Description of *Candidatus* Abagmana inguritrix sp. nov.

Candidatus Abagmana inguritrix (NL. fem. n. *inguritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1435 sp002329385*. The type genome for the species is the GenBank assembly GCA_002329385.1. The GC content of the type genome is 46.66 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Abagmana gen. nov.

Candidatus Abagmana (NL. fem. n. *Abagmana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1435*. The type species for the genus is *Candidatus* Abagmana inguritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Abagmaria advinitio sp. nov.

Candidatus Abagmaria advinitio (NL. fem. n. *advinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6130 sp002428285*. The type genome for the species is the GenBank assembly GCA_002428285.1. The GC content of the type genome is 35.62 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Abagmaria gen. nov.

Candidatus Abagmaria (NL. fem. n. *Abagmaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6130*. The type species for the genus is *Candidatus* Abagmaria advinitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Abagmia affunilenta sp. nov.

Candidatus Abagmia affunilenta (NL. fem. n. *affunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-459 sp003162395*. The type genome for the species is the GenBank assembly GCA_003162395.1. The GC content of the type genome is 68.46 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Abagmia gen. nov.

Candidatus Abagmia (NL. fem. n. *Abagmia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-459*. The type species for the genus is *Candidatus* Abagmia affunilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Abagmia atrusago sp. nov.

Candidatus Abagmia atrusago (NL. fem. n. *atrusago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-459 sp003135595*. The type genome for the species is the GenBank assembly GCA_003135595.1. The GC content of the type genome is 69.78 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Abagmida adhoressa sp. nov.

Candidatus Abagmida adhoressa (NL. fem. n. *adhoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIAF01 sp009691905*. The type genome for the species is the GenBank assembly GCA_009691905.1. The GC content of the type genome is 61.2 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Abagmida gen. nov.

Candidatus Abagmida (NL. fem. n. *Abagmida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIAF01*. The type species for the genus is *Candidatus* Abagmida adhoressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10511*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicaliaceae.

Description of *Candidatus* Abagmosa adlapugo sp. nov.

Candidatus Abagmosa adlapugo (NL. fem. n. *adlapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-47-10 sp002773135*. The type genome for the species is the GenBank assembly GCA_002773135.1. The GC content of the type genome is 46.68 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Abagmosa gen. nov.

Candidatus Abagmosa (NL. fem. n. *Abagmosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-47-10*. The type species for the genus is *Candidatus* Abagmosa adlapugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Abambana artocitrix sp. nov.

Candidatus Abambana artocitrix (NL. fem. n. *artocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUVM01 sp012520095*. The type genome for the species is the GenBank assembly GCA_012520095.1. The GC content of the type genome is 46.51 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Abambana gen. nov.

Candidatus Abambana (NL. fem. n. *Abambana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUVM01*. The type species for the genus is *Candidatus* Abambana artocitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abambana assefitrix sp. nov.

Candidatus Abambana assefitrix (NL. fem. n. *assefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUVM01 sp012841045*. The type genome for the species is the GenBank assembly GCA_012841045.1. The GC content of the type genome is 48.52 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Abambaria affuniforma sp. nov.

Candidatus Abambaria affuniforma (NL. fem. n. *affuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2701705 sp002701705*. The type genome for the species is the GenBank assembly GCA_002701705.1. The GC content of the type genome is 31.34 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Abambaria gen. nov.

Candidatus Abambaria (NL. fem. n. *Abambaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2701705*. The type species for the genus is *Candidatus* Abambaria affuniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002716945*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecidaceae.

Description of *Candidatus* Abambella anasticella sp. nov.

Candidatus Abambella anasticella (NL. fem. n. *anasticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6059 sp002435755*. The type genome for the species is the GenBank assembly GCA_002435755.1. The GC content of the type genome is 43.5 % and the genome length is 6.92 Mbp.

Description of *Candidatus* Abambella gen. nov.

Candidatus Abambella (NL. fem. n. *Abambella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6059*. The type species for the genus is *Candidatus* Abambella anasticella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abambia anteventia sp. nov.

Candidatus Abambia anteventia (NL. fem. n. *anteventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDEQ01 sp013816225*. The type genome for the species is the GenBank assembly GCA_013816225.1. The GC content of the type genome is 58.42 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Abambia gen. nov.

Candidatus Abambia (NL. fem. n. *Abambia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDEQ01*. The type species for the genus is *Candidatus* Abambia anteventia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ATM1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pavimidaceae.

Description of *Candidatus* Abambida agnicitio sp. nov.

Candidatus Abambida agnicitio (NL. fem. n. *agnicitio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGH01 sp903970275*. The type genome for the species is the GenBank assembly GCA_903970275.1. The GC content of the type genome is 63.78 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Abambida gen. nov.

Candidatus Abambida (NL. fem. n. *Abambida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDGH01*. The type species for the genus is *Candidatus* Abambida agnicitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1321*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolulaceae.

Description of *Candidatus* Abambida appacatica sp. nov.

Candidatus Abambida appacatica (NL. fem. n. *appacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGH01 sp013286145*. The type genome for the species is the GenBank assembly GCA_013286145.1. The GC content of the type genome is 53.6 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Abambida divolastra sp. nov.

Candidatus Abambida divolastra (NL. fem. n. *divolastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGH01 sp903970335*. The type genome for the species is the GenBank assembly GCA_903970335.1. The GC content of the type genome is 59.72 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Abambida inmoribula sp. nov.

Candidatus Abambida inmoribula (NL. fem. n. *inmoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGH01 sp013285645*. The type genome for the species is the GenBank assembly GCA_013285645.1. The GC content of the type genome is 55.3 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Abambida vaniditura sp. nov.

Candidatus Abambida vaniditura (NL. fem. n. *vaniditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGH01 sp903863295*. The type genome for the species is the GenBank assembly GCA_903863295.1. The GC content of the type genome is 56.48 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Abantana cerofisca sp. nov.

Candidatus Abantana cerofisca (NL. fem. n. *cerofisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1490 sp900548185*. The type genome for the species is the GenBank assembly GCA_900548185.1. The GC content of the type genome is 58.39 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Abantana gen. nov.

Candidatus Abantana (NL. fem. n. *Abantana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1490*. The type species for the genus is *Candidatus* Abantana cerofisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-312*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homolariaceae.

Description of *Candidatus* Abantana impacugo sp. nov.

Candidatus Abantana impacugo (NL. fem. n. *impacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1490 sp900552245*. The type genome for the species is the GenBank assembly GCA_900552245.1. The GC content of the type genome is 46.01 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Abantana plostedo sp. nov.

Candidatus Abantana plostedo (NL. fem. n. *plostedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1490 sp900547395*. The type genome for the species is the GenBank assembly GCA_900547395.1. The GC content of the type genome is 45.86 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Abantaria serotibra sp. nov.

Candidatus Abantaria serotibra (NL. fem. n. *serotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2717465 sp002717465*. The type genome for the species is the GenBank assembly GCA_002717465.1. The GC content of the type genome is 40.23 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Abantaria gen. nov.

Candidatus Abantaria (NL. fem. n. *Abantaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2717465*. The type species for the genus is *Candidatus* Abantaria serotibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivariaceae.

Description of *Candidatus* Abantida evangatica sp. nov.

Candidatus Abantida evangatica (NL. fem. n. *evangatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *50-400-T64 sp002746135*. The type genome for the species is the GenBank assembly GCA_002746135.1. The GC content of the type genome is 50.15 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Abantida gen. nov.

Candidatus Abantida (NL. fem. n. *Abantida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *50-400-T64*. The type species for the genus is *Candidatus* Abantida evangatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abantida exturago sp. nov.

Candidatus Abantida exturago (NL. fem. n. *exturago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *50-400-T64 sp002162825*. The type genome for the species is the GenBank assembly GCA_002162825.1. The GC content of the type genome is 53.34 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Abantida insoritio sp. nov.

Candidatus Abantida insoritio (NL. fem. n. *insoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *50-400-T64 sp002162815*. The type genome for the species is the GenBank assembly GCA_002162815.1. The GC content of the type genome is 53.25 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Abantida loripilenta sp. nov.

Candidatus Abantida loripilenta (NL. fem. n. *loripilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *50-400-T64 sp002162755*. The type genome for the species is the GenBank assembly GCA_002162755.1. The GC content of the type genome is 49.97 %

and the genome length is 3.05 Mbp.

Description of *Candidatus* Abantida paracimonia sp. nov.

Candidatus Abantida paracimonia (NL. fem. n. *paracimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *50-400-T64 sp003646355*. The type genome for the species is the GenBank assembly GCA_003646355.1. The GC content of the type genome is 50.93 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Abantosa duponatio sp. nov.

Candidatus Abantosa duponatio (NL. fem. n. *duponatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKH01 sp009778175*. The type genome for the species is the GenBank assembly GCA_009778175.1. The GC content of the type genome is 44.85 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Abantosa gen. nov.

Candidatus Abantosa (NL. fem. n. *Abantosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKH01*. The type species for the genus is *Candidatus* Abantosa duponatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Abantula adsenisca sp. nov.

Candidatus Abantula adsenisca (NL. fem. n. *adsenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSRU01 sp011331465*. The type genome for the species is the GenBank assembly GCA_011331465.1. The GC content of the type genome is 48.76 % and the genome length is 6.88 Mbp.

Description of *Candidatus* Abantula gen. nov.

Candidatus Abantula (NL. fem. n. *Abantula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSRU01*. The type species for the genus is *Candidatus* Abantula adsenisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abascana debucibula sp. nov.

Candidatus Abascana debucibula (NL. fem. n. *debucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA946 sp009777725*. The type genome for the species is the GenBank assembly GCA_009777725.1. The GC content of the type genome is 43.83 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Abascana gen. nov.

Candidatus Abascana (NL. fem. n. *Abascana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA946*. The type species for the genus is *Candidatus* Abascana debucibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abascana exforentia sp. nov.

Candidatus Abascana exforentia (NL. fem. n. *exforentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA946 sp002293295*. The type genome for the species is the GenBank assembly GCA_002293295.1. The GC content of the type genome is 41.83 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Abascaria infatousia sp. nov.

Candidatus Abascaria infatousia (NL. fem. n. *infatousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGEC01 sp009918425*. The type genome for the species is the GenBank assembly GCA_009918425.1. The GC content of the type genome is 44.37 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Abascaria gen. nov.

Candidatus Abascaria (NL. fem. n. *Abascaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGEC01*. The type species for the genus is *Candidatus* Abascaria infatousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadidaceae.

Description of *Candidatus* Abascia immurimonia sp. nov.

Candidatus Abascia immurimonia (NL. fem. n. *immurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CYSP01 sp001298735*. The type genome for the species is the GenBank assembly RS_GCF_001298735.1. The GC content of the type genome is 45.58 % and the genome length is 4.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Biogas slut".

Description of *Candidatus* Abascia gen. nov.

Candidatus Abascia (NL. fem. n. *Abascia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CYSP01*. The type species for the genus is *Candidatus* Abascia immurimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abascida obnoxatio sp. nov.

Candidatus Abascida obnoxatio (NL. fem. n. *obnoxatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPF01 sp011055775*. The type genome for the species is the GenBank assembly GCA_011055775.1. The GC content of the type genome is 59.6 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Abascida gen. nov.

Candidatus Abascida (NL. fem. n. *Abascida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPF01*. The type species for the genus is *Candidatus* Abascida obnoxatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Abascosa admigatio sp. nov.

Candidatus Abascosa admigatio (NL. fem. n. *admigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACBGS01 sp902538855*. The type genome for the species is the GenBank assembly GCA_902538855.1. The GC content of the type genome is 36.82 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Abascosa gen. nov.

Candidatus Abascosa (NL. fem. n. *Abascosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACBGS01*. The type species for the genus is *Candidatus* Abascosa admigatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7916*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venuniaceae.

Description of *Candidatus* Abditibacterium recorilega sp. nov.

Candidatus Abditibacterium recorilega (NL. fem. n. *recorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Abditibacterium sp004172935*. The type genome for the species is the GenBank assembly GCA_004172935.1. The GC content of the type genome is 55.0 % and the genome length is 7.2 Mbp.

Description of *Candidatus* Abhinana momoratica sp. nov.

Candidatus Abhinana momoratica (NL. fem. n. *momoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1397 sp900761355*. The type genome for the species is the GenBank assembly RS_GCF_900761355.1. The GC content of the type genome is 60.13 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Abhinana gen. nov.

Candidatus Abhinana (NL. fem. n. *Abhinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1397*. The type species for the genus is *Candidatus* Abhinana momoratica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abhinana pluscimonas sp. nov.

Candidatus Abhinana pluscimonas (NL. fem. n. *pluscimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1397 sp900551425*. The type genome for the species is the GenBank assembly GCA_900551425.1. The GC content of the type genome is 57.86 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Abhinaria demulentia sp. nov.

Candidatus Abhinaria demulentia (NL. fem. n. *demulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBAT01 sp005884665*. The type genome for the species is the GenBank assembly GCA_005884665.1. The GC content of the type genome is 43.47 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Abhinaria gen. nov.

Candidatus Abhinaria (NL. fem. n. *Abhinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBAT01*. The type species for the genus is *Candidatus* Abhinaria demulentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abhinaria eccilax sp. nov.

Candidatus Abhinaria eccilax (NL. fem. n. *eccilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBAT01 sp014379965*. The type genome for the species is the GenBank assembly GCA_014379965.1. The GC content of the type genome is 45.98 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Abhinella invicilega sp. nov.

Candidatus Abhinella invicilega (NL. fem. n. *invicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c57 sp000961745*. The type genome for the species is the GenBank assembly GCA_000961745.1. The GC content of the type genome is 65.4 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Abhinella gen. nov.

Candidatus Abhinella (NL. fem. n. *Abhinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *BRH-c57*. The type species for the genus is *Candidatus* Abhinella invicilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abhinia effulugo sp. nov.

Candidatus Abhinia effulugo (NL. fem. n. *effulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2719315 sp002719315*. The type genome for the species is the GenBank assembly GCA_002719315.1. The GC content of the type genome is 28.01 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Abhinia gen. nov.

Candidatus Abhinia (NL. fem. n. *Abhinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2719315*. The type species for the genus is *Candidatus* Abhinia effulugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abhinia exentitrix sp. nov.

Candidatus Abhinia exentitrix (NL. fem. n. *exentitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2719315 sp902560065*. The type genome for the species is the GenBank assembly GCA_902560065.1. The GC content of the type genome is 28.08 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Abhinida cenacisca sp. nov.

Candidatus Abhinida cenacisca (NL. fem. n. *cenacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCRA01 sp013813825*. The type genome for the species is the GenBank assembly GCA_013813825.1. The GC content of the type genome is 59.62 %

and the genome length is 3.96 Mbp.

Description of *Candidatus* Abhinida gen. nov.

Candidatus Abhinida (NL. fem. n. *Abhinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCRA01*. The type species for the genus is *Candidatus* Abhinida cenacisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abhinosa feficago sp. nov.

Candidatus Abhinosa feficago (NL. fem. n. *feficago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFJZ01 sp009885805*. The type genome for the species is the GenBank assembly GCA_009885805.1. The GC content of the type genome is 71.4 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Abhinosa gen. nov.

Candidatus Abhinosa (NL. fem. n. *Abhinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFJZ01*. The type species for the genus is *Candidatus* Abhinosa feficago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F1-60-MAGs149*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulanaceae.

Description of *Candidatus* Abhinula induvicula sp. nov.

Candidatus Abhinula induvicula (NL. fem. n. *induvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-64-85 sp001798885*. The type genome for the species is the GenBank assembly GCA_001798885.1. The GC content of the type genome is 63.48 % and the genome length is 2.21 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Abhinula gen. nov.

Candidatus Abhinula (NL. fem. n. *Abhinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-64-85*. The type species for the genus is *Candidatus* Abhinula induvicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MBNT15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenulaceae.

Description of *Candidatus* Abindana antimitio sp. nov.

Candidatus Abindana antimitio (NL. fem. n. *antimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J033 sp003696605*. The type genome for the species is the GenBank assembly GCA_003696605.1. The GC content of the type genome is 50.49 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Abindana gen. nov.

Candidatus Abindana (NL. fem. n. *Abindana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J033*. The type species for the genus is *Candidatus* Abindana antimitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abindaria attegiforma sp. nov.

Candidatus Abindaria attegiforma (NL. fem. n. *attegiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCL01 sp013288135*. The type genome for the species is the GenBank assembly GCA_013288135.1. The GC content of the type genome is 37.41 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Abindaria gen. nov.

Candidatus Abindaria (NL. fem. n. *Abindaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCL01*. The type species for the genus is *Candidatus* Abindaria attegiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6186*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laniganaceae.

Description of *Candidatus* Abindella delecilega sp. nov.

Candidatus Abindella delecilega (NL. fem. n. *delecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGR01 sp009787085*. The type genome for the species is the GenBank assembly GCA_009787085.1. The GC content of the type genome is 57.2 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Abindella gen. nov.

Candidatus Abindella (NL. fem. n. *Abindella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGR01*. The type species for the genus is *Candidatus* Abindella delecilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumanaceae.

Description of *Candidatus* Abindia caravitoga sp. nov.

Candidatus Abindia caravitoga (NL. fem. n. *caravitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6116 sp002423425*. The type genome for the species is the GenBank assembly GCA_002423425.1. The GC content of the type genome is 40.85 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Abindia gen. nov.

Candidatus Abindia (NL. fem. n. *Abindia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6116*. The type species for the genus is *Candidatus* Abindia caravitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abindida oblonago sp. nov.

Candidatus Abindida oblonago (NL. fem. n. *oblonago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSY01 sp009379815*. The type genome for the species is the GenBank assembly GCA_009379815.1. The GC content of the type genome is 70.82 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Abindida gen. nov.

Candidatus Abindida (NL. fem. n. *Abindida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSY01*. The type species for the genus is *Candidatus* Abindida oblonago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abindida venefugo sp. nov.

Candidatus Abindida venefugo (NL. fem. n. *venefugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSY01 sp009377865*. The type genome for the species is the GenBank assembly GCA_009377865.1. The GC content of the type genome is 70.23 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Abindosa conigitia sp. nov.

Candidatus Abindosa conigitia (NL. fem. n. *conigitia* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3ABIN15 sp002923195*. The type genome for the species is the GenBank assembly GCA_002923195.1. The GC content of the type genome is 37.36 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Abindosa gen. nov.

Candidatus Abindosa (NL. fem. n. *Abindosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3ABIN15*. The type species for the genus is *Candidatus* Abindosa conigitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-40-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalidaceae.

Description of *Candidatus* Abindula armipessa sp. nov.

Candidatus Abindula armipessa (NL. fem. n. *armipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTR01 sp009377635*. The type genome for the species is the GenBank assembly GCA_009377635.1. The GC content of the type genome is 65.53 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Abindula gen. nov.

Candidatus Abindula (NL. fem. n. *Abindula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTR01*. The type species for the genus is *Candidatus* Abindula armipessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perabanaceae.

Description of *Candidatus* Abinvana aneclessa sp. nov.

Candidatus Abinvana aneclessa (NL. fem. n. *aneclessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAF01 sp009783515*. The type genome for the species is the GenBank assembly GCA_009783515.1. The GC content of the type genome is 48.52 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Abinvana gen. nov.

Candidatus Abinvana (NL. fem. n. *Abinvana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAF01*. The type species for the genus is *Candidatus* Abinvana aneclessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Abinvana nefaredo sp. nov.

Candidatus Abinvana nefaredo (NL. fem. n. *nefaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAF01 sp009780325*. The type genome for the species is the GenBank assembly GCA_009780325.1. The GC content of the type genome is 34.79 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Abinvaria mirabitas sp. nov.

Candidatus Abinvaria mirabitas (NL. fem. n. *mirabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-G11 sp004356175*. The type genome for the species is the GenBank assembly GCA_004356175.1. The GC content of the type genome is 58.14 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Abinvaria gen. nov.

Candidatus Abinvaria (NL. fem. n. *Abinvaria* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B3-G11*. The type species for the genus is *Candidatus* Abinvaria mirabitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicellaceae.

Description of *Candidatus* Abinvaria subacisca sp. nov.

Candidatus Abinvaria subacisca (NL. fem. n. *subacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-G11 sp003648875*. The type genome for the species is the GenBank assembly GCA_003648875.1. The GC content of the type genome is 59.87 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Abinvella insepicella sp. nov.

Candidatus Abinvella insepicella (NL. fem. n. *insepicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXQD01 sp012974475*. The type genome for the species is the GenBank assembly GCA_012974475.1. The GC content of the type genome is 46.39 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Abinvella gen. nov.

Candidatus Abinvella (NL. fem. n. *Abinvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXQD01*. The type species for the genus is *Candidatus* Abinvella insepicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11574*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momoranaceae.

Description of *Candidatus* Abinvia allacedo sp. nov.

Candidatus Abinvia allacedo (NL. fem. n. *allacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADJD01 sp013150955*. The type genome for the species is the GenBank assembly GCA_013150955.1. The GC content of the type genome is 50.37 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Abinvia gen. nov.

Candidatus Abinvia (NL. fem. n. *Abinvia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADJD01*. The type species for the genus is *Candidatus* Abinvia allacedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diluvidaceae.

Description of *Candidatus* Abinvida indeventia sp. nov.

Candidatus Abinvida indeventia (NL. fem. n. *indeventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVRX01 sp014534205*. The type genome for the species is the GenBank assembly GCA_014534205.1. The GC content of the type genome is 69.58 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Abinvida gen. nov.

Candidatus Abinvida (NL. fem. n. *Abinvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACVRX01*. The type species for the genus is *Candidatus* Abinvida indeventia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abinvosa ignosifica sp. nov.

Candidatus Abinvosa ignosifica (NL. fem. n. *ignosifica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNLK01 sp014381505*. The type genome for the species is the GenBank assembly GCA_014381505.1. The GC content of the type genome is 51.06 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Abinvosa gen. nov.

Candidatus Abinvosa (NL. fem. n. *Abinvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNLK01*. The type species for the genus is *Candidatus* Abinvosa ignosifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abiotrophia adtenitura sp. nov.

Candidatus Abiotrophia adtenitura (NL. fem. n. *adtenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Abiotrophia sp001815865*. The type genome for the species is the GenBank assembly RS_GCF_001815865.1. The GC content of the type genome is 46.6 % and the genome length is 2.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Respiratory".

Description of *Candidatus* Ablacana exsatatica sp. nov.

Candidatus Ablacana exsatatica (NL. fem. n. *exsatatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUQQ01 sp012032745*. The type genome for the species is the GenBank assembly GCA_012032745.1. The GC content of the type genome is 58.49 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Ablacana gen. nov.

Candidatus Ablacana (NL. fem. n. *Ablacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUQQ01*. The type species for the genus is *Candidatus* Ablacana exsatatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ablacella eccisousia sp. nov.

Candidatus Ablacella eccisousia (NL. fem. n. *eccisousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12783 sp902782535*. The type genome for the species is the GenBank assembly GCA_902782535.1. The GC content of the type genome is 26.72 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Ablacella gen. nov.

Candidatus Ablacella (NL. fem. n. *Ablacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12783*. The type species for the genus is *Candidatus* Ablacella eccisousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Ablacella excetentia sp. nov.

Candidatus Ablacella excetentia (NL. fem. n. *excetentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12783 sp902783985*. The type genome for the species is the GenBank assembly GCA_902783985.1. The GC content of the type genome is 25.18 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Ablacella tumefetta sp. nov.

Candidatus Ablacella tumefetta (NL. fem. n. *tumefetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12783 sp902801795*. The type genome for the species is the GenBank assembly GCA_902801795.1. The GC content of the type genome is 26.2 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Ablacia citocentia sp. nov.

Candidatus Ablacia citocentia (NL. fem. n. *citocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPV01 sp011055625*. The type genome for the species is the GenBank assembly GCA_011055625.1. The GC content of the type genome is 52.23 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Ablacia gen. nov.

Candidatus Ablacia (NL. fem. n. *Ablacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPV01*. The type species for the genus is *Candidatus* Ablacia citocentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Ablacida indepatio sp. nov.

Candidatus Ablacida indepatio (NL. fem. n. *indepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM05398 sp900767385*. The type genome for the species is the GenBank assembly RS_GCF_900767385.1. The GC content of the type genome is 48.83 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Ablacida gen. nov.

Candidatus Ablacida (NL. fem. n. *Ablacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM05398*. The type species for the genus is *Candidatus* Ablacida

indepatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ablacosa embamitudo sp. nov.

Candidatus Ablacosa embamitudo (NL. fem. n. *embamitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1771 sp002315315*. The type genome for the species is the GenBank assembly GCA_002315315.1. The GC content of the type genome is 48.28 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Ablacosa gen. nov.

Candidatus Ablacosa (NL. fem. n. *Ablacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1771*. The type species for the genus is *Candidatus* Ablacosa embamitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ablacula adperousia sp. nov.

Candidatus Ablacula adperousia (NL. fem. n. *adperousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9845 sp902796635*. The type genome for the species is the GenBank assembly GCA_902796635.1. The GC content of the type genome is 31.2 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Ablacula gen. nov.

Candidatus Ablacula (NL. fem. n. *Ablacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9845*. The type species for the genus is *Candidatus* Ablacula adperousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA1242. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Ablacula tirunetta sp. nov.

Candidatus Ablacula tirunetta (NL. fem. n. *tirunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9845 sp003453435*. The type genome for the species is the GenBank assembly GCA_003453435.1. The GC content of the type genome is 31.21 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Ablepana anactedo sp. nov.

Candidatus Ablepana anactedo (NL. fem. n. *anactedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGV01 sp009778875*. The type genome for the species is the GenBank assembly GCA_009778875.1. The GC content of the type genome is 64.16 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Ablepana gen. nov.

Candidatus Ablepana (NL. fem. n. *Ablepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGV01*. The type species for the genus is *Candidatus* Ablepana anactedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ablepana indoticella sp. nov.

Candidatus Ablepana indoticella (NL. fem. n. *indoticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGV01 sp009781145*. The type genome for the species is the GenBank assembly GCA_009781145.1. The GC content of the type genome is 62.03 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Ablepana momorivita sp. nov.

Candidatus Ablepana momorivita (NL. fem. n. *momorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGV01 sp009787035*. The type genome for the species is the GenBank assembly GCA_009787035.1. The GC content of the type genome is 68.33 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Ablepana vivifatica sp. nov.

Candidatus Ablepana vivifatica (NL. fem. n. *vivifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGV01 sp009785885*. The type genome for the species is the GenBank assembly GCA_009785885.1. The GC content of the type genome is 70.49 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Ableparia cimelax sp. nov.

Candidatus Ableparia cimelax (NL. fem. n. *cimelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCIR01 sp903970425*. The type genome for the species is the GenBank assembly GCA_903970425.1. The GC content of the type genome is 43.47 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Ableparia gen. nov.

Candidatus Ableparia (NL. fem. n. *Ableparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCIR01*. The type species for the genus is *Candidatus* Ableparia cimelax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Meridiaceae.

Description of *Candidatus* Ablepella nugivifica sp. nov.

Candidatus Ablepella nugivifica (NL. fem. n. *nugivifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zgenome-0002 sp003854985*. The type genome for the species is the GenBank assembly GCA_003854985.1. The GC content of the type genome is 39.74 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Ablepella gen. nov.

Candidatus Ablepella (NL. fem. n. *Ablepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Zgenome-0002*. The type species for the genus is *Candidatus* Ablepella nugivifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ablepia cacopigena sp. nov.

Candidatus Ablepia cacopigena (NL. fem. n. *cacopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QZFT01 sp003600225*. The type genome for the species is the GenBank assembly RS_GCF_003600225.1. The GC content of the type genome is 68.12 % and the genome length is 7.61 Mbp.

Description of *Candidatus* Ablepia gen. nov.

Candidatus Ablepia (NL. fem. n. *Ablepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QZFT01*. The type species for the genus is *Candidatus* Ablepia cacopigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ablepida edulcivita sp. nov.

Candidatus Ablepida edulcivita (NL. fem. n. *edulcivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YG09 sp009650435*. The type genome for the species is the GenBank assembly RS_GCF_009650435.1. The GC content of the type genome is 44.62 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Ablepida gen. nov.

Candidatus Ablepida (NL. fem. n. *Ablepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YG09*. The type species for the genus is *Candidatus* Ablepida edulcivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ableposa homilitica sp. nov.

Candidatus Ableposa homilitica (NL. fem. n. *homilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-908 sp903643085*. The type genome for the species is the GenBank assembly RS_GCF_903643085.1. The GC content of the type genome is 66.96 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Ableposa gen. nov.

Candidatus Ableposa (NL. fem. n. *Ableposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-908*. The type species for the genus is *Candidatus* Ableposa homilitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ableposa peradimonas sp. nov.

Candidatus Ableposa peradimonas (NL. fem. n. *peradimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-908 sp003133065*. The type genome for the species is the

GenBank assembly GCA_003133065.1. The GC content of the type genome is 64.68 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Ablepula ranunifica sp. nov.

Candidatus Ablepula ranunifica (NL. fem. n. *ranunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-000702305 sp000702305*. The type genome for the species is the GenBank assembly RS_GCF_000702305.1. The GC content of the type genome is 68.19 % and the genome length is 4.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment".

Description of *Candidatus* Ablepula gen. nov.

Candidatus Ablepula (NL. fem. n. *Ablepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-000702305*. The type species for the genus is *Candidatus* Ablepula ranunifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abligaria irremiforma sp. nov.

Candidatus Abligaria irremiforma (NL. fem. n. *irremiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMNX01 sp013204405*. The type genome for the species is the GenBank assembly GCA_013204405.1. The GC content of the type genome is 39.06 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Abligaria gen. nov.

Candidatus Abligaria (NL. fem. n. *Abligaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMNX01*. The type species for the genus is *Candidatus* Abligaria irremiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Legifariaceae.

Description of *Candidatus* Abligella selecimonia sp. nov.

Candidatus Abligella selecimonia (NL. fem. n. *selecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-501 sp011328735*. The type genome for the species is the GenBank assembly GCA_011328735.1. The GC content of the type genome is 69.18 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Abligella gen. nov.

Candidatus Abligella (NL. fem. n. *Abligella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-501*. The type species for the genus is *Candidatus* Abligella selecimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2174*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisoridaceae.

Description of *Candidatus* Abligia utilligena sp. nov.

Candidatus Abligia utilligena (NL. fem. n. *utilligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-47-10-A sp001820675*. The type genome for the species is the GenBank assembly GCA_001820675.1. The GC content of the type genome is 46.64 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Abligia gen. nov.

Candidatus Abligia (NL. fem. n. *Abligia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-47-10-A*. The type species for the genus is *Candidatus*

Abligia utilligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-42-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conamulaceae.

Description of *Candidatus* Abligida imbeletta sp. nov.

Candidatus Abligida imbeletta (NL. fem. n. *imbeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTCFX2 sp002050125*. The type genome for the species is the GenBank assembly GCA_002050125.1. The GC content of the type genome is 56.95 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Abligida gen. nov.

Candidatus Abligida (NL. fem. n. *Abligida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UTCFX2*. The type species for the genus is *Candidatus* Abligida imbeletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Abligula abveritrix sp. nov.

Candidatus Abligula abveritrix (NL. fem. n. *abveritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J051 sp003695835*. The type genome for the species is the GenBank assembly GCA_003695835.1. The GC content of the type genome is 61.29 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Abligula gen. nov.

Candidatus Abligula (NL. fem. n. *Abligula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *J051*. The type species for the genus is *Candidatus* Abligula abveritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ATM1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pavimidaceae.

Description of *Candidatus* Abligula occucimonia sp. nov.

Candidatus Abligula occucimonia (NL. fem. n. *occucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J051 sp011331565*. The type genome for the species is the GenBank assembly GCA_011331565.1. The GC content of the type genome is 63.61 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Abluvida faticilenta sp. nov.

Candidatus Abluvida faticilenta (NL. fem. n. *faticilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6912 sp002450985*. The type genome for the species is the GenBank assembly GCA_002450985.1. The GC content of the type genome is 69.13 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Abluvida gen. nov.

Candidatus Abluvida (NL. fem. n. *Abluvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6912*. The type species for the genus is *Candidatus* Abluvida faticilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicellaceae.

Description of *Candidatus* Abluvosa fatifitia sp. nov.

Candidatus Abluvosa fatifitia (NL. fem. n. *fatifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLS01 sp012799185*. The type genome for the species is the GenBank assembly GCA_012799185.1. The GC content of the type genome is 52.97 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Abluvosa gen. nov.

Candidatus Abluvosa (NL. fem. n. *Abluvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZLS01*. The type species for the genus is *Candidatus* Abluvosa fatifitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Abmatana adnilitudo sp. nov.

Candidatus Abmatana adnilitudo (NL. fem. n. *adnilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLJM01 sp007131755*. The type genome for the species is the GenBank assembly GCA_007131755.1. The GC content of the type genome is 60.61 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Abmatana gen. nov.

Candidatus Abmatana (NL. fem. n. *Abmatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLJM01*. The type species for the genus is *Candidatus* Abmatana adnilitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abmatana apercetta sp. nov.

Candidatus Abmatana apercetta (NL. fem. n. *apercetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SLJM01 sp007120915*. The type genome for the species is the GenBank assembly GCA_007120915.1. The GC content of the type genome is 62.09 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Abmatana apsoritia sp. nov.

Candidatus Abmatana apsoritia (NL. fem. n. *apsoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLJM01 sp007119175*. The type genome for the species is the GenBank assembly GCA_007119175.1. The GC content of the type genome is 58.9 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Abmatana holisilega sp. nov.

Candidatus Abmatana holisilega (NL. fem. n. *holisilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLJM01 sp007119595*. The type genome for the species is the GenBank assembly GCA_007119595.1. The GC content of the type genome is 57.99 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Abmatana thessentia sp. nov.

Candidatus Abmatana thessentia (NL. fem. n. *thessentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLJM01 sp007135085*. The type genome for the species is the GenBank assembly GCA_007135085.1. The GC content of the type genome is 60.37 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Abmataria maledibula sp. nov.

Candidatus Abmataria maledibula (NL. fem. n. *maledibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUUM01 sp012031565*. The type genome for the species is the GenBank assembly GCA_012031565.1. The GC content of the type genome is 53.55 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Abmataria gen. nov.

Candidatus Abmataria (NL. fem. n. *Abmataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUUM01*. The type species for the genus is *Candidatus* Abmataria maledibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JA-3-3Ab*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divolariaceae.

Description of *Candidatus* Abmatida bicodimonia sp. nov.

Candidatus Abmatida bicodimonia (NL. fem. n. *bicodimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-A16 sp003280345*. The type genome for the species is the GenBank assembly GCA_003280345.1. The GC content of the type genome is 39.86 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Abmatida gen. nov.

Candidatus Abmatida (NL. fem. n. *Abmatida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-363-A16*. The type species for the genus is *Candidatus* Abmatida bicodimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abmatosa retunessa sp. nov.

Candidatus Abmatosa retunessa (NL. fem. n. *retunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLJS01 sp007135015*. The type genome for the species is the GenBank assembly GCA_007135015.1. The GC content of the type genome is 63.98 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Abmatosa gen. nov.

Candidatus Abmatosa (NL. fem. n. *Abmatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLJS01*. The type species for the genus is *Candidatus* Abmatosa retunessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abnepana saburousia sp. nov.

Candidatus Abnepana saburousia (NL. fem. n. *saburousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-43-28 sp001801635*. The type genome for the species is the GenBank assembly GCA_001801635.1. The GC content of the type genome is 43.12 % and the genome length is 1.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Abnepana gen. nov.

Candidatus Abnepana (NL. fem. n. *Abnepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-43-28*. The type species for the genus is *Candidatus* Abnepana saburousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Abneparia dicimentia sp. nov.

Candidatus Abneparia dicimentia (NL. fem. n. *dicimentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *G713 sp011192175*. The type genome for the species is the GenBank assembly GCA_011192175.1. The GC content of the type genome is 55.46 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Abneparia gen. nov.

Candidatus Abneparia (NL. fem. n. *Abneparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *G713*. The type species for the genus is *Candidatus* Abneparia dicimentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLSP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decamosaceae.

Description of *Candidatus* Abnepia inmacitrix sp. nov.

Candidatus Abnepia inmacitrix (NL. fem. n. *inmacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFWF01 sp013362405*. The type genome for the species is the GenBank assembly GCA_013362405.1. The GC content of the type genome is 70.47 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Abnepia gen. nov.

Candidatus Abnepia (NL. fem. n. *Abnepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFWF01*. The type species for the genus is *Candidatus* Abnepia inmacitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abnepida resuliforma sp. nov.

Candidatus Abnepida resuliforma (NL. fem. n. *resuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZJO01 sp012800315*. The type genome for the species is the GenBank assembly GCA_012800315.1. The GC content of the type genome is 34.26 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Abnepida gen. nov.

Candidatus Abnepida (NL. fem. n. *Abnepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZJO01*. The type species for the genus is *Candidatus* Abnepida resuliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Abnepula incorago sp. nov.

Candidatus Abnepula incorago (NL. fem. n. *incorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMRV01 sp013202285*. The type genome for the species is the GenBank assembly GCA_013202285.1. The GC content of the type genome is 48.39 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Abnepula gen. nov.

Candidatus Abnepula (NL. fem. n. *Abnepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMRV01*. The type species for the genus is *Candidatus* Abnepula incorago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AABM5-125-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desonellaceae.

Description of *Candidatus* Abnocana abveritia sp. nov.

Candidatus Abnocana abveritia (NL. fem. n. *abveritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS874 sp902766575*. The type genome for the species is the GenBank assembly GCA_902766575.1. The GC content of the type genome is 55.34 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Abnocana gen. nov.

Candidatus Abnocana (NL. fem. n. *Abnocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS874*. The type species for the genus is *Candidatus* Abnocana abveritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Abnocana semimitoga sp. nov.

Candidatus Abnocana semimitoga (NL. fem. n. *semimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS874 sp900546315*. The type genome for the species is the GenBank assembly GCA_900546315.1. The GC content of the type genome is 55.19 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Abnocaria bipinitura sp. nov.

Candidatus Abnocaria bipinitura (NL. fem. n. *bipinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBJ01 sp012730105*. The type genome for the species is the GenBank assembly GCA_012730105.1. The GC content of the type genome is 56.3 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Abnocaria gen. nov.

Candidatus Abnocaria (NL. fem. n. *Abnocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBJ01*. The type species for the genus is *Candidatus* Abnocaria bipinitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilulaceae.

Description of *Candidatus* Abnocaria expanitio sp. nov.

Candidatus Abnocaria expanitio (NL. fem. n. *expanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBJ01 sp012523015*. The type genome for the species is the GenBank assembly GCA_012523015.1. The GC content of the type genome is 50.06 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Abnocella expecetta sp. nov.

Candidatus Abnocella expecetta (NL. fem. n. *expecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSOT01 sp011046905*. The type genome for the species is the GenBank assembly GCA_011046905.1. The GC content of the type genome is 66.04 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Abnocella gen. nov.

Candidatus Abnocella (NL. fem. n. *Abnocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSOT01*. The type species for the genus is *Candidatus* Abnocella expecetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludanaceae.

Description of *Candidatus* Abnocia inrevitio sp. nov.

Candidatus Abnocia inrevitio (NL. fem. n. *inrevitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWCR01 sp002070095*. The type genome for the species is the GenBank assembly GCA_002070095.1. The GC content of the type genome is 47.09 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Abnocia gen. nov.

Candidatus Abnocia (NL. fem. n. *Abnocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCR01*. The type species for the genus is *Candidatus* Abnocia inrevitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-60-25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugigulaceae.

Description of *Candidatus* Abnocida armigousia sp. nov.

Candidatus Abnocida armigousia (NL. fem. n. *armigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6489 sp002435385*. The type genome for the species is the GenBank assembly GCA_002435385.1. The GC content of the type genome is 26.75 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Abnocida gen. nov.

Candidatus Abnocida (NL. fem. n. *Abnocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6489*. The type species for the genus is *Candidatus* Abnocida armigousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6164*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifellaceae.

Description of *Candidatus* Abnocula offulitura sp. nov.

Candidatus Abnocula offulitura (NL. fem. n. *offulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E29-bin73 sp004375885*. The type genome for the species is the GenBank assembly GCA_004375885.1. The GC content of the type genome is 53.1 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Abnocula gen. nov.

Candidatus Abnocula (NL. fem. n. *Abnocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E29-bin73*. The type species for the genus is *Candidatus* Abnocula offulitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Abnorella buxanilenta sp. nov.

Candidatus Abnorella buxanilenta (NL. fem. n. *buxanilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J052 sp003696385*. The type genome for the species is the GenBank assembly GCA_003696385.1. The GC content of the type genome is 65.76 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Abnorella gen. nov.

Candidatus Abnorella (NL. fem. n. *Abnorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J052*. The type species for the genus is *Candidatus* Abnorella buxanilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abnoria depacastra sp. nov.

Candidatus Abnoria depacastra (NL. fem. n. *depacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CHKCI006 sp900018345*. The type genome for the species is the GenBank assembly RS_GCF_900018345.1. The GC content of the type genome is 42.83 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Abnoria gen. nov.

Candidatus Abnoria (NL. fem. n. *Abnoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CHKCI006*. The type species for the genus is *Candidatus* Abnoria depacastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abnorida inbelitio sp. nov.

Candidatus Abnorida inbelitio (NL. fem. n. *inbelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11873 sp003540955*. The type genome for the species is the GenBank assembly GCA_003540955.1. The GC content of the type genome is 49.28 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Abnorida gen. nov.

Candidatus Abnorida (NL. fem. n. *Abnorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11873*. The type species for the genus is *Candidatus* Abnorida inbelitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077536*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delebidaceae.

Description of *Candidatus* Abnorosa virecetta sp. nov.

Candidatus Abnorosa virecetta (NL. fem. n. *virecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PEZG01 sp002774185*. The type genome for the species is the GenBank assembly GCA_002774185.1. The GC content of the type genome is 41.42 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Abnorosa gen. nov.

Candidatus Abnorosa (NL. fem. n. *Abnorosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PEZG01*. The type species for the genus is *Candidatus* Abnorosa virecetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Abnorula gen. nov.

Candidatus Abnorula (NL. fem. n. *Abnorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-1133*. The type species for the genus is *Candidatus* Abnorula mulderi_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abpatana viragiforma sp. nov.

Candidatus Abpatana viragiforma (NL. fem. n. *viragiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1765 sp002314675*. The type genome for the species is the GenBank assembly GCA_002314675.1. The GC content of the type genome is 45.58 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Abpatana gen. nov.

Candidatus Abpatana (NL. fem. n. *Abpatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1765*. The type species for the genus is *Candidatus* Abpatana viragiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abpatia ecligitoga sp. nov.

Candidatus Abpatia ecligitoga (NL. fem. n. *ecligitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1425 sp009779495*. The type genome for the species is the GenBank assembly GCA_009779495.1. The GC content of the type genome is 54.42 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Abpatia gen. nov.

Candidatus Abpatia (NL. fem. n. *Abpatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1425*. The type species for the genus is *Candidatus* Abpatia ecligitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abpatia fraglago sp. nov.

Candidatus Abpatia fraglago (NL. fem. n. *fraglago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1425 sp002329365*. The type genome for the species is the GenBank assembly GCA_002329365.1. The GC content of the type genome is 50.38 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Abpatia scorbedo sp. nov.

Candidatus Abpatia scorbedo (NL. fem. n. *scorbedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1425 sp012523185*. The type genome for the species is the GenBank assembly GCA_012523185.1. The GC content of the type genome is 49.21 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Abpatosa adobrousia sp. nov.

Candidatus Abpatosa adobrousia (NL. fem. n. *adobrousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CADEFQ01 sp902826575*. The type genome for the species is the GenBank assembly GCA_902826575.1. The GC content of the type genome is 67.25 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Abpatosa gen. nov.

Candidatus Abpatosa (NL. fem. n. *Abpatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEFQ01*. The type species for the genus is *Candidatus* Abpatosa adobrousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abpatosa arcipitio sp. nov.

Candidatus Abpatosa arcipitio (NL. fem. n. *arcipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEFQ01 sp902826635*. The type genome for the species is the GenBank assembly GCA_902826635.1. The GC content of the type genome is 67.47 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Abpatula levifitrix sp. nov.

Candidatus Abpatula levifitrix (NL. fem. n. *levifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6181 sp002422135*. The type genome for the species is the GenBank assembly GCA_002422135.1. The GC content of the type genome is 33.5 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Abpatula gen. nov.

Candidatus Abpatula (NL. fem. n. *Abpatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6181*. The type species for the genus is *Candidatus* Abpatula levifitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abrelia nidifago sp. nov.

Candidatus Abrelia nidifago (NL. fem. n. *nidifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40-80 sp001899145*. The type genome for the species is the GenBank assembly GCA_001899145.1. The GC content of the type genome is 39.57 % and the genome length is 3.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Abrelia gen. nov.

Candidatus Abrelia (NL. fem. n. *Abrelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40-80*. The type species for the genus is *Candidatus* Abrelia nidifago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abrelia ossaritas sp. nov.

Candidatus Abrelia ossaritas (NL. fem. n. *ossaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40-80 sp008017065*. The type genome for the species is the GenBank assembly GCA_008017065.1. The GC content of the type genome is 40.22 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Abrelida benementia sp. nov.

Candidatus Abrelida benementia (NL. fem. n. *benementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXE01 sp013697265*. The type genome for the species is the GenBank assembly GCA_013697265.1. The GC content of the type genome is 66.26 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Abrelida gen. nov.

Candidatus Abrelida (NL. fem. n. *Abrelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXE01*. The type species for the genus is *Candidatus* Abrelida benementia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACDEA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solifanaceae.

Description of *Candidatus* Abrelosa disidibula sp. nov.

Candidatus Abrelosa disidibula (NL. fem. n. *disidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFGT01 sp010365215*. The type genome for the species is the GenBank assembly GCA_010365215.1. The GC content of the type genome is 59.81 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Abrelosa gen. nov.

Candidatus Abrelosa (NL. fem. n. *Abrelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFGT01*. The type species for the genus is *Candidatus* Abrelosa disidibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Abrelula rorifatio sp. nov.

Candidatus Abrelula rorifatio (NL. fem. n. *rorifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1511 sp002323535*. The type genome for the species is the GenBank assembly GCA_002323535.1. The GC content of the type genome is 36.07 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Abrelula gen. nov.

Candidatus Abrelula (NL. fem. n. *Abrelula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1511*. The type species for the genus is *Candidatus* Abrelula rorifatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abrepana capuciforma sp. nov.

Candidatus Abrepana capuciforma (NL. fem. n. *capuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLHU01 sp007135995*. The type genome for the species is the GenBank assembly GCA_007135995.1. The GC content of the type genome is 48.11 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Abrepana gen. nov.

Candidatus Abrepana (NL. fem. n. *Abrepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLHU01*. The type species for the genus is *Candidatus* Abrepana capuciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5734*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropulaceae.

Description of *Candidatus* Abrepana exsuressa sp. nov.

Candidatus Abrepana exsuressa (NL. fem. n. *exsuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLHU01 sp007133255*. The type genome for the species is the GenBank assembly GCA_007133255.1. The GC content of the type genome is 47.83 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Abrepana gasifimonia sp. nov.

Candidatus Abrepana gasifimonia (NL. fem. n. *gasifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLHU01 sp009929975*. The type genome for the species is the GenBank assembly GCA_009929975.1. The GC content of the type genome is 55.66 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Abrepia addubax sp. nov.

Candidatus Abrepia addubax (NL. fem. n. *addubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-20 sp005879255*. The type genome for the species is the GenBank assembly GCA_005879255.1. The GC content of the type genome is 54.72 % and the genome length is 8.79 Mbp.

Description of *Candidatus* Abrepia gen. nov.

Candidatus Abrepia (NL. fem. n. *Abrepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DP-20*. The type species for the genus is *Candidatus* Abrepia addubax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigosaceae.

Description of *Candidatus* Abrepia apsenitia sp. nov.

Candidatus Abrepia apsenitia (NL. fem. n. *apsenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-20 sp009692615*. The type genome for the species is the GenBank assembly GCA_009692615.1. The GC content of the type genome is 56.67 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Abrepia ceracitia sp. nov.

Candidatus Abrepia ceracitia (NL. fem. n. *ceracitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-20 sp005879435*. The type genome for the species is the GenBank assembly GCA_005879435.1. The GC content of the type genome is 55.63 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Abrepia cosigitura sp. nov.

Candidatus Abrepia cosigitura (NL. fem. n. *cosigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-20 sp011329495*. The type genome for the species is the GenBank assembly GCA_011329495.1. The GC content of the type genome is 58.06 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Abrepida bicinitia sp. nov.

Candidatus Abrepida bicinitia (NL. fem. n. *bicinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAFF01 sp013388455*. The type genome for the species is the GenBank assembly GCA_013388455.1. The GC content of the type genome is 36.11 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Abrepida gen. nov.

Candidatus Abrepida (NL. fem. n. *Abrepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAFF01*. The type species for the genus is *Candidatus* Abrepida bicinitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peridulaceae.

Description of *Candidatus* Abreposa depicitoga sp. nov.

Candidatus Abreposa depicitoga (NL. fem. n. *depicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *2-01-FULL-50-25 sp001822215*. The type genome for the species is the GenBank assembly GCA_001822215.1. The GC content of the type genome is 50.48 % and the genome length is 0.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Abreposa gen. nov.

Candidatus Abreposa (NL. fem. n. *Abreposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-50-25*. The type species for the genus is *Candidatus* Abreposa depicitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-52-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vanitellaceae.

Description of *Candidatus* Abrepula nefanitio sp. nov.

Candidatus Abrepula nefanitio (NL. fem. n. *nefanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Root112D2 sp001424905*. The type genome for the species is the GenBank assembly RS_GCF_001424905.1. The GC content of the type genome is 65.58 % and the genome length is 3.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Abrepula gen. nov.

Candidatus Abrepula (NL. fem. n. *Abrepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Root112D2*. The type species for the genus is *Candidatus* Abrepula nefanitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abrumana excocilega sp. nov.

Candidatus Abrumana excocilega (NL. fem. n. *excocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDI01 sp012729315*. The type genome for the species is the GenBank assembly GCA_012729315.1. The GC content of the type genome is 64.34 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Abrumana gen. nov.

Candidatus Abrumana (NL. fem. n. *Abrumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYDI01*. The type species for the genus is *Candidatus* Abrumana excocilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abrumella obmutitio sp. nov.

Candidatus Abrumella obmutitio (NL. fem. n. *obmutitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBM01 sp013360495*. The type genome for the species is the GenBank assembly GCA_013360495.1. The GC content of the type genome is 59.07 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Abrumella gen. nov.

Candidatus Abrumella (NL. fem. n. *Abrumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBM01*. The type species for the genus is *Candidatus* Abrumella obmutitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2392*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pimenidaceae.

Description of *Candidatus* Abrumia amatribra sp. nov.

Candidatus Abrumia amatribra (NL. fem. n. *amatribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-56 sp003599135*. The type genome for the species is the GenBank assembly GCA_003599135.1. The GC content of the type genome is 52.28 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Abrumia gen. nov.

Candidatus Abrumia (NL. fem. n. *Abrumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-56*. The type species for the genus is *Candidatus* Abrumia amatribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-56-20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagosaceae.

Description of *Candidatus* Abrumida illunatio sp. nov.

Candidatus Abrumida illunatio (NL. fem. n. *illunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADEM01 sp013153405*. The type genome for the species is the GenBank assembly GCA_013153405.1. The GC content of the type genome is 38.49 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Abrumida gen. nov.

Candidatus Abrumida (NL. fem. n. *Abrumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADEM01*. The type species for the genus is *Candidatus* Abrumida illunatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abrumosa catafitudo sp. nov.

Candidatus Abrumosa catafitudo (NL. fem. n. *catafitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UM-FILTER-37-10 sp002793075*. The type genome for the species is the GenBank assembly GCA_002793075.1. The GC content of the type genome is 37.0 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Abrumosa gen. nov.

Candidatus Abrumosa (NL. fem. n. *Abrumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-37-10*. The type species for the genus is *Candidatus* Abrumosa catafitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1558*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivellaceae.

Description of *Candidatus* Absegana codifigena sp. nov.

Candidatus Absegana codifigena (NL. fem. n. *codifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABHOJ01 sp902168195*. The type genome for the species is the GenBank assembly GCA_902168195.1. The GC content of the type genome is 57.81 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Absegana gen. nov.

Candidatus Absegana (NL. fem. n. *Absegana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABHOJ01*. The type species for the genus is *Candidatus* Absegana codifigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Absegaria ecnepitrix sp. nov.

Candidatus Absegaria ecnepitrix (NL. fem. n. *ecnepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMIS01 sp900299155*. The type genome for the species is the

GenBank assembly GCA_900299155.1. The GC content of the type genome is 41.13 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Absegaria gen. nov.

Candidatus Absegaria (NL. fem. n. *Absegaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OMIS01*. The type species for the genus is *Candidatus* Absegaria ecnepitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Absegella impinastra sp. nov.

Candidatus Absegella impinastra (NL. fem. n. *impinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12587 sp900766915*. The type genome for the species is the GenBank assembly RS_GCF_900766915.1. The GC content of the type genome is 42.28 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Absegella gen. nov.

Candidatus Absegella (NL. fem. n. *Absegella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12587*. The type species for the genus is *Candidatus* Absegella impinastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Absegia conamago sp. nov.

Candidatus Absegia conamago (NL. fem. n. *conamago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2863085 sp002863085*. The type genome for the species is the GenBank assembly GCA_002863085.1. The GC content of the type genome is 31.17 %

and the genome length is 1.35 Mbp.

Description of *Candidatus* Absegia gen. nov.

Candidatus Absegia (NL. fem. n. *Absegia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2863085*. The type species for the genus is *Candidatus* Absegia conamago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fusifulaceae.

Description of *Candidatus* Absegosa inredisca sp. nov.

Candidatus Absegosa inredisca (NL. fem. n. *inredisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6220 sp002421745*. The type genome for the species is the GenBank assembly GCA_002421745.1. The GC content of the type genome is 32.61 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Absegosa gen. nov.

Candidatus Absegosa (NL. fem. n. *Absegosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6220*. The type species for the genus is *Candidatus* Absegosa inredisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5633*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carecosaceae.

Description of *Candidatus* Absegula subabitoga sp. nov.

Candidatus Absegula subabitoga (NL. fem. n. *subabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABSQ01 sp011390315*. The type genome for the species is the

GenBank assembly GCA_011390315.1. The GC content of the type genome is 56.65 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Absegula gen. nov.

Candidatus Absegula (NL. fem. n. *Absegula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABSQ01*. The type species for the genus is *Candidatus* Absegula subabitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Absicoccus revulitudo sp. nov.

Candidatus Absicoccus revulitudo (NL. fem. n. *revulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Absicoccus sp000434355*. The type genome for the species is the GenBank assembly RS_GCF_003480165.1. The GC content of the type genome is 37.85 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Absocaria solivigena sp. nov.

Candidatus Absocaria solivigena (NL. fem. n. *solivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYNG01 sp012520935*. The type genome for the species is the GenBank assembly GCA_012520935.1. The GC content of the type genome is 36.16 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Absocaria gen. nov.

Candidatus Absocaria (NL. fem. n. *Absocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYNG01*. The type species for the genus is *Candidatus* Absocaria solivigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Absocella reduvitia sp. nov.

Candidatus Absocella reduvitia (NL. fem. n. *reduvitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACDH01 sp009936995*. The type genome for the species is the GenBank assembly GCA_009936995.1. The GC content of the type genome is 61.75 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Absocella gen. nov.

Candidatus Absocella (NL. fem. n. *Absocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACDH01*. The type species for the genus is *Candidatus* Absocella reduvitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2862545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tolutanaceae.

Description of *Candidatus* Absocia ambadago sp. nov.

Candidatus Absocia ambadago (NL. fem. n. *ambadago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTJY01 sp011524645*. The type genome for the species is the GenBank assembly GCA_011524645.1. The GC content of the type genome is 48.78 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Absocia gen. nov.

Candidatus Absocia (NL. fem. n. *Absocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTJY01*. The type species for the genus is *Candidatus* Absocia ambadago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Absocida assudiforma sp. nov.

Candidatus Absocida assudiforma (NL. fem. n. *assudiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S5-A14a sp000758905*. The type genome for the species is the GenBank assembly RS_GCF_000758905.1. The GC content of the type genome is 38.86 % and the genome length is 1.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Absocida gen. nov.

Candidatus Absocida (NL. fem. n. *Absocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *S5-A14a*. The type species for the genus is *Candidatus* Absocida assudiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Absocida cataficella sp. nov.

Candidatus Absocida cataficella (NL. fem. n. *cataficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S5-A14a sp900112915*. The type genome for the species is the GenBank assembly RS_GCF_900112915.1. The GC content of the type genome is 39.39 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Absocida sarabifica sp. nov.

Candidatus Absocida sarabifica (NL. fem. n. *sarabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S5-A14a sp900553025*. The type genome for the species is the GenBank assembly GCA_900553025.1. The GC content of the type genome is 38.51 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Absocosa undevisca sp. nov.

Candidatus Absocosa undevisca (NL. fem. n. *undevisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCIT01 sp903970405*. The type genome for the species is the GenBank assembly GCA_903970405.1. The GC content of the type genome is 59.57 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Absocosa gen. nov.

Candidatus Absocosa (NL. fem. n. *Absocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCIT01*. The type species for the genus is *Candidatus* Absocosa undevisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Absocula cimitago sp. nov.

Candidatus Absocula cimitago (NL. fem. n. *cimitago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLK01 sp007134115*. The type genome for the species is the GenBank assembly GCA_007134115.1. The GC content of the type genome is 62.72 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Absocula gen. nov.

Candidatus Absocula (NL. fem. n. *Absocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLLK01*. The type species for the genus is *Candidatus* Absocula cimitago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5335*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verifosaceae.

Description of *Candidatus* Absorana colopigena sp. nov.

Candidatus Absorana colopigena (NL. fem. n. *colopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRJH01 sp011052285*. The type genome for the species is the GenBank assembly GCA_011052285.1. The GC content of the type genome is 51.07 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Absorana gen. nov.

Candidatus Absorana (NL. fem. n. *Absorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRJH01*. The type species for the genus is *Candidatus* Absorana colopigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5680*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decupanaceae.

Description of *Candidatus* Absoraria cosigago sp. nov.

Candidatus Absoraria cosigago (NL. fem. n. *cosigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UASB124 sp001468855*. The type genome for the species is the GenBank assembly GCA_001468855.1. The GC content of the type genome is 36.91 % and the genome length is 1.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "wastewater sludge from a upflow anaerobic sludge blanket reactor".

Description of *Candidatus* Absoraria gen. nov.

Candidatus Absoraria (NL. fem. n. *Absoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UASB124*. The type species for the genus is *Candidatus* Absoraria cosigago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RVW-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpanaceae.

Description of *Candidatus* Absoria selecilenta sp. nov.

Candidatus Absoria selecilenta (NL. fem. n. *selecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCT01 sp009779405*. The type genome for the species is the GenBank assembly GCA_009779405.1. The GC content of the type genome is 55.7 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Absoria gen. nov.

Candidatus Absoria (NL. fem. n. *Absoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRCT01*. The type species for the genus is *Candidatus* Absoria selecilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Absoria vinulicella sp. nov.

Candidatus Absoria vinulicella (NL. fem. n. *vinulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCT01 sp009783775*. The type genome for the species is the GenBank assembly GCA_009783775.1. The GC content of the type genome is 57.24 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Absorosa inmacitia sp. nov.

Candidatus Absorosa inmacitia (NL. fem. n. *inmacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-547 sp003250135*. The type genome for the species is the GenBank assembly GCA_003250135.1. The GC content of the type genome is 66.58 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Absorosa gen. nov.

Candidatus Absorosa (NL. fem. n. *Absorosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-547*. The type species for the genus is *Candidatus* Absorosa inmacitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Absorula documiforma sp. nov.

Candidatus Absorula documiforma (NL. fem. n. *documiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDI01 sp007693595*. The type genome for the species is the GenBank assembly GCA_007693595.1. The GC content of the type genome is 67.36 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Absorula gen. nov.

Candidatus Absorula (NL. fem. n. *Absorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REDI01*. The type species for the genus is *Candidatus* Absorula documiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2862545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tolutanaceae.

Description of *Candidatus* Absuraria atropitrix sp. nov.

Candidatus Absuraria atropitrix (NL. fem. n. *atropitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-828 sp011370585*. The type genome for the species is the GenBank assembly GCA_011370585.1. The GC content of the type genome is 45.14 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Absuraria gen. nov.

Candidatus Absuraria (NL. fem. n. *Absuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-828*. The type species for the genus is *Candidatus* Absuraria atropitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5629*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deneciaceae.

Description of *Candidatus* Absuria fetifitrix sp. nov.

Candidatus Absuria fetifitrix (NL. fem. n. *fetifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-12 sp001779505*. The type genome for the species is the GenBank assembly GCA_001779505.1. The GC content of the type genome is 53.76 % and the genome length is 0.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.1 filter".

Description of *Candidatus* Absuria gen. nov.

Candidatus Absuria (NL. fem. n. *Absuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-54-12*. The type species for the genus is *Candidatus* Absuria fetifitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Absurida intecousia sp. nov.

Candidatus Absurida intecousia (NL. fem. n. *intecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *P4200 sp900626095*. The type genome for the species is the GenBank assembly RS_GCF_900626095.1. The GC content of the type genome is 28.13 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Absurida gen. nov.

Candidatus Absurida (NL. fem. n. *Absurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *P4200*. The type species for the genus is *Candidatus* Absurida intecousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Absurula rosacitas sp. nov.

Candidatus Absurula rosacitas (NL. fem. n. *rosacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB23 sp001567245*. The type genome for the species is the GenBank assembly GCA_001567245.1. The GC content of the type genome is 41.61 % and the genome length is 0.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Absurula gen. nov.

Candidatus Absurula (NL. fem. n. *Absurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB23*. The type species for the genus is *Candidatus* Absurula rosacitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-37-13b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifidaceae.

Description of *Candidatus* Abverana derunimonas sp. nov.

Candidatus Abverana derunimonas (NL. fem. n. *derunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTT01 sp009377495*. The type genome for the species is the GenBank assembly GCA_009377495.1. The GC content of the type genome is 64.38 % and the genome length is 6.52 Mbp.

Description of *Candidatus* Abverana gen. nov.

Candidatus Abverana (NL. fem. n. *Abverana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTT01*. The type species for the genus is *Candidatus* Abverana derunimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abverana exheditia sp. nov.

Candidatus Abverana exheditia (NL. fem. n. *exheditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTT01 sp009377605*. The type genome for the species is the GenBank assembly GCA_009377605.1. The GC content of the type genome is 64.52 % and the genome length is 6.79 Mbp.

Description of *Candidatus* Abverella oblonisca sp. nov.

Candidatus Abverella oblonisca (NL. fem. n. *oblonisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-48-11 sp002793855*. The type genome for the species is the GenBank assembly GCA_002793855.1. The GC content of the type genome is 47.82 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Abverella gen. nov.

Candidatus Abverella (NL. fem. n. *Abverella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-48-11*. The type species for the genus is *Candidatus* Abverella oblonisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-46-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Democariaceae.

Description of *Candidatus* Abveria ardifitas sp. nov.

Candidatus Abveria ardifitas (NL. fem. n. *ardifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDYJ01 sp004293145*. The type genome for the species is the GenBank assembly GCA_004293145.1. The GC content of the type genome is 38.54 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Abveria gen. nov.

Candidatus Abveria (NL. fem. n. *Abveria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDYJ01*. The type species for the genus is *Candidatus* Abveria ardifitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abverida inmenicella sp. nov.

Candidatus Abverida inmenicella (NL. fem. n. *inmenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3ABIN04 sp002898175*. The type genome for the species is the GenBank assembly GCA_002898175.1. The GC content of the type genome is 33.39 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Abverida gen. nov.

Candidatus Abverida (NL. fem. n. *Abverida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3ABIN04*. The type species for the genus is *Candidatus* Abverida inmenicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Abverula dilibitudo sp. nov.

Candidatus Abverula dilibitudo (NL. fem. n. *dilibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-115 sp003231035*. The type genome for the species is the GenBank assembly GCA_003231035.1. The GC content of the type genome is 63.43 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Abverula gen. nov.

Candidatus Abverula (NL. fem. n. *Abverula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-115*. The type species for the genus is *Candidatus* Abverula dilibitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5704*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovidaceae.

Description of *Candidatus* Acaryochloris isoscicula sp. nov.

Candidatus Acaryochloris isoscicula (NL. fem. n. *isoscicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acaryochloris sp000238775*. The type genome for the species is the GenBank assembly RS_GCF_000238775.1. The GC content of the type genome is 47.12 % and the genome length is 7.88 Mbp.

Description of *Candidatus* Acaryochloris metucitudo sp. nov.

Candidatus Acaryochloris metucitudo (NL. fem. n. *metucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acaryochloris sp012034865*. The type genome for the species is the GenBank assembly GCA_012033135.1. The GC content of the type genome is 48.07 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Acaryochloris navifentia sp. nov.

Candidatus Acaryochloris navifentia (NL. fem. n. *navifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acaryochloris sp012030735*. The type genome for the species is the GenBank assembly GCA_012030735.1. The GC content of the type genome is 48.98 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Accapana adnepiforma sp. nov.

Candidatus Accapana adnepiforma (NL. fem. n. *adnepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTB01 sp009379735*. The type genome for the species is the GenBank assembly GCA_009379735.1. The GC content of the type genome is 70.35 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Accapana gen. nov.

Candidatus Accapana (NL. fem. n. *Accapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTB01*. The type species for the genus is *Candidatus* Accapana adnepiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accaparia monacisca sp. nov.

Candidatus Accaparia monacisca (NL. fem. n. *monacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QXHL01 sp003584005*. The type genome for the species is the GenBank assembly RS_GCF_003584005.1. The GC content of the type genome is 50.17 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Accaparia gen. nov.

Candidatus Accaparia (NL. fem. n. *Accaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QXHL01*. The type species for the genus is *Candidatus* Accaparia monacisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accapella exentitio sp. nov.

Candidatus Accapella exentitio (NL. fem. n. *exentitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDP01 sp007693455*. The type genome for the species is the GenBank assembly GCA_007693455.1. The GC content of the type genome is 55.81 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Accapella gen. nov.

Candidatus Accapella (NL. fem. n. *Accapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REDP01*. The type species for the genus is *Candidatus* Accapella exentitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisorariaceae.

Description of *Candidatus* Accapella inturigena sp. nov.

Candidatus Accapella inturigena (NL. fem. n. *inturigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDP01 sp007695355*. The type genome for the species is the GenBank assembly GCA_007695355.1. The GC content of the type genome is 60.25 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Accapia urbicibula sp. nov.

Candidatus Accapia urbicibula (NL. fem. n. *urbicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHEX01 sp002843005*. The type genome for the species is the GenBank assembly GCA_002843005.1. The GC content of the type genome is 57.29 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Accapia gen. nov.

Candidatus Accapia (NL. fem. n. *Accapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHEX01*. The type species for the genus is *Candidatus* Accapia urbicibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-727*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Appugulaceae.

Description of *Candidatus* Accapida inpenitio sp. nov.

Candidatus Accapida inpenitio (NL. fem. n. *inpenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *G519 sp011176615*. The type genome for the species is the GenBank assembly GCA_011176615.1. The GC content of the type genome is 41.9 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Accapida gen. nov.

Candidatus Accapida (NL. fem. n. *Accapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *G519*. The type species for the genus is *Candidatus* Accapida inpenitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11858*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifellaceae.

Description of *Candidatus* Accenaria manufentia sp. nov.

Candidatus Accenaria manufentia (NL. fem. n. *manufentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Cloacimonetes-2 sp002842035*. The type genome for the species is the GenBank assembly GCA_002842035.1. The GC content of the type genome is 48.08 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Accenaria gen. nov.

Candidatus Accenaria (NL. fem. n. *Accenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Cloacimonetes-2*. The type species for the genus is *Candidatus* Accenaria manufentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accenia adcelimonia sp. nov.

Candidatus Accenia adcelimonia (NL. fem. n. *adcelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26077 sp005787645*. The type genome for the species is the GenBank assembly GCA_005787645.1. The GC content of the type genome is 49.9 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Accenia gen. nov.

Candidatus Accenia (NL. fem. n. *Accenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IMCC26077*. The type species for the genus is *Candidatus* Accenia adcelimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accenia alticigena sp. nov.

Candidatus Accenia alticigena (NL. fem. n. *alticigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26077 sp002284915*. The type genome for the species is the GenBank assembly RS_GCF_002284915.1. The GC content of the type genome is 51.31 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Accenida resulitura sp. nov.

Candidatus Accenida resulitura (NL. fem. n. *resulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KN286 sp009833495*. The type genome for the species is the GenBank assembly RS_GCF_009833495.1. The GC content of the type genome is 65.02 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Accenida gen. nov.

Candidatus Accenida (NL. fem. n. *Accenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KN286*. The type species for the genus is *Candidatus* Accenida resulitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accenosa cisorago sp. nov.

Candidatus Accenosa cisorago (NL. fem. n. *cisorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRDJ01 sp009783495*. The type genome for the species is the GenBank assembly GCA_009783495.1. The GC content of the type genome is 55.73 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Accenosa gen. nov.

Candidatus Accenosa (NL. fem. n. *Accenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRDJ01*. The type species for the genus is *Candidatus* Accenosa cisorago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4068*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divulosaceae.

Description of *Candidatus* Accenula inardimonas sp. nov.

Candidatus Accenula inardimonas (NL. fem. n. *inardimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B120-G9 sp003641415*. The type genome for the species is the GenBank assembly GCA_003641415.1. The GC content of the type genome is 45.27 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Accenula gen. nov.

Candidatus Accenula (NL. fem. n. *Accenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B120-G9*. The type species for the genus is *Candidatus* Accenula inardimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEB-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanugulaceae.

Description of *Candidatus* Accerana adlicedo sp. nov.

Candidatus Accerana adlicedo (NL. fem. n. *adlicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *69-11 sp001898425*. The type genome for the species is the GenBank assembly GCA_001898425.1. The GC content of the type genome is 69.21 % and the genome length is 6.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Accerana gen. nov.

Candidatus Accerana (NL. fem. n. *Accerana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *69-11*. The type species for the genus is *Candidatus* Accerana adlicedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acceraria tetenatio sp. nov.

Candidatus Acceraria tetenatio (NL. fem. n. *tetenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CACIRS01 sp902589115*. The type genome for the species is the GenBank assembly GCA_902589115.1. The GC content of the type genome is 37.29 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Acceraria gen. nov.

Candidatus Acceraria (NL. fem. n. *Acceraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACIRS01*. The type species for the genus is *Candidatus* Acceraria tetenatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accerella cibaribula sp. nov.

Candidatus Accerella cibaribula (NL. fem. n. *cibaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TC-71 sp010092775*. The type genome for the species is the GenBank assembly GCA_010092775.1. The GC content of the type genome is 56.89 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Accerella gen. nov.

Candidatus Accerella (NL. fem. n. *Accerella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TC-71*. The type species for the genus is *Candidatus* Accerella cibaribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3940*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpidaceae.

Description of *Candidatus* Acceria isoscilega sp. nov.

Candidatus Acceria isoscilega (NL. fem. n. *isoscilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHXZ01 sp009693045*. The type genome for the species is the

GenBank assembly GCA_009693045.1. The GC content of the type genome is 64.64 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Acceria gen. nov.

Candidatus Acceria (NL. fem. n. *Acceria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHXZ01*. The type species for the genus is *Candidatus* Acceria isoscilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deniculaceae.

Description of *Candidatus* Accerida semiliforma sp. nov.

Candidatus Accerida semiliforma (NL. fem. n. *semiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFO01 sp012728215*. The type genome for the species is the GenBank assembly GCA_012728215.1. The GC content of the type genome is 46.35 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Accerida gen. nov.

Candidatus Accerida (NL. fem. n. *Accerida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYFO01*. The type species for the genus is *Candidatus* Accerida semiliforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accerosa catabibula sp. nov.

Candidatus Accerosa catabibula (NL. fem. n. *catabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1754 sp900759475*. The type genome for the species is the GenBank assembly GCA_900759475.1. The GC content of the type genome is 27.73 %

and the genome length is 1.28 Mbp.

Description of *Candidatus* Accerosa gen. nov.

Candidatus Accerosa (NL. fem. n. *Accerosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1754*. The type species for the genus is *Candidatus* Accerosa catabibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Accerosa vinulitoga sp. nov.

Candidatus Accerosa vinulitoga (NL. fem. n. *vinulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1754 sp900554815*. The type genome for the species is the GenBank assembly GCA_900554815.1. The GC content of the type genome is 27.09 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Accerula hegumicella sp. nov.

Candidatus Accerula hegumicella (NL. fem. n. *hegumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACEJU01 sp902559885*. The type genome for the species is the GenBank assembly GCA_902559885.1. The GC content of the type genome is 32.64 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Accerula gen. nov.

Candidatus Accerula (NL. fem. n. *Accerula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACEJU01*. The type species for the genus is *Candidatus* Accerula hegumicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Accogana bicinessa sp. nov.

Candidatus Accogana bicinessa (NL. fem. n. *bicinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J054 sp003695765*. The type genome for the species is the GenBank assembly GCA_003695765.1. The GC content of the type genome is 68.25 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Accogana gen. nov.

Candidatus Accogana (NL. fem. n. *Accogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J054*. The type species for the genus is *Candidatus* Accogana bicinessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2729495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulidaceae.

Description of *Candidatus* Accogaria acratilega sp. nov.

Candidatus Accogaria acratilega (NL. fem. n. *acratilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACOMT01 sp014623385*. The type genome for the species is the GenBank assembly GCA_014623385.1. The GC content of the type genome is 56.93 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Accogaria gen. nov.

Candidatus Accogaria (NL. fem. n. *Accogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACOMT01*. The type species for the genus is *Candidatus* Accogaria acratilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accogida adgenitrix sp. nov.

Candidatus Accogida adgenitrix (NL. fem. n. *adgenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQSK01 sp009787915*. The type genome for the species is the GenBank assembly GCA_009787915.1. The GC content of the type genome is 43.48 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Accogida gen. nov.

Candidatus Accogida (NL. fem. n. *Accogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQSK01*. The type species for the genus is *Candidatus* Accogida adgenitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Accogosa carucitudo sp. nov.

Candidatus Accogosa carucitudo (NL. fem. n. *carucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VCDI01 sp005844085*. The type genome for the species is the GenBank assembly RS_GCF_005844085.1. The GC content of the type genome is 67.81 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Accogosa gen. nov.

Candidatus Accogosa (NL. fem. n. *Accogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VCDI01*. The type species for the genus is *Candidatus* Accogosa carucitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accogula derunedo sp. nov.

Candidatus Accogula derunedo (NL. fem. n. *derunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZNM01 sp012798265*. The type genome for the species is the GenBank assembly GCA_012798265.1. The GC content of the type genome is 41.48 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Accogula gen. nov.

Candidatus Accogula (NL. fem. n. *Accogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZNM01*. The type species for the genus is *Candidatus* Accogula derunedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Accomana cacopugo sp. nov.

Candidatus Accomana cacopugo (NL. fem. n. *cacopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUI01 sp012728555*. The type genome for the species is the GenBank assembly GCA_012728555.1. The GC content of the type genome is 35.26 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Accomana gen. nov.

Candidatus Accomana (NL. fem. n. *Accomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUUI01*. The type species for the genus is *Candidatus* Accomana cacopugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accomana capabago sp. nov.

Candidatus Accomana capabago (NL. fem. n. *capabago* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUI01 sp012512495*. The type genome for the species is the GenBank assembly GCA_012512495.1. The GC content of the type genome is 43.07 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Accomana omnimitudo sp. nov.

Candidatus Accomana omnimitudo (NL. fem. n. *omnimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUI01 sp012841625*. The type genome for the species is the GenBank assembly GCA_012841625.1. The GC content of the type genome is 35.2 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Accomana pluscibula sp. nov.

Candidatus Accomana pluscibula (NL. fem. n. *pluscibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUI01 sp012512455*. The type genome for the species is the GenBank assembly GCA_012512455.1. The GC content of the type genome is 35.38 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Accomella utrolax sp. nov.

Candidatus Accomella utrolax (NL. fem. n. *utrolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1344 sp003171235*. The type genome for the species is the GenBank assembly GCA_003171235.1. The GC content of the type genome is 64.16 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Accomella gen. nov.

Candidatus Accomella (NL. fem. n. *Accomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *FEN-1344*. The type species for the genus is *Candidatus* Accomella utrolax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Accomia infelitas sp. nov.

Candidatus Accomia infelitas (NL. fem. n. *infelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMRP01 sp014376325*. The type genome for the species is the GenBank assembly GCA_014376325.1. The GC content of the type genome is 48.02 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Accomia gen. nov.

Candidatus Accomia (NL. fem. n. *Accomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMRP01*. The type species for the genus is *Candidatus* Accomia infelitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accomida melilimonas sp. nov.

Candidatus Accomida melilimonas (NL. fem. n. *melilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SGAir0037 sp005491705*. The type genome for the species is the GenBank assembly RS_GCF_005491705.1. The GC content of the type genome is 45.31 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Accomida gen. nov.

Candidatus Accomida (NL. fem. n. *Accomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SGAir0037*. The type species for the genus is *Candidatus* Accomida

melilimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accomosa dilicigena sp. nov.

Candidatus Accomosa dilicigena (NL. fem. n. *dilicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAE01 sp012719555*. The type genome for the species is the GenBank assembly GCA_012719555.1. The GC content of the type genome is 38.67 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Accomosa gen. nov.

Candidatus Accomosa (NL. fem. n. *Accomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAE01*. The type species for the genus is *Candidatus* Accomosa dilicigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accorana binocitudo sp. nov.

Candidatus Accorana binocitudo (NL. fem. n. *binocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM509 sp002868865*. The type genome for the species is the GenBank assembly GCA_002868865.1. The GC content of the type genome is 55.18 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Accorana gen. nov.

Candidatus Accorana (NL. fem. n. *Accorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM509*. The type species for the genus is *Candidatus* Accorana binocitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accorana cadavastra sp. nov.

Candidatus Accorana cadavastra (NL. fem. n. *cadavastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM509 sp002869695*. The type genome for the species is the GenBank assembly GCA_002869695.1. The GC content of the type genome is 54.98 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Accoraria obtoricula sp. nov.

Candidatus Accoraria obtoricula (NL. fem. n. *obtoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ARS1224 sp002688155*. The type genome for the species is the GenBank assembly GCA_002688155.1. The GC content of the type genome is 61.15 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Accoraria gen. nov.

Candidatus Accoraria (NL. fem. n. *Accoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ARS1224*. The type species for the genus is *Candidatus* Accoraria obtoricula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accorella immobax sp. nov.

Candidatus Accorella immobax (NL. fem. n. *immobax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVR01 sp011328705*. The type genome for the species is the GenBank assembly GCA_011328705.1. The GC content of the type genome is 58.49 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Accorella gen. nov.

Candidatus Accorella (NL. fem. n. *Accorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVR01*. The type species for the genus is *Candidatus* Accorella immobax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACEL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peropariaceae.

Description of *Candidatus* Accoria enimvilega sp. nov.

Candidatus Accoria enimvilega (NL. fem. n. *enimvilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VUMM01 sp009696175*. The type genome for the species is the GenBank assembly RS_GCF_009696175.1. The GC content of the type genome is 33.42 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Accoria gen. nov.

Candidatus Accoria (NL. fem. n. *Accoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VUMM01*. The type species for the genus is *Candidatus* Accoria enimvilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accorosa dececugo sp. nov.

Candidatus Accorosa dececugo (NL. fem. n. *dececugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3084 sp002367335*. The type genome for the species is the GenBank assembly GCA_002367335.1. The GC content of the type genome is 42.36 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Accorosa gen. nov.

Candidatus Accorosa (NL. fem. n. *Accorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3084*. The type species for the genus is *Candidatus* Accorosa dececugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6807*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monimosaceae.

Description of *Candidatus* Accorula derelicula sp. nov.

Candidatus Accorula derelicula (NL. fem. n. *derelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-206 sp011041825*. The type genome for the species is the GenBank assembly GCA_011041825.1. The GC content of the type genome is 55.47 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Accorula gen. nov.

Candidatus Accorula (NL. fem. n. *Accorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HyVt-206*. The type species for the genus is *Candidatus* Accorula derelicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-600*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citivulaceae.

Description of *Candidatus* Accucana arremax sp. nov.

Candidatus Accucana arremax (NL. fem. n. *arremax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMW01 sp009776955*. The type genome for the species is the GenBank assembly GCA_009776955.1. The GC content of the type genome is 55.39 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Accucana gen. nov.

Candidatus Accucana (NL. fem. n. *Accucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRMW01*. The type species for the genus is *Candidatus* Accucana arremax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accucaria infesisca sp. nov.

Candidatus Accucaria infesisca (NL. fem. n. *infesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHXN01 sp003222975*. The type genome for the species is the GenBank assembly GCA_003222975.1. The GC content of the type genome is 65.14 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Accucaria gen. nov.

Candidatus Accucaria (NL. fem. n. *Accucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHXN01*. The type species for the genus is *Candidatus* Accucaria infesisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accucella sarabimonia sp. nov.

Candidatus Accucella sarabimonia (NL. fem. n. *sarabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-451 sp011330885*. The type genome for the species is the GenBank assembly GCA_011330885.1. The GC content of the type genome is 69.32 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Accucella gen. nov.

Candidatus Accucella (NL. fem. n. *Accucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-451*. The type species for the genus is *Candidatus* Accucella

sarabimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHTK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarellaceae.

Description of *Candidatus* Accucia ammodiforma sp. nov.

Candidatus Accucia ammodiforma (NL. fem. n. *ammodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSUT01 sp011362355*. The type genome for the species is the GenBank assembly GCA_011362355.1. The GC content of the type genome is 63.23 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Accucia gen. nov.

Candidatus Accucia (NL. fem. n. *Accucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSUT01*. The type species for the genus is *Candidatus* Accucia ammodiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homulosaceae.

Description of *Candidatus* Accucula cinefedo sp. nov.

Candidatus Accucula cinefedo (NL. fem. n. *cinefedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-12 sp013044295*. The type genome for the species is the GenBank assembly GCA_013044295.1. The GC content of the type genome is 68.4 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Accucula gen. nov.

Candidatus Accucula (NL. fem. n. *Accucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *AG-12*. The type species for the genus is *Candidatus* Accucula cinefedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bog-877*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culigosaceae.

Description of *Candidatus* Acculana adpanessa sp. nov.

Candidatus Acculana adpanessa (NL. fem. n. *adpanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYZH01 sp012514965*. The type genome for the species is the GenBank assembly GCA_012514965.1. The GC content of the type genome is 53.72 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Acculana gen. nov.

Candidatus Acculana (NL. fem. n. *Acculana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZH01*. The type species for the genus is *Candidatus* Acculana adpanessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acculia scombifica sp. nov.

Candidatus Acculia scombifica (NL. fem. n. *scombifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2706465 sp002706465*. The type genome for the species is the GenBank assembly GCA_002706465.1. The GC content of the type genome is 29.23 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Acculia gen. nov.

Candidatus Acculia (NL. fem. n. *Acculia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2706465*. The type species for the genus is *Candidatus* Acculia

scombifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SAT41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumiaceae.

Description of *Candidatus* Acculosa buxanetta sp. nov.

Candidatus Acculosa buxanetta (NL. fem. n. *buxanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICN01 sp009691405*. The type genome for the species is the GenBank assembly GCA_009691405.1. The GC content of the type genome is 51.7 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Acculosa gen. nov.

Candidatus Acculosa (NL. fem. n. *Acculosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICN01*. The type species for the genus is *Candidatus* Acculosa buxanetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acculula indotessa sp. nov.

Candidatus Acculula indotessa (NL. fem. n. *indotessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-693 sp003156595*. The type genome for the species is the GenBank assembly GCA_003156595.1. The GC content of the type genome is 66.96 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Acculula gen. nov.

Candidatus Acculula (NL. fem. n. *Acculula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-693*. The type species for the genus is *Candidatus* Acculula indotessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-688*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Attubulaceae.

Description of *Candidatus* Accumana depasiforma sp. nov.

Candidatus Accumana depasiforma (NL. fem. n. *depasiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-42-14 sp002772695*. The type genome for the species is the GenBank assembly GCA_002772695.1. The GC content of the type genome is 44.06 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Accumana gen. nov.

Candidatus Accumana (NL. fem. n. *Accumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-42-14*. The type species for the genus is *Candidatus* Accumana depasiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Accumana lapililega sp. nov.

Candidatus Accumana lapililega (NL. fem. n. *lapililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-42-14 sp009991965*. The type genome for the species is the GenBank assembly GCA_009991965.1. The GC content of the type genome is 44.16 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Accumana perexitica sp. nov.

Candidatus Accumana perexitica (NL. fem. n. *perexitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UM-FILTER-42-14 sp002784625*. The type genome for the species is the GenBank assembly GCA_002784625.1. The GC content of the type genome is 42.16 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Accumaria assicatica sp. nov.

Candidatus Accumaria assicatica (NL. fem. n. *assicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1366 sp002306005*. The type genome for the species is the GenBank assembly GCA_002306005.1. The GC content of the type genome is 48.88 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Accumaria gen. nov.

Candidatus Accumaria (NL. fem. n. *Accumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1366*. The type species for the genus is *Candidatus* Accumaria assicatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accumella documedo sp. nov.

Candidatus Accumella documedo (NL. fem. n. *documedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-51 sp003232965*. The type genome for the species is the GenBank assembly GCA_003232965.1. The GC content of the type genome is 45.92 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Accumella gen. nov.

Candidatus Accumella (NL. fem. n. *Accumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-51*. The type species for the genus is *Candidatus* Accumella documedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Rorulellaceae.

Description of *Candidatus* Accumia salubicella sp. nov.

Candidatus Accumia salubicella (NL. fem. n. *salubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHWC01 sp009691045*. The type genome for the species is the GenBank assembly GCA_009691045.1. The GC content of the type genome is 61.99 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Accumia gen. nov.

Candidatus Accumia (NL. fem. n. *Accumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHWC01*. The type species for the genus is *Candidatus* Accumia salubicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA828*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hegumosaceae.

Description of *Candidatus* Accumida extipilenta sp. nov.

Candidatus Accumida extipilenta (NL. fem. n. *extipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-60 sp003604975*. The type genome for the species is the GenBank assembly GCA_003604975.1. The GC content of the type genome is 55.91 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Accumida gen. nov.

Candidatus Accumida (NL. fem. n. *Accumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-60*. The type species for the genus is *Candidatus* Accumida extipilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Accumosa mirabax sp. nov.

Candidatus Accumosa mirabax (NL. fem. n. *mirabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC3RG10 sp003387805*. The type genome for the species is the GenBank assembly GCA_003387805.1. The GC content of the type genome is 68.79 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Accumosa gen. nov.

Candidatus Accumosa (NL. fem. n. *Accumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC3RG10*. The type species for the genus is *Candidatus* Accumosa mirabax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ZCTH02-B6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relecellaceae.

Description of *Candidatus* Accumulibacter cadavatica sp. nov.

Candidatus Accumulibacter cadavatica (NL. fem. n. *cadavatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Accumulibacter sp000584975*. The type genome for the species is the GenBank assembly RS_GCF_005889575.1. The GC content of the type genome is 61.22 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Accumulibacter cilibifica sp. nov.

Candidatus Accumulibacter cilibifica (NL. fem. n. *cilibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Accumulibacter sp000585075*. The type genome for the species is the GenBank assembly GCA_002455435.1. The GC content of the type genome is 64.19 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Accumulibacter cosiditas sp. nov.

Candidatus Accumulibacter cosiditas (NL. fem. n. *cosiditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Accumulibacter sp000585015*. The type genome for the species is the GenBank assembly GCA_000585015.1. The GC content of the type genome is 66.32 % and the genome length is 4.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enriched from a lab-scale EBPR bioreactor".

Description of *Candidatus* Accumulibacter famelax sp. nov.

Candidatus Accumulibacter famelax (NL. fem. n. *famelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Accumulibacter sp005524045*. The type genome for the species is the GenBank assembly GCA_013347225.1. The GC content of the type genome is 65.98 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Accumulibacter solivibra sp. nov.

Candidatus Accumulibacter solivibra (NL. fem. n. *solivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Accumulibacter sp000585055*. The type genome for the species is the GenBank assembly GCA_002352265.1. The GC content of the type genome is 63.02 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Acertana immemitura sp. nov.

Candidatus Acertana immemitura (NL. fem. n. *immemitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YIM-75000 sp003594885*. The type genome for the species is the GenBank assembly RS_GCF_003594885.1. The GC content of the type genome is 76.97 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Acertana gen. nov.

Candidatus Acertana (NL. fem. n. *Acertana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YIM-75000*. The type species for the genus is *Candidatus* Acertana immemitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acertida epigricella sp. nov.

Candidatus Acertida epigricella (NL. fem. n. *epigricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUQW01 sp012837585*. The type genome for the species is the GenBank assembly GCA_012837585.1. The GC content of the type genome is 30.45 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Acertida gen. nov.

Candidatus Acertida (NL. fem. n. *Acertida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUQW01*. The type species for the genus is *Candidatus* Acertida epigricella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acertida inurbitrix sp. nov.

Candidatus Acertida inurbitrix (NL. fem. n. *inurbitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUQW01 sp012520715*. The type genome for the species is the GenBank assembly GCA_012520715.1. The GC content of the type genome is 30.44 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Acertida viripastra sp. nov.

Candidatus Acertida viripastra (NL. fem. n. *viripastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DUQW01 sp012515785*. The type genome for the species is the GenBank assembly GCA_012515785.1. The GC content of the type genome is 31.65 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Acertosa ensicugo sp. nov.

Candidatus Acertosa ensicugo (NL. fem. n. *ensicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGZ01 sp013286575*. The type genome for the species is the GenBank assembly GCA_013286575.1. The GC content of the type genome is 46.17 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Acertosa gen. nov.

Candidatus Acertosa (NL. fem. n. *Acertosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDGZ01*. The type species for the genus is *Candidatus* Acertosa ensicugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002753745*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosaculaceae.

Description of *Candidatus* Acertosa refulimonas sp. nov.

Candidatus Acertosa refulimonas (NL. fem. n. *refulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGZ01 sp013287965*. The type genome for the species is the GenBank assembly GCA_013287965.1. The GC content of the type genome is 46.76 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Acertosa subinilega sp. nov.

Candidatus Acertosa subinilega (NL. fem. n. *subinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGZ01 sp013285735*. The type genome for the species is the

GenBank assembly GCA_013285735.1. The GC content of the type genome is 41.82 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Acertula redacentia sp. nov.

Candidatus Acertula redacentia (NL. fem. n. *redacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEB-17 sp003104935*. The type genome for the species is the GenBank assembly GCA_003104935.1. The GC content of the type genome is 44.06 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Acertula gen. nov.

Candidatus Acertula (NL. fem. n. *Acertula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEB-17*. The type species for the genus is *Candidatus* Acertula redacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-36-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mutabiaceae.

Description of *Candidatus* Acetatifactor acustiforma sp. nov.

Candidatus Acetatifactor acustiforma (NL. fem. n. *acustiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp002490995*. The type genome for the species is the GenBank assembly GCA_002490995.1. The GC content of the type genome is 50.17 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Acetatifactor adnumitia sp. nov.

Candidatus Acetatifactor adnumitia (NL. fem. n. *adnumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp902766425*. The type genome for the species is the GenBank assembly GCA_902766425.1. The GC content of the type genome is 49.04 %

and the genome length is 2.78 Mbp.

Description of *Candidatus* Acetatifactor agnomilega sp. nov.

Candidatus Acetatifactor agnomilega (NL. fem. n. *agnomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp900766575*. The type genome for the species is the GenBank assembly RS_GCF_900766575.1. The GC content of the type genome is 47.48 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Acetatifactor bimetetta sp. nov.

Candidatus Acetatifactor bimetetta (NL. fem. n. *bimetetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp003612485*. The type genome for the species is the GenBank assembly RS_GCF_003612485.1. The GC content of the type genome is 50.84 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Acetatifactor cerofitica sp. nov.

Candidatus Acetatifactor cerofitica (NL. fem. n. *cerofitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp900755865*. The type genome for the species is the GenBank assembly RS_GCF_900755865.1. The GC content of the type genome is 46.5 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Acetatifactor delebitura sp. nov.

Candidatus Acetatifactor delebitura (NL. fem. n. *delebitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp002314715*. The type genome for the species is the GenBank assembly GCA_002314715.1. The GC content of the type genome is 43.16 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Acetatifactor depasimonia sp. nov.

Candidatus Acetatifactor depasimonia (NL. fem. n. *depasimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp009177215*. The type genome for the species is the GenBank assembly GCA_009177215.1. The GC content of the type genome is 43.15 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Acetatifactor dinupimonia sp. nov.

Candidatus Acetatifactor dinupimonia (NL. fem. n. *dinupimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp900772845*. The type genome for the species is the GenBank assembly RS_GCF_900772845.1. The GC content of the type genome is 46.66 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Acetatifactor essonedo sp. nov.

Candidatus Acetatifactor essonedo (NL. fem. n. *essonedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp002431915*. The type genome for the species is the GenBank assembly GCA_002431915.1. The GC content of the type genome is 47.69 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Acetatifactor excamousia sp. nov.

Candidatus Acetatifactor excamousia (NL. fem. n. *excamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp900771995*. The type genome for the species is the GenBank assembly RS_GCF_900771995.1. The GC content of the type genome is 48.95 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Acetatifactor expalisca sp. nov.

Candidatus Acetatifactor expalisca (NL. fem. n. *expalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp002368865*. The type genome for the species is the GenBank assembly GCA_002368865.1. The GC content of the type genome is 48.85 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Acetatifactor faticugo sp. nov.

Candidatus Acetatifactor faticugo (NL. fem. n. *faticugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp900066565*. The type genome for the species is the GenBank assembly RS_GCF_003435925.1. The GC content of the type genome is 46.54 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Acetatifactor funivessa sp. nov.

Candidatus Acetatifactor funivessa (NL. fem. n. *funivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp900554205*. The type genome for the species is the GenBank assembly RS_GCF_900771935.1. The GC content of the type genome is 49.95 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Acetatifactor lenimicula sp. nov.

Candidatus Acetatifactor lenimicula (NL. fem. n. *lenimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp900760705*. The type genome for the species is the GenBank assembly RS_GCF_900760705.1. The GC content of the type genome is 46.28 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Acetatifactor levififorma sp. nov.

Candidatus Acetatifactor levififorma (NL. fem. n. *levififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp902796105*. The type genome for the species is the GenBank assembly GCA_902796105.1. The GC content of the type genome is 49.06 %

and the genome length is 2.49 Mbp.

Description of *Candidatus* Acetatifactor monacitio sp. nov.

Candidatus Acetatifactor monacitio (NL. fem. n. *monacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp900320485*. The type genome for the species is the GenBank assembly GCA_902788525.1. The GC content of the type genome is 49.45 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Acetatifactor recocitio sp. nov.

Candidatus Acetatifactor recocitio (NL. fem. n. *recocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp011959105*. The type genome for the species is the GenBank assembly RS_GCF_011959105.1. The GC content of the type genome is 50.65 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Acetatifactor terebousia sp. nov.

Candidatus Acetatifactor terebousia (NL. fem. n. *terebousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp003447295*. The type genome for the species is the GenBank assembly RS_GCF_900768905.1. The GC content of the type genome is 47.08 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Acetatifactor voragilega sp. nov.

Candidatus Acetatifactor voragilega (NL. fem. n. *voragilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetatifactor sp900066365*. The type genome for the species is the GenBank assembly GCA_000434955.1. The GC content of the type genome is 46.62 % and the genome length is 2.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Acetitomaculum ranuniforma sp. nov.

Candidatus Acetitomaculum ranuniforma (NL. fem. n. *ranuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetitomaculum sp902797785*. The type genome for the species is the GenBank assembly GCA_902797785.1. The GC content of the type genome is 43.57 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Acetivibrio impolatio sp. nov.

Candidatus Acetivibrio impolatio (NL. fem. n. *impolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetivibrio sp012519925*. The type genome for the species is the GenBank assembly GCA_012519925.1. The GC content of the type genome is 34.28 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Acetivibrio angipibra sp. nov.

Candidatus Acetivibrio angipibra (NL. fem. n. *angipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetivibrio_A sp002419585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002419585.1. The GC content of the type genome is 36.34 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Acetivibrio proslibra sp. nov.

Candidatus Acetivibrio proslibra (NL. fem. n. *proslibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetivibrio_A sp009696045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009696045.1. The GC content of the type genome is 34.88 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Acetobacter anacligena sp. nov.

Candidatus Acetobacter anacligena (NL. fem. n. *anacligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetobacter sp011516755*. The type genome for the species is the GenBank assembly RS_GCF_011516755.1. The GC content of the type genome is 58.96 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Acetobacter decatibra sp. nov.

Candidatus Acetobacter decatibra (NL. fem. n. *decatibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetobacter sp008365315*. The type genome for the species is the GenBank assembly RS_GCF_008365315.1. The GC content of the type genome is 59.24 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Acetobacter femelitudo sp. nov.

Candidatus Acetobacter femelitudo (NL. fem. n. *femelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetobacter sp011516735*. The type genome for the species is the GenBank assembly RS_GCF_011516725.1. The GC content of the type genome is 58.33 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Acetobacter infunessa sp. nov.

Candidatus Acetobacter infunessa (NL. fem. n. *infunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetobacter sp002409645*. The type genome for the species is the GenBank assembly GCA_002409645.1. The GC content of the type genome is 56.76 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Acetobacter insicitica sp. nov.

Candidatus Acetobacter insicitica (NL. fem. n. *insicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetobacter sp002153745*. The type genome for the species is the GenBank assembly RS_GCF_002153745.1. The GC content of the type genome is 60.08 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Acetobacter semilousia sp. nov.

Candidatus Acetobacter semilousia (NL. fem. n. *semilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetobacter sp012517935*. The type genome for the species is the GenBank assembly GCA_012517935.1. The GC content of the type genome is 53.26 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Acetobacterium novilago sp. nov.

Candidatus Acetobacterium novilago (NL. fem. n. *novilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetobacterium sp002841405*. The type genome for the species is the GenBank assembly GCA_002841405.1. The GC content of the type genome is 43.62 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Acetobacterium pomifax sp. nov.

Candidatus Acetobacterium pomifax (NL. fem. n. *pomifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetobacterium sp003260995*. The type genome for the species is the GenBank assembly RS_GCF_003260995.1. The GC content of the type genome is 42.48 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Acetobacteroides duponousia sp. nov.

Candidatus Acetobacteroides duponousia (NL. fem. n. *duponousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetobacteroides sp000798815*. The type genome for the species is the GenBank assembly RS_GCF_000798815.1. The GC content of the type genome is 43.08

% and the genome length is 4.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "organic material".

Description of *Candidatus* Acetomicrobium advigicula sp. nov.

Candidatus Acetomicrobium advigicula (NL. fem. n. *advigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetomicrobium sp002433005*. The type genome for the species is the GenBank assembly GCA_002433005.1. The GC content of the type genome is 46.2 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Acetomicrobium duricatio sp. nov.

Candidatus Acetomicrobium duricatio (NL. fem. n. *duricatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetomicrobium sp002385485*. The type genome for the species is the GenBank assembly GCA_012843005.1. The GC content of the type genome is 46.81 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Acetomicrobium inmoritio sp. nov.

Candidatus Acetomicrobium inmoritio (NL. fem. n. *inmoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acetomicrobium sp012518015*. The type genome for the species is the GenBank assembly GCA_012518015.1. The GC content of the type genome is 44.75 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Acholeplasma adfamax sp. nov.

Candidatus Acholeplasma adfamax (NL. fem. n. *adfamax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acholeplasma sp002399815*. The type genome for the species is the GenBank assembly GCA_002399815.1. The GC content of the type genome is 30.65 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Acholeplasma nocenibula sp. nov.

Candidatus Acholeplasma nocenibula (NL. fem. n. *nocenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acholeplasma_A sp012837395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012837395.1. The GC content of the type genome is 28.02 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Acholeplasma casabitoga sp. nov.

Candidatus Acholeplasma casabitoga (NL. fem. n. *casabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acholeplasma_D sp012519065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012519065.1. The GC content of the type genome is 31.05 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Achromobacter annucimonas sp. nov.

Candidatus Achromobacter annucimonas (NL. fem. n. *annucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp002902905*. The type genome for the species is the GenBank assembly RS_GCF_002902905.1. The GC content of the type genome is 67.43 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Achromobacter cacopibula sp. nov.

Candidatus Achromobacter cacopibula (NL. fem. n. *cacopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp014170335*. The type genome for the species is the GenBank assembly RS_GCF_014170335.1. The GC content of the type genome is 65.82 % and the genome length is 6.68 Mbp.

Description of *Candidatus* Achromobacter celumibula sp. nov.

Candidatus Achromobacter celumibula (NL. fem. n. *celumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp003454835*. The type genome for the species is the GenBank assembly GCA_003454835.1. The GC content of the type genome is 64.96 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Achromobacter esculax sp. nov.

Candidatus Achromobacter esculax (NL. fem. n. *esculax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp002975275*. The type genome for the species is the GenBank assembly RS_GCF_002975275.1. The GC content of the type genome is 65.04 % and the genome length is 6.68 Mbp.

Description of *Candidatus* Achromobacter lenocax sp. nov.

Candidatus Achromobacter lenocax (NL. fem. n. *lenocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp001270295*. The type genome for the species is the GenBank assembly RS_GCF_001270295.1. The GC content of the type genome is 67.41 % and the genome length is 4.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "industrial effluent contaminated site".

Description of *Candidatus* Achromobacter malivitudo sp. nov.

Candidatus Achromobacter malivitudo (NL. fem. n. *malivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp001428845*. The type genome for the species is the GenBank assembly RS_GCF_001428845.1. The GC content of the type genome is 65.85 % and the genome length is 6.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Achromobacter pedepibula sp. nov.

Candidatus Achromobacter pedepibula (NL. fem. n. *pedepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp900156745*. The type genome for the species is the GenBank assembly RS_GCF_900108985.1. The GC content of the type genome is 66.55 % and the genome length is 6.29 Mbp.

Description of *Candidatus* Achromobacter redunitoga sp. nov.

Candidatus Achromobacter redunitoga (NL. fem. n. *redunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp000757485*. The type genome for the species is the GenBank assembly RS_GCF_000757485.1. The GC content of the type genome is 66.62 % and the genome length is 6.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "termite gut and rumen fluid".

Description of *Candidatus* Achromobacter rutabimonas sp. nov.

Candidatus Achromobacter rutabimonas (NL. fem. n. *rutabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp012928505*. The type genome for the species is the GenBank assembly RS_GCF_012928505.1. The GC content of the type genome is 65.4 % and the genome length is 6.62 Mbp.

Description of *Candidatus* Achromobacter viginatio sp. nov.

Candidatus Achromobacter viginatio (NL. fem. n. *viginatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Achromobacter sp014170305*. The type genome for the species is the GenBank assembly RS_GCF_014170305.1. The GC content of the type genome is 66.36 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Acidaminobacter impigitica sp. nov.

Candidatus Acidaminobacter impigitica (NL. fem. n. *impigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidaminobacter sp009881125*. The type genome for the species is the GenBank assembly GCA_009881125.1. The GC content of the type genome is 48.28 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Acidaminococcus adfunitrix sp. nov.

Candidatus Acidaminococcus adfunitrix (NL. fem. n. *adfunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidaminococcus sp902796945*. The type genome for the species is the GenBank assembly GCA_902796945.1. The GC content of the type genome is 52.68 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Acidaminococcus bicipisca sp. nov.

Candidatus Acidaminococcus bicipisca (NL. fem. n. *bicipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidaminococcus sp000437815*. The type genome for the species is the GenBank assembly GCA_900542455.1. The GC content of the type genome is 56.58 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Acidaminococcus exindugo sp. nov.

Candidatus Acidaminococcus exindugo (NL. fem. n. *exindugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidaminococcus sp900770265*. The type genome for the species is the GenBank assembly GCA_900770265.1. The GC content of the type genome is 57.61 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Acidaminococcus fibicitudo sp. nov.

Candidatus Acidaminococcus fibicitudo (NL. fem. n. *fibicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidaminococcus sp900538365*. The type genome for the species is the GenBank assembly GCA_900765765.1. The GC content of the type genome is 50.09 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Acidaminococcus repurivita sp. nov.

Candidatus Acidaminococcus repurivita (NL. fem. n. *repurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidaminococcus sp900554515*. The type genome for the species is the GenBank assembly GCA_900554515.1. The GC content of the type genome is 49.09 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Acidaminococcus resupago sp. nov.

Candidatus Acidaminococcus resupago (NL. fem. n. *resupago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidaminococcus sp900315205*. The type genome for the species is the GenBank assembly GCA_900315205.1. The GC content of the type genome is 55.91 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Acidaminococcus tirocigena sp. nov.

Candidatus Acidaminococcus tirocigena (NL. fem. n. *tirocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidaminococcus sp900314165*. The type genome for the species is the GenBank assembly GCA_900314165.1. The GC content of the type genome is 51.76 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Acidibrevibacterium dibapimonas sp. nov.

Candidatus Acidibrevibacterium dibapimonas (NL. fem. n. *dibapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidibrevibacterium sp011332665*. The type genome for the species is the GenBank assembly GCA_011332665.1. The GC content of the type genome is 66.64 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Acidiferrobacter derecitio sp. nov.

Candidatus Acidiferrobacter derecitio (NL. fem. n. *derecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidiferrobacter sp003184265*. The type genome for the species is the GenBank assembly RS_GCF_003184265.1. The GC content of the type genome is 64.19 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Acidimicrobium expopibula sp. nov.

Candidatus Acidimicrobium expopibula (NL. fem. n. *expopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidimicrobium sp004366215*. The type genome for the species is the GenBank assembly GCA_004366215.1. The GC content of the type genome is 68.47 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Acidiphilium caduritio sp. nov.

Candidatus Acidiphilium caduritio (NL. fem. n. *caduritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidiphilium sp002255515*. The type genome for the species is the GenBank assembly RS_GCF_902712915.1. The GC content of the type genome is 66.12 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Acidiphilium perexiforma sp. nov.

Candidatus Acidiphilium perexiforma (NL. fem. n. *perexiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidiphilium sp002279355*. The type genome for the species is the GenBank assembly GCA_002279355.1. The GC content of the type genome is 59.99 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Acidisoma semivitas sp. nov.

Candidatus Acidisoma semivitas (NL. fem. n. *semivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Acidisoma sp009765865*. The type genome for the species is the GenBank assembly RS_GCF_009765865.1. The GC content of the type genome is 62.48 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Acidithiobacillus dedigatica sp. nov.

Candidatus Acidithiobacillus dedigatica (NL. fem. n. *dedigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidithiobacillus sp002847505*. The type genome for the species is the GenBank assembly RS_GCF_002847505.1. The GC content of the type genome is 54.26 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Acidithiobacillus ammuribra sp. nov.

Candidatus Acidithiobacillus ammuribra (NL. fem. n. *ammuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidithiobacillus_A sp002341825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002341825.1. The GC content of the type genome is 59.57 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Acidobacterium dilibigena sp. nov.

Candidatus Acidobacterium dilibigena (NL. fem. n. *dilibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidobacterium_A sp013285705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013285705.1. The GC content of the type genome is 55.5 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Acidobacterium repepitio sp. nov.

Candidatus Acidobacterium repepitio (NL. fem. n. *repepitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Acidobacterium_A sp014274465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014274465.1. The GC content of the type genome is 55.79 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Acidobacterium vavasetta sp. nov.

Candidatus Acidobacterium vavasetta (NL. fem. n. *vavasetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidobacterium_A sp009765985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009765985.1. The GC content of the type genome is 55.52 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Acidocella bicodago sp. nov.

Candidatus Acidocella bicodago (NL. fem. n. *bicodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidocella sp002281005*. The type genome for the species is the GenBank assembly GCA_002255785.1. The GC content of the type genome is 57.62 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Acidocella defalicula sp. nov.

Candidatus Acidocella defalicula (NL. fem. n. *defalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidocella sp002255575*. The type genome for the species is the GenBank assembly GCA_002255715.1. The GC content of the type genome is 57.84 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Acidocella diludimonas sp. nov.

Candidatus Acidocella diludimonas (NL. fem. n. *diludimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidocella sp003137135*. The type genome for the species is the GenBank assembly GCA_003139935.1. The GC content of the type genome is 62.59 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Acidocella documago sp. nov.

Candidatus Acidocella documago (NL. fem. n. *documago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidocella sp003164135*. The type genome for the species is the GenBank assembly GCA_003156215.1. The GC content of the type genome is 61.21 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Acidocella solifousia sp. nov.

Candidatus Acidocella solifousia (NL. fem. n. *solifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidocella sp013044125*. The type genome for the species is the GenBank assembly GCA_013044125.1. The GC content of the type genome is 63.1 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Acidovorax adlubitoga sp. nov.

Candidatus Acidovorax adlubitoga (NL. fem. n. *adlubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp003663825*. The type genome for the species is the GenBank assembly RS_GCF_003663825.1. The GC content of the type genome is 63.58 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Acidovorax aneclitrix sp. nov.

Candidatus Acidovorax aneclitrix (NL. fem. n. *aneclitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp003060895*. The type genome for the species is the GenBank assembly RS_GCF_003060895.1. The GC content of the type genome is 64.44

% and the genome length is 4.65 Mbp.

Description of *Candidatus* Acidovorax catapastra sp. nov.

Candidatus Acidovorax catapastra (NL. fem. n. *catapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp002176815*. The type genome for the species is the GenBank assembly RS_GCF_002193515.1. The GC content of the type genome is 64.19 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Acidovorax clancentia sp. nov.

Candidatus Acidovorax clancentia (NL. fem. n. *clancentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp006715665*. The type genome for the species is the GenBank assembly RS_GCF_006715665.1. The GC content of the type genome is 65.69 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Acidovorax cotenicula sp. nov.

Candidatus Acidovorax cotenicula (NL. fem. n. *cotenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp001428665*. The type genome for the species is the GenBank assembly RS_GCF_001428645.1. The GC content of the type genome is 66.92 % and the genome length is 6.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Acidovorax curotitica sp. nov.

Candidatus Acidovorax curotitica (NL. fem. n. *curotitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp003852545*. The type genome for the species is the GenBank assembly RS_GCF_003852545.1. The GC content of the type genome is 66.47 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Acidovorax defesitas sp. nov.

Candidatus Acidovorax defesitas (NL. fem. n. *defesitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp001633105*. The type genome for the species is the GenBank assembly RS_GCF_001633105.1. The GC content of the type genome is 65.65 % and the genome length is 5.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ground water".

Description of *Candidatus* Acidovorax depetilenta sp. nov.

Candidatus Acidovorax depetilenta (NL. fem. n. *depetilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp000302535*. The type genome for the species is the GenBank assembly RS_GCF_003231145.1. The GC content of the type genome is 64.92 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Acidovorax divolisca sp. nov.

Candidatus Acidovorax divolisca (NL. fem. n. *divolisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp001422735*. The type genome for the species is the GenBank assembly RS_GCF_001422735.1. The GC content of the type genome is 66.29 % and the genome length is 5.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Acidovorax feficifica sp. nov.

Candidatus Acidovorax feficifica (NL. fem. n. *feficifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp002754495*. The type genome for the species is the GenBank assembly RS_GCF_002754495.1. The GC content of the type genome is 63.8 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Acidovorax irrecimonas sp. nov.

Candidatus Acidovorax irrecimonas (NL. fem. n. *irrecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp003208485*. The type genome for the species is the GenBank assembly GCA_003208485.1. The GC content of the type genome is 66.55 % and the genome length is 6.98 Mbp.

Description of *Candidatus* Acidovorax lenimiforma sp. nov.

Candidatus Acidovorax lenimiforma (NL. fem. n. *lenimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp003058055*. The type genome for the species is the GenBank assembly RS_GCF_003058055.1. The GC content of the type genome is 65.04 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Acidovorax lenunatio sp. nov.

Candidatus Acidovorax lenunatio (NL. fem. n. *lenunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp004210805*. The type genome for the species is the GenBank assembly GCA_004210805.1. The GC content of the type genome is 65.88 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Acidovorax murelitio sp. nov.

Candidatus Acidovorax murelitio (NL. fem. n. *murelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp005405905*. The type genome for the species is the GenBank assembly RS_GCF_005405905.1. The GC content of the type genome is 65.32 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Acidovorax nefanago sp. nov.

Candidatus Acidovorax nefanago (NL. fem. n. *nefanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Acidovorax sp001714725*. The type genome for the species is the GenBank assembly RS_GCF_001714725.1. The GC content of the type genome is 65.29 % and the genome length is 4.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Algal phycosphere".

Description of *Candidatus* Acidovorax oblonastra sp. nov.

Candidatus Acidovorax oblonastra (NL. fem. n. *oblonastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp011620245*. The type genome for the species is the GenBank assembly GCA_011620245.1. The GC content of the type genome is 64.23 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Acidovorax occenugo sp. nov.

Candidatus Acidovorax occenugo (NL. fem. n. *occenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp002797445*. The type genome for the species is the GenBank assembly RS_GCF_002797445.1. The GC content of the type genome is 63.46 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Acidovorax papavatica sp. nov.

Candidatus Acidovorax papavatica (NL. fem. n. *papavatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp001411535*. The type genome for the species is the GenBank assembly GCA_001724055.1. The GC content of the type genome is 64.63 % and the genome length is 5.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Acidovorax procricula sp. nov.

Candidatus Acidovorax procricula (NL. fem. n. *procricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp013408765*. The type genome for the species is the GenBank assembly RS_GCF_013408765.1. The GC content of the type genome is 66.7

% and the genome length is 6.91 Mbp.

Description of *Candidatus* Acidovorax reduvitas sp. nov.

Candidatus Acidovorax reduvitas (NL. fem. n. *reduvitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp001464865*. The type genome for the species is the GenBank assembly GCA_001464865.1. The GC content of the type genome is 65.18 % and the genome length is 4.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Acidovorax rudecitio sp. nov.

Candidatus Acidovorax rudecitio (NL. fem. n. *rudecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp003053545*. The type genome for the species is the GenBank assembly RS_GCF_000276605.1. The GC content of the type genome is 67.77 % and the genome length is 7.09 Mbp.

Description of *Candidatus* Acidovorax serotitica sp. nov.

Candidatus Acidovorax serotitica (NL. fem. n. *serotitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax sp001424425*. The type genome for the species is the GenBank assembly RS_GCF_001422105.1. The GC content of the type genome is 66.86 % and the genome length is 5.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Acidovorax amnenetta sp. nov.

Candidatus Acidovorax amnenetta (NL. fem. n. *amnenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax_A sp001424265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_001424265.1. The GC content of the type genome is 68.64 % and the genome length is 4.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Acidovorax vocamibula sp. nov.

Candidatus Acidovorax vocamibula (NL. fem. n. *vocamibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax_A sp002397315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002397315.1. The GC content of the type genome is 69.38 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Acidovorax dapifigena sp. nov.

Candidatus Acidovorax dapifigena (NL. fem. n. *dapifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax_C sp001725235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001898665.1. The GC content of the type genome is 68.09 % and the genome length is 4.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Acidovorax infiratica sp. nov.

Candidatus Acidovorax infiratica (NL. fem. n. *infiratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidovorax_C sp011303755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011303755.1. The GC content of the type genome is 65.6 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Acidulodesulfobacterium rumifilenta sp. nov.

Candidatus Acidulodesulfobacterium rumifilenta (NL. fem. n. *rumifilenta* a species

epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidulodesulfobacterium sp011358715*. The type genome for the species is the GenBank assembly GCA_011358715.1. The GC content of the type genome is 38.08 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Acidulodesulfobacterium saburessa sp. nov.

Candidatus Acidulodesulfobacterium saburessa (NL. fem. n. *saburessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acidulodesulfobacterium sp003232385*. The type genome for the species is the GenBank assembly GCA_011052455.1. The GC content of the type genome is 37.57 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Acinetobacter adgenifica sp. nov.

Candidatus Acinetobacter adgenifica (NL. fem. n. *adgenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135295*. The type genome for the species is the GenBank assembly RS_GCF_002135295.1. The GC content of the type genome is 40.02 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Acinetobacter adhinago sp. nov.

Candidatus Acinetobacter adhinago (NL. fem. n. *adhinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp003611475*. The type genome for the species is the GenBank assembly RS_GCF_003611475.1. The GC content of the type genome is 37.67 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Acinetobacter affulimonas sp. nov.

Candidatus Acinetobacter affulimonas (NL. fem. n. *affulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135415*. The type genome for the species is the GenBank assembly RS_GCF_002135415.1. The GC content of the type genome is 36.99 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Acinetobacter agrapatica sp. nov.

Candidatus Acinetobacter agrapatica (NL. fem. n. *agrapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002165305*. The type genome for the species is the GenBank assembly RS_GCF_002165305.2. The GC content of the type genome is 41.17 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Acinetobacter aplesifica sp. nov.

Candidatus Acinetobacter aplesifica (NL. fem. n. *aplesifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002688565*. The type genome for the species is the GenBank assembly RS_GCF_002688565.1. The GC content of the type genome is 42.35 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Acinetobacter arcititas sp. nov.

Candidatus Acinetobacter arcititas (NL. fem. n. *arcititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135315*. The type genome for the species is the GenBank assembly RS_GCF_002135315.1. The GC content of the type genome is 41.62 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Acinetobacter bicubitio sp. nov.

Candidatus Acinetobacter bicubitio (NL. fem. n. *bicubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135345*. The type genome for the species is the GenBank assembly RS_GCF_002135345.1. The GC content of the type genome is 37.58 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Acinetobacter biveribra sp. nov.

Candidatus Acinetobacter biveribra (NL. fem. n. *biveribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp004331075*. The type genome for the species is the GenBank assembly RS_GCF_004331065.1. The GC content of the type genome is 41.74 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Acinetobacter buxanitio sp. nov.

Candidatus Acinetobacter buxanitio (NL. fem. n. *buxanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp902809855*. The type genome for the species is the GenBank assembly RS_GCF_902809855.1. The GC content of the type genome is 37.48 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Acinetobacter capilitudo sp. nov.

Candidatus Acinetobacter capilitudo (NL. fem. n. *capilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp003611515*. The type genome for the species is the GenBank assembly RS_GCF_003611515.1. The GC content of the type genome is 39.95 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Acinetobacter capucitia sp. nov.

Candidatus Acinetobacter capucitia (NL. fem. n. *capucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000400715*. The type genome for the species is the GenBank assembly RS_GCF_000400715.1. The GC content of the type genome is 40.73 % and the genome length is 4.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "skin".

Description of *Candidatus* Acinetobacter caselousia sp. nov.

Candidatus Acinetobacter caselousia (NL. fem. n. *caselousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135245*. The type genome for the species is the GenBank assembly RS_GCF_013420305.1. The GC content of the type genome is 42.01 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Acinetobacter cepuriforma sp. nov.

Candidatus Acinetobacter cepuriforma (NL. fem. n. *cepuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp011578045*. The type genome for the species is the GenBank assembly RS_GCF_011578045.1. The GC content of the type genome is 38.26 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Acinetobacter cibaredo sp. nov.

Candidatus Acinetobacter cibaredo (NL. fem. n. *cibaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp004336635*. The type genome for the species is the GenBank assembly RS_GCF_013004315.1. The GC content of the type genome is 40.32 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Acinetobacter culilitas sp. nov.

Candidatus Acinetobacter culilitas (NL. fem. n. *culilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135205*. The type genome for the species is the GenBank assembly RS_GCF_003569905.1. The GC content of the type genome is 40.72 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Acinetobacter debucessa sp. nov.

Candidatus Acinetobacter debucessa (NL. fem. n. *debucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp013072695*. The type genome for the species is the GenBank assembly RS_GCF_013072695.1. The GC content of the type genome is 40.59 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Acinetobacter decucitas sp. nov.

Candidatus Acinetobacter decucitas (NL. fem. n. *decucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp008017255*. The type genome for the species is the GenBank assembly GCA_008017255.1. The GC content of the type genome is 42.77 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Acinetobacter deculessa sp. nov.

Candidatus Acinetobacter deculessa (NL. fem. n. *deculessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp012371325*. The type genome for the species is the GenBank assembly RS_GCF_012371355.1. The GC content of the type genome is 41.16 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Acinetobacter defacifica sp. nov.

Candidatus Acinetobacter defacifica (NL. fem. n. *defacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000313935*. The type genome for the species is the GenBank assembly RS_GCF_000313935.1. The GC content of the type genome is 38.85 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Acinetobacter delebitia sp. nov.

Candidatus Acinetobacter delebitia (NL. fem. n. *delebitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002367455*. The type genome for the species is the GenBank assembly GCA_002367455.1. The GC content of the type genome is 43.27 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Acinetobacter deniciforma sp. nov.

Candidatus Acinetobacter deniciforma (NL. fem. n. *deniciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp900323515*. The type genome for the species is the GenBank assembly RS_GCF_900323515.1. The GC content of the type genome is 37.73 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Acinetobacter dereledo sp. nov.

Candidatus Acinetobacter dereledo (NL. fem. n. *dereledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp004331035*. The type genome for the species is the GenBank assembly RS_GCF_004331035.1. The GC content of the type genome is 40.47 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Acinetobacter derunicella sp. nov.

Candidatus Acinetobacter derunicella (NL. fem. n. *derunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp001696615*. The type genome for the species is the GenBank assembly RS_GCF_001696615.3. The GC content of the type genome is 48.98 % and the genome length is 3.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital sewage".

Description of *Candidatus* Acinetobacter desomitio sp. nov.

Candidatus Acinetobacter desomitio (NL. fem. n. *desomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp001647675*. The type genome for the species is the GenBank assembly RS_GCF_001647675.1. The GC content of the type genome is 40.07 % and the genome length is 3.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "tracheal swab from cat-captured mouse".

Description of *Candidatus* Acinetobacter detotilenta sp. nov.

Candidatus Acinetobacter detotilenta (NL. fem. n. *detotilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000773685*. The type genome for the species is the GenBank assembly RS_GCF_000773685.1. The GC content of the type genome is 43.54 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rumen fluid of Korean native cattle (HanWoo)".

Description of *Candidatus* Acinetobacter direpedo sp. nov.

Candidatus Acinetobacter direpedo (NL. fem. n. *direpedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002296655*. The type genome for the species is the GenBank assembly GCA_002296945.1. The GC content of the type genome is 41.24 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Acinetobacter domipiforma sp. nov.

Candidatus Acinetobacter domipiforma (NL. fem. n. *domipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp011578285*. The type genome for the species is the GenBank assembly RS_GCF_011191955.1. The GC content of the type genome is 40.87 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Acinetobacter edulcastra sp. nov.

Candidatus Acinetobacter edulcastra (NL. fem. n. *edulcastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp003261585*. The type genome for the species is the GenBank assembly RS_GCF_003261585.1. The GC content of the type genome is 41.38 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Acinetobacter effaressa sp. nov.

Candidatus Acinetobacter effaressa (NL. fem. n. *effaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp003024515*. The type genome for the species is the GenBank assembly RS_GCF_003024515.2. The GC content of the type genome is 37.02 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Acinetobacter effositica sp. nov.

Candidatus Acinetobacter effositica (NL. fem. n. *effositica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp008017315*. The type genome for the species is the GenBank assembly GCA_008017315.1. The GC content of the type genome is 41.63 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Acinetobacter effulax sp. nov.

Candidatus Acinetobacter effulax (NL. fem. n. *effulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp900766635*. The type genome for the species is the GenBank assembly GCA_900766635.1. The GC content of the type genome is 41.46 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Acinetobacter encenicula sp. nov.

Candidatus Acinetobacter encenicula (NL. fem. n. *encenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp001612555*. The type genome for the species is the GenBank assembly RS_GCF_001612555.1. The GC content of the type genome is 39.86 % and the genome length is 3.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "frozen soil".

Description of *Candidatus* Acinetobacter encomitrix sp. nov.

Candidatus Acinetobacter encomitrix (NL. fem. n. *encomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000369805*. The type genome for the species is the GenBank assembly RS_GCF_000369805.1. The GC content of the type genome is 40.88 % and the genome length is 3.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Wound".

Description of *Candidatus* Acinetobacter ermelicula sp. nov.

Candidatus Acinetobacter ermelicula (NL. fem. n. *ermelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135435*. The type genome for the species is the GenBank assembly RS_GCF_002135435.1. The GC content of the type genome is 43.0 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Acinetobacter expenatica sp. nov.

Candidatus Acinetobacter expenatica (NL. fem. n. *expenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp011753255*. The type genome for the species is the GenBank assembly RS_GCF_011753255.1. The GC content of the type genome is 40.57 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Acinetobacter fatifitrix sp. nov.

Candidatus Acinetobacter fatifitrix (NL. fem. n. *fatifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000369525*. The type genome for the species is the GenBank assembly RS_GCF_000302415.1. The GC content of the type genome is 40.77 % and the genome length is 4.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "urine".

Description of *Candidatus* Acinetobacter holoviforma sp. nov.

Candidatus Acinetobacter holoviforma (NL. fem. n. *holoviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp003611465*. The type genome for the species is the

GenBank assembly RS_GCF_003611465.1. The GC content of the type genome is 42.29 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Acinetobacter homogitura sp. nov.

Candidatus Acinetobacter homogitura (NL. fem. n. *homogitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp003105055*. The type genome for the species is the GenBank assembly RS_GCF_003105055.1. The GC content of the type genome is 40.43 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Acinetobacter inabsousia sp. nov.

Candidatus Acinetobacter inabsousia (NL. fem. n. *inabsousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp004331175*. The type genome for the species is the GenBank assembly RS_GCF_004331175.1. The GC content of the type genome is 40.73 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Acinetobacter inlusugo sp. nov.

Candidatus Acinetobacter inlusugo (NL. fem. n. *inlusugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp004331285*. The type genome for the species is the GenBank assembly RS_GCF_004331285.1. The GC content of the type genome is 40.27 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Acinetobacter inmemivita sp. nov.

Candidatus Acinetobacter inmemivita (NL. fem. n. *inmemivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135335*. The type genome for the species is the GenBank assembly RS_GCF_002135335.1. The GC content of the type genome is 38.87 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Acinetobacter lacinimonas sp. nov.

Candidatus Acinetobacter lacinimonas (NL. fem. n. *lacinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000369645*. The type genome for the species is the GenBank assembly RS_GCF_003227755.1. The GC content of the type genome is 41.01 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Acinetobacter lavabitas sp. nov.

Candidatus Acinetobacter lavabitas (NL. fem. n. *lavabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp013009345*. The type genome for the species is the GenBank assembly RS_GCF_002137095.1. The GC content of the type genome is 38.82 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Acinetobacter licenessa sp. nov.

Candidatus Acinetobacter licenessa (NL. fem. n. *licenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002018365*. The type genome for the species is the GenBank assembly RS_GCF_013417045.1. The GC content of the type genome is 40.3 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Acinetobacter maheletta sp. nov.

Candidatus Acinetobacter maheletta (NL. fem. n. *maheletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp001626925*. The type genome for the species is the GenBank assembly GCA_001626975.1. The GC content of the type genome is 41.91 % and the genome length is 1.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 169 - depth 25m".

Description of *Candidatus* Acinetobacter mimogax sp. nov.

Candidatus Acinetobacter mimogax (NL. fem. n. *mimogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000805455*. The type genome for the species is the GenBank assembly RS_GCF_000805455.1. The GC content of the type genome is 44.5 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soft tissue samples".

Description of *Candidatus* Acinetobacter necopibula sp. nov.

Candidatus Acinetobacter necopibula (NL. fem. n. *necopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002165255*. The type genome for the species is the GenBank assembly RS_GCF_013391535.1. The GC content of the type genome is 39.01 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Acinetobacter oblivilega sp. nov.

Candidatus Acinetobacter oblivilega (NL. fem. n. *oblivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135355*. The type genome for the species is the GenBank assembly RS_GCF_002135355.1. The GC content of the type genome is 41.53 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Acinetobacter ocissibula sp. nov.

Candidatus Acinetobacter ocissibula (NL. fem. n. *ocissibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135375*. The type genome for the species is the GenBank assembly RS_GCF_002135375.1. The GC content of the type genome is 35.62 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Acinetobacter pavimifica sp. nov.

Candidatus Acinetobacter pavimifica (NL. fem. n. *pavimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000369505*. The type genome for the species is the GenBank assembly RS_GCF_000369505.1. The GC content of the type genome is 40.17 % and the genome length is 3.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Wound".

Description of *Candidatus* Acinetobacter pinigimonas sp. nov.

Candidatus Acinetobacter pinigimonas (NL. fem. n. *pinigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp009557235*. The type genome for the species is the GenBank assembly RS_GCF_009601085.1. The GC content of the type genome is 40.38 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Acinetobacter pocilivita sp. nov.

Candidatus Acinetobacter pocilivita (NL. fem. n. *pocilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp900625095*. The type genome for the species is the GenBank assembly RS_GCF_900625095.1. The GC content of the type genome is 40.42 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Acinetobacter procratio sp. nov.

Candidatus Acinetobacter procratio (NL. fem. n. *procratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp003268395*. The type genome for the species is the GenBank assembly RS_GCF_003268395.1. The GC content of the type genome is 37.67 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Acinetobacter ratifibra sp. nov.

Candidatus Acinetobacter ratifibra (NL. fem. n. *ratifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002455755*. The type genome for the species is the GenBank assembly GCA_002455755.1. The GC content of the type genome is 42.01 %

and the genome length is 2.96 Mbp.

Description of *Candidatus* Acinetobacter recogibra sp. nov.

Candidatus Acinetobacter recogibra (NL. fem. n. *recogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002365595*. The type genome for the species is the GenBank assembly GCA_004210695.1. The GC content of the type genome is 40.61 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Acinetobacter recoritudo sp. nov.

Candidatus Acinetobacter recoritudo (NL. fem. n. *recoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp008630915*. The type genome for the species is the GenBank assembly RS_GCF_008630915.1. The GC content of the type genome is 39.44 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Acinetobacter sacomilenta sp. nov.

Candidatus Acinetobacter sacomilenta (NL. fem. n. *sacomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000632455*. The type genome for the species is the GenBank assembly RS_GCF_900109815.1. The GC content of the type genome is 38.65 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Acinetobacter sicinatio sp. nov.

Candidatus Acinetobacter sicinatio (NL. fem. n. *sicinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000369405*. The type genome for the species is the GenBank assembly RS_GCF_000369405.1. The GC content of the type genome is 40.35 % and the genome length is 4.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Urine".

Description of *Candidatus* Acinetobacter sifunedo sp. nov.

Candidatus Acinetobacter sifunedo (NL. fem. n. *sifunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp003711395*. The type genome for the species is the GenBank assembly RS_GCF_003711395.1. The GC content of the type genome is 41.14 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Acinetobacter subacentia sp. nov.

Candidatus Acinetobacter subacentia (NL. fem. n. *subacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135235*. The type genome for the species is the GenBank assembly RS_GCF_002135235.1. The GC content of the type genome is 38.06 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Acinetobacter subodatio sp. nov.

Candidatus Acinetobacter subodatio (NL. fem. n. *subodatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp001647535*. The type genome for the species is the GenBank assembly RS_GCF_001647535.1. The GC content of the type genome is 43.13 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Acinetobacter tiguressa sp. nov.

Candidatus Acinetobacter tiguressa (NL. fem. n. *tiguressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000368265*. The type genome for the species is the GenBank assembly RS_GCF_004331275.1. The GC content of the type genome is 41.2 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Acinetobacter venefatica sp. nov.

Candidatus Acinetobacter venefatica (NL. fem. n. *venefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp002135195*. The type genome for the species is the GenBank assembly RS_GCF_013004275.1. The GC content of the type genome is 40.21 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Acinetobacter venunessa sp. nov.

Candidatus Acinetobacter venunessa (NL. fem. n. *venunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp000214135*. The type genome for the species is the GenBank assembly RS_GCF_000214135.1. The GC content of the type genome is 37.6 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Acinetobacter verifitrix sp. nov.

Candidatus Acinetobacter verifitrix (NL. fem. n. *verifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp009707625*. The type genome for the species is the GenBank assembly RS_GCF_009707625.1. The GC content of the type genome is 36.48 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Acinetobacter vilitugo sp. nov.

Candidatus Acinetobacter vilitugo (NL. fem. n. *vilitugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp900771065*. The type genome for the species is the GenBank assembly GCA_900771065.1. The GC content of the type genome is 36.54 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Acinetobacter viragibula sp. nov.

Candidatus Acinetobacter viragibula (NL. fem. n. *viragibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp004331255*. The type genome for the species is the GenBank assembly RS_GCF_004331255.1. The GC content of the type genome is 40.53

% and the genome length is 3.84 Mbp.

Description of *Candidatus* Acinetobacter viripatica sp. nov.

Candidatus Acinetobacter viripatica (NL. fem. n. *viripatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp001647545*. The type genome for the species is the GenBank assembly RS_GCF_004331055.1. The GC content of the type genome is 40.34 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Acinetobacter vivifago sp. nov.

Candidatus Acinetobacter vivifago (NL. fem. n. *vivifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp003987695*. The type genome for the species is the GenBank assembly GCA_003987695.1. The GC content of the type genome is 38.8 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Acinetobacter xenopifica sp. nov.

Candidatus Acinetobacter xenopifica (NL. fem. n. *xenopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acinetobacter sp004331115*. The type genome for the species is the GenBank assembly RS_GCF_013004435.1. The GC content of the type genome is 40.99 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Aciscana conipugo sp. nov.

Candidatus Aciscana conipugo (NL. fem. n. *conipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRTC01 sp011372345*. The type genome for the species is the GenBank assembly GCA_011372345.1. The GC content of the type genome is 35.86 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Aciscana gen. nov.

Candidatus Aciscana (NL. fem. n. *Aciscana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRTC01*. The type species for the genus is *Candidatus* Aciscana conipugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefellaceae.

Description of *Candidatus* Aciscaria inredatica sp. nov.

Candidatus Aciscaria inredatica (NL. fem. n. *inredatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *42-54-T18 sp002162955*. The type genome for the species is the GenBank assembly GCA_002162955.1. The GC content of the type genome is 44.74 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Aciscaria gen. nov.

Candidatus Aciscaria (NL. fem. n. *Aciscaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *42-54-T18*. The type species for the genus is *Candidatus* Aciscaria inredatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aciscaria insubugo sp. nov.

Candidatus Aciscaria insubugo (NL. fem. n. *insubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *42-54-T18 sp002163245*. The type genome for the species is the GenBank assembly GCA_002163245.1. The GC content of the type genome is 42.59 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Aciscaria nugacibra sp. nov.

Candidatus Aciscaria nugacibra (NL. fem. n. *nugacibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *42-54-T18 sp002402125*. The type genome for the species is the GenBank assembly GCA_002402125.1. The GC content of the type genome is 43.86 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Aciscella bovicax sp. nov.

Candidatus Aciscella bovicax (NL. fem. n. *bovicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVX01 sp011327765*. The type genome for the species is the GenBank assembly GCA_011327765.1. The GC content of the type genome is 33.92 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Aciscella gen. nov.

Candidatus Aciscella (NL. fem. n. *Aciscella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVX01*. The type species for the genus is *Candidatus* Aciscella bovicax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSTG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melopellaceae.

Description of *Candidatus* Aciscosa sacopitura sp. nov.

Candidatus Aciscosa sacopitura (NL. fem. n. *sacopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VTOM01 sp009765365*. The type genome for the species is the GenBank assembly RS_GCF_009765365.1. The GC content of the type genome is 69.09 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Aciscosa gen. nov.

Candidatus Aciscosa (NL. fem. n. *Aciscosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VTOM01*. The type species for the genus is *Candidatus* Aciscosa sacopitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aciscula obsatitudo sp. nov.

Candidatus Aciscula obsatitudo (NL. fem. n. *obsatitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJV01 sp011333745*. The type genome for the species is the GenBank assembly GCA_011333745.1. The GC content of the type genome is 54.44 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Aciscula gen. nov.

Candidatus Aciscula (NL. fem. n. *Aciscula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJV01*. The type species for the genus is *Candidatus* Aciscula obsatitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYYI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabidaceae.

Description of *Candidatus* Acistana obambentia sp. nov.

Candidatus Acistana obambentia (NL. fem. n. *obambentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-000287355 sp000287355*. The type genome for the species is the GenBank assembly RS_GCF_000287355.1. The GC content of the type genome is 28.9 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Acistana gen. nov.

Candidatus Acistana (NL. fem. n. *Acistana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-000287355*. The type species for the genus is *Candidatus* Acistana obambentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acistaria obtenitrix sp. nov.

Candidatus Acistaria obtenitrix (NL. fem. n. *obtenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFJ01 sp013286645*. The type genome for the species is the GenBank assembly GCA_013286645.1. The GC content of the type genome is 44.23 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Acistaria gen. nov.

Candidatus Acistaria (NL. fem. n. *Acistaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDFJ01*. The type species for the genus is *Candidatus* Acistaria obtenitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acistella bicipilega sp. nov.

Candidatus Acistella bicipilega (NL. fem. n. *bicipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-49-14 sp001816915*. The type genome for the species is the GenBank assembly GCA_001816915.1. The GC content of the type genome is 49.1 % and the genome length is 1.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Acistella gen. nov.

Candidatus Acistella (NL. fem. n. *Acistella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *2-01-FULL-49-14*. The type species for the genus is *Candidatus* Acistella bicipilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acistia morigessa sp. nov.

Candidatus Acistia morigessa (NL. fem. n. *morigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNNM01 sp013824215*. The type genome for the species is the GenBank assembly GCA_013824215.1. The GC content of the type genome is 69.5 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Acistia gen. nov.

Candidatus Acistia (NL. fem. n. *Acistia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNNM01*. The type species for the genus is *Candidatus* Acistia morigessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D1FN1-002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forinulaceae.

Description of *Candidatus* Acistida depocibula sp. nov.

Candidatus Acistida depocibula (NL. fem. n. *depocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2316 sp002256935*. The type genome for the species is the GenBank assembly GCA_002256935.1. The GC content of the type genome is 41.06 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Acistida gen. nov.

Candidatus Acistida (NL. fem. n. *Acistida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2316*. The type species for the genus is *Candidatus* Acistida

depocibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acistida inrevifica sp. nov.

Candidatus Acistida inrevifica (NL. fem. n. *inrevifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2316 sp013359135*. The type genome for the species is the GenBank assembly GCA_013359135.1. The GC content of the type genome is 34.89 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Acistida obtorisca sp. nov.

Candidatus Acistida obtorisca (NL. fem. n. *obtorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2316 sp002345205*. The type genome for the species is the GenBank assembly GCA_002345205.1. The GC content of the type genome is 40.71 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Acistida sicarilenta sp. nov.

Candidatus Acistida sicarilenta (NL. fem. n. *sicarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2316 sp002344565*. The type genome for the species is the GenBank assembly GCA_002344565.1. The GC content of the type genome is 41.03 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Acistosa idciribra sp. nov.

Candidatus Acistosa idciribra (NL. fem. n. *idciribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SB15 sp008933735*. The type genome for the species is the GenBank assembly GCA_008933735.1. The GC content of the type genome is 52.31 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Acistosa gen. nov.

Candidatus Acistosa (NL. fem. n. *Acistosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SB15*. The type species for the genus is *Candidatus* Acistosa idciribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J027*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemellaceae.

Description of *Candidatus* Acistula admutisca sp. nov.

Candidatus Acistula admutisca (NL. fem. n. *admutisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYEJ01 sp012728835*. The type genome for the species is the GenBank assembly GCA_012728835.1. The GC content of the type genome is 70.15 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Acistula gen. nov.

Candidatus Acistula (NL. fem. n. *Acistula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYEJ01*. The type species for the genus is *Candidatus* Acistula admutisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rarefulaceae.

Description of *Candidatus* Aclasaria armifibula sp. nov.

Candidatus Aclasaria armifibula (NL. fem. n. *armifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2723275 sp002723275*. The type genome for the species is the GenBank assembly GCA_002723275.1. The GC content of the type genome is 52.79 % and the genome length is 6.8 Mbp.

Description of *Candidatus* Aclasaria gen. nov.

Candidatus Aclasaria (NL. fem. n. *Aclasaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2723275*. The type species for the genus is *Candidatus* Aclasaria armifibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aclasella diludentia sp. nov.

Candidatus Aclasella diludentia (NL. fem. n. *diludentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFT01 sp012519355*. The type genome for the species is the GenBank assembly GCA_012519355.1. The GC content of the type genome is 33.3 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Aclasella gen. nov.

Candidatus Aclasella (NL. fem. n. *Aclasella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYFT01*. The type species for the genus is *Candidatus* Aclasella diludentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aclasella foricilenta sp. nov.

Candidatus Aclasella foricilenta (NL. fem. n. *foricilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFT01 sp012735245*. The type genome for the species is the GenBank assembly GCA_012735245.1. The GC content of the type genome is 34.28 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Aclasella satacimonas sp. nov.

Candidatus Aclasella satacimonas (NL. fem. n. *satacimonas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFT01 sp012728125*. The type genome for the species is the GenBank assembly GCA_012728125.1. The GC content of the type genome is 33.78 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Aclasida voragimonia sp. nov.

Candidatus Aclasida voragimonia (NL. fem. n. *voragimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LB1R16 sp007097155*. The type genome for the species is the GenBank assembly RS_GCF_007097155.1. The GC content of the type genome is 68.84 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Aclasida gen. nov.

Candidatus Aclasida (NL. fem. n. *Aclasida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LB1R16*. The type species for the genus is *Candidatus* Aclasida voragimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aclasosa conigitas sp. nov.

Candidatus Aclasosa conigitas (NL. fem. n. *conigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-3 sp003232185*. The type genome for the species is the GenBank assembly GCA_003232185.1. The GC content of the type genome is 40.89 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Aclasosa gen. nov.

Candidatus Aclasosa (NL. fem. n. *Aclasosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SZUA-3*. The type species for the genus is *Candidatus* Aclasosa conigitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aclasosa elastimonia sp. nov.

Candidatus Aclasosa elastimonia (NL. fem. n. *elastimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-3 sp003229495*. The type genome for the species is the GenBank assembly GCA_003229495.1. The GC content of the type genome is 42.55 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Aclasula advorugo sp. nov.

Candidatus Aclasula advorugo (NL. fem. n. *advorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFL01 sp011065065*. The type genome for the species is the GenBank assembly GCA_011065065.1. The GC content of the type genome is 41.7 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Aclasula gen. nov.

Candidatus Aclasula (NL. fem. n. *Aclasula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFL01*. The type species for the genus is *Candidatus* Aclasula advorugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLFE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forinidaceae.

Description of *Candidatus* Acontana culilitica sp. nov.

Candidatus Acontana culilitica (NL. fem. n. *culilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DUPJ01 sp012838355*. The type genome for the species is the GenBank assembly GCA_012838355.1. The GC content of the type genome is 55.49 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Acontana gen. nov.

Candidatus Acontana (NL. fem. n. *Acontana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPJ01*. The type species for the genus is *Candidatus* Acontana culilitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decunariaceae.

Description of *Candidatus* Acontana expasiforma sp. nov.

Candidatus Acontana expasiforma (NL. fem. n. *expasiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPJ01 sp012837885*. The type genome for the species is the GenBank assembly GCA_012837885.1. The GC content of the type genome is 53.31 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Acontida ecastitica sp. nov.

Candidatus Acontida ecastitica (NL. fem. n. *ecastitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-O23 sp003215355*. The type genome for the species is the GenBank assembly GCA_003215355.1. The GC content of the type genome is 42.05 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Acontida gen. nov.

Candidatus Acontida (NL. fem. n. *Acontida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-O23*. The type species for the genus is *Candidatus* Acontida ecastitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acontosa infunitudo sp. nov.

Candidatus Acontosa infunitudo (NL. fem. n. *infunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDDH01 sp013287705*. The type genome for the species is the GenBank assembly GCA_013287705.1. The GC content of the type genome is 44.24 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Acontosa gen. nov.

Candidatus Acontosa (NL. fem. n. *Acontosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDH01*. The type species for the genus is *Candidatus* Acontosa infunitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acratana attubitia sp. nov.

Candidatus Acratana attubitia (NL. fem. n. *attubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-55-24 sp002772745*. The type genome for the species is the GenBank assembly GCA_002772745.1. The GC content of the type genome is 55.19 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Acratana gen. nov.

Candidatus Acratana (NL. fem. n. *Acratana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-55-24*. The type species for the genus is *Candidatus* Acratana attubitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrataria anaclifica sp. nov.

Candidatus Acrataria anaclifica (NL. fem. n. *anaclifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJQ01 sp011370505*. The type genome for the species is the GenBank assembly GCA_011370505.1. The GC content of the type genome is 38.23 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Acrataria gen. nov.

Candidatus Acrataria (NL. fem. n. *Acrataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJQ01*. The type species for the genus is *Candidatus* Acrataria anaclifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subucidaceae.

Description of *Candidatus* Acricana proscibra sp. nov.

Candidatus Acricana proscibra (NL. fem. n. *proscibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *N075bin62 sp004356265*. The type genome for the species is the GenBank assembly GCA_004356265.1. The GC content of the type genome is 50.66 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Acricana gen. nov.

Candidatus Acricana (NL. fem. n. *Acricana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *N075bin62*. The type species for the genus is *Candidatus* Acricana proscibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10348*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divorosaceae.

Description of *Candidatus* Acricia aspilitica sp. nov.

Candidatus Acricia aspilitica (NL. fem. n. *aspilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTHY01 sp011522945*. The type genome for the species is the GenBank assembly GCA_011522945.1. The GC content of the type genome is 46.35 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Acricia gen. nov.

Candidatus Acricia (NL. fem. n. *Acricia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTHY01*. The type species for the genus is *Candidatus* Acricia aspilitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acricida ephemilenta sp. nov.

Candidatus Acricida ephemilenta (NL. fem. n. *ephemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJT01 sp013298955*. The type genome for the species is the GenBank assembly GCA_013298955.1. The GC content of the type genome is 39.53 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Acricida gen. nov.

Candidatus Acricida (NL. fem. n. *Acricida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFJT01*. The type species for the genus is *Candidatus* Acricida ephemilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acricosa inculilega sp. nov.

Candidatus Acricosa inculilega (NL. fem. n. *inculilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NCED01 sp002280485*. The type genome for the species is the GenBank assembly GCA_002280485.1. The GC content of the type genome is 69.05 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Acricosa gen. nov.

Candidatus Acricosa (NL. fem. n. *Acricosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NCED01*. The type species for the genus is *Candidatus* Acricosa inculilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acricula sonipilega sp. nov.

Candidatus Acricula sonipilega (NL. fem. n. *sonipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AN110305 sp008386585*. The type genome for the species is the GenBank assembly RS_GCF_008386585.1. The GC content of the type genome is 70.7 % and the genome length is 9.3 Mbp.

Description of *Candidatus* Acricula gen. nov.

Candidatus Acricula (NL. fem. n. *Acricula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AN110305*. The type species for the genus is *Candidatus* Acricula sonipilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrifana cicaritrix sp. nov.

Candidatus Acrifana cicaritrix (NL. fem. n. *cicaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11367 sp900767835*. The type genome for the species is the GenBank assembly RS_GCF_900767835.1. The GC content of the type genome is 29.86 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Acrifana gen. nov.

Candidatus Acrifana (NL. fem. n. *Acrifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11367*. The type species for the genus is *Candidatus* Acrifana cicaritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Acrifana inornitoga sp. nov.

Candidatus Acrifana inornitoga (NL. fem. n. *inornitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11367 sp900768425*. The type genome for the species is the GenBank assembly RS_GCF_900768425.1. The GC content of the type genome is 30.78 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Acrifella incorisca sp. nov.

Candidatus Acrifella incorisca (NL. fem. n. *incorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAHJXF01 sp903644065*. The type genome for the species is the GenBank assembly RS_GCF_903644065.1. The GC content of the type genome is 68.89 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Acrifella gen. nov.

Candidatus Acrifella (NL. fem. n. *Acrifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CAHJXF01*. The type species for the genus is *Candidatus* Acrifella incorisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrifida decapatio sp. nov.

Candidatus Acrifida decapatio (NL. fem. n. *decapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFMI01 sp002785165*. The type genome for the species is the GenBank assembly GCA_002785165.1. The GC content of the type genome is 32.94 % and the genome length is 0.33 Mbp.

Description of *Candidatus* Acrifida gen. nov.

Candidatus Acrifida (NL. fem. n. *Acrifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PFMI01*. The type species for the genus is *Candidatus* Acrifida decapatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-41-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditosaceae.

Description of *Candidatus* Acrifula alcibicella sp. nov.

Candidatus Acrifula alcibicella (NL. fem. n. *alcibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-335 sp003154055*. The type genome for the species is the GenBank assembly GCA_003154055.1. The GC content of the type genome is 59.72 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Acrifula gen. nov.

Candidatus Acrifula (NL. fem. n. *Acrifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-335*. The type species for the genus is *Candidatus* Acrifula

alcibicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrimana plusciforma sp. nov.

Candidatus Acrimana plusciforma (NL. fem. n. *plusciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-40-20 sp001818675*. The type genome for the species is the GenBank assembly GCA_001818675.1. The GC content of the type genome is 40.17 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Acrimana gen. nov.

Candidatus Acrimana (NL. fem. n. *Acrimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-40-20*. The type species for the genus is *Candidatus* Acrimana plusciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WO2-44-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinacellaceae.

Description of *Candidatus* Acrimaria citipax sp. nov.

Candidatus Acrimaria citipax (NL. fem. n. *citipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYIG01 sp012523595*. The type genome for the species is the GenBank assembly GCA_012523595.1. The GC content of the type genome is 44.87 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Acrimaria gen. nov.

Candidatus Acrimaria (NL. fem. n. *Acrimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAYIG01*. The type species for the genus is *Candidatus* Acrimaria citipax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrimaria deparatica sp. nov.

Candidatus Acrimaria deparatica (NL. fem. n. *deparatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYIG01 sp012515615*. The type genome for the species is the GenBank assembly GCA_012515615.1. The GC content of the type genome is 44.95 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Acrimia adfunugo sp. nov.

Candidatus Acrimia adfunugo (NL. fem. n. *adfunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-113R1 sp007117695*. The type genome for the species is the GenBank assembly GCA_007117695.1. The GC content of the type genome is 29.54 % and the genome length is 0.55 Mbp.

Description of *Candidatus* Acrimia gen. nov.

Candidatus Acrimia (NL. fem. n. *Acrimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBR16-113R1*. The type species for the genus is *Candidatus* Acrimia adfunugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Acrimia epogdimonas sp. nov.

Candidatus Acrimia epogdimonas (NL. fem. n. *epogdimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CSBR16-113R1 sp007116525*. The type genome for the species is the GenBank assembly GCA_007116525.1. The GC content of the type genome is 29.31 % and the genome length is 0.45 Mbp.

Description of *Candidatus* Acrimida eviscilega sp. nov.

Candidatus Acrimida eviscilega (NL. fem. n. *eviscilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPK01 sp012838345*. The type genome for the species is the GenBank assembly GCA_012838345.1. The GC content of the type genome is 51.63 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Acrimida gen. nov.

Candidatus Acrimida (NL. fem. n. *Acrimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPK01*. The type species for the genus is *Candidatus* Acrimida eviscilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrimida gabinetta sp. nov.

Candidatus Acrimida gabinetta (NL. fem. n. *gabinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPK01 sp012520395*. The type genome for the species is the GenBank assembly GCA_012520395.1. The GC content of the type genome is 50.3 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Acrimosa exsolentia sp. nov.

Candidatus Acrimosa exsolentia (NL. fem. n. *exsolentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1370 sp003165355*. The type genome for the species is the GenBank assembly GCA_003165355.1. The GC content of the type genome is 40.42 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Acrimosa gen. nov.

Candidatus Acrimosa (NL. fem. n. *Acrimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-1370*. The type species for the genus is *Candidatus* Acrimosa exsolentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrobana almitastra sp. nov.

Candidatus Acrobana almitastra (NL. fem. n. *almitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-309 sp003228415*. The type genome for the species is the GenBank assembly GCA_003228415.1. The GC content of the type genome is 57.91 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Acrobana gen. nov.

Candidatus Acrobana (NL. fem. n. *Acrobana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-309*. The type species for the genus is *Candidatus* Acrobana almitastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Acrobana devecugo sp. nov.

Candidatus Acrobana devecugo (NL. fem. n. *devecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-309 sp003247835*. The type genome for the species is the GenBank assembly GCA_003247835.1. The GC content of the type genome is 64.44 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Acrobaria deparitrix sp. nov.

Candidatus Acrobaria deparitrix (NL. fem. n. *deparitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRNA01 sp011322365*. The type genome for the species is the GenBank assembly GCA_011322365.1. The GC content of the type genome is 40.64 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Acrobaria gen. nov.

Candidatus Acrobaria (NL. fem. n. *Acrobaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRNA01*. The type species for the genus is *Candidatus* Acrobaria deparitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002770795*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conoposaceae.

Description of *Candidatus* Acrobella abhinatio sp. nov.

Candidatus Acrobella abhinatio (NL. fem. n. *abhinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAHJWT01 sp903642255*. The type genome for the species is the GenBank assembly RS_GCF_903642255.1. The GC content of the type genome is 68.55 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Acrobella gen. nov.

Candidatus Acrobella (NL. fem. n. *Acrobella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAHJWT01*. The type species for the genus is *Candidatus* Acrobella abhinatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrobella intecilenta sp. nov.

Candidatus Acrobella intecilenta (NL. fem. n. *intecilenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAHJWT01 sp903643075*. The type genome for the species is the GenBank assembly RS_GCF_903643075.1. The GC content of the type genome is 69.58 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Acrobia xeramitura sp. nov.

Candidatus Acrobia xeramitura (NL. fem. n. *xeramitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA947 sp002293275*. The type genome for the species is the GenBank assembly GCA_002293275.1. The GC content of the type genome is 46.78 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Acrobia gen. nov.

Candidatus Acrobia (NL. fem. n. *Acrobia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA947*. The type species for the genus is *Candidatus* Acrobia xeramitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrobida malagibra sp. nov.

Candidatus Acrobida malagibra (NL. fem. n. *malagibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM05376 sp900769785*. The type genome for the species is the GenBank assembly RS_GCF_900769785.1. The GC content of the type genome is 39.32 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Acrobida gen. nov.

Candidatus Acrobida (NL. fem. n. *Acrobida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *HGM05376*. The type species for the genus is *Candidatus* Acrobida malagibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucosaceae.

Description of *Candidatus* Acrobosa utillessa sp. nov.

Candidatus Acrobosa utillessa (NL. fem. n. *utillessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTNO01 sp011358525*. The type genome for the species is the GenBank assembly GCA_011358525.1. The GC content of the type genome is 64.44 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Acrobosa gen. nov.

Candidatus Acrobosa (NL. fem. n. *Acrobosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTNO01*. The type species for the genus is *Candidatus* Acrobosa utillessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hariciaceae.

Description of *Candidatus* Acrobula enharimonas sp. nov.

Candidatus Acrobula enharimonas (NL. fem. n. *enharimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQW01 sp013203115*. The type genome for the species is the GenBank assembly GCA_013203115.1. The GC content of the type genome is 43.8 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Acrobula gen. nov.

Candidatus Acrobula (NL. fem. n. *Acrobula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQW01*. The type species for the genus is *Candidatus* Acrobula enharimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS56*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turiciaceae.

Description of *Candidatus* Acrocana exhorax sp. nov.

Candidatus Acrocana exhorax (NL. fem. n. *exhorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1388 sp002772705*. The type genome for the species is the GenBank assembly GCA_002772705.1. The GC content of the type genome is 43.7 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Acrocana gen. nov.

Candidatus Acrocana (NL. fem. n. *Acrocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1388*. The type species for the genus is *Candidatus* Acrocana exhorax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Acrocana vocamitio sp. nov.

Candidatus Acrocana vocamitio (NL. fem. n. *vocamitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1388 sp002305355*. The type genome for the species is the GenBank assembly GCA_002305355.1. The GC content of the type genome is 40.73 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Acrocella apsenigena sp. nov.

Candidatus Acrocella apsenigena (NL. fem. n. *apsenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED170 sp902604695*. The type genome for the species is the GenBank assembly GCA_902604695.1. The GC content of the type genome is 29.26 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Acrocella gen. nov.

Candidatus Acrocella (NL. fem. n. *Acrocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED170*. The type species for the genus is *Candidatus* Acrocella apsenigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrocella asbesifica sp. nov.

Candidatus Acrocella asbesifica (NL. fem. n. *asbesifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED170 sp002170875*. The type genome for the species is the GenBank assembly GCA_002170875.2. The GC content of the type genome is 28.17 % and the genome length is 0.45 Mbp.

Description of *Candidatus* Acrocia monumitrix sp. nov.

Candidatus Acrocia monumitrix (NL. fem. n. *monumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB22 sp001567515*. The type genome for the species is the GenBank assembly GCA_001567515.1. The GC content of the type genome is 44.47 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Acrocia gen. nov.

Candidatus Acrocia (NL. fem. n. *Acrocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB22*. The type species for the genus is *Candidatus* Acrocia monumitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-37-13b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifidaceae.

Description of *Candidatus* Acrocida vigeniforma sp. nov.

Candidatus Acrocida vigeniforma (NL. fem. n. *vigeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-50 sp013214845*. The type genome for the species is the GenBank assembly GCA_013214845.1. The GC content of the type genome is 28.38 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Acrocida gen. nov.

Candidatus Acrocida (NL. fem. n. *Acrocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-50*. The type species for the genus is *Candidatus* Acrocida vigeniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrocosa dehisitoga sp. nov.

Candidatus Acrocosa dehisitoga (NL. fem. n. *dehisitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2699335 sp002699335*. The type genome for the species is the GenBank assembly GCA_002699335.1. The GC content of the type genome is 46.95 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Acrocosa gen. nov.

Candidatus Acrocosa (NL. fem. n. *Acrocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2699335*. The type species for the genus is *Candidatus* Acrocosa dehisitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9662*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumulaceae.

Description of *Candidatus* Acrocula adlapatica sp. nov.

Candidatus Acrocula adlapatica (NL. fem. n. *adlapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J097 sp003694975*. The type genome for the species is the GenBank assembly GCA_003694975.1. The GC content of the type genome is 60.89 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Acrocula gen. nov.

Candidatus Acrocula (NL. fem. n. *Acrocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J097*. The type species for the genus is *Candidatus* Acrocula adlapatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Acrolana buceligena sp. nov.

Candidatus Acrolana buceligena (NL. fem. n. *buceligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYJ01 sp009780915*. The type genome for the species is the GenBank assembly GCA_009780915.1. The GC content of the type genome is 65.14 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Acrolana gen. nov.

Candidatus Acrolana (NL. fem. n. *Acrolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQYJ01*. The type species for the genus is *Candidatus* Acrolana buceligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrolana cohoritudo sp. nov.

Candidatus Acrolana cohoritudo (NL. fem. n. *cohoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYJ01 sp009782785*. The type genome for the species is the GenBank assembly GCA_009782785.1. The GC content of the type genome is 53.68 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Acrolana cohuribra sp. nov.

Candidatus Acrolana cohuribra (NL. fem. n. *cohuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYJ01 sp009778725*. The type genome for the species is the GenBank assembly GCA_009778725.1. The GC content of the type genome is 61.36 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Acrolana errabitica sp. nov.

Candidatus Acrolana errabitica (NL. fem. n. *errabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYJ01 sp009779115*. The type genome for the species is the GenBank assembly GCA_009779115.1. The GC content of the type genome is 60.82 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Acrolana inpenentia sp. nov.

Candidatus Acrolana inpenentia (NL. fem. n. *inpenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYJ01 sp009781325*. The type genome for the species is the

GenBank assembly GCA_009781325.1. The GC content of the type genome is 55.8 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Acrolana ludimax sp. nov.

Candidatus Acrolana ludimax (NL. fem. n. *ludimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYJ01 sp009782915*. The type genome for the species is the GenBank assembly GCA_009782915.1. The GC content of the type genome is 55.01 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Acrolaria errabitoga sp. nov.

Candidatus Acrolaria errabitoga (NL. fem. n. *errabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSRJ01 sp011331615*. The type genome for the species is the GenBank assembly GCA_011331615.1. The GC content of the type genome is 59.4 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Acrolaria gen. nov.

Candidatus Acrolaria (NL. fem. n. *Acrolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSRJ01*. The type species for the genus is *Candidatus* Acrolaria errabitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrolella expasatio sp. nov.

Candidatus Acrolella expasatio (NL. fem. n. *expasatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J055 sp003695795*. The type genome for the species is the GenBank assembly GCA_003695795.1. The GC content of the type genome is 50.96 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Acrolella gen. nov.

Candidatus Acrolella (NL. fem. n. *Acrolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J055*. The type species for the genus is *Candidatus* Acrolella expasatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrolida admutigena sp. nov.

Candidatus Acrolida admutigena (NL. fem. n. *admutigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3753 sp002372375*. The type genome for the species is the GenBank assembly GCA_002372375.1. The GC content of the type genome is 34.53 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Acrolida gen. nov.

Candidatus Acrolida (NL. fem. n. *Acrolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3753*. The type species for the genus is *Candidatus* Acrolida admutigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrolula adnilessa sp. nov.

Candidatus Acrolula adnilessa (NL. fem. n. *adnilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN40 sp002898275*. The type genome for the species is the GenBank assembly GCA_002898275.1. The GC content of the type genome is 68.58 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Acrolula gen. nov.

Candidatus Acrolula (NL. fem. n. *Acrolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN40*. The type species for the genus is *Candidatus* Acrolula adnilessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acropana scombivita sp. nov.

Candidatus Acropana scombivita (NL. fem. n. *scombivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4292 sp002395865*. The type genome for the species is the GenBank assembly GCA_002395865.1. The GC content of the type genome is 51.34 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Acropana gen. nov.

Candidatus Acropana (NL. fem. n. *Acropana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4292*. The type species for the genus is *Candidatus* Acropana scombivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acropana totidibula sp. nov.

Candidatus Acropana totidibula (NL. fem. n. *totidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4292 sp902790095*. The type genome for the species is the GenBank assembly GCA_902790095.1. The GC content of the type genome is 45.89 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Acroparia devecedo sp. nov.

Candidatus Acroparia devecedo (NL. fem. n. *devecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UWMA-0117 sp012963895*. The type genome for the species is the GenBank assembly GCA_012963895.1. The GC content of the type genome is 36.65 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Acroparia gen. nov.

Candidatus Acroparia (NL. fem. n. *Acroparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UWMA-0117*. The type species for the genus is *Candidatus* Acroparia devecedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acropia sicarugo sp. nov.

Candidatus Acropia sicarugo (NL. fem. n. *sicarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1753 sp002317595*. The type genome for the species is the GenBank assembly GCA_002317595.1. The GC content of the type genome is 45.67 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Acropia gen. nov.

Candidatus Acropia (NL. fem. n. *Acropia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1753*. The type species for the genus is *Candidatus* Acropia sicarugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acroposa catocilega sp. nov.

Candidatus Acroposa catocilega (NL. fem. n. *catocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM304 sp002868905*. The type genome for the species is the GenBank assembly GCA_002868905.1. The GC content of the type genome is 56.69 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Acroposa gen. nov.

Candidatus Acroposa (NL. fem. n. *Acroposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM304*. The type species for the genus is *Candidatus* Acroposa catocilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrotana inrepitrix sp. nov.

Candidatus Acrotana inrepitrix (NL. fem. n. *inrepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1088 sp003161835*. The type genome for the species is the GenBank assembly GCA_003161835.1. The GC content of the type genome is 65.93 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Acrotana gen. nov.

Candidatus Acrotana (NL. fem. n. *Acrotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1088*. The type species for the genus is *Candidatus* Acrotana inrepitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Acrotanaceae.

Description of *Candidatus* Acrotanaceae fam. nov.

Candidatus Acrotanaceae (NL. fem. n. *Acrotanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-1088.* The type genus for the taxon is *Candidatus* Acrotana .

According to the original version of GTDB R06-RS202, this family belongs to the order *Palsa-1104*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Effigidales.

Description of *Candidatus* Acrotella irregitas sp. nov.

Candidatus Acrotella irregitas (NL. fem. n. *irregitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ID1734 sp007489285*. The type genome for the species is the GenBank assembly RS_GCF_007489285.1. The GC content of the type genome is 65.29 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Acrotella gen. nov.

Candidatus Acrotella (NL. fem. n. *Acrotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ID1734*. The type species for the genus is *Candidatus* Acrotella irregitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrotia cosidicella sp. nov.

Candidatus Acrotia cosidicella (NL. fem. n. *cosidicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DB1 sp001914235*. The type genome for the species is the GenBank assembly GCA_001914235.1. The GC content of the type genome is 53.78 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "anode biofilm in microbial fuel cells".

Description of *Candidatus* Acrotia gen. nov.

Candidatus Acrotia (NL. fem. n. *Acrotia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DB1*. The type species for the genus is *Candidatus* Acrotia cosidicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrotida ciminicella sp. nov.

Candidatus Acrotida ciminicella (NL. fem. n. *ciminicella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXNM01 sp005777155*. The type genome for the species is the GenBank assembly GCA_005777155.1. The GC content of the type genome is 70.53 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Acrotida gen. nov.

Candidatus Acrotida (NL. fem. n. *Acrotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXNM01*. The type species for the genus is *Candidatus* Acrotida ciminicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubigariaceae.

Description of *Candidatus* Acrotosa armiditoga sp. nov.

Candidatus Acrotosa armiditoga (NL. fem. n. *armiditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCP01 sp013360215*. The type genome for the species is the GenBank assembly GCA_013360215.1. The GC content of the type genome is 44.79 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Acrotosa gen. nov.

Candidatus Acrotosa (NL. fem. n. *Acrotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCP01*. The type species for the genus is *Candidatus* Acrotosa armiditoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SB21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifiaceae.

Description of *Candidatus* Acrufana incoribula sp. nov.

Candidatus Acrufana incoribula (NL. fem. n. *incoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINEW01 sp903847915*. The type genome for the species is the GenBank assembly GCA_903847915.1. The GC content of the type genome is 40.2 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Acrufana gen. nov.

Candidatus Acrufana (NL. fem. n. *Acrufana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINEW01*. The type species for the genus is *Candidatus* Acrufana incoribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Acrufaria adrumilega sp. nov.

Candidatus Acrufaria adrumilega (NL. fem. n. *adrumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIAQ01 sp009697105*. The type genome for the species is the GenBank assembly GCA_009697105.1. The GC content of the type genome is 58.06 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Acrufaria gen. nov.

Candidatus Acrufaria (NL. fem. n. *Acrufaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIAQ01*. The type species for the genus is *Candidatus* Acrufaria adrumilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrufella intesitura sp. nov.

Candidatus Acrufella intesitura (NL. fem. n. *intesitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6129 sp002422465*. The type genome for the species is the GenBank assembly GCA_002422465.1. The GC content of the type genome is 44.98 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Acrufella gen. nov.

Candidatus Acrufella (NL. fem. n. *Acrufella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6129*. The type species for the genus is *Candidatus* Acrufella intesitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRI-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Latibellaceae.

Description of *Candidatus* Acrufia peracicula sp. nov.

Candidatus Acrufia peracicula (NL. fem. n. *peracicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN33 sp002923375*. The type genome for the species is the GenBank assembly GCA_002923375.1. The GC content of the type genome is 63.45 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Acrufia gen. nov.

Candidatus Acrufia (NL. fem. n. *Acrufia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN33*. The type species for the genus is *Candidatus* Acrufia peracicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Acrufida embamatio sp. nov.

Candidatus Acrufida embamatio (NL. fem. n. *embamatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUVF01 sp012841165*. The type genome for the species is the GenBank assembly GCA_012841165.1. The GC content of the type genome is 50.97 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Acrufida gen. nov.

Candidatus Acrufida (NL. fem. n. *Acrufida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUVF01*. The type species for the genus is *Candidatus* Acrufida embamatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrufosa alcalousia sp. nov.

Candidatus Acrufosa alcalousia (NL. fem. n. *alcalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R267 sp001768075*. The type genome for the species is the GenBank assembly GCA_001768075.1. The GC content of the type genome is 69.41 % and the genome length is 5.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Acrufosa gen. nov.

Candidatus Acrufosa (NL. fem. n. *Acrufosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *R267*. The type species for the genus is *Candidatus* Acrufosa alcalousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acrufosa infacitia sp. nov.

Candidatus Acrufosa infacitia (NL. fem. n. *infacitia* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R267 sp013340205*. The type genome for the species is the GenBank assembly RS_GCF_013340205.1. The GC content of the type genome is 74.49 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Acrufula tomacilenta sp. nov.

Candidatus Acrufula tomacilenta (NL. fem. n. *tomacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZXH01 sp014240275*. The type genome for the species is the GenBank assembly GCA_014240275.1. The GC content of the type genome is 35.46 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Acrufula gen. nov.

Candidatus Acrufula (NL. fem. n. *Acrufula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZXH01*. The type species for the genus is *Candidatus* Acrufula tomacilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2718715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Roruliaceae.

Description of *Candidatus* Actararia adpagedo sp. nov.

Candidatus Actararia adpagedo (NL. fem. n. *adpagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILUF01 sp903837365*. The type genome for the species is the GenBank assembly GCA_903837365.1. The GC content of the type genome is 31.31 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Actararia gen. nov.

Candidatus Actararia (NL. fem. n. *Actararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILUF01*. The type species for the genus is *Candidatus* Actararia adpagedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1997*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decapiaceae.

Description of *Candidatus* Actararia annifousia sp. nov.

Candidatus Actararia annifousia (NL. fem. n. *annifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILUF01 sp014190355*. The type genome for the species is the GenBank assembly GCA_014190355.1. The GC content of the type genome is 29.87 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Actarella perabilega sp. nov.

Candidatus Actarella perabilega (NL. fem. n. *perabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFH-S0501 sp011059135*. The type genome for the species is the GenBank assembly RS_GCF_011059135.1. The GC content of the type genome is 55.77 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Actarella gen. nov.

Candidatus Actarella (NL. fem. n. *Actarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CFH-S0501*. The type species for the genus is *Candidatus* Actarella perabilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Actarella peradilega sp. nov.

Candidatus Actarella peradilega (NL. fem. n. *peradilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFH-S0501 sp004521915*. The type genome for the species is the GenBank assembly RS_GCF_004521915.1. The GC content of the type genome is 49.72 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Actaria desulax sp. nov.

Candidatus Actaria desulax (NL. fem. n. *desulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6161 sp002422315*. The type genome for the species is the GenBank assembly GCA_002422315.1. The GC content of the type genome is 34.84 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Actaria gen. nov.

Candidatus Actaria (NL. fem. n. *Actaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6161*. The type species for the genus is *Candidatus* Actaria desulax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadidaceae.

Description of *Candidatus* Actarida diminax sp. nov.

Candidatus Actarida diminax (NL. fem. n. *diminax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-0-10-47-8-A sp002793885*. The type genome for the species is the GenBank assembly GCA_002793885.1. The GC content of the type genome is 46.73 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Actarida gen. nov.

Candidatus Actarida (NL. fem. n. *Actarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *21-14-0-10-47-8-A*. The type species for the genus is *Candidatus* Actarida diminax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10212*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categiaceae.

Description of *Candidatus* Actarosa remedicula sp. nov.

Candidatus Actarosa remedicula (NL. fem. n. *remedicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FW021-bin43 sp004299665*. The type genome for the species is the GenBank assembly GCA_004299665.1. The GC content of the type genome is 72.81 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Actarosa gen. nov.

Candidatus Actarosa (NL. fem. n. *Actarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FW021-bin43*. The type species for the genus is *Candidatus* Actarosa remedicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Actarula televimonia sp. nov.

Candidatus Actarula televimonia (NL. fem. n. *televimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-35-14 sp002796205*. The type genome for the species is the GenBank assembly GCA_002796205.1. The GC content of the type genome is 34.46 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Actarula gen. nov.

Candidatus Actarula (NL. fem. n. *Actarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-35-14*. The type species for the genus is *Candidatus* Actarula

televimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYB1-36-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defulosaceae.

Description of *Candidatus* Actibacterium ontolago sp. nov.

Candidatus Actibacterium ontolago (NL. fem. n. *ontolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actibacterium sp000744955*. The type genome for the species is the GenBank assembly RS_GCF_000744955.1. The GC content of the type genome is 62.74 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Actibacterium decamitrix sp. nov.

Candidatus Actibacterium decamitrix (NL. fem. n. *decamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actibacterium_A sp002706605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002298325.1. The GC content of the type genome is 61.23 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Actinokineospora almitousia sp. nov.

Candidatus Actinokineospora almitousia (NL. fem. n. *almitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinokineospora sp009745975*. The type genome for the species is the GenBank assembly RS_GCF_009745975.1. The GC content of the type genome is 72.59 % and the genome length is 6.44 Mbp.

Description of *Candidatus* Actinokineospora baropitio sp. nov.

Candidatus Actinokineospora baropitio (NL. fem. n. *baropitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinokineospora sp014323725*. The type genome for the species is the GenBank assembly RS_GCF_014323725.1. The GC content of the type genome is 69.63 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Actinokineospora venabitudo sp. nov.

Candidatus Actinokineospora venabitudo (NL. fem. n. *venabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinokineospora sp900070365*. The type genome for the species is the GenBank assembly RS_GCF_900070365.1. The GC content of the type genome is 69.59 % and the genome length is 7.41 Mbp.

Description of *Candidatus* Actinomadura ininniforma sp. nov.

Candidatus Actinomadura ininniforma (NL. fem. n. *ininniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomadura_C sp014323665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014323665.1. The GC content of the type genome is 69.71 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Actinomarina admorigena sp. nov.

Candidatus Actinomarina admorigena (NL. fem. n. *admorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902521955*. The type genome for the species is the GenBank assembly GCA_902521955.1. The GC content of the type genome is 32.61 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Actinomarina afranatica sp. nov.

Candidatus Actinomarina afranatica (NL. fem. n. *afranatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902615855*. The type genome for the species is the

GenBank assembly GCA_902615855.1. The GC content of the type genome is 32.29 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Actinomarina alceditudo sp. nov.

Candidatus Actinomarina alceditudo (NL. fem. n. *alceditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp002308095*. The type genome for the species is the GenBank assembly GCA_002308095.1. The GC content of the type genome is 34.39 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Actinomarina ambusax sp. nov.

Candidatus Actinomarina ambusax (NL. fem. n. *ambusax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902628045*. The type genome for the species is the GenBank assembly GCA_902628045.1. The GC content of the type genome is 32.51 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Actinomarina bacifimonas sp. nov.

Candidatus Actinomarina bacifimonas (NL. fem. n. *bacifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902626065*. The type genome for the species is the GenBank assembly GCA_902630965.1. The GC content of the type genome is 32.27 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Actinomarina bicinicella sp. nov.

Candidatus Actinomarina bicinicella (NL. fem. n. *bicinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902619825*. The type genome for the species is the GenBank assembly GCA_902619825.1. The GC content of the type genome is 32.35 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Actinomarina casabatica sp. nov.

Candidatus Actinomarina casabatica (NL. fem. n. *casabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp003282445*. The type genome for the species is the GenBank assembly GCA_902560935.1. The GC content of the type genome is 31.83 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Actinomarina catabigena sp. nov.

Candidatus Actinomarina catabigena (NL. fem. n. *catabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902533795*. The type genome for the species is the GenBank assembly GCA_902536255.1. The GC content of the type genome is 32.25 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Actinomarina catabilenta sp. nov.

Candidatus Actinomarina catabilenta (NL. fem. n. *catabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp000384495*. The type genome for the species is the GenBank assembly GCA_902539685.1. The GC content of the type genome is 32.27 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Actinomarina cenacicella sp. nov.

Candidatus Actinomarina cenacicella (NL. fem. n. *cenacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp002683085*. The type genome for the species is the GenBank assembly GCA_902509835.1. The GC content of the type genome is 33.87 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Actinomarina cibicitura sp. nov.

Candidatus Actinomarina cibicitura (NL. fem. n. *cibicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902510995*. The type genome for the species is the GenBank assembly GCA_902510995.1. The GC content of the type genome is 31.75 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Actinomarina cicaritia sp. nov.

Candidatus Actinomarina cicaritia (NL. fem. n. *cicaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902519215*. The type genome for the species is the GenBank assembly GCA_902519215.1. The GC content of the type genome is 32.56 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Actinomarina colubitoga sp. nov.

Candidatus Actinomarina colubitoga (NL. fem. n. *colubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902596545*. The type genome for the species is the GenBank assembly GCA_902596545.1. The GC content of the type genome is 32.49 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Actinomarina conamitoga sp. nov.

Candidatus Actinomarina conamitoga (NL. fem. n. *conamitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902555055*. The type genome for the species is the GenBank assembly GCA_902555055.1. The GC content of the type genome is 32.61 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Actinomarina cunabugo sp. nov.

Candidatus Actinomarina cunabugo (NL. fem. n. *cunabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902555985*. The type genome for the species is the GenBank assembly GCA_902595365.1. The GC content of the type genome is 32.32 %

and the genome length is 0.92 Mbp.

Description of *Candidatus* Actinomarina curotastra sp. nov.

Candidatus Actinomarina curotastra (NL. fem. n. *curotastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902593795*. The type genome for the species is the GenBank assembly GCA_902595965.1. The GC content of the type genome is 32.13 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Actinomarina detosibra sp. nov.

Candidatus Actinomarina detosibra (NL. fem. n. *detosibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp003213165*. The type genome for the species is the GenBank assembly GCA_003212995.1. The GC content of the type genome is 32.92 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Actinomarina devecivita sp. nov.

Candidatus Actinomarina devecivita (NL. fem. n. *devecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp014239265*. The type genome for the species is the GenBank assembly GCA_014239265.1. The GC content of the type genome is 34.32 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Actinomarina divorimonia sp. nov.

Candidatus Actinomarina divorimonia (NL. fem. n. *divorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902576605*. The type genome for the species is the GenBank assembly GCA_902576605.1. The GC content of the type genome is 33.4 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Actinomarina domiciforma sp. nov.

Candidatus Actinomarina domiciforma (NL. fem. n. *domiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp003281085*. The type genome for the species is the GenBank assembly GCA_902535815.1. The GC content of the type genome is 32.63 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Actinomarina duciledo sp. nov.

Candidatus Actinomarina duciledo (NL. fem. n. *duciledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp002169845*. The type genome for the species is the GenBank assembly GCA_002169845.1. The GC content of the type genome is 34.3 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Actinomarina fecunousia sp. nov.

Candidatus Actinomarina fecunousia (NL. fem. n. *fecunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902519845*. The type genome for the species is the GenBank assembly GCA_902519845.1. The GC content of the type genome is 32.09 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Actinomarina femelibula sp. nov.

Candidatus Actinomarina femelibula (NL. fem. n. *femelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902625455*. The type genome for the species is the GenBank assembly GCA_902629095.1. The GC content of the type genome is 32.31 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Actinomarina fetutitoga sp. nov.

Candidatus Actinomarina fetutitoga (NL. fem. n. *fetutitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp002724835*. The type genome for the species is the GenBank assembly GCA_902564375.1. The GC content of the type genome is 32.11 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Actinomarina homicitas sp. nov.

Candidatus Actinomarina homicitas (NL. fem. n. *homicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902609285*. The type genome for the species is the GenBank assembly GCA_902609285.1. The GC content of the type genome is 32.16 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Actinomarina indecax sp. nov.

Candidatus Actinomarina indecax (NL. fem. n. *indecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902627635*. The type genome for the species is the GenBank assembly GCA_902627635.1. The GC content of the type genome is 32.91 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Actinomarina ludimastra sp. nov.

Candidatus Actinomarina ludimastra (NL. fem. n. *ludimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902604835*. The type genome for the species is the GenBank assembly GCA_902604835.1. The GC content of the type genome is 32.08 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Actinomarina luticentia sp. nov.

Candidatus Actinomarina luticentia (NL. fem. n. *luticentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902599555*. The type genome for the species is the GenBank assembly GCA_902599555.1. The GC content of the type genome is 32.87 %

and the genome length is 1.02 Mbp.

Description of *Candidatus* Actinomarina malogisca sp. nov.

Candidatus Actinomarina malogisca (NL. fem. n. *malogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902571385*. The type genome for the species is the GenBank assembly GCA_902551065.1. The GC content of the type genome is 32.52 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Actinomarina manufatio sp. nov.

Candidatus Actinomarina manufatio (NL. fem. n. *manufatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902565645*. The type genome for the species is the GenBank assembly GCA_902565645.1. The GC content of the type genome is 32.04 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Actinomarina monodetta sp. nov.

Candidatus Actinomarina monodetta (NL. fem. n. *monodetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp003213625*. The type genome for the species is the GenBank assembly GCA_003213435.1. The GC content of the type genome is 32.35 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Actinomarina nubecicula sp. nov.

Candidatus Actinomarina nubecicula (NL. fem. n. *nubecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902593435*. The type genome for the species is the GenBank assembly GCA_902593435.1. The GC content of the type genome is 32.24 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Actinomarina pacificula sp. nov.

Candidatus Actinomarina pacificula (NL. fem. n. *pacificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902587025*. The type genome for the species is the GenBank assembly GCA_902587025.1. The GC content of the type genome is 32.13 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Actinomarina papavugo sp. nov.

Candidatus Actinomarina papavugo (NL. fem. n. *papavugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902610815*. The type genome for the species is the GenBank assembly GCA_902610815.1. The GC content of the type genome is 32.59 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Actinomarina procressa sp. nov.

Candidatus Actinomarina procressa (NL. fem. n. *procressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp004214055*. The type genome for the species is the GenBank assembly GCA_004214055.1. The GC content of the type genome is 31.82 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Actinomarina semodedo sp. nov.

Candidatus Actinomarina semodedo (NL. fem. n. *semodedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp002169115*. The type genome for the species is the GenBank assembly GCA_002169115.2. The GC content of the type genome is 32.86 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Actinomarina solacastra sp. nov.

Candidatus Actinomarina solacastra (NL. fem. n. *solacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902526825*. The type genome for the species is the GenBank assembly GCA_902526825.1. The GC content of the type genome is 32.01 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Actinomarina solipicella sp. nov.

Candidatus Actinomarina solipicella (NL. fem. n. *solipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp004213405*. The type genome for the species is the GenBank assembly GCA_004213405.1. The GC content of the type genome is 33.14 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Actinomarina subodicula sp. nov.

Candidatus Actinomarina subodicula (NL. fem. n. *subodicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902593475*. The type genome for the species is the GenBank assembly GCA_902593475.1. The GC content of the type genome is 32.84 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Actinomarina tegumibula sp. nov.

Candidatus Actinomarina tegumibula (NL. fem. n. *tegumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp014384285*. The type genome for the species is the GenBank assembly GCA_014384285.1. The GC content of the type genome is 34.16 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Actinomarina televatio sp. nov.

Candidatus Actinomarina televatio (NL. fem. n. *televatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902595195*. The type genome for the species is the GenBank assembly GCA_902600955.1. The GC content of the type genome is 32.42 %

and the genome length is 0.87 Mbp.

Description of *Candidatus* Actinomarina turililenta sp. nov.

Candidatus Actinomarina turililenta (NL. fem. n. *turililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902622665*. The type genome for the species is the GenBank assembly GCA_902622665.1. The GC content of the type genome is 32.46 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Actinomarina venucicula sp. nov.

Candidatus Actinomarina venucicula (NL. fem. n. *venucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomarina sp902580215*. The type genome for the species is the GenBank assembly GCA_902580215.1. The GC content of the type genome is 32.87 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Actinomyces actariforma sp. nov.

Candidatus Actinomyces actariforma (NL. fem. n. *actariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp002154335*. The type genome for the species is the GenBank assembly RS_GCF_002154335.2. The GC content of the type genome is 68.05 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Actinomyces debucisca sp. nov.

Candidatus Actinomyces debucisca (NL. fem. n. *debucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp013177295*. The type genome for the species is the GenBank assembly RS_GCF_009829645.1. The GC content of the type genome is 71.7 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Actinomyces desacifica sp. nov.

Candidatus Actinomyces desacifica (NL. fem. n. *desacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp011751985*. The type genome for the species is the GenBank assembly RS_GCF_011751985.1. The GC content of the type genome is 70.11 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Actinomyces dicanisca sp. nov.

Candidatus Actinomyces dicanisca (NL. fem. n. *dicanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp900323545*. The type genome for the species is the GenBank assembly RS_GCF_902363285.1. The GC content of the type genome is 68.4 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Actinomyces dilogugo sp. nov.

Candidatus Actinomyces dilogugo (NL. fem. n. *dilogugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp004010955*. The type genome for the species is the GenBank assembly RS_GCF_006333825.1. The GC content of the type genome is 69.39 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Actinomyces exentitica sp. nov.

Candidatus Actinomyces exentitica (NL. fem. n. *exentitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp011752065*. The type genome for the species is the GenBank assembly RS_GCF_011752065.1. The GC content of the type genome is 69.23 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Actinomyces exsuficella sp. nov.

Candidatus Actinomyces exsuficella (NL. fem. n. *exsuficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp001278845*. The type genome for the species is the GenBank assembly RS_GCF_001278845.1. The GC content of the type genome is 71.94 % and the genome length is 3.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "curette".

Description of *Candidatus* Actinomyces feficitudo sp. nov.

Candidatus Actinomyces feficitudo (NL. fem. n. *feficitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp009930875*. The type genome for the species is the GenBank assembly RS_GCF_009930875.1. The GC content of the type genome is 68.89 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Actinomyces futaticella sp. nov.

Candidatus Actinomyces futaticella (NL. fem. n. *futaticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp002999235*. The type genome for the species is the GenBank assembly RS_GCF_002999235.1. The GC content of the type genome is 71.63 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Actinomyces innabitudo sp. nov.

Candidatus Actinomyces innabitudo (NL. fem. n. *innabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp000195595*. The type genome for the species is the GenBank assembly RS_GCF_000195595.1. The GC content of the type genome is 67.75 % and the genome length is 3.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral".

Description of *Candidatus* Actinomyces nicomitas sp. nov.

Candidatus Actinomyces nicomitas (NL. fem. n. *nicomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Actinomyces sp003606385*. The type genome for the species is the GenBank assembly RS_GCF_003606385.1. The GC content of the type genome is 69.02 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Actinomyces optumibula sp. nov.

Candidatus Actinomyces optumibula (NL. fem. n. *optumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp000220835*. The type genome for the species is the GenBank assembly RS_GCF_000220835.1. The GC content of the type genome is 69.68 % and the genome length is 2.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity".

Description of *Candidatus* Actinomyces vanidatica sp. nov.

Candidatus Actinomyces vanidatica (NL. fem. n. *vanidatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp013185035*. The type genome for the species is the GenBank assembly RS_GCF_013184985.1. The GC content of the type genome is 68.67 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Actinomyces vepalitoga sp. nov.

Candidatus Actinomyces vepalitoga (NL. fem. n. *vepalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces sp004798665*. The type genome for the species is the GenBank assembly RS_GCF_008033505.1. The GC content of the type genome is 69.27 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Actinomyces cnestitura sp. nov.

Candidatus Actinomyces cnestitura (NL. fem. n. *cnestitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces_I sp009696615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_009696615.1. The GC content of the type genome is 53.53 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Actinomyces vagabatica sp. nov.

Candidatus Actinomyces vagabatica (NL. fem. n. *vagabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomyces_I sp014069575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014525425.1. The GC content of the type genome is 59.14 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Actinomycetospora cnestivita sp. nov.

Candidatus Actinomycetospora cnestivita (NL. fem. n. *cnestivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomycetospora sp902805495*. The type genome for the species is the GenBank assembly GCA_902805495.1. The GC content of the type genome is 74.62 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Actinomycetospora emortentia sp. nov.

Candidatus Actinomycetospora emortentia (NL. fem. n. *emortentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinomycetospora sp012933465*. The type genome for the species is the GenBank assembly RS_GCF_012933465.1. The GC content of the type genome is 74.55 % and the genome length is 6.52 Mbp.

Description of *Candidatus* Actinophytocola adverifica sp. nov.

Candidatus Actinophytocola adverifica (NL. fem. n. *adverifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinophytocola sp009379765*. The type genome for the species is the GenBank assembly GCA_009379765.1. The GC content of the type genome is 70.94 % and the genome length is 8.36 Mbp.

Description of *Candidatus* Actinoplanes anaplitrix sp. nov.

Candidatus Actinoplanes anaplitrix (NL. fem. n. *anaplitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinoplanes sp003999975*. The type genome for the species is the GenBank assembly RS_GCF_003999975.1. The GC content of the type genome is 70.01 % and the genome length is 10.12 Mbp.

Description of *Candidatus* Actinoplanes dapifimonas sp. nov.

Candidatus Actinoplanes dapifimonas (NL. fem. n. *dapifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinoplanes sp000389965*. The type genome for the species is the GenBank assembly RS_GCF_000389965.1. The GC content of the type genome is 71.31 % and the genome length is 9.23 Mbp.

Description of *Candidatus* Actinoplanes expaniforma sp. nov.

Candidatus Actinoplanes expaniforma (NL. fem. n. *expaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinoplanes sp012933445*. The type genome for the species is the GenBank assembly RS_GCF_012933445.1. The GC content of the type genome is 69.55 % and the genome length is 9.66 Mbp.

Description of *Candidatus* Actinoplanes ficedibula sp. nov.

Candidatus Actinoplanes ficedibula (NL. fem. n. *ficedibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinoplanes sp900119315*. The type genome for the species is the GenBank assembly RS_GCF_900119315.1. The GC content of the type genome is 71.32 % and the genome length is 9.24 Mbp.

Description of *Candidatus* Actinoplanes lavacitura sp. nov.

Candidatus Actinoplanes lavacitura (NL. fem. n. *lavacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinoplanes sp004001265*. The type genome for the species is the GenBank assembly RS_GCF_004001265.1. The GC content of the type genome is 70.34 % and the genome length is 9.29 Mbp.

Description of *Candidatus* Actinoplanes smegmilega sp. nov.

Candidatus Actinoplanes smegmilega (NL. fem. n. *smegmilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinoplanes sp001553785*. The type genome for the species is the GenBank assembly RS_GCF_001553785.1. The GC content of the type genome is 69.06 % and the genome length is 7.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sterile plastic container".

Description of *Candidatus* Actinopolyspora desomugo sp. nov.

Candidatus Actinopolyspora desomugo (NL. fem. n. *desomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinopolyspora sp006716775*. The type genome for the species is the GenBank assembly RS_GCF_006716775.1. The GC content of the type genome is 68.91 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Actinosynnema expisitia sp. nov.

Candidatus Actinosynnema expisitia (NL. fem. n. *expisitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinosynnema sp001984175*. The type genome for the species is the GenBank assembly RS_GCF_001984175.1. The GC content of the type genome is 70.14 % and the genome length is 10.3 Mbp.

Description of *Candidatus* Actinosynnema noninitrix sp. nov.

Candidatus Actinosynnema noninitrix (NL. fem. n. *noninitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinosynnema sp000716595*. The type genome for the species is the GenBank assembly RS_GCF_000716595.1. The GC content of the type genome is 71.1 % and the genome length is 8.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "evergreen rhizosphere soil".

Description of *Candidatus* Actinosynnema umbilicula sp. nov.

Candidatus Actinosynnema umbilicula (NL. fem. n. *umbilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinosynnema sp001280085*. The type genome for the species is the GenBank assembly RS_GCF_001280085.1. The GC content of the type genome is 71.37 % and the genome length is 10.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "wheat field soil".

Description of *Candidatus* Actinotalea arillicula sp. nov.

Candidatus Actinotalea arillicula (NL. fem. n. *arillicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinotalea sp000526515*. The type genome for the species is the GenBank assembly RS_GCF_000526515.1. The GC content of the type genome is 71.73 % and the genome length is 4.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Actinotalea cilibugo sp. nov.

Candidatus Actinotalea cilibugo (NL. fem. n. *cilibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinotalea sp009996735*. The type genome for the species is the GenBank assembly RS_GCF_009996735.1. The GC content of the type genome is 73.46 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Actinotalea decunivita sp. nov.

Candidatus Actinotalea decunivita (NL. fem. n. *decunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinotalea sp014042015*. The type genome for the species is the GenBank assembly RS_GCF_014042015.1. The GC content of the type genome is 74.49 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Actinotalea epicredo sp. nov.

Candidatus Actinotalea epicredo (NL. fem. n. *epicredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinotalea sp014360395*. The type genome for the species is the GenBank assembly GCA_014360395.1. The GC content of the type genome is 74.84 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Actinotalea intenentia sp. nov.

Candidatus Actinotalea intenentia (NL. fem. n. *intenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinotalea sp012514545*. The type genome for the species is the GenBank assembly GCA_012514545.1. The GC content of the type genome is 75.92 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Actinotalea mahelax sp. nov.

Candidatus Actinotalea mahelax (NL. fem. n. *mahelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Actinotalea sp008364845*. The type genome for the species is the GenBank assembly RS_GCF_008364845.1. The GC content of the type genome is 73.45 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Actutella acrocifica sp. nov.

Candidatus Actutella acrocifica (NL. fem. n. *acrocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1739 sp002315385*. The type genome for the species is the GenBank assembly GCA_002315385.1. The GC content of the type genome is 41.87 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Actutella gen. nov.

Candidatus Actutella (NL. fem. n. *Actutella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1739*. The type species for the genus is *Candidatus* Actutella acrocifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Actutida innulousia sp. nov.

Candidatus Actutida innulousia (NL. fem. n. *innulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14130 sp902796025*. The type genome for the species is the GenBank assembly GCA_902796025.1. The GC content of the type genome is 58.28 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Actutida gen. nov.

Candidatus Actutida (NL. fem. n. *Actutida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14130*. The type species for the genus is *Candidatus* Actutida innulousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Acustana holisitudo sp. nov.

Candidatus Acustana holisitudo (NL. fem. n. *holisitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOTC01 sp903861205*. The type genome for the species is the GenBank assembly GCA_903861205.1. The GC content of the type genome is 43.08 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Acustana gen. nov.

Candidatus Acustana (NL. fem. n. *Acustana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOTC01*. The type species for the genus is *Candidatus* Acustana holisitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acustaria illapatio sp. nov.

Candidatus Acustaria illapatio (NL. fem. n. *illapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4787 sp002402995*. The type genome for the species is the GenBank assembly GCA_002402995.1. The GC content of the type genome is 38.08 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Acustaria gen. nov.

Candidatus Acustaria (NL. fem. n. *Acustaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4787*. The type species for the genus is *Candidatus* Acustaria illapatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4787*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerifanaceae.

Description of *Candidatus* Acustella tiguribula sp. nov.

Candidatus Acustella tiguribula (NL. fem. n. *tiguribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHG01 sp012735455*. The type genome for the species is the GenBank assembly GCA_012735455.1. The GC content of the type genome is 54.01 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Acustella gen. nov.

Candidatus Acustella (NL. fem. n. *Acustella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHG01*. The type species for the genus is *Candidatus* Acustella tiguribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vaciliaceae.

Description of *Candidatus* Acustida octipedo sp. nov.

Candidatus Acustida octipedo (NL. fem. n. *octipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQTQ01 sp009786175*. The type genome for the species is the GenBank assembly GCA_009786175.1. The GC content of the type genome is 45.15 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Acustida gen. nov.

Candidatus Acustida (NL. fem. n. *Acustida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQTQ01*. The type species for the genus is *Candidatus* Acustida octipedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Acustosa effulessa sp. nov.

Candidatus Acustosa effulessa (NL. fem. n. *effulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2699585 sp002699585*. The type genome for the species is the GenBank assembly GCA_002699585.1. The GC content of the type genome is 52.95 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Acustosa gen. nov.

Candidatus Acustosa (NL. fem. n. *Acustosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2699585*. The type species for the genus is *Candidatus* Acustosa effulessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Acustula vilitisca sp. nov.

Candidatus Acustula vilitisca (NL. fem. n. *vilitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6079 sp002428705*. The type genome for the species is the GenBank assembly GCA_002428705.1. The GC content of the type genome is 67.33 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Acustula gen. nov.

Candidatus Acustula (NL. fem. n. *Acustula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6079*. The type species for the genus is *Candidatus* Acustula vilitisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Acutalibacter buxanitrix sp. nov.

Candidatus Acutalibacter buxanitrix (NL. fem. n. *buxanitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp900759575*. The type genome for the species is the GenBank assembly RS_GCF_900759575.1. The GC content of the type genome is 53.12 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Acutalibacter catobedo sp. nov.

Candidatus Acutalibacter catobedo (NL. fem. n. *catobedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp009936055*. The type genome for the species is the GenBank assembly RS_GCF_009917445.1. The GC content of the type genome is 54.9 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Acutalibacter conifitio sp. nov.

Candidatus Acutalibacter conifitio (NL. fem. n. *conifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp900543555*. The type genome for the species is the GenBank assembly RS_GCF_900771745.1. The GC content of the type genome is 59.91 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Acutalibacter diluvicula sp. nov.

Candidatus Acutalibacter diluvicula (NL. fem. n. *diluvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp000435395*. The type genome for the species is the GenBank assembly GCA_000435395.1. The GC content of the type genome is 60.5 % and the genome length is 2.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Acutalibacter irregimonas sp. nov.

Candidatus Acutalibacter irregimonas (NL. fem. n. *irregimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp900543305*. The type genome for the species is the GenBank assembly GCA_900543305.1. The GC content of the type genome is 53.38 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Acutalibacter maligivita sp. nov.

Candidatus Acutalibacter maligivita (NL. fem. n. *maligivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp009917525*. The type genome for the species is the GenBank assembly RS_GCF_009917525.1. The GC content of the type genome is 54.21 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Acutalibacter relecicula sp. nov.

Candidatus Acutalibacter relecicula (NL. fem. n. *relecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp003612555*. The type genome for the species is the GenBank assembly RS_GCF_003612555.1. The GC content of the type genome is 55.44 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Acutalibacter solacitas sp. nov.

Candidatus Acutalibacter solacitas (NL. fem. n. *solacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp000432995*. The type genome for the species is the GenBank assembly GCA_900549515.1. The GC content of the type genome is 54.28 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Acutalibacter solifibula sp. nov.

Candidatus Acutalibacter solifibula (NL. fem. n. *solifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp900548545*. The type genome for the species is the GenBank assembly GCA_900548545.1. The GC content of the type genome is 57.18 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Acutalibacter tibicitrix sp. nov.

Candidatus Acutalibacter tibicitrix (NL. fem. n. *tibicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp009936035*. The type genome for the species is the GenBank assembly RS_GCF_009911675.1. The GC content of the type genome is 53.69 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Acutalibacter volubilenta sp. nov.

Candidatus Acutalibacter volubilenta (NL. fem. n. *volubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Acutalibacter sp900755895*. The type genome for the species is the GenBank assembly RS_GCF_900755895.1. The GC content of the type genome is 54.4 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Adaggana immemigena sp. nov.

Candidatus Adaggana immemigena (NL. fem. n. *immemigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LMUX01 sp009765705*. The type genome for the species is the GenBank assembly RS_GCF_009765705.1. The GC content of the type genome is 59.63 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Adaggana gen. nov.

Candidatus Adaggana (NL. fem. n. *Adaggana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LMUX01*. The type species for the genus is *Candidatus* Adaggana immemigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adaggaria desepimonas sp. nov.

Candidatus Adaggaria desepimonas (NL. fem. n. *desepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4457 sp902557415*. The type genome for the species is the GenBank assembly GCA_902557415.1. The GC content of the type genome is 43.64 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Adaggaria gen. nov.

Candidatus Adaggaria (NL. fem. n. *Adaggaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4457*. The type species for the genus is *Candidatus* Adaggaria desepimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077536*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delebidaceae.

Description of *Candidatus* Adaggaria impinatica sp. nov.

Candidatus Adaggaria impinatica (NL. fem. n. *impinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4457 sp002390205*. The type genome for the species is the GenBank assembly GCA_002390205.1. The GC content of the type genome is 43.68 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Adaggella tranvicula sp. nov.

Candidatus Adaggella tranvicula (NL. fem. n. *tranvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUQA01 sp012032855*. The type genome for the species is the GenBank assembly GCA_012032855.1. The GC content of the type genome is 53.72 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Adaggella gen. nov.

Candidatus Adaggella (NL. fem. n. *Adaggella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUQA01*. The type species for the genus is *Candidatus* Adaggella tranvicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adaggia argitibra sp. nov.

Candidatus Adaggia argitibra (NL. fem. n. *argitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLWZ01 sp012103315*. The type genome for the species is the GenBank assembly GCA_012103315.1. The GC content of the type genome is 51.98 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Adaggia gen. nov.

Candidatus Adaggia (NL. fem. n. *Adaggia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLWZ01*. The type species for the genus is *Candidatus* Adaggia argitibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2964*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibidaceae.

Description of *Candidatus* Adaggida entomitrix sp. nov.

Candidatus Adaggida entomitrix (NL. fem. n. *entomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHBS01 sp003243885*. The type genome for the species is the GenBank assembly GCA_003243885.1. The GC content of the type genome is 68.25 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Adaggida gen. nov.

Candidatus Adaggida (NL. fem. n. *Adaggida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHBS01*. The type species for the genus is *Candidatus* Adaggida entomitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adaggosa alticisca sp. nov.

Candidatus Adaggosa alticisca (NL. fem. n. *alticisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADIV01 sp011330685*. The type genome for the species is the GenBank assembly GCA_011330685.1. The GC content of the type genome is 50.9 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Adaggosa gen. nov.

Candidatus Adaggosa (NL. fem. n. *Adaggosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADIV01*. The type species for the genus is *Candidatus* Adaggosa alticisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adaggosa peropimonia sp. nov.

Candidatus Adaggosa peropimonia (NL. fem. n. *peropimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADIV01 sp013151175*. The type genome for the species is the GenBank assembly GCA_013151175.1. The GC content of the type genome is 49.82 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Adaggula acrotiforma sp. nov.

Candidatus Adaggula acrotiforma (NL. fem. n. *acrotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWIP01 sp003560355*. The type genome for the species is the GenBank assembly GCA_003560355.1. The GC content of the type genome is 32.69 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Adaggula gen. nov.

Candidatus Adaggula (NL. fem. n. *Adaggula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWIP01*. The type species for the genus is *Candidatus* Adaggula acrotiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family

T1SED10-24. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conibiaceae.

Description of *Candidatus* Adaggula domicilenta sp. nov.

Candidatus Adaggula domicilenta (NL. fem. n. *domicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWIP01 sp007130415*. The type genome for the species is the GenBank assembly GCA_007130415.1. The GC content of the type genome is 33.52 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Adaggula giganitoga sp. nov.

Candidatus Adaggula giganitoga (NL. fem. n. *giganitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWIP01 sp007136035*. The type genome for the species is the GenBank assembly GCA_007136035.1. The GC content of the type genome is 33.26 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Adalgella adsenitio sp. nov.

Candidatus Adalgella adsenitio (NL. fem. n. *adsenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VULY01 sp009696485*. The type genome for the species is the GenBank assembly RS_GCF_009696485.1. The GC content of the type genome is 47.66 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Adalgella gen. nov.

Candidatus Adalgella (NL. fem. n. *Adalgella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VULY01*. The type species for the genus is *Candidatus* Adalgella adsenitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adalgia infacatio sp. nov.

Candidatus Adalgia infacatio (NL. fem. n. *infacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDAL01 sp013695465*. The type genome for the species is the GenBank assembly GCA_013695465.1. The GC content of the type genome is 64.67 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Adalgia gen. nov.

Candidatus Adalgia (NL. fem. n. *Adalgia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDAL01*. The type species for the genus is *Candidatus* Adalgia infacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHSQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recumanaceae.

Description of *Candidatus* Adambella exherilenta sp. nov.

Candidatus Adambella exherilenta (NL. fem. n. *exherilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6144 sp002435705*. The type genome for the species is the GenBank assembly GCA_002435705.1. The GC content of the type genome is 45.03 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Adambella gen. nov.

Candidatus Adambella (NL. fem. n. *Adambella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6144*. The type species for the genus is *Candidatus* Adambella exherilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adambia artufousia sp. nov.

Candidatus Adambia artufousia (NL. fem. n. *artufousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1Sed10-187 sp003551485*. The type genome for the species is the GenBank assembly GCA_003551485.1. The GC content of the type genome is 68.47 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Adambia gen. nov.

Candidatus Adambia (NL. fem. n. *Adambia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1Sed10-187*. The type species for the genus is *Candidatus* Adambia artufousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adambia metucetta sp. nov.

Candidatus Adambia metucetta (NL. fem. n. *metucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1Sed10-187 sp003552605*. The type genome for the species is the GenBank assembly GCA_003552605.1. The GC content of the type genome is 64.36 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Adambida dicabetta sp. nov.

Candidatus Adambida dicabetta (NL. fem. n. *dicabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMFH01 sp007375925*. The type genome for the species is the GenBank assembly GCA_007375925.1. The GC content of the type genome is 53.95 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Adambida gen. nov.

Candidatus Adambida (NL. fem. n. *Adambida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMFH01*. The type species for the genus is *Candidatus* Adambida dicabetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Adambosa spastitura sp. nov.

Candidatus Adambosa spastitura (NL. fem. n. *spastitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1312 sp002307135*. The type genome for the species is the GenBank assembly GCA_002307135.1. The GC content of the type genome is 37.67 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Adambosa gen. nov.

Candidatus Adambosa (NL. fem. n. *Adambosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1312*. The type species for the genus is *Candidatus* Adambosa spastitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adambosa xenodigena sp. nov.

Candidatus Adambosa xenodigena (NL. fem. n. *xenodigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1312 sp002482815*. The type genome for the species is the GenBank assembly GCA_002482815.1. The GC content of the type genome is 39.82 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Adbelaria inordentia sp. nov.

Candidatus Adbelaria inordentia (NL. fem. n. *inordentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-42-22 sp002773725*. The type genome for the species is the GenBank assembly GCA_002773725.1. The GC content of the type genome is 42.03 % and the genome length is 0.55 Mbp.

Description of *Candidatus* Adbelaria gen. nov.

Candidatus Adbelaria (NL. fem. n. *Adbelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-42-22*. The type species for the genus is *Candidatus* Adbelaria inordentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adbelella emancitica sp. nov.

Candidatus Adbelella emancitica (NL. fem. n. *emancitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHYP01 sp003224195*. The type genome for the species is the GenBank assembly GCA_003224195.1. The GC content of the type genome is 60.36 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Adbelella gen. nov.

Candidatus Adbelella (NL. fem. n. *Adbelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHYP01*. The type species for the genus is *Candidatus* Adbelella emancitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Adbelosa fumifimonas sp. nov.

Candidatus Adbelosa fumifimonas (NL. fem. n. *fumifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *OXYB2-FULL-48-7 sp001800495*. The type genome for the species is the GenBank assembly GCA_001800495.1. The GC content of the type genome is 47.55 % and the genome length is 2.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Adbelosa gen. nov.

Candidatus Adbelosa (NL. fem. n. *Adbelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OXYB2-FULL-48-7*. The type species for the genus is *Candidatus* Adbelosa fumifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYA2-FULL-39-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delucariaceae.

Description of *Candidatus* Adbelula inperatio sp. nov.

Candidatus Adbelula inperatio (NL. fem. n. *inperatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MM2 sp001645185*. The type genome for the species is the GenBank assembly RS_GCF_001645185.1. The GC content of the type genome is 57.57 % and the genome length is 2.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "grassland soil".

Description of *Candidatus* Adbelula gen. nov.

Candidatus Adbelula (NL. fem. n. *Adbelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MM2*. The type species for the genus is *Candidatus* Adbelula inperatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcelana corocentia sp. nov.

Candidatus Adcelana corocentia (NL. fem. n. *corocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SY095 sp008152325*. The type genome for the species is the GenBank assembly RS_GCF_008152325.1. The GC content of the type genome is 30.81 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Adcelana gen. nov.

Candidatus Adcelana (NL. fem. n. *Adcelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SY095*. The type species for the genus is *Candidatus* Adcelana corocentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcelosa adhinibula sp. nov.

Candidatus Adcelosa adhinibula (NL. fem. n. *adhinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1338 sp003164595*. The type genome for the species is the GenBank assembly GCA_003164595.1. The GC content of the type genome is 42.74 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Adcelosa gen. nov.

Candidatus Adcelosa (NL. fem. n. *Adcelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-1338*. The type species for the genus is *Candidatus* Adcelosa adhinibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Adcesana affamugo sp. nov.

Candidatus Adcesana affamugo (NL. fem. n. *affamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *12844 sp902783115*. The type genome for the species is the GenBank assembly GCA_902783115.1. The GC content of the type genome is 44.6 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Adcesana gen. nov.

Candidatus Adcesana (NL. fem. n. *Adcesana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *12844*. The type species for the genus is *Candidatus* Adcesana affamugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilosaceae.

Description of *Candidatus* Adcesana assucentia sp. nov.

Candidatus Adcesana assucentia (NL. fem. n. *assucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *12844 sp902796445*. The type genome for the species is the GenBank assembly GCA_902796445.1. The GC content of the type genome is 38.93 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Adcesella detunetta sp. nov.

Candidatus Adcesella detunetta (NL. fem. n. *detunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2227 sp003510215*. The type genome for the species is the GenBank assembly GCA_003510215.1. The GC content of the type genome is 40.26 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Adcesella gen. nov.

Candidatus Adcesella (NL. fem. n. *Adcesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2227*. The type species for the genus is *Candidatus* Adcesella detunetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcesella innulimonia sp. nov.

Candidatus Adcesella innulimonia (NL. fem. n. *innulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2227 sp002841515*. The type genome for the species is the GenBank assembly GCA_002841515.1. The GC content of the type genome is 41.72 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Adcesella obtecifica sp. nov.

Candidatus Adcesella obtecifica (NL. fem. n. *obtecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2227 sp002841605*. The type genome for the species is the GenBank assembly GCA_002841605.1. The GC content of the type genome is 41.52 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Adcesella vatilago sp. nov.

Candidatus Adcesella vatilago (NL. fem. n. *vatilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2227 sp002348095*. The type genome for the species is the GenBank assembly GCA_002348095.1. The GC content of the type genome is 44.49 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Adcesia decitugo sp. nov.

Candidatus Adcesia decitugo (NL. fem. n. *decitugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VAYN01 sp013821475*. The type genome for the species is the GenBank assembly GCA_013821475.1. The GC content of the type genome is 69.07 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Adcesia gen. nov.

Candidatus Adcesia (NL. fem. n. *Adcesia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VAYN01*. The type species for the genus is *Candidatus* Adcesia decitugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *70-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Adcesia obsatiforma sp. nov.

Candidatus Adcesia obsatiforma (NL. fem. n. *obsatiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VAYN01 sp005885405*. The type genome for the species is the GenBank assembly GCA_005885405.1. The GC content of the type genome is 68.07 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Adcesida acratilenta sp. nov.

Candidatus Adcesida acratilenta (NL. fem. n. *acratilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZND01 sp012798485*. The type genome for the species is the GenBank assembly GCA_012798485.1. The GC content of the type genome is 32.03 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Adcesida gen. nov.

Candidatus Adcesida (NL. fem. n. *Adcesida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZND01*. The type species for the genus is *Candidatus* Adcesida acratilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1449*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demagariaceae.

Description of *Candidatus* Adcesosa bipalifica sp. nov.

Candidatus Adcesosa bipalifica (NL. fem. n. *bipalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c32 sp001516025*. The type genome for the species is the GenBank assembly GCA_001516025.1. The GC content of the type genome is 34.18 % and the genome length is 3.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Adcesosa gen. nov.

Candidatus Adcesosa (NL. fem. n. *Adcesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BRH-c32*. The type species for the genus is *Candidatus* Adcesosa bipalifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcogana rosaritrix sp. nov.

Candidatus Adcogana rosaritrix (NL. fem. n. *rosaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M08DMB sp009362815*. The type genome for the species is the GenBank assembly RS_GCF_009362815.1. The GC content of the type genome is 32.26 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Adcogana gen. nov.

Candidatus Adcogana (NL. fem. n. *Adcogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M08DMB*. The type species for the genus is *Candidatus* Adcogana rosaritrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcogaria senacilega sp. nov.

Candidatus Adcogaria senacilega (NL. fem. n. *senacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-45-15b sp001822655*. The type genome for the species is the GenBank assembly GCA_001822655.1. The GC content of the type genome is 45.02 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Adcogaria gen. nov.

Candidatus Adcogaria (NL. fem. n. *Adcogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-45-15b*. The type species for the genus is *Candidatus* Adcogaria senacilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_C*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mavorellaceae.

Description of *Candidatus* Adcogella assififica sp. nov.

Candidatus Adcogella assififica (NL. fem. n. *assififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZBK01 sp012513855*. The type genome for the species is the GenBank assembly GCA_012513855.1. The GC content of the type genome is 69.93 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Adcogella gen. nov.

Candidatus Adcogella (NL. fem. n. *Adcogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZBK01*. The type species for the genus is *Candidatus* Adcogella assififica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYBP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumulaceae.

Description of *Candidatus* Adcogia ascelitudo sp. nov.

Candidatus Adcogia ascelitudo (NL. fem. n. *ascelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDYS01 sp902810715*. The type genome for the species is the GenBank assembly RS_GCF_902810715.1. The GC content of the type genome is 47.67 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Adcogia gen. nov.

Candidatus Adcogia (NL. fem. n. *Adcogia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDYS01*. The type species for the genus is *Candidatus* Adcogia ascelitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solifidaceae.

Description of *Candidatus* Adcogida bisacitoga sp. nov.

Candidatus Adcogida bisacitoga (NL. fem. n. *bisacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-011290485 sp011290485*. The type genome for the species is the GenBank assembly RS_GCF_011290485.1. The GC content of the type genome is 61.15 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Adcogida gen. nov.

Candidatus Adcogida (NL. fem. n. *Adcogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-011290485*. The type species for the genus is *Candidatus* Adcogida bisacitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcogula monumatio sp. nov.

Candidatus Adcogula monumatio (NL. fem. n. *monumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTOO01 sp011334425*. The type genome for the species is the GenBank assembly GCA_011334425.1. The GC content of the type genome is 56.18 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Adcogula gen. nov.

Candidatus Adcogula (NL. fem. n. *Adcogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTOO01*. The type species for the genus is *Candidatus* Adcogula monumatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-43-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinefanaceae.

Description of *Candidatus* Adcomana allibugo sp. nov.

Candidatus Adcomana allibugo (NL. fem. n. *allibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EW11 sp003054665*. The type genome for the species is the GenBank assembly RS_GCF_003054665.1. The GC content of the type genome is 63.63 % and the genome length is 6.4 Mbp.

Description of *Candidatus* Adcomana gen. nov.

Candidatus Adcomana (NL. fem. n. *Adcomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *EW11*. The type species for the genus is *Candidatus* Adcomana allibugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcomella depubilega sp. nov.

Candidatus Adcomella depubilega (NL. fem. n. *depubilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPHQ01 sp903864895*. The type genome for the species is the GenBank assembly GCA_903864895.1. The GC content of the type genome is 67.1 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Adcomella gen. nov.

Candidatus Adcomella (NL. fem. n. *Adcomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPHQ01*. The type species for the genus is *Candidatus* Adcomella depubilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcomida aggenitudo sp. nov.

Candidatus Adcomida aggenitudo (NL. fem. n. *aggenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-013693735 sp013693735*. The type genome for the species is the GenBank assembly GCA_013693735.1. The GC content of the type genome is 68.37 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Adcomida gen. nov.

Candidatus Adcomida (NL. fem. n. *Adcomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-013693735*. The type species for the genus is *Candidatus* Adcomida aggenitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcomosa inlumitrix sp. nov.

Candidatus Adcomosa inlumitrix (NL. fem. n. *inlumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RICK02 sp004210275*. The type genome for the species is the GenBank assembly RS_GCF_004210275.1. The GC content of the type genome is 40.84 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Adcomosa gen. nov.

Candidatus Adcomosa (NL. fem. n. *Adcomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RICK02*. The type species for the genus is *Candidatus* Adcomosa inlumitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcomula pulegitica sp. nov.

Candidatus Adcomula pulegitica (NL. fem. n. *pulegitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTAW01 sp013139435*. The type genome for the species is the GenBank assembly GCA_013139435.1. The GC content of the type genome is 46.46 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Adcomula gen. nov.

Candidatus Adcomula (NL. fem. n. *Adcomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTAW01*. The type species for the genus is *Candidatus* Adcomula pulegitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcubaria ammulitoga sp. nov.

Candidatus Adcubaria ammulitoga (NL. fem. n. *ammulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VATK01 sp006546985*. The type genome for the species is the

GenBank assembly RS_GCF_006546985.1. The GC content of the type genome is 36.09 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Adcubaria gen. nov.

Candidatus Adcubaria (NL. fem. n. *Adcubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VATK01*. The type species for the genus is *Candidatus* Adcubaria ammulitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-18226*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Robigidaceae.

Description of *Candidatus* Adcubida curabessa sp. nov.

Candidatus Adcubida curabessa (NL. fem. n. *curabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2391 sp002343825*. The type genome for the species is the GenBank assembly GCA_002343825.1. The GC content of the type genome is 59.63 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Adcubida gen. nov.

Candidatus Adcubida (NL. fem. n. *Adcubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2391*. The type species for the genus is *Candidatus* Adcubida curabessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcubosa impolax sp. nov.

Candidatus Adcubosa impolax (NL. fem. n. *impolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYZT01 sp903930735*. The type genome for the species is the GenBank assembly GCA_903930735.1. The GC content of the type genome is 61.81 %

and the genome length is 3.65 Mbp.

Description of *Candidatus* Adcubosa gen. nov.

Candidatus Adcubosa (NL. fem. n. *Adcubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYZT01*. The type species for the genus is *Candidatus* Adcubosa impolax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcubula adsudibra sp. nov.

Candidatus Adcubula adsudibra (NL. fem. n. *adsudibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRER01 sp011051015*. The type genome for the species is the GenBank assembly GCA_011051015.1. The GC content of the type genome is 38.22 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Adcubula gen. nov.

Candidatus Adcubula (NL. fem. n. *Adcubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRER01*. The type species for the genus is *Candidatus* Adcubula adsudibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-20-42-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimelellaceae.

Description of *Candidatus* Adcucana hecatilenta sp. nov.

Candidatus Adcucana hecatilenta (NL. fem. n. *hecatilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-43 sp005885555*. The type genome for the species is the GenBank assembly GCA_005885555.1. The GC content of the type genome is 71.78 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Adcucana gen. nov.

Candidatus Adcucana (NL. fem. n. *Adcucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-43*. The type species for the genus is *Candidatus* Adcucana hecatilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcucana velivitura sp. nov.

Candidatus Adcucana velivitura (NL. fem. n. *velivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-43 sp005885115*. The type genome for the species is the GenBank assembly GCA_005885115.1. The GC content of the type genome is 71.69 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Adcucaria nimiratica sp. nov.

Candidatus Adcucaria nimiratica (NL. fem. n. *nimiratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYQJ01 sp903928275*. The type genome for the species is the GenBank assembly GCA_903928275.1. The GC content of the type genome is 72.63 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Adcucaria gen. nov.

Candidatus Adcucaria (NL. fem. n. *Adcucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYQJ01*. The type species for the genus is *Candidatus* Adcucaria nimiratica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Adcucella insinitura sp. nov.

Candidatus Adcucella insinitura (NL. fem. n. *insinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-53-11 sp001770165*. The type genome for the species is the GenBank assembly GCA_001770165.1. The GC content of the type genome is 53.48 % and the genome length is 3.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Adcucella gen. nov.

Candidatus Adcucella (NL. fem. n. *Adcucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD1-FULL-53-11*. The type species for the genus is *Candidatus* Adcucella insinitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Adcucida deniximonas sp. nov.

Candidatus Adcucida deniximonas (NL. fem. n. *deniximonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2970 sp002348345*. The type genome for the species is the GenBank assembly GCA_002348345.1. The GC content of the type genome is 57.17 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Adcucida gen. nov.

Candidatus Adcucida (NL. fem. n. *Adcucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2970*. The type species for the genus is *Candidatus* Adcucida deniximonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AAA164-E04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recomosaceae.

Description of *Candidatus* Adcucula murelatica sp. nov.

Candidatus Adcucula murelatica (NL. fem. n. *murelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2683315 sp002683315*. The type genome for the species is the GenBank assembly GCA_002683315.1. The GC content of the type genome is 41.83 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Adcucula gen. nov.

Candidatus Adcucula (NL. fem. n. *Adcucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2683315*. The type species for the genus is *Candidatus* Adcucula murelatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilanaceae.

Description of *Candidatus* Adculana istinessa sp. nov.

Candidatus Adculana istinessa (NL. fem. n. *istinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGUW01 sp010027605*. The type genome for the species is the GenBank assembly GCA_010027605.1. The GC content of the type genome is 65.49 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Adculana gen. nov.

Candidatus Adculana (NL. fem. n. *Adculana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGUW01*. The type species for the genus is *Candidatus* Adculana istinessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adcularia devecitoga sp. nov.

Candidatus Adcularia devecitoga (NL. fem. n. *devecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GLR69 sp013138865*. The type genome for the species is the GenBank assembly GCA_013138865.1. The GC content of the type genome is 32.52 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Adcularia gen. nov.

Candidatus Adcularia (NL. fem. n. *Adcularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GLR69*. The type species for the genus is *Candidatus* Adcularia devecitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adculella inaspatica sp. nov.

Candidatus Adculella inaspatica (NL. fem. n. *inaspatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Site-B15 sp013042715*. The type genome for the species is the GenBank assembly GCA_013042715.1. The GC content of the type genome is 31.0 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Adculella gen. nov.

Candidatus Adculella (NL. fem. n. *Adculella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Site-B15*. The type species for the genus is *Candidatus* Adculella inaspatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adculida effunitudo sp. nov.

Candidatus Adculida effunitudo (NL. fem. n. *effunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYXM01 sp012515925*. The type genome for the species is the GenBank assembly GCA_012515925.1. The GC content of the type genome is 50.04 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Adculida gen. nov.

Candidatus Adculida (NL. fem. n. *Adculida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYXM01*. The type species for the genus is *Candidatus* Adculida effunitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adculosa obsoliforma sp. nov.

Candidatus Adculosa obsoliforma (NL. fem. n. *obsoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDFN01 sp013815775*. The type genome for the species is the GenBank assembly GCA_013815775.1. The GC content of the type genome is 44.57 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Adculosa gen. nov.

Candidatus Adculosa (NL. fem. n. *Adculosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDFN01*. The type species for the genus is *Candidatus* Adculosa obsoliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10212*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categiaceae.

Description of *Candidatus* Adculula deculugo sp. nov.

Candidatus Adculula deculugo (NL. fem. n. *deculugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCH01 sp013359215*. The type genome for the species is the GenBank assembly GCA_013359215.1. The GC content of the type genome is 38.8 % and the genome length is 6.39 Mbp.

Description of *Candidatus* Adculula gen. nov.

Candidatus Adculula (NL. fem. n. *Adculula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCH01*. The type species for the genus is *Candidatus* Adculula deculugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SRT547*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sarabosaceae.

Description of *Candidatus* Adcumaria adpelitrix sp. nov.

Candidatus Adcumaria adpelitrix (NL. fem. n. *adpelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2685815 sp002685815*. The type genome for the species is the GenBank assembly GCA_002685815.1. The GC content of the type genome is 51.88 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Adcumaria gen. nov.

Candidatus Adcumaria (NL. fem. n. *Adcumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2685815*. The type species for the genus is *Candidatus* Adcumaria adpelitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2162*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifosaceae.

Description of *Candidatus* Adcumida adsigibra sp. nov.

Candidatus Adcumida adsigibra (NL. fem. n. *adsigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVNC01 sp903907165*. The type genome for the species is the GenBank assembly GCA_903907165.1. The GC content of the type genome is 39.68 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Adcumida gen. nov.

Candidatus Adcumida (NL. fem. n. *Adcumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVNC01*. The type species for the genus is *Candidatus* Adcumida adsigibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-39-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dibapiaceae.

Description of *Candidatus* Adcumosa regigicella sp. nov.

Candidatus Adcumosa regigicella (NL. fem. n. *regigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11521 sp900751885*. The type genome for the species is the GenBank assembly RS_GCF_900751885.1. The GC content of the type genome is 45.17 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Adcumosa gen. nov.

Candidatus Adcumosa (NL. fem. n. *Adcumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11521*. The type species for the genus is *Candidatus* Adcumosa regigicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilosaceae.

Description of *Candidatus* Addivana insemiforma sp. nov.

Candidatus Addivana insemiforma (NL. fem. n. *insemiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-10 sp004552515*. The type genome for the species is the GenBank assembly GCA_004552515.1. The GC content of the type genome is 62.04 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Addivana gen. nov.

Candidatus Addivana (NL. fem. n. *Addivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Firm-10*. The type species for the genus is *Candidatus* Addivana insemiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Addivana malifitudo sp. nov.

Candidatus Addivana malifitudo (NL. fem. n. *malifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-10 sp902790345*. The type genome for the species is the GenBank assembly GCA_902790345.1. The GC content of the type genome is 62.68 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Addivana rorulivita sp. nov.

Candidatus Addivana rorulivita (NL. fem. n. *rorulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-10 sp001603025*. The type genome for the species is the GenBank assembly GCA_001603025.1. The GC content of the type genome is 62.45 % and the genome length is 2.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Addivaria milifilenta sp. nov.

Candidatus Addivaria milifilenta (NL. fem. n. *milifilenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHAE01 sp002840285*. The type genome for the species is the GenBank assembly GCA_002840285.1. The GC content of the type genome is 49.57 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Addivaria gen. nov.

Candidatus Addivaria (NL. fem. n. *Addivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHAE01*. The type species for the genus is *Candidatus* Addivaria milifilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Addivella capabiforma sp. nov.

Candidatus Addivella capabiforma (NL. fem. n. *capabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PEYC01 sp002774555*. The type genome for the species is the GenBank assembly GCA_002774555.1. The GC content of the type genome is 35.5 % and the genome length is 0.51 Mbp.

Description of *Candidatus* Addivella gen. nov.

Candidatus Addivella (NL. fem. n. *Addivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PEYC01*. The type species for the genus is *Candidatus* Addivella capabiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-38-27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citiviaceae.

Description of *Candidatus* Addivia advicilega sp. nov.

Candidatus Addivia advicilega (NL. fem. n. *advicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PZPK01 sp006212045*. The type genome for the species is the GenBank assembly GCA_006212045.1. The GC content of the type genome is 50.42 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Addivia gen. nov.

Candidatus Addivia (NL. fem. n. *Addivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PZPK01*. The type species for the genus is *Candidatus* Addivia advicilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Addivida insusitura sp. nov.

Candidatus Addivida insusitura (NL. fem. n. *insusitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSN01 sp004322205*. The type genome for the species is the GenBank assembly GCA_004322205.1. The GC content of the type genome is 48.83 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Addivida gen. nov.

Candidatus Addivida (NL. fem. n. *Addivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCSN01*. The type species for the genus is *Candidatus* Addivida insusitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Addivosa inhumigena sp. nov.

Candidatus Addivosa inhumigena (NL. fem. n. *inhumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R2A62 sp000161835*. The type genome for the species is the GenBank assembly RS_GCF_000161835.1. The GC content of the type genome is 55.25 % and the genome length is 3.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Subsurface water samples were collected at 10 m in Niskinbottles at a station located 8 km west of the mouth of Yaquina Bay; OR".

Description of *Candidatus* Addivosa gen. nov.

Candidatus Addivosa (NL. fem. n. *Addivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *R2A62*. The type species for the genus is *Candidatus* Addivosa inhumigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Addubana vicatigena sp. nov.

Candidatus Addubana vicatigena (NL. fem. n. *vicatigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11155 sp003511945*. The type genome for the species is the GenBank assembly GCA_003511945.1. The GC content of the type genome is 70.23 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Addubana gen. nov.

Candidatus Addubana (NL. fem. n. *Addubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11155*. The type species for the genus is *Candidatus* Addubana vicatigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Addubia agraticula sp. nov.

Candidatus Addubia agraticula (NL. fem. n. *agraticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED10-83 sp003556525*. The type genome for the species is the GenBank assembly GCA_003556525.1. The GC content of the type genome is 34.75 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Addubia gen. nov.

Candidatus Addubia (NL. fem. n. *Addubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED10-83*. The type species for the genus is *Candidatus* Addubia agraticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-42-11_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirunidaceae.

Description of *Candidatus* Addubida avuncigena sp. nov.

Candidatus Addubida avuncigena (NL. fem. n. *avuncigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-181 sp003228735*. The type genome for the species is the GenBank assembly GCA_003228735.1. The GC content of the type genome is 55.29 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Addubida gen. nov.

Candidatus Addubida (NL. fem. n. *Addubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-181*. The type species for the genus is *Candidatus* Addubida avuncigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Addubosa enuntitura sp. nov.

Candidatus Addubosa enuntitura (NL. fem. n. *enuntitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NaphS2 sp000179315*. The type genome for the species is the GenBank assembly RS_GCF_000179315.1. The GC content of the type genome is 49.83 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Addubosa gen. nov.

Candidatus Addubosa (NL. fem. n. *Addubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NaphS2*. The type species for the genus is *Candidatus* Addubosa enuntitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Addubula utputitoga sp. nov.

Candidatus Addubula utputitoga (NL. fem. n. *utputitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1XD8-76 sp003611955*. The type genome for the species is the GenBank assembly RS_GCF_003611955.1. The GC content of the type genome is 48.9 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Addubula gen. nov.

Candidatus Addubula (NL. fem. n. *Addubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1XD8-76*. The type species for the genus is *Candidatus* Addubula utputitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adessaria vocifousia sp. nov.

Candidatus Adessaria vocifousia (NL. fem. n. *vocifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACETI01 sp013911415*. The type genome for the species is the GenBank assembly GCA_013911415.1. The GC content of the type genome is 40.19 %

and the genome length is 2.51 Mbp.

Description of *Candidatus* Adessaria gen. nov.

Candidatus Adessaria (NL. fem. n. *Adessaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACETI01*. The type species for the genus is *Candidatus* Adessaria vocifousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adessella antecilenta sp. nov.

Candidatus Adessella antecilenta (NL. fem. n. *antecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWKK01 sp009911695*. The type genome for the species is the GenBank assembly RS_GCF_009911695.1. The GC content of the type genome is 67.72 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Adessella gen. nov.

Candidatus Adessella (NL. fem. n. *Adessella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QWKK01*. The type species for the genus is *Candidatus* Adessella antecilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adessida adtolousia sp. nov.

Candidatus Adessida adtolousia (NL. fem. n. *adtolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718395 sp002710905*. The type genome for the species is the GenBank assembly GCA_002710905.1. The GC content of the type genome is 33.83 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Adessida gen. nov.

Candidatus Adessida (NL. fem. n. *Adessida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002718395*. The type species for the genus is *Candidatus* Adessida adtolousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Adessida inornousia sp. nov.

Candidatus Adessida inornousia (NL. fem. n. *inornousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718395 sp003228125*. The type genome for the species is the GenBank assembly GCA_003228125.1. The GC content of the type genome is 31.5 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Adessida odollitia sp. nov.

Candidatus Adessida odollitia (NL. fem. n. *odollitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718395 sp002718395*. The type genome for the species is the GenBank assembly GCA_002718395.1. The GC content of the type genome is 32.99 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Adessosa cisoritoga sp. nov.

Candidatus Adessosa cisoritoga (NL. fem. n. *cisoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPI01 sp012521575*. The type genome for the species is the GenBank assembly GCA_012521575.1. The GC content of the type genome is 27.69 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Adessosa gen. nov.

Candidatus Adessosa (NL. fem. n. *Adessosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPI01*. The type species for the genus is *Candidatus* Adessosa cisoritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Adessosa effosax sp. nov.

Candidatus Adessosa effosax (NL. fem. n. *effosax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPI01 sp012838395*. The type genome for the species is the GenBank assembly GCA_012838395.1. The GC content of the type genome is 28.22 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Adessula aprugax sp. nov.

Candidatus Adessula aprugax (NL. fem. n. *aprugax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5150 sp002413795*. The type genome for the species is the GenBank assembly GCA_002413795.1. The GC content of the type genome is 54.71 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Adessula gen. nov.

Candidatus Adessula (NL. fem. n. *Adessula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5150*. The type species for the genus is *Candidatus* Adessula aprugax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Adessula detumatica sp. nov.

Candidatus Adessula detumatica (NL. fem. n. *detumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5150 sp003133385*. The type genome for the species is the GenBank assembly GCA_003133385.1. The GC content of the type genome is 48.31 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Adessula fibicigena sp. nov.

Candidatus Adessula fibicigena (NL. fem. n. *fibicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5150 sp003153395*. The type genome for the species is the GenBank assembly GCA_003153395.1. The GC content of the type genome is 40.12 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Adessula pimenugo sp. nov.

Candidatus Adessula pimenugo (NL. fem. n. *pimenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5150 sp002792275*. The type genome for the species is the GenBank assembly GCA_002792275.1. The GC content of the type genome is 52.43 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Adfabana conabousia sp. nov.

Candidatus Adfabana conabousia (NL. fem. n. *conabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZX01 sp013813185*. The type genome for the species is the GenBank assembly GCA_013813185.1. The GC content of the type genome is 62.32 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Adfabana gen. nov.

Candidatus Adfabana (NL. fem. n. *Adfabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZX01*. The type species for the genus is *Candidatus* Adfabana conabousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfabana inmacatica sp. nov.

Candidatus Adfabana inmacatica (NL. fem. n. *inmacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZX01 sp013695705*. The type genome for the species is the GenBank assembly GCA_013695705.1. The GC content of the type genome is 60.67 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Adfabana vitabousia sp. nov.

Candidatus Adfabana vitabousia (NL. fem. n. *vitabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZX01 sp013696665*. The type genome for the species is the GenBank assembly GCA_013696665.1. The GC content of the type genome is 60.22 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Adfabella relenimonia sp. nov.

Candidatus Adfabella relenimonia (NL. fem. n. *relenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14319 sp902797845*. The type genome for the species is the GenBank assembly GCA_902797845.1. The GC content of the type genome is 44.06 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Adfabella gen. nov.

Candidatus Adfabella (NL. fem. n. *Adfabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14319*. The type species for the genus is *Candidatus* Adfabella relenimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfabia bicubetta sp. nov.

Candidatus Adfabia bicubetta (NL. fem. n. *bicubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2696965 sp002171975*. The type genome for the species is the GenBank assembly GCA_002171975.2. The GC content of the type genome is 30.62 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Adfabia gen. nov.

Candidatus Adfabia (NL. fem. n. *Adfabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2696965*. The type species for the genus is *Candidatus* Adfabia bicubetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fusifulaceae.

Description of *Candidatus* Adfabia capililenta sp. nov.

Candidatus Adfabia capililenta (NL. fem. n. *capililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2696965 sp002696965*. The type genome for the species is the GenBank assembly GCA_002696965.1. The GC content of the type genome is 30.23 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Adfabosa panifitica sp. nov.

Candidatus Adfabosa panifitica (NL. fem. n. *panifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11034 sp003514205*. The type genome for the species is the GenBank assembly GCA_003514205.1. The GC content of the type genome is 59.81 %

and the genome length is 3.42 Mbp.

Description of *Candidatus* Adfabosa gen. nov.

Candidatus Adfabosa (NL. fem. n. *Adfabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11034*. The type species for the genus is *Candidatus* Adfabosa panifitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfabula embamessa sp. nov.

Candidatus Adfabula embamessa (NL. fem. n. *embamessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-40-9 sp002791215*. The type genome for the species is the GenBank assembly GCA_002791215.1. The GC content of the type genome is 38.21 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Adfabula gen. nov.

Candidatus Adfabula (NL. fem. n. *Adfabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-40-9*. The type species for the genus is *Candidatus* Adfabula embamessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *X112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Adfamana expisibula sp. nov.

Candidatus Adfamana expisibula (NL. fem. n. *expisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBr16-110 sp007117775*. The type genome for the species is the GenBank assembly GCA_007117775.1. The GC content of the type genome is 65.58 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Adfamana gen. nov.

Candidatus Adfamana (NL. fem. n. *Adfamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBr16-110*. The type species for the genus is *Candidatus* Adfamana expisibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfamaria obsigilega sp. nov.

Candidatus Adfamaria obsigilega (NL. fem. n. *obsigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RQJ05 sp003286125*. The type genome for the species is the GenBank assembly RS_GCF_003286125.1. The GC content of the type genome is 38.95 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Adfamaria gen. nov.

Candidatus Adfamaria (NL. fem. n. *Adfamaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RQJ05*. The type species for the genus is *Candidatus* Adfamaria obsigilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfamaria prospastra sp. nov.

Candidatus Adfamaria prospastra (NL. fem. n. *prospastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RQJ05 sp003063625*. The type genome for the species is the GenBank assembly RS_GCF_003063625.1. The GC content of the type genome is 41.27 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Adfamella innoxugo sp. nov.

Candidatus Adfamella innoxugo (NL. fem. n. *innoxugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMRS01 sp014376345*. The type genome for the species is the GenBank assembly GCA_014376345.1. The GC content of the type genome is 35.84 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Adfamella gen. nov.

Candidatus Adfamella (NL. fem. n. *Adfamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMRS01*. The type species for the genus is *Candidatus* Adfamella innoxugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadidaceae.

Description of *Candidatus* Adfamida lavacilenta sp. nov.

Candidatus Adfamida lavacilenta (NL. fem. n. *lavacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-O06 sp003280085*. The type genome for the species is the GenBank assembly GCA_003280085.1. The GC content of the type genome is 39.65 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Adfamida gen. nov.

Candidatus Adfamida (NL. fem. n. *Adfamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-363-O06*. The type species for the genus is *Candidatus* Adfamida lavacilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfamosa epicritio sp. nov.

Candidatus Adfamosa epicritio (NL. fem. n. *epicritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-493 sp003251535*. The type genome for the species is the GenBank assembly GCA_003251535.1. The GC content of the type genome is 64.24 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Adfamosa gen. nov.

Candidatus Adfamosa (NL. fem. n. *Adfamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-493*. The type species for the genus is *Candidatus* Adfamosa epicritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfamula abagmousia sp. nov.

Candidatus Adfamula abagmousia (NL. fem. n. *abagmousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSSF01 sp013214485*. The type genome for the species is the GenBank assembly GCA_013214485.1. The GC content of the type genome is 30.06 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Adfamula gen. nov.

Candidatus Adfamula (NL. fem. n. *Adfamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSSF01*. The type species for the genus is *Candidatus* Adfamula abagmousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfanana decinivita sp. nov.

Candidatus Adfanana decinivita (NL. fem. n. *decinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-613 sp011371135*. The type genome for the species is the GenBank assembly GCA_011371135.1. The GC content of the type genome is 41.57 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Adfanana gen. nov.

Candidatus Adfanana (NL. fem. n. *Adfanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HyVt-613*. The type species for the genus is *Candidatus* Adfanana decinivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfanaria ingigicula sp. nov.

Candidatus Adfanaria ingigicula (NL. fem. n. *ingigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RACS-045 sp013316135*. The type genome for the species is the GenBank assembly GCA_013316135.1. The GC content of the type genome is 42.07 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Adfanaria gen. nov.

Candidatus Adfanaria (NL. fem. n. *Adfanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RACS-045*. The type species for the genus is *Candidatus* Adfanaria ingigicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3700*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicarellaceae.

Description of *Candidatus* Adfania bipalax sp. nov.

Candidatus Adfania bipalax (NL. fem. n. *bipalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1219 sp002309295*. The type genome for the species is the GenBank assembly GCA_002309295.1. The GC content of the type genome is 48.48 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Adfania gen. nov.

Candidatus Adfania (NL. fem. n. *Adfania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1219*. The type species for the genus is *Candidatus* Adfania bipalax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucosaceae.

Description of *Candidatus* Adfanida galacatio sp. nov.

Candidatus Adfanida galacatio (NL. fem. n. *galacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACLJX01 sp902607435*. The type genome for the species is the GenBank assembly GCA_902607435.1. The GC content of the type genome is 29.22 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Adfanida gen. nov.

Candidatus Adfanida (NL. fem. n. *Adfanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACLJX01*. The type species for the genus is *Candidatus* Adfanida galacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002718135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defululaceae.

Description of *Candidatus* Adfanosa sicariforma sp. nov.

Candidatus Adfanosa sicariforma (NL. fem. n. *sicariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11604 sp900769875*. The type genome for the species is the GenBank assembly RS_GCF_900769875.1. The GC content of the type genome is 60.23 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Adfanosa gen. nov.

Candidatus Adfanosa (NL. fem. n. *Adfanosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11604*. The type species for the genus is *Candidatus* Adfanosa sicariforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Adfanula camilugo sp. nov.

Candidatus Adfanula camilugo (NL. fem. n. *camilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6182 sp002422065*. The type genome for the species is the GenBank assembly GCA_002422065.1. The GC content of the type genome is 35.22 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Adfanula gen. nov.

Candidatus Adfanula (NL. fem. n. *Adfanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6182*. The type species for the genus is *Candidatus* Adfanula camilugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfanula inurbessa sp. nov.

Candidatus Adfanula inurbessa (NL. fem. n. *inurbessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA6182 sp012511085*. The type genome for the species is the GenBank assembly GCA_012511085.1. The GC content of the type genome is 40.6 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Adfirana amercifica sp. nov.

Candidatus Adfirana amercifica (NL. fem. n. *amercifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5623 sp900258555*. The type genome for the species is the GenBank assembly GCA_900258555.1. The GC content of the type genome is 47.01 % and the genome length is 5.43 Mbp.

Description of *Candidatus* Adfirana gen. nov.

Candidatus Adfirana (NL. fem. n. *Adfirana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5623*. The type species for the genus is *Candidatus* Adfirana amercifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfirana bisacax sp. nov.

Candidatus Adfirana bisacax (NL. fem. n. *bisacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5623 sp002424495*. The type genome for the species is the GenBank assembly GCA_002424495.1. The GC content of the type genome is 47.46 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Adfiraria adordatio sp. nov.

Candidatus Adfiraria adordatio (NL. fem. n. *adordatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W265 sp011170325*. The type genome for the species is the GenBank assembly GCA_011170325.1. The GC content of the type genome is 46.96 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Adfiraria gen. nov.

Candidatus Adfiraria (NL. fem. n. *Adfiraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W265*. The type species for the genus is *Candidatus* Adfiraria adordatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5620*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semaposaceae.

Description of *Candidatus* Adfirella nubecisca sp. nov.

Candidatus Adfirella nubecisca (NL. fem. n. *nubecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNIV01 sp014382915*. The type genome for the species is the GenBank assembly GCA_014382915.1. The GC content of the type genome is 37.22 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Adfirella gen. nov.

Candidatus Adfirella (NL. fem. n. *Adfirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNIV01*. The type species for the genus is *Candidatus* Adfirella nubecisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefellaceae.

Description of *Candidatus* Adfiria reforivita sp. nov.

Candidatus Adfiria reforivita (NL. fem. n. *reforivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UNRQ01 sp900498245*. The type genome for the species is the GenBank assembly RS_GCF_900498245.1. The GC content of the type genome is 49.72 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Adfiria gen. nov.

Candidatus Adfiria (NL. fem. n. *Adfiria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UNRQ01*. The type species for the genus is *Candidatus* Adfiria reforivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PGXB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munimidaceae.

Description of *Candidatus* Adfirida incesilega sp. nov.

Candidatus Adfirida incesilega (NL. fem. n. *incesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1379 sp002305475*. The type genome for the species is the GenBank assembly GCA_002305475.1. The GC content of the type genome is 37.37 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Adfirida gen. nov.

Candidatus Adfirida (NL. fem. n. *Adfirida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1379*. The type species for the genus is *Candidatus* Adfirida incesilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Adfirosa nicomago sp. nov.

Candidatus Adfirosa nicomago (NL. fem. n. *nicomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-43-11b sp001780985*. The type genome for the species is the GenBank assembly GCA_001780985.1. The GC content of the type genome is 42.92 % and the genome length is 1.02 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Adfirosa gen. nov.

Candidatus Adfirosa (NL. fem. n. *Adfirosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-43-11b*. The type species for the genus is *Candidatus* Adfirosa nicomago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA927*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigellaceae.

Description of *Candidatus* Adfulana amatrentia sp. nov.

Candidatus Adfulana amatrentia (NL. fem. n. *amatrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MYbin3 sp002753335*. The type genome for the species is the GenBank assembly GCA_002753335.1. The GC content of the type genome is 44.36 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Adfulana gen. nov.

Candidatus Adfulana (NL. fem. n. *Adfulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MYbin3*. The type species for the genus is *Candidatus* Adfulana amatrentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramosaceae.

Description of *Candidatus* Adfulana stercibra sp. nov.

Candidatus Adfulana stercibra (NL. fem. n. *stercibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MYbin3 sp004321915*. The type genome for the species is the GenBank assembly GCA_004321915.1. The GC content of the type genome is 48.51 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Adfularia ficulisca sp. nov.

Candidatus Adfularia ficulisca (NL. fem. n. *ficulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDF01 sp012729395*. The type genome for the species is the GenBank assembly GCA_012729395.1. The GC content of the type genome is 63.45 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Adfularia gen. nov.

Candidatus Adfularia (NL. fem. n. *Adfularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYDF01*. The type species for the genus is *Candidatus* Adfularia ficulisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWPN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifidaceae.

Description of *Candidatus* Adfulia nehalitura sp. nov.

Candidatus Adfulia nehalitura (NL. fem. n. *nehalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMA01 sp012799055*. The type genome for the species is the GenBank assembly GCA_012799055.1. The GC content of the type genome is 29.67 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Adfulia gen. nov.

Candidatus Adfulia (NL. fem. n. *Adfulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZMA01*. The type species for the genus is *Candidatus* Adfulia nehalitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfulosa desacax sp. nov.

Candidatus Adfulosa desacax (NL. fem. n. *desacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-47-8 sp001805375*. The type genome for the species is the GenBank assembly GCA_001805375.1. The GC content of the type genome is 46.95 % and the genome length is 2.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Adfulosa gen. nov.

Candidatus Adfulosa (NL. fem. n. *Adfulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-47-8*. The type species for the genus is *Candidatus* Adfulosa desacax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Kpj58rc*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanellaceae.

Description of *Candidatus* Adfulula attolimonia sp. nov.

Candidatus Adfulula attolimonia (NL. fem. n. *attolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNEW01 sp002922725*. The type genome for the species is the GenBank assembly GCA_002922725.1. The GC content of the type genome is 38.97 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Adfulula gen. nov.

Candidatus Adfulula (NL. fem. n. *Adfulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNEW01*. The type species for the genus is *Candidatus* Adfulula

attolimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2987*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lutulariaceae.

Description of *Candidatus* Adfunella admulessa sp. nov.

Candidatus Adfunella admulessa (NL. fem. n. *admulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZ26 sp003232155*. The type genome for the species is the GenBank assembly GCA_003232155.1. The GC content of the type genome is 35.57 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Adfunella gen. nov.

Candidatus Adfunella (NL. fem. n. *Adfunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RZ26*. The type species for the genus is *Candidatus* Adfunella admulessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfunella rudecastra sp. nov.

Candidatus Adfunella rudecastra (NL. fem. n. *rudecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZ26 sp005885635*. The type genome for the species is the GenBank assembly RS_GCF_005885635.1. The GC content of the type genome is 37.97 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Adfunia exsisimonia sp. nov.

Candidatus Adfunia exsisimonia (NL. fem. n. *exsisimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14121 sp902795845*. The type genome for the species is the

GenBank assembly GCA_902795845.1. The GC content of the type genome is 24.55 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Adfunia gen. nov.

Candidatus Adfunia (NL. fem. n. *Adfunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14121*. The type species for the genus is *Candidatus* Adfunia exsisimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Adfunida almucatica sp. nov.

Candidatus Adfunida almucatica (NL. fem. n. *almucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUKE01 sp003553565*. The type genome for the species is the GenBank assembly GCA_003553565.1. The GC content of the type genome is 72.74 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Adfunida gen. nov.

Candidatus Adfunida (NL. fem. n. *Adfunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUKE01*. The type species for the genus is *Candidatus* Adfunida almucatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adfunida effunastra sp. nov.

Candidatus Adfunida effunastra (NL. fem. n. *effunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUKE01 sp003550425*. The type genome for the species is the GenBank assembly GCA_003550425.1. The GC content of the type genome is 71.75 %

and the genome length is 2.92 Mbp.

Description of *Candidatus* Adfunosa ornititas sp. nov.

Candidatus Adfunosa ornititas (NL. fem. n. *ornititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDMM01 sp013001465*. The type genome for the species is the GenBank assembly GCA_013001465.1. The GC content of the type genome is 39.25 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Adfunosa gen. nov.

Candidatus Adfunosa (NL. fem. n. *Adfunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDMM01*. The type species for the genus is *Candidatus* Adfunosa ornititas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8649*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feficidaceae.

Description of *Candidatus* Adgenana offiricula sp. nov.

Candidatus Adgenana offiricula (NL. fem. n. *offiricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T33-2 sp002860205*. The type genome for the species is the GenBank assembly RS_GCF_002860205.1. The GC content of the type genome is 43.26 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Adgenana gen. nov.

Candidatus Adgenana (NL. fem. n. *Adgenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T33-2*. The type species for the genus is *Candidatus* Adgenana offiricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-18226*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Robigidaceae.

Description of *Candidatus* Adgenaria peropitudo sp. nov.

Candidatus Adgenaria peropitudo (NL. fem. n. *peropitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAP81b sp001295935*. The type genome for the species is the GenBank assembly RS_GCF_001295935.1. The GC content of the type genome is 68.49 % and the genome length is 3.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Adgenaria gen. nov.

Candidatus Adgenaria (NL. fem. n. *Adgenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AAP81b*. The type species for the genus is *Candidatus* Adgenaria peropitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adgenia crusmitudo sp. nov.

Candidatus Adgenia crusmitudo (NL. fem. n. *crusmitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *65-79 sp001896885*. The type genome for the species is the GenBank assembly GCA_001896885.1. The GC content of the type genome is 64.61 % and the genome length is 5.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Adgenia gen. nov.

Candidatus Adgenia (NL. fem. n. *Adgenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *65-79*. The type species for the genus is *Candidatus* Adgenia crusmitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adgenida apposibra sp. nov.

Candidatus Adgenida apposibra (NL. fem. n. *apposibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GW-Firmicutes-8 sp002840165*. The type genome for the species is the GenBank assembly GCA_002840165.1. The GC content of the type genome is 45.88 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Adgenida gen. nov.

Candidatus Adgenida (NL. fem. n. *Adgenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GW-Firmicutes-8*. The type species for the genus is *Candidatus* Adgenida apposibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefanaceae.

Description of *Candidatus* Adgenosa parocibra sp. nov.

Candidatus Adgenosa parocibra (NL. fem. n. *parocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13423 sp902788865*. The type genome for the species is the GenBank assembly GCA_902788865.1. The GC content of the type genome is 48.3 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Adgenosa gen. nov.

Candidatus Adgenosa (NL. fem. n. *Adgenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13423*. The type species for the genus is *Candidatus* Adgenosa parocibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adgenula alembilega sp. nov.

Candidatus Adgenula alembilega (NL. fem. n. *alembilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5489 sp002424095*. The type genome for the species is the GenBank assembly GCA_002424095.1. The GC content of the type genome is 30.85 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Adgenula gen. nov.

Candidatus Adgenula (NL. fem. n. *Adgenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5489*. The type species for the genus is *Candidatus* Adgenula alembilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Adgesella navifitica sp. nov.

Candidatus Adgesella navifitica (NL. fem. n. *navifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUX01 sp013044185*. The type genome for the species is the GenBank assembly GCA_013044185.1. The GC content of the type genome is 62.45 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Adgesella gen. nov.

Candidatus Adgesella (NL. fem. n. *Adgesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEUX01*. The type species for the genus is *Candidatus* Adgesella navifitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adgesella semibousia sp. nov.

Candidatus Adgesella semibousia (NL. fem. n. *semibousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUX01 sp013043945*. The type genome for the species is the GenBank assembly GCA_013043945.1. The GC content of the type genome is 62.54 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Adgesula inpuditas sp. nov.

Candidatus Adgesula inpuditas (NL. fem. n. *inpuditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-230 sp002085085*. The type genome for the species is the GenBank assembly GCA_002085085.1. The GC content of the type genome is 44.23 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Adgesula gen. nov.

Candidatus Adgesula (NL. fem. n. *Adgesula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-230*. The type species for the genus is *Candidatus* Adgesula inpuditas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adgubana catagatica sp. nov.

Candidatus Adgubana catagatica (NL. fem. n. *catagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2283 sp002345725*. The type genome for the species is the GenBank assembly GCA_002345725.1. The GC content of the type genome is 38.97 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Adgubana gen. nov.

Candidatus Adgubana (NL. fem. n. *Adgubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA2283*. The type species for the genus is *Candidatus* Adgubana catagatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Adgubana indivitica sp. nov.

Candidatus Adgubana indivitica (NL. fem. n. *indivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2283 sp903825325*. The type genome for the species is the GenBank assembly GCA_903825325.1. The GC content of the type genome is 39.3 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Adgubaria exceretta sp. nov.

Candidatus Adgubaria exceretta (NL. fem. n. *exceretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYSU-D60014 sp003576685*. The type genome for the species is the GenBank assembly RS_GCF_003576685.1. The GC content of the type genome is 65.08 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Adgubaria gen. nov.

Candidatus Adgubaria (NL. fem. n. *Adgubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYSU-D60014*. The type species for the genus is *Candidatus* Adgubaria exceretta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adgubella adfanax sp. nov.

Candidatus Adgubella adfanax (NL. fem. n. *adfanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RHKK01 sp008363075*. The type genome for the species is the GenBank assembly GCA_008363075.1. The GC content of the type genome is 59.96 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Adgubella gen. nov.

Candidatus Adgubella (NL. fem. n. *Adgubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RHKK01*. The type species for the genus is *Candidatus* Adgubella adfanax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-60-25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugigulaceae.

Description of *Candidatus* Adgubida abligicula sp. nov.

Candidatus Adgubida abligicula (NL. fem. n. *abligicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPL01 sp012838385*. The type genome for the species is the GenBank assembly GCA_012838385.1. The GC content of the type genome is 40.09 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Adgubida gen. nov.

Candidatus Adgubida (NL. fem. n. *Adgubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPL01*. The type species for the genus is *Candidatus* Adgubida abligicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benifulaceae.

Description of *Candidatus* Adgubida bisulivita sp. nov.

Candidatus Adgubida bisulivita (NL. fem. n. *bisulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPL01 sp012522035*. The type genome for the species is the GenBank assembly GCA_012522035.1. The GC content of the type genome is 40.61 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Adgubula armipedo sp. nov.

Candidatus Adgubula armipedo (NL. fem. n. *armipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1447 sp002329225*. The type genome for the species is the GenBank assembly GCA_002329225.1. The GC content of the type genome is 46.42 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Adgubula gen. nov.

Candidatus Adgubula (NL. fem. n. *Adgubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1447*. The type species for the genus is *Candidatus* Adgubula armipedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adgubula homogatica sp. nov.

Candidatus Adgubula homogatica (NL. fem. n. *homogatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1447 sp012524025*. The type genome for the species is the GenBank assembly GCA_012524025.1. The GC content of the type genome is 45.01 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Adgubula monocigena sp. nov.

Candidatus Adgubula monocigena (NL. fem. n. *monocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1447 sp012728445*. The type genome for the species is the GenBank assembly GCA_012728445.1. The GC content of the type genome is 46.09 %

and the genome length is 2.41 Mbp.

Description of *Candidatus* Adgubula vicecax sp. nov.

Candidatus Adgubula vicecax (NL. fem. n. *vicecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1447 sp002069695*. The type genome for the species is the GenBank assembly GCA_002069695.1. The GC content of the type genome is 57.29 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Adhaeribacter assudicella sp. nov.

Candidatus Adhaeribacter assudicella (NL. fem. n. *assudicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Adhaeribacter sp014075995*. The type genome for the species is the GenBank assembly RS_GCF_014075995.1. The GC content of the type genome is 40.78 % and the genome length is 6.94 Mbp.

Description of *Candidatus* Adhaeribacter ineffibra sp. nov.

Candidatus Adhaeribacter ineffibra (NL. fem. n. *ineffibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Adhaeribacter sp003340495*. The type genome for the species is the GenBank assembly RS_GCF_003340495.1. The GC content of the type genome is 42.8 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Adhaeribacter nosocitas sp. nov.

Candidatus Adhaeribacter nosocitas (NL. fem. n. *nosocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Adhaeribacter sp008629685*. The type genome for the species is the GenBank assembly RS_GCF_008629685.1. The GC content of the type genome is 43.35 % and the genome length is 6.52 Mbp.

Description of *Candidatus* Adhaeribacter turifivita sp. nov.

Candidatus Adhaeribacter turifivita (NL. fem. n. *turifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Adhaeribacter sp003023845*. The type genome for the species is the GenBank assembly RS_GCF_003023845.1. The GC content of the type genome is 41.99 % and the genome length is 7.25 Mbp.

Description of *Candidatus* Adhinana patibitura sp. nov.

Candidatus Adhinana patibitura (NL. fem. n. *patibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FMMP01 sp900095725*. The type genome for the species is the GenBank assembly RS_GCF_900095725.1. The GC content of the type genome is 35.23 % and the genome length is 4.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Coal seam gas water treatment pond".

Description of *Candidatus* Adhinana gen. nov.

Candidatus Adhinana (NL. fem. n. *Adhinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FMMP01*. The type species for the genus is *Candidatus* Adhinana patibitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adhinaria depacitura sp. nov.

Candidatus Adhinaria depacitura (NL. fem. n. *depacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWPP01 sp003558625*. The type genome for the species is the GenBank assembly GCA_003558625.1. The GC content of the type genome is 48.16 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Adhinaria gen. nov.

Candidatus Adhinaria (NL. fem. n. *Adhinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWPP01*. The type species for the genus is *Candidatus* Adhinaria depacitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adhinia fefelicella sp. nov.

Candidatus Adhinia fefelicella (NL. fem. n. *fefelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCUS01 sp013811715*. The type genome for the species is the GenBank assembly GCA_013811715.1. The GC content of the type genome is 68.84 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Adhinia gen. nov.

Candidatus Adhinia (NL. fem. n. *Adhinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCUS01*. The type species for the genus is *Candidatus* Adhinia fefelicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adhinida artopentia sp. nov.

Candidatus Adhinida artopentia (NL. fem. n. *artopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B46-G9 sp003646815*. The type genome for the species is the GenBank assembly GCA_003646815.1. The GC content of the type genome is 51.5 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Adhinida gen. nov.

Candidatus Adhinida (NL. fem. n. *Adhinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B46-G9*. The type species for the genus is *Candidatus* Adhinida

artopentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adhinosa acistedo sp. nov.

Candidatus Adhinosa acistedo (NL. fem. n. *acistedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGX01 sp011047885*. The type genome for the species is the GenBank assembly GCA_011047885.1. The GC content of the type genome is 45.16 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Adhinosa gen. nov.

Candidatus Adhinosa (NL. fem. n. *Adhinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTGX01*. The type species for the genus is *Candidatus* Adhinosa acistedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponidaceae.

Description of *Candidatus* Adhinosa immacatica sp. nov.

Candidatus Adhinosa immacatica (NL. fem. n. *immacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGX01 sp011334825*. The type genome for the species is the GenBank assembly GCA_011334825.1. The GC content of the type genome is 45.69 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Adhorana insinugo sp. nov.

Candidatus Adhorana insinugo (NL. fem. n. *insinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMI01 sp012798895*. The type genome for the species is the

GenBank assembly GCA_012798895.1. The GC content of the type genome is 49.09 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Adhorana gen. nov.

Candidatus Adhorana (NL. fem. n. *Adhorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZMI01*. The type species for the genus is *Candidatus* Adhorana insinugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubiaceae.

Description of *Candidatus* Adhorana munifitrix sp. nov.

Candidatus Adhorana munifitrix (NL. fem. n. *munifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMI01 sp012518675*. The type genome for the species is the GenBank assembly GCA_012518675.1. The GC content of the type genome is 47.85 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Adhoraria dimacivita sp. nov.

Candidatus Adhoraria dimacivita (NL. fem. n. *dimacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMXL01 sp004356385*. The type genome for the species is the GenBank assembly GCA_004356385.1. The GC content of the type genome is 51.58 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Adhoraria gen. nov.

Candidatus Adhoraria (NL. fem. n. *Adhoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMXL01*. The type species for the genus is *Candidatus* Adhoraria dimacivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA10348. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divorosaceae.

Description of *Candidatus* Adhorella adrotilega sp. nov.

Candidatus Adhorella adrotilega (NL. fem. n. *adrotilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA685 sp011524995*. The type genome for the species is the GenBank assembly GCA_011524995.1. The GC content of the type genome is 49.45 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Adhorella gen. nov.

Candidatus Adhorella (NL. fem. n. *Adhorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA685*. The type species for the genus is *Candidatus* Adhorella adrotilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adhorella cululibra sp. nov.

Candidatus Adhorella cululibra (NL. fem. n. *cululibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA685 sp011525265*. The type genome for the species is the GenBank assembly GCA_011525265.1. The GC content of the type genome is 47.0 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Adhorella daducilega sp. nov.

Candidatus Adhorella daducilega (NL. fem. n. *daducilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA685 sp002299005*. The type genome for the species is the GenBank assembly GCA_002299005.1. The GC content of the type genome is 49.64 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Adhorella obtecicella sp. nov.

Candidatus Adhorella obtecicella (NL. fem. n. *obtecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA685 sp011526395*. The type genome for the species is the GenBank assembly GCA_011526395.1. The GC content of the type genome is 45.78 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Adhoria adsulitica sp. nov.

Candidatus Adhoria adsulitica (NL. fem. n. *adsulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PSRI01 sp003175935*. The type genome for the species is the GenBank assembly GCA_003175935.1. The GC content of the type genome is 39.62 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Adhoria gen. nov.

Candidatus Adhoria (NL. fem. n. *Adhoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PSRI01*. The type species for the genus is *Candidatus* Adhoria adsulitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adhorida odontimonas sp. nov.

Candidatus Adhorida odontimonas (NL. fem. n. *odontimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-19 sp003599855*. The type genome for the species is the GenBank assembly GCA_003599855.1. The GC content of the type genome is 62.85 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Adhorida gen. nov.

Candidatus Adhorida (NL. fem. n. *Adhorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-19*. The type species for the genus is *Candidatus* Adhorida odontimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3ABIN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negidariaceae.

Description of *Candidatus* Adhorosa enharitio sp. nov.

Candidatus Adhorosa enharitio (NL. fem. n. *enharitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFE01 sp012735405*. The type genome for the species is the GenBank assembly GCA_012735405.1. The GC content of the type genome is 33.67 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Adhorosa gen. nov.

Candidatus Adhorosa (NL. fem. n. *Adhorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYFE01*. The type species for the genus is *Candidatus* Adhorosa enharitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adhorosa hecatifica sp. nov.

Candidatus Adhorosa hecatifica (NL. fem. n. *hecatifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFE01 sp012728365*. The type genome for the species is the GenBank assembly GCA_012728365.1. The GC content of the type genome is 33.92 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Adhorula benepilenta sp. nov.

Candidatus Adhorula benepilenta (NL. fem. n. *benepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACORA01 sp902629495*. The type genome for the species is the GenBank assembly RS_GCF_902629495.1. The GC content of the type genome is 48.2 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Adhorula gen. nov.

Candidatus Adhorula (NL. fem. n. *Adhorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACORA01*. The type species for the genus is *Candidatus* Adhorula benepilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subinellaceae.

Description of *Candidatus* Adhosana amfitessa sp. nov.

Candidatus Adhosana amfitessa (NL. fem. n. *amfitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKU01 sp009885415*. The type genome for the species is the GenBank assembly GCA_009885415.1. The GC content of the type genome is 62.91 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Adhosana gen. nov.

Candidatus Adhosana (NL. fem. n. *Adhosana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKU01*. The type species for the genus is *Candidatus* Adhosana amfitessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2746185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benepulaceae.

Description of *Candidatus* Adhosaria ineffisca sp. nov.

Candidatus Adhosaria ineffisca (NL. fem. n. *ineffisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1994 sp900553945*. The type genome for the species is the GenBank assembly GCA_900553945.1. The GC content of the type genome is 28.66 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Adhosaria gen. nov.

Candidatus Adhosaria (NL. fem. n. *Adhosaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1994*. The type species for the genus is *Candidatus* Adhosaria ineffisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Adhosaria peribifica sp. nov.

Candidatus Adhosaria peribifica (NL. fem. n. *peribifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1994 sp900556975*. The type genome for the species is the GenBank assembly GCA_900556975.1. The GC content of the type genome is 28.8 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Adhosella edulcedo sp. nov.

Candidatus Adhosella edulcedo (NL. fem. n. *edulcedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2732015 sp002732015*. The type genome for the species is the GenBank assembly GCA_002732015.1. The GC content of the type genome is 29.25 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Adhosella gen. nov.

Candidatus Adhosella (NL. fem. n. *Adhosella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2732015*. The type species for the genus is *Candidatus* Adhosella edulcedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citoculaceae.

Description of *Candidatus* Adhosella immigisca sp. nov.

Candidatus Adhosella immigisca (NL. fem. n. *immigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2732015 sp902557845*. The type genome for the species is the GenBank assembly RS_GCF_902557845.1. The GC content of the type genome is 29.07 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Adhosella resacibra sp. nov.

Candidatus Adhosella resacibra (NL. fem. n. *resacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2732015 sp002171495*. The type genome for the species is the GenBank assembly GCA_002171495.2. The GC content of the type genome is 29.26 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Adhosida benevitica sp. nov.

Candidatus Adhosida benevitica (NL. fem. n. *benevitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11130 sp902766115*. The type genome for the species is the GenBank assembly GCA_902766115.1. The GC content of the type genome is 56.61 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Adhosida gen. nov.

Candidatus Adhosida (NL. fem. n. *Adhosida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *RUG11130*. The type species for the genus is *Candidatus* Adhosida benevitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Adhososa adlapastra sp. nov.

Candidatus Adhososa adlapastra (NL. fem. n. *adlapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACXEY01 sp902766695*. The type genome for the species is the GenBank assembly GCA_902766695.1. The GC content of the type genome is 67.53 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Adhososa gen. nov.

Candidatus Adhososa (NL. fem. n. *Adhososa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACXEY01*. The type species for the genus is *Candidatus* Adhososa adlapastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Lenti-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lavacariaceae.

Description of *Candidatus* Adinvella nicotitura sp. nov.

Candidatus Adinvella nicotitura (NL. fem. n. *nicotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDBN01 sp013288625*. The type genome for the species is the GenBank assembly GCA_013288625.1. The GC content of the type genome is 40.91 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Adinvella gen. nov.

Candidatus Adinvella (NL. fem. n. *Adinvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDBN01*. The type species for the genus is *Candidatus* Adinvella nicotitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adinvida inrefifica sp. nov.

Candidatus Adinvida inrefifica (NL. fem. n. *inrefifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9296 sp003518125*. The type genome for the species is the GenBank assembly GCA_003518125.1. The GC content of the type genome is 33.62 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Adinvida gen. nov.

Candidatus Adinvida (NL. fem. n. *Adinvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9296*. The type species for the genus is *Candidatus* Adinvida inrefifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Adinvula colopiforma sp. nov.

Candidatus Adinvula colopiforma (NL. fem. n. *colopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZBG01 sp012513915*. The type genome for the species is the GenBank assembly GCA_012513915.1. The GC content of the type genome is 40.33 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Adinvula gen. nov.

Candidatus Adinvula (NL. fem. n. *Adinvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAZBG01*. The type species for the genus is *Candidatus* Adinvula colopiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlacana insenimonas sp. nov.

Candidatus Adlacana insenimonas (NL. fem. n. *insenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQH01 sp007131555*. The type genome for the species is the GenBank assembly GCA_007131555.1. The GC content of the type genome is 63.92 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Adlacana gen. nov.

Candidatus Adlacana (NL. fem. n. *Adlacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLQH01*. The type species for the genus is *Candidatus* Adlacana insenimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisorariaceae.

Description of *Candidatus* Adlacella hirudifica sp. nov.

Candidatus Adlacella hirudifica (NL. fem. n. *hirudifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUUD01 sp012031655*. The type genome for the species is the GenBank assembly GCA_012031655.1. The GC content of the type genome is 61.23 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Adlacella gen. nov.

Candidatus Adlacella (NL. fem. n. *Adlacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUUD01*. The type species for the genus is *Candidatus* Adlacella

hirudifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J027*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemellaceae.

Description of *Candidatus* Adlacia intabitio sp. nov.

Candidatus Adlacia intabitio (NL. fem. n. *intabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGJ01 sp012727745*. The type genome for the species is the GenBank assembly GCA_012727745.1. The GC content of the type genome is 49.49 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Adlacia gen. nov.

Candidatus Adlacia (NL. fem. n. *Adlacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYGJ01*. The type species for the genus is *Candidatus* Adlacia intabitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlacida subabilega sp. nov.

Candidatus Adlacida subabilega (NL. fem. n. *subabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWJF01 sp009391835*. The type genome for the species is the GenBank assembly GCA_009391835.1. The GC content of the type genome is 56.56 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Adlacida gen. nov.

Candidatus Adlacida (NL. fem. n. *Adlacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QWJF01*. The type species for the genus is *Candidatus* Adlacida subabilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11579*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirabosaceae.

Description of *Candidatus* Adlacula smegmetta sp. nov.

Candidatus Adlacula smegmetta (NL. fem. n. *smegmetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002731945 sp002731945*. The type genome for the species is the GenBank assembly GCA_002731945.1. The GC content of the type genome is 35.06 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Adlacula gen. nov.

Candidatus Adlacula (NL. fem. n. *Adlacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002731945*. The type species for the genus is *Candidatus* Adlacula smegmetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citipiaceae.

Description of *Candidatus* Adlapana mahelitio sp. nov.

Candidatus Adlapana mahelitio (NL. fem. n. *mahelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3871 sp002392265*. The type genome for the species is the GenBank assembly GCA_002392265.1. The GC content of the type genome is 47.74 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Adlapana gen. nov.

Candidatus Adlapana (NL. fem. n. *Adlapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3871*. The type species for the genus is *Candidatus* Adlapana

mahelitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlapella regifibra sp. nov.

Candidatus Adlapella regifibra (NL. fem. n. *regifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFJ01 sp012728295*. The type genome for the species is the GenBank assembly GCA_012728295.1. The GC content of the type genome is 36.31 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Adlapella gen. nov.

Candidatus Adlapella (NL. fem. n. *Adlapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYFJ01*. The type species for the genus is *Candidatus* Adlapella regifibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlapia insubitas sp. nov.

Candidatus Adlapia insubitas (NL. fem. n. *insubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch10 sp013178295*. The type genome for the species is the GenBank assembly GCA_013178295.1. The GC content of the type genome is 52.95 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Adlapia gen. nov.

Candidatus Adlapia (NL. fem. n. *Adlapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch10*. The type species for the genus is *Candidatus* Adlapia insubitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlapida adtacimonia sp. nov.

Candidatus Adlapida adtacimonia (NL. fem. n. *adtacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686595 sp002686595*. The type genome for the species is the GenBank assembly GCA_002686595.1. The GC content of the type genome is 65.58 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Adlapida gen. nov.

Candidatus Adlapida (NL. fem. n. *Adlapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2686595*. The type species for the genus is *Candidatus* Adlapida adtacimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Adlaposa resupitudo sp. nov.

Candidatus Adlaposa resupitudo (NL. fem. n. *resupitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZR01 sp013695855*. The type genome for the species is the GenBank assembly GCA_013695855.1. The GC content of the type genome is 70.84 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Adlaposa gen. nov.

Candidatus Adlaposa (NL. fem. n. *Adlaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZR01*. The type species for the genus is *Candidatus* Adlaposa resupitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlapula omnivastra sp. nov.

Candidatus Adlapula omnivastra (NL. fem. n. *omnivastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXM01 sp013697005*. The type genome for the species is the GenBank assembly GCA_013697005.1. The GC content of the type genome is 64.38 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Adlapula gen. nov.

Candidatus Adlapula (NL. fem. n. *Adlapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXM01*. The type species for the genus is *Candidatus* Adlapula omnivastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Adlecaria ampenilenta sp. nov.

Candidatus Adlecaria ampenilenta (NL. fem. n. *ampenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA935 sp009777715*. The type genome for the species is the GenBank assembly GCA_009777715.1. The GC content of the type genome is 42.85 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Adlecaria gen. nov.

Candidatus Adlecaria (NL. fem. n. *Adlecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA935*. The type species for the genus is *Candidatus* Adlecaria ampenilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlecaria attolastra sp. nov.

Candidatus Adlecaria attolastra (NL. fem. n. *attolastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA935 sp009787745*. The type genome for the species is the GenBank assembly GCA_009787745.1. The GC content of the type genome is 40.87 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Adlecaria benevedo sp. nov.

Candidatus Adlecaria benevedo (NL. fem. n. *benevedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA935 sp002293525*. The type genome for the species is the GenBank assembly GCA_002293525.1. The GC content of the type genome is 46.29 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Adlecaria colepitas sp. nov.

Candidatus Adlecaria colepitas (NL. fem. n. *colepitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA935 sp009780115*. The type genome for the species is the GenBank assembly GCA_009780115.1. The GC content of the type genome is 40.39 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Adlecaria ecligentia sp. nov.

Candidatus Adlecaria ecligentia (NL. fem. n. *ecligentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA935 sp002293475*. The type genome for the species is the GenBank assembly GCA_002293475.1. The GC content of the type genome is 47.04 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Adlecella cotenitura sp. nov.

Candidatus Adlecella cotenitura (NL. fem. n. *cotenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPBQ01 sp004525875*. The type genome for the species is the GenBank assembly GCA_004525875.1. The GC content of the type genome is 66.2 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Adlecella gen. nov.

Candidatus Adlecella (NL. fem. n. *Adlecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPBQ01*. The type species for the genus is *Candidatus* Adlecella cotenitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1149*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recuculaceae.

Description of *Candidatus* Adlecia denupiforma sp. nov.

Candidatus Adlecia denupiforma (NL. fem. n. *denupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14300 sp902797685*. The type genome for the species is the GenBank assembly GCA_902797685.1. The GC content of the type genome is 54.09 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Adlecia gen. nov.

Candidatus Adlecia (NL. fem. n. *Adlecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14300*. The type species for the genus is *Candidatus* Adlecia denupiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-1252*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenunulaceae.

Description of *Candidatus* Adlecida genufitoga sp. nov.

Candidatus Adlecida genufitoga (NL. fem. n. *genufitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWDC01 sp002070355*. The type genome for the species is the GenBank assembly GCA_002070355.1. The GC content of the type genome is 32.79 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Adlecida gen. nov.

Candidatus Adlecida (NL. fem. n. *Adlecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWDC01*. The type species for the genus is *Candidatus* Adlecida genufitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6264*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotulaceae.

Description of *Candidatus* Adlecosa lubenibra sp. nov.

Candidatus Adlecosa lubenibra (NL. fem. n. *lubenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA647 sp002299555*. The type genome for the species is the GenBank assembly GCA_002299555.1. The GC content of the type genome is 37.77 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Adlecosa gen. nov.

Candidatus Adlecosa (NL. fem. n. *Adlecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA647*. The type species for the genus is *Candidatus* Adlecosa lubenibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucosaceae.

Description of *Candidatus* Adlecula telefastra sp. nov.

Candidatus Adlecula telefastra (NL. fem. n. *telefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUML01 sp012839895*. The type genome for the species is the GenBank assembly GCA_012839895.1. The GC content of the type genome is 42.22 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Adlecula gen. nov.

Candidatus Adlecula (NL. fem. n. *Adlecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUML01*. The type species for the genus is *Candidatus* Adlecula telefastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlenana allubicula sp. nov.

Candidatus Adlenana allubicula (NL. fem. n. *allubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5796 sp002418215*. The type genome for the species is the GenBank assembly GCA_002418215.1. The GC content of the type genome is 59.22 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Adlenana gen. nov.

Candidatus Adlenana (NL. fem. n. *Adlenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5796*. The type species for the genus is *Candidatus* Adlenana allubicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Adlenaria affabessa sp. nov.

Candidatus Adlenaria affabessa (NL. fem. n. *affabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFYP01 sp011526365*. The type genome for the species is the GenBank assembly GCA_011526365.1. The GC content of the type genome is 42.86 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Adlenaria gen. nov.

Candidatus Adlenaria (NL. fem. n. *Adlenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFYP01*. The type species for the genus is *Candidatus* Adlenaria affabessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlenaria melilousia sp. nov.

Candidatus Adlenaria melilousia (NL. fem. n. *melilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFYP01 sp009921175*. The type genome for the species is the GenBank assembly GCA_009921175.1. The GC content of the type genome is 45.36 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Adlenosa repudibula sp. nov.

Candidatus Adlenosa repudibula (NL. fem. n. *repudibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-243 sp003135055*. The type genome for the species is the GenBank assembly GCA_003135055.1. The GC content of the type genome is 60.94 % and the genome length is 10.71 Mbp.

Description of *Candidatus* Adlenosa gen. nov.

Candidatus Adlenosa (NL. fem. n. *Adlenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-243*. The type species for the genus is *Candidatus* Adlenosa repudibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlenula colapilenta sp. nov.

Candidatus Adlenula colapilenta (NL. fem. n. *colapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPG01 sp012838425*. The type genome for the species is the GenBank assembly GCA_012838425.1. The GC content of the type genome is 44.67 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Adlenula gen. nov.

Candidatus Adlenula (NL. fem. n. *Adlenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPG01*. The type species for the genus is *Candidatus* Adlenula colapilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Adlenula pinigatica sp. nov.

Candidatus Adlenula pinigatica (NL. fem. n. *pinigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPG01 sp012511925*. The type genome for the species is the GenBank assembly GCA_012511925.1. The GC content of the type genome is 41.13 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Adlicana vilitigena sp. nov.

Candidatus Adlicana vilitigena (NL. fem. n. *vilitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMDH01 sp008080945*. The type genome for the species is the GenBank assembly GCA_008080945.1. The GC content of the type genome is 37.43 %

and the genome length is 0.89 Mbp.

Description of *Candidatus* Adlicana gen. nov.

Candidatus Adlicana (NL. fem. n. *Adlicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMDH01*. The type species for the genus is *Candidatus* Adlicana vilitigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Adlicaria rosacatio sp. nov.

Candidatus Adlicaria rosacatio (NL. fem. n. *rosacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKSR01 sp007122885*. The type genome for the species is the GenBank assembly GCA_007122885.1. The GC content of the type genome is 67.23 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Adlicaria gen. nov.

Candidatus Adlicaria (NL. fem. n. *Adlicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKSR01*. The type species for the genus is *Candidatus* Adlicaria rosacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Adlicella innupugo sp. nov.

Candidatus Adlicella innupugo (NL. fem. n. *innupugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGO01 sp012727685*. The type genome for the species is the

GenBank assembly GCA_012727685.1. The GC content of the type genome is 54.85 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Adlicella gen. nov.

Candidatus Adlicella (NL. fem. n. *Adlicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYGO01*. The type species for the genus is *Candidatus* Adlicella innupugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Adlicia artifago sp. nov.

Candidatus Adlicia artifago (NL. fem. n. *artifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5356 sp002407935*. The type genome for the species is the GenBank assembly GCA_002407935.1. The GC content of the type genome is 41.32 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Adlicia gen. nov.

Candidatus Adlicia (NL. fem. n. *Adlicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5356*. The type species for the genus is *Candidatus* Adlicia artifago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Taraxidaceae.

Description of *Candidatus* Adlicida apsocisca sp. nov.

Candidatus Adlicida apsocisca (NL. fem. n. *apsocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAYNV01 sp012520645*. The type genome for the species is the GenBank assembly GCA_012520645.1. The GC content of the type genome is 44.07 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Adlicida gen. nov.

Candidatus Adlicida (NL. fem. n. *Adlicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYNV01*. The type species for the genus is *Candidatus* Adlicida apsocisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlicosa refinatio sp. nov.

Candidatus Adlicosa refinatio (NL. fem. n. *refinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707205 sp002707205*. The type genome for the species is the GenBank assembly GCA_002707205.1. The GC content of the type genome is 35.19 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Adlicosa gen. nov.

Candidatus Adlicosa (NL. fem. n. *Adlicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2707205*. The type species for the genus is *Candidatus* Adlicosa refinatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cemenellaceae.

Description of *Candidatus* Adlocaria prospitudo sp. nov.

Candidatus Adlocaria prospitudo (NL. fem. n. *prospitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCD01 sp013359265*. The type genome for the species is the

GenBank assembly GCA_013359265.1. The GC content of the type genome is 60.13 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Adlocaria gen. nov.

Candidatus Adlocaria (NL. fem. n. *Adlocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCD01*. The type species for the genus is *Candidatus* Adlocaria prospitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLHB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegulaceae.

Description of *Candidatus* Adlocella retunatio sp. nov.

Candidatus Adlocella retunatio (NL. fem. n. *retunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWL01 sp902806405*. The type genome for the species is the GenBank assembly GCA_902806405.1. The GC content of the type genome is 71.85 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Adlocella gen. nov.

Candidatus Adlocella (NL. fem. n. *Adlocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWL01*. The type species for the genus is *Candidatus* Adlocella retunatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Adlocida adfabimonas sp. nov.

Candidatus Adlocida adfabimonas (NL. fem. n. *adfabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Spiro-01 sp001604265*. The type genome for the species is the GenBank assembly GCA_001604265.1. The GC content of the type genome is 50.94 % and the genome length is 1.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Adlocida gen. nov.

Candidatus Adlocida (NL. fem. n. *Adlocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Spiro-01*. The type species for the genus is *Candidatus* Adlocida adfabimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlocida adtorisca sp. nov.

Candidatus Adlocida adtorisca (NL. fem. n. *adtorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Spiro-01 sp900769955*. The type genome for the species is the GenBank assembly RS_GCF_900769955.1. The GC content of the type genome is 48.94 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Adlocida sicubatica sp. nov.

Candidatus Adlocida sicubatica (NL. fem. n. *sicubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Spiro-01 sp009695635*. The type genome for the species is the GenBank assembly RS_GCF_009695635.1. The GC content of the type genome is 35.8 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Adlocosa adpinitoga sp. nov.

Candidatus Adlocosa adpinitoga (NL. fem. n. *adpinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *41T-STBD-0c-01a sp002009425*. The type genome for the species is

the GenBank assembly RS_GCF_002009425.1. The GC content of the type genome is 60.08 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Adlocosa gen. nov.

Candidatus Adlocosa (NL. fem. n. *Adlocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *41T-STBD-0c-01a*. The type species for the genus is *Candidatus* Adlocosa adpinitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlocula sugiligena sp. nov.

Candidatus Adlocula sugiligena (NL. fem. n. *sugiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA993 sp002292015*. The type genome for the species is the GenBank assembly GCA_002292015.1. The GC content of the type genome is 49.74 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Adlocula gen. nov.

Candidatus Adlocula (NL. fem. n. *Adlocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA993*. The type species for the genus is *Candidatus* Adlocula sugiligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Adlubana effaritas sp. nov.

Candidatus Adlubana effaritas (NL. fem. n. *effaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-J16 sp003215655*. The type genome for the species is the GenBank assembly GCA_003215655.1. The GC content of the type genome is 40.2 %

and the genome length is 1.84 Mbp.

Description of *Candidatus* Adlubana gen. nov.

Candidatus Adlubana (NL. fem. n. *Adlubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-J16*. The type species for the genus is *Candidatus* Adlubana effaritas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlubella antevedo sp. nov.

Candidatus Adlubella antevedo (NL. fem. n. *antevedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-188 sp003169715*. The type genome for the species is the GenBank assembly GCA_003169715.1. The GC content of the type genome is 53.83 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Adlubella gen. nov.

Candidatus Adlubella (NL. fem. n. *Adlubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-188*. The type species for the genus is *Candidatus* Adlubella antevedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adlubia monoditudo sp. nov.

Candidatus Adlubia monoditudo (NL. fem. n. *monoditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CCA-013414725 sp013414725*. The type genome for the species is the GenBank assembly GCA_013414725.1. The GC content of the type genome is 40.56 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Adlubia gen. nov.

Candidatus Adlubia (NL. fem. n. *Adlubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CCA-013414725*. The type species for the genus is *Candidatus* Adlubia monoditudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solipanaceae.

Description of *Candidatus* Adlubida adtesessa sp. nov.

Candidatus Adlubida adtesessa (NL. fem. n. *adtesessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCHM01 sp903970255*. The type genome for the species is the GenBank assembly GCA_903970255.1. The GC content of the type genome is 43.05 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Adlubida gen. nov.

Candidatus Adlubida (NL. fem. n. *Adlubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCHM01*. The type species for the genus is *Candidatus* Adlubida adtesessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adluvana conipigena sp. nov.

Candidatus Adluvana conipigena (NL. fem. n. *conipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-62-58 sp001772005*. The type genome for the species is the GenBank assembly GCA_001772005.1. The GC content of the type genome is 61.83 % and the genome length is 5.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Adluvana gen. nov.

Candidatus Adluvana (NL. fem. n. *Adluvana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-62-58*. The type species for the genus is *Candidatus* Adluvana conipigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludanaceae.

Description of *Candidatus* Adluvana pomifibra sp. nov.

Candidatus Adluvana pomifibra (NL. fem. n. *pomifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-62-58 sp001771985*. The type genome for the species is the GenBank assembly GCA_001771985.1. The GC content of the type genome is 61.74 % and the genome length is 5.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Adluvaria impugibula sp. nov.

Candidatus Adluvaria impugibula (NL. fem. n. *impugibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSOS01 sp011055765*. The type genome for the species is the GenBank assembly GCA_011055765.1. The GC content of the type genome is 58.34 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Adluvaria gen. nov.

Candidatus Adluvaria (NL. fem. n. *Adluvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSOS01*. The type species for the genus is *Candidatus* Adluvaria impugibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Habacidaceae.

Description of *Candidatus* Adluvella lucelitio sp. nov.

Candidatus Adluvella lucelitio (NL. fem. n. *lucelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ANT-B6 sp001683905*. The type genome for the species is the GenBank assembly GCA_001683905.1. The GC content of the type genome is 41.56 % and the genome length is 3.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Antarctic Hypolithon".

Description of *Candidatus* Adluvella gen. nov.

Candidatus Adluvella (NL. fem. n. *Adluvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ANT-B6*. The type species for the genus is *Candidatus* Adluvella lucelitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adluvida hexagilenta sp. nov.

Candidatus Adluvida hexagilenta (NL. fem. n. *hexagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRHE01 sp011049745*. The type genome for the species is the GenBank assembly GCA_011049745.1. The GC content of the type genome is 46.41 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Adluvida gen. nov.

Candidatus Adluvida (NL. fem. n. *Adluvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRHE01*. The type species for the genus is *Candidatus* Adluvida hexagilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Volucanaceae.

Description of *Candidatus* Adluvosa appicitrix sp. nov.

Candidatus Adluvosa appicitrix (NL. fem. n. *appicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RSA1 sp002919305*. The type genome for the species is the GenBank assembly GCA_002919305.1. The GC content of the type genome is 66.14 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Adluvosa gen. nov.

Candidatus Adluvosa (NL. fem. n. *Adluvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RSA1*. The type species for the genus is *Candidatus* Adluvosa appicitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admigana maledifica sp. nov.

Candidatus Admigana maledifica (NL. fem. n. *maledifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED11-109 sp003563385*. The type genome for the species is the GenBank assembly GCA_003563385.1. The GC content of the type genome is 52.65 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Admigana gen. nov.

Candidatus Admigana (NL. fem. n. *Admigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED11-109*. The type species for the genus is *Candidatus* Admigana maledifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubiaceae.

Description of *Candidatus* Admigaria apsuricula sp. nov.

Candidatus Admigaria apsuricula (NL. fem. n. *apsuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUPU01 sp012032975*. The type genome for the species is the GenBank assembly GCA_012032975.1. The GC content of the type genome is 59.63 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Admigaria gen. nov.

Candidatus Admigaria (NL. fem. n. *Admigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUPU01*. The type species for the genus is *Candidatus* Admigaria apsuricula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admigella ablepetta sp. nov.

Candidatus Admigella ablepetta (NL. fem. n. *ablepetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCE01 sp013359235*. The type genome for the species is the GenBank assembly GCA_013359235.1. The GC content of the type genome is 31.63 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Admigella gen. nov.

Candidatus Admigella (NL. fem. n. *Admigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCE01*. The type species for the genus is *Candidatus* Admigella ablepetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9320*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilariaceae.

Description of *Candidatus* Admigia allobedo sp. nov.

Candidatus Admigia allobedo (NL. fem. n. *allobedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1901 sp900556135*. The type genome for the species is the GenBank assembly GCA_900556135.1. The GC content of the type genome is 29.3 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Admigia gen. nov.

Candidatus Admigia (NL. fem. n. *Admigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1901*. The type species for the genus is *Candidatus* Admigia allobedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Admigia inconivita sp. nov.

Candidatus Admigia inconivita (NL. fem. n. *inconivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1901 sp900553755*. The type genome for the species is the GenBank assembly GCA_900553755.1. The GC content of the type genome is 28.83 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Admigida pulegax sp. nov.

Candidatus Admigida pulegax (NL. fem. n. *pulegax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWE01 sp902806325*. The type genome for the species is the GenBank assembly GCA_902806325.1. The GC content of the type genome is 70.84 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Admigida gen. nov.

Candidatus Admigida (NL. fem. n. *Admigida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWE01*. The type species for the genus is *Candidatus* Admigida pulegax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Admodana resaledo sp. nov.

Candidatus Admodana resaledo (NL. fem. n. *resaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVE01 sp011368475*. The type genome for the species is the GenBank assembly GCA_011368475.1. The GC content of the type genome is 63.21 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Admodana gen. nov.

Candidatus Admodana (NL. fem. n. *Admodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVE01*. The type species for the genus is *Candidatus* Admodana resaledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NAK82*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minagidaceae.

Description of *Candidatus* Admodaria indepitio sp. nov.

Candidatus Admodaria indepitio (NL. fem. n. *indepitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA918 sp002293845*. The type genome for the species is the GenBank assembly GCA_002293845.1. The GC content of the type genome is 52.4 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Admodaria gen. nov.

Candidatus Admodaria (NL. fem. n. *Admodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA918*. The type species for the genus is *Candidatus* Admodaria indepitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Admodaria lenunibula sp. nov.

Candidatus Admodaria lenunibula (NL. fem. n. *lenunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA918 sp002422025*. The type genome for the species is the GenBank assembly GCA_002422025.1. The GC content of the type genome is 43.76 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Admodaria lubenitudo sp. nov.

Candidatus Admodaria lubenitudo (NL. fem. n. *lubenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA918 sp001779595*. The type genome for the species is the GenBank assembly GCA_001779595.1. The GC content of the type genome is 45.95 % and the genome length is 0.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Admodaria nitelentia sp. nov.

Candidatus Admodaria nitelentia (NL. fem. n. *nitelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA918 sp001783525*. The type genome for the species is the GenBank assembly GCA_001783525.1. The GC content of the type genome is 46.6 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Admodella ammoditas sp. nov.

Candidatus Admodella ammoditas (NL. fem. n. *ammoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-78 sp003553505*. The type genome for the species is the GenBank assembly GCA_003553505.1. The GC content of the type genome is 41.86 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Admodella gen. nov.

Candidatus Admodella (NL. fem. n. *Admodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1SED10-78*. The type species for the genus is *Candidatus* Admodella ammoditas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWPS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lacinidaceae.

Description of *Candidatus* Admodida pinifugo sp. nov.

Candidatus Admodida pinifugo (NL. fem. n. *pinifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICG01 sp009691525*. The type genome for the species is the GenBank assembly GCA_009691525.1. The GC content of the type genome is 64.05 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Admodida gen. nov.

Candidatus Admodida (NL. fem. n. *Admodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICG01*. The type species for the genus is *Candidatus* Admodida pinifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8231*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatosaceae.

Description of *Candidatus* Admodosa denecitoga sp. nov.

Candidatus Admodosa denecitoga (NL. fem. n. *denecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTG01 sp012031785*. The type genome for the species is the GenBank assembly GCA_012031785.1. The GC content of the type genome is 39.17 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Admodosa gen. nov.

Candidatus Admodosa (NL. fem. n. *Admodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUTG01*. The type species for the genus is *Candidatus* Admodosa denecitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admorana famelousia sp. nov.

Candidatus Admorana famelousia (NL. fem. n. *famelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG24 sp003242685*. The type genome for the species is the GenBank assembly GCA_003242685.1. The GC content of the type genome is 67.82 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Admorana gen. nov.

Candidatus Admorana (NL. fem. n. *Admorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG24*. The type species for the genus is *Candidatus* Admorana famelousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admorella armigilenta sp. nov.

Candidatus Admorella armigilenta (NL. fem. n. *armigilenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHZ01 sp012270625*. The type genome for the species is the GenBank assembly GCA_012270625.1. The GC content of the type genome is 59.14 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Admorella gen. nov.

Candidatus Admorella (NL. fem. n. *Admorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXHZ01*. The type species for the genus is *Candidatus* Admorella armigilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resupellaceae.

Description of *Candidatus* Admorida demigisca sp. nov.

Candidatus Admorida demigisca (NL. fem. n. *demigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7708 sp002482415*. The type genome for the species is the GenBank assembly GCA_002482415.1. The GC content of the type genome is 51.72 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Admorida gen. nov.

Candidatus Admorida (NL. fem. n. *Admorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7708*. The type species for the genus is *Candidatus* Admorida demigisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admulana cacomitas sp. nov.

Candidatus Admulana cacomitas (NL. fem. n. *cacomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLNH01 sp007133195*. The type genome for the species is the GenBank assembly GCA_007133195.1. The GC content of the type genome is 68.73 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Admulana gen. nov.

Candidatus Admulana (NL. fem. n. *Admulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLNH01*. The type species for the genus is *Candidatus* Admulana cacomitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admularia direcastra sp. nov.

Candidatus Admularia direcastra (NL. fem. n. *direcastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF1-45-5 sp001001795*. The type genome for the species is the GenBank assembly GCA_001001795.1. The GC content of the type genome is 45.59 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Admularia gen. nov.

Candidatus Admularia (NL. fem. n. *Admularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF1-45-5*. The type species for the genus is *Candidatus* Admularia direcastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admulella arrugimonas sp. nov.

Candidatus Admulella arrugimonas (NL. fem. n. *arrugimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-539 sp011369955*. The type genome for the species is the GenBank assembly GCA_011369955.1. The GC content of the type genome is 67.0 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Admulella gen. nov.

Candidatus Admulella (NL. fem. n. *Admulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-539*. The type species for the genus is *Candidatus* Admulella arrugimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UTPLA1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumidaceae.

Description of *Candidatus* Admulia arnogigena sp. nov.

Candidatus Admulia arnogigena (NL. fem. n. *arnogigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BH258 sp005870085*. The type genome for the species is the GenBank assembly RS_GCF_005870085.1. The GC content of the type genome is 37.35 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Admulia gen. nov.

Candidatus Admulia (NL. fem. n. *Admulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BH258*. The type species for the genus is *Candidatus* Admulia arnogigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admulida altiviforma sp. nov.

Candidatus Admulida altiviforma (NL. fem. n. *altiviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYXX01 sp012515695*. The type genome for the species is the GenBank assembly GCA_012515695.1. The GC content of the type genome is 61.51 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Admulida gen. nov.

Candidatus Admulida (NL. fem. n. *Admulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYXX01*. The type species for the genus is *Candidatus* Admulida altiviforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Admulosa vocamitura sp. nov.

Candidatus Admulosa vocamitura (NL. fem. n. *vocamitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM10611 sp900770645*. The type genome for the species is the GenBank assembly RS_GCF_900770645.1. The GC content of the type genome is 28.84 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Admulosa gen. nov.

Candidatus Admulosa (NL. fem. n. *Admulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM10611*. The type species for the genus is *Candidatus* Admulosa vocamitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caliposaceae.

Description of *Candidatus* Admulula uxorcitas sp. nov.

Candidatus Admulula uxorcitas (NL. fem. n. *uxorcitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYYM01 sp012515365*. The type genome for the species is the GenBank assembly GCA_012515365.1. The GC content of the type genome is 39.17 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Admulula gen. nov.

Candidatus Admulula (NL. fem. n. *Admulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYYM01*. The type species for the genus is *Candidatus* Admulula uxorcitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admurana naviciforma sp. nov.

Candidatus Admurana naviciforma (NL. fem. n. *naviciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718895 sp002718895*. The type genome for the species is the GenBank assembly GCA_002718895.1. The GC content of the type genome is 29.08 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Admurana gen. nov.

Candidatus Admurana (NL. fem. n. *Admurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2718895*. The type species for the genus is *Candidatus* Admurana naviciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fusifulaceae.

Description of *Candidatus* Admuraria adrumifica sp. nov.

Candidatus Admuraria adrumifica (NL. fem. n. *adrumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-18 sp003598025*. The type genome for the species is the GenBank assembly GCA_003598025.1. The GC content of the type genome is 41.02 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Admuraria gen. nov.

Candidatus Admuraria (NL. fem. n. *Admuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-18*. The type species for the genus is *Candidatus* Admuraria adrumifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Admurida oblanigena sp. nov.

Candidatus Admurida oblanigena (NL. fem. n. *oblanigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKWY01 sp007128675*. The type genome for the species is the GenBank assembly GCA_007128675.1. The GC content of the type genome is 59.5 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Admurida gen. nov.

Candidatus Admurida (NL. fem. n. *Admurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKWY01*. The type species for the genus is *Candidatus* Admurida oblanigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLRQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufiaceae.

Description of *Candidatus* Admurosa abambitas sp. nov.

Candidatus Admurosa abambitas (NL. fem. n. *abambitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-1 sp005879605*. The type genome for the species is the GenBank assembly GCA_005879605.1. The GC content of the type genome is 54.86 % and the genome length is 6.59 Mbp.

Description of *Candidatus* Admurosa gen. nov.

Candidatus Admurosa (NL. fem. n. *Admurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DP-1*. The type species for the genus is *Candidatus* Admurosa abambitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigosaceae.

Description of *Candidatus* Admurula inreticella sp. nov.

Candidatus Admurula inreticella (NL. fem. n. *inreticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-36-10b sp001785725*. The type genome for the species is the GenBank assembly GCA_001785725.1. The GC content of the type genome is 36.59 % and the genome length is 0.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Admurula gen. nov.

Candidatus Admurula (NL. fem. n. *Admurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-36-10b*. The type species for the genus is *Candidatus* Admurula inreticella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1006*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nehalulaceae.

Description of *Candidatus* Admutana ambecitura sp. nov.

Candidatus Admutana ambecitura (NL. fem. n. *ambecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNYL01 sp003973375*. The type genome for the species is the GenBank assembly GCA_003973375.1. The GC content of the type genome is 36.74 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Admutana gen. nov.

Candidatus Admutana (NL. fem. n. *Admutana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNYL01*. The type species for the genus is *Candidatus* Admutana ambecitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admutella argumifica sp. nov.

Candidatus Admutella argumifica (NL. fem. n. *argumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6224 sp002441585*. The type genome for the species is the GenBank assembly GCA_002441585.1. The GC content of the type genome is 52.75 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Admutella gen. nov.

Candidatus Admutella (NL. fem. n. *Admutella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6224*. The type species for the genus is *Candidatus* Admutella argumifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Admutia exaggitrix sp. nov.

Candidatus Admutia exaggitrix (NL. fem. n. *exaggitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOC01 sp012839065*. The type genome for the species is the GenBank assembly GCA_012839065.1. The GC content of the type genome is 35.61 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Admutia gen. nov.

Candidatus Admutia (NL. fem. n. *Admutia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOC01*. The type species for the genus is *Candidatus* Admutia exaggitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pocilariaceae.

Description of *Candidatus* Admutida clancatica sp. nov.

Candidatus Admutida clancatica (NL. fem. n. *clancatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHZS01 sp009692105*. The type genome for the species is the GenBank assembly GCA_009692105.1. The GC content of the type genome is 66.38 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Admutida gen. nov.

Candidatus Admutida (NL. fem. n. *Admutida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHZS01*. The type species for the genus is *Candidatus* Admutida clancatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Admutosa inresitica sp. nov.

Candidatus Admutosa inresitica (NL. fem. n. *inresitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCQM01 sp004298555*. The type genome for the species is the GenBank assembly GCA_004298555.1. The GC content of the type genome is 52.51 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Admutosa gen. nov.

Candidatus Admutosa (NL. fem. n. *Admutosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCQM01*. The type species for the genus is *Candidatus* Admutosa inresitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Admutosa semipugo sp. nov.

Candidatus Admutosa semipugo (NL. fem. n. *semipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCQM01 sp013044365*. The type genome for the species is the GenBank assembly GCA_013044365.1. The GC content of the type genome is 50.68 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Adnararia tresvigena sp. nov.

Candidatus Adnararia tresvigena (NL. fem. n. *tresvigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An181 sp002160325*. The type genome for the species is the GenBank assembly RS_GCF_002160325.1. The GC content of the type genome is 43.17 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Adnararia gen. nov.

Candidatus Adnararia (NL. fem. n. *Adnararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *An181*. The type species for the genus is *Candidatus* Adnararia tresvigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnarida colepiforma sp. nov.

Candidatus Adnarida colepiforma (NL. fem. n. *colepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFB93 sp001887775*. The type genome for the species is the GenBank assembly RS_GCF_001887775.1. The GC content of the type genome is 53.41 % and the genome length is 3.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "intertidal sediment".

Description of *Candidatus* Adnarida gen. nov.

Candidatus Adnarida (NL. fem. n. *Adnarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFB93*. The type species for the genus is *Candidatus* Adnarida colepiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnarida direpilenta sp. nov.

Candidatus Adnarida direpilenta (NL. fem. n. *direpilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFB93 sp013619105*. The type genome for the species is the GenBank assembly GCA_013619105.1. The GC content of the type genome is 53.72 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Adnarida domabousia sp. nov.

Candidatus Adnarida domabousia (NL. fem. n. *domabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SFB93 sp001751225*. The type genome for the species is the GenBank assembly GCA_001751225.1. The GC content of the type genome is 52.74 % and the genome length is 2.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sample #5579; elevator 3A push core 41 containing 12 cm of sediment; collected at Hydrate Ridge North during Jason II dive J2-593 from an area of active seepage marked by bubble ebullition and surface expression of white microbial mat".

Description of *Candidatus* Adnarosa armipax sp. nov.

Candidatus Adnarosa armipax (NL. fem. n. *armipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFIY01 sp013297985*. The type genome for the species is the GenBank assembly GCA_013297985.1. The GC content of the type genome is 63.82 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Adnarosa gen. nov.

Candidatus Adnarosa (NL. fem. n. *Adnarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFIY01*. The type species for the genus is *Candidatus* Adnarosa armipax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnarula albogitudo sp. nov.

Candidatus Adnarula albogitudo (NL. fem. n. *albogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14219 sp902796925*. The type genome for the species is the GenBank assembly GCA_902796925.1. The GC content of the type genome is 33.91 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Adnarula gen. nov.

Candidatus Adnarula (NL. fem. n. *Adnarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *RUG14219*. The type species for the genus is *Candidatus* Adnarula albogitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnecana exsufastra sp. nov.

Candidatus Adnecana exsufastra (NL. fem. n. *exsufastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAU-1509 sp005047655*. The type genome for the species is the GenBank assembly RS_GCF_005047655.1. The GC content of the type genome is 63.17 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Adnecana gen. nov.

Candidatus Adnecana (NL. fem. n. *Adnecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAU-1509*. The type species for the genus is *Candidatus* Adnecana exsufastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnecaria ininnibula sp. nov.

Candidatus Adnecaria ininnibula (NL. fem. n. *ininnibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8156 sp003456125*. The type genome for the species is the GenBank assembly GCA_003456125.1. The GC content of the type genome is 59.36 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Adnecaria gen. nov.

Candidatus Adnecaria (NL. fem. n. *Adnecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8156*. The type species for the genus is *Candidatus* Adnecaria ininnibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnecaria pedepisca sp. nov.

Candidatus Adnecaria pedepisca (NL. fem. n. *pedepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8156 sp012031195*. The type genome for the species is the GenBank assembly GCA_012031195.1. The GC content of the type genome is 59.39 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Adnecella recogentia sp. nov.

Candidatus Adnecella recogentia (NL. fem. n. *recogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGA01 sp007376345*. The type genome for the species is the GenBank assembly GCA_007376345.1. The GC content of the type genome is 45.92 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Adnecella gen. nov.

Candidatus Adnecella (NL. fem. n. *Adnecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGA01*. The type species for the genus is *Candidatus* Adnecella recogentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnecida adtemimonia sp. nov.

Candidatus Adnecida adtemimonia (NL. fem. n. *adtemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOHZ01 sp903858165*. The type genome for the species is the GenBank assembly GCA_903858165.1. The GC content of the type genome is 62.97 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Adnecida gen. nov.

Candidatus Adnecida (NL. fem. n. *Adnecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOHZ01*. The type species for the genus is *Candidatus* Adnecida adtemimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnecosa accomibula sp. nov.

Candidatus Adnecosa accomibula (NL. fem. n. *accomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSOI01 sp013216005*. The type genome for the species is the GenBank assembly GCA_013216005.1. The GC content of the type genome is 37.25 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Adnecosa gen. nov.

Candidatus Adnecosa (NL. fem. n. *Adnecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSOI01*. The type species for the genus is *Candidatus* Adnecosa accomibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnecosa ephipedo sp. nov.

Candidatus Adnecosa ephipedo (NL. fem. n. *ephipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSOI01 sp013216015*. The type genome for the species is the GenBank assembly GCA_013216015.1. The GC content of the type genome is 37.17 % and the genome length is 6.45 Mbp.

Description of *Candidatus* Adneparia vitabibula sp. nov.

Candidatus Adneparia vitabibula (NL. fem. n. *vitabibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKA01 sp009885795*. The type genome for the species is the GenBank assembly GCA_009885795.1. The GC content of the type genome is 65.71 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Adneparia gen. nov.

Candidatus Adneparia (NL. fem. n. *Adneparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKA01*. The type species for the genus is *Candidatus* Adneparia vitabibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnepella hemidigena sp. nov.

Candidatus Adnepella hemidigena (NL. fem. n. *hemidigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUD01 sp012517855*. The type genome for the species is the GenBank assembly GCA_012517855.1. The GC content of the type genome is 39.04 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Adnepella gen. nov.

Candidatus Adnepella (NL. fem. n. *Adnepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUD01*. The type species for the genus is *Candidatus* Adnepella hemidigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnepia advoritudo sp. nov.

Candidatus Adnepia advoritudo (NL. fem. n. *advoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEVM01 sp013041585*. The type genome for the species is the GenBank assembly GCA_013041585.1. The GC content of the type genome is 39.27 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Adnepia gen. nov.

Candidatus Adnepia (NL. fem. n. *Adnepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEVM01*. The type species for the genus is *Candidatus* Adnepia advoritudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnicana annucetta sp. nov.

Candidatus Adnicana annucetta (NL. fem. n. *annucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZNB01 sp012798515*. The type genome for the species is the GenBank assembly GCA_012798515.1. The GC content of the type genome is 61.02 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Adnicana gen. nov.

Candidatus Adnicana (NL. fem. n. *Adnicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZNB01*. The type species for the genus is *Candidatus* Adnicana annucetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnicaria accomugo sp. nov.

Candidatus Adnicaria accomugo (NL. fem. n. *accomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXUA01 sp013335665*. The type genome for the species is the

GenBank assembly GCA_013335665.1. The GC content of the type genome is 44.45 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Adnicaria gen. nov.

Candidatus Adnicaria (NL. fem. n. *Adnicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXUA01*. The type species for the genus is *Candidatus* Adnicaria accomugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWE2-39-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifulaceae.

Description of *Candidatus* Adnicaria arcipigena sp. nov.

Candidatus Adnicaria arcipigena (NL. fem. n. *arcipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXUA01 sp013336275*. The type genome for the species is the GenBank assembly GCA_013336275.1. The GC content of the type genome is 50.55 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Adnicida undevilega sp. nov.

Candidatus Adnicida undevilega (NL. fem. n. *undevilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-001602625 sp001602625*. The type genome for the species is the GenBank assembly RS_GCF_001602625.1. The GC content of the type genome is 49.75 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Adnicida gen. nov.

Candidatus Adnicida (NL. fem. n. *Adnicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-001602625*. The type species for the genus is *Candidatus* Adnicida undevilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnicosa insubicella sp. nov.

Candidatus Adnicosa insubicella (NL. fem. n. *insubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PDTW01 sp002749055*. The type genome for the species is the GenBank assembly GCA_002749055.1. The GC content of the type genome is 23.67 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Adnicosa gen. nov.

Candidatus Adnicosa (NL. fem. n. *Adnicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PDTW01*. The type species for the genus is *Candidatus* Adnicosa insubicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6164*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifellaceae.

Description of *Candidatus* Adnicula notabitica sp. nov.

Candidatus Adnicula notabitica (NL. fem. n. *notabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMNZ01 sp013204395*. The type genome for the species is the GenBank assembly GCA_013204395.1. The GC content of the type genome is 47.12 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Adnicula gen. nov.

Candidatus Adnicula (NL. fem. n. *Adnicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMNZ01*. The type species for the genus is *Candidatus* Adnicula notabitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Adnilaria inherentia sp. nov.

Candidatus Adnilaria inherentia (NL. fem. n. *inherentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11200 sp902766825*. The type genome for the species is the GenBank assembly GCA_902766825.1. The GC content of the type genome is 36.97 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Adnilaria gen. nov.

Candidatus Adnilaria (NL. fem. n. *Adnilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11200*. The type species for the genus is *Candidatus* Adnilaria inherentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnilaria xenopivita sp. nov.

Candidatus Adnilaria xenopivita (NL. fem. n. *xenopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11200 sp902783965*. The type genome for the species is the GenBank assembly GCA_902783965.1. The GC content of the type genome is 42.7 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Adnilida manubitia sp. nov.

Candidatus Adnilida manubitia (NL. fem. n. *manubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748265 sp002748265*. The type genome for the species is the GenBank assembly GCA_002748265.1. The GC content of the type genome is 64.18 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Adnilida gen. nov.

Candidatus Adnilida (NL. fem. n. *Adnilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2748265*. The type species for the genus is *Candidatus* Adnilida manubitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnilula intecitio sp. nov.

Candidatus Adnilula intecitio (NL. fem. n. *intecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-002776555 sp002776555*. The type genome for the species is the GenBank assembly RS_GCF_002776555.1. The GC content of the type genome is 23.03 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Adnilula gen. nov.

Candidatus Adnilula (NL. fem. n. *Adnilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-002776555*. The type species for the genus is *Candidatus* Adnilula intecitio .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Adnubana desonitas sp. nov.

Candidatus Adnubana desonitas (NL. fem. n. *desonitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-43 sp003599735*. The type genome for the species is the GenBank assembly GCA_003599735.1. The GC content of the type genome is 66.98 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Adnubana gen. nov.

Candidatus Adnubana (NL. fem. n. *Adnubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-43*. The type species for the genus is *Candidatus* Adnubana

desonitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Adnubana homunitura sp. nov.

Candidatus Adnubana homunitura (NL. fem. n. *homunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-43 sp004297315*. The type genome for the species is the GenBank assembly GCA_004297315.1. The GC content of the type genome is 69.15 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Adnubana utputitura sp. nov.

Candidatus Adnubana utputitura (NL. fem. n. *utputitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-43 sp004296805*. The type genome for the species is the GenBank assembly GCA_004296805.1. The GC content of the type genome is 67.7 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Adnubaria apsegimonas sp. nov.

Candidatus Adnubaria apsegimonas (NL. fem. n. *apsegimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZZIT01 sp012800685*. The type genome for the species is the GenBank assembly GCA_012800685.1. The GC content of the type genome is 34.22 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Adnubaria gen. nov.

Candidatus Adnubaria (NL. fem. n. *Adnubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZZIT01*. The type species for the genus is *Candidatus* Adnubaria apsegimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnubella lapicentia sp. nov.

Candidatus Adnubella lapicentia (NL. fem. n. *lapicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNKV01 sp014381855*. The type genome for the species is the GenBank assembly GCA_014381855.1. The GC content of the type genome is 41.06 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Adnubella gen. nov.

Candidatus Adnubella (NL. fem. n. *Adnubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNKV01*. The type species for the genus is *Candidatus* Adnubella lapicentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8229*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilellaceae.

Description of *Candidatus* Adnubida evangimonas sp. nov.

Candidatus Adnubida evangimonas (NL. fem. n. *evangimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJM01 sp012522895*. The type genome for the species is the GenBank assembly GCA_012522895.1. The GC content of the type genome is 35.85 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Adnubida gen. nov.

Candidatus Adnubida (NL. fem. n. *Adnubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYJM01*. The type species for the genus is *Candidatus* Adnubida evangimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA2268. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Adnubosa desonicella sp. nov.

Candidatus Adnubosa desonicella (NL. fem. n. *desonicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QKMZ01 sp013823055*. The type genome for the species is the GenBank assembly GCA_013823055.1. The GC content of the type genome is 49.74 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Adnubosa gen. nov.

Candidatus Adnubosa (NL. fem. n. *Adnubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QKMZ01*. The type species for the genus is *Candidatus* Adnubosa desonicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnubosa innecedo sp. nov.

Candidatus Adnubosa innecedo (NL. fem. n. *innecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QKMZ01 sp014380105*. The type genome for the species is the GenBank assembly GCA_014380105.1. The GC content of the type genome is 47.37 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Adnubosa petulisca sp. nov.

Candidatus Adnubosa petulisca (NL. fem. n. *petulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QKMZ01 sp012965515*. The type genome for the species is the GenBank assembly GCA_012965515.1. The GC content of the type genome is 49.63 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Adnubosa tetenetta sp. nov.

Candidatus Adnubosa tetenetta (NL. fem. n. *tetenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QKMZ01 sp013997645*. The type genome for the species is the GenBank assembly GCA_013997645.1. The GC content of the type genome is 50.33 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Adnubosa videlitica sp. nov.

Candidatus Adnubosa videlitica (NL. fem. n. *videlitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QKMZ01 sp003242885*. The type genome for the species is the GenBank assembly GCA_003242885.1. The GC content of the type genome is 49.26 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Adnulella delapicula sp. nov.

Candidatus Adnulella delapicula (NL. fem. n. *delapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CHB1 sp011525875*. The type genome for the species is the GenBank assembly GCA_011525875.1. The GC content of the type genome is 37.82 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Adnulella gen. nov.

Candidatus Adnulella (NL. fem. n. *Adnulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CHB1*. The type species for the genus is *Candidatus* Adnulella delapicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnulia fedititica sp. nov.

Candidatus Adnulia fedititica (NL. fem. n. *fedititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GSPS2-BC2016 sp002904345*. The type genome for the species is the GenBank assembly RS_GCF_002904345.1. The GC content of the type genome is 37.03 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Adnulia gen. nov.

Candidatus Adnulia (NL. fem. n. *Adnulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GSPS2-BC2016*. The type species for the genus is *Candidatus* Adnulia fedititica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnulosa delucisca sp. nov.

Candidatus Adnulosa delucisca (NL. fem. n. *delucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HdN1 sp000198515*. The type genome for the species is the GenBank assembly RS_GCF_000198515.1. The GC content of the type genome is 53.26 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Adnulosa gen. nov.

Candidatus Adnulosa (NL. fem. n. *Adnulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HdN1*. The type species for the genus is *Candidatus* Adnulosa delucisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnumaria tolutetta sp. nov.

Candidatus Adnumaria tolutetta (NL. fem. n. *tolutetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2725955 sp002725955*. The type genome for the species is the GenBank assembly GCA_002725955.1. The GC content of the type genome is 40.65 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Adnumaria gen. nov.

Candidatus Adnumaria (NL. fem. n. *Adnumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2725955*. The type species for the genus is *Candidatus* Adnumaria tolutetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnumella bicapitas sp. nov.

Candidatus Adnumella bicapitas (NL. fem. n. *bicapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-44-16 sp001803225*. The type genome for the species is the GenBank assembly GCA_001803225.1. The GC content of the type genome is 44.02 % and the genome length is 5.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Adnumella gen. nov.

Candidatus Adnumella (NL. fem. n. *Adnumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-44-16*. The type species for the genus is *Candidatus* Adnumella bicapitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-45-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilariaceae.

Description of *Candidatus* Adnumia cosidivita sp. nov.

Candidatus Adnumia cosidivita (NL. fem. n. *cosidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1786 sp902785075*. The type genome for the species is the GenBank assembly GCA_902785075.1. The GC content of the type genome is 44.88 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Adnumia gen. nov.

Candidatus Adnumia (NL. fem. n. *Adnumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1786*. The type species for the genus is *Candidatus* Adnumia cosidivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnumia detecatio sp. nov.

Candidatus Adnumia detecatio (NL. fem. n. *detecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1786 sp902797255*. The type genome for the species is the GenBank assembly GCA_902797255.1. The GC content of the type genome is 45.12 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Adnumia oblanilega sp. nov.

Candidatus Adnumia oblanilega (NL. fem. n. *oblanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1786 sp002314525*. The type genome for the species is the GenBank assembly GCA_002314525.1. The GC content of the type genome is 46.72 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Adnumia optumimonia sp. nov.

Candidatus Adnumia optumimonia (NL. fem. n. *optumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1786 sp900771425*. The type genome for the species is the

GenBank assembly RS_GCF_900771425.1. The GC content of the type genome is 48.69 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Adnumia subacitio sp. nov.

Candidatus Adnumia subacitio (NL. fem. n. *subacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1786 sp902787555*. The type genome for the species is the GenBank assembly GCA_902787555.1. The GC content of the type genome is 46.01 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Adnumida inlocitudo sp. nov.

Candidatus Adnumida inlocitudo (NL. fem. n. *inlocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUCM01 sp012959785*. The type genome for the species is the GenBank assembly GCA_012959785.1. The GC content of the type genome is 64.38 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Adnumida gen. nov.

Candidatus Adnumida (NL. fem. n. *Adnumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUCM01*. The type species for the genus is *Candidatus* Adnumida inlocitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Adnumosa cibicitas sp. nov.

Candidatus Adnumosa cibicitas (NL. fem. n. *cibicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADEN01 sp013153335*. The type genome for the species is the GenBank assembly GCA_013153335.1. The GC content of the type genome is 63.51 %

and the genome length is 1.58 Mbp.

Description of *Candidatus* Adnumosa gen. nov.

Candidatus Adnumosa (NL. fem. n. *Adnumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADEN01*. The type species for the genus is *Candidatus* Adnumosa cibicitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRMV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacanaceae.

Description of *Candidatus* Adnumosa decacastra sp. nov.

Candidatus Adnumosa decacastra (NL. fem. n. *decacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADEN01 sp013153375*. The type genome for the species is the GenBank assembly GCA_013153375.1. The GC content of the type genome is 68.0 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Adnumosa fusifimonia sp. nov.

Candidatus Adnumosa fusifimonia (NL. fem. n. *fusifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADEN01 sp013153135*. The type genome for the species is the GenBank assembly GCA_013153135.1. The GC content of the type genome is 61.43 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Adnumula sonivetta sp. nov.

Candidatus Adnumula sonivetta (NL. fem. n. *sonivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1380 sp002305445*. The type genome for the species is the GenBank assembly GCA_002305445.1. The GC content of the type genome is 57.73 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Adnumula gen. nov.

Candidatus Adnumula (NL. fem. n. *Adnumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1380*. The type species for the genus is *Candidatus* Adnumula sonivetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Adnunana ignigetta sp. nov.

Candidatus Adnunana ignigetta (NL. fem. n. *ignigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJK01 sp012522955*. The type genome for the species is the GenBank assembly GCA_012522955.1. The GC content of the type genome is 44.18 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Adnunana gen. nov.

Candidatus Adnunana (NL. fem. n. *Adnunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYJK01*. The type species for the genus is *Candidatus* Adnunana ignigetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnunana inhonibula sp. nov.

Candidatus Adnunana inhonibula (NL. fem. n. *inhonibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJK01 sp012520725*. The type genome for the species is the GenBank assembly GCA_012520725.1. The GC content of the type genome is 44.74 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Adnunaria fiducicella sp. nov.

Candidatus Adnunaria fiducicella (NL. fem. n. *fiducicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAC01 sp012719535*. The type genome for the species is the GenBank assembly GCA_012719535.1. The GC content of the type genome is 53.28 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Adnunaria gen. nov.

Candidatus Adnunaria (NL. fem. n. *Adnunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAC01*. The type species for the genus is *Candidatus* Adnunaria fiducicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adnunia infunibula sp. nov.

Candidatus Adnunia infunibula (NL. fem. n. *infunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14670 sp902801525*. The type genome for the species is the GenBank assembly GCA_902801525.1. The GC content of the type genome is 25.41 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Adnunia gen. nov.

Candidatus Adnunia (NL. fem. n. *Adnunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14670*. The type species for the genus is *Candidatus* Adnunia infunibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Adnunida buxanugo sp. nov.

Candidatus Adnunida buxanugo (NL. fem. n. *buxanugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJU01 sp011370455*. The type genome for the species is the GenBank assembly GCA_011370455.1. The GC content of the type genome is 43.64 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Adnunida gen. nov.

Candidatus Adnunida (NL. fem. n. *Adnunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJU01*. The type species for the genus is *Candidatus* Adnunida buxanugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B13-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panifiaceae.

Description of *Candidatus* Adnunida sacopicula sp. nov.

Candidatus Adnunida sacopicula (NL. fem. n. *sacopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJU01 sp011361925*. The type genome for the species is the GenBank assembly GCA_011361925.1. The GC content of the type genome is 43.75 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Adnunosa paralatica sp. nov.

Candidatus Adnunosa paralatica (NL. fem. n. *paralatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGC01 sp013286215*. The type genome for the species is the GenBank assembly GCA_013286215.1. The GC content of the type genome is 48.4 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Adnunosa gen. nov.

Candidatus Adnunosa (NL. fem. n. *Adnunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDGC01*. The type species for the genus is *Candidatus* Adnunosa paralatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Adobrana ambacicella sp. nov.

Candidatus Adobrana ambacicella (NL. fem. n. *ambacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2729515 sp002729515*. The type genome for the species is the GenBank assembly GCA_002729515.1. The GC content of the type genome is 66.19 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Adobrana gen. nov.

Candidatus Adobrana (NL. fem. n. *Adobrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2729515*. The type species for the genus is *Candidatus* Adobrana ambacicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMWR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penicellaceae.

Description of *Candidatus* Adobraria effigitudo sp. nov.

Candidatus Adobraria effigitudo (NL. fem. n. *effigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYEM01 sp012728725*. The type genome for the species is the GenBank assembly GCA_012728725.1. The GC content of the type genome is 35.75 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Adobraria gen. nov.

Candidatus Adobraria (NL. fem. n. *Adobraria* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYEM01*. The type species for the genus is *Candidatus* Adobraria effigitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adobrella ignipitio sp. nov.

Candidatus Adobrella ignipitio (NL. fem. n. *ignipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002726655 sp002726655*. The type genome for the species is the GenBank assembly GCA_002726655.1. The GC content of the type genome is 50.28 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Adobrella gen. nov.

Candidatus Adobrella (NL. fem. n. *Adobrella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002726655*. The type species for the genus is *Candidatus* Adobrella ignipitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Adobrella lapicitas sp. nov.

Candidatus Adobrella lapicitas (NL. fem. n. *lapicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002726655 sp002725995*. The type genome for the species is the GenBank assembly GCA_002725995.1. The GC content of the type genome is 50.27 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Adobrida cilotentia sp. nov.

Candidatus Adobrida cilotentia (NL. fem. n. *cilotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1196 sp003140135*. The type genome for the species is the GenBank assembly GCA_003140135.1. The GC content of the type genome is 62.98 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Adobrida gen. nov.

Candidatus Adobrida (NL. fem. n. *Adobrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1196*. The type species for the genus is *Candidatus* Adobrida cilotentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adobrosa expopitica sp. nov.

Candidatus Adobrosa expopitica (NL. fem. n. *expopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B60-G16 sp003647275*. The type genome for the species is the GenBank assembly GCA_003647275.1. The GC content of the type genome is 48.45 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Adobrosa gen. nov.

Candidatus Adobrosa (NL. fem. n. *Adobrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B60-G16*. The type species for the genus is *Candidatus* Adobrosa expopitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *C00003060*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubidaceae.

Description of *Candidatus* Adobrula bicapentia sp. nov.

Candidatus Adobrula bicapentia (NL. fem. n. *bicapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J028 sp003695865*. The type genome for the species is the GenBank assembly GCA_003695865.1. The GC content of the type genome is 71.35 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Adobrula gen. nov.

Candidatus Adobrula (NL. fem. n. *Adobrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J028*. The type species for the genus is *Candidatus* Adobrula bicapentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Adordaria turibitura sp. nov.

Candidatus Adordaria turibitura (NL. fem. n. *turibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CCP5 sp003017785*. The type genome for the species is the GenBank assembly RS_GCF_003017785.1. The GC content of the type genome is 55.63 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Adordaria gen. nov.

Candidatus Adordaria (NL. fem. n. *Adordaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CCP5*. The type species for the genus is *Candidatus* Adordaria turibitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adordella diluvitio sp. nov.

Candidatus Adordella diluvitio (NL. fem. n. *diluvitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCVQ01 sp004296865*. The type genome for the species is the GenBank assembly GCA_004296865.1. The GC content of the type genome is 61.63 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Adordella gen. nov.

Candidatus Adordella (NL. fem. n. *Adordella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCVQ01*. The type species for the genus is *Candidatus* Adordella diluvitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adordia altifitrix sp. nov.

Candidatus Adordia altifitrix (NL. fem. n. *altifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-70-22 sp001724275*. The type genome for the species is the GenBank assembly GCA_001724275.1. The GC content of the type genome is 70.18 % and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Adordia gen. nov.

Candidatus Adordia (NL. fem. n. *Adordia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCN-70-22*. The type species for the genus is *Candidatus* Adordia altifitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adordia apsurastra sp. nov.

Candidatus Adordia apsurastra (NL. fem. n. *apsurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-70-22 sp902826615*. The type genome for the species is the

GenBank assembly GCA_902826615.1. The GC content of the type genome is 64.66 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Adordia depetisca sp. nov.

Candidatus Adordia depetisca (NL. fem. n. *depetisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-70-22 sp014379705*. The type genome for the species is the GenBank assembly GCA_014379705.1. The GC content of the type genome is 67.51 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Adordida irremisca sp. nov.

Candidatus Adordida irremisca (NL. fem. n. *irremisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002840985 sp002840985*. The type genome for the species is the GenBank assembly GCA_002840985.1. The GC content of the type genome is 35.9 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Adordida gen. nov.

Candidatus Adordida (NL. fem. n. *Adordida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002840985*. The type species for the genus is *Candidatus* Adordida irremisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2711565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimacidaceae.

Description of *Candidatus* Adordosa inordousia sp. nov.

Candidatus Adordosa inordousia (NL. fem. n. *inordousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG42 sp003242425*. The type genome for the species is the GenBank assembly GCA_003242425.1. The GC content of the type genome is 66.54 %

and the genome length is 2.43 Mbp.

Description of *Candidatus* Adordosa gen. nov.

Candidatus Adordosa (NL. fem. n. *Adordosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG42*. The type species for the genus is *Candidatus* Adordosa inordousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Adordula defesimonas sp. nov.

Candidatus Adordula defesimonas (NL. fem. n. *defesimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2722775 sp002722775*. The type genome for the species is the GenBank assembly GCA_002722775.1. The GC content of the type genome is 53.9 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Adordula gen. nov.

Candidatus Adordula (NL. fem. n. *Adordula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2722775*. The type species for the genus is *Candidatus* Adordula defesimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adoscana irraditica sp. nov.

Candidatus Adoscana irraditica (NL. fem. n. *irraditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMN01 sp012798795*. The type genome for the species is the GenBank assembly GCA_012798795.1. The GC content of the type genome is 38.74 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Adoscana gen. nov.

Candidatus Adoscana (NL. fem. n. *Adoscana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZMN01*. The type species for the genus is *Candidatus* Adoscana irraditica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU012*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homolellaceae.

Description of *Candidatus* Adoscella mahelousia sp. nov.

Candidatus Adoscella mahelousia (NL. fem. n. *mahelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B2-G16 sp003650505*. The type genome for the species is the GenBank assembly GCA_003650505.1. The GC content of the type genome is 62.95 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Adoscella gen. nov.

Candidatus Adoscella (NL. fem. n. *Adoscella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B2-G16*. The type species for the genus is *Candidatus* Adoscella mahelousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9294*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semodosaceae.

Description of *Candidatus* Adoscia encomilega sp. nov.

Candidatus Adoscia encomilega (NL. fem. n. *encomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1350 sp003152975*. The type genome for the species is the GenBank assembly GCA_003152975.1. The GC content of the type genome is 59.19 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Adoscia gen. nov.

Candidatus Adoscia (NL. fem. n. *Adoscia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1350*. The type species for the genus is *Candidatus* Adoscia encomilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adoscia inlapitica sp. nov.

Candidatus Adoscia inlapitica (NL. fem. n. *inlapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1350 sp012517095*. The type genome for the species is the GenBank assembly GCA_012517095.1. The GC content of the type genome is 55.28 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Adoscida adlicigena sp. nov.

Candidatus Adoscida adlicigena (NL. fem. n. *adlicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0108 sp009928645*. The type genome for the species is the GenBank assembly GCA_009928645.1. The GC content of the type genome is 65.32 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Adoscida gen. nov.

Candidatus Adoscida (NL. fem. n. *Adoscida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M0108*. The type species for the genus is *Candidatus* Adoscida adlicigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adoscida ensicifica sp. nov.

Candidatus Adoscida ensicifica (NL. fem. n. *ensicifica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0108 sp006227775*. The type genome for the species is the GenBank assembly GCA_006227775.1. The GC content of the type genome is 65.63 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Adpacana delucimonia sp. nov.

Candidatus Adpacana delucimonia (NL. fem. n. *delucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691085 sp902575965*. The type genome for the species is the GenBank assembly GCA_902575965.1. The GC content of the type genome is 34.21 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Adpacana gen. nov.

Candidatus Adpacana (NL. fem. n. *Adpacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2691085*. The type species for the genus is *Candidatus* Adpacana delucimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpacana vepalitas sp. nov.

Candidatus Adpacana vepalitas (NL. fem. n. *vepalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691085 sp002691085*. The type genome for the species is the GenBank assembly GCA_002691085.1. The GC content of the type genome is 34.21 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Adpacaria artilivita sp. nov.

Candidatus Adpacaria artilivita (NL. fem. n. *artilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRKS01 sp011051655*. The type genome for the species is the GenBank assembly GCA_011051655.1. The GC content of the type genome is 61.65 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Adpacaria gen. nov.

Candidatus Adpacaria (NL. fem. n. *Adpacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRKS01*. The type species for the genus is *Candidatus* Adpacaria artilivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpacella adcomimonia sp. nov.

Candidatus Adpacella adcomimonia (NL. fem. n. *adcomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAY01 sp014238225*. The type genome for the species is the GenBank assembly GCA_014238225.1. The GC content of the type genome is 32.92 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Adpacella gen. nov.

Candidatus Adpacella (NL. fem. n. *Adpacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABAAY01*. The type species for the genus is *Candidatus* Adpacella adcomimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCF-1484045*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notacosaceae.

Description of *Candidatus* Adpacella xeramibra sp. nov.

Candidatus Adpacella xeramibra (NL. fem. n. *xeramibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JABAAY01 sp014238525*. The type genome for the species is the GenBank assembly GCA_014238525.1. The GC content of the type genome is 31.93 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Adpacosa disidago sp. nov.

Candidatus Adpacosa disidago (NL. fem. n. *disidago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUZU01 sp013349285*. The type genome for the species is the GenBank assembly GCA_013349285.1. The GC content of the type genome is 52.74 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Adpacosa gen. nov.

Candidatus Adpacosa (NL. fem. n. *Adpacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUZU01*. The type species for the genus is *Candidatus* Adpacosa disidago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpagana mahemitura sp. nov.

Candidatus Adpagana mahemitura (NL. fem. n. *mahemitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-36-19 sp002772535*. The type genome for the species is the GenBank assembly GCA_002772535.1. The GC content of the type genome is 35.81 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Adpagana gen. nov.

Candidatus Adpagana (NL. fem. n. *Adpagana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-36-19*. The type species for the genus is *Candidatus* Adpagana mahemitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LOWO2-01-FULL-3*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Malifanaceae.

Description of *Candidatus* Adpagaria tubicitrix sp. nov.

Candidatus Adpagaria tubicitrix (NL. fem. n. *tubicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Site-B1 sp013043005*. The type genome for the species is the GenBank assembly GCA_013043005.1. The GC content of the type genome is 33.92 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Adpagaria gen. nov.

Candidatus Adpagaria (NL. fem. n. *Adpagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Site-B1*. The type species for the genus is *Candidatus* Adpagaria tubicitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpagida adsuciforma sp. nov.

Candidatus Adpagida adsuciforma (NL. fem. n. *adsuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYXB01 sp903930015*. The type genome for the species is the GenBank assembly GCA_903930015.1. The GC content of the type genome is 34.24 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Adpagida gen. nov.

Candidatus Adpagida (NL. fem. n. *Adpagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYXB01*. The type species for the genus is *Candidatus* Adpagida adsuciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LMEP-6097*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumiaceae.

Description of *Candidatus* Adpanaria obveribula sp. nov.

Candidatus Adpanaria obveribula (NL. fem. n. *obveribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTG01 sp004298335*. The type genome for the species is the GenBank assembly GCA_004298335.1. The GC content of the type genome is 63.01 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Adpanaria gen. nov.

Candidatus Adpanaria (NL. fem. n. *Adpanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTG01*. The type species for the genus is *Candidatus* Adpanaria obveribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NS-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadavulaceae.

Description of *Candidatus* Adpanella alsidiforma sp. nov.

Candidatus Adpanella alsidiforma (NL. fem. n. *alsidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686065 sp002686065*. The type genome for the species is the GenBank assembly GCA_002686065.1. The GC content of the type genome is 47.99 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Adpanella gen. nov.

Candidatus Adpanella (NL. fem. n. *Adpanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2686065*. The type species for the genus is *Candidatus* Adpanella alsidiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1609*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifanaceae.

Description of *Candidatus* Adpania detenitrix sp. nov.

Candidatus Adpania detenitrix (NL. fem. n. *detenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTY01 sp012523605*. The type genome for the species is the GenBank assembly GCA_012523605.1. The GC content of the type genome is 64.79 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Adpania gen. nov.

Candidatus Adpania (NL. fem. n. *Adpania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYTY01*. The type species for the genus is *Candidatus* Adpania detenitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpanida sceptigena sp. nov.

Candidatus Adpanida sceptigena (NL. fem. n. *sceptigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8612 sp003505905*. The type genome for the species is the GenBank assembly GCA_003505905.1. The GC content of the type genome is 49.11 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Adpanida gen. nov.

Candidatus Adpanida (NL. fem. n. *Adpanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8612*. The type species for the genus is *Candidatus* Adpanida sceptigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpanula edissimonia sp. nov.

Candidatus Adpanula edissimonia (NL. fem. n. *edissimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-82 sp013152035*. The type genome for the species is the GenBank assembly GCA_013152035.1. The GC content of the type genome is 47.15 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Adpanula gen. nov.

Candidatus Adpanula (NL. fem. n. *Adpanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-82*. The type species for the genus is *Candidatus* Adpanula edissimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9983*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifosaceae.

Description of *Candidatus* Adpanula expasicella sp. nov.

Candidatus Adpanula expasicella (NL. fem. n. *expasicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-82 sp003231675*. The type genome for the species is the GenBank assembly GCA_003231675.1. The GC content of the type genome is 42.58 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Adpecana abligentia sp. nov.

Candidatus Adpecana abligentia (NL. fem. n. *abligentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *41-12-T18 sp002163085*. The type genome for the species is the GenBank assembly GCA_002163085.1. The GC content of the type genome is 41.91 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Adpecana gen. nov.

Candidatus Adpecana (NL. fem. n. *Adpecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *41-12-T18*. The type species for the genus is *Candidatus* Adpecana abligentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpecana aggubastra sp. nov.

Candidatus Adpecana aggubastra (NL. fem. n. *aggubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *41-12-T18 sp002400805*. The type genome for the species is the GenBank assembly GCA_002400805.1. The GC content of the type genome is 42.32 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Adpecana culigentia sp. nov.

Candidatus Adpecana culigentia (NL. fem. n. *culigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *41-12-T18 sp002163115*. The type genome for the species is the GenBank assembly GCA_002163115.1. The GC content of the type genome is 41.25 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Adpecana frigdisca sp. nov.

Candidatus Adpecana frigdisca (NL. fem. n. *frigdisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *41-12-T18 sp013215805*. The type genome for the species is the GenBank assembly GCA_013215805.1. The GC content of the type genome is 34.55 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Adpecella epicritoga sp. nov.

Candidatus Adpecella epicritoga (NL. fem. n. *epicritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *NSJ-40 sp014384705*. The type genome for the species is the GenBank assembly GCA_014384705.1. The GC content of the type genome is 51.12 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Adpecella gen. nov.

Candidatus Adpecella (NL. fem. n. *Adpecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NSJ-40*. The type species for the genus is *Candidatus* Adpecella epicritoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpecia panopilenta sp. nov.

Candidatus Adpecia panopilenta (NL. fem. n. *panopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMOQ01 sp013204045*. The type genome for the species is the GenBank assembly GCA_013204045.1. The GC content of the type genome is 57.03 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Adpecia gen. nov.

Candidatus Adpecia (NL. fem. n. *Adpecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMOQ01*. The type species for the genus is *Candidatus* Adpecia panopilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-58-16_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bulapanaceae.

Description of *Candidatus* Adpecida maligastra sp. nov.

Candidatus Adpecida maligastra (NL. fem. n. *maligastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZBI01 sp012513875*. The type genome for the species is the

GenBank assembly GCA_012513875.1. The GC content of the type genome is 28.63 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Adpecida gen. nov.

Candidatus Adpecida (NL. fem. n. *Adpecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZBI01*. The type species for the genus is *Candidatus* Adpecida maligastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Adpecula velifitas sp. nov.

Candidatus Adpecula velifitas (NL. fem. n. *velifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4M-Z18 sp003400305*. The type genome for the species is the GenBank assembly RS_GCF_003400305.1. The GC content of the type genome is 61.08 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Adpecula gen. nov.

Candidatus Adpecula (NL. fem. n. *Adpecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4M-Z18*. The type species for the genus is *Candidatus* Adpecula velifitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpelana dimidessa sp. nov.

Candidatus Adpelana dimidessa (NL. fem. n. *dimidessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401345 sp002401345*. The type genome for the species is the GenBank assembly GCA_002401345.1. The GC content of the type genome is 36.98 %

and the genome length is 0.9 Mbp.

Description of *Candidatus* Adpelana gen. nov.

Candidatus Adpelana (NL. fem. n. *Adpelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2401345*. The type species for the genus is *Candidatus* Adpelana dimidessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilanaceae.

Description of *Candidatus* Adpelaria lavacitio sp. nov.

Candidatus Adpelaria lavacitio (NL. fem. n. *lavacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMIX01 sp014380935*. The type genome for the species is the GenBank assembly GCA_014380935.1. The GC content of the type genome is 57.47 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Adpelaria gen. nov.

Candidatus Adpelaria (NL. fem. n. *Adpelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMIX01*. The type species for the genus is *Candidatus* Adpelaria lavacitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpelella cibarugo sp. nov.

Candidatus Adpelella cibarugo (NL. fem. n. *cibarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHZH01 sp009692385*. The type genome for the species is the GenBank assembly GCA_009692385.1. The GC content of the type genome is 41.58 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Adpelella gen. nov.

Candidatus Adpelella (NL. fem. n. *Adpelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHZH01*. The type species for the genus is *Candidatus* Adpelella cibarugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDGN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Modifosaceae.

Description of *Candidatus* Adpelia affunitura sp. nov.

Candidatus Adpelia affunitura (NL. fem. n. *affunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-161 sp005880175*. The type genome for the species is the GenBank assembly GCA_005880175.1. The GC content of the type genome is 73.02 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Adpelia gen. nov.

Candidatus Adpelia (NL. fem. n. *Adpelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-161*. The type species for the genus is *Candidatus* Adpelia affunitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpelida altificella sp. nov.

Candidatus Adpelida altificella (NL. fem. n. *altificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RH2-MAG17b sp902812415*. The type genome for the species is the GenBank assembly RS_GCF_902812415.1. The GC content of the type genome is 56.43 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Adpelida gen. nov.

Candidatus Adpelida (NL. fem. n. *Adpelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RH2-MAG17b*. The type species for the genus is *Candidatus* Adpelida altificella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumariaceae.

Description of *Candidatus* Adpelida fatifitura sp. nov.

Candidatus Adpelida fatifitura (NL. fem. n. *fatifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RH2-MAG17b sp002197525*. The type genome for the species is the GenBank assembly GCA_002197525.1. The GC content of the type genome is 58.52 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Adpelosa expalitia sp. nov.

Candidatus Adpelosa expalitia (NL. fem. n. *expalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVK01 sp009784025*. The type genome for the species is the GenBank assembly GCA_009784025.1. The GC content of the type genome is 47.59 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Adpelosa gen. nov.

Candidatus Adpelosa (NL. fem. n. *Adpelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVK01*. The type species for the genus is *Candidatus* Adpelosa expalitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Adpenana denavicella sp. nov.

Candidatus Adpenana denavicella (NL. fem. n. *denavicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACADZ01 sp013389105*. The type genome for the species is the GenBank assembly GCA_013389105.1. The GC content of the type genome is 65.63 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Adpenana gen. nov.

Candidatus Adpenana (NL. fem. n. *Adpenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACADZ01*. The type species for the genus is *Candidatus* Adpenana denavicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpenaria adpicigena sp. nov.

Candidatus Adpenaria adpicigena (NL. fem. n. *adpicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDZH01 sp902812455*. The type genome for the species is the GenBank assembly RS_GCF_902812455.1. The GC content of the type genome is 54.84 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Adpenaria gen. nov.

Candidatus Adpenaria (NL. fem. n. *Adpenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDZH01*. The type species for the genus is *Candidatus* Adpenaria adpicigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpenella obtenilenta sp. nov.

Candidatus Adpenella obtenilenta (NL. fem. n. *obtenilenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WS-2 sp005893185*. The type genome for the species is the GenBank assembly GCA_005893185.1. The GC content of the type genome is 70.06 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Adpenella gen. nov.

Candidatus Adpenella (NL. fem. n. *Adpenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WS-2*. The type species for the genus is *Candidatus* Adpenella obtenilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabidaceae.

Description of *Candidatus* Adpenia catobugo sp. nov.

Candidatus Adpenia catobugo (NL. fem. n. *catobugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCH01 sp009784115*. The type genome for the species is the GenBank assembly GCA_009784115.1. The GC content of the type genome is 45.66 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Adpenia gen. nov.

Candidatus Adpenia (NL. fem. n. *Adpenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRCH01*. The type species for the genus is *Candidatus* Adpenia catobugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpenosa cicilimonas sp. nov.

Candidatus Adpenosa cicilimonas (NL. fem. n. *cicilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAAHEQ01 sp900772625*. The type genome for the species is the GenBank assembly RS_GCF_900772625.1. The GC content of the type genome is 44.33 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Adpenosa gen. nov.

Candidatus Adpenosa (NL. fem. n. *Adpenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAAHEQ01*. The type species for the genus is *Candidatus* Adpenosa cicilimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3637*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracellaceae.

Description of *Candidatus* Adpenula adgenisca sp. nov.

Candidatus Adpenula adgenisca (NL. fem. n. *adgenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KOR34 sp007859765*. The type genome for the species is the GenBank assembly RS_GCF_007859765.1. The GC content of the type genome is 66.67 % and the genome length is 6.77 Mbp.

Description of *Candidatus* Adpenula gen. nov.

Candidatus Adpenula (NL. fem. n. *Adpenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KOR34*. The type species for the genus is *Candidatus* Adpenula adgenisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelariaceae.

Description of *Candidatus* Adpenula everbitudo sp. nov.

Candidatus Adpenula everbitudo (NL. fem. n. *everbitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KOR34 sp007859935*. The type genome for the species is the GenBank assembly RS_GCF_007859935.1. The GC content of the type genome is 66.5 % and the genome length is 6.26 Mbp.

Description of *Candidatus* Adperana cruppivita sp. nov.

Candidatus Adperana cruppivita (NL. fem. n. *cruppivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZYF759 sp012911015*. The type genome for the species is the GenBank assembly RS_GCF_012911015.1. The GC content of the type genome is 64.38 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Adperana gen. nov.

Candidatus Adperana (NL. fem. n. *Adperana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZYF759*. The type species for the genus is *Candidatus* Adperana cruppivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adperaria meridastra sp. nov.

Candidatus Adperaria meridastra (NL. fem. n. *meridastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJS01 sp012522805*. The type genome for the species is the GenBank assembly GCA_012522805.1. The GC content of the type genome is 42.54 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Adperaria gen. nov.

Candidatus Adperaria (NL. fem. n. *Adperaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAYJS01*. The type species for the genus is *Candidatus* Adperaria meridastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adperia abrumitio sp. nov.

Candidatus Adperia abrumitio (NL. fem. n. *abrumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9636 sp003451585*. The type genome for the species is the GenBank assembly GCA_003451585.1. The GC content of the type genome is 47.57 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Adperia gen. nov.

Candidatus Adperia (NL. fem. n. *Adperia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9636*. The type species for the genus is *Candidatus* Adperia abrumitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1572*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumanaceae.

Description of *Candidatus* Adperida obtemitrix sp. nov.

Candidatus Adperida obtemitrix (NL. fem. n. *obtemitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WS-9 sp005893305*. The type genome for the species is the GenBank assembly GCA_005893305.1. The GC content of the type genome is 66.98 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Adperida gen. nov.

Candidatus Adperida (NL. fem. n. *Adperida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WS-9*. The type species for the genus is *Candidatus* Adperida obtemitrix

.

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-252*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamanaceae.

Description of *Candidatus* Adperosa exaspitrix sp. nov.

Candidatus Adperosa exaspitrix (NL. fem. n. *exaspitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYED01 sp012719135*. The type genome for the species is the GenBank assembly GCA_012719135.1. The GC content of the type genome is 63.64 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Adperosa gen. nov.

Candidatus Adperosa (NL. fem. n. *Adperosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYED01*. The type species for the genus is *Candidatus* Adperosa exaspitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Adperosa pecunimonas sp. nov.

Candidatus Adperosa pecunimonas (NL. fem. n. *pecunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYED01 sp012728955*. The type genome for the species is the GenBank assembly GCA_012728955.1. The GC content of the type genome is 64.57 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Adperula advigatica sp. nov.

Candidatus Adperula advigatica (NL. fem. n. *advigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRIV01 sp009782495*. The type genome for the species is the GenBank assembly GCA_009782495.1. The GC content of the type genome is 45.13 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Adperula gen. nov.

Candidatus Adperula (NL. fem. n. *Adperula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRIV01*. The type species for the genus is *Candidatus* Adperula advigatica .

According to GTDB R06-RS202, this genus belongs to the family _B.

Description of *Candidatus* Adperula ambifitoga sp. nov.

Candidatus Adperula ambifitoga (NL. fem. n. *ambifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRIV01 sp009782555*. The type genome for the species is the GenBank assembly GCA_009782555.1. The GC content of the type genome is 48.72 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Adperula attemibra sp. nov.

Candidatus Adperula attemibra (NL. fem. n. *attemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRIV01 sp009782955*. The type genome for the species is the GenBank assembly GCA_009782955.1. The GC content of the type genome is 43.73 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Adpicana inlibimonas sp. nov.

Candidatus Adpicana inlibimonas (NL. fem. n. *inlibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LUC14-002-19-P2 sp002084115*. The type genome for the species is the GenBank assembly GCA_002084115.1. The GC content of the type genome is 52.1

% and the genome length is 3.3 Mbp.

Description of *Candidatus* Adpicana gen. nov.

Candidatus Adpicana (NL. fem. n. *Adpicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LUC14-002-19-P2*. The type species for the genus is *Candidatus* Adpicana inlibimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpicaria ludibitia sp. nov.

Candidatus Adpicaria ludibitia (NL. fem. n. *ludibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAER01 sp013388745*. The type genome for the species is the GenBank assembly GCA_013388745.1. The GC content of the type genome is 60.08 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Adpicaria gen. nov.

Candidatus Adpicaria (NL. fem. n. *Adpicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAER01*. The type species for the genus is *Candidatus* Adpicaria ludibitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Adpicia adselimonas sp. nov.

Candidatus Adpicia adselimonas (NL. fem. n. *adselimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077545 sp003347645*. The type genome for the species is the GenBank assembly RS_GCF_003347645.1. The GC content of the type genome is 63.81 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Adpicia gen. nov.

Candidatus Adpicia (NL. fem. n. *Adpicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077545*. The type species for the genus is *Candidatus* Adpicia adselimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpicia cetarimonia sp. nov.

Candidatus Adpicia cetarimonia (NL. fem. n. *cetarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077545 sp014191545*. The type genome for the species is the GenBank assembly GCA_014191545.1. The GC content of the type genome is 62.23 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Adpicia extinentia sp. nov.

Candidatus Adpicia extinentia (NL. fem. n. *extinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077545 sp001464335*. The type genome for the species is the GenBank assembly GCA_001464335.1. The GC content of the type genome is 62.98 % and the genome length is 3.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Adpicosa amfititoga sp. nov.

Candidatus Adpicosa amfititoga (NL. fem. n. *amfititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCA01 sp013817065*. The type genome for the species is the GenBank assembly GCA_013817065.1. The GC content of the type genome is 64.78 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Adpicosa gen. nov.

Candidatus Adpicosa (NL. fem. n. *Adpicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDCA01*. The type species for the genus is *Candidatus* Adpicosa amfititoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-66-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunidaceae.

Description of *Candidatus* Adpicosa duciligena sp. nov.

Candidatus Adpicosa duciligena (NL. fem. n. *duciligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCA01 sp013694845*. The type genome for the species is the GenBank assembly GCA_013694845.1. The GC content of the type genome is 65.28 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Adpicosa utrinedo sp. nov.

Candidatus Adpicosa utrinedo (NL. fem. n. *utrinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCA01 sp013694635*. The type genome for the species is the GenBank assembly GCA_013694635.1. The GC content of the type genome is 65.15 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Adpicula minuritio sp. nov.

Candidatus Adpicula minuritio (NL. fem. n. *minuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-130 sp002084425*. The type genome for the species is the GenBank assembly GCA_002084425.1. The GC content of the type genome is 29.47 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Adpicula gen. nov.

Candidatus Adpicula (NL. fem. n. *Adpicula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4572-130*. The type species for the genus is *Candidatus* Adpicula minuritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpinana octobitrix sp. nov.

Candidatus Adpinana octobitrix (NL. fem. n. *octobitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-42-24 sp001792115*. The type genome for the species is the GenBank assembly GCA_001792115.1. The GC content of the type genome is 42.21 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Adpinana gen. nov.

Candidatus Adpinana (NL. fem. n. *Adpinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-42-24*. The type species for the genus is *Candidatus* Adpinana octobitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Adpinella artocilega sp. nov.

Candidatus Adpinella artocilega (NL. fem. n. *artocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5559 sp002425705*. The type genome for the species is the GenBank assembly GCA_002425705.1. The GC content of the type genome is 49.02 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Adpinella gen. nov.

Candidatus Adpinella (NL. fem. n. *Adpinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5559*. The type species for the genus is *Candidatus* Adpinella artocilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpinia bicapimonia sp. nov.

Candidatus Adpinia bicapimonia (NL. fem. n. *bicapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PMP191F sp001302245*. The type genome for the species is the GenBank assembly RS_GCF_001302245.1. The GC content of the type genome is 43.44 % and the genome length is 6.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "peritoneal pseudomyxoma peritonei tumor".

Description of *Candidatus* Adpinia gen. nov.

Candidatus Adpinia (NL. fem. n. *Adpinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PMP191F*. The type species for the genus is *Candidatus* Adpinia bicapimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpinosa modifitura sp. nov.

Candidatus Adpinosa modifitura (NL. fem. n. *modifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REBR01 sp007692645*. The type genome for the species is the GenBank assembly GCA_007692645.1. The GC content of the type genome is 58.23 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Adpinosa gen. nov.

Candidatus Adpinosa (NL. fem. n. *Adpinosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REBR01*. The type species for the genus is *Candidatus* Adpinosa modifitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpinula expugiforma sp. nov.

Candidatus Adpinula expugiforma (NL. fem. n. *expugiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11865 sp003519205*. The type genome for the species is the GenBank assembly GCA_003519205.1. The GC content of the type genome is 50.05 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Adpinula gen. nov.

Candidatus Adpinula (NL. fem. n. *Adpinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11865*. The type species for the genus is *Candidatus* Adpinula expugiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adporana resalitrix sp. nov.

Candidatus Adporana resalitrix (NL. fem. n. *resalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M5B4 sp002861535*. The type genome for the species is the GenBank assembly GCA_002861535.1. The GC content of the type genome is 47.51 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Adporana gen. nov.

Candidatus Adporana (NL. fem. n. *Adporana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M5B4*. The type species for the genus is *Candidatus* Adporana resalitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adporella bicodax sp. nov.

Candidatus Adporella bicodax (NL. fem. n. *bicodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABABH01 sp014238325*. The type genome for the species is the GenBank assembly GCA_014238325.1. The GC content of the type genome is 42.82 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Adporella gen. nov.

Candidatus Adporella (NL. fem. n. *Adporella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABABH01*. The type species for the genus is *Candidatus* Adporella bicodax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adporida invesugo sp. nov.

Candidatus Adporida invesugo (NL. fem. n. *invesugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2982 sp009692205*. The type genome for the species is the GenBank assembly GCA_009692205.1. The GC content of the type genome is 68.16 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Adporida gen. nov.

Candidatus Adporida (NL. fem. n. *Adporida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2982*. The type species for the genus is *Candidatus* Adporida invesugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Adporida munimibula sp. nov.

Candidatus Adporida munimibula (NL. fem. n. *munimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2982 sp002347035*. The type genome for the species is the GenBank assembly GCA_002347035.1. The GC content of the type genome is 53.97 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Adporula ranunetta sp. nov.

Candidatus Adporula ranunetta (NL. fem. n. *ranunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTSJ01 sp012965445*. The type genome for the species is the GenBank assembly GCA_012965445.1. The GC content of the type genome is 52.46 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Adporula gen. nov.

Candidatus Adporula (NL. fem. n. *Adporula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTSJ01*. The type species for the genus is *Candidatus* Adporula ranunetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2746185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benepulaceae.

Description of *Candidatus* Adposana adpanago sp. nov.

Candidatus Adposana adpanago (NL. fem. n. *adpanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *HYN0046 sp003351745*. The type genome for the species is the GenBank assembly RS_GCF_003351745.1. The GC content of the type genome is 46.01 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Adposana gen. nov.

Candidatus Adposana (NL. fem. n. *Adposana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HYN0046*. The type species for the genus is *Candidatus* Adposana adpanago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adposana artifessa sp. nov.

Candidatus Adposana artifessa (NL. fem. n. *artifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HYN0046 sp014378805*. The type genome for the species is the GenBank assembly GCA_014378805.1. The GC content of the type genome is 43.28 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Adposaria acculibra sp. nov.

Candidatus Adposaria acculibra (NL. fem. n. *acculibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-926 sp003153235*. The type genome for the species is the GenBank assembly GCA_003153235.1. The GC content of the type genome is 51.63 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Adposaria gen. nov.

Candidatus Adposaria (NL. fem. n. *Adposaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-926*. The type species for the genus is *Candidatus* Adposaria acculibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2020*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Lucubiaceae.

Description of *Candidatus* Adposella vinacousia sp. nov.

Candidatus Adposella vinacousia (NL. fem. n. *vinacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-42-13 sp001772625*. The type genome for the species is the GenBank assembly GCA_001772625.1. The GC content of the type genome is 41.93 % and the genome length is 0.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Adposella gen. nov.

Candidatus Adposella (NL. fem. n. *Adposella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-42-13*. The type species for the genus is *Candidatus* Adposella vinacousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Adposida assicimonia sp. nov.

Candidatus Adposida assicimonia (NL. fem. n. *assicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14133 sp902796085*. The type genome for the species is the GenBank assembly RS_GCF_902796085.1. The GC content of the type genome is 34.61 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Adposida gen. nov.

Candidatus Adposida (NL. fem. n. *Adposida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14133*. The type species for the genus is *Candidatus* Adposida

assicimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adposida lanifibula sp. nov.

Candidatus Adposida lanifibula (NL. fem. n. *lanifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14133 sp009996845*. The type genome for the species is the GenBank assembly RS_GCF_009996845.1. The GC content of the type genome is 34.83 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Adposula exsisitia sp. nov.

Candidatus Adposula exsisitia (NL. fem. n. *exsisitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2031 sp002333145*. The type genome for the species is the GenBank assembly GCA_002333145.1. The GC content of the type genome is 53.29 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Adposula gen. nov.

Candidatus Adposula (NL. fem. n. *Adposula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2031*. The type species for the genus is *Candidatus* Adposula exsisitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adposula monumicula sp. nov.

Candidatus Adposula monumicula (NL. fem. n. *monumicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2031 sp003543245*. The type genome for the species is the GenBank assembly GCA_003543245.1. The GC content of the type genome is 57.97 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Adpugana incocitica sp. nov.

Candidatus Adpugana incocitica (NL. fem. n. *incocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKIL01 sp007116425*. The type genome for the species is the GenBank assembly GCA_007116425.1. The GC content of the type genome is 39.32 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Adpugana gen. nov.

Candidatus Adpugana (NL. fem. n. *Adpugana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKIL01*. The type species for the genus is *Candidatus* Adpugana incocitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adpugella desulago sp. nov.

Candidatus Adpugella desulago (NL. fem. n. *desulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1933 sp900772235*. The type genome for the species is the GenBank assembly RS_GCF_900772235.1. The GC content of the type genome is 28.07 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Adpugella gen. nov.

Candidatus Adpugella (NL. fem. n. *Adpugella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1933*. The type species for the genus is *Candidatus* Adpugella desulago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Adpugella duriciforma sp. nov.

Candidatus Adpugella duriciforma (NL. fem. n. *duriciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1933 sp900556455*. The type genome for the species is the GenBank assembly GCA_900556455.1. The GC content of the type genome is 28.68 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Adpugia bicorentia sp. nov.

Candidatus Adpugia bicorentia (NL. fem. n. *bicorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHVS01 sp003223635*. The type genome for the species is the GenBank assembly GCA_003223635.1. The GC content of the type genome is 62.4 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Adpugia gen. nov.

Candidatus Adpugia (NL. fem. n. *Adpugia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHVS01*. The type species for the genus is *Candidatus* Adpugia bicorentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Gp7-AA8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viburanaceae.

Description of *Candidatus* Adpugula cerimitio sp. nov.

Candidatus Adpugula cerimitio (NL. fem. n. *cerimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCRK01 sp013813565*. The type genome for the species is the GenBank assembly GCA_013813565.1. The GC content of the type genome is 61.42 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Adpugula gen. nov.

Candidatus Adpugula (NL. fem. n. *Adpugula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCRK01*. The type species for the genus is *Candidatus* Adpugula cerimitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adrecana humecugo sp. nov.

Candidatus Adrecana humecugo (NL. fem. n. *humecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2674 sp002693605*. The type genome for the species is the GenBank assembly GCA_002693605.1. The GC content of the type genome is 47.13 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Adrecana gen. nov.

Candidatus Adrecana (NL. fem. n. *Adrecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2674*. The type species for the genus is *Candidatus* Adrecana humecugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adrecaria verecedo sp. nov.

Candidatus Adrecaria verecedo (NL. fem. n. *verecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6019 sp002427995*. The type genome for the species is the GenBank assembly GCA_002427995.1. The GC content of the type genome is 69.72 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Adrecaria gen. nov.

Candidatus Adrecaria (NL. fem. n. *Adrecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6019*. The type species for the genus is *Candidatus* Adrecaria verecedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adrecella peropatica sp. nov.

Candidatus Adrecella peropatica (NL. fem. n. *peropatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-37-15 sp001784565*. The type genome for the species is the GenBank assembly GCA_001784565.1. The GC content of the type genome is 36.92 % and the genome length is 2.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Adrecella gen. nov.

Candidatus Adrecella (NL. fem. n. *Adrecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-37-15*. The type species for the genus is *Candidatus* Adrecella peropatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9579*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibariaceae.

Description of *Candidatus* Adrecia ignobicella sp. nov.

Candidatus Adrecia ignobicella (NL. fem. n. *ignobicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACESU01 sp013911655*. The type genome for the species is the GenBank assembly GCA_013911655.1. The GC content of the type genome is 47.9 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Adrecia gen. nov.

Candidatus Adrecia (NL. fem. n. *Adrecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACESU01*. The type species for the genus is *Candidatus* Adrecia ignobicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1908*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolellaceae.

Description of *Candidatus* Adrecia ornititudo sp. nov.

Candidatus Adrecia ornititudo (NL. fem. n. *ornititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACESU01 sp013822015*. The type genome for the species is the GenBank assembly GCA_013822015.1. The GC content of the type genome is 52.65 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Adrecosa desupilega sp. nov.

Candidatus Adrecosa desupilega (NL. fem. n. *desupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCRD01 sp004298155*. The type genome for the species is the GenBank assembly GCA_004298155.1. The GC content of the type genome is 56.74 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Adrecosa gen. nov.

Candidatus Adrecosa (NL. fem. n. *Adrecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCRD01*. The type species for the genus is *Candidatus* Adrecosa desupilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumariaceae.

Description of *Candidatus* Adrecosa legifatica sp. nov.

Candidatus Adrecosa legifatica (NL. fem. n. *legifatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCRD01 sp011388475*. The type genome for the species is the GenBank assembly GCA_011388475.1. The GC content of the type genome is 57.09 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Adrecula bovicisca sp. nov.

Candidatus Adrecula bovicisca (NL. fem. n. *bovicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLHZ01 sp007135895*. The type genome for the species is the GenBank assembly GCA_007135895.1. The GC content of the type genome is 52.13 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Adrecula gen. nov.

Candidatus Adrecula (NL. fem. n. *Adrecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLHZ01*. The type species for the genus is *Candidatus* Adrecula bovicisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinulaceae.

Description of *Candidatus* Adremaria panopentia sp. nov.

Candidatus Adremaria panopentia (NL. fem. n. *panopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11194 sp902766725*. The type genome for the species is the GenBank assembly GCA_902766725.1. The GC content of the type genome is 24.94 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Adremaria gen. nov.

Candidatus Adremaria (NL. fem. n. *Adremaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11194*. The type species for the genus is *Candidatus* Adremaria panopentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adremaria salubitio sp. nov.

Candidatus Adremaria salubitio (NL. fem. n. *salubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11194 sp902789825*. The type genome for the species is the GenBank assembly GCA_902789825.1. The GC content of the type genome is 26.45 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Adremella rareficella sp. nov.

Candidatus Adremella rareficella (NL. fem. n. *rareficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYRQ01 sp012518685*. The type genome for the species is the GenBank assembly GCA_012518685.1. The GC content of the type genome is 35.46 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Adremella gen. nov.

Candidatus Adremella (NL. fem. n. *Adremella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYRQ01*. The type species for the genus is *Candidatus* Adremella rareficella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adremosa appecitura sp. nov.

Candidatus Adremosa appecitura (NL. fem. n. *appecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *20-60-12 sp002255495*. The type genome for the species is the GenBank assembly GCA_002255495.1. The GC content of the type genome is 59.86 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Adremosa gen. nov.

Candidatus Adremosa (NL. fem. n. *Adremosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *20-60-12*. The type species for the genus is *Candidatus* Adremosa appecitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adremula illuventia sp. nov.

Candidatus Adremula illuventia (NL. fem. n. *illuventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAP01 sp009780135*. The type genome for the species is the GenBank assembly GCA_009780135.1. The GC content of the type genome is 35.84 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Adremula gen. nov.

Candidatus Adremula (NL. fem. n. *Adremula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAP01*. The type species for the genus is *Candidatus* Adremula illuventia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Adremula immemastra sp. nov.

Candidatus Adremula immemastra (NL. fem. n. *immemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAP01 sp009781235*. The type genome for the species is the

GenBank assembly GCA_009781235.1. The GC content of the type genome is 50.88 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Adremula inoccessa sp. nov.

Candidatus Adremula inoccessa (NL. fem. n. *inoccessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAP01 sp009777485*. The type genome for the species is the GenBank assembly GCA_009777485.1. The GC content of the type genome is 45.74 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Adrenana conibitoga sp. nov.

Candidatus Adrenana conibitoga (NL. fem. n. *conibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3470 sp002378125*. The type genome for the species is the GenBank assembly GCA_002378125.1. The GC content of the type genome is 56.56 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Adrenana gen. nov.

Candidatus Adrenana (NL. fem. n. *Adrenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3470*. The type species for the genus is *Candidatus* Adrenana conibitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Casp-alpha2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninidaceae.

Description of *Candidatus* Adrenana conopedo sp. nov.

Candidatus Adrenana conopedo (NL. fem. n. *conopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3470 sp002709525*. The type genome for the species is the GenBank assembly GCA_002709525.1. The GC content of the type genome is 52.69 %

and the genome length is 3.18 Mbp.

Description of *Candidatus* Adrenaria exhilatica sp. nov.

Candidatus Adrenaria exhilatica (NL. fem. n. *exhilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F202Z8 sp005943945*. The type genome for the species is the GenBank assembly RS_GCF_005943945.1. The GC content of the type genome is 43.26 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Adrenaria gen. nov.

Candidatus Adrenaria (NL. fem. n. *Adrenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F202Z8*. The type species for the genus is *Candidatus* Adrenaria exhilatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adrenella denecitio sp. nov.

Candidatus Adrenella denecitio (NL. fem. n. *denecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRJW01 sp011052055*. The type genome for the species is the GenBank assembly GCA_011052055.1. The GC content of the type genome is 49.74 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Adrenella gen. nov.

Candidatus Adrenella (NL. fem. n. *Adrenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRJW01*. The type species for the genus is *Candidatus* Adrenella denecitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7883*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimellaceae.

Description of *Candidatus* Adrenida manupisca sp. nov.

Candidatus Adrenida manupisca (NL. fem. n. *manupisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSWQ01 sp011370105*. The type genome for the species is the GenBank assembly GCA_011370105.1. The GC content of the type genome is 50.91 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Adrenida gen. nov.

Candidatus Adrenida (NL. fem. n. *Adrenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSWQ01*. The type species for the genus is *Candidatus* Adrenida manupisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Adrenula conopitrix sp. nov.

Candidatus Adrenula conopitrix (NL. fem. n. *conopitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7868 sp002501285*. The type genome for the species is the GenBank assembly GCA_002501285.1. The GC content of the type genome is 28.67 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Adrenula gen. nov.

Candidatus Adrenula (NL. fem. n. *Adrenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7868*. The type species for the genus is *Candidatus* Adrenula conopitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Adrotana tametessa sp. nov.

Candidatus Adrotana tametessa (NL. fem. n. *tametessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZNO01 sp012798275*. The type genome for the species is the GenBank assembly GCA_012798275.1. The GC content of the type genome is 62.95 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Adrotana gen. nov.

Candidatus Adrotana (NL. fem. n. *Adrotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZNO01*. The type species for the genus is *Candidatus* Adrotana tametessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLSP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decamosaceae.

Description of *Candidatus* Adrotella catobilega sp. nov.

Candidatus Adrotella catobilega (NL. fem. n. *catobilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-O15 sp003278255*. The type genome for the species is the GenBank assembly GCA_003278255.1. The GC content of the type genome is 38.64 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Adrotella gen. nov.

Candidatus Adrotella (NL. fem. n. *Adrotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-363-O15*. The type species for the genus is *Candidatus* Adrotella catobilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adrotia armicugo sp. nov.

Candidatus Adrotia armicugo (NL. fem. n. *armicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-002259525 sp002259525*. The type genome for the species is the GenBank assembly RS_GCF_002259525.1. The GC content of the type genome is 33.05 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Adrotia gen. nov.

Candidatus Adrotia (NL. fem. n. *Adrotia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-002259525*. The type species for the genus is *Candidatus* Adrotia armicugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adrotosa adalgicella sp. nov.

Candidatus Adrotosa adalgicella (NL. fem. n. *adalgicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HT-58-2 sp002163975*. The type genome for the species is the GenBank assembly RS_GCF_002163975.1. The GC content of the type genome is 42.57 % and the genome length is 7.9 Mbp.

Description of *Candidatus* Adrotosa gen. nov.

Candidatus Adrotosa (NL. fem. n. *Adrotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HT-58-2*. The type species for the genus is *Candidatus* Adrotosa adalgicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adrotula chancatio sp. nov.

Candidatus Adrotula chancatio (NL. fem. n. *chancatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NCCP-1664 sp008580665*. The type genome for the species is the GenBank assembly RS_GCF_008580665.1. The GC content of the type genome is 70.03 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Adrotula gen. nov.

Candidatus Adrotula (NL. fem. n. *Adrotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NCCP-1664*. The type species for the genus is *Candidatus* Adrotula chancatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adrumana inredimonas sp. nov.

Candidatus Adrumana inredimonas (NL. fem. n. *inredimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFQD01 sp009925875*. The type genome for the species is the GenBank assembly GCA_009925875.1. The GC content of the type genome is 59.89 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Adrumana gen. nov.

Candidatus Adrumana (NL. fem. n. *Adrumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFQD01*. The type species for the genus is *Candidatus* Adrumana inredimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adrumana obfeniforma sp. nov.

Candidatus Adrumana obfeniforma (NL. fem. n. *obfeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFQD01 sp009704705*. The type genome for the species is the

GenBank assembly GCA_009704705.1. The GC content of the type genome is 59.73 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Adrumaria lavacessa sp. nov.

Candidatus Adrumaria lavacessa (NL. fem. n. *lavacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJZ01 sp013298205*. The type genome for the species is the GenBank assembly GCA_013298205.1. The GC content of the type genome is 31.84 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Adrumaria gen. nov.

Candidatus Adrumaria (NL. fem. n. *Adrumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFJZ01*. The type species for the genus is *Candidatus* Adrumaria lavacessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9547*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gemebiaceae.

Description of *Candidatus* Adrumida decititudo sp. nov.

Candidatus Adrumida decititudo (NL. fem. n. *decititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNNG01 sp013824115*. The type genome for the species is the GenBank assembly GCA_013824115.1. The GC content of the type genome is 49.08 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Adrumida gen. nov.

Candidatus Adrumida (NL. fem. n. *Adrumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNNG01*. The type species for the genus is *Candidatus* Adrumida decititudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA7662. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manubanaceae.

Description of *Candidatus* Adrumosa infucitica sp. nov.

Candidatus Adrumosa infucitica (NL. fem. n. *infucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QFOX01 sp003241645*. The type genome for the species is the GenBank assembly GCA_003241645.1. The GC content of the type genome is 61.08 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Adrumosa gen. nov.

Candidatus Adrumosa (NL. fem. n. *Adrumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QFOX01*. The type species for the genus is *Candidatus* Adrumosa infucitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipariaceae.

Description of *Candidatus* Adrumula benivifica sp. nov.

Candidatus Adrumula benivifica (NL. fem. n. *benivifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSN01 sp902825985*. The type genome for the species is the GenBank assembly GCA_902825985.1. The GC content of the type genome is 68.72 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Adrumula gen. nov.

Candidatus Adrumula (NL. fem. n. *Adrumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSN01*. The type species for the genus is *Candidatus* Adrumula benivifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Adrumula homagitoga sp. nov.

Candidatus Adrumula homagitoga (NL. fem. n. *homagitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSN01 sp009380045*. The type genome for the species is the GenBank assembly GCA_009380045.1. The GC content of the type genome is 66.09 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Adrumula illunitica sp. nov.

Candidatus Adrumula illunitica (NL. fem. n. *illunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSN01 sp902826465*. The type genome for the species is the GenBank assembly GCA_902826465.1. The GC content of the type genome is 65.02 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Adsecaria horomitas sp. nov.

Candidatus Adsecaria horomitas (NL. fem. n. *horomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-167 sp005879775*. The type genome for the species is the GenBank assembly GCA_005879775.1. The GC content of the type genome is 69.36 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Adsecaria gen. nov.

Candidatus Adsecaria (NL. fem. n. *Adsecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-167*. The type species for the genus is *Candidatus* Adsecaria horomitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family

QHBO01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefariaceae.

Description of *Candidatus* Adsecaria irrevilega sp. nov.

Candidatus Adsecaria irrevilega (NL. fem. n. *irrevilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-167 sp013816405*. The type genome for the species is the GenBank assembly GCA_013816405.1. The GC content of the type genome is 67.95 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Adsecella semibigena sp. nov.

Candidatus Adsecella semibigena (NL. fem. n. *semibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-849 sp011333685*. The type genome for the species is the GenBank assembly GCA_011333685.1. The GC content of the type genome is 42.31 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Adsecella gen. nov.

Candidatus Adsecella (NL. fem. n. *Adsecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-849*. The type species for the genus is *Candidatus* Adsecella semibigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYB2-FULL-48-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomogiaceae.

Description of *Candidatus* Adsecia subadessa sp. nov.

Candidatus Adsecia subadessa (NL. fem. n. *subadessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPGG5 sp001643555*. The type genome for the species is the GenBank

assembly GCA_001643555.1. The GC content of the type genome is 50.52 % and the genome length is 1.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment sample collected at the water-sediment interface from the South Pacific gyre; IODP site U1369".

Description of *Candidatus* Adsecia gen. nov.

Candidatus Adsecia (NL. fem. n. *Adsecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPGG5*. The type species for the genus is *Candidatus* Adsecia subadessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8639*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locelidaceae.

Description of *Candidatus* Adsecida scammivita sp. nov.

Candidatus Adsecida scammivita (NL. fem. n. *scammivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAAPF01 sp009908425*. The type genome for the species is the GenBank assembly GCA_009908425.1. The GC content of the type genome is 72.04 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Adsecida gen. nov.

Candidatus Adsecida (NL. fem. n. *Adsecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAAPF01*. The type species for the genus is *Candidatus* Adsecida scammivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adselana adroticula sp. nov.

Candidatus Adselana adroticula (NL. fem. n. *adroticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *WRKJ01 sp009780245*. The type genome for the species is the GenBank assembly GCA_009780245.1. The GC content of the type genome is 43.97 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Adselana gen. nov.

Candidatus Adselana (NL. fem. n. *Adselana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKJ01*. The type species for the genus is *Candidatus* Adselana adroticula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adselana crusmicella sp. nov.

Candidatus Adselana crusmicella (NL. fem. n. *crusmicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKJ01 sp009778135*. The type genome for the species is the GenBank assembly GCA_009778135.1. The GC content of the type genome is 38.97 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Adselaria conopastra sp. nov.

Candidatus Adselaria conopastra (NL. fem. n. *conopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRDM01 sp009783465*. The type genome for the species is the GenBank assembly GCA_009783465.1. The GC content of the type genome is 62.38 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Adselaria gen. nov.

Candidatus Adselaria (NL. fem. n. *Adselaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRDM01*. The type species for the genus is *Candidatus* Adselaria conopastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Megalanaceae.

Description of *Candidatus* Adselella assifitia sp. nov.

Candidatus Adselella assifitia (NL. fem. n. *assifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B16-G9 sp003650425*. The type genome for the species is the GenBank assembly GCA_003650425.1. The GC content of the type genome is 40.22 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Adselella gen. nov.

Candidatus Adselella (NL. fem. n. *Adselella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B16-G9*. The type species for the genus is *Candidatus* Adselella assifitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Adselia delubedo sp. nov.

Candidatus Adselia delubedo (NL. fem. n. *delubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002401295 sp002401295*. The type genome for the species is the GenBank assembly GCA_002401295.1. The GC content of the type genome is 41.73 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Adselia gen. nov.

Candidatus Adselia (NL. fem. n. *Adselia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002401295*. The type species for the genus is *Candidatus* Adselia delubedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

XYD2-FULL-50-16. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nicomellaceae.

Description of *Candidatus* Adselida refinousia sp. nov.

Candidatus Adselida refinousia (NL. fem. n. *refinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYR01 sp009692705*. The type genome for the species is the GenBank assembly GCA_009692705.1. The GC content of the type genome is 72.72 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Adselida gen. nov.

Candidatus Adselida (NL. fem. n. *Adselida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYR01*. The type species for the genus is *Candidatus* Adselida refinousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Adselosa cohonago sp. nov.

Candidatus Adselosa cohonago (NL. fem. n. *cohonago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *K23-9 sp007741555*. The type genome for the species is the GenBank assembly RS_GCF_007741555.1. The GC content of the type genome is 54.65 % and the genome length is 7.95 Mbp.

Description of *Candidatus* Adselosa gen. nov.

Candidatus Adselosa (NL. fem. n. *Adselosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *K23-9*. The type species for the genus is *Candidatus* Adselosa cohonago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsenana divulitica sp. nov.

Candidatus Adsenana divulitica (NL. fem. n. *divulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6491 sp002436505*. The type genome for the species is the GenBank assembly GCA_002436505.1. The GC content of the type genome is 42.39 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Adsenana gen. nov.

Candidatus Adsenana (NL. fem. n. *Adsenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6491*. The type species for the genus is *Candidatus* Adsenana divulitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9320*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilariaceae.

Description of *Candidatus* Adsenaria acertitoga sp. nov.

Candidatus Adsenaria acertitoga (NL. fem. n. *acertitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHG01 sp013698435*. The type genome for the species is the GenBank assembly GCA_013698435.1. The GC content of the type genome is 68.41 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Adsenaria gen. nov.

Candidatus Adsenaria (NL. fem. n. *Adsenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDHG01*. The type species for the genus is *Candidatus* Adsenaria acertitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsenaria calipatio sp. nov.

Candidatus Adsenaria calipatio (NL. fem. n. *calipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHG01 sp013821195*. The type genome for the species is the GenBank assembly GCA_013821195.1. The GC content of the type genome is 68.19 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Adsenaria refinitio sp. nov.

Candidatus Adsenaria refinitio (NL. fem. n. *refinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHG01 sp013697905*. The type genome for the species is the GenBank assembly GCA_013697905.1. The GC content of the type genome is 67.84 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Adsenella decaticella sp. nov.

Candidatus Adsenella decaticella (NL. fem. n. *decaticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLM01 sp003564975*. The type genome for the species is the GenBank assembly GCA_003564975.1. The GC content of the type genome is 63.01 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Adsenella gen. nov.

Candidatus Adsenella (NL. fem. n. *Adsenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLLM01*. The type species for the genus is *Candidatus* Adsenella decaticella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsenella lapicastra sp. nov.

Candidatus Adsenella lapicastra (NL. fem. n. *lapicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLM01 sp007134055*. The type genome for the species is the GenBank assembly GCA_007134055.1. The GC content of the type genome is 65.31 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Adsenia colubitia sp. nov.

Candidatus Adsenia colubitia (NL. fem. n. *colubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCYV01 sp013290025*. The type genome for the species is the GenBank assembly GCA_013290025.1. The GC content of the type genome is 56.4 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Adsenia gen. nov.

Candidatus Adsenia (NL. fem. n. *Adsenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCYV01*. The type species for the genus is *Candidatus* Adsenia colubitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsenida optumibra sp. nov.

Candidatus Adsenida optumibra (NL. fem. n. *optumibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQWN01 sp009785325*. The type genome for the species is the GenBank assembly GCA_009785325.1. The GC content of the type genome is 48.29 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Adsenida gen. nov.

Candidatus Adsenida (NL. fem. n. *Adsenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQWN01*. The type species for the genus is *Candidatus* Adsenida

optumibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsenosa incenivita sp. nov.

Candidatus Adsenosa incenivita (NL. fem. n. *incenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RECY01 sp007693785*. The type genome for the species is the GenBank assembly GCA_007693785.1. The GC content of the type genome is 69.36 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Adsenosa gen. nov.

Candidatus Adsenosa (NL. fem. n. *Adsenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RECY01*. The type species for the genus is *Candidatus* Adsenosa incenivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Adsenula arrabimonas sp. nov.

Candidatus Adsenula arrabimonas (NL. fem. n. *arrabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7951 sp003511785*. The type genome for the species is the GenBank assembly GCA_003511785.1. The GC content of the type genome is 67.6 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Adsenula gen. nov.

Candidatus Adsenula (NL. fem. n. *Adsenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7951*. The type species for the genus is *Candidatus* Adsenula arrabimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsesana exforitio sp. nov.

Candidatus Adsesana exforitio (NL. fem. n. *exforitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11403 sp002423125*. The type genome for the species is the GenBank assembly GCA_002423125.1. The GC content of the type genome is 41.79 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Adsesana gen. nov.

Candidatus Adsesana (NL. fem. n. *Adsesana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11403*. The type species for the genus is *Candidatus* Adsesana exforitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsesella armiciforma sp. nov.

Candidatus Adsesella armiciforma (NL. fem. n. *armiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-51-16 sp001796785*. The type genome for the species is the GenBank assembly GCA_001796785.1. The GC content of the type genome is 51.17 % and the genome length is 2.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Adsesella gen. nov.

Candidatus Adsesella (NL. fem. n. *Adsesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-51-16*. The type species for the genus is *Candidatus* Adsesella armiciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family

EnvOPS12. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Adsesosa diminitudo sp. nov.

Candidatus Adsesosa diminitudo (NL. fem. n. *diminitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUBZ01 sp012960035*. The type genome for the species is the GenBank assembly GCA_012960035.1. The GC content of the type genome is 59.27 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Adsesosa gen. nov.

Candidatus Adsesosa (NL. fem. n. *Adsesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUBZ01*. The type species for the genus is *Candidatus* Adsesosa diminitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4427*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapiaceae.

Description of *Candidatus* Adsesula monopitica sp. nov.

Candidatus Adsesula monopitica (NL. fem. n. *monopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACXFF01 sp902766805*. The type genome for the species is the GenBank assembly GCA_902766805.1. The GC content of the type genome is 66.27 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Adsesula gen. nov.

Candidatus Adsesula (NL. fem. n. *Adsesula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACXFF01*. The type species for the genus is *Candidatus* Adsesula monopitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsibana ambacastra sp. nov.

Candidatus Adsibana ambacastra (NL. fem. n. *ambacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG12 sp003222235*. The type genome for the species is the GenBank assembly GCA_003222235.1. The GC content of the type genome is 68.81 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Adsibana gen. nov.

Candidatus Adsibana (NL. fem. n. *Adsibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG12*. The type species for the genus is *Candidatus* Adsibana ambacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Adsibaria ossicetta sp. nov.

Candidatus Adsibaria ossicetta (NL. fem. n. *ossicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G105 sp004213235*. The type genome for the species is the GenBank assembly GCA_004213235.1. The GC content of the type genome is 54.44 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Adsibaria gen. nov.

Candidatus Adsibaria (NL. fem. n. *Adsibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G105*. The type species for the genus is *Candidatus* Adsibaria ossicetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsibella arrabilega sp. nov.

Candidatus Adsibella arrabilega (NL. fem. n. *arrabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-26 sp003233235*. The type genome for the species is the GenBank assembly GCA_003233235.1. The GC content of the type genome is 50.99 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Adsibella gen. nov.

Candidatus Adsibella (NL. fem. n. *Adsibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-26*. The type species for the genus is *Candidatus* Adsibella arrabilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsibia rinocibula sp. nov.

Candidatus Adsibia rinocibula (NL. fem. n. *rinocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDAE01 sp013695595*. The type genome for the species is the GenBank assembly GCA_013695595.1. The GC content of the type genome is 49.82 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Adsibia gen. nov.

Candidatus Adsibia (NL. fem. n. *Adsibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDAE01*. The type species for the genus is *Candidatus* Adsibia rinocibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsibida butubisca sp. nov.

Candidatus Adsibida butubisca (NL. fem. n. *butubisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXRN01 sp012270665*. The type genome for the species is the GenBank assembly GCA_012270665.1. The GC content of the type genome is 58.29 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Adsibida gen. nov.

Candidatus Adsibida (NL. fem. n. *Adsibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXRN01*. The type species for the genus is *Candidatus* Adsibida butubisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resupellaceae.

Description of *Candidatus* Adsibida dicanitica sp. nov.

Candidatus Adsibida dicanitica (NL. fem. n. *dicanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXRN01 sp009838465*. The type genome for the species is the GenBank assembly GCA_009838465.1. The GC content of the type genome is 58.33 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Adsicana solifessa sp. nov.

Candidatus Adsicana solifessa (NL. fem. n. *solifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RR4-56 sp011044155*. The type genome for the species is the GenBank assembly RS_GCF_011044155.1. The GC content of the type genome is 65.87 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Adsicana gen. nov.

Candidatus Adsicana (NL. fem. n. *Adsicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RR4-56*. The type species for the genus is *Candidatus* Adsicana solifessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsicaria detepitia sp. nov.

Candidatus Adsicaria detepitia (NL. fem. n. *detepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1405 sp002305685*. The type genome for the species is the GenBank assembly GCA_002305685.1. The GC content of the type genome is 52.03 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Adsicaria gen. nov.

Candidatus Adsicaria (NL. fem. n. *Adsicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1405*. The type species for the genus is *Candidatus* Adsicaria detepitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsicella affuledo sp. nov.

Candidatus Adsicella affuledo (NL. fem. n. *affuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *L227-S17 sp013390565*. The type genome for the species is the GenBank assembly GCA_013390565.1. The GC content of the type genome is 46.78 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Adsicella gen. nov.

Candidatus Adsicella (NL. fem. n. *Adsicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *L227-S17*. The type species for the genus is *Candidatus* Adsicella

affuledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *54-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacidaceae.

Description of *Candidatus* Adsicia adpenilega sp. nov.

Candidatus Adsicia adpenilega (NL. fem. n. *adpenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077550 sp902826865*. The type genome for the species is the GenBank assembly GCA_902826865.1. The GC content of the type genome is 67.21 % and the genome length is 8.53 Mbp.

Description of *Candidatus* Adsicia gen. nov.

Candidatus Adsicia (NL. fem. n. *Adsicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077550*. The type species for the genus is *Candidatus* Adsicia adpenilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsicia octopatio sp. nov.

Candidatus Adsicia octopatio (NL. fem. n. *octopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077550 sp001464385*. The type genome for the species is the GenBank assembly GCA_001464385.1. The GC content of the type genome is 72.2 % and the genome length is 10.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Adsicida solifitrix sp. nov.

Candidatus Adsicida solifitrix (NL. fem. n. *solifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Plut-88870 sp012271205*. The type genome for the species is the GenBank assembly GCA_012271205.1. The GC content of the type genome is 56.03 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Adsicida gen. nov.

Candidatus Adsicida (NL. fem. n. *Adsicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Plut-88870*. The type species for the genus is *Candidatus* Adsicida solifitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin80*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecanaceae.

Description of *Candidatus* Adsicosa deparedo sp. nov.

Candidatus Adsicosa deparedo (NL. fem. n. *deparedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFG01 sp012728335*. The type genome for the species is the GenBank assembly GCA_012728335.1. The GC content of the type genome is 32.24 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Adsicosa gen. nov.

Candidatus Adsicosa (NL. fem. n. *Adsicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYFG01*. The type species for the genus is *Candidatus* Adsicosa deparedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsicula cicatentia sp. nov.

Candidatus Adsicula cicatentia (NL. fem. n. *cicatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JABDDS01 sp013287465*. The type genome for the species is the GenBank assembly GCA_013287465.1. The GC content of the type genome is 41.17 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Adsicula gen. nov.

Candidatus Adsicula (NL. fem. n. *Adsicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDS01*. The type species for the genus is *Candidatus* Adsicula cicatentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsifana genufetta sp. nov.

Candidatus Adsifana genufetta (NL. fem. n. *genufetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RQZE01 sp003858585*. The type genome for the species is the GenBank assembly RS_GCF_003858585.1. The GC content of the type genome is 32.26 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Adsifana gen. nov.

Candidatus Adsifana (NL. fem. n. *Adsifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RQZE01*. The type species for the genus is *Candidatus* Adsifana genufetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsifaria filifitudo sp. nov.

Candidatus Adsifaria filifitudo (NL. fem. n. *filifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9220 sp003519965*. The type genome for the species is the GenBank assembly GCA_003519965.1. The GC content of the type genome is 58.7 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Adsifaria gen. nov.

Candidatus Adsifaria (NL. fem. n. *Adsifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9220*. The type species for the genus is *Candidatus* Adsifaria filifitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsifia almitibula sp. nov.

Candidatus Adsifia almitibula (NL. fem. n. *almitibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-107 sp007117835*. The type genome for the species is the GenBank assembly GCA_007117835.1. The GC content of the type genome is 37.56 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Adsifia gen. nov.

Candidatus Adsifia (NL. fem. n. *Adsifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBR16-107*. The type species for the genus is *Candidatus* Adsifia almitibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsifida apperax sp. nov.

Candidatus Adsifida apperax (NL. fem. n. *apperax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746235 sp002746235*. The type genome for the species is the GenBank assembly GCA_002746235.1. The GC content of the type genome is 54.26 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Adsifida gen. nov.

Candidatus Adsifida (NL. fem. n. *Adsifida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746235*. The type species for the genus is *Candidatus* Adsifida apperax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacellaceae.

Description of *Candidatus* Adsifula aspililega sp. nov.

Candidatus Adsifula aspililega (NL. fem. n. *aspililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADFW01 sp013152655*. The type genome for the species is the GenBank assembly GCA_013152655.1. The GC content of the type genome is 30.63 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Adsifula gen. nov.

Candidatus Adsifula (NL. fem. n. *Adsifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFW01*. The type species for the genus is *Candidatus* Adsifula aspililega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B39-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decatidaceae.

Description of *Candidatus* Adsigana vitupitia sp. nov.

Candidatus Adsigana vitupitia (NL. fem. n. *vitupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-42-16 sp001818695*. The type genome for the species is the GenBank assembly GCA_001818695.1. The GC content of the type genome is 41.03 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Adsigana gen. nov.

Candidatus Adsigana (NL. fem. n. *Adsigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-42-16*. The type species for the genus is *Candidatus* Adsigana vitupitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *02-FULL-45-10c*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delubariaceae.

Description of *Candidatus* Adsigaria adsudastra sp. nov.

Candidatus Adsigaria adsudastra (NL. fem. n. *adsudastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGDT01 sp009918525*. The type genome for the species is the GenBank assembly GCA_009918525.1. The GC content of the type genome is 55.14 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Adsigaria gen. nov.

Candidatus Adsigaria (NL. fem. n. *Adsigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGDT01*. The type species for the genus is *Candidatus* Adsigaria adsudastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsigella cinipentia sp. nov.

Candidatus Adsigella cinipentia (NL. fem. n. *cinipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTW01 sp012517955*. The type genome for the species is the GenBank assembly GCA_012517955.1. The GC content of the type genome is 46.13 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Adsigella gen. nov.

Candidatus Adsigella (NL. fem. n. *Adsigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYTW01*. The type species for the genus is *Candidatus* Adsigella cinipentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-95*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponidaceae.

Description of *Candidatus* Adsigia adnecibra sp. nov.

Candidatus Adsigia adnecibra (NL. fem. n. *adnecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11257 sp902773305*. The type genome for the species is the GenBank assembly GCA_902773305.1. The GC content of the type genome is 54.12 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Adsigia gen. nov.

Candidatus Adsigia (NL. fem. n. *Adsigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11257*. The type species for the genus is *Candidatus* Adsigia adnecibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Adsigia colubugo sp. nov.

Candidatus Adsigia colubugo (NL. fem. n. *colubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11257 sp902767355*. The type genome for the species is the GenBank assembly GCA_902767355.1. The GC content of the type genome is 56.21 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Adsigia inergago sp. nov.

Candidatus Adsigia inergago (NL. fem. n. *inergago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11257 sp012513425*. The type genome for the species is the GenBank assembly GCA_012513425.1. The GC content of the type genome is 40.02 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Adsigida linigago sp. nov.

Candidatus Adsigida linigago (NL. fem. n. *linigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DROE01 sp011322005*. The type genome for the species is the GenBank assembly GCA_011322005.1. The GC content of the type genome is 57.15 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Adsigida gen. nov.

Candidatus Adsigida (NL. fem. n. *Adsigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DROE01*. The type species for the genus is *Candidatus* Adsigida linigago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsigosa penurifica sp. nov.

Candidatus Adsigosa penurifica (NL. fem. n. *penurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYLX01 sp005808505*. The type genome for the species is the GenBank assembly GCA_005808505.1. The GC content of the type genome is 52.81 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Adsigosa gen. nov.

Candidatus Adsigosa (NL. fem. n. *Adsigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYLX01*. The type species for the genus is *Candidatus* Adsigosa penurifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsigula repudastra sp. nov.

Candidatus Adsigula repudastra (NL. fem. n. *repudastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLMZ01 sp009726095*. The type genome for the species is the GenBank assembly GCA_009726095.1. The GC content of the type genome is 65.69 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Adsigula gen. nov.

Candidatus Adsigula (NL. fem. n. *Adsigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLMZ01*. The type species for the genus is *Candidatus* Adsigula repudastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsocana tibicitia sp. nov.

Candidatus Adsocana tibicitia (NL. fem. n. *tibicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPG01 sp011046725*. The type genome for the species is the GenBank assembly GCA_011046725.1. The GC content of the type genome is 71.58 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Adsocana gen. nov.

Candidatus Adsocana (NL. fem. n. *Adsocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPG01*. The type species for the genus is *Candidatus* Adsocana

tibicitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsocaria delapilenta sp. nov.

Candidatus Adsocaria delapilenta (NL. fem. n. *delapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O-77 sp013177315*. The type genome for the species is the GenBank assembly RS_GCF_013177315.1. The GC content of the type genome is 56.38 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Adsocaria gen. nov.

Candidatus Adsocaria (NL. fem. n. *Adsocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O-77*. The type species for the genus is *Candidatus* Adsocaria delapilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsocaria omniniforma sp. nov.

Candidatus Adsocaria omniniforma (NL. fem. n. *omniniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O-77 sp003695655*. The type genome for the species is the GenBank assembly GCA_003695655.1. The GC content of the type genome is 55.78 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Adsocaria thessetta sp. nov.

Candidatus Adsocaria thessetta (NL. fem. n. *thessetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O-77 sp001548395*. The type genome for the species is the GenBank assembly RS_GCF_001548395.1. The GC content of the type genome is 55.93 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Adsocella gabinugo sp. nov.

Candidatus Adsocella gabinugo (NL. fem. n. *gabinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBE01 sp013695075*. The type genome for the species is the GenBank assembly GCA_013695075.1. The GC content of the type genome is 69.16 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Adsocella gen. nov.

Candidatus Adsocella (NL. fem. n. *Adsocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDBE01*. The type species for the genus is *Candidatus* Adsocella gabinugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicellaceae.

Description of *Candidatus* Adsocida cilotibra sp. nov.

Candidatus Adsocida cilotibra (NL. fem. n. *cilotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *45385 sp002156385*. The type genome for the species is the GenBank assembly RS_GCF_002156385.1. The GC content of the type genome is 38.13 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Adsocida gen. nov.

Candidatus Adsocida (NL. fem. n. *Adsocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *45385*. The type species for the genus is *Candidatus* Adsocida cilotibra .

According to GTDB R06-RS202, this genus belongs to the family _D.

Description of *Candidatus* Adsocida tomogitrix sp. nov.

Candidatus Adsocida tomogitrix (NL. fem. n. *tomogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *45385 sp002797395*. The type genome for the species is the GenBank assembly RS_GCF_002797395.1. The GC content of the type genome is 37.82 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Adsocosa optumentia sp. nov.

Candidatus Adsocosa optumentia (NL. fem. n. *optumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2722955 sp002722955*. The type genome for the species is the GenBank assembly GCA_002722955.1. The GC content of the type genome is 53.47 % and the genome length is 7.1 Mbp.

Description of *Candidatus* Adsocosa gen. nov.

Candidatus Adsocosa (NL. fem. n. *Adsocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2722955*. The type species for the genus is *Candidatus* Adsocosa optumentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsocula conamilenta sp. nov.

Candidatus Adsocula conamilenta (NL. fem. n. *conamilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSM01 sp009692115*. The type genome for the species is the GenBank assembly GCA_009692115.1. The GC content of the type genome is 65.65 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Adsocula gen. nov.

Candidatus Adsocula (NL. fem. n. *Adsocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFSM01*. The type species for the genus is *Candidatus* Adsocula conamilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Adsocula fatifimonas sp. nov.

Candidatus Adsocula fatifimonas (NL. fem. n. *fatifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSM01 sp902826755*. The type genome for the species is the GenBank assembly GCA_902826755.1. The GC content of the type genome is 68.4 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Adsocula homulessa sp. nov.

Candidatus Adsocula homulessa (NL. fem. n. *homulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSM01 sp013140635*. The type genome for the species is the GenBank assembly GCA_013140635.1. The GC content of the type genome is 66.39 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Adsucana panopitrix sp. nov.

Candidatus Adsucana panopitrix (NL. fem. n. *panopitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSSY01 sp011330955*. The type genome for the species is the GenBank assembly GCA_011330955.1. The GC content of the type genome is 66.13 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Adsucana gen. nov.

Candidatus Adsucana (NL. fem. n. *Adsucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DSSY01*. The type species for the genus is *Candidatus* Adsucana panopitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsucaria citipatica sp. nov.

Candidatus Adsucaria citipatica (NL. fem. n. *citipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RECQ01 sp007693965*. The type genome for the species is the GenBank assembly GCA_007693965.1. The GC content of the type genome is 65.8 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Adsucaria gen. nov.

Candidatus Adsucaria (NL. fem. n. *Adsucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RECQ01*. The type species for the genus is *Candidatus* Adsucaria citipatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Adsucida melilugo sp. nov.

Candidatus Adsucida melilugo (NL. fem. n. *melilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VEXC01 sp009391225*. The type genome for the species is the GenBank assembly GCA_009391225.1. The GC content of the type genome is 52.42 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Adsucida gen. nov.

Candidatus Adsucida (NL. fem. n. *Adsucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VEXC01*. The type species for the genus is *Candidatus* Adsucida

melilugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2985*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Terebanaceae.

Description of *Candidatus* Adsucosa grallitia sp. nov.

Candidatus Adsucosa grallitia (NL. fem. n. *grallitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSOQ01 sp013216195*. The type genome for the species is the GenBank assembly GCA_013216195.1. The GC content of the type genome is 46.31 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Adsucosa gen. nov.

Candidatus Adsucosa (NL. fem. n. *Adsucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSOQ01*. The type species for the genus is *Candidatus* Adsucosa grallitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1609*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifanaceae.

Description of *Candidatus* Adsucula adsibago sp. nov.

Candidatus Adsucula adsibago (NL. fem. n. *adsibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-38-10 sp000992305*. The type genome for the species is the GenBank assembly GCA_000992305.1. The GC content of the type genome is 38.28 % and the genome length is 1.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Adsucula gen. nov.

Candidatus Adsucula (NL. fem. n. *Adsucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-38-10*. The type species for the genus is *Candidatus* Adsucula adsibago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RVW-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpanaceae.

Description of *Candidatus* Adsudana abindicula sp. nov.

Candidatus Adsudana abindicula (NL. fem. n. *abindicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFZ01 sp009778655*. The type genome for the species is the GenBank assembly GCA_009778655.1. The GC content of the type genome is 40.51 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Adsudana gen. nov.

Candidatus Adsudana (NL. fem. n. *Adsudana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFZ01*. The type species for the genus is *Candidatus* Adsudana abindicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsudia acrolicula sp. nov.

Candidatus Adsudia acrolicula (NL. fem. n. *acrolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1141 sp002816455*. The type genome for the species is the GenBank assembly GCA_002816455.1. The GC content of the type genome is 55.72 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Adsudia gen. nov.

Candidatus Adsudia (NL. fem. n. *Adsudia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA1141*. The type species for the genus is *Candidatus* Adsudia acrolicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Adsudia adcomago sp. nov.

Candidatus Adsudia adcomago (NL. fem. n. *adcomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1141 sp002311385*. The type genome for the species is the GenBank assembly GCA_002311385.1. The GC content of the type genome is 54.74 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Adsudia nehalugo sp. nov.

Candidatus Adsudia nehalugo (NL. fem. n. *nehalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1141 sp002817055*. The type genome for the species is the GenBank assembly GCA_002817055.1. The GC content of the type genome is 54.84 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Adsudida decunitoga sp. nov.

Candidatus Adsudida decunitoga (NL. fem. n. *decunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHX01 sp013151655*. The type genome for the species is the GenBank assembly GCA_013151655.1. The GC content of the type genome is 60.12 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Adsudida gen. nov.

Candidatus Adsudida (NL. fem. n. *Adsudida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHX01*. The type species for the genus is *Candidatus* Adsudida

decunitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TK06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaculaceae.

Description of *Candidatus* Adsulana invinessa sp. nov.

Candidatus Adsulana invinessa (NL. fem. n. *invinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMLX01 sp014377535*. The type genome for the species is the GenBank assembly GCA_014377535.1. The GC content of the type genome is 65.74 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Adsulana gen. nov.

Candidatus Adsulana (NL. fem. n. *Adsulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMLX01*. The type species for the genus is *Candidatus* Adsulana invinessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsulana lenimedo sp. nov.

Candidatus Adsulana lenimedo (NL. fem. n. *lenimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMLX01 sp014379355*. The type genome for the species is the GenBank assembly GCA_014379355.1. The GC content of the type genome is 65.35 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Adsularia inhumedo sp. nov.

Candidatus Adsularia inhumedo (NL. fem. n. *inhumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1359 sp002306385*. The type genome for the species is the

GenBank assembly GCA_002306385.1. The GC content of the type genome is 38.67 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Adsularia gen. nov.

Candidatus Adsularia (NL. fem. n. *Adsularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1359*. The type species for the genus is *Candidatus* Adsularia inhumedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuriaceae.

Description of *Candidatus* Adsulella scintitica sp. nov.

Candidatus Adsulella scintitica (NL. fem. n. *scintitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-Chloro-G3 sp002816715*. The type genome for the species is the GenBank assembly GCA_002816715.1. The GC content of the type genome is 56.13 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Adsulella gen. nov.

Candidatus Adsulella (NL. fem. n. *Adsulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Casp-Chloro-G3*. The type species for the genus is *Candidatus* Adsulella scintitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Adsulosa carunago sp. nov.

Candidatus Adsulosa carunago (NL. fem. n. *carunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA5774 sp002418625*. The type genome for the species is the GenBank assembly GCA_002418625.1. The GC content of the type genome is 49.13 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Adsulosa gen. nov.

Candidatus Adsulosa (NL. fem. n. *Adsulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5774*. The type species for the genus is *Candidatus* Adsulosa carunago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsulula lupanicula sp. nov.

Candidatus Adsulula lupanicula (NL. fem. n. *lupanicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WS-3 sp005893225*. The type genome for the species is the GenBank assembly GCA_005893225.1. The GC content of the type genome is 69.79 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Adsulula gen. nov.

Candidatus Adsulula (NL. fem. n. *Adsulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WS-3*. The type species for the genus is *Candidatus* Adsulula lupanicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabidaceae.

Description of *Candidatus* Adsusaria diminedo sp. nov.

Candidatus Adsusaria diminedo (NL. fem. n. *diminedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1112 sp003136475*. The type genome for the species is the

GenBank assembly GCA_003136475.1. The GC content of the type genome is 46.03 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Adsusaria gen. nov.

Candidatus Adsusaria (NL. fem. n. *Adsusaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-1112*. The type species for the genus is *Candidatus* Adsusaria diminedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bog-1112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Adsusariaceae.

Description of *Candidatus* Adsusariaceae fam. nov.

Candidatus Adsusariaceae (NL. fem. n. *Adsusariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bog-1112.* The type genus for the taxon is *Candidatus* Adsusaria .

According to GTDB R06-RS202, this family belongs to the order *Oligoflexales*.

Description of *Candidatus* Adsusella ascenibra sp. nov.

Candidatus Adsusella ascenibra (NL. fem. n. *ascenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B79-G16 sp003647645*. The type genome for the species is the GenBank assembly GCA_003647645.1. The GC content of the type genome is 43.04 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Adsusella gen. nov.

Candidatus Adsusella (NL. fem. n. *Adsusella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B79-G16*. The type species for the genus is *Candidatus* Adsusella ascenibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family

Kazan-3B-28. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decitellaceae.

Description of *Candidatus* Adsusia artifibula sp. nov.

Candidatus Adsusia artifibula (NL. fem. n. *artifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pan189 sp007744515*. The type genome for the species is the GenBank assembly RS_GCF_007744515.1. The GC content of the type genome is 58.58 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Adsusia gen. nov.

Candidatus Adsusia (NL. fem. n. *Adsusia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pan189*. The type species for the genus is *Candidatus* Adsusia artifibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsusia desonitudo sp. nov.

Candidatus Adsusia desonitudo (NL. fem. n. *desonitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pan189 sp007745435*. The type genome for the species is the GenBank assembly RS_GCF_007745435.1. The GC content of the type genome is 53.9 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Adsusosa afranicella sp. nov.

Candidatus Adsusosa afranicella (NL. fem. n. *afranicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-213 sp007121565*. The type genome for the species is the GenBank assembly GCA_007121565.1. The GC content of the type genome is 57.33 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Adsusosa gen. nov.

Candidatus Adsusosa (NL. fem. n. *Adsusosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3Sed10-213*. The type species for the genus is *Candidatus* Adsusosa afranicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adsusosa agrimisca sp. nov.

Candidatus Adsusosa agrimisca (NL. fem. n. *agrimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-213 sp012519365*. The type genome for the species is the GenBank assembly GCA_012519365.1. The GC content of the type genome is 53.59 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Adsusosa annicatica sp. nov.

Candidatus Adsusosa annicatica (NL. fem. n. *annicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-213 sp012729675*. The type genome for the species is the GenBank assembly GCA_012729675.1. The GC content of the type genome is 54.88 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Adsusosa bicipifica sp. nov.

Candidatus Adsusosa bicipifica (NL. fem. n. *bicipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-213 sp003567095*. The type genome for the species is the GenBank assembly GCA_003567095.1. The GC content of the type genome is 56.33 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Adsusosa thapsilega sp. nov.

Candidatus Adsusosa thapsilega (NL. fem. n. *thapsilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-213 sp011048645*. The type genome for the species is the GenBank assembly GCA_011048645.1. The GC content of the type genome is 55.27 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Adsusula vilitilega sp. nov.

Candidatus Adsusula vilitilega (NL. fem. n. *vilitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1460 sp003159675*. The type genome for the species is the GenBank assembly GCA_003159675.1. The GC content of the type genome is 59.76 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Adsusula gen. nov.

Candidatus Adsusula (NL. fem. n. *Adsusula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-1460*. The type species for the genus is *Candidatus* Adsusula vilitilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3939*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceromidaceae.

Description of *Candidatus* Adtacana ancepifica sp. nov.

Candidatus Adtacana ancepifica (NL. fem. n. *ancepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1183 sp002309885*. The type genome for the species is the GenBank assembly GCA_002309885.1. The GC content of the type genome is 41.58 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Adtacana gen. nov.

Candidatus Adtacana (NL. fem. n. *Adtacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1183*. The type species for the genus is *Candidatus* Adtacana ancepifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9783*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisanaceae.

Description of *Candidatus* Adtacella favilitas sp. nov.

Candidatus Adtacella favilitas (NL. fem. n. *favilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEVB01 sp013044165*. The type genome for the species is the GenBank assembly GCA_013044165.1. The GC content of the type genome is 56.23 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Adtacella gen. nov.

Candidatus Adtacella (NL. fem. n. *Adtacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEVB01*. The type species for the genus is *Candidatus* Adtacella favilitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WQYP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludidaceae.

Description of *Candidatus* Adtacia absuratica sp. nov.

Candidatus Adtacia absuratica (NL. fem. n. *absuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQUN01 sp009782085*. The type genome for the species is the GenBank assembly GCA_009782085.1. The GC content of the type genome is 59.44 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Adtacia gen. nov.

Candidatus Adtacia (NL. fem. n. *Adtacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQUN01*. The type species for the genus is *Candidatus* Adtacia absuratica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Adtacosa adsibitio sp. nov.

Candidatus Adtacosa adsibitio (NL. fem. n. *adsibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYVZ01 sp012516935*. The type genome for the species is the GenBank assembly GCA_012516935.1. The GC content of the type genome is 68.38 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Adtacosa gen. nov.

Candidatus Adtacosa (NL. fem. n. *Adtacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYVZ01*. The type species for the genus is *Candidatus* Adtacosa adsibitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtagana optabitrix sp. nov.

Candidatus Adtagana optabitrix (NL. fem. n. *optabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5069 sp002415895*. The type genome for the species is the GenBank assembly GCA_002415895.1. The GC content of the type genome is 62.1 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Adtagana gen. nov.

Candidatus Adtagana (NL. fem. n. *Adtagana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5069*. The type species for the genus is *Candidatus* Adtagana optabitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtagaria irrefitudo sp. nov.

Candidatus Adtagaria irrefitudo (NL. fem. n. *irrefitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748155 sp002748155*. The type genome for the species is the GenBank assembly GCA_002748155.1. The GC content of the type genome is 66.77 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Adtagaria gen. nov.

Candidatus Adtagaria (NL. fem. n. *Adtagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2748155*. The type species for the genus is *Candidatus* Adtagaria irrefitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtagella casabetta sp. nov.

Candidatus Adtagella casabetta (NL. fem. n. *casabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWG01 sp902806335*. The type genome for the species is the GenBank assembly GCA_902806335.1. The GC content of the type genome is 73.35 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Adtagella gen. nov.

Candidatus Adtagella (NL. fem. n. *Adtagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWG01*. The type species for the genus is *Candidatus* Adtagella casabetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Adtagida badititica sp. nov.

Candidatus Adtagida badititica (NL. fem. n. *badititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WOFB19 sp011620375*. The type genome for the species is the GenBank assembly GCA_011620375.1. The GC content of the type genome is 36.57 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Adtagida gen. nov.

Candidatus Adtagida (NL. fem. n. *Adtagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WOFB19*. The type species for the genus is *Candidatus* Adtagida badititica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtagosa expalitica sp. nov.

Candidatus Adtagosa expalitica (NL. fem. n. *expalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2729595 sp002729595*. The type genome for the species is the GenBank assembly GCA_002729595.1. The GC content of the type genome is 35.24 % and the genome length is 7.99 Mbp.

Description of *Candidatus* Adtagosa gen. nov.

Candidatus Adtagosa (NL. fem. n. *Adtagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2729595*. The type species for the genus is *Candidatus* Adtagosa expalitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtagula adtumilenta sp. nov.

Candidatus Adtagula adtumilenta (NL. fem. n. *adtumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1428 sp002329335*. The type genome for the species is the GenBank assembly GCA_002329335.1. The GC content of the type genome is 56.11 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Adtagula gen. nov.

Candidatus Adtagula (NL. fem. n. *Adtagula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1428*. The type species for the genus is *Candidatus* Adtagula adtumilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1750*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabulaceae.

Description of *Candidatus* Adtemana triscitica sp. nov.

Candidatus Adtemana triscitica (NL. fem. n. *triscitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BBFE01 sp001313085*. The type genome for the species is the GenBank assembly GCA_001313085.1. The GC content of the type genome is 49.88 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Adtemana gen. nov.

Candidatus Adtemana (NL. fem. n. *Adtemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BBFE01*. The type species for the genus is *Candidatus* Adtemana triscitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtemella arvecigena sp. nov.

Candidatus Adtemella arvecigena (NL. fem. n. *arvecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED220 sp902514625*. The type genome for the species is the GenBank assembly GCA_902514625.1. The GC content of the type genome is 28.32 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Adtemella gen. nov.

Candidatus Adtemella (NL. fem. n. *Adtemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED220*. The type species for the genus is *Candidatus* Adtemella arvecigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtemella metucitura sp. nov.

Candidatus Adtemella metucitura (NL. fem. n. *metucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED220 sp002169155*. The type genome for the species is the GenBank assembly GCA_002169155.2. The GC content of the type genome is 28.68 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Adtemella taraxitica sp. nov.

Candidatus Adtemella taraxitica (NL. fem. n. *taraxitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED220 sp002702875*. The type genome for the species is the GenBank assembly GCA_002702875.1. The GC content of the type genome is 28.65 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Adtemia ardififica sp. nov.

Candidatus Adtemia ardififica (NL. fem. n. *ardififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2711925 sp002711925*. The type genome for the species is the GenBank assembly GCA_002711925.1. The GC content of the type genome is 33.74 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Adtemia gen. nov.

Candidatus Adtemia (NL. fem. n. *Adtemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2711925*. The type species for the genus is *Candidatus* Adtemia ardififica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bog-1112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Adsusariaceae.

Description of *Candidatus* Adtemida ignomilenta sp. nov.

Candidatus Adtemida ignomilenta (NL. fem. n. *ignomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-54-12 sp001795535*. The type genome for the species is the GenBank assembly GCA_001795535.1. The GC content of the type genome is 54.24 % and the genome length is 2.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Adtemida gen. nov.

Candidatus Adtemida (NL. fem. n. *Adtemida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-54-12*. The type species for the genus is *Candidatus* Adtemida ignomilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifellaceae.

Description of *Candidatus* Adtemosa cinipatio sp. nov.

Candidatus Adtemosa cinipatio (NL. fem. n. *cinipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1247 sp003136975*. The type genome for the species is the GenBank assembly GCA_003136975.1. The GC content of the type genome is 59.99 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Adtemosa gen. nov.

Candidatus Adtemosa (NL. fem. n. *Adtemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1247*. The type species for the genus is *Candidatus* Adtemosa cinipatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtemosa cosigitica sp. nov.

Candidatus Adtemosa cosigitica (NL. fem. n. *cosigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1247 sp003155795*. The type genome for the species is the GenBank assembly GCA_003155795.1. The GC content of the type genome is 59.14 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Adtemula ammuritica sp. nov.

Candidatus Adtemula ammuritica (NL. fem. n. *ammuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVZ01 sp011327785*. The type genome for the species is the GenBank assembly GCA_011327785.1. The GC content of the type genome is 66.46 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Adtemula gen. nov.

Candidatus Adtemula (NL. fem. n. *Adtemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVZ01*. The type species for the genus is *Candidatus* Adtemula ammuritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J093*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelosaceae.

Description of *Candidatus* Adtenella insinitrix sp. nov.

Candidatus Adtenella insinitrix (NL. fem. n. *insinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIUL01 sp902589825*. The type genome for the species is the GenBank assembly GCA_902589825.1. The GC content of the type genome is 53.64 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Adtenella gen. nov.

Candidatus Adtenella (NL. fem. n. *Adtenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACIUL01*. The type species for the genus is *Candidatus* Adtenella insinitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DEV007*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragosaceae.

Description of *Candidatus* Adtenia giganibra sp. nov.

Candidatus Adtenia giganibra (NL. fem. n. *giganibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJL01 sp013002505*. The type genome for the species is the GenBank assembly GCA_013002505.1. The GC content of the type genome is 58.25 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Adtenia gen. nov.

Candidatus Adtenia (NL. fem. n. *Adtenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJL01*. The type species for the genus is *Candidatus* Adtenia giganibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulellaceae.

Description of *Candidatus* Adtenula arcifitia sp. nov.

Candidatus Adtenula arcifitia (NL. fem. n. *arcifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1185 sp003165595*. The type genome for the species is the GenBank assembly GCA_003165595.1. The GC content of the type genome is 55.09 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Adtenula gen. nov.

Candidatus Adtenula (NL. fem. n. *Adtenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1185*. The type species for the genus is *Candidatus* Adtenula arcifitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtesana cepuratio sp. nov.

Candidatus Adtesana cepuratio (NL. fem. n. *cepuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTV01 sp004298345*. The type genome for the species is the GenBank assembly GCA_004298345.1. The GC content of the type genome is 44.68 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Adtesana gen. nov.

Candidatus Adtesana (NL. fem. n. *Adtesana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTV01*. The type species for the genus is *Candidatus* Adtesana cepuratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-1337*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colutulaceae.

Description of *Candidatus* Adtesaria ficedilenta sp. nov.

Candidatus Adtesaria ficedilenta (NL. fem. n. *ficedilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZU01 sp013695835*. The type genome for the species is the GenBank assembly GCA_013695835.1. The GC content of the type genome is 65.64 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Adtesaria gen. nov.

Candidatus Adtesaria (NL. fem. n. *Adtesaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZU01*. The type species for the genus is *Candidatus* Adtesaria ficedilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHSQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recumanaceae.

Description of *Candidatus* Adtesella aminnicula sp. nov.

Candidatus Adtesella aminnicula (NL. fem. n. *aminnicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUSE01 sp012031925*. The type genome for the species is the GenBank assembly GCA_012031925.1. The GC content of the type genome is 33.28 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Adtesella gen. nov.

Candidatus Adtesella (NL. fem. n. *Adtesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUSE01*. The type species for the genus is *Candidatus* Adtesella aminnicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACMRA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ficedosaceae.

Description of *Candidatus* Adtesia adpositia sp. nov.

Candidatus Adtesia adpositia (NL. fem. n. *adpositia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-39-10 sp000993205*. The type genome for the species is the GenBank assembly GCA_000993205.1. The GC content of the type genome is 39.31 % and the genome length is 1.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Adtesia gen. nov.

Candidatus Adtesia (NL. fem. n. *Adtesia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-39-10*. The type species for the genus is *Candidatus* Adtesia adpositia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Adtesida capabitas sp. nov.

Candidatus Adtesida capabitas (NL. fem. n. *capabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZJW01 sp012519835*. The type genome for the species is the GenBank assembly GCA_012519835.1. The GC content of the type genome is 38.8 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Adtesida gen. nov.

Candidatus Adtesida (NL. fem. n. *Adtesida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZJW01*. The type species for the genus is *Candidatus* Adtesida capabitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtesida lanigisca sp. nov.

Candidatus Adtesida lanigisca (NL. fem. n. *lanigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZJW01 sp012800145*. The type genome for the species is the GenBank assembly GCA_012800145.1. The GC content of the type genome is 37.97 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Adtilaria assubatio sp. nov.

Candidatus Adtilaria assubatio (NL. fem. n. *assubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-366 sp003165315*. The type genome for the species is the GenBank assembly GCA_003165315.1. The GC content of the type genome is 56.45 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Adtilaria gen. nov.

Candidatus Adtilaria (NL. fem. n. *Adtilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-366*. The type species for the genus is *Candidatus* Adtilaria assubatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumariaceae.

Description of *Candidatus* Adtilaria vicecitura sp. nov.

Candidatus Adtilaria vicecitura (NL. fem. n. *vicecitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-366 sp003165615*. The type genome for the species is the GenBank assembly GCA_003165615.1. The GC content of the type genome is 58.14 % and the genome length is 6.24 Mbp.

Description of *Candidatus* Adtilella abagmitrix sp. nov.

Candidatus Adtilella abagmitrix (NL. fem. n. *abagmitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGE01 sp007376395*. The type genome for the species is the GenBank assembly GCA_007376395.1. The GC content of the type genome is 41.37 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Adtilella gen. nov.

Candidatus Adtilella (NL. fem. n. *Adtilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGE01*. The type species for the genus is *Candidatus* Adtilella abagmitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sotulanaceae.

Description of *Candidatus* Adtilia munimitrix sp. nov.

Candidatus Adtilia munimitrix (NL. fem. n. *munimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMSV01 sp013791935*. The type genome for the species is the GenBank assembly GCA_013791935.1. The GC content of the type genome is 48.62 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Adtilia gen. nov.

Candidatus Adtilia (NL. fem. n. *Adtilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMSV01*. The type species for the genus is *Candidatus* Adtilia munimitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5616*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasomellaceae.

Description of *Candidatus* Adtilida prospitio sp. nov.

Candidatus Adtilida prospitio (NL. fem. n. *prospitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKKZ01 sp007123455*. The type genome for the species is the GenBank assembly GCA_007123455.1. The GC content of the type genome is 64.55 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Adtilida gen. nov.

Candidatus Adtilida (NL. fem. n. *Adtilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKKZ01*. The type species for the genus is *Candidatus* Adtilida prospitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLCP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depasariaceae.

Description of *Candidatus* Adtilosa denixilega sp. nov.

Candidatus Adtilosa denixilega (NL. fem. n. *denixilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WC007 sp009762775*. The type genome for the species is the GenBank assembly RS_GCF_009762775.1. The GC content of the type genome is 38.38 % and the genome length is 7.81 Mbp.

Description of *Candidatus* Adtilosa gen. nov.

Candidatus Adtilosa (NL. fem. n. *Adtilosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WC007*. The type species for the genus is *Candidatus* Adtilosa denixilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtilula pinifibra sp. nov.

Candidatus Adtilula pinifibra (NL. fem. n. *pinifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTH01 sp011389985*. The type genome for the species is the GenBank assembly GCA_011389985.1. The GC content of the type genome is 43.77 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Adtilula gen. nov.

Candidatus Adtilula (NL. fem. n. *Adtilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABTH01*. The type species for the genus is *Candidatus* Adtilula pinifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Adtolana affulugo sp. nov.

Candidatus Adtolana affulugo (NL. fem. n. *affulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1368 sp012511795*. The type genome for the species is the GenBank assembly GCA_012511795.1. The GC content of the type genome is 42.05 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Adtolana gen. nov.

Candidatus Adtolana (NL. fem. n. *Adtolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1368*. The type species for the genus is *Candidatus* Adtolana affulugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtolana expalibra sp. nov.

Candidatus Adtolana expalibra (NL. fem. n. *expalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1368 sp002305965*. The type genome for the species is the GenBank assembly GCA_002305965.1. The GC content of the type genome is 44.74 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Adtolana semivatio sp. nov.

Candidatus Adtolana semivatio (NL. fem. n. *semivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1368 sp012515055*. The type genome for the species is the GenBank assembly GCA_012515055.1. The GC content of the type genome is 45.69 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Adtolella ectenifica sp. nov.

Candidatus Adtolella ectenifica (NL. fem. n. *ectenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAAFZY01 sp900767645*. The type genome for the species is the GenBank assembly RS_GCF_900767645.1. The GC content of the type genome is 41.22 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Adtolella gen. nov.

Candidatus Adtolella (NL. fem. n. *Adtolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAAFZY01*. The type species for the genus is *Candidatus* Adtolella

ectenifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-239*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobosaceae.

Description of *Candidatus* Adtolida carecitio sp. nov.

Candidatus Adtolida carecitio (NL. fem. n. *carecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVR01 sp009785775*. The type genome for the species is the GenBank assembly GCA_009785775.1. The GC content of the type genome is 41.22 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Adtolida gen. nov.

Candidatus Adtolida (NL. fem. n. *Adtolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVR01*. The type species for the genus is *Candidatus* Adtolida carecitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtolula lorarivita sp. nov.

Candidatus Adtolula lorarivita (NL. fem. n. *lorarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMU01 sp009776965*. The type genome for the species is the GenBank assembly GCA_009776965.1. The GC content of the type genome is 46.39 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Adtolula gen. nov.

Candidatus Adtolula (NL. fem. n. *Adtolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRMU01*. The type species for the genus is *Candidatus* Adtolula lorarivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Adtorella ancipugo sp. nov.

Candidatus Adtorella ancipugo (NL. fem. n. *ancipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6131 sp002435875*. The type genome for the species is the GenBank assembly GCA_002435875.1. The GC content of the type genome is 59.68 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Adtorella gen. nov.

Candidatus Adtorella (NL. fem. n. *Adtorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6131*. The type species for the genus is *Candidatus* Adtorella ancipugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2200*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homunulaceae.

Description of *Candidatus* Adtorida lenunousia sp. nov.

Candidatus Adtorida lenunousia (NL. fem. n. *lenunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11864 sp902773415*. The type genome for the species is the GenBank assembly GCA_902773415.1. The GC content of the type genome is 65.77 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Adtorida gen. nov.

Candidatus Adtorida (NL. fem. n. *Adtorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11864*. The type species for the genus is *Candidatus* Adtorida

lenunousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtorosa antacentia sp. nov.

Candidatus Adtorosa antacentia (NL. fem. n. *antacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6147 sp002423185*. The type genome for the species is the GenBank assembly GCA_002423185.1. The GC content of the type genome is 53.45 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Adtorosa gen. nov.

Candidatus Adtorosa (NL. fem. n. *Adtorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6147*. The type species for the genus is *Candidatus* Adtorosa antacentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtorula addubastra sp. nov.

Candidatus Adtorula addubastra (NL. fem. n. *addubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-52 sp003599195*. The type genome for the species is the GenBank assembly GCA_003599195.1. The GC content of the type genome is 57.38 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Adtorula gen. nov.

Candidatus Adtorula (NL. fem. n. *Adtorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-52*. The type species for the genus is *Candidatus* Adtorula addubastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family

0-14-0-80-60-11. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubanaceae.

Description of *Candidatus* Adtubana nugigitica sp. nov.

Candidatus Adtubana nugigitica (NL. fem. n. *nugigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SDRK01 sp007845205*. The type genome for the species is the GenBank assembly RS_GCF_007845205.1. The GC content of the type genome is 34.0 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Adtubana gen. nov.

Candidatus Adtubana (NL. fem. n. *Adtubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SDRK01*. The type species for the genus is *Candidatus* Adtubana nugigitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtubaria irrefimonia sp. nov.

Candidatus Adtubaria irrefimonia (NL. fem. n. *irrefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNOF01 sp013824645*. The type genome for the species is the GenBank assembly GCA_013824645.1. The GC content of the type genome is 45.36 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Adtubaria gen. nov.

Candidatus Adtubaria (NL. fem. n. *Adtubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNOF01*. The type species for the genus is *Candidatus* Adtubaria irrefimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtubella adpecatica sp. nov.

Candidatus Adtubella adpecatica (NL. fem. n. *adpecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHT01 sp012523915*. The type genome for the species is the GenBank assembly GCA_012523915.1. The GC content of the type genome is 37.52 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Adtubella gen. nov.

Candidatus Adtubella (NL. fem. n. *Adtubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHT01*. The type species for the genus is *Candidatus* Adtubella adpecatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtubella homicilega sp. nov.

Candidatus Adtubella homicilega (NL. fem. n. *homicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHT01 sp012735285*. The type genome for the species is the GenBank assembly GCA_012735285.1. The GC content of the type genome is 37.99 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Adtubia inadfatio sp. nov.

Candidatus Adtubia inadfatio (NL. fem. n. *inadfatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-65-8 sp002278985*. The type genome for the species is the GenBank assembly GCA_002278985.1. The GC content of the type genome is 65.4 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Adtubia gen. nov.

Candidatus Adtubia (NL. fem. n. *Adtubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *34-65-8*. The type species for the genus is *Candidatus* Adtubia inadfatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtubida accogousia sp. nov.

Candidatus Adtubida accogousia (NL. fem. n. *accogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3BBIN02 sp013151445*. The type genome for the species is the GenBank assembly GCA_013151445.1. The GC content of the type genome is 60.39 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Adtubida gen. nov.

Candidatus Adtubida (NL. fem. n. *Adtubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3BBIN02*. The type species for the genus is *Candidatus* Adtubida accogousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicellaceae.

Description of *Candidatus* Adtubida exturousia sp. nov.

Candidatus Adtubida exturousia (NL. fem. n. *exturousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3BBIN02 sp002898115*. The type genome for the species is the GenBank assembly GCA_002898115.1. The GC content of the type genome is 60.34 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Adtubosa conarimonas sp. nov.

Candidatus Adtubosa conarimonas (NL. fem. n. *conarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA940 sp900768115*. The type genome for the species is the GenBank assembly GCA_900768115.1. The GC content of the type genome is 53.49 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Adtubosa gen. nov.

Candidatus Adtubosa (NL. fem. n. *Adtubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA940*. The type species for the genus is *Candidatus* Adtubosa conarimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtubosa irradago sp. nov.

Candidatus Adtubosa irradago (NL. fem. n. *irradago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA940 sp002293535*. The type genome for the species is the GenBank assembly GCA_002293535.1. The GC content of the type genome is 51.72 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Adtubosa legifastra sp. nov.

Candidatus Adtubosa legifastra (NL. fem. n. *legifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA940 sp002293505*. The type genome for the species is the GenBank assembly GCA_002293505.1. The GC content of the type genome is 55.85 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Adtubosa nubifitia sp. nov.

Candidatus Adtubosa nubifitia (NL. fem. n. *nubifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA940 sp002293665*. The type genome for the species is the

GenBank assembly GCA_002293665.1. The GC content of the type genome is 57.77 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Adtubosa vigenitio sp. nov.

Candidatus Adtubosa vigenitio (NL. fem. n. *vigenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA940 sp002293425*. The type genome for the species is the GenBank assembly GCA_002293425.1. The GC content of the type genome is 54.4 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Adtubula illunibula sp. nov.

Candidatus Adtubula illunibula (NL. fem. n. *illunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11139 sp902766265*. The type genome for the species is the GenBank assembly GCA_902766265.1. The GC content of the type genome is 52.26 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Adtubula gen. nov.

Candidatus Adtubula (NL. fem. n. *Adtubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11139*. The type species for the genus is *Candidatus* Adtubula illunibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucosaceae.

Description of *Candidatus* Adtumana telefisca sp. nov.

Candidatus Adtumana telefisca (NL. fem. n. *telefisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10426 sp003499525*. The type genome for the species is the GenBank assembly GCA_003499525.1. The GC content of the type genome is 41.69 %

and the genome length is 3.26 Mbp.

Description of *Candidatus* Adtumana gen. nov.

Candidatus Adtumana (NL. fem. n. *Adtumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10426*. The type species for the genus is *Candidatus* Adtumana telefisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtumaria papilago sp. nov.

Candidatus Adtumaria papilago (NL. fem. n. *papilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOIL31 sp001468865*. The type genome for the species is the GenBank assembly GCA_001468865.1. The GC content of the type genome is 37.82 % and the genome length is 1.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "agricultural soil".

Description of *Candidatus* Adtumaria gen. nov.

Candidatus Adtumaria (NL. fem. n. *Adtumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SOIL31*. The type species for the genus is *Candidatus* Adtumaria papilago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtumia susicitio sp. nov.

Candidatus Adtumia susicitio (NL. fem. n. *susicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABXKX01 sp013619035*. The type genome for the species is the GenBank assembly GCA_013619035.1. The GC content of the type genome is 33.41 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Adtumia gen. nov.

Candidatus Adtumia (NL. fem. n. *Adtumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABXKX01*. The type species for the genus is *Candidatus* Adtumia susicitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtumida utricicula sp. nov.

Candidatus Adtumida utricicula (NL. fem. n. *utricicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PSRF01 sp003175865*. The type genome for the species is the GenBank assembly GCA_003175865.1. The GC content of the type genome is 50.85 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Adtumida gen. nov.

Candidatus Adtumida (NL. fem. n. *Adtumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PSRF01*. The type species for the genus is *Candidatus* Adtumida utricicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adtumosa adessigena sp. nov.

Candidatus Adtumosa adessigena (NL. fem. n. *adessigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISTG01 sp903888345*. The type genome for the species is the GenBank assembly GCA_903888345.1. The GC content of the type genome is 41.46 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Adtumosa gen. nov.

Candidatus Adtumosa (NL. fem. n. *Adtumosa* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISTG01*. The type species for the genus is *Candidatus* Adtumosa adessigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-39-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dibapiaceae.

Description of *Candidatus* Adtumosa bipatitio sp. nov.

Candidatus Adtumosa bipatitio (NL. fem. n. *bipatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISTG01 sp002068915*. The type genome for the species is the GenBank assembly GCA_002068915.1. The GC content of the type genome is 41.4 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Adtumula fideniforma sp. nov.

Candidatus Adtumula fideniforma (NL. fem. n. *fideniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDBA01 sp013288885*. The type genome for the species is the GenBank assembly GCA_013288885.1. The GC content of the type genome is 40.53 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Adtumula gen. nov.

Candidatus Adtumula (NL. fem. n. *Adtumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDBA01*. The type species for the genus is *Candidatus* Adtumula fideniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advecana adremousia sp. nov.

Candidatus Advecana adremousia (NL. fem. n. *adremousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8202 sp011367685*. The type genome for the species is the GenBank assembly GCA_011367685.1. The GC content of the type genome is 43.28 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Advecana gen. nov.

Candidatus Advecana (NL. fem. n. *Advecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8202*. The type species for the genus is *Candidatus* Advecana adremousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VadinHA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categariaceae.

Description of *Candidatus* Advecana halucicula sp. nov.

Candidatus Advecana halucicula (NL. fem. n. *halucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8202 sp003521565*. The type genome for the species is the GenBank assembly GCA_003521565.1. The GC content of the type genome is 37.82 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Advecella terebetta sp. nov.

Candidatus Advecella terebetta (NL. fem. n. *terebetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPZ01 sp013203565*. The type genome for the species is the GenBank assembly GCA_013203565.1. The GC content of the type genome is 34.82 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Advecella gen. nov.

Candidatus Advecella (NL. fem. n. *Advecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPZ01*. The type species for the genus is *Candidatus* Advecella terebetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-41-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditosaceae.

Description of *Candidatus* Advecia geruniforma sp. nov.

Candidatus Advecia geruniforma (NL. fem. n. *geruniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISSD01 sp903887975*. The type genome for the species is the GenBank assembly GCA_903887975.1. The GC content of the type genome is 41.94 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Advecia gen. nov.

Candidatus Advecia (NL. fem. n. *Advecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISSD01*. The type species for the genus is *Candidatus* Advecia geruniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advecida incucimonas sp. nov.

Candidatus Advecida incucimonas (NL. fem. n. *incucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLZL01 sp003152145*. The type genome for the species is the GenBank assembly GCA_003152145.1. The GC content of the type genome is 56.6 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Advecida gen. nov.

Candidatus Advecida (NL. fem. n. *Advecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *PLZL01*. The type species for the genus is *Candidatus* Advecida incucimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11358*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Loceliaceae.

Description of *Candidatus* Advecosa ammatatio sp. nov.

Candidatus Advecosa ammatatio (NL. fem. n. *ammatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTON01 sp011389025*. The type genome for the species is the GenBank assembly GCA_011389025.1. The GC content of the type genome is 62.33 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Advecosa gen. nov.

Candidatus Advecosa (NL. fem. n. *Advecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTON01*. The type species for the genus is *Candidatus* Advecosa ammatatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JADDFT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipanaceae.

Description of *Candidatus* Advenella bicalibula sp. nov.

Candidatus Advenella bicalibula (NL. fem. n. *bicalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Advenella sp003533245*. The type genome for the species is the GenBank assembly GCA_003533245.1. The GC content of the type genome is 54.77 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Advenella impigousia sp. nov.

Candidatus Advenella impigousia (NL. fem. n. *impigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Advenella sp012735395*. The type genome for the species is the GenBank assembly GCA_012735395.1. The GC content of the type genome is 49.4 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Advenella lugubedo sp. nov.

Candidatus Advenella lugubedo (NL. fem. n. *lugubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Advenella sp002810445*. The type genome for the species is the GenBank assembly RS_GCF_002810445.1. The GC content of the type genome is 54.3 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Advenella milifitas sp. nov.

Candidatus Advenella milifitas (NL. fem. n. *milifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Advenella sp012923605*. The type genome for the species is the GenBank assembly RS_GCF_012923605.1. The GC content of the type genome is 49.83 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Adveraria abascitudo sp. nov.

Candidatus Adveraria abascitudo (NL. fem. n. *abascitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-19 sp005879405*. The type genome for the species is the GenBank assembly GCA_005879405.1. The GC content of the type genome is 69.34 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Adveraria gen. nov.

Candidatus Adveraria (NL. fem. n. *Adveraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DP-19*. The type species for the genus is *Candidatus* Adveraria abascitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UTPRO1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetulidaceae.

Description of *Candidatus* Adverella arcubibra sp. nov.

Candidatus Adverella arcubibra (NL. fem. n. *arcubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHUM01 sp009691245*. The type genome for the species is the GenBank assembly GCA_009691245.1. The GC content of the type genome is 59.11 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Adverella gen. nov.

Candidatus Adverella (NL. fem. n. *Adverella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHUM01*. The type species for the genus is *Candidatus* Adverella arcubibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-54-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacosaceae.

Description of *Candidatus* Adveria desulitas sp. nov.

Candidatus Adveria desulitas (NL. fem. n. *desulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3738 sp002372505*. The type genome for the species is the GenBank assembly GCA_002372505.1. The GC content of the type genome is 45.71 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Adveria gen. nov.

Candidatus Adveria (NL. fem. n. *Adveria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3738*. The type species for the genus is *Candidatus* Adveria

desulitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adveria oblonilenta sp. nov.

Candidatus Adveria oblonilenta (NL. fem. n. *oblonilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3738 sp902803725*. The type genome for the species is the GenBank assembly GCA_902803725.1. The GC content of the type genome is 44.94 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Adverida nosocastra sp. nov.

Candidatus Adverida nosocastra (NL. fem. n. *nosocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCIC01 sp903970185*. The type genome for the species is the GenBank assembly GCA_903970185.1. The GC content of the type genome is 61.32 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Adverida gen. nov.

Candidatus Adverida (NL. fem. n. *Adverida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCIC01*. The type species for the genus is *Candidatus* Adverida nosocastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Adverosa absorigena sp. nov.

Candidatus Adverosa absorigena (NL. fem. n. *absorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11591 sp003487525*. The type genome for the species is the GenBank assembly GCA_003487525.1. The GC content of the type genome is 42.79 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Adverosa gen. nov.

Candidatus Adverosa (NL. fem. n. *Adverosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11591*. The type species for the genus is *Candidatus* Adverosa absorigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advicana incivitura sp. nov.

Candidatus Advicana incivitura (NL. fem. n. *incivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-463-P14 sp003209275*. The type genome for the species is the GenBank assembly GCA_003209275.1. The GC content of the type genome is 40.41 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Advicana gen. nov.

Candidatus Advicana (NL. fem. n. *Advicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-463-P14*. The type species for the genus is *Candidatus* Advicana incivitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advicaria inpinitudo sp. nov.

Candidatus Advicaria inpinitudo (NL. fem. n. *inpinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-272 sp003235325*. The type genome for the species is the GenBank assembly GCA_003235325.1. The GC content of the type genome is 57.32 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Advicaria gen. nov.

Candidatus Advicaria (NL. fem. n. *Advicaria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-272*. The type species for the genus is *Candidatus* Advicaria inpinitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advicella rinocisca sp. nov.

Candidatus Advicella rinocisca (NL. fem. n. *rinocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHXZ01 sp003223165*. The type genome for the species is the GenBank assembly GCA_003223165.1. The GC content of the type genome is 70.68 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Advicella gen. nov.

Candidatus Advicella (NL. fem. n. *Advicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHXZ01*. The type species for the genus is *Candidatus* Advicella rinocisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Gp22-AA2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilibosaceae.

Description of *Candidatus* Advicida notabicula sp. nov.

Candidatus Advicida notabicula (NL. fem. n. *notabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6233 sp002440965*. The type genome for the species is the GenBank assembly GCA_002440965.1. The GC content of the type genome is 41.88 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Advicida gen. nov.

Candidatus Advicida (NL. fem. n. *Advicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6233*. The type species for the genus is *Candidatus* Advicida notabicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Advicosa cocibitio sp. nov.

Candidatus Advicosa cocibitio (NL. fem. n. *cocibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMFR01 sp007376135*. The type genome for the species is the GenBank assembly GCA_007376135.1. The GC content of the type genome is 60.55 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Advicosa gen. nov.

Candidatus Advicosa (NL. fem. n. *Advicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMFR01*. The type species for the genus is *Candidatus* Advicosa cocibitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-38-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decinosaceae.

Description of *Candidatus* Advicula inguritia sp. nov.

Candidatus Advicula inguritia (NL. fem. n. *inguritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPK01 sp013203725*. The type genome for the species is the GenBank assembly GCA_013203725.1. The GC content of the type genome is 47.36 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Advicula gen. nov.

Candidatus Advicula (NL. fem. n. *Advicula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPK01*. The type species for the genus is *Candidatus* Advicula inguritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11717*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desomanaceae.

Description of *Candidatus* Advigella diritatica sp. nov.

Candidatus Advigella diritatica (NL. fem. n. *diritatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-50-24 sp001804225*. The type genome for the species is the GenBank assembly GCA_001804225.1. The GC content of the type genome is 49.74 % and the genome length is 1.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Advigella gen. nov.

Candidatus Advigella (NL. fem. n. *Advigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-50-24*. The type species for the genus is *Candidatus* Advigella diritatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *01-FULL-45-10b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semipidaceae.

Description of *Candidatus* Advigia nehalousia sp. nov.

Candidatus Advigia nehalousia (NL. fem. n. *nehalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDES01 sp013816265*. The type genome for the species is the GenBank assembly GCA_013816265.1. The GC content of the type genome is 35.63 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Advigia gen. nov.

Candidatus Advigia (NL. fem. n. *Advigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDES01*. The type species for the genus is *Candidatus* Advigia nehalousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advigida thessibra sp. nov.

Candidatus Advigida thessibra (NL. fem. n. *thessibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MGJZ01 sp001794525*. The type genome for the species is the GenBank assembly GCA_001794525.1. The GC content of the type genome is 49.44 % and the genome length is 0.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Advigida gen. nov.

Candidatus Advigida (NL. fem. n. *Advigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MGJZ01*. The type species for the genus is *Candidatus* Advigida thessibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Advinana gasifimonas sp. nov.

Candidatus Advinana gasifimonas (NL. fem. n. *gasifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABRC01 sp011391115*. The type genome for the species is the GenBank assembly GCA_011391115.1. The GC content of the type genome is 58.82 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Advinana gen. nov.

Candidatus Advinana (NL. fem. n. *Advinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABRC01*. The type species for the genus is *Candidatus* Advinana gasifimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advinaria conigatio sp. nov.

Candidatus Advinaria conigatio (NL. fem. n. *conigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYRF01 sp012518905*. The type genome for the species is the GenBank assembly GCA_012518905.1. The GC content of the type genome is 50.58 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Advinaria gen. nov.

Candidatus Advinaria (NL. fem. n. *Advinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYRF01*. The type species for the genus is *Candidatus* Advinaria conigatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovosaceae.

Description of *Candidatus* Advinella ablepiforma sp. nov.

Candidatus Advinella ablepiforma (NL. fem. n. *ablepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11198 sp902766815*. The type genome for the species is the GenBank assembly GCA_902766815.1. The GC content of the type genome is 28.06 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Advinella gen. nov.

Candidatus Advinella (NL. fem. n. *Advinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11198*. The type species for the genus is *Candidatus* Advinella ablepiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Advinia bicodatica sp. nov.

Candidatus Advinia bicodatica (NL. fem. n. *bicodatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA997 sp002291945*. The type genome for the species is the GenBank assembly GCA_002291945.1. The GC content of the type genome is 63.28 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Advinia gen. nov.

Candidatus Advinia (NL. fem. n. *Advinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA997*. The type species for the genus is *Candidatus* Advinia bicodatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advinida minagimonas sp. nov.

Candidatus Advinida minagimonas (NL. fem. n. *minagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TC-195 sp010092885*. The type genome for the species is the GenBank assembly GCA_010092885.1. The GC content of the type genome is 61.48 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Advinida gen. nov.

Candidatus Advinida (NL. fem. n. *Advinida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TC-195*. The type species for the genus is *Candidatus* Advinida minagimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3940*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpidaceae.

Description of *Candidatus* Advinula intenifica sp. nov.

Candidatus Advinula intenifica (NL. fem. n. *intenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGP01 sp012727625*. The type genome for the species is the GenBank assembly GCA_012727625.1. The GC content of the type genome is 39.86 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Advinula gen. nov.

Candidatus Advinula (NL. fem. n. *Advinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYGP01*. The type species for the genus is *Candidatus* Advinula intenifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-8532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabidaceae.

Description of *Candidatus* Advoraria cocodedo sp. nov.

Candidatus Advoraria cocodedo (NL. fem. n. *cocodedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM05232 sp900759955*. The type genome for the species is the GenBank assembly RS_GCF_900759955.1. The GC content of the type genome is 39.64 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Advoraria gen. nov.

Candidatus Advoraria (NL. fem. n. *Advoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM05232*. The type species for the genus is *Candidatus* Advoraria cocodedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advorella scellago sp. nov.

Candidatus Advorella scellago (NL. fem. n. *scellago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXOO01 sp005776725*. The type genome for the species is the GenBank assembly GCA_005776725.1. The GC content of the type genome is 69.92 % and the genome length is 7.37 Mbp.

Description of *Candidatus* Advorella gen. nov.

Candidatus Advorella (NL. fem. n. *Advorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXOO01*. The type species for the genus is *Candidatus* Advorella scellago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2863065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimitosaceae.

Description of *Candidatus* Advoria omnivitas sp. nov.

Candidatus Advoria omnivitas (NL. fem. n. *omnivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *L227-5C sp013390945*. The type genome for the species is the GenBank assembly GCA_013390945.1. The GC content of the type genome is 47.74 % and the genome length is 6.35 Mbp.

Description of *Candidatus* Advoria gen. nov.

Candidatus Advoria (NL. fem. n. *Advoria* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *L227-5C*. The type species for the genus is *Candidatus* Advoria omnivitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *54-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacidaceae.

Description of *Candidatus* Advorida obtematica sp. nov.

Candidatus Advorida obtematica (NL. fem. n. *obtematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD12-FULL-50-9 sp001799225*. The type genome for the species is the GenBank assembly GCA_001799225.1. The GC content of the type genome is 50.16 % and the genome length is 3.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point D".

Description of *Candidatus* Advorida gen. nov.

Candidatus Advorida (NL. fem. n. *Advorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD12-FULL-50-9*. The type species for the genus is *Candidatus* Advorida obtematica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Advorosa terebilenta sp. nov.

Candidatus Advorosa terebilenta (NL. fem. n. *terebilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHBP01 sp003244175*. The type genome for the species is the GenBank assembly GCA_003244175.1. The GC content of the type genome is 61.65 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Advorosa gen. nov.

Candidatus Advorosa (NL. fem. n. *Advorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHBP01*. The type species for the genus is *Candidatus* Advorosa terebilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5177*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divolellaceae.

Description of *Candidatus* Advorula effinitudo sp. nov.

Candidatus Advorula effinitudo (NL. fem. n. *effinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6165 sp002422285*. The type genome for the species is the GenBank assembly GCA_002422285.1. The GC content of the type genome is 39.77 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Advorula gen. nov.

Candidatus Advorula (NL. fem. n. *Advorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6165*. The type species for the genus is *Candidatus* Advorula effinitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aegiribacteria adpelivita sp. nov.

Candidatus Aegiribacteria adpelivita (NL. fem. n. *adpelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aegiribacteria sp013138965*. The type genome for the species is the GenBank assembly GCA_013138965.1. The GC content of the type genome is 48.2 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Aegiribacteria semilibra sp. nov.

Candidatus Aegiribacteria semilibra (NL. fem. n. *semilibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aegiribacteria sp002030045*. The type genome for the species is the GenBank assembly GCA_002030045.1. The GC content of the type genome is 59.59 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Aegiribacteria verecitia sp. nov.

Candidatus Aegiribacteria verecitia (NL. fem. n. *verecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aegiribacteria sp003644925*. The type genome for the species is the GenBank assembly GCA_003644925.1. The GC content of the type genome is 48.37 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Aequorivita alismivita sp. nov.

Candidatus Aequorivita alismivita (NL. fem. n. *alismivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aequorivita sp900489465*. The type genome for the species is the GenBank assembly RS_GCF_900489465.1. The GC content of the type genome is 36.39 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Aequorivita categitoga sp. nov.

Candidatus Aequorivita categitoga (NL. fem. n. *categitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aequorivita sp002375695*. The type genome for the species is the GenBank assembly GCA_002697085.1. The GC content of the type genome is 36.07 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Aequorivita dehonitura sp. nov.

Candidatus Aequorivita dehonitura (NL. fem. n. *dehonitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aequorivita sp002733915*. The type genome for the species is the GenBank assembly GCA_002733915.1. The GC content of the type genome is 38.38 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Aequorivita depasifica sp. nov.

Candidatus Aequorivita depasifica (NL. fem. n. *depasifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aequorivita sp002364215*. The type genome for the species is the GenBank assembly GCA_002364215.1. The GC content of the type genome is 38.71 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Aequorivita ducilitio sp. nov.

Candidatus Aequorivita ducilitio (NL. fem. n. *ducilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aequorivita sp004022485*. The type genome for the species is the GenBank assembly RS_GCF_004022485.1. The GC content of the type genome is 38.25 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Aequorivita loripibra sp. nov.

Candidatus Aequorivita loripibra (NL. fem. n. *loripibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aequorivita sp002715485*. The type genome for the species is the GenBank assembly GCA_002453015.1. The GC content of the type genome is 37.9 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Aequorivita modifisca sp. nov.

Candidatus Aequorivita modifisca (NL. fem. n. *modifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aequorivita sp012522045*. The type genome for the species is the GenBank assembly GCA_012522045.1. The GC content of the type genome is 37.33 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Aeriscardovia extinicella sp. nov.

Candidatus Aeriscardovia extinicella (NL. fem. n. *extinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeriscardovia sp903789535*. The type genome for the species is the GenBank assembly GCA_903789535.1. The GC content of the type genome is 64.05 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Aeriscardovia taraxousia sp. nov.

Candidatus Aeriscardovia taraxousia (NL. fem. n. *taraxousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeriscardovia sp903789525*. The type genome for the species is the GenBank assembly GCA_903789525.1. The GC content of the type genome is 52.88 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Aerococcus citocugo sp. nov.

Candidatus Aerococcus citocugo (NL. fem. n. *citocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aerococcus sp002440555*. The type genome for the species is the GenBank assembly GCA_002440555.1. The GC content of the type genome is 39.76 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Aerococcus desupago sp. nov.

Candidatus Aerococcus desupago (NL. fem. n. *desupago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aerococcus sp001809535*. The type genome for the species is the GenBank assembly RS_GCF_001836025.1. The GC content of the type genome is 47.45 % and the genome length is 2.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "urine".

Description of *Candidatus* Aerococcus detoritica sp. nov.

Candidatus Aerococcus detoritica (NL. fem. n. *detoritica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aerococcus sp001813115*. The type genome for the species is the GenBank assembly RS_GCF_008726925.1. The GC content of the type genome is 47.45 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Aerococcus illepibula sp. nov.

Candidatus Aerococcus illepibula (NL. fem. n. *illepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aerococcus sp002252085*. The type genome for the species is the GenBank assembly RS_GCF_002252085.1. The GC content of the type genome is 38.5 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Aerococcus susicimonas sp. nov.

Candidatus Aerococcus susicimonas (NL. fem. n. *susicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aerococcus sp003797145*. The type genome for the species is the GenBank assembly RS_GCF_003797145.1. The GC content of the type genome is 39.0 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Aeromicrobium adsocimonia sp. nov.

Candidatus Aeromicrobium adsocimonia (NL. fem. n. *adsocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp014377785*. The type genome for the species is the GenBank assembly GCA_014377785.1. The GC content of the type genome is 61.76 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Aeromicrobium adsucastra sp. nov.

Candidatus Aeromicrobium adsucastra (NL. fem. n. *adsucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp013283745*. The type genome for the species is the GenBank assembly RS_GCF_013283745.1. The GC content of the type genome is 69.87 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Aeromicrobium adveritio sp. nov.

Candidatus Aeromicrobium adveritio (NL. fem. n. *adveritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp012513165*. The type genome for the species is the GenBank assembly GCA_012513165.1. The GC content of the type genome is 59.32 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Aeromicrobium appecimonas sp. nov.

Candidatus Aeromicrobium appecimonas (NL. fem. n. *appecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp003443875*. The type genome for the species is the GenBank assembly RS_GCF_003443875.1. The GC content of the type genome is 67.61 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Aeromicrobium armigicula sp. nov.

Candidatus Aeromicrobium armigicula (NL. fem. n. *armigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp007421815*. The type genome for the species is the GenBank assembly RS_GCF_007421815.1. The GC content of the type genome is 68.35 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Aeromicrobium artopatio sp. nov.

Candidatus Aeromicrobium artopatio (NL. fem. n. *artopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp014378035*. The type genome for the species is the GenBank assembly GCA_014378035.1. The GC content of the type genome is 66.89 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Aeromicrobium aruspitudo sp. nov.

Candidatus Aeromicrobium aruspitudo (NL. fem. n. *aruspitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp902506105*. The type genome for the species is the GenBank assembly RS_GCF_902506105.1. The GC content of the type genome is 68.31 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Aeromicrobium bifisugo sp. nov.

Candidatus Aeromicrobium bifisugo (NL. fem. n. *bifisugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp002174305*. The type genome for the species is the GenBank assembly RS_GCF_002174305.1. The GC content of the type genome is 67.52 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Aeromicrobium capucimonas sp. nov.

Candidatus Aeromicrobium capucimonas (NL. fem. n. *capucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp001426485*. The type genome for the species is the GenBank assembly RS_GCF_001426485.1. The GC content of the type genome is 71.34 % and the genome length is 3.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Aeromicrobium delapibula sp. nov.

Candidatus Aeromicrobium delapibula (NL. fem. n. *delapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp001425755*. The type genome for the species is the GenBank assembly RS_GCF_001425755.1. The GC content of the type genome is 68.76 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Aeromicrobium devecibra sp. nov.

Candidatus Aeromicrobium devecibra (NL. fem. n. *devecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp001428805*. The type genome for the species is the GenBank assembly RS_GCF_001428805.1. The GC content of the type genome is 69.01 % and the genome length is 3.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Aeromicrobium dicimitas sp. nov.

Candidatus Aeromicrobium dicimitas (NL. fem. n. *dicimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp002476985*. The type genome for the species is the GenBank assembly GCA_002476985.1. The GC content of the type genome is 70.8 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Aeromicrobium dilecatica sp. nov.

Candidatus Aeromicrobium dilecatica (NL. fem. n. *dilecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp001426755*. The type genome for the species is the GenBank assembly RS_GCF_001426755.1. The GC content of the type genome is 70.43 % and the genome length is 3.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Aeromicrobium excinitica sp. nov.

Candidatus Aeromicrobium excinitica (NL. fem. n. *excinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp008017265*. The type genome for the species is the GenBank assembly GCA_008017265.1. The GC content of the type genome is 58.07 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Aeromicrobium fidenitoga sp. nov.

Candidatus Aeromicrobium fidenitoga (NL. fem. n. *fidenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp001423335*. The type genome for the species is the GenBank assembly RS_GCF_001422865.1. The GC content of the type genome is 71.73 % and the genome length is 3.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Aeromicrobium holisitas sp. nov.

Candidatus Aeromicrobium holisitas (NL. fem. n. *holisitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp004336805*. The type genome for the species is the GenBank assembly RS_GCF_004336805.1. The GC content of the type genome is 72.75 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Aeromicrobium inbecimonia sp. nov.

Candidatus Aeromicrobium inbecimonia (NL. fem. n. *inbecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp003586285*. The type genome for the species is the GenBank assembly RS_GCF_003586285.1. The GC content of the type genome is 70.56 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Aeromicrobium loripilega sp. nov.

Candidatus Aeromicrobium loripilega (NL. fem. n. *loripilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp005788575*. The type genome for the species is the GenBank assembly GCA_005788575.1. The GC content of the type genome is 72.58 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Aeromicrobium nivomentia sp. nov.

Candidatus Aeromicrobium nivomentia (NL. fem. n. *nivomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp003065605*. The type genome for the species is the GenBank assembly RS_GCF_003065605.1. The GC content of the type genome is 70.33 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Aeromicrobium recoricella sp. nov.

Candidatus Aeromicrobium recoricella (NL. fem. n. *recoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp008039565*. The type genome for the species is the GenBank assembly RS_GCF_008039565.1. The GC content of the type genome is 70.64 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Aeromicrobium regigousia sp. nov.

Candidatus Aeromicrobium regigousia (NL. fem. n. *regigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp000471045*. The type genome for the species is the GenBank assembly RS_GCF_000471045.1. The GC content of the type genome is 70.62 % and the genome length is 3.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Little Long Lake".

Description of *Candidatus* Aeromicrobium videlivita sp. nov.

Candidatus Aeromicrobium videlivita (NL. fem. n. *videlivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp009649075*. The type genome for the species is the GenBank assembly RS_GCF_009661045.1. The GC content of the type genome is 69.93 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Aeromicrobium vocamedo sp. nov.

Candidatus Aeromicrobium vocamedo (NL. fem. n. *vocamedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromicrobium sp014334735*. The type genome for the species is the GenBank assembly RS_GCF_014490085.1. The GC content of the type genome is 70.28

% and the genome length is 3.14 Mbp.

Description of *Candidatus* Aeromonas adrotitudo sp. nov.

Candidatus Aeromonas adrotitudo (NL. fem. n. *adrotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aeromonas sp900156095*. The type genome for the species is the GenBank assembly RS_GCF_900156095.1. The GC content of the type genome is 57.89 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Aestuariibaculum excorimonas sp. nov.

Candidatus Aestuariibaculum excorimonas (NL. fem. n. *excorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aestuariibaculum sp014596945*. The type genome for the species is the GenBank assembly RS_GCF_014596945.1. The GC content of the type genome is 34.22 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Aestuariivirga adpugiforma sp. nov.

Candidatus Aestuariivirga adpugiforma (NL. fem. n. *adpugiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aestuariivirga sp900298995*. The type genome for the species is the GenBank assembly GCA_900298995.1. The GC content of the type genome is 63.28 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Aestuariivirga adsifitura sp. nov.

Candidatus Aestuariivirga adsifitura (NL. fem. n. *adsifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aestuariivirga sp009885825*. The type genome for the species is the GenBank assembly GCA_009885825.1. The GC content of the type genome is 56.48 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Aestuariivirga cenodugo sp. nov.

Candidatus Aestuariivirga cenodugo (NL. fem. n. *cenodugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aestuariivirga sp902826365*. The type genome for the species is the GenBank assembly GCA_902826365.1. The GC content of the type genome is 58.75 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Aestuariivirga inergessa sp. nov.

Candidatus Aestuariivirga inergessa (NL. fem. n. *inergessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aestuariivirga sp012032065*. The type genome for the species is the GenBank assembly GCA_012032065.1. The GC content of the type genome is 61.14 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Aestuariivirga inmutitica sp. nov.

Candidatus Aestuariivirga inmutitica (NL. fem. n. *inmutitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aestuariivirga sp014380505*. The type genome for the species is the GenBank assembly GCA_014380505.1. The GC content of the type genome is 60.38 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Aestuariivirga prognimonia sp. nov.

Candidatus Aestuariivirga prognimonia (NL. fem. n. *prognimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aestuariivirga sp003151375*. The type genome for the species is the GenBank assembly GCA_003151375.1. The GC content of the type genome is 51.67 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Aestuariivirga solipousia sp. nov.

Candidatus Aestuariivirga solipousia (NL. fem. n. *solipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aestuariivirga sp903930095*. The type genome for the species is the GenBank assembly GCA_903930095.1. The GC content of the type genome is 63.65 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Aestuariivita pinigicella sp. nov.

Candidatus Aestuariivita pinigicella (NL. fem. n. *pinigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aestuariivita sp006227805*. The type genome for the species is the GenBank assembly GCA_006227805.1. The GC content of the type genome is 67.81 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Affabana bisacitura sp. nov.

Candidatus Affabana bisacitura (NL. fem. n. *bisacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *02-FULL-45-17b sp005239605*. The type genome for the species is the GenBank assembly GCA_005239605.1. The GC content of the type genome is 46.32 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Affabana gen. nov.

Candidatus Affabana (NL. fem. n. *Affabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *02-FULL-45-17b*. The type species for the genus is *Candidatus* Affabana bisacitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-48-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifariaceae.

Description of *Candidatus* Affabana pinifentia sp. nov.

Candidatus Affabana pinifentia (NL. fem. n. *pinifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *02-FULL-45-17b sp001819815*. The type genome for the species is the GenBank assembly GCA_001819815.1. The GC content of the type genome is 44.58 % and the genome length is 0.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Affabella tolutessa sp. nov.

Candidatus Affabella tolutessa (NL. fem. n. *tolutessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYPI01 sp012519885*. The type genome for the species is the GenBank assembly GCA_012519885.1. The GC content of the type genome is 35.05 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Affabella gen. nov.

Candidatus Affabella (NL. fem. n. *Affabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYPI01*. The type species for the genus is *Candidatus* Affabella tolutessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affabida absocivita sp. nov.

Candidatus Affabida absocivita (NL. fem. n. *absocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1737 sp002315915*. The type genome for the species is the GenBank assembly GCA_002315915.1. The GC content of the type genome is 25.76 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Affabida gen. nov.

Candidatus Affabida (NL. fem. n. *Affabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1737*. The type species for the genus is *Candidatus* Affabida

absocivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caliposaceae.

Description of *Candidatus* Affabosa exindigena sp. nov.

Candidatus Affabosa exindigena (NL. fem. n. *exindigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-42-15 sp001797285*. The type genome for the species is the GenBank assembly GCA_001797285.1. The GC content of the type genome is 42.08 % and the genome length is 1.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Affabosa gen. nov.

Candidatus Affabosa (NL. fem. n. *Affabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-42-15*. The type species for the genus is *Candidatus* Affabosa exindigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affamella cerifitrix sp. nov.

Candidatus Affamella cerifitrix (NL. fem. n. *cerifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAAOM01 sp009908855*. The type genome for the species is the GenBank assembly GCA_009908855.1. The GC content of the type genome is 39.16 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Affamella gen. nov.

Candidatus Affamella (NL. fem. n. *Affamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAAOM01*. The type species for the genus is *Candidatus* Affamella cerifitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10428*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifellaceae.

Description of *Candidatus* Affamia abagmivita sp. nov.

Candidatus Affamia abagmivita (NL. fem. n. *abagmivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Cfx2-01 sp013377115*. The type genome for the species is the GenBank assembly GCA_013377115.1. The GC content of the type genome is 32.32 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Affamia gen. nov.

Candidatus Affamia (NL. fem. n. *Affamia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Cfx2-01*. The type species for the genus is *Candidatus* Affamia abagmivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-32-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadosaceae.

Description of *Candidatus* Affamosa octinitio sp. nov.

Candidatus Affamosa octinitio (NL. fem. n. *octinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJHQ01 sp014193115*. The type genome for the species is the GenBank assembly GCA_014193115.1. The GC content of the type genome is 65.38 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Affamosa gen. nov.

Candidatus Affamosa (NL. fem. n. *Affamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJHQ01*. The type species for the genus is *Candidatus* Affamosa octinitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisorariaceae.

Description of *Candidatus* Affamula immusimonia sp. nov.

Candidatus Affamula immusimonia (NL. fem. n. *immusimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZDI01 sp012512295*. The type genome for the species is the GenBank assembly GCA_012512295.1. The GC content of the type genome is 46.01 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Affamula gen. nov.

Candidatus Affamula (NL. fem. n. *Affamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZDI01*. The type species for the genus is *Candidatus* Affamula immusimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosiganaceae.

Description of *Candidatus* Affanaria grallimonas sp. nov.

Candidatus Affanaria grallimonas (NL. fem. n. *grallimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3583 sp002375815*. The type genome for the species is the GenBank assembly GCA_002375815.1. The GC content of the type genome is 32.08 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Affanaria gen. nov.

Candidatus Affanaria (NL. fem. n. *Affanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3583*. The type species for the genus is *Candidatus* Affanaria grallimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affanaria incomago sp. nov.

Candidatus Affanaria incomago (NL. fem. n. *incomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3583 sp012520755*. The type genome for the species is the GenBank assembly GCA_012520755.1. The GC content of the type genome is 32.21 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Affanella adtorousia sp. nov.

Candidatus Affanella adtorousia (NL. fem. n. *adtorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp13-AA74 sp003224695*. The type genome for the species is the GenBank assembly GCA_003224695.1. The GC content of the type genome is 60.19 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Affanella gen. nov.

Candidatus Affanella (NL. fem. n. *Affanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp13-AA74*. The type species for the genus is *Candidatus* Affanella adtorousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumariaceae.

Description of *Candidatus* Affanella cohorentia sp. nov.

Candidatus Affanella cohorentia (NL. fem. n. *cohorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp13-AA74 sp003225365*. The type genome for the species is the GenBank assembly GCA_003225365.1. The GC content of the type genome is 60.23 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Affanida cenacitoga sp. nov.

Candidatus Affanida cenacitoga (NL. fem. n. *cenacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXP01 sp013696905*. The type genome for the species is the GenBank assembly GCA_013696905.1. The GC content of the type genome is 71.44 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Affanida gen. nov.

Candidatus Affanida (NL. fem. n. *Affanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXP01*. The type species for the genus is *Candidatus* Affanida cenacitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affirana divolitia sp. nov.

Candidatus Affirana divolitia (NL. fem. n. *divolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMLW01 sp014379385*. The type genome for the species is the GenBank assembly GCA_014379385.1. The GC content of the type genome is 66.27 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Affirana gen. nov.

Candidatus Affirana (NL. fem. n. *Affirana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMLW01*. The type species for the genus is *Candidatus* Affirana divolitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Affiraria bisulitoga sp. nov.

Candidatus Affiraria bisulitoga (NL. fem. n. *bisulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACADY01 sp013389115*. The type genome for the species is the GenBank assembly GCA_013389115.1. The GC content of the type genome is 63.1 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Affiraria gen. nov.

Candidatus Affiraria (NL. fem. n. *Affiraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACADY01*. The type species for the genus is *Candidatus* Affiraria bisulitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affirella acustivita sp. nov.

Candidatus Affirella acustivita (NL. fem. n. *acustivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4045 sp002383695*. The type genome for the species is the GenBank assembly GCA_002383695.1. The GC content of the type genome is 42.77 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Affirella gen. nov.

Candidatus Affirella (NL. fem. n. *Affirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4045*. The type species for the genus is *Candidatus* Affirella acustivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affirella eccisastra sp. nov.

Candidatus Affirella eccisastra (NL. fem. n. *eccisastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4045 sp002383285*. The type genome for the species is the GenBank assembly GCA_002383285.1. The GC content of the type genome is 43.11 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Affirella lutulibula sp. nov.

Candidatus Affirella lutulibula (NL. fem. n. *lutulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4045 sp011053775*. The type genome for the species is the GenBank assembly GCA_011053775.1. The GC content of the type genome is 42.66 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Affiria demadilega sp. nov.

Candidatus Affiria demadilega (NL. fem. n. *demadilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AkT22 sp011398155*. The type genome for the species is the GenBank assembly RS_GCF_011398155.1. The GC content of the type genome is 43.22 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Affiria gen. nov.

Candidatus Affiria (NL. fem. n. *Affiria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AkT22*. The type species for the genus is *Candidatus* Affiria demadilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affirida odontago sp. nov.

Candidatus Affirida odontago (NL. fem. n. *odontago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-505 sp003168255*. The type genome for the species is the GenBank assembly GCA_003168255.1. The GC content of the type genome is 68.61 % and the genome length is 7.15 Mbp.

Description of *Candidatus* Affirida gen. nov.

Candidatus Affirida (NL. fem. n. *Affirida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-505*. The type species for the genus is *Candidatus* Affirida odontago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affirosa inergilenta sp. nov.

Candidatus Affirosa inergilenta (NL. fem. n. *inergilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWBX01 sp002069755*. The type genome for the species is the GenBank assembly GCA_002069755.1. The GC content of the type genome is 32.42 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Affirosa gen. nov.

Candidatus Affirosa (NL. fem. n. *Affirosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWBX01*. The type species for the genus is *Candidatus* Affirosa inergilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSSED10-335*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Regifellaceae.

Description of *Candidatus* Affirula camilimonia sp. nov.

Candidatus Affirula camilimonia (NL. fem. n. *camilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCSC01 sp013813215*. The type genome for the species is the GenBank assembly GCA_013813215.1. The GC content of the type genome is 71.23 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Affirula gen. nov.

Candidatus Affirula (NL. fem. n. *Affirula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCSC01*. The type species for the genus is *Candidatus* Affirula camilimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affulana adluvitura sp. nov.

Candidatus Affulana adluvitura (NL. fem. n. *adluvitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0040 sp012974435*. The type genome for the species is the GenBank assembly GCA_012974435.1. The GC content of the type genome is 50.85 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Affulana gen. nov.

Candidatus Affulana (NL. fem. n. *Affulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M0040*. The type species for the genus is *Candidatus* Affulana adluvitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM103*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defetellaceae.

Description of *Candidatus* Affulana rutabilenta sp. nov.

Candidatus Affulana rutabilenta (NL. fem. n. *rutabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0040 sp006226895*. The type genome for the species is the GenBank assembly GCA_006226895.1. The GC content of the type genome is 53.0 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Affularia rinocatio sp. nov.

Candidatus Affularia rinocatio (NL. fem. n. *rinocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0074140 sp001464115*. The type genome for the species is the GenBank assembly GCA_001464115.1. The GC content of the type genome is 47.82 % and the genome length is 1.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Affularia gen. nov.

Candidatus Affularia (NL. fem. n. *Affularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0074140*. The type species for the genus is *Candidatus* Affularia rinocatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affulosa apercatica sp. nov.

Candidatus Affulosa apercatica (NL. fem. n. *apercatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RECZ01 sp007693765*. The type genome for the species is the GenBank assembly GCA_007693765.1. The GC content of the type genome is 69.69 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Affulosa gen. nov.

Candidatus Affulosa (NL. fem. n. *Affulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RECZ01*. The type species for the genus is *Candidatus* Affulosa

apercatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Affunana carunastra sp. nov.

Candidatus Affunana carunastra (NL. fem. n. *carunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSWT01 sp011370065*. The type genome for the species is the GenBank assembly GCA_011370065.1. The GC content of the type genome is 59.28 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Affunana gen. nov.

Candidatus Affunana (NL. fem. n. *Affunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSWT01*. The type species for the genus is *Candidatus* Affunana carunastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLSP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decamosaceae.

Description of *Candidatus* Affunaria odollugo sp. nov.

Candidatus Affunaria odollugo (NL. fem. n. *odollugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOG01 sp012838945*. The type genome for the species is the GenBank assembly GCA_012838945.1. The GC content of the type genome is 33.51 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Affunaria gen. nov.

Candidatus Affunaria (NL. fem. n. *Affunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DUOG01*. The type species for the genus is *Candidatus* Affunaria odollugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caliposaceae.

Description of *Candidatus* Affunella inmodicella sp. nov.

Candidatus Affunella inmodicella (NL. fem. n. *inmodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGW-1 sp002841625*. The type genome for the species is the GenBank assembly GCA_002841625.1. The GC content of the type genome is 33.75 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Affunella gen. nov.

Candidatus Affunella (NL. fem. n. *Affunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGW-1*. The type species for the genus is *Candidatus* Affunella inmodicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Affunella obsatilega sp. nov.

Candidatus Affunella obsatilega (NL. fem. n. *obsatilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGW-1 sp002841375*. The type genome for the species is the GenBank assembly GCA_002841375.1. The GC content of the type genome is 33.78 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Affunosa expasitas sp. nov.

Candidatus Affunosa expasitas (NL. fem. n. *expasitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2728355 sp002728355*. The type genome for the species is the GenBank assembly GCA_002728355.1. The GC content of the type genome is 32.21 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Affunosa gen. nov.

Candidatus Affunosa (NL. fem. n. *Affunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2728355*. The type species for the genus is *Candidatus* Affunosa expasitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002716945*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecidaceae.

Description of *Candidatus* Afipia adperimonia sp. nov.

Candidatus Afipia adperimonia (NL. fem. n. *adperimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Afipia sp001897905*. The type genome for the species is the GenBank assembly GCA_001897905.1. The GC content of the type genome is 62.3 % and the genome length is 3.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Afipia incucastra sp. nov.

Candidatus Afipia incucastra (NL. fem. n. *incucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Afipia sp003963145*. The type genome for the species is the GenBank assembly GCA_003963145.1. The GC content of the type genome is 60.8 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Afipia loraratio sp. nov.

Candidatus Afipia loraratio (NL. fem. n. *loraratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Afipia sp000497575*. The type genome for the species is the GenBank assembly RS_GCF_000497655.1. The GC content of the type genome is 61.13 % and the genome length is 5.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "blood".

Description of *Candidatus* Afipia molecimonia sp. nov.

Candidatus Afipia molecimonia (NL. fem. n. *molecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Afipia sp001897755*. The type genome for the species is the GenBank assembly GCA_001897755.1. The GC content of the type genome is 63.65 % and the genome length is 3.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Afipia omninedo sp. nov.

Candidatus Afipia omninedo (NL. fem. n. *omninedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Afipia sp001425835*. The type genome for the species is the GenBank assembly RS_GCF_001425835.1. The GC content of the type genome is 61.45 % and the genome length is 4.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Afipia soniventia sp. nov.

Candidatus Afipia soniventia (NL. fem. n. *soniventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Afipia sp000178995*. The type genome for the species is the GenBank assembly RS_GCF_001051035.1. The GC content of the type genome is 61.28 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Afranaria induvugo sp. nov.

Candidatus Afranaria induvugo (NL. fem. n. *induvugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP110 sp002732955*. The type genome for the species is the

GenBank assembly GCA_002732955.1. The GC content of the type genome is 53.94 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Afranaria gen. nov.

Candidatus Afranaria (NL. fem. n. *Afranaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NORP110*. The type species for the genus is *Candidatus* Afranaria induvugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Afranella perexatica sp. nov.

Candidatus Afranella perexatica (NL. fem. n. *perexatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADHD01 sp900696575*. The type genome for the species is the GenBank assembly GCA_900696575.1. The GC content of the type genome is 42.09 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Afranella gen. nov.

Candidatus Afranella (NL. fem. n. *Afranella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAADHD01*. The type species for the genus is *Candidatus* Afranella perexatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehiciaceae.

Description of *Candidatus* Afranida exsusitoga sp. nov.

Candidatus Afranida exsusitoga (NL. fem. n. *exsusitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BX21 sp014385195*. The type genome for the species is the GenBank assembly GCA_014385195.1. The GC content of the type genome is 33.31 % and the

genome length is 3.03 Mbp.

Description of *Candidatus* Afranida gen. nov.

Candidatus Afranida (NL. fem. n. *Afranida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BX21*. The type species for the genus is *Candidatus* Afranida exsusitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Afranosa defanitoga sp. nov.

Candidatus Afranosa defanitoga (NL. fem. n. *defanitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHB01 sp012271125*. The type genome for the species is the GenBank assembly GCA_012271125.1. The GC content of the type genome is 56.06 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Afranosa gen. nov.

Candidatus Afranosa (NL. fem. n. *Afranosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXHB01*. The type species for the genus is *Candidatus* Afranosa defanitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11606*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifanaceae.

Description of *Candidatus* Afranula curotedo sp. nov.

Candidatus Afranula curotedo (NL. fem. n. *curotedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTD01 sp011390065*. The type genome for the species is the GenBank assembly GCA_011390065.1. The GC content of the type genome is 59.12 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Afranula gen. nov.

Candidatus Afranula (NL. fem. n. *Afranula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABTD01*. The type species for the genus is *Candidatus* Afranula curotedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Afranula inardifica sp. nov.

Candidatus Afranula inardifica (NL. fem. n. *inardifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTD01 sp011389855*. The type genome for the species is the GenBank assembly GCA_011389855.1. The GC content of the type genome is 59.92 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Agaribacterium inhumatica sp. nov.

Candidatus Agaribacterium inhumatica (NL. fem. n. *inhumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agaribacterium sp003265435*. The type genome for the species is the GenBank assembly RS_GCF_003265435.1. The GC content of the type genome is 53.86 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Agarivorans bicoritrix sp. nov.

Candidatus Agarivorans bicoritrix (NL. fem. n. *bicoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agarivorans sp005405585*. The type genome for the species is the GenBank assembly RS_GCF_005405585.1. The GC content of the type genome is 44.23 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Agarivorans decamitia sp. nov.

Candidatus Agarivorans decamitia (NL. fem. n. *decamitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agarivorans sp900537085*. The type genome for the species is the GenBank assembly RS_GCF_900537085.1. The GC content of the type genome is 44.68 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Agathobacter bifisiforma sp. nov.

Candidatus Agathobacter bifisiforma (NL. fem. n. *bifisiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900546625*. The type genome for the species is the GenBank assembly GCA_900546625.1. The GC content of the type genome is 41.6 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Agathobacter cimelitoga sp. nov.

Candidatus Agathobacter cimelitoga (NL. fem. n. *cimelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900316805*. The type genome for the species is the GenBank assembly GCA_002351275.1. The GC content of the type genome is 47.64 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Agathobacter conubivita sp. nov.

Candidatus Agathobacter conubivita (NL. fem. n. *conubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900550845*. The type genome for the species is the GenBank assembly GCA_900550845.1. The GC content of the type genome is 38.44 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Agathobacter dedigimonia sp. nov.

Candidatus Agathobacter dedigimonia (NL. fem. n. *dedigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Agathobacter sp900550545*. The type genome for the species is the GenBank assembly GCA_900550545.1. The GC content of the type genome is 41.71 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Agathobacter dilicicula sp. nov.

Candidatus Agathobacter dilicicula (NL. fem. n. *dilicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900557055*. The type genome for the species is the GenBank assembly GCA_900557055.1. The GC content of the type genome is 42.57 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Agathobacter documousia sp. nov.

Candidatus Agathobacter documousia (NL. fem. n. *documousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900543445*. The type genome for the species is the GenBank assembly GCA_900757015.1. The GC content of the type genome is 45.26 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Agathobacter genocimonas sp. nov.

Candidatus Agathobacter genocimonas (NL. fem. n. *genocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900549895*. The type genome for the species is the GenBank assembly GCA_900549895.1. The GC content of the type genome is 45.18 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Agathobacter gerunilega sp. nov.

Candidatus Agathobacter gerunilega (NL. fem. n. *gerunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900552085*. The type genome for the species is the GenBank assembly GCA_902762165.1. The GC content of the type genome is 41.05 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Agathobacter inargitoga sp. nov.

Candidatus Agathobacter inargitoga (NL. fem. n. *inargitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900547695*. The type genome for the species is the GenBank assembly GCA_900547695.1. The GC content of the type genome is 38.51 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Agathobacter nocumitudo sp. nov.

Candidatus Agathobacter nocumitudo (NL. fem. n. *nocumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900317585*. The type genome for the species is the GenBank assembly GCA_002349805.1. The GC content of the type genome is 41.63 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Agathobacter scombicella sp. nov.

Candidatus Agathobacter scombicella (NL. fem. n. *scombicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp002474415*. The type genome for the species is the GenBank assembly GCA_002474415.1. The GC content of the type genome is 43.79 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Agathobacter tabifax sp. nov.

Candidatus Agathobacter tabifax (NL. fem. n. *tabifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp900548765*. The type genome for the species is the GenBank assembly GCA_900762195.1. The GC content of the type genome is 41.67 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Agathobacter venabitas sp. nov.

Candidatus Agathobacter venabitas (NL. fem. n. *venabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobacter sp000434275*. The type genome for the species is the GenBank assembly GCA_001916895.1. The GC content of the type genome is 41.54 % and the genome length is 2.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Agathobaculum advicax sp. nov.

Candidatus Agathobaculum advicax (NL. fem. n. *advicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobaculum sp900555465*. The type genome for the species is the GenBank assembly GCA_900555465.1. The GC content of the type genome is 60.42 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Agathobaculum arundax sp. nov.

Candidatus Agathobaculum arundax (NL. fem. n. *arundax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobaculum sp900625105*. The type genome for the species is the GenBank assembly RS_GCF_900625105.1. The GC content of the type genome is 57.12 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Agathobaculum binocilega sp. nov.

Candidatus Agathobaculum binocilega (NL. fem. n. *binocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobaculum sp900544475*. The type genome for the species is the GenBank assembly GCA_900544475.1. The GC content of the type genome is 59.02 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Agathobaculum clancugo sp. nov.

Candidatus Agathobaculum clancugo (NL. fem. n. *clancugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobaculum sp900557315*. The type genome for the species is the GenBank assembly GCA_900557315.1. The GC content of the type genome is 59.17 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Agathobaculum furibatica sp. nov.

Candidatus Agathobaculum furibatica (NL. fem. n. *furibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobaculum sp900291975*. The type genome for the species is the GenBank assembly RS_GCF_900291975.1. The GC content of the type genome is 56.4 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Agathobaculum murilibra sp. nov.

Candidatus Agathobaculum murilibra (NL. fem. n. *murilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agathobaculum sp003481705*. The type genome for the species is the GenBank assembly GCA_900541385.1. The GC content of the type genome is 59.08 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Aggenana adtumax sp. nov.

Candidatus Aggenana adtumax (NL. fem. n. *adtumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HHTR118 sp003572205*. The type genome for the species is the GenBank assembly RS_GCF_003572205.1. The GC content of the type genome is 64.92 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Aggenana gen. nov.

Candidatus Aggenana (NL. fem. n. *Aggenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HHTR118*. The type species for the genus is *Candidatus* Aggenana adtumax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aggenana inaspitudo sp. nov.

Candidatus Aggenana inaspitudo (NL. fem. n. *inaspitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HHTR118 sp006969625*. The type genome for the species is the GenBank assembly GCA_006969625.1. The GC content of the type genome is 69.8 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Aggenaria adfabatica sp. nov.

Candidatus Aggenaria adfabatica (NL. fem. n. *adfabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXL01 sp013697015*. The type genome for the species is the GenBank assembly GCA_013697015.1. The GC content of the type genome is 58.98 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Aggenaria gen. nov.

Candidatus Aggenaria (NL. fem. n. *Aggenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXL01*. The type species for the genus is *Candidatus* Aggenaria adfabatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Aggenella immigicella sp. nov.

Candidatus Aggenella immigicella (NL. fem. n. *immigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Cfx3-02 sp013376995*. The type genome for the species is the GenBank assembly GCA_013376995.1. The GC content of the type genome is 42.01 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Aggenella gen. nov.

Candidatus Aggenella (NL. fem. n. *Aggenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Cfx3-02*. The type species for the genus is *Candidatus* Aggenella immigicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aggenia adluvicella sp. nov.

Candidatus Aggenia adluvicella (NL. fem. n. *adluvicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYNB01 sp012521085*. The type genome for the species is the GenBank assembly GCA_012521085.1. The GC content of the type genome is 30.16 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Aggenia gen. nov.

Candidatus Aggenia (NL. fem. n. *Aggenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYNB01*. The type species for the genus is *Candidatus* Aggenia adluvicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aggenida vehicitio sp. nov.

Candidatus Aggenida vehicitio (NL. fem. n. *vehicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQSD01 sp009788105*. The type genome for the species is the GenBank assembly GCA_009788105.1. The GC content of the type genome is 47.62 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Aggenida gen. nov.

Candidatus Aggenida (NL. fem. n. *Aggenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQSD01*. The type species for the genus is *Candidatus* Aggenida vehicitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Aggenosa indomitia sp. nov.

Candidatus Aggenosa indomitia (NL. fem. n. *indomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRTT01 sp011372105*. The type genome for the species is the GenBank assembly GCA_011372105.1. The GC content of the type genome is 38.66 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Aggenosa gen. nov.

Candidatus Aggenosa (NL. fem. n. *Aggenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRTT01*. The type species for the genus is *Candidatus* Aggenosa indomitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B3-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monumariaceae.

Description of *Candidatus* Aggenula antevibula sp. nov.

Candidatus Aggenula antevibula (NL. fem. n. *antevibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADIM01 sp013151345*. The type genome for the species is the GenBank assembly GCA_013151345.1. The GC content of the type genome is 42.6 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Aggenula gen. nov.

Candidatus Aggenula (NL. fem. n. *Aggenula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADIM01*. The type species for the genus is *Candidatus* Aggenula antevibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nicotariaceae.

Description of *Candidatus* Aggesaria inpinimonia sp. nov.

Candidatus Aggesaria inpinimonia (NL. fem. n. *inpinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABLXL01 sp013178125*. The type genome for the species is the GenBank assembly GCA_013178125.1. The GC content of the type genome is 54.51 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Aggesaria gen. nov.

Candidatus Aggesaria (NL. fem. n. *Aggesaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABLXL01*. The type species for the genus is *Candidatus* Aggesaria inpinimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABLXJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Filifulaceae.

Description of *Candidatus* Aggesaria vitupetta sp. nov.

Candidatus Aggesaria vitupetta (NL. fem. n. *vitupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABLXL01 sp012839815*. The type genome for the species is the GenBank assembly GCA_012839815.1. The GC content of the type genome is 55.09 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Aggesella irrotedo sp. nov.

Candidatus Aggesella irrotedo (NL. fem. n. *irrotedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM04593 sp900770655*. The type genome for the species is the GenBank assembly RS_GCF_900770655.1. The GC content of the type genome is 46.09 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Aggesella gen. nov.

Candidatus Aggesella (NL. fem. n. *Aggesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM04593*. The type species for the genus is *Candidatus* Aggesella irrotedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aggesella locupisca sp. nov.

Candidatus Aggesella locupisca (NL. fem. n. *locupisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM04593 sp900769765*. The type genome for the species is the GenBank assembly RS_GCF_900769765.1. The GC content of the type genome is 45.28 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Aggesella rinocitrix sp. nov.

Candidatus Aggesella rinocitrix (NL. fem. n. *rinocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM04593 sp900770665*. The type genome for the species is the GenBank assembly RS_GCF_900770665.1. The GC content of the type genome is 46.82 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Aggesella vocififica sp. nov.

Candidatus Aggesella vocififica (NL. fem. n. *vocififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM04593 sp900769465*. The type genome for the species is the GenBank assembly RS_GCF_900769465.1. The GC content of the type genome is 46.75 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Aggesia ammatugo sp. nov.

Candidatus Aggesia ammatugo (NL. fem. n. *ammatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUMX01 sp003552485*. The type genome for the species is the GenBank assembly GCA_003552485.1. The GC content of the type genome is 59.44 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Aggesia gen. nov.

Candidatus Aggesia (NL. fem. n. *Aggesia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUMX01*. The type species for the genus is *Candidatus* Aggesia ammatugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLHB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegulaceae.

Description of *Candidatus* Aggesosa ininnax sp. nov.

Candidatus Aggesosa ininnax (NL. fem. n. *ininnax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-105 sp011049175*. The type genome for the species is the GenBank assembly GCA_011049175.1. The GC content of the type genome is 49.73 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Aggesosa gen. nov.

Candidatus Aggesosa (NL. fem. n. *Aggesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *HyVt-105*. The type species for the genus is *Candidatus* Aggesosa ininnax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VadinHA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categariaceae.

Description of *Candidatus* Aggesosa tenemousia sp. nov.

Candidatus Aggesosa tenemousia (NL. fem. n. *tenemousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-105 sp011042635*. The type genome for the species is the GenBank assembly GCA_011042635.1. The GC content of the type genome is 50.15 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Aggregatibacter cepulitas sp. nov.

Candidatus Aggregatibacter cepulitas (NL. fem. n. *cepulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aggregatibacter sp000466335*. The type genome for the species is the GenBank assembly RS_GCF_000466335.1. The GC content of the type genome is 42.98 % and the genome length is 2.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity - mouth".

Description of *Candidatus* Aggregicoccus regigisca sp. nov.

Candidatus Aggregicoccus regigisca (NL. fem. n. *regigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aggregicoccus sp009659535*. The type genome for the species is the GenBank assembly RS_GCF_009659535.1. The GC content of the type genome is 72.98 % and the genome length is 6.93 Mbp.

Description of *Candidatus* Aggubaria depubicula sp. nov.

Candidatus Aggubaria depubicula (NL. fem. n. *depubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLRI01 sp007131045*. The type genome for the species is the GenBank assembly GCA_007131045.1. The GC content of the type genome is 68.41 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Aggubaria gen. nov.

Candidatus Aggubaria (NL. fem. n. *Aggubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLRI01*. The type species for the genus is *Candidatus* Aggubaria depubicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aggubaria vecorax sp. nov.

Candidatus Aggubaria vecorax (NL. fem. n. *vecorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLRI01 sp011390475*. The type genome for the species is the GenBank assembly GCA_011390475.1. The GC content of the type genome is 67.64 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Aggubella effositudo sp. nov.

Candidatus Aggubella effositudo (NL. fem. n. *effositudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-013348725 sp013348725*. The type genome for the species is the GenBank assembly RS_GCF_013348725.1. The GC content of the type genome is 67.8 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Aggubella gen. nov.

Candidatus Aggubella (NL. fem. n. *Aggubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-013348725*. The type species for the genus is *Candidatus* Aggubella effositudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aggubia aneclibula sp. nov.

Candidatus Aggubia aneclibula (NL. fem. n. *aneclibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-60-19 sp001798595*. The type genome for the species is the GenBank assembly GCA_001798595.1. The GC content of the type genome is 59.68 % and the genome length is 4.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Aggubia gen. nov.

Candidatus Aggubia (NL. fem. n. *Aggubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-60-19*. The type species for the genus is *Candidatus* Aggubia aneclibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigosaceae.

Description of *Candidatus* Aggubida allacibula sp. nov.

Candidatus Aggubida allacibula (NL. fem. n. *allacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAVLZ01 sp012034405*. The type genome for the species is the GenBank assembly RS_GCF_012034405.1. The GC content of the type genome is 53.25 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Aggubida gen. nov.

Candidatus Aggubida (NL. fem. n. *Aggubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAVLZ01*. The type species for the genus is *Candidatus* Aggubida allacibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aggubosa inmutimonas sp. nov.

Candidatus Aggubosa inmutimonas (NL. fem. n. *inmutimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFOF01 sp009926845*. The type genome for the species is the GenBank assembly GCA_009926845.1. The GC content of the type genome is 51.56 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Aggubosa gen. nov.

Candidatus Aggubosa (NL. fem. n. *Aggubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFOF01*. The type species for the genus is *Candidatus* Aggubosa inmutimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXRF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatariaceae.

Description of *Candidatus* Agitococcus cadurifica sp. nov.

Candidatus Agitococcus cadurifica (NL. fem. n. *cadurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agitococcus sp006546595*. The type genome for the species is the GenBank assembly RS_GCF_006546595.1. The GC content of the type genome is 43.58 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Agitococcus repepisca sp. nov.

Candidatus Agitococcus repepisca (NL. fem. n. *repepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agitococcus sp002333125*. The type genome for the species is the GenBank assembly GCA_002333125.1. The GC content of the type genome is 41.49 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Aglasana agratilenta sp. nov.

Candidatus Aglasana agratilenta (NL. fem. n. *agratilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-23 sp003599425*. The type genome for the species is the GenBank assembly GCA_003599425.1. The GC content of the type genome is 45.82 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Aglasana gen. nov.

Candidatus Aglasana (NL. fem. n. *Aglasana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-23*. The type species for the genus is *Candidatus* Aglasana agratilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodosaceae.

Description of *Candidatus* Aglasaria inperisca sp. nov.

Candidatus Aglasaria inperisca (NL. fem. n. *inperisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNC21 sp013112555*. The type genome for the species is the GenBank assembly GCA_013112555.1. The GC content of the type genome is 59.94 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Aglasaria gen. nov.

Candidatus Aglasaria (NL. fem. n. *Aglasaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNC21*. The type species for the genus is *Candidatus* Aglasaria inperisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Aglasella lanifax sp. nov.

Candidatus Aglasella lanifax (NL. fem. n. *lanifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNI01 sp007120615*. The type genome for the species is the GenBank assembly GCA_007120615.1. The GC content of the type genome is 57.66 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Aglasella gen. nov.

Candidatus Aglasella (NL. fem. n. *Aglasella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKNI01*. The type species for the genus is *Candidatus* Aglasella lanifax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aglasia attelousia sp. nov.

Candidatus Aglasia attelousia (NL. fem. n. *attelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-609 sp003249255*. The type genome for the species is the GenBank assembly GCA_003249255.1. The GC content of the type genome is 35.93 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Aglasia gen. nov.

Candidatus Aglasia (NL. fem. n. *Aglasia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-609*. The type species for the genus is *Candidatus* Aglasia attelousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aglasosa adsocago sp. nov.

Candidatus Aglasosa adsocago (NL. fem. n. *adsocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2711515 sp002711515*. The type genome for the species is the GenBank assembly GCA_002711515.1. The GC content of the type genome is 30.11 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Aglasosa gen. nov.

Candidatus Aglasosa (NL. fem. n. *Aglasosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2711515*. The type species for the genus is *Candidatus* Aglasosa adsocago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Aglasosa dececimonas sp. nov.

Candidatus Aglasosa dececimonas (NL. fem. n. *dececimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2711515 sp902563505*. The type genome for the species is the GenBank assembly GCA_902563505.1. The GC content of the type genome is 29.68 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Aglasula adcumatica sp. nov.

Candidatus Aglasula adcumatica (NL. fem. n. *adcumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJGN01 sp014190515*. The type genome for the species is the GenBank assembly GCA_014190515.1. The GC content of the type genome is 37.34 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Aglasula gen. nov.

Candidatus Aglasula (NL. fem. n. *Aglasula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJGN01*. The type species for the genus is *Candidatus* Aglasula adcumatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agnicana ignigatica sp. nov.

Candidatus Agnicana ignigatica (NL. fem. n. *ignigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bg2 sp001641205*. The type genome for the species is the GenBank assembly GCA_001641205.1. The GC content of the type genome is 26.54 % and the genome length is 0.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "midgut".

Description of *Candidatus* Agnicana gen. nov.

Candidatus Agnicana (NL. fem. n. *Agnicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bg2*. The type species for the genus is *Candidatus* Agnicana ignigatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agnicana incomatica sp. nov.

Candidatus Agnicana incomatica (NL. fem. n. *incomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bg2 sp001641225*. The type genome for the species is the GenBank assembly GCA_001641225.1. The GC content of the type genome is 28.34 % and the genome length is 0.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "midgut".

Description of *Candidatus* Agnicana odontibra sp. nov.

Candidatus Agnicana odontibra (NL. fem. n. *odontibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Bg2 sp013139135*. The type genome for the species is the GenBank assembly GCA_013139135.1. The GC content of the type genome is 28.46 % and the genome length is 0.55 Mbp.

Description of *Candidatus* Agnicana vanidilenta sp. nov.

Candidatus Agnicana vanidilenta (NL. fem. n. *vanidilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bg2 sp013214765*. The type genome for the species is the GenBank assembly GCA_013214765.1. The GC content of the type genome is 24.94 % and the genome length is 0.48 Mbp.

Description of *Candidatus* Agnicia intabitrix sp. nov.

Candidatus Agnicia intabitrix (NL. fem. n. *intabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11241 sp902767245*. The type genome for the species is the GenBank assembly GCA_902767245.1. The GC content of the type genome is 26.76 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Agnicia gen. nov.

Candidatus Agnicia (NL. fem. n. *Agnicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11241*. The type species for the genus is *Candidatus* Agnicia intabitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Agnicida ludifugo sp. nov.

Candidatus Agnicida ludifugo (NL. fem. n. *ludifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5194 sp010119095*. The type genome for the species is the

GenBank assembly GCA_010119095.1. The GC content of the type genome is 26.18 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Agnicida gen. nov.

Candidatus Agnicida (NL. fem. n. *Agnicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5194*. The type species for the genus is *Candidatus* Agnicida ludifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6164*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifellaceae.

Description of *Candidatus* Agnicida refunastra sp. nov.

Candidatus Agnicida refunastra (NL. fem. n. *refunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5194 sp002412935*. The type genome for the species is the GenBank assembly GCA_002412935.1. The GC content of the type genome is 23.9 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Agnicosa affunago sp. nov.

Candidatus Agnicosa affunago (NL. fem. n. *affunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSU01 sp004299275*. The type genome for the species is the GenBank assembly GCA_004299275.1. The GC content of the type genome is 56.7 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Agnicosa gen. nov.

Candidatus Agnicosa (NL. fem. n. *Agnicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCSU01*. The type species for the genus is *Candidatus* Agnicosa affunago .

According to the original version of GTDB R06-RS202, this genus belongs to the family

2-12-FULL-57-11. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacomanaceae.

Description of *Candidatus* Agnicula adrecigena sp. nov.

Candidatus Agnicula adrecigena (NL. fem. n. *adrecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MA-N2 sp004354015*. The type genome for the species is the GenBank assembly RS_GCF_004354015.1. The GC content of the type genome is 63.63 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Agnicula gen. nov.

Candidatus Agnicula (NL. fem. n. *Agnicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MA-N2*. The type species for the genus is *Candidatus* Agnicula adrecigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agnicula epitrilenta sp. nov.

Candidatus Agnicula epitrilenta (NL. fem. n. *epitrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MA-N2 sp002009585*. The type genome for the species is the GenBank assembly RS_GCF_002009585.1. The GC content of the type genome is 64.08 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Agnicula luxuressa sp. nov.

Candidatus Agnicula luxuressa (NL. fem. n. *luxuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MA-N2 sp014207375*. The type genome for the species is the GenBank assembly RS_GCF_014207375.1. The GC content of the type genome is 63.33 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Agnicula megalitas sp. nov.

Candidatus Agnicula megalitas (NL. fem. n. *megalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MA-N2 sp001549895*. The type genome for the species is the GenBank assembly GCA_001549895.1. The GC content of the type genome is 63.76 % and the genome length is 5.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Tsunami-affected soil".

Description of *Candidatus* Agnicula semidilega sp. nov.

Candidatus Agnicula semidilega (NL. fem. n. *semidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MA-N2 sp000517125*. The type genome for the species is the GenBank assembly RS_GCF_000517125.1. The GC content of the type genome is 62.99 % and the genome length is 4.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Agnomana delapentia sp. nov.

Candidatus Agnomana delapentia (NL. fem. n. *delapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-13 sp902826255*. The type genome for the species is the GenBank assembly GCA_902826255.1. The GC content of the type genome is 64.97 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Agnomana gen. nov.

Candidatus Agnomana (NL. fem. n. *Agnomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AWTP1-13*. The type species for the genus is *Candidatus* Agnomana delapentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agnomana diponilega sp. nov.

Candidatus Agnomana diponilega (NL. fem. n. *diponilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-13 sp003963125*. The type genome for the species is the GenBank assembly GCA_003963125.1. The GC content of the type genome is 65.73 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Agnomana enuntivita sp. nov.

Candidatus Agnomana enuntivita (NL. fem. n. *enuntivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-13 sp011046675*. The type genome for the species is the GenBank assembly GCA_011046675.1. The GC content of the type genome is 70.9 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Agnomana impacivita sp. nov.

Candidatus Agnomana impacivita (NL. fem. n. *impacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-13 sp008933705*. The type genome for the species is the GenBank assembly GCA_008933705.1. The GC content of the type genome is 65.53 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Agnomella troclicella sp. nov.

Candidatus Agnomella troclicella (NL. fem. n. *troclicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1307 sp900550505*. The type genome for the species is the GenBank assembly GCA_900550505.1. The GC content of the type genome is 52.04 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Agnomella gen. nov.

Candidatus Agnomella (NL. fem. n. *Agnomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1307*. The type species for the genus is *Candidatus* Agnomella troclicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Agnomosa arcebisca sp. nov.

Candidatus Agnomosa arcebisca (NL. fem. n. *arcebisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXVE01 sp005790265*. The type genome for the species is the GenBank assembly GCA_005790265.1. The GC content of the type genome is 49.31 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Agnomosa gen. nov.

Candidatus Agnomosa (NL. fem. n. *Agnomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXVE01*. The type species for the genus is *Candidatus* Agnomosa arcebisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agnomula necubimonia sp. nov.

Candidatus Agnomula necubimonia (NL. fem. n. *necubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MESE01 sp001770855*. The type genome for the species is the GenBank assembly GCA_001770855.1. The GC content of the type genome is 55.9 % and the genome length is 5.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Agnomula gen. nov.

Candidatus Agnomula (NL. fem. n. *Agnomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MESE01*. The type species for the genus is *Candidatus* Agnomula necubimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agraparia agravivita sp. nov.

Candidatus Agraparia agravivita (NL. fem. n. *agravivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RQCD01 sp008668455*. The type genome for the species is the GenBank assembly GCA_008668455.1. The GC content of the type genome is 46.13 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Agraparia gen. nov.

Candidatus Agraparia (NL. fem. n. *Agraparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RQCD01*. The type species for the genus is *Candidatus* Agraparia agravivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilosaceae.

Description of *Candidatus* Agrapella ancepilenta sp. nov.

Candidatus Agrapella ancepilenta (NL. fem. n. *ancepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UCG-010 sp900754535*. The type genome for the species is the GenBank assembly RS_GCF_900754535.1. The GC content of the type genome is 53.19 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Agrapella gen. nov.

Candidatus Agrapella (NL. fem. n. *Agrapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UCG-010*. The type species for the genus is *Candidatus* Agrapella ancepilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Agrapella bigemicella sp. nov.

Candidatus Agrapella bigemicella (NL. fem. n. *bigemicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UCG-010 sp003150115*. The type genome for the species is the GenBank assembly GCA_003150115.1. The GC content of the type genome is 50.59 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Agrapella semivastra sp. nov.

Candidatus Agrapella semivastra (NL. fem. n. *semivastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UCG-010 sp900760275*. The type genome for the species is the GenBank assembly RS_GCF_900760275.1. The GC content of the type genome is 60.82 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Agrapella tumefitia sp. nov.

Candidatus Agrapella tumefitia (NL. fem. n. *tumefitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UCG-010 sp003150215*. The type genome for the species is the GenBank assembly GCA_003150215.1. The GC content of the type genome is 59.9 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Agrapia adlapitica sp. nov.

Candidatus Agrapia adlapitica (NL. fem. n. *adlapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTHT01 sp011389255*. The type genome for the species is the GenBank assembly GCA_011389255.1. The GC content of the type genome is 62.39 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Agrapia gen. nov.

Candidatus Agrapia (NL. fem. n. *Agrapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTHT01*. The type species for the genus is *Candidatus* Agrapia adlapitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agrapida cocolago sp. nov.

Candidatus Agrapida cocolago (NL. fem. n. *cocolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA690 sp002298225*. The type genome for the species is the GenBank assembly GCA_002298225.1. The GC content of the type genome is 62.4 % and the genome length is 6.74 Mbp.

Description of *Candidatus* Agrapida gen. nov.

Candidatus Agrapida (NL. fem. n. *Agrapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA690*. The type species for the genus is *Candidatus* Agrapida cocolago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agrapida detoratica sp. nov.

Candidatus Agrapida detoratica (NL. fem. n. *detoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA690 sp013388415*. The type genome for the species is the GenBank assembly GCA_013388415.1. The GC content of the type genome is 63.72 %

and the genome length is 4.35 Mbp.

Description of *Candidatus* Agraposa parocicella sp. nov.

Candidatus Agraposa parocicella (NL. fem. n. *parocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2772 sp002352545*. The type genome for the species is the GenBank assembly GCA_002352545.1. The GC content of the type genome is 33.61 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Agraposa gen. nov.

Candidatus Agraposa (NL. fem. n. *Agraposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2772*. The type species for the genus is *Candidatus* Agraposa parocicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUUL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dinupellaceae.

Description of *Candidatus* Agrapula innecastra sp. nov.

Candidatus Agrapula innecastra (NL. fem. n. *innecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAAOG01 sp009909005*. The type genome for the species is the GenBank assembly GCA_009909005.1. The GC content of the type genome is 66.72 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Agrapula gen. nov.

Candidatus Agrapula (NL. fem. n. *Agrapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAAOG01*. The type species for the genus is *Candidatus* Agrapula innecastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agratana annubifica sp. nov.

Candidatus Agratana annubifica (NL. fem. n. *annubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-50-9 sp002791295*. The type genome for the species is the GenBank assembly GCA_002791295.1. The GC content of the type genome is 49.82 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Agratana gen. nov.

Candidatus Agratana (NL. fem. n. *Agratana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-50-9*. The type species for the genus is *Candidatus* Agratana annubifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Agrataria categitio sp. nov.

Candidatus Agrataria categitio (NL. fem. n. *categitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMDJ01 sp008080925*. The type genome for the species is the GenBank assembly GCA_008080925.1. The GC content of the type genome is 48.33 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Agrataria gen. nov.

Candidatus Agrataria (NL. fem. n. *Agrataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMDJ01*. The type species for the genus is *Candidatus* Agrataria categitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agratella umbilitudo sp. nov.

Candidatus Agratella umbilitudo (NL. fem. n. *umbilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCZH01 sp013289795*. The type genome for the species is the GenBank assembly GCA_013289795.1. The GC content of the type genome is 57.76 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Agratella gen. nov.

Candidatus Agratella (NL. fem. n. *Agratella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCZH01*. The type species for the genus is *Candidatus* Agratella umbilitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agratida amfitilega sp. nov.

Candidatus Agratida amfitilega (NL. fem. n. *amfitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5868 sp014336955*. The type genome for the species is the GenBank assembly RS_GCF_014336955.1. The GC content of the type genome is 51.27 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Agratida gen. nov.

Candidatus Agratida (NL. fem. n. *Agratida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5868*. The type species for the genus is *Candidatus* Agratida amfitilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agratida redunousia sp. nov.

Candidatus Agratida redunousia (NL. fem. n. *redunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5868 sp002432555*. The type genome for the species is the GenBank assembly GCA_002432555.1. The GC content of the type genome is 56.96 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Agratida saxopitoga sp. nov.

Candidatus Agratida saxopitoga (NL. fem. n. *saxopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5868 sp002432095*. The type genome for the species is the GenBank assembly GCA_002432095.1. The GC content of the type genome is 52.53 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Agratosa biparimonia sp. nov.

Candidatus Agratosa biparimonia (NL. fem. n. *biparimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYEL01 sp012728755*. The type genome for the species is the GenBank assembly GCA_012728755.1. The GC content of the type genome is 33.22 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Agratosa gen. nov.

Candidatus Agratosa (NL. fem. n. *Agratosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYEL01*. The type species for the genus is *Candidatus* Agratosa biparimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agratula homicatio sp. nov.

Candidatus Agratula homicatio (NL. fem. n. *homicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-45-12 sp001801665*. The type genome for the species is

the GenBank assembly GCA_001801665.1. The GC content of the type genome is 45.27 % and the genome length is 1.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Agratula gen. nov.

Candidatus Agratula (NL. fem. n. *Agratula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-45-12*. The type species for the genus is *Candidatus* Agratula homicatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Agravana hexagetta sp. nov.

Candidatus Agravana hexagetta (NL. fem. n. *hexagetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-370 sp003247225*. The type genome for the species is the GenBank assembly GCA_003247225.1. The GC content of the type genome is 67.8 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Agravana gen. nov.

Candidatus Agravana (NL. fem. n. *Agravana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-370*. The type species for the genus is *Candidatus* Agravana hexagetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12059*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubicanaceae.

Description of *Candidatus* Agravana paracitas sp. nov.

Candidatus Agravana paracitas (NL. fem. n. *paracitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-370 sp002839245*. The type genome for the species is the GenBank assembly GCA_002839245.1. The GC content of the type genome is 61.73 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Agravana vinolitura sp. nov.

Candidatus Agravana vinolitura (NL. fem. n. *vinolitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-370 sp002839315*. The type genome for the species is the GenBank assembly GCA_002839315.1. The GC content of the type genome is 62.33 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Agravella adluvessa sp. nov.

Candidatus Agravella adluvessa (NL. fem. n. *adluvessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYRG01 sp012518885*. The type genome for the species is the GenBank assembly GCA_012518885.1. The GC content of the type genome is 33.97 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Agravella gen. nov.

Candidatus Agravella (NL. fem. n. *Agravella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYRG01*. The type species for the genus is *Candidatus* Agravella adluvessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agravida irrelicula sp. nov.

Candidatus Agravida irrelicula (NL. fem. n. *irrelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZGG01 sp012511355*. The type genome for the species is the

GenBank assembly GCA_012511355.1. The GC content of the type genome is 37.61 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Agravida gen. nov.

Candidatus Agravida (NL. fem. n. *Agravida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZGG01*. The type species for the genus is *Candidatus* Agravida irrelicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1709*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bonifanaceae.

Description of *Candidatus* Agravosa adoscitura sp. nov.

Candidatus Agravosa adoscitura (NL. fem. n. *adoscitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWZK01 sp003567495*. The type genome for the species is the GenBank assembly GCA_003567495.1. The GC content of the type genome is 52.31 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Agravosa gen. nov.

Candidatus Agravosa (NL. fem. n. *Agravosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWZK01*. The type species for the genus is *Candidatus* Agravosa adoscitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rarefulaceae.

Description of *Candidatus* Agravula buxanessa sp. nov.

Candidatus Agravula buxanessa (NL. fem. n. *buxanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MA-ANB-1 sp003388545*. The type genome for the species is the GenBank assembly GCA_003388545.1. The GC content of the type genome is 62.16 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Agravula gen. nov.

Candidatus Agravula (NL. fem. n. *Agravula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MA-ANB-1*. The type species for the genus is *Candidatus* Agravula buxanessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ZC4RG35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidosaceae.

Description of *Candidatus* Agreia denixitio sp. nov.

Candidatus Agreia denixitio (NL. fem. n. *denixitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agreia sp001421485*. The type genome for the species is the GenBank assembly RS_GCF_001421485.1. The GC content of the type genome is 66.29 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Agreia epicressa sp. nov.

Candidatus Agreia epicressa (NL. fem. n. *epicressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agreia sp900177765*. The type genome for the species is the GenBank assembly RS_GCF_900177765.1. The GC content of the type genome is 65.85 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Agreia murilicula sp. nov.

Candidatus Agreia murilicula (NL. fem. n. *murilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Agreia sp001422485*. The type genome for the species is the GenBank assembly RS_GCF_001422485.1. The GC content of the type genome is 67.59 % and the genome length is 3.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Agricana altivisca sp. nov.

Candidatus Agricana altivisca (NL. fem. n. *altivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGJ01 sp011523615*. The type genome for the species is the GenBank assembly GCA_011523615.1. The GC content of the type genome is 58.5 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Agricana gen. nov.

Candidatus Agricana (NL. fem. n. *Agricana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTGJ01*. The type species for the genus is *Candidatus* Agricana altivisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Agricaria cohonitura sp. nov.

Candidatus Agricaria cohonitura (NL. fem. n. *cohonitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYIH01 sp012523545*. The type genome for the species is the GenBank assembly GCA_012523545.1. The GC content of the type genome is 58.36 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Agricaria gen. nov.

Candidatus Agricaria (NL. fem. n. *Agricaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYIH01*. The type species for the genus is *Candidatus* Agricaria

cohonitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4975*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxopellaceae.

Description of *Candidatus* Agricella acropatica sp. nov.

Candidatus Agricella acropatica (NL. fem. n. *acropatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTC01 sp009379795*. The type genome for the species is the GenBank assembly GCA_009379795.1. The GC content of the type genome is 69.62 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Agricella gen. nov.

Candidatus Agricella (NL. fem. n. *Agricella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTC01*. The type species for the genus is *Candidatus* Agricella acropatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agricia optumago sp. nov.

Candidatus Agricia optumago (NL. fem. n. *optumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSO01 sp009380075*. The type genome for the species is the GenBank assembly GCA_009380075.1. The GC content of the type genome is 65.64 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Agricia gen. nov.

Candidatus Agricia (NL. fem. n. *Agricia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSO01*. The type species for the genus is *Candidatus* Agricia optumago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMXQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momorellaceae.

Description of *Candidatus* Agricosa cacalivita sp. nov.

Candidatus Agricosa cacalivita (NL. fem. n. *cacalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHYU01 sp003224235*. The type genome for the species is the GenBank assembly GCA_003224235.1. The GC content of the type genome is 60.78 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Agricosa gen. nov.

Candidatus Agricosa (NL. fem. n. *Agricosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHYU01*. The type species for the genus is *Candidatus* Agricosa cacalivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Agricula diritibula sp. nov.

Candidatus Agricula diritibula (NL. fem. n. *diritibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABUEZ01 sp013314795*. The type genome for the species is the GenBank assembly GCA_013314795.1. The GC content of the type genome is 49.3 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Agricula gen. nov.

Candidatus Agricula (NL. fem. n. *Agricula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABUEZ01*. The type species for the genus is *Candidatus* Agricula

diritibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agrilactobacillus mavoritoga sp. nov.

Candidatus Agrilactobacillus mavoritoga (NL. fem. n. *mavoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrilactobacillus sp003946725*. The type genome for the species is the GenBank assembly RS_GCF_003946725.1. The GC content of the type genome is 39.96 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Agrimana defunax sp. nov.

Candidatus Agrimana defunax (NL. fem. n. *defunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYXV01 sp903930225*. The type genome for the species is the GenBank assembly GCA_903930225.1. The GC content of the type genome is 51.52 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Agrimana gen. nov.

Candidatus Agrimana (NL. fem. n. *Agrimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYXV01*. The type species for the genus is *Candidatus* Agrimana defunax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WPAF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detecariaceae.

Description of *Candidatus* Agrimella arcelicella sp. nov.

Candidatus Agrimella arcelicella (NL. fem. n. *arcelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTY01 sp013695665*. The type genome for the species is the

GenBank assembly GCA_013695665.1. The GC content of the type genome is 69.07 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Agrimella gen. nov.

Candidatus Agrimella (NL. fem. n. *Agrimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCTY01*. The type species for the genus is *Candidatus* Agrimella arcelicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agrimella depicifica sp. nov.

Candidatus Agrimella depicifica (NL. fem. n. *depicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTY01 sp013695685*. The type genome for the species is the GenBank assembly GCA_013695685.1. The GC content of the type genome is 69.59 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Agrimella indomago sp. nov.

Candidatus Agrimella indomago (NL. fem. n. *indomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTY01 sp013812145*. The type genome for the species is the GenBank assembly GCA_013812145.1. The GC content of the type genome is 69.37 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Agrimella milipivita sp. nov.

Candidatus Agrimella milipivita (NL. fem. n. *milipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTY01 sp013696785*. The type genome for the species is the GenBank assembly GCA_013696785.1. The GC content of the type genome is 69.15 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Agrimia palifigena sp. nov.

Candidatus Agrimia palifigena (NL. fem. n. *palifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BS3 sp008274585*. The type genome for the species is the GenBank assembly RS_GCF_008274585.1. The GC content of the type genome is 43.42 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Agrimia gen. nov.

Candidatus Agrimia (NL. fem. n. *Agrimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BS3*. The type species for the genus is *Candidatus* Agrimia palifigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agrimida admodicella sp. nov.

Candidatus Agrimida admodicella (NL. fem. n. *admodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM515 sp002869635*. The type genome for the species is the GenBank assembly GCA_002869635.1. The GC content of the type genome is 56.23 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Agrimida gen. nov.

Candidatus Agrimida (NL. fem. n. *Agrimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM515*. The type species for the genus is *Candidatus* Agrimida admodicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agrimula oppugibula sp. nov.

Candidatus Agrimula oppugibula (NL. fem. n. *oppugibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W1P20-047 sp004555335*. The type genome for the species is the GenBank assembly GCA_004555335.1. The GC content of the type genome is 59.64 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Agrimula gen. nov.

Candidatus Agrimula (NL. fem. n. *Agrimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W1P20-047*. The type species for the genus is *Candidatus* Agrimula oppugibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agriparia culilisca sp. nov.

Candidatus Agriparia culilisca (NL. fem. n. *culilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTMR01 sp011358865*. The type genome for the species is the GenBank assembly GCA_011358865.1. The GC content of the type genome is 50.39 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Agriparia gen. nov.

Candidatus Agriparia (NL. fem. n. *Agriparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTMR01*. The type species for the genus is *Candidatus* Agriparia culilisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Agripella occalugo sp. nov.

Candidatus Agripella occalugo (NL. fem. n. *occalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHXQ01 sp003223935*. The type genome for the species is the GenBank assembly GCA_003223935.1. The GC content of the type genome is 59.56 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Agripella gen. nov.

Candidatus Agripella (NL. fem. n. *Agripella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHXQ01*. The type species for the genus is *Candidatus* Agripella occalugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agripia manubetta sp. nov.

Candidatus Agripia manubetta (NL. fem. n. *manubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG-bin9 sp002083525*. The type genome for the species is the GenBank assembly GCA_002083525.1. The GC content of the type genome is 63.05 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Agripia gen. nov.

Candidatus Agripia (NL. fem. n. *Agripia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG-bin9*. The type species for the genus is *Candidatus* Agripia manubetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agripida resuritrix sp. nov.

Candidatus Agripida resuritrix (NL. fem. n. *resuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTJH01 sp011524915*. The type genome for the species is the

GenBank assembly GCA_011524915.1. The GC content of the type genome is 42.66 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Agripida gen. nov.

Candidatus Agripida (NL. fem. n. *Agripida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTJH01*. The type species for the genus is *Candidatus* Agripida resuritrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Agriposa tenemicella sp. nov.

Candidatus Agriposa tenemicella (NL. fem. n. *tenemicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWBF01 sp002068935*. The type genome for the species is the GenBank assembly GCA_002068935.1. The GC content of the type genome is 68.12 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Agriposa gen. nov.

Candidatus Agriposa (NL. fem. n. *Agriposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWBF01*. The type species for the genus is *Candidatus* Agriposa tenemicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-64-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redacidaceae.

Description of *Candidatus* Agripula regifisca sp. nov.

Candidatus Agripula regifisca (NL. fem. n. *regifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5318 sp002408285*. The type genome for the species is the GenBank assembly GCA_002408285.1. The GC content of the type genome is 46.85 %

and the genome length is 2.72 Mbp.

Description of *Candidatus* Agripula gen. nov.

Candidatus Agripula (NL. fem. n. *Agripula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5318*. The type species for the genus is *Candidatus* Agripula regifisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRI-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Latibellaceae.

Description of *Candidatus* Agrobacterium adaggitoga sp. nov.

Candidatus Agrobacterium adaggitoga (NL. fem. n. *adaggitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp001422245*. The type genome for the species is the GenBank assembly RS_GCF_001422245.1. The GC content of the type genome is 57.3 % and the genome length is 5.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Agrobacterium bifaritio sp. nov.

Candidatus Agrobacterium bifaritio (NL. fem. n. *bifaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp000192635*. The type genome for the species is the GenBank assembly RS_GCF_900465695.1. The GC content of the type genome is 58.53 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Agrobacterium casigitura sp. nov.

Candidatus Agrobacterium casigitura (NL. fem. n. *casigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp900472925*. The type genome for the species is the GenBank assembly RS_GCF_900472925.1. The GC content of the type genome is 56.76

% and the genome length is 5.1 Mbp.

Description of *Candidatus* Agrobacterium celumax sp. nov.

Candidatus Agrobacterium celumax (NL. fem. n. *celumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp900012615*. The type genome for the species is the GenBank assembly RS_GCF_006757705.1. The GC content of the type genome is 59.47 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Agrobacterium decomiforma sp. nov.

Candidatus Agrobacterium decomiforma (NL. fem. n. *decomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp900012625*. The type genome for the species is the GenBank assembly RS_GCF_900012625.1. The GC content of the type genome is 59.05 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Agrobacterium hirunousia sp. nov.

Candidatus Agrobacterium hirunousia (NL. fem. n. *hirunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp900473305*. The type genome for the species is the GenBank assembly RS_GCF_900467875.1. The GC content of the type genome is 58.2 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Agrobacterium melilivita sp. nov.

Candidatus Agrobacterium melilivita (NL. fem. n. *melilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp005938205*. The type genome for the species is the GenBank assembly GCA_005938205.1. The GC content of the type genome is 57.12 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Agrobacterium metabitrix sp. nov.

Candidatus Agrobacterium metabitrix (NL. fem. n. *metabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp900013535*. The type genome for the species is the GenBank assembly RS_GCF_900013535.1. The GC content of the type genome is 59.2 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Agrobacterium notabessa sp. nov.

Candidatus Agrobacterium notabessa (NL. fem. n. *notabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp900468285*. The type genome for the species is the GenBank assembly RS_GCF_900471905.1. The GC content of the type genome is 57.14 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Agrobacterium venunatio sp. nov.

Candidatus Agrobacterium venunatio (NL. fem. n. *venunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp900473205*. The type genome for the species is the GenBank assembly RS_GCF_900470045.1. The GC content of the type genome is 57.3 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Agrobacterium viginatica sp. nov.

Candidatus Agrobacterium viginatica (NL. fem. n. *viginatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrobacterium sp900468015*. The type genome for the species is the GenBank assembly RS_GCF_900468085.1. The GC content of the type genome is 57.3 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Agrococcus ambacilega sp. nov.

Candidatus Agrococcus ambacilega (NL. fem. n. *ambacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrococcus sp005484985*. The type genome for the species is the GenBank assembly RS_GCF_005484985.1. The GC content of the type genome is 72.99 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Agrococcus omnipifica sp. nov.

Candidatus Agrococcus omnipifica (NL. fem. n. *omnipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agrococcus sp900117395*. The type genome for the species is the GenBank assembly RS_GCF_900117395.1. The GC content of the type genome is 71.82 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Agromyces cilibitrix sp. nov.

Candidatus Agromyces cilibitrix (NL. fem. n. *cilibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp900113185*. The type genome for the species is the GenBank assembly RS_GCF_900113185.1. The GC content of the type genome is 70.84 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Agromyces cohoritrix sp. nov.

Candidatus Agromyces cohoritrix (NL. fem. n. *cohoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp003710805*. The type genome for the species is the GenBank assembly RS_GCF_003710805.1. The GC content of the type genome is 71.84 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Agromyces deforigena sp. nov.

Candidatus Agromyces deforigena (NL. fem. n. *deforigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp902809835*. The type genome for the species is the GenBank assembly RS_GCF_902809835.1. The GC content of the type genome is 69.63

% and the genome length is 3.56 Mbp.

Description of *Candidatus* Agromyces defosousia sp. nov.

Candidatus Agromyces defosousia (NL. fem. n. *defosousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp006337065*. The type genome for the species is the GenBank assembly RS_GCF_006337065.1. The GC content of the type genome is 69.01 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Agromyces derecitas sp. nov.

Candidatus Agromyces derecitas (NL. fem. n. *derecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp008122505*. The type genome for the species is the GenBank assembly RS_GCF_008122505.1. The GC content of the type genome is 71.51 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Agromyces ecastimonas sp. nov.

Candidatus Agromyces ecastimonas (NL. fem. n. *ecastimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp008365295*. The type genome for the species is the GenBank assembly RS_GCF_008365295.1. The GC content of the type genome is 71.07 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Agromyces enuclitrix sp. nov.

Candidatus Agromyces enuclitrix (NL. fem. n. *enuclitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp006715355*. The type genome for the species is the GenBank assembly RS_GCF_006715355.1. The GC content of the type genome is 70.43 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Agromyces incomitia sp. nov.

Candidatus Agromyces incomitia (NL. fem. n. *incomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp004959775*. The type genome for the species is the GenBank assembly RS_GCF_004959775.1. The GC content of the type genome is 70.81 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Agromyces infacetta sp. nov.

Candidatus Agromyces infacetta (NL. fem. n. *infacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp003384855*. The type genome for the species is the GenBank assembly RS_GCF_003384855.1. The GC content of the type genome is 70.9 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Agromyces inobritrix sp. nov.

Candidatus Agromyces inobritrix (NL. fem. n. *inobritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp003634985*. The type genome for the species is the GenBank assembly RS_GCF_003634985.1. The GC content of the type genome is 71.45 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Agromyces inpelitura sp. nov.

Candidatus Agromyces inpelitura (NL. fem. n. *inpelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp009647605*. The type genome for the species is the GenBank assembly RS_GCF_009647605.1. The GC content of the type genome is 71.51 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Agromyces insusilega sp. nov.

Candidatus Agromyces insusilega (NL. fem. n. *insusilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp009720255*. The type genome for the species is the GenBank assembly RS_GCF_009720255.1. The GC content of the type genome is 70.16 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Agromyces orniticella sp. nov.

Candidatus Agromyces orniticella (NL. fem. n. *orniticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp004006235*. The type genome for the species is the GenBank assembly RS_GCF_004006235.1. The GC content of the type genome is 71.27 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Agromyces protrastra sp. nov.

Candidatus Agromyces protrastra (NL. fem. n. *protrastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp001428255*. The type genome for the species is the GenBank assembly RS_GCF_001428255.1. The GC content of the type genome is 69.97 % and the genome length is 4.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Agromyces rubigitio sp. nov.

Candidatus Agromyces rubigitio (NL. fem. n. *rubigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp001620055*. The type genome for the species is the GenBank assembly RS_GCF_001620055.1. The GC content of the type genome is 72.12 % and the genome length is 3.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water from newly drilled coal seam bore well; sample 4".

Description of *Candidatus* Agromyces umbilousia sp. nov.

Candidatus Agromyces umbilousia (NL. fem. n. *umbilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp009674665*. The type genome for the species is the GenBank assembly RS_GCF_009674665.1. The GC content of the type genome is 71.88 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Agromyces viburastra sp. nov.

Candidatus Agromyces viburastra (NL. fem. n. *viburastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp003070885*. The type genome for the species is the GenBank assembly RS_GCF_003113355.1. The GC content of the type genome is 69.72 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Agromyces virecastra sp. nov.

Candidatus Agromyces virecastra (NL. fem. n. *virecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp001429165*. The type genome for the species is the GenBank assembly RS_GCF_001429165.1. The GC content of the type genome is 69.7 % and the genome length is 4.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Agromyces visibitura sp. nov.

Candidatus Agromyces visibitura (NL. fem. n. *visibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Agromyces sp001421565*. The type genome for the species is the GenBank assembly RS_GCF_001421565.1. The GC content of the type genome is 70.64 % and the genome length is 4.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Akkermansia abascitrix sp. nov.

Candidatus Akkermansia abascitrix (NL. fem. n. *abascitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Akkermansia sp002471255*. The type genome for the species is the

GenBank assembly GCA_002471255.1. The GC content of the type genome is 40.59 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Akkermansia caravitrix sp. nov.

Candidatus Akkermansia caravitrix (NL. fem. n. *caravitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Akkermansia sp001580195*. The type genome for the species is the GenBank assembly RS_GCF_001647615.1. The GC content of the type genome is 56.95 % and the genome length is 3.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "GI tract".

Description of *Candidatus* Akkermansia desonitica sp. nov.

Candidatus Akkermansia desonitica (NL. fem. n. *desonitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Akkermansia sp900545155*. The type genome for the species is the GenBank assembly GCA_900545155.1. The GC content of the type genome is 51.89 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Akkermansia fatilax sp. nov.

Candidatus Akkermansia fatilax (NL. fem. n. *fatilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Akkermansia sp900766865*. The type genome for the species is the GenBank assembly GCA_900766865.1. The GC content of the type genome is 55.19 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Akkermansia novilitudo sp. nov.

Candidatus Akkermansia novilitudo (NL. fem. n. *novilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Akkermansia sp900548895*. The type genome for the species is the GenBank assembly GCA_900754675.1. The GC content of the type genome is 64.76 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Akkermansia ossiciforma sp. nov.

Candidatus Akkermansia ossiciforma (NL. fem. n. *ossiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Akkermansia sp002358905*. The type genome for the species is the GenBank assembly GCA_002358905.1. The GC content of the type genome is 54.02 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Akkermansia resaletta sp. nov.

Candidatus Akkermansia resaletta (NL. fem. n. *resaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Akkermansia sp004167605*. The type genome for the species is the GenBank assembly RS_GCF_008421425.1. The GC content of the type genome is 55.84 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Albidovulum adfabatio sp. nov.

Candidatus Albidovulum adfabatio (NL. fem. n. *adfabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Albidovulum sp002440625*. The type genome for the species is the GenBank assembly GCA_002440625.1. The GC content of the type genome is 65.15 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Albidovulum arcubimonia sp. nov.

Candidatus Albidovulum arcubimonia (NL. fem. n. *arcubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Albidovulum sp002841115*. The type genome for the species is the GenBank assembly GCA_002841115.1. The GC content of the type genome is 68.43 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Albidovulum errabessa sp. nov.

Candidatus Albidovulum errabessa (NL. fem. n. *errabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Albidovulum sp011620265*. The type genome for the species is the GenBank assembly GCA_011620265.1. The GC content of the type genome is 67.5 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Albidovulum exsaniforma sp. nov.

Candidatus Albidovulum exsaniforma (NL. fem. n. *exsaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Albidovulum sp008933605*. The type genome for the species is the GenBank assembly GCA_008933605.1. The GC content of the type genome is 68.06 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Albidovulum utputitrix sp. nov.

Candidatus Albidovulum utputitrix (NL. fem. n. *utputitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Albidovulum sp002280515*. The type genome for the species is the GenBank assembly GCA_002280515.1. The GC content of the type genome is 66.39 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Albogana thapsousia sp. nov.

Candidatus Albogana thapsousia (NL. fem. n. *thapsousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAP99 sp001295775*. The type genome for the species is the GenBank assembly RS_GCF_001295775.1. The GC content of the type genome is 65.41 % and the genome length is 3.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Albogana gen. nov.

Candidatus Albogana (NL. fem. n. *Albogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *AAP99*. The type species for the genus is *Candidatus* Albogana thapsousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Albogaria buxanigena sp. nov.

Candidatus Albogaria buxanigena (NL. fem. n. *buxanigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11224 sp902767005*. The type genome for the species is the GenBank assembly GCA_902767005.1. The GC content of the type genome is 27.16 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Albogaria gen. nov.

Candidatus Albogaria (NL. fem. n. *Albogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11224*. The type species for the genus is *Candidatus* Albogaria buxanigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Albogella desucibula sp. nov.

Candidatus Albogella desucibula (NL. fem. n. *desucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSRN01 sp013214025*. The type genome for the species is the GenBank assembly GCA_013214025.1. The GC content of the type genome is 60.73 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Albogella gen. nov.

Candidatus Albogella (NL. fem. n. *Albogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSRN01*. The type species for the genus is *Candidatus* Albogella

desucibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Albogia adpecentia sp. nov.

Candidatus Albogia adpecentia (NL. fem. n. *adpecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYPM01 sp012519815*. The type genome for the species is the GenBank assembly GCA_012519815.1. The GC content of the type genome is 33.03 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Albogia gen. nov.

Candidatus Albogia (NL. fem. n. *Albogia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYPM01*. The type species for the genus is *Candidatus* Albogia adpecentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Veridariaceae.

Description of *Candidatus* Albogida adhoritoga sp. nov.

Candidatus Albogida adhoritoga (NL. fem. n. *adhoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDIY01 sp013003535*. The type genome for the species is the GenBank assembly GCA_013003535.1. The GC content of the type genome is 61.08 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Albogida gen. nov.

Candidatus Albogida (NL. fem. n. *Albogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDIY01*. The type species for the genus is *Candidatus* Albogida adhoritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipatosaceae.

Description of *Candidatus* Albogida adtesitudo sp. nov.

Candidatus Albogida adtesitudo (NL. fem. n. *adtesitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDIY01 sp013003325*. The type genome for the species is the GenBank assembly GCA_013003325.1. The GC content of the type genome is 64.22 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Albogosa lavabivita sp. nov.

Candidatus Albogosa lavabivita (NL. fem. n. *lavabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNAD01 sp003641345*. The type genome for the species is the GenBank assembly GCA_003641345.1. The GC content of the type genome is 35.26 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Albogosa gen. nov.

Candidatus Albogosa (NL. fem. n. *Albogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNAD01*. The type species for the genus is *Candidatus* Albogosa lavabivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEB-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanugulaceae.

Description of *Candidatus* Alcalana lucifilenta sp. nov.

Candidatus Alcalana lucifilenta (NL. fem. n. *lucifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAADIO01 sp013151235*. The type genome for the species is the GenBank assembly GCA_013151235.1. The GC content of the type genome is 54.97 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Alcalana gen. nov.

Candidatus Alcalana (NL. fem. n. *Alcalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADIO01*. The type species for the genus is *Candidatus* Alcalana lucifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-53-67*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocibosaceae.

Description of *Candidatus* Alcalaria decapitica sp. nov.

Candidatus Alcalaria decapitica (NL. fem. n. *decapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSW01 sp009379895*. The type genome for the species is the GenBank assembly GCA_009379895.1. The GC content of the type genome is 72.19 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Alcalaria gen. nov.

Candidatus Alcalaria (NL. fem. n. *Alcalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSW01*. The type species for the genus is *Candidatus* Alcalaria decapitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *70-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Alcalella inturibra sp. nov.

Candidatus Alcalella inturibra (NL. fem. n. *inturibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRLO01 sp009777575*. The type genome for the species is the GenBank assembly GCA_009777575.1. The GC content of the type genome is 34.01 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Alcalella gen. nov.

Candidatus Alcalella (NL. fem. n. *Alcalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRLO01*. The type species for the genus is *Candidatus* Alcalella inturibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRIO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracidaceae.

Description of *Candidatus* Alcalia domabax sp. nov.

Candidatus Alcalia domabax (NL. fem. n. *domabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1690 sp900554165*. The type genome for the species is the GenBank assembly GCA_900554165.1. The GC content of the type genome is 43.51 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Alcalia gen. nov.

Candidatus Alcalia (NL. fem. n. *Alcalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1690*. The type species for the genus is *Candidatus* Alcalia domabax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alcalida melilisca sp. nov.

Candidatus Alcalida melilisca (NL. fem. n. *melilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *NBLS01 sp002084385*. The type genome for the species is the GenBank assembly GCA_002084385.1. The GC content of the type genome is 34.58 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Alcalida gen. nov.

Candidatus Alcalida (NL. fem. n. *Alcalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NBLS01*. The type species for the genus is *Candidatus* Alcalida melilisca .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Alcalosa citivitia sp. nov.

Candidatus Alcalosa citivitia (NL. fem. n. *citivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBML01 sp013792075*. The type genome for the species is the GenBank assembly GCA_013792075.1. The GC content of the type genome is 47.33 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Alcalosa gen. nov.

Candidatus Alcalosa (NL. fem. n. *Alcalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NBML01*. The type species for the genus is *Candidatus* Alcalosa citivitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alcalosa hecativita sp. nov.

Candidatus Alcalosa hecativita (NL. fem. n. *hecativita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBML01 sp002085465*. The type genome for the species is the GenBank assembly GCA_002085465.1. The GC content of the type genome is 43.64 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Alcalula fatilago sp. nov.

Candidatus Alcalula fatilago (NL. fem. n. *fatilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8914 sp003486725*. The type genome for the species is the GenBank assembly GCA_003486725.1. The GC content of the type genome is 54.71 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Alcalula gen. nov.

Candidatus Alcalula (NL. fem. n. *Alcalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8914*. The type species for the genus is *Candidatus* Alcalula fatilago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9219*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luticidaceae.

Description of *Candidatus* Alcalula obsecitia sp. nov.

Candidatus Alcalula obsecitia (NL. fem. n. *obsecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8914 sp009779135*. The type genome for the species is the GenBank assembly GCA_009779135.1. The GC content of the type genome is 52.79 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Alcanivorax acrufiforma sp. nov.

Candidatus Alcanivorax acrufiforma (NL. fem. n. *acrufiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp002726155*. The type genome for the species is the GenBank assembly GCA_002726155.1. The GC content of the type genome is 58.03 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Alcanivorax assudago sp. nov.

Candidatus Alcanivorax assudago (NL. fem. n. *assudago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp009882945*. The type genome for the species is the GenBank assembly RS_GCF_009882945.1. The GC content of the type genome is 57.47 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Alcanivorax cituvimonia sp. nov.

Candidatus Alcanivorax cituvimonia (NL. fem. n. *cituvimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp002389055*. The type genome for the species is the GenBank assembly GCA_002389055.1. The GC content of the type genome is 64.68 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Alcanivorax colapitio sp. nov.

Candidatus Alcanivorax colapitio (NL. fem. n. *colapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp004360225*. The type genome for the species is the GenBank assembly RS_GCF_004360225.1. The GC content of the type genome is 61.37 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Alcanivorax dilibentia sp. nov.

Candidatus Alcanivorax dilibentia (NL. fem. n. *dilibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp002354605*. The type genome for the species is the GenBank assembly GCA_002331785.1. The GC content of the type genome is 65.22 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Alcanivorax divoribula sp. nov.

Candidatus Alcanivorax divoribula (NL. fem. n. *divoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp002313655*. The type genome for the species is the GenBank assembly GCA_002696185.1. The GC content of the type genome is 65.72 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Alcanivorax ingigisca sp. nov.

Candidatus Alcanivorax ingigisca (NL. fem. n. *ingigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp002733835*. The type genome for the species is the GenBank assembly GCA_002733835.1. The GC content of the type genome is 58.19 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Alcanivorax inpiniforma sp. nov.

Candidatus Alcanivorax inpiniforma (NL. fem. n. *inpiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp009711585*. The type genome for the species is the GenBank assembly GCA_009711585.1. The GC content of the type genome is 64.77 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Alcanivorax manibastra sp. nov.

Candidatus Alcanivorax manibastra (NL. fem. n. *manibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp002706085*. The type genome for the species is the GenBank assembly GCA_002706085.1. The GC content of the type genome is 57.79 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Alcanivorax refulitura sp. nov.

Candidatus Alcanivorax refulitura (NL. fem. n. *refulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp900107995*. The type genome for the species is the GenBank assembly GCA_002709465.1. The GC content of the type genome is 59.41 %

and the genome length is 2.08 Mbp.

Description of *Candidatus* Alcanivorax regigitas sp. nov.

Candidatus Alcanivorax regigitas (NL. fem. n. *regigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp009601165*. The type genome for the species is the GenBank assembly RS_GCF_009601165.1. The GC content of the type genome is 57.15 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Alcanivorax rubigilenta sp. nov.

Candidatus Alcanivorax rubigilenta (NL. fem. n. *rubigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax sp000155615*. The type genome for the species is the GenBank assembly RS_GCF_000155615.1. The GC content of the type genome is 58.23 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Alcanivorax cenobitrix sp. nov.

Candidatus Alcanivorax cenobitrix (NL. fem. n. *cenobitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax_A sp013823245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013823245.1. The GC content of the type genome is 62.64 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Alcanivorax funebitas sp. nov.

Candidatus Alcanivorax funebitas (NL. fem. n. *funebitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alcanivorax_A sp009846755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009846755.1. The GC

content of the type genome is 62.83 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Alcedana insufatio sp. nov.

Candidatus Alcedana insufatio (NL. fem. n. *insufatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAHJWO01 sp903642295*. The type genome for the species is the GenBank assembly RS_GCF_903642295.1. The GC content of the type genome is 63.22 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Alcedana gen. nov.

Candidatus Alcedana (NL. fem. n. *Alcedana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAHJWO01*. The type species for the genus is *Candidatus* Alcedana insufatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Alcedia insinastra sp. nov.

Candidatus Alcedia insinastra (NL. fem. n. *insinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-931 sp003164375*. The type genome for the species is the GenBank assembly GCA_003164375.1. The GC content of the type genome is 62.48 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Alcedia gen. nov.

Candidatus Alcedia (NL. fem. n. *Alcedia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-931*. The type species for the genus is *Candidatus* Alcedia insinastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alcedosa offulatio sp. nov.

Candidatus Alcedosa offulatio (NL. fem. n. *offulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMF01 sp012798955*. The type genome for the species is the GenBank assembly GCA_012798955.1. The GC content of the type genome is 49.62 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Alcedosa gen. nov.

Candidatus Alcedosa (NL. fem. n. *Alcedosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZMF01*. The type species for the genus is *Candidatus* Alcedosa offulatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovosaceae.

Description of *Candidatus* Alcedosa sonipitoga sp. nov.

Candidatus Alcedosa sonipitoga (NL. fem. n. *sonipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMF01 sp012519025*. The type genome for the species is the GenBank assembly GCA_012519025.1. The GC content of the type genome is 47.65 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Alcibana anancatio sp. nov.

Candidatus Alcibana anancatio (NL. fem. n. *anancatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBF01 sp013811765*. The type genome for the species is the GenBank assembly GCA_013811765.1. The GC content of the type genome is 69.69 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Alcibana gen. nov.

Candidatus Alcibana (NL. fem. n. *Alcibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBF01*. The type species for the genus is *Candidatus* Alcibana anancatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alcibana mirifax sp. nov.

Candidatus Alcibana mirifax (NL. fem. n. *mirifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBF01 sp013812005*. The type genome for the species is the GenBank assembly GCA_013812005.1. The GC content of the type genome is 70.44 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Alcibana vavasatio sp. nov.

Candidatus Alcibana vavasatio (NL. fem. n. *vavasatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBF01 sp012718975*. The type genome for the species is the GenBank assembly GCA_012718975.1. The GC content of the type genome is 73.55 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Alcibella adfiribra sp. nov.

Candidatus Alcibella adfiribra (NL. fem. n. *adfiribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5455 sp012518415*. The type genome for the species is the GenBank assembly GCA_012518415.1. The GC content of the type genome is 35.94 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Alcibella gen. nov.

Candidatus Alcibella (NL. fem. n. *Alcibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5455*. The type species for the genus is *Candidatus* Alcibella adfiribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Alcibella perabousia sp. nov.

Candidatus Alcibella perabousia (NL. fem. n. *perabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5455 sp002427365*. The type genome for the species is the GenBank assembly GCA_002427365.1. The GC content of the type genome is 36.05 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Alcibida lametilega sp. nov.

Candidatus Alcibida lametilega (NL. fem. n. *lametilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULU01 sp012840225*. The type genome for the species is the GenBank assembly GCA_012840225.1. The GC content of the type genome is 56.94 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Alcibida gen. nov.

Candidatus Alcibida (NL. fem. n. *Alcibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DULU01*. The type species for the genus is *Candidatus* Alcibida lametilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU080*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defosellaceae.

Description of *Candidatus* Alcibosa depubibula sp. nov.

Candidatus Alcibosa depubibula (NL. fem. n. *depubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFJZ01 sp001781025*. The type genome for the species is the GenBank assembly GCA_001781025.1. The GC content of the type genome is 48.42 % and the genome length is 1.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Alcibosa gen. nov.

Candidatus Alcibosa (NL. fem. n. *Alcibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFJZ01*. The type species for the genus is *Candidatus* Alcibosa depubibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA927*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigellaceae.

Description of *Candidatus* Alectana affamedo sp. nov.

Candidatus Alectana affamedo (NL. fem. n. *affamedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQWG01 sp009785435*. The type genome for the species is the GenBank assembly GCA_009785435.1. The GC content of the type genome is 45.31 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Alectana gen. nov.

Candidatus Alectana (NL. fem. n. *Alectana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQWG01*. The type species for the genus is *Candidatus* Alectana affamedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alectaria detosago sp. nov.

Candidatus Alectaria detosago (NL. fem. n. *detosago* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1440 sp903912925*. The type genome for the species is the GenBank assembly GCA_903912925.1. The GC content of the type genome is 61.06 % and the genome length is 8.8 Mbp.

Description of *Candidatus* Alectaria gen. nov.

Candidatus Alectaria (NL. fem. n. *Alectaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1440*. The type species for the genus is *Candidatus* Alectaria detosago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabitidaceae.

Description of *Candidatus* Alectaria inpudivita sp. nov.

Candidatus Alectaria inpudivita (NL. fem. n. *inpudivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1440 sp003152225*. The type genome for the species is the GenBank assembly GCA_003152225.1. The GC content of the type genome is 60.84 % and the genome length is 8.38 Mbp.

Description of *Candidatus* Alectella inrecitica sp. nov.

Candidatus Alectella inrecitica (NL. fem. n. *inrecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSJ01 sp012518395*. The type genome for the species is the GenBank assembly GCA_012518395.1. The GC content of the type genome is 41.26 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Alectella gen. nov.

Candidatus Alectella (NL. fem. n. *Alectella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSJ01*. The type species for the genus is *Candidatus* Alectella inrecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3941*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabulaceae.

Description of *Candidatus* Alectia abnocitura sp. nov.

Candidatus Alectia abnocitura (NL. fem. n. *abnocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6084 sp002428625*. The type genome for the species is the GenBank assembly GCA_002428625.1. The GC content of the type genome is 51.56 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Alectia gen. nov.

Candidatus Alectia (NL. fem. n. *Alectia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6084*. The type species for the genus is *Candidatus* Alectia abnocitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alectida fibicilenta sp. nov.

Candidatus Alectida fibicilenta (NL. fem. n. *fibicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNC22 sp013285505*. The type genome for the species is the GenBank assembly GCA_013285505.1. The GC content of the type genome is 67.88 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Alectida gen. nov.

Candidatus Alectida (NL. fem. n. *Alectida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNC22*. The type species for the genus is *Candidatus* Alectida fibicilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Alectosa appecentia sp. nov.

Candidatus Alectosa appecentia (NL. fem. n. *appecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2033 sp013297885*. The type genome for the species is the GenBank assembly GCA_013297885.1. The GC content of the type genome is 27.76 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Alectosa gen. nov.

Candidatus Alectosa (NL. fem. n. *Alectosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2033*. The type species for the genus is *Candidatus* Alectosa appecentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alectosa repagetta sp. nov.

Candidatus Alectosa repagetta (NL. fem. n. *repagetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2033 sp002333425*. The type genome for the species is the GenBank assembly GCA_002333425.1. The GC content of the type genome is 34.74 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Alectula vigenicella sp. nov.

Candidatus Alectula vigenicella (NL. fem. n. *vigenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLDF01 sp007125435*. The type genome for the species is the GenBank assembly GCA_007125435.1. The GC content of the type genome is 40.99 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Alectula gen. nov.

Candidatus Alectula (NL. fem. n. *Alectula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLDF01*. The type species for the genus is *Candidatus* Alectula vigenicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alembella tegumatio sp. nov.

Candidatus Alembella tegumatio (NL. fem. n. *tegumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IGN16 sp013112585*. The type genome for the species is the GenBank assembly GCA_013112585.1. The GC content of the type genome is 34.77 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Alembella gen. nov.

Candidatus Alembella (NL. fem. n. *Alembella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IGN16*. The type species for the genus is *Candidatus* Alembella tegumatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alembia antepousia sp. nov.

Candidatus Alembia antepousia (NL. fem. n. *antepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CS2-K091 sp013349615*. The type genome for the species is the GenBank assembly GCA_013349615.1. The GC content of the type genome is 48.98 %

and the genome length is 3.77 Mbp.

Description of *Candidatus* Alembia gen. nov.

Candidatus Alembia (NL. fem. n. *Alembia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CS2-K091*. The type species for the genus is *Candidatus* Alembia antepousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Alembia cerimisca sp. nov.

Candidatus Alembia cerimisca (NL. fem. n. *cerimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CS2-K091 sp011776225*. The type genome for the species is the GenBank assembly GCA_011776225.1. The GC content of the type genome is 47.34 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Alembida coturigena sp. nov.

Candidatus Alembida coturigena (NL. fem. n. *coturigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11942 sp902774205*. The type genome for the species is the GenBank assembly GCA_902774205.1. The GC content of the type genome is 44.68 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Alembida gen. nov.

Candidatus Alembida (NL. fem. n. *Alembida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11942*. The type species for the genus is *Candidatus* Alembida coturigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Turibosaceae.

Description of *Candidatus* Alembosa cibicibra sp. nov.

Candidatus Alembosa cibicibra (NL. fem. n. *cibicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM13634 sp900770385*. The type genome for the species is the GenBank assembly RS_GCF_900770385.1. The GC content of the type genome is 26.41 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Alembosa gen. nov.

Candidatus Alembosa (NL. fem. n. *Alembosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM13634*. The type species for the genus is *Candidatus* Alembosa cibicibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Alembula annicitura sp. nov.

Candidatus Alembula annicitura (NL. fem. n. *annicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWOA01 sp003564155*. The type genome for the species is the GenBank assembly GCA_003564155.1. The GC content of the type genome is 35.31 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Alembula gen. nov.

Candidatus Alembula (NL. fem. n. *Alembula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWOA01*. The type species for the genus is *Candidatus* Alembula annicitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family

PWNZ01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voluculaceae.

Description of *Candidatus* Algebana inperatica sp. nov.

Candidatus Algebana inperatica (NL. fem. n. *inperatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5182 sp002413185*. The type genome for the species is the GenBank assembly GCA_002413185.1. The GC content of the type genome is 68.59 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Algebana gen. nov.

Candidatus Algebana (NL. fem. n. *Algebana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5182*. The type species for the genus is *Candidatus* Algebana inperatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacosaceae.

Description of *Candidatus* Algebaria lupanitudo sp. nov.

Candidatus Algebaria lupanitudo (NL. fem. n. *lupanitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LMUY01 sp009765685*. The type genome for the species is the GenBank assembly RS_GCF_009765685.1. The GC content of the type genome is 64.87 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Algebaria gen. nov.

Candidatus Algebaria (NL. fem. n. *Algebaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LMUY01*. The type species for the genus is *Candidatus* Algebaria lupanitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Algebella oblonitas sp. nov.

Candidatus Algebella oblonitas (NL. fem. n. *oblonitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-01 sp001603845*. The type genome for the species is the GenBank assembly GCA_001603845.1. The GC content of the type genome is 59.72 % and the genome length is 4.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Algebella gen. nov.

Candidatus Algebella (NL. fem. n. *Algebella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Delta-01*. The type species for the genus is *Candidatus* Algebella oblonitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Algebida sonipitudo sp. nov.

Candidatus Algebida sonipitudo (NL. fem. n. *sonipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBA01 sp009779915*. The type genome for the species is the GenBank assembly GCA_009779915.1. The GC content of the type genome is 40.39 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Algebida gen. nov.

Candidatus Algebida (NL. fem. n. *Algebida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBA01*. The type species for the genus is *Candidatus* Algebida sonipitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA5962. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenoculaceae.

Description of *Candidatus* Algebosa agricatio sp. nov.

Candidatus Algebosa agricatio (NL. fem. n. *agricatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721975 sp002721975*. The type genome for the species is the GenBank assembly GCA_002721975.1. The GC content of the type genome is 33.72 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Algebosa gen. nov.

Candidatus Algebosa (NL. fem. n. *Algebosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2721975*. The type species for the genus is *Candidatus* Algebosa agricatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Algebula irradisca sp. nov.

Candidatus Algebula irradisca (NL. fem. n. *irradisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WNDY01 sp009914555*. The type genome for the species is the GenBank assembly GCA_009914555.1. The GC content of the type genome is 69.15 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Algebula gen. nov.

Candidatus Algebula (NL. fem. n. *Algebula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WNDY01*. The type species for the genus is *Candidatus* Algebula irradisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Algibacter ammatilenta sp. nov.

Candidatus Algibacter ammatilenta (NL. fem. n. *ammatilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algibacter sp009796825*. The type genome for the species is the GenBank assembly RS_GCF_009796825.1. The GC content of the type genome is 33.33 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Algibacter atropigena sp. nov.

Candidatus Algibacter atropigena (NL. fem. n. *atropigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algibacter sp009796805*. The type genome for the species is the GenBank assembly RS_GCF_009796805.1. The GC content of the type genome is 32.47 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Algibacter nidifimonia sp. nov.

Candidatus Algibacter nidifimonia (NL. fem. n. *nidifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algibacter sp008033385*. The type genome for the species is the GenBank assembly RS_GCF_008033385.1. The GC content of the type genome is 33.22 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Algibacter direcitas sp. nov.

Candidatus Algibacter direcitas (NL. fem. n. *direcitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algibacter_B sp003143755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003143755.1. The GC content of the type genome is 31.86 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Algifana extipatica sp. nov.

Candidatus Algifana extipatica (NL. fem. n. *extipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDIZ01 sp013003465*. The type genome for the species is the GenBank assembly GCA_013003465.1. The GC content of the type genome is 66.43 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Algifana gen. nov.

Candidatus Algifana (NL. fem. n. *Algifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDIZ01*. The type species for the genus is *Candidatus* Algifana extipatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Algifaria hegumitia sp. nov.

Candidatus Algifaria hegumitia (NL. fem. n. *hegumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABQT01 sp011391295*. The type genome for the species is the GenBank assembly GCA_011391295.1. The GC content of the type genome is 67.99 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Algifaria gen. nov.

Candidatus Algifaria (NL. fem. n. *Algifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABQT01*. The type species for the genus is *Candidatus* Algifaria hegumitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Algifia catecitoga sp. nov.

Candidatus Algifia catecitoga (NL. fem. n. *catecitoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDAQ01 sp013289115*. The type genome for the species is the GenBank assembly GCA_013289115.1. The GC content of the type genome is 38.94 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Algifia gen. nov.

Candidatus Algifia (NL. fem. n. *Algifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDAQ01*. The type species for the genus is *Candidatus* Algifia catecitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Algifida extinatio sp. nov.

Candidatus Algifida extinatio (NL. fem. n. *extinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZAN01 sp012514315*. The type genome for the species is the GenBank assembly GCA_012514315.1. The GC content of the type genome is 59.56 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Algifida gen. nov.

Candidatus Algifida (NL. fem. n. *Algifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZAN01*. The type species for the genus is *Candidatus* Algifida extinatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B4-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubulaceae.

Description of *Candidatus* Algifosa detecitoga sp. nov.

Candidatus Algifosa detecitoga (NL. fem. n. *detecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZME01 sp012798975*. The type genome for the species is the GenBank assembly GCA_012798975.1. The GC content of the type genome is 37.38 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Algifosa gen. nov.

Candidatus Algifosa (NL. fem. n. *Algifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZME01*. The type species for the genus is *Candidatus* Algifosa detecitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Algifula palifitrix sp. nov.

Candidatus Algifula palifitrix (NL. fem. n. *palifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHJ01 sp013298325*. The type genome for the species is the GenBank assembly GCA_013298325.1. The GC content of the type genome is 65.08 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Algifula gen. nov.

Candidatus Algifula (NL. fem. n. *Algifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHJ01*. The type species for the genus is *Candidatus* Algifula palifitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Algorimicrobium benifitica sp. nov.

Candidatus Algorimicrobium benifitica (NL. fem. n. *benifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algorimicrobium sp002414705*. The type genome for the species is the GenBank assembly GCA_002414705.1. The GC content of the type genome is 33.02 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Algoriphagus aprugitrix sp. nov.

Candidatus Algoriphagus aprugitrix (NL. fem. n. *aprugitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algoriphagus sp013373335*. The type genome for the species is the GenBank assembly GCA_013373335.1. The GC content of the type genome is 40.7 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Algoriphagus eclipago sp. nov.

Candidatus Algoriphagus eclipago (NL. fem. n. *eclipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algoriphagus sp007655305*. The type genome for the species is the GenBank assembly RS_GCF_007655305.1. The GC content of the type genome is 39.57 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Algoriphagus fibicitoga sp. nov.

Candidatus Algoriphagus fibicitoga (NL. fem. n. *fibicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algoriphagus sp903952135*. The type genome for the species is the GenBank assembly GCA_903882755.1. The GC content of the type genome is 45.38 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Algoriphagus hirudimonia sp. nov.

Candidatus Algoriphagus hirudimonia (NL. fem. n. *hirudimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algoriphagus sp002002735*. The type genome for the species is the GenBank assembly RS_GCF_002002735.1. The GC content of the type genome is 44.12 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Algoriphagus inhabivita sp. nov.

Candidatus Algoriphagus inhabivita (NL. fem. n. *inhabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algoriphagus sp009885605*. The type genome for the species is the GenBank assembly GCA_009885605.1. The GC content of the type genome is 42.17 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Algoriphagus inrefitas sp. nov.

Candidatus Algoriphagus inrefitas (NL. fem. n. *inrefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algoriphagus sp005788235*. The type genome for the species is the GenBank assembly GCA_005788235.1. The GC content of the type genome is 44.15 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Algoriphagus oblanitio sp. nov.

Candidatus Algoriphagus oblanitio (NL. fem. n. *oblanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algoriphagus sp014324365*. The type genome for the species is the GenBank assembly RS_GCF_014324365.1. The GC content of the type genome is 43.62 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Algoriphagus plostetta sp. nov.

Candidatus Algoriphagus plostetta (NL. fem. n. *plostetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Algoriphagus sp013373065*. The type genome for the species is the GenBank assembly GCA_013373065.1. The GC content of the type genome is 40.8 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Aliarcobacter bisulicella sp. nov.

Candidatus Aliarcobacter bisulicella (NL. fem. n. *bisulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliarcobacter sp003063295*. The type genome for the species is the GenBank assembly RS_GCF_003063295.1. The GC content of the type genome is 26.8 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Aliarcobacter vatilimonas sp. nov.

Candidatus Aliarcobacter vatilimonas (NL. fem. n. *vatilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliarcobacter sp003316695*. The type genome for the species is the GenBank assembly RS_GCF_003316685.1. The GC content of the type genome is 27.39 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Aliidiomarina conamessa sp. nov.

Candidatus Aliidiomarina conamessa (NL. fem. n. *conamessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliidiomarina sp000218785*. The type genome for the species is the GenBank assembly RS_GCF_000218785.1. The GC content of the type genome is 45.5 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Aliidiomarina dilogitura sp. nov.

Candidatus Aliidiomarina dilogitura (NL. fem. n. *dilogitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliidiomarina sp003316875*. The type genome for the species is the GenBank assembly RS_GCF_003316875.1. The GC content of the type genome is 49.58 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Aliidiomarina inmacedo sp. nov.

Candidatus Aliidiomarina inmacedo (NL. fem. n. *inmacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Aliidiomarina sp003290085*. The type genome for the species is the GenBank assembly RS_GCF_003290085.1. The GC content of the type genome is 45.48 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Aliidiomarina innulibra sp. nov.

Candidatus Aliidiomarina innulibra (NL. fem. n. *innulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliidiomarina sp007096385*. The type genome for the species is the GenBank assembly RS_GCF_007096385.1. The GC content of the type genome is 49.7 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Aliidiomarina nivomimonas sp. nov.

Candidatus Aliidiomarina nivomimonas (NL. fem. n. *nivomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliidiomarina sp001458075*. The type genome for the species is the GenBank assembly GCA_001314555.1. The GC content of the type genome is 47.49 % and the genome length is 2.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-O from microbial mat sample; contains cyanobacterium Phormidium OSCR and associated heterotrophs".

Description of *Candidatus* Aliiglaciecola vanidiforma sp. nov.

Candidatus Aliiglaciecola vanidiforma (NL. fem. n. *vanidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliiglaciecola sp007197995*. The type genome for the species is the GenBank assembly RS_GCF_007197995.1. The GC content of the type genome is 43.24 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Aliihoeflea ceromitas sp. nov.

Candidatus Aliihoeflea ceromitas (NL. fem. n. *ceromitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliihoeflea sp000497755*. The type genome for the species is the

GenBank assembly RS_GCF_000497755.1. The GC content of the type genome is 64.38 % and the genome length is 4.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biofilter treating arsenic-rich groundwater".

Description of *Candidatus* Aliikangiella infucessa sp. nov.

Candidatus Aliikangiella infucessa (NL. fem. n. *infucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliikangiella sp007004725*. The type genome for the species is the GenBank assembly RS_GCF_007004725.1. The GC content of the type genome is 41.45 % and the genome length is 7.04 Mbp.

Description of *Candidatus* Aliiroseovarius orniticula sp. nov.

Candidatus Aliiroseovarius orniticula (NL. fem. n. *orniticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliiroseovarius sp002340515*. The type genome for the species is the GenBank assembly GCA_002340515.1. The GC content of the type genome is 55.71 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Aliiroseovarius patibigena sp. nov.

Candidatus Aliiroseovarius patibigena (NL. fem. n. *patibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliiroseovarius sp010500215*. The type genome for the species is the GenBank assembly RS_GCF_010500215.1. The GC content of the type genome is 58.94 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Aliiroseovarius siteledo sp. nov.

Candidatus Aliiroseovarius siteledo (NL. fem. n. *siteledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliiroseovarius sp002367285*. The type genome for the species is the GenBank assembly GCA_002367285.1. The GC content of the type genome is 60.91 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Aliivibrio culiligena sp. nov.

Candidatus Aliivibrio culiligena (NL. fem. n. *culiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliivibrio sp001690985*. The type genome for the species is the GenBank assembly RS_GCF_001691025.1. The GC content of the type genome is 38.66 % and the genome length is 4.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Filtered Seawater; 1-5 micron fraction".

Description of *Candidatus* Aliivibrio inmoritas sp. nov.

Candidatus Aliivibrio inmoritas (NL. fem. n. *inmoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliivibrio sp900312675*. The type genome for the species is the GenBank assembly RS_GCF_900312675.1. The GC content of the type genome is 39.02 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Alismaria chalbisca sp. nov.

Candidatus Alismaria chalbisca (NL. fem. n. *chalbisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1250 sp013697785*. The type genome for the species is the GenBank assembly GCA_013697785.1. The GC content of the type genome is 65.1 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Alismaria gen. nov.

Candidatus Alismaria (NL. fem. n. *Alismaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1250*. The type species for the genus is *Candidatus* Alismaria chalbisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alismaria dilogitio sp. nov.

Candidatus Alismaria dilogitio (NL. fem. n. *dilogitio* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1250 sp003142495*. The type genome for the species is the GenBank assembly GCA_003142495.1. The GC content of the type genome is 65.72 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Alismella adtenatio sp. nov.

Candidatus Alismella adtenatio (NL. fem. n. *adtenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UPXZ01 sp900498215*. The type genome for the species is the GenBank assembly GCA_900498215.1. The GC content of the type genome is 35.02 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Alismella gen. nov.

Candidatus Alismella (NL. fem. n. *Alismella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UPXZ01*. The type species for the genus is *Candidatus* Alismella adtenatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alismella alluvigena sp. nov.

Candidatus Alismella alluvigena (NL. fem. n. *alluvigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UPXZ01 sp012837935*. The type genome for the species is the GenBank assembly GCA_012837935.1. The GC content of the type genome is 37.78 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Alismella muriligena sp. nov.

Candidatus Alismella muriligena (NL. fem. n. *muriligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UPXZ01 sp012518275*. The type genome for the species is the GenBank assembly GCA_012518275.1. The GC content of the type genome is 38.58 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Alismella papavetta sp. nov.

Candidatus Alismella papavetta (NL. fem. n. *papavetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UPXZ01 sp009929445*. The type genome for the species is the GenBank assembly GCA_009929445.1. The GC content of the type genome is 41.84 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Alismella virecago sp. nov.

Candidatus Alismella virecago (NL. fem. n. *virecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UPXZ01 sp012523295*. The type genome for the species is the GenBank assembly GCA_012523295.1. The GC content of the type genome is 38.55 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Alismia tomacitio sp. nov.

Candidatus Alismia tomacitio (NL. fem. n. *tomacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCUN01 sp004297655*. The type genome for the species is the GenBank assembly GCA_004297655.1. The GC content of the type genome is 66.62 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Alismia gen. nov.

Candidatus Alismia (NL. fem. n. *Alismia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCUN01*. The type species for the genus is *Candidatus* Alismia tomacitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SCN-69-37. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Democulaceae.

Description of *Candidatus* Alismida ciminugo sp. nov.

Candidatus Alismida ciminugo (NL. fem. n. *ciminugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11368 sp900772745*. The type genome for the species is the GenBank assembly RS_GCF_900772745.1. The GC content of the type genome is 42.19 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Alismida gen. nov.

Candidatus Alismida (NL. fem. n. *Alismida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11368*. The type species for the genus is *Candidatus* Alismida ciminugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3700*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicarellaceae.

Description of *Candidatus* Alismosa adsucilega sp. nov.

Candidatus Alismosa adsucilega (NL. fem. n. *adsucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-48-10 sp001817755*. The type genome for the species is the GenBank assembly GCA_001817755.1. The GC content of the type genome is 48.44 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Alismosa gen. nov.

Candidatus Alismosa (NL. fem. n. *Alismosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *2-01-FULL-48-10*. The type species for the genus is *Candidatus* Alismosa adsucilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alistipes adhosax sp. nov.

Candidatus Alistipes adhosax (NL. fem. n. *adhosax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900766655*. The type genome for the species is the GenBank assembly GCA_900766655.1. The GC content of the type genome is 50.52 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Alistipes adnumivita sp. nov.

Candidatus Alistipes adnumivita (NL. fem. n. *adnumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900553175*. The type genome for the species is the GenBank assembly GCA_900553175.1. The GC content of the type genome is 63.79 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Alistipes aruspitio sp. nov.

Candidatus Alistipes aruspitio (NL. fem. n. *aruspitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900761235*. The type genome for the species is the GenBank assembly GCA_900761235.1. The GC content of the type genome is 53.54 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Alistipes bacifetta sp. nov.

Candidatus Alistipes bacifetta (NL. fem. n. *bacifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900768015*. The type genome for the species is the GenBank assembly GCA_900768015.1. The GC content of the type genome is 51.36 %

and the genome length is 1.89 Mbp.

Description of *Candidatus* Alistipes casabitia sp. nov.

Candidatus Alistipes casabitia (NL. fem. n. *casabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900769525*. The type genome for the species is the GenBank assembly GCA_900769525.1. The GC content of the type genome is 48.8 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Alistipes decamago sp. nov.

Candidatus Alistipes decamago (NL. fem. n. *decamago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900768045*. The type genome for the species is the GenBank assembly GCA_900768045.1. The GC content of the type genome is 47.57 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Alistipes defunimonia sp. nov.

Candidatus Alistipes defunimonia (NL. fem. n. *defunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900548155*. The type genome for the species is the GenBank assembly GCA_900548155.1. The GC content of the type genome is 54.27 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Alistipes demadatio sp. nov.

Candidatus Alistipes demadatio (NL. fem. n. *demadatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900769445*. The type genome for the species is the GenBank assembly GCA_900769445.1. The GC content of the type genome is 46.89 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Alistipes denomibula sp. nov.

Candidatus Alistipes denomibula (NL. fem. n. *denomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900290115*. The type genome for the species is the GenBank assembly RS_GCF_900290115.1. The GC content of the type genome is 61.65 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Alistipes denunitia sp. nov.

Candidatus Alistipes denunitia (NL. fem. n. *denunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp002293345*. The type genome for the species is the GenBank assembly GCA_002293345.1. The GC content of the type genome is 54.58 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Alistipes depopivita sp. nov.

Candidatus Alistipes depopivita (NL. fem. n. *depopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp009774895*. The type genome for the species is the GenBank assembly GCA_009774895.1. The GC content of the type genome is 64.38 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Alistipes dicanilenta sp. nov.

Candidatus Alistipes dicanilenta (NL. fem. n. *dicanilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900552955*. The type genome for the species is the GenBank assembly GCA_900552955.1. The GC content of the type genome is 62.61 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Alistipes dilacastra sp. nov.

Candidatus Alistipes dilacastra (NL. fem. n. *dilacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900549305*. The type genome for the species is the GenBank assembly GCA_900765655.1. The GC content of the type genome is 56.72 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Alistipes docibiforma sp. nov.

Candidatus Alistipes docibiforma (NL. fem. n. *docibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900542505*. The type genome for the species is the GenBank assembly GCA_900542505.1. The GC content of the type genome is 61.97 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Alistipes extoribula sp. nov.

Candidatus Alistipes extoribula (NL. fem. n. *extoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900760675*. The type genome for the species is the GenBank assembly GCA_900760675.1. The GC content of the type genome is 54.2 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Alistipes fetifitio sp. nov.

Candidatus Alistipes fetifitio (NL. fem. n. *fetifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900541585*. The type genome for the species is the GenBank assembly GCA_900762385.1. The GC content of the type genome is 59.55 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Alistipes gabiniforma sp. nov.

Candidatus Alistipes gabiniforma (NL. fem. n. *gabiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900546065*. The type genome for the species is the GenBank assembly GCA_900546065.1. The GC content of the type genome is 56.88 %

and the genome length is 2.56 Mbp.

Description of *Candidatus* Alistipes hirudilega sp. nov.

Candidatus Alistipes hirudilega (NL. fem. n. *hirudilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp001941065*. The type genome for the species is the GenBank assembly GCA_001941065.1. The GC content of the type genome is 58.77 % and the genome length is 3.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Zagget the koala".

Description of *Candidatus* Alistipes humecetta sp. nov.

Candidatus Alistipes humecetta (NL. fem. n. *humecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp902363575*. The type genome for the species is the GenBank assembly RS_GCF_902363575.1. The GC content of the type genome is 58.46 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Alistipes impirago sp. nov.

Candidatus Alistipes impirago (NL. fem. n. *impirago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900770585*. The type genome for the species is the GenBank assembly GCA_900770585.1. The GC content of the type genome is 52.69 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Alistipes lametentia sp. nov.

Candidatus Alistipes lametentia (NL. fem. n. *lametentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp000434235*. The type genome for the species is the GenBank assembly GCA_003514405.1. The GC content of the type genome is 61.98 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Alistipes monoditura sp. nov.

Candidatus Alistipes monoditura (NL. fem. n. *monoditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp902388705*. The type genome for the species is the GenBank assembly GCA_902388705.1. The GC content of the type genome is 58.74 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Alistipes nicotousia sp. nov.

Candidatus Alistipes nicotousia (NL. fem. n. *nicotousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900769405*. The type genome for the species is the GenBank assembly GCA_900769405.1. The GC content of the type genome is 53.04 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Alistipes notabilenta sp. nov.

Candidatus Alistipes notabilenta (NL. fem. n. *notabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp002358415*. The type genome for the species is the GenBank assembly GCA_003513905.1. The GC content of the type genome is 65.85 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Alistipes obnupibula sp. nov.

Candidatus Alistipes obnupibula (NL. fem. n. *obnupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900770635*. The type genome for the species is the GenBank assembly GCA_900770635.1. The GC content of the type genome is 48.92 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Alistipes obtecitia sp. nov.

Candidatus Alistipes obtecitia (NL. fem. n. *obtecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900769745*. The type genome for the species is the GenBank assembly GCA_900769745.1. The GC content of the type genome is 48.54 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Alistipes pacifigena sp. nov.

Candidatus Alistipes pacifigena (NL. fem. n. *pacifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp002362235*. The type genome for the species is the GenBank assembly GCA_009774865.1. The GC content of the type genome is 56.76 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Alistipes panifastra sp. nov.

Candidatus Alistipes panifastra (NL. fem. n. *panifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900544265*. The type genome for the species is the GenBank assembly GCA_900752765.1. The GC content of the type genome is 63.49 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Alistipes robigitas sp. nov.

Candidatus Alistipes robigitas (NL. fem. n. *robigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp002428825*. The type genome for the species is the GenBank assembly GCA_002428825.1. The GC content of the type genome is 59.11 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Alistipes telefilenta sp. nov.

Candidatus Alistipes telefilenta (NL. fem. n. *telefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp003979135*. The type genome for the species is the GenBank assembly GCA_013316905.1. The GC content of the type genome is 54.96 %

and the genome length is 1.78 Mbp.

Description of *Candidatus* Alistipes tirocitia sp. nov.

Candidatus Alistipes tirocitia (NL. fem. n. *tirocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900021155*. The type genome for the species is the GenBank assembly GCA_900543355.1. The GC content of the type genome is 60.86 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Alistipes turifousia sp. nov.

Candidatus Alistipes turifousia (NL. fem. n. *turifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900550925*. The type genome for the species is the GenBank assembly GCA_900550925.1. The GC content of the type genome is 55.33 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Alistipes vilipiforma sp. nov.

Candidatus Alistipes vilipiforma (NL. fem. n. *vilipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp002161445*. The type genome for the species is the GenBank assembly RS_GCF_002161445.1. The GC content of the type genome is 59.4 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Alistipes volucibula sp. nov.

Candidatus Alistipes volucibula (NL. fem. n. *volucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes sp900550375*. The type genome for the species is the GenBank assembly GCA_900550375.1. The GC content of the type genome is 57.89 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Alistipes brasmicula sp. nov.

Candidatus Alistipes brasmicula (NL. fem. n. *brasmicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes_A sp900549685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900549685.1. The GC content of the type genome is 57.97 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Alistipes nugivitoga sp. nov.

Candidatus Alistipes nugivitoga (NL. fem. n. *nugivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes_A sp900240235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900240235.1. The GC content of the type genome is 54.3 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Alistipes pinigivita sp. nov.

Candidatus Alistipes pinigivita (NL. fem. n. *pinigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes_A sp900546005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900546005.1. The GC content of the type genome is 51.23 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Alistipes repagibra sp. nov.

Candidatus Alistipes repagibra (NL. fem. n. *repagibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes_A sp900545315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_900752635.1. The GC content of the type genome is 49.45 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Alistipes visocax sp. nov.

Candidatus Alistipes visocax (NL. fem. n. *visocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alistipes_A sp900539755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900756465.1. The GC content of the type genome is 46.21 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Aliterella diritimonia sp. nov.

Candidatus Aliterella diritimonia (NL. fem. n. *diritimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliterella sp000332075*. The type genome for the species is the GenBank assembly RS_GCF_000332075.2. The GC content of the type genome is 41.67 % and the genome length is 4.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rock scraping".

Description of *Candidatus* Aliterella exadvitudo sp. nov.

Candidatus Aliterella exadvitudo (NL. fem. n. *exadvitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliterella sp013698215*. The type genome for the species is the GenBank assembly GCA_013698215.1. The GC content of the type genome is 42.06 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Aliterella lucificella sp. nov.

Candidatus Aliterella lucificella (NL. fem. n. *lucificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aliterella sp003003885*. The type genome for the species is the GenBank assembly RS_GCF_003003885.1. The GC content of the type genome is 41.81

% and the genome length is 5.23 Mbp.

Description of *Candidatus* Alkalibacillus rudecedo sp. nov.

Candidatus Alkalibacillus rudecedo (NL. fem. n. *rudecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalibacillus sp014595945*. The type genome for the species is the GenBank assembly RS_GCF_014595945.1. The GC content of the type genome is 37.96 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Alkalibacter obtunastra sp. nov.

Candidatus Alkalibacter obtunastra (NL. fem. n. *obtunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalibacter sp003446375*. The type genome for the species is the GenBank assembly GCA_003446375.1. The GC content of the type genome is 38.4 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Alkalibacterium aggenetta sp. nov.

Candidatus Alkalibacterium aggenetta (NL. fem. n. *aggenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalibacterium sp000585255*. The type genome for the species is the GenBank assembly RS_GCF_000585255.1. The GC content of the type genome is 44.74 % and the genome length is 2.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Lonar Lake".

Description of *Candidatus* Alkalibacterium decomitia sp. nov.

Candidatus Alkalibacterium decomitia (NL. fem. n. *decomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalibacterium sp002500855*. The type genome for the species is the GenBank assembly GCA_002500855.1. The GC content of the type genome is 39.21 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Alkalibacterium delecetta sp. nov.

Candidatus Alkalibacterium delecetta (NL. fem. n. *delecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalibacterium sp007692455*. The type genome for the species is the GenBank assembly GCA_007692455.1. The GC content of the type genome is 41.78 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Alkalibacterium uxorcitura sp. nov.

Candidatus Alkalibacterium uxorcitura (NL. fem. n. *uxorcitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalibacterium sp001885615*. The type genome for the species is the GenBank assembly RS_GCF_001885615.1. The GC content of the type genome is 38.92 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Alkalicoccus dapifessa sp. nov.

Candidatus Alkalicoccus dapifessa (NL. fem. n. *dapifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalicoccus sp007692495*. The type genome for the species is the GenBank assembly GCA_007692495.1. The GC content of the type genome is 46.47 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Alkalicoccus ossififorma sp. nov.

Candidatus Alkalicoccus ossififorma (NL. fem. n. *ossififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalicoccus sp006965545*. The type genome for the species is the GenBank assembly RS_GCF_006965545.2. The GC content of the type genome is 43.08 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Alkalicoccus rosaritica sp. nov.

Candidatus Alkalicoccus rosaritica (NL. fem. n. *rosaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalicoccus sp003560495*. The type genome for the species is the GenBank assembly GCA_003560495.1. The GC content of the type genome is 45.93 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Alkalilacustris bucolitoga sp. nov.

Candidatus Alkalilacustris bucolitoga (NL. fem. n. *bucolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalilacustris sp007128865*. The type genome for the species is the GenBank assembly GCA_007117935.1. The GC content of the type genome is 67.18 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Alkalilacustris cuticentia sp. nov.

Candidatus Alkalilacustris cuticentia (NL. fem. n. *cuticentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalilacustris sp002967695*. The type genome for the species is the GenBank assembly RS_GCF_002967695.1. The GC content of the type genome is 68.25 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Alkalilacustris dececetta sp. nov.

Candidatus Alkalilacustris dececetta (NL. fem. n. *dececetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalilacustris sp003551745*. The type genome for the species is the GenBank assembly GCA_003551745.1. The GC content of the type genome is 69.03 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Alkalilacustris indilitudo sp. nov.

Candidatus Alkalilacustris indilitudo (NL. fem. n. *indilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalilacustris sp007121055*. The type genome for the species is the GenBank assembly GCA_007121055.1. The GC content of the type genome is 70.6 %

and the genome length is 2.59 Mbp.

Description of *Candidatus* Alkalilacustris innumimonia sp. nov.

Candidatus Alkalilacustris innumimonia (NL. fem. n. *innumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalilacustris sp007129775*. The type genome for the species is the GenBank assembly GCA_007129775.1. The GC content of the type genome is 67.8 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Alkalilacustris insiniforma sp. nov.

Candidatus Alkalilacustris insiniforma (NL. fem. n. *insiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalilacustris sp007126375*. The type genome for the species is the GenBank assembly GCA_007126375.1. The GC content of the type genome is 69.2 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Alkalilacustris istinitia sp. nov.

Candidatus Alkalilacustris istinitia (NL. fem. n. *istinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalilacustris sp003558415*. The type genome for the species is the GenBank assembly GCA_003558415.1. The GC content of the type genome is 66.77 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Alkalilacustris latibiforma sp. nov.

Candidatus Alkalilacustris latibiforma (NL. fem. n. *latibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalilacustris sp003550665*. The type genome for the species is the GenBank assembly GCA_007125815.1. The GC content of the type genome is 68.76 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Alkalilacustris sugilentia sp. nov.

Candidatus Alkalilacustris sugilentia (NL. fem. n. *sugilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalilacustris sp007131685*. The type genome for the species is the GenBank assembly GCA_007124905.1. The GC content of the type genome is 69.47 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Alkalimonas invecousia sp. nov.

Candidatus Alkalimonas invecousia (NL. fem. n. *invecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalimonas sp007117525*. The type genome for the species is the GenBank assembly GCA_007117525.1. The GC content of the type genome is 53.94 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Alkaliphilus inaspax sp. nov.

Candidatus Alkaliphilus inaspax (NL. fem. n. *inaspax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkaliphilus_C sp009017275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009017275.1. The GC content of the type genome is 33.87 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Alkalispirochaeta appicitoga sp. nov.

Candidatus Alkalispirochaeta appicitoga (NL. fem. n. *appicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalispirochaeta sp007117185*. The type genome for the species is the GenBank assembly GCA_007117185.1. The GC content of the type genome is 61.36 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Alkalispirochaeta conipitia sp. nov.

Candidatus Alkalispirochaeta conipitia (NL. fem. n. *conipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalispirochaeta sp007695175*. The type genome for the species is the GenBank assembly GCA_007695175.1. The GC content of the type genome is 61.2 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Alkalispirochaeta ignicibra sp. nov.

Candidatus Alkalispirochaeta ignicibra (NL. fem. n. *ignicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalispirochaeta sp002313505*. The type genome for the species is the GenBank assembly GCA_002313505.1. The GC content of the type genome is 64.54 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Alkalispirochaeta saburitio sp. nov.

Candidatus Alkalispirochaeta saburitio (NL. fem. n. *saburitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkalispirochaeta sp007130865*. The type genome for the species is the GenBank assembly GCA_003557615.1. The GC content of the type genome is 59.91 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Alkanindiges indifax sp. nov.

Candidatus Alkanindiges indifax (NL. fem. n. *indifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alkanindiges sp004173455*. The type genome for the species is the GenBank assembly GCA_004173455.1. The GC content of the type genome is 46.13 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Alkanindiges vicatisca sp. nov.

Candidatus Alkanindiges vicatisca (NL. fem. n. *vicatisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Alkanindiges sp001982605*. The type genome for the species is the GenBank assembly RS_GCF_001982605.1. The GC content of the type genome is 46.43 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Allacaria domicitudo sp. nov.

Candidatus Allacaria domicitudo (NL. fem. n. *domicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWDV01 sp002070715*. The type genome for the species is the GenBank assembly GCA_002070715.1. The GC content of the type genome is 61.18 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Allacaria gen. nov.

Candidatus Allacaria (NL. fem. n. *Allacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWDV01*. The type species for the genus is *Candidatus* Allacaria domicitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NGM72-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubulaceae.

Description of *Candidatus* Allacella hexamago sp. nov.

Candidatus Allacella hexamago (NL. fem. n. *hexamago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSSM01 sp011331105*. The type genome for the species is the GenBank assembly GCA_011331105.1. The GC content of the type genome is 33.8 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Allacella gen. nov.

Candidatus Allacella (NL. fem. n. *Allacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSSM01*. The type species for the genus is *Candidatus* Allacella hexamago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-1AR*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufosaceae.

Description of *Candidatus* Allacia triscedo sp. nov.

Candidatus Allacia triscedo (NL. fem. n. *triscedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1257 sp003135995*. The type genome for the species is the GenBank assembly GCA_003135995.1. The GC content of the type genome is 33.05 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Allacia gen. nov.

Candidatus Allacia (NL. fem. n. *Allacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1257*. The type species for the genus is *Candidatus* Allacia triscedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-1AR*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufosaceae.

Description of *Candidatus* Allacosa biparitrix sp. nov.

Candidatus Allacosa biparitrix (NL. fem. n. *biparitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6154 sp002422375*. The type genome for the species is the GenBank assembly GCA_002422375.1. The GC content of the type genome is 55.17 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Allacosa gen. nov.

Candidatus Allacosa (NL. fem. n. *Allacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6154*. The type species for the genus is *Candidatus* Allacosa

biparitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Allacosa malogilenta sp. nov.

Candidatus Allacosa malogilenta (NL. fem. n. *malogilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6154 sp903896585*. The type genome for the species is the GenBank assembly GCA_903896585.1. The GC content of the type genome is 53.8 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Allacula accomigena sp. nov.

Candidatus Allacula accomigena (NL. fem. n. *accomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB9 sp001567255*. The type genome for the species is the GenBank assembly GCA_001567255.1. The GC content of the type genome is 37.72 % and the genome length is 3.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Allacula gen. nov.

Candidatus Allacula (NL. fem. n. *Allacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB9*. The type species for the genus is *Candidatus* Allacula accomigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allacula bimotilenta sp. nov.

Candidatus Allacula bimotilenta (NL. fem. n. *bimotilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB9 sp014379665*. The type genome for the species is the GenBank assembly GCA_014379665.1. The GC content of the type genome is 37.75 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Allacula penecessa sp. nov.

Candidatus Allacula penecessa (NL. fem. n. *penecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB9 sp002482845*. The type genome for the species is the GenBank assembly GCA_002482845.1. The GC content of the type genome is 34.92 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Allapana monumicella sp. nov.

Candidatus Allapana monumicella (NL. fem. n. *monumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-62 sp003599595*. The type genome for the species is the GenBank assembly GCA_003599595.1. The GC content of the type genome is 35.01 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Allapana gen. nov.

Candidatus Allapana (NL. fem. n. *Allapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-62*. The type species for the genus is *Candidatus* Allapana monumicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA1-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefellaceae.

Description of *Candidatus* Allaparia immigentia sp. nov.

Candidatus Allaparia immigentia (NL. fem. n. *immigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1858 sp900555705*. The type genome for the species is the GenBank assembly GCA_900555705.1. The GC content of the type genome is 58.37 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Allaparia gen. nov.

Candidatus Allaparia (NL. fem. n. *Allaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1858*. The type species for the genus is *Candidatus* Allaparia immigentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allapella cacalessa sp. nov.

Candidatus Allapella cacalessa (NL. fem. n. *cacalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-50-10 sp001824635*. The type genome for the species is the GenBank assembly GCA_001824635.1. The GC content of the type genome is 49.52 % and the genome length is 2.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Allapella gen. nov.

Candidatus Allapella (NL. fem. n. *Allapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-50-10*. The type species for the genus is *Candidatus* Allapella cacalessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12454*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucellaceae.

Description of *Candidatus* Allapia inabsitio sp. nov.

Candidatus Allapia inabsitio (NL. fem. n. *inabsitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG36 sp003242205*. The type genome for the species is the GenBank assembly GCA_003242205.1. The GC content of the type genome is 60.96 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Allapia gen. nov.

Candidatus Allapia (NL. fem. n. *Allapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG36*. The type species for the genus is *Candidatus* Allapia inabsitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Allapida locelilega sp. nov.

Candidatus Allapida locelilega (NL. fem. n. *locelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-49-23 sp001798855*. The type genome for the species is the GenBank assembly GCA_001798855.1. The GC content of the type genome is 49.05 % and the genome length is 3.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Allapida gen. nov.

Candidatus Allapida (NL. fem. n. *Allapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-49-23*. The type species for the genus is *Candidatus* Allapida locelilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponidaceae.

Description of *Candidatus* Allaposa agrimitoga sp. nov.

Candidatus Allaposa agrimitoga (NL. fem. n. *agrimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUTS01 sp012841935*. The type genome for the species is the GenBank assembly GCA_012841935.1. The GC content of the type genome is 37.52 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Allaposa gen. nov.

Candidatus Allaposa (NL. fem. n. *Allaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUTS01*. The type species for the genus is *Candidatus* Allaposa agrimitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Taraxidaceae.

Description of *Candidatus* Allaposa offuniforma sp. nov.

Candidatus Allaposa offuniforma (NL. fem. n. *offuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUTS01 sp012842035*. The type genome for the species is the GenBank assembly GCA_012842035.1. The GC content of the type genome is 38.39 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Allapula vitabatica sp. nov.

Candidatus Allapula vitabatica (NL. fem. n. *vitabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYH01 sp009692865*. The type genome for the species is the GenBank assembly GCA_009692865.1. The GC content of the type genome is 63.8 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Allapula gen. nov.

Candidatus Allapula (NL. fem. n. *Allapula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYH01*. The type species for the genus is *Candidatus* Allapula vitabatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2717565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conarosaceae.

Description of *Candidatus* Allibana artufitura sp. nov.

Candidatus Allibana artufitura (NL. fem. n. *artufitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1240 sp012519415*. The type genome for the species is the GenBank assembly GCA_012519415.1. The GC content of the type genome is 34.98 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Allibana gen. nov.

Candidatus Allibana (NL. fem. n. *Allibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1240*. The type species for the genus is *Candidatus* Allibana artufitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allibana robigicula sp. nov.

Candidatus Allibana robigicula (NL. fem. n. *robigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1240 sp002308875*. The type genome for the species is the GenBank assembly GCA_002308875.1. The GC content of the type genome is 41.79 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Allibana tegumitas sp. nov.

Candidatus Allibana tegumitas (NL. fem. n. *tegumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1240 sp001603145*. The type genome for the species is the GenBank assembly GCA_001603145.1. The GC content of the type genome is 44.71 % and the genome length is 2.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Allibana totiditio sp. nov.

Candidatus Allibana totiditio (NL. fem. n. *totiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1240 sp902797925*. The type genome for the species is the GenBank assembly GCA_902797925.1. The GC content of the type genome is 43.14 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Allibaria ducilitoga sp. nov.

Candidatus Allibaria ducilitoga (NL. fem. n. *ducilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B7-G4 sp003647675*. The type genome for the species is the GenBank assembly GCA_003647675.1. The GC content of the type genome is 38.51 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Allibaria gen. nov.

Candidatus Allibaria (NL. fem. n. *Allibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B7-G4*. The type species for the genus is *Candidatus* Allibaria ducilitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12075*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenociaceae.

Description of *Candidatus* Allibella acrobetta sp. nov.

Candidatus Allibella acrobetta (NL. fem. n. *acrobetta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691785 sp002691785*. The type genome for the species is the GenBank assembly GCA_002691785.1. The GC content of the type genome is 31.62 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Allibella gen. nov.

Candidatus Allibella (NL. fem. n. *Allibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2691785*. The type species for the genus is *Candidatus* Allibella acrobetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1611*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilariaceae.

Description of *Candidatus* Allibella homulivita sp. nov.

Candidatus Allibella homulivita (NL. fem. n. *homulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691785 sp902611135*. The type genome for the species is the GenBank assembly GCA_902611135.1. The GC content of the type genome is 31.94 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Allibia arcipivita sp. nov.

Candidatus Allibia arcipivita (NL. fem. n. *arcipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWCM01 sp002070055*. The type genome for the species is the GenBank assembly GCA_002070055.1. The GC content of the type genome is 39.45 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Allibia gen. nov.

Candidatus Allibia (NL. fem. n. *Allibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCM01*. The type species for the genus is *Candidatus* Allibia arcipivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYA2-FULL-43-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denavulaceae.

Description of *Candidatus* Allibida demogigena sp. nov.

Candidatus Allibida demogigena (NL. fem. n. *demogigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JKG1 sp000526415*. The type genome for the species is the GenBank assembly RS_GCF_000526415.1. The GC content of the type genome is 65.77 % and the genome length is 4.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Allibida gen. nov.

Candidatus Allibida (NL. fem. n. *Allibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JKG1*. The type species for the genus is *Candidatus* Allibida demogigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allibosa ammulimonia sp. nov.

Candidatus Allibosa ammulimonia (NL. fem. n. *ammulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JSC-12 sp000309945*. The type genome for the species is the GenBank assembly RS_GCF_000309945.1. The GC content of the type genome is 47.49 % and the genome length is 5.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Allibosa gen. nov.

Candidatus Allibosa (NL. fem. n. *Allibosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JSC-12*. The type species for the genus is *Candidatus* Allibosa ammulimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allibula maligousia sp. nov.

Candidatus Allibula maligousia (NL. fem. n. *maligousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OmCyn01 sp007996965*. The type genome for the species is the GenBank assembly RS_GCF_007996965.1. The GC content of the type genome is 48.49 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Allibula gen. nov.

Candidatus Allibula (NL. fem. n. *Allibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OmCyn01*. The type species for the genus is *Candidatus* Allibula maligousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allobacillus adtolago sp. nov.

Candidatus Allobacillus adtolago (NL. fem. n. *adtolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allobacillus sp007559355*. The type genome for the species is the GenBank assembly RS_GCF_007559355.1. The GC content of the type genome is 39.51 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Allobacillus dilacigena sp. nov.

Candidatus Allobacillus dilacigena (NL. fem. n. *dilacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allobacillus sp007559425*. The type genome for the species is the GenBank assembly RS_GCF_007559425.1. The GC content of the type genome is 38.78 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Allobana infunentia sp. nov.

Candidatus Allobana infunentia (NL. fem. n. *infunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WMS2 sp001276605*. The type genome for the species is the GenBank assembly GCA_001276605.1. The GC content of the type genome is 43.27 % and the genome length is 2.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "single cell amplified by MDA; Sediments of Warm Mineral Spring".

Description of *Candidatus* Allobana gen. nov.

Candidatus Allobana (NL. fem. n. *Allobana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WMS2*. The type species for the genus is *Candidatus* Allobana infunentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allobaria nutabitio sp. nov.

Candidatus Allobaria nutabitio (NL. fem. n. *nutabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LMEP-10873 sp005110395*. The type genome for the species is the GenBank assembly GCA_005110395.1. The GC content of the type genome is 34.95 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Allobaria gen. nov.

Candidatus Allobaria (NL. fem. n. *Allobaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *LMEP-10873*. The type species for the genus is *Candidatus* Allobaria nutabitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allobella repurago sp. nov.

Candidatus Allobella repurago (NL. fem. n. *repurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2733545 sp002733545*. The type genome for the species is the GenBank assembly GCA_002733545.1. The GC content of the type genome is 33.73 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Allobella gen. nov.

Candidatus Allobella (NL. fem. n. *Allobella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2733545*. The type species for the genus is *Candidatus* Allobella repurago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allobida exorcicella sp. nov.

Candidatus Allobida exorcicella (NL. fem. n. *exorcicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGYE01 sp002839505*. The type genome for the species is the GenBank assembly GCA_002839505.1. The GC content of the type genome is 43.35 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Allobida gen. nov.

Candidatus Allobida (NL. fem. n. *Allobida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGYE01*. The type species for the genus is *Candidatus* Allobida exorcicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LOWO2-01-FULL-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifanaceae.

Description of *Candidatus* Allobosa effaritica sp. nov.

Candidatus Allobosa effaritica (NL. fem. n. *effaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLNJ01 sp009699865*. The type genome for the species is the GenBank assembly GCA_009699865.1. The GC content of the type genome is 60.48 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Allobosa gen. nov.

Candidatus Allobosa (NL. fem. n. *Allobosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLNJ01*. The type species for the genus is *Candidatus* Allobosa effaritica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allobula ignifica sp. nov.

Candidatus Allobula ignifica (NL. fem. n. *ignifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFT01 sp011064935*. The type genome for the species is the GenBank assembly GCA_011064935.1. The GC content of the type genome is 47.37 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Allobula gen. nov.

Candidatus Allobula (NL. fem. n. *Allobula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFT01*. The type species for the genus is *Candidatus* Allobula ignifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

JAAKFR01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recucanaceae.

Description of *Candidatus* Allokutzneria denavigena sp. nov.

Candidatus Allokutzneria denavigena (NL. fem. n. *denavigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allokutzneria sp002155965*. The type genome for the species is the GenBank assembly RS_GCF_002155965.1. The GC content of the type genome is 70.07 % and the genome length is 8.19 Mbp.

Description of *Candidatus* Alloprevotella bisacitudo sp. nov.

Candidatus Alloprevotella bisacitudo (NL. fem. n. *bisacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alloprevotella sp900317635*. The type genome for the species is the GenBank assembly GCA_900317635.1. The GC content of the type genome is 54.78 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Alloprevotella laxititudo sp. nov.

Candidatus Alloprevotella laxititudo (NL. fem. n. *laxititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alloprevotella sp900321445*. The type genome for the species is the GenBank assembly GCA_902794575.1. The GC content of the type genome is 52.24 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Allopseudarcicella catobousia sp. nov.

Candidatus Allopseudarcicella catobousia (NL. fem. n. *catobousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allopseudarcicella sp004118285*. The type genome for the species is the GenBank assembly RS_GCF_004118285.1. The GC content of the type genome is 38.79 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Allopseudarcicella retunicula sp. nov.

Candidatus Allopseudarcicella retunicula (NL. fem. n. *retunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allopseudarcicella sp011250515*. The type genome for the species is the GenBank assembly RS_GCF_011250515.1. The GC content of the type genome is 38.42 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Allopseudarcicella viragigena sp. nov.

Candidatus Allopseudarcicella viragigena (NL. fem. n. *viragigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allopseudarcicella sp011090385*. The type genome for the species is the GenBank assembly RS_GCF_011090385.1. The GC content of the type genome is 38.49 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Allorhizobium adfulitica sp. nov.

Candidatus Allorhizobium adfulitica (NL. fem. n. *adfulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900176345*. The type genome for the species is the GenBank assembly RS_GCF_900176345.1. The GC content of the type genome is 61.38 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Allorhizobium aggenitas sp. nov.

Candidatus Allorhizobium aggenitas (NL. fem. n. *aggenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp003527225*. The type genome for the species is the GenBank assembly GCA_003527225.1. The GC content of the type genome is 61.41 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Allorhizobium arnogessa sp. nov.

Candidatus Allorhizobium arnogessa (NL. fem. n. *arnogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp005860795*. The type genome for the species is the GenBank assembly RS_GCF_005860795.2. The GC content of the type genome is 58.62 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Allorhizobium benepimonia sp. nov.

Candidatus Allorhizobium benepimonia (NL. fem. n. *benepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp002796995*. The type genome for the species is the GenBank assembly GCA_013791895.1. The GC content of the type genome is 63.66 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Allorhizobium capucilega sp. nov.

Candidatus Allorhizobium capucilega (NL. fem. n. *capucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp001429245*. The type genome for the species is the GenBank assembly RS_GCF_001425145.1. The GC content of the type genome is 61.15 % and the genome length is 4.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Allorhizobium carucigena sp. nov.

Candidatus Allorhizobium carucigena (NL. fem. n. *carucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900465755*. The type genome for the species is the GenBank assembly RS_GCF_900465755.1. The GC content of the type genome is 62.06 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Allorhizobium catagago sp. nov.

Candidatus Allorhizobium catagago (NL. fem. n. *catagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp002307905*. The type genome for the species is the GenBank assembly GCA_002307905.1. The GC content of the type genome is 62.05 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Allorhizobium cemenibula sp. nov.

Candidatus Allorhizobium cemenibula (NL. fem. n. *cemenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900465605*. The type genome for the species is the GenBank assembly GCA_900465605.1. The GC content of the type genome is 63.47 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Allorhizobium cenotifica sp. nov.

Candidatus Allorhizobium cenotifica (NL. fem. n. *cenotifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp001713475*. The type genome for the species is the GenBank assembly RS_GCF_001713475.1. The GC content of the type genome is 61.11 % and the genome length is 4.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Algal phycosphere".

Description of *Candidatus* Allorhizobium codifilenta sp. nov.

Candidatus Allorhizobium codifilenta (NL. fem. n. *codifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900473805*. The type genome for the species is the GenBank assembly RS_GCF_900470435.1. The GC content of the type genome is 61.31 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Allorhizobium decomitio sp. nov.

Candidatus Allorhizobium decomitio (NL. fem. n. *decomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900466005*. The type genome for the species is the GenBank assembly RS_GCF_900467305.1. The GC content of the type genome is 63.24

% and the genome length is 5.13 Mbp.

Description of *Candidatus* Allorhizobium defenitura sp. nov.

Candidatus Allorhizobium defenitura (NL. fem. n. *defenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900470155*. The type genome for the species is the GenBank assembly RS_GCF_900470155.1. The GC content of the type genome is 60.18 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Allorhizobium democicella sp. nov.

Candidatus Allorhizobium democicella (NL. fem. n. *democicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp002855515*. The type genome for the species is the GenBank assembly RS_GCF_002855515.1. The GC content of the type genome is 61.38 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Allorhizobium denecilenta sp. nov.

Candidatus Allorhizobium denecilenta (NL. fem. n. *denecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp902706095*. The type genome for the species is the GenBank assembly RS_GCF_902706095.1. The GC content of the type genome is 60.35 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Allorhizobium feculibra sp. nov.

Candidatus Allorhizobium feculibra (NL. fem. n. *feculibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp004912145*. The type genome for the species is the GenBank assembly RS_GCF_008000915.1. The GC content of the type genome is 61.12 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Allorhizobium fefelitoga sp. nov.

Candidatus Allorhizobium fefelitoga (NL. fem. n. *fefelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900473745*. The type genome for the species is the GenBank assembly GCA_900473745.1. The GC content of the type genome is 61.1 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Allorhizobium inpinatio sp. nov.

Candidatus Allorhizobium inpinatio (NL. fem. n. *inpinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp003248775*. The type genome for the species is the GenBank assembly GCA_003248775.1. The GC content of the type genome is 60.85 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Allorhizobium insicitia sp. nov.

Candidatus Allorhizobium insicitia (NL. fem. n. *insicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp000247475*. The type genome for the species is the GenBank assembly RS_GCF_000247475.1. The GC content of the type genome is 60.25 % and the genome length is 5.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Allorhizobium obtemibula sp. nov.

Candidatus Allorhizobium obtemibula (NL. fem. n. *obtemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp001296045*. The type genome for the species is the GenBank assembly RS_GCF_001296045.1. The GC content of the type genome is 60.36 % and the genome length is 4.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Allorhizobium prodrifica sp. nov.

Candidatus Allorhizobium prodrifica (NL. fem. n. *prodrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp002600635*. The type genome for the species is the GenBank assembly RS_GCF_002600635.1. The GC content of the type genome is 61.18 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Allorhizobium rubigugo sp. nov.

Candidatus Allorhizobium rubigugo (NL. fem. n. *rubigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900473245*. The type genome for the species is the GenBank assembly RS_GCF_900465645.1. The GC content of the type genome is 61.88 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Allorhizobium senacessa sp. nov.

Candidatus Allorhizobium senacessa (NL. fem. n. *senacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900156055*. The type genome for the species is the GenBank assembly RS_GCF_900156055.1. The GC content of the type genome is 61.04 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Allorhizobium vavasitas sp. nov.

Candidatus Allorhizobium vavasitas (NL. fem. n. *vavasitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp001724035*. The type genome for the species is the GenBank assembly GCA_001724035.1. The GC content of the type genome is 61.39 % and the genome length is 4.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Allorhizobium vehicedo sp. nov.

Candidatus Allorhizobium vehicedo (NL. fem. n. *vehicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp012276985*. The type genome for the species is the GenBank assembly RS_GCF_012276985.1. The GC content of the type genome is 61.74 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Allorhizobium vilipilenta sp. nov.

Candidatus Allorhizobium vilipilenta (NL. fem. n. *vilipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp003501385*. The type genome for the species is the GenBank assembly GCA_003501385.1. The GC content of the type genome is 54.93 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Allorhizobium vinacatica sp. nov.

Candidatus Allorhizobium vinacatica (NL. fem. n. *vinacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp014237835*. The type genome for the species is the GenBank assembly RS_GCF_014237835.1. The GC content of the type genome is 61.15 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Allorhizobium vinuliforma sp. nov.

Candidatus Allorhizobium vinuliforma (NL. fem. n. *vinuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp012927355*. The type genome for the species is the GenBank assembly RS_GCF_012927355.1. The GC content of the type genome is 63.11 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Allorhizobium visibugo sp. nov.

Candidatus Allorhizobium visibugo (NL. fem. n. *visibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allorhizobium sp900466945*. The type genome for the species is the GenBank assembly GCA_900472325.1. The GC content of the type genome is 61.16 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Allosphingosinicella allacitrix sp. nov.

Candidatus Allosphingosinicella allacitrix (NL. fem. n. *allacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp011320075*. The type genome for the species is the GenBank assembly RS_GCF_011320075.1. The GC content of the type genome is 68.24 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Allosphingosinicella apsociforma sp. nov.

Candidatus Allosphingosinicella apsociforma (NL. fem. n. *apsociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp004564275*. The type genome for the species is the GenBank assembly RS_GCF_004564275.1. The GC content of the type genome is 68.4 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Allosphingosinicella armipilega sp. nov.

Candidatus Allosphingosinicella armipilega (NL. fem. n. *armipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp005883305*. The type genome for the species is the GenBank assembly GCA_005883305.1. The GC content of the type genome is 67.55 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Allosphingosinicella catagilenta sp. nov.

Candidatus Allosphingosinicella catagilenta (NL. fem. n. *catagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp002344055*. The type genome for the species is the GenBank assembly GCA_002344055.1. The GC content of the type genome is 66.67 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Allosphingosinicella homicibula sp. nov.

Candidatus Allosphingosinicella homicibula (NL. fem. n. *homicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp003347635*. The type genome for the species is the GenBank assembly RS_GCF_003347635.1. The GC content of the type genome is 68.2 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Allosphingosinicella nitelatio sp. nov.

Candidatus Allosphingosinicella nitelatio (NL. fem. n. *nitelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp004135585*. The type genome for the species is the GenBank assembly RS_GCF_004135585.1. The GC content of the type genome is 66.0 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Allosphingosinicella obsolax sp. nov.

Candidatus Allosphingosinicella obsolax (NL. fem. n. *obsolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp003012735*. The type genome for the species is the GenBank assembly RS_GCF_003012735.1. The GC content of the type genome is 65.99 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Allosphingosinicella problago sp. nov.

Candidatus Allosphingosinicella problago (NL. fem. n. *problago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp005882415*. The type genome for the species is the GenBank assembly GCA_005882415.1. The GC content of the type genome is 67.28 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Allosphingosinicella regifilega sp. nov.

Candidatus Allosphingosinicella regifilega (NL. fem. n. *regifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Allosphingosinicella sp902806315*. The type genome for the species is the GenBank assembly GCA_902806315.1. The GC content of the type genome is 66.06 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Allosphingosinicella remedivita sp. nov.

Candidatus Allosphingosinicella remedivita (NL. fem. n. *remedivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp013816585*. The type genome for the species is the GenBank assembly GCA_013816585.1. The GC content of the type genome is 61.37 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Allosphingosinicella remulitica sp. nov.

Candidatus Allosphingosinicella remulitica (NL. fem. n. *remulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Allosphingosinicella sp004151485*. The type genome for the species is the GenBank assembly RS_GCF_004151485.1. The GC content of the type genome is 66.78 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Allubana foricimonia sp. nov.

Candidatus Allubana foricimonia (NL. fem. n. *foricimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDZF01 sp902812445*. The type genome for the species is the GenBank assembly RS_GCF_902812445.1. The GC content of the type genome is 58.23 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Allubana gen. nov.

Candidatus Allubana (NL. fem. n. *Allubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDZF01*. The type species for the genus is *Candidatus* Allubana foricimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allubella cepulitoga sp. nov.

Candidatus Allubella cepulitoga (NL. fem. n. *cepulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUES01 sp011192055*. The type genome for the species is the GenBank assembly GCA_011192055.1. The GC content of the type genome is 51.8 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Allubella gen. nov.

Candidatus Allubella (NL. fem. n. *Allubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUES01*. The type species for the genus is *Candidatus* Allubella cepulitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1064*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benifidaceae.

Description of *Candidatus* Allubida ectenilenta sp. nov.

Candidatus Allubida ectenilenta (NL. fem. n. *ectenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5507 sp002426195*. The type genome for the species is the GenBank assembly GCA_002426195.1. The GC content of the type genome is 37.74 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Allubida gen. nov.

Candidatus Allubida (NL. fem. n. *Allubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5507*. The type species for the genus is *Candidatus* Allubida ectenilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Allubosa exsomitas sp. nov.

Candidatus Allubosa exsomitas (NL. fem. n. *exsomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-36-7 sp002791255*. The type genome for the species is the GenBank assembly GCA_002791255.1. The GC content of the type genome is 36.04 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Allubosa gen. nov.

Candidatus Allubosa (NL. fem. n. *Allubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-36-7*. The type species for the genus is *Candidatus* Allubosa exsomitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Allubula baropivita sp. nov.

Candidatus Allubula baropivita (NL. fem. n. *baropivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABACC01 sp014237915*. The type genome for the species is the GenBank assembly GCA_014237915.1. The GC content of the type genome is 28.38 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Allubula gen. nov.

Candidatus Allubula (NL. fem. n. *Allubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABACC01*. The type species for the genus is *Candidatus* Allubula baropivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2747955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homaganaceae.

Description of *Candidatus* Alluvida gemebisca sp. nov.

Candidatus Alluvida gemebisca (NL. fem. n. *gemebisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJGO01 sp014190535*. The type genome for the species is the GenBank assembly GCA_014190535.1. The GC content of the type genome is 41.45 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Alluvida gen. nov.

Candidatus Alluvida (NL. fem. n. *Alluvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJGO01*. The type species for the genus is *Candidatus* Alluvida gemebisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10324*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vereciaceae.

Description of *Candidatus* Alluvosa repuribra sp. nov.

Candidatus Alluvosa repuribra (NL. fem. n. *repuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F-3ap sp010179735*. The type genome for the species is the GenBank assembly RS_GCF_010179735.1. The GC content of the type genome is 56.78 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Alluvosa gen. nov.

Candidatus Alluvosa (NL. fem. n. *Alluvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F-3ap*. The type species for the genus is *Candidatus* Alluvosa repuribra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alluvula exforugo sp. nov.

Candidatus Alluvula exforugo (NL. fem. n. *exforugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTF01 sp012031775*. The type genome for the species is the GenBank assembly GCA_012031775.1. The GC content of the type genome is 59.95 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Alluvula gen. nov.

Candidatus Alluvula (NL. fem. n. *Alluvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUTF01*. The type species for the genus is *Candidatus* Alluvula exforugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Almitaria adporibra sp. nov.

Candidatus Almitaria adporibra (NL. fem. n. *adporibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAY01 sp009787685*. The type genome for the species is the GenBank assembly GCA_009787685.1. The GC content of the type genome is 38.23 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Almitaria gen. nov.

Candidatus Almitaria (NL. fem. n. *Almitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAY01*. The type species for the genus is *Candidatus* Almitaria adporibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Almitaria bicubivita sp. nov.

Candidatus Almitaria bicubivita (NL. fem. n. *bicubivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAY01 sp009779975*. The type genome for the species is the GenBank assembly GCA_009779975.1. The GC content of the type genome is 37.77 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Almitaria prospilenta sp. nov.

Candidatus Almitaria prospilenta (NL. fem. n. *prospilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAY01 sp009787875*. The type genome for the species is the GenBank assembly GCA_009787875.1. The GC content of the type genome is 37.73 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Almitella repecugo sp. nov.

Candidatus Almitella repecugo (NL. fem. n. *repecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686445 sp002686445*. The type genome for the species is the GenBank assembly GCA_002686445.1. The GC content of the type genome is 52.3 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Almitella gen. nov.

Candidatus Almitella (NL. fem. n. *Almitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2686445*. The type species for the genus is *Candidatus* Almitella repecugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolidaceae.

Description of *Candidatus* Almitosa abverousia sp. nov.

Candidatus Almitosa abverousia (NL. fem. n. *abverousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-002002485 sp002002485*. The type genome for the species is the GenBank assembly RS_GCF_002002485.1. The GC content of the type genome is 38.82 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Almitosa gen. nov.

Candidatus Almitosa (NL. fem. n. *Almitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-002002485*. The type species for the genus is *Candidatus* Almitosa abverousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Almitula maxumitas sp. nov.

Candidatus Almitula maxumitas (NL. fem. n. *maxumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1005 sp003153335*. The type genome for the species is the GenBank assembly GCA_003153335.1. The GC content of the type genome is 62.18 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Almitula gen. nov.

Candidatus Almitula (NL. fem. n. *Almitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1005*. The type species for the genus is *Candidatus* Almitula maxumitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Almucaria duricilega sp. nov.

Candidatus Almucaria duricilega (NL. fem. n. *duricilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MES10 sp009711805*. The type genome for the species is the GenBank assembly GCA_009711805.1. The GC content of the type genome is 42.41 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Almucaria gen. nov.

Candidatus Almucaria (NL. fem. n. *Almucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MES10*. The type species for the genus is *Candidatus* Almucaria duricilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Almucella maledax sp. nov.

Candidatus Almucella maledax (NL. fem. n. *maledax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-354 sp003564915*. The type genome for the species is the GenBank assembly GCA_003564915.1. The GC content of the type genome is 43.05 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Almucella gen. nov.

Candidatus Almucella (NL. fem. n. *Almucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3SED10-354*. The type species for the genus is *Candidatus* Almucella maledax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Almucia argimedo sp. nov.

Candidatus Almucia argimedo (NL. fem. n. *argimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1936 sp013821585*. The type genome for the species is the GenBank assembly GCA_013821585.1. The GC content of the type genome is 65.7 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Almucia gen. nov.

Candidatus Almucia (NL. fem. n. *Almucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1936*. The type species for the genus is *Candidatus* Almucia argimedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Almucia labecessa sp. nov.

Candidatus Almucia labecessa (NL. fem. n. *labecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1936 sp002336985*. The type genome for the species is the GenBank assembly GCA_002336985.1. The GC content of the type genome is 63.46 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Almucia obsorugo sp. nov.

Candidatus Almucia obsorugo (NL. fem. n. *obsorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1936 sp003660165*. The type genome for the species is the GenBank assembly RS_GCF_003660165.1. The GC content of the type genome is 58.86 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Almucida abluvitas sp. nov.

Candidatus Almucida abluvitas (NL. fem. n. *abluvitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYEV01 sp012728565*. The type genome for the species is the GenBank assembly GCA_012728565.1. The GC content of the type genome is 49.4 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Almucida gen. nov.

Candidatus Almucida (NL. fem. n. *Almucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYEV01*. The type species for the genus is *Candidatus* Almucida abluvitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch29*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Niteliaceae.

Description of *Candidatus* Almucida almitugo sp. nov.

Candidatus Almucida almitugo (NL. fem. n. *almitugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYEV01 sp012523075*. The type genome for the species is the GenBank assembly GCA_012523075.1. The GC content of the type genome is 48.2 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Almucosa almucifica sp. nov.

Candidatus Almucosa almucifica (NL. fem. n. *almucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQZR01 sp009780625*. The type genome for the species is the GenBank assembly GCA_009780625.1. The GC content of the type genome is 37.8 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Almucosa gen. nov.

Candidatus Almucosa (NL. fem. n. *Almucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQZR01*. The type species for the genus is *Candidatus* Almucosa almucifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Alsidana sacomibula sp. nov.

Candidatus Alsidana sacomibula (NL. fem. n. *sacomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KH17 sp900199505*. The type genome for the species is the GenBank assembly RS_GCF_900199505.1. The GC content of the type genome is 64.89 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Alsidana gen. nov.

Candidatus Alsidana (NL. fem. n. *Alsidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KH17*. The type species for the genus is *Candidatus* Alsidana sacomibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alsidaria funebigena sp. nov.

Candidatus Alsidaria funebigena (NL. fem. n. *funebigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV17 sp003219225*. The type genome for the species is the GenBank assembly GCA_003219225.1. The GC content of the type genome is 58.35 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Alsidaria gen. nov.

Candidatus Alsidaria (NL. fem. n. *Alsidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AV17*. The type species for the genus is *Candidatus* Alsidaria funebigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Alsidida metapedo sp. nov.

Candidatus Alsidida metapedo (NL. fem. n. *metapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHM01 sp013151855*. The type genome for the species is the GenBank assembly GCA_013151855.1. The GC content of the type genome is 39.42 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Alsidida gen. nov.

Candidatus Alsidida (NL. fem. n. *Alsidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHM01*. The type species for the genus is *Candidatus* Alsidida metapedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEB-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanugulaceae.

Description of *Candidatus* Alsidosa ascelicella sp. nov.

Candidatus Alsidosa ascelicella (NL. fem. n. *ascelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401865 sp002401865*. The type genome for the species is the GenBank assembly GCA_002401865.1. The GC content of the type genome is 38.78 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Alsidosa gen. nov.

Candidatus Alsidosa (NL. fem. n. *Alsidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2401865*. The type species for the genus is *Candidatus* Alsidosa ascelicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alsidula cisalicella sp. nov.

Candidatus Alsidula cisalicella (NL. fem. n. *cisalicella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSDU01 sp011056835*. The type genome for the species is the GenBank assembly GCA_011056835.1. The GC content of the type genome is 48.27 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Alsidula gen. nov.

Candidatus Alsidula (NL. fem. n. *Alsidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSDU01*. The type species for the genus is *Candidatus* Alsidula cisalicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6807*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monimosaceae.

Description of *Candidatus* Alsisana crastax sp. nov.

Candidatus Alsisana crastax (NL. fem. n. *crastax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AVCC01 sp012927625*. The type genome for the species is the GenBank assembly GCA_012927625.1. The GC content of the type genome is 53.91 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Alsisana gen. nov.

Candidatus Alsisana (NL. fem. n. *Alsisana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AVCC01*. The type species for the genus is *Candidatus* Alsisana crastax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alsisana effulatio sp. nov.

Candidatus Alsisana effulatio (NL. fem. n. *effulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AVCC01 sp012927585*. The type genome for the species is the GenBank assembly GCA_012927585.1. The GC content of the type genome is 54.34 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Alsisana innuligena sp. nov.

Candidatus Alsisana innuligena (NL. fem. n. *innuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AVCC01 sp000622895*. The type genome for the species is the GenBank assembly RS_GCF_000622895.1. The GC content of the type genome is 58.91 % and the genome length is 3.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "coal-tar contaminated soil".

Description of *Candidatus* Alsisaria renavifica sp. nov.

Candidatus Alsisaria renavifica (NL. fem. n. *renavifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G21 sp002457305*. The type genome for the species is the GenBank assembly GCA_002457305.1. The GC content of the type genome is 34.27 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Alsisaria gen. nov.

Candidatus Alsisaria (NL. fem. n. *Alsisaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G21*. The type species for the genus is *Candidatus* Alsisaria renavifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7430*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desaciaceae.

Description of *Candidatus* Alsisella lutulitio sp. nov.

Candidatus Alsisella lutulitio (NL. fem. n. *lutulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHR01 sp013820915*. The type genome for the species is the GenBank assembly GCA_013820915.1. The GC content of the type genome is 66.55 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Alsisella gen. nov.

Candidatus Alsisella (NL. fem. n. *Alsisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDHR01*. The type species for the genus is *Candidatus* Alsisella lutulitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alsisia insinimonia sp. nov.

Candidatus Alsisia insinimonia (NL. fem. n. *insinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWD01 sp004357495*. The type genome for the species is the GenBank assembly GCA_004357495.1. The GC content of the type genome is 61.17 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Alsisia gen. nov.

Candidatus Alsisia (NL. fem. n. *Alsisia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMWD01*. The type species for the genus is *Candidatus* Alsisia insinimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2729495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulidaceae.

Description of *Candidatus* Alsisida soliviforma sp. nov.

Candidatus Alsisida soliviforma (NL. fem. n. *soliviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-318 sp003248075*. The type genome for the species is the GenBank assembly GCA_003248075.1. The GC content of the type genome is 69.07 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Alsisida gen. nov.

Candidatus Alsisida (NL. fem. n. *Alsisida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-318*. The type species for the genus is *Candidatus* Alsisida soliviforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Alsisosa anaclastra sp. nov.

Candidatus Alsisosa anaclastra (NL. fem. n. *anaclastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKGI01 sp007694145*. The type genome for the species is the GenBank assembly GCA_007694145.1. The GC content of the type genome is 48.97 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Alsisosa gen. nov.

Candidatus Alsisosa (NL. fem. n. *Alsisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKGI01*. The type species for the genus is *Candidatus* Alsisosa anaclastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alsisosa thessitura sp. nov.

Candidatus Alsisosa thessitura (NL. fem. n. *thessitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKGI01 sp007117555*. The type genome for the species is the GenBank assembly GCA_007117555.1. The GC content of the type genome is 43.24 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Alsobacter catilago sp. nov.

Candidatus Alsobacter catilago (NL. fem. n. *catilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alsobacter sp003004785*. The type genome for the species is the GenBank assembly RS_GCF_003004785.1. The GC content of the type genome is 68.52 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Alsulella innupitas sp. nov.

Candidatus Alsulella innupitas (NL. fem. n. *innupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSQF01 sp011357805*. The type genome for the species is the GenBank assembly GCA_011357805.1. The GC content of the type genome is 74.53 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Alsulella gen. nov.

Candidatus Alsulella (NL. fem. n. *Alsulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSQF01*. The type species for the genus is *Candidatus* Alsulella innupitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabidaceae.

Description of *Candidatus* Alsulia bacifitas sp. nov.

Candidatus Alsulia bacifitas (NL. fem. n. *bacifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1440 sp002329565*. The type genome for the species is the GenBank assembly GCA_002329565.1. The GC content of the type genome is 47.47 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Alsulia gen. nov.

Candidatus Alsulia (NL. fem. n. *Alsulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1440*. The type species for the genus is *Candidatus* Alsulia bacifitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alsulida assudimonas sp. nov.

Candidatus Alsulida assudimonas (NL. fem. n. *assudimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1457 sp003164155*. The type genome for the species is the GenBank assembly GCA_003164155.1. The GC content of the type genome is 45.63 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Alsulida gen. nov.

Candidatus Alsulida (NL. fem. n. *Alsulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-1457*. The type species for the genus is *Candidatus* Alsulida assudimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alsulosa edulcitio sp. nov.

Candidatus Alsulosa edulcitio (NL. fem. n. *edulcitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP287 sp002721285*. The type genome for the species is the GenBank assembly GCA_002721285.1. The GC content of the type genome is 30.52 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Alsulosa gen. nov.

Candidatus Alsulosa (NL. fem. n. *Alsulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SP287*. The type species for the genus is *Candidatus* Alsulosa edulcitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favonellaceae.

Description of *Candidatus* Alsulula divoritura sp. nov.

Candidatus Alsulula divoritura (NL. fem. n. *divoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDNZ01 sp013043565*. The type genome for the species is the GenBank assembly GCA_013043565.1. The GC content of the type genome is 61.6 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Alsulula gen. nov.

Candidatus Alsulula (NL. fem. n. *Alsulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDNZ01*. The type species for the genus is *Candidatus* Alsulula divoritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Alteraurantiacibacter expopetta sp. nov.

Candidatus Alteraurantiacibacter expopetta (NL. fem. n. *expopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteraurantiacibacter sp009807005*. The type genome for the species is the GenBank assembly RS_GCF_009807005.1. The GC content of the type genome is 61.31 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Alteraurantiacibacter insorigena sp. nov.

Candidatus Alteraurantiacibacter insorigena (NL. fem. n. *insorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteraurantiacibacter sp002367375*. The type genome for the species is the GenBank assembly GCA_002367375.1. The GC content of the type genome is 60.36 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Alteraurantiacibacter morigibra sp. nov.

Candidatus Alteraurantiacibacter morigibra (NL. fem. n. *morigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteraurantiacibacter sp002341345*. The type genome for the species is the GenBank assembly GCA_002341345.1. The GC content of the type genome is 62.33 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Alteraurantiacibacter pocilax sp. nov.

Candidatus Alteraurantiacibacter pocilax (NL. fem. n. *pocilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteraurantiacibacter sp002337385*. The type genome for the species is the GenBank assembly GCA_002337385.1. The GC content of the type genome is 63.57 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Alteraurantiacibacter semipedo sp. nov.

Candidatus Alteraurantiacibacter semipedo (NL. fem. n. *semipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteraurantiacibacter sp902498745*. The type genome for the species is the GenBank assembly RS_GCF_902498745.1. The GC content of the type genome is 62.8 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Altererythrobacter addivax sp. nov.

Candidatus Altererythrobacter addivax (NL. fem. n. *addivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altererythrobacter sp011524425*. The type genome for the species is the GenBank assembly GCA_011524425.1. The GC content of the type genome is 55.51 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Altererythrobacter adrumatica sp. nov.

Candidatus Altererythrobacter adrumatica (NL. fem. n. *adrumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altererythrobacter sp003483125*. The type genome for the species is the GenBank assembly GCA_003483125.1. The GC content of the type genome is 56.5 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Altererythrobacter attolitoga sp. nov.

Candidatus Altererythrobacter attolitoga (NL. fem. n. *attolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altererythrobacter sp006226465*. The type genome for the species is the GenBank assembly GCA_006226465.1. The GC content of the type genome is 60.42 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Altererythrobacter cilibago sp. nov.

Candidatus Altererythrobacter cilibago (NL. fem. n. *cilibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altererythrobacter sp003149575*. The type genome for the species is the GenBank assembly GCA_009922725.1. The GC content of the type genome is 57.35 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Altererythrobacter decacentia sp. nov.

Candidatus Altererythrobacter decacentia (NL. fem. n. *decacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Altererythrobacter sp013002295*. The type genome for the species is the GenBank assembly GCA_013003785.1. The GC content of the type genome is 57.54 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Altererythrobacter hirunago sp. nov.

Candidatus Altererythrobacter hirunago (NL. fem. n. *hirunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altererythrobacter sp013371495*. The type genome for the species is the GenBank assembly RS_GCF_013371495.1. The GC content of the type genome is 57.75 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Altererythrobacter inexsitoga sp. nov.

Candidatus Altererythrobacter inexsitoga (NL. fem. n. *inexsitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altererythrobacter sp001516125*. The type genome for the species is the GenBank assembly GCA_001516125.1. The GC content of the type genome is 62.94 % and the genome length is 2.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Altererythrobacter nutamivita sp. nov.

Candidatus Altererythrobacter nutamivita (NL. fem. n. *nutamivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altererythrobacter sp001515985*. The type genome for the species is the GenBank assembly GCA_001515985.1. The GC content of the type genome is 60.69 % and the genome length is 2.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Altererythrobacter recocicula sp. nov.

Candidatus Altererythrobacter recocicula (NL. fem. n. *recocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Altererythrobacter sp011047315*. The type genome for the species is the GenBank assembly RS_GCF_011047315.1. The GC content of the type genome is 62.21 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Altererythrobacter rutabedo sp. nov.

Candidatus Altererythrobacter rutabedo (NL. fem. n. *rutabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altererythrobacter sp013822125*. The type genome for the species is the GenBank assembly GCA_013822125.1. The GC content of the type genome is 62.78 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Altererythrobacter murilatio sp. nov.

Candidatus Altererythrobacter murilatio (NL. fem. n. *murilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altererythrobacter_D sp004282995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013001185.1. The GC content of the type genome is 61.4 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Alteribacillus cinefentia sp. nov.

Candidatus Alteribacillus cinefentia (NL. fem. n. *cinefentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteribacillus sp009765375*. The type genome for the species is the GenBank assembly RS_GCF_009765375.1. The GC content of the type genome is 39.02 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Altericroceibacterium cenotilega sp. nov.

Candidatus Altericroceibacterium cenotilega (NL. fem. n. *cenotilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altericroceibacterium sp003610805*. The type genome for the species is the GenBank assembly RS_GCF_003610805.1. The GC content of the type genome is

57.6 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Alteriqipengyuania citivibra sp. nov.

Candidatus Alteriqipengyuania citivibra (NL. fem. n. *citivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteriqipengyuania sp002729695*. The type genome for the species is the GenBank assembly GCA_002703435.1. The GC content of the type genome is 64.17 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Alteriqipengyuania dilemitudo sp. nov.

Candidatus Alteriqipengyuania dilemitudo (NL. fem. n. *dilemitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteriqipengyuania sp002712945*. The type genome for the species is the GenBank assembly GCA_002712945.1. The GC content of the type genome is 65.71 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Alteriqipengyuania milipitio sp. nov.

Candidatus Alteriqipengyuania milipitio (NL. fem. n. *milipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteriqipengyuania sp009993635*. The type genome for the species is the GenBank assembly GCA_009993635.1. The GC content of the type genome is 64.66 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Alteriqipengyuania minagousia sp. nov.

Candidatus Alteriqipengyuania minagousia (NL. fem. n. *minagousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteriqipengyuania sp002377695*. The type genome for the species is the GenBank assembly GCA_002377695.1. The GC content of the type genome is 64.86 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Alteriqipengyuania sugilugo sp. nov.

Candidatus Alteriqipengyuania sugilugo (NL. fem. n. *sugilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteriqipengyuania sp000186705*. The type genome for the species is the GenBank assembly RS_GCF_000186705.1. The GC content of the type genome is 64.91 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "upper water in South China Sea".

Description of *Candidatus* Alteromonas colapedo sp. nov.

Candidatus Alteromonas colapedo (NL. fem. n. *colapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp000597705*. The type genome for the species is the GenBank assembly RS_GCF_000597705.1. The GC content of the type genome is 43.67 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Alteromonas curotitas sp. nov.

Candidatus Alteromonas curotitas (NL. fem. n. *curotitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp003443615*. The type genome for the species is the GenBank assembly RS_GCF_003443615.1. The GC content of the type genome is 44.07 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Alteromonas decunax sp. nov.

Candidatus Alteromonas decunax (NL. fem. n. *decunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp009811415*. The type genome for the species is the GenBank assembly RS_GCF_009811415.1. The GC content of the type genome is 44.52 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Alteromonas fusifitoga sp. nov.

Candidatus Alteromonas fusifitoga (NL. fem. n. *fusifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp000753865*. The type genome for the species is the GenBank assembly RS_GCF_000753915.1. The GC content of the type genome is 44.17 % and the genome length is 4.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Alteromonas hemitastra sp. nov.

Candidatus Alteromonas hemitastra (NL. fem. n. *hemitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp009811495*. The type genome for the species is the GenBank assembly RS_GCF_009811495.1. The GC content of the type genome is 43.82 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Alteromonas humecitrix sp. nov.

Candidatus Alteromonas humecitrix (NL. fem. n. *humecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp006538325*. The type genome for the species is the GenBank assembly RS_GCF_006538325.1. The GC content of the type genome is 42.88 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Alteromonas pomifatica sp. nov.

Candidatus Alteromonas pomifatica (NL. fem. n. *pomifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp010500865*. The type genome for the species is the GenBank assembly RS_GCF_010500865.1. The GC content of the type genome is 44.36 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Alteromonas senacatio sp. nov.

Candidatus Alteromonas senacatio (NL. fem. n. *senacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp006538345*. The type genome for the species is the GenBank assembly RS_GCF_006538345.1. The GC content of the type genome is 44.42 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Alteromonas tibicitas sp. nov.

Candidatus Alteromonas tibicitas (NL. fem. n. *tibicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp902506055*. The type genome for the species is the GenBank assembly RS_GCF_902506055.1. The GC content of the type genome is 43.73 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Alteromonas verififorma sp. nov.

Candidatus Alteromonas verififorma (NL. fem. n. *verififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas sp001885075*. The type genome for the species is the GenBank assembly RS_GCF_001885075.1. The GC content of the type genome is 44.01 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Alteromonas conifimonas sp. nov.

Candidatus Alteromonas conifimonas (NL. fem. n. *conifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas_A sp002691625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002691625.1. The GC content of the type genome is 48.93 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Alteromonas exhonatio sp. nov.

Candidatus Alteromonas exhonatio (NL. fem. n. *exhonatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas_A sp013373625*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013373625.1. The GC content of the type genome is 47.45 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Alteromonas solivousia sp. nov.

Candidatus Alteromonas solivousia (NL. fem. n. *solivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas_A sp002335925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003535135.1. The GC content of the type genome is 49.65 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Alteromonas benemitrix sp. nov.

Candidatus Alteromonas benemitrix (NL. fem. n. *benemitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Alteromonas_B sp002729795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003584565.2. The GC content of the type genome is 48.71 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Altibacter conarago sp. nov.

Candidatus Altibacter conarago (NL. fem. n. *conarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altibacter sp014295415*. The type genome for the species is the GenBank assembly RS_GCF_014295415.1. The GC content of the type genome is 40.38 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Altibacter lapicugo sp. nov.

Candidatus Altibacter lapicugo (NL. fem. n. *lapicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altibacter sp002696485*. The type genome for the species is the GenBank assembly GCA_002376315.1. The GC content of the type genome is 42.3 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Altibacter sceptibula sp. nov.

Candidatus Altibacter sceptibula (NL. fem. n. *sceptibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Altibacter sp002813135*. The type genome for the species is the GenBank assembly RS_GCF_002813135.1. The GC content of the type genome is 39.37 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Alticaria taraxisca sp. nov.

Candidatus Alticaria taraxisca (NL. fem. n. *taraxisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADEW01 sp013153205*. The type genome for the species is the GenBank assembly GCA_013153205.1. The GC content of the type genome is 49.07 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Alticaria gen. nov.

Candidatus Alticaria (NL. fem. n. *Alticaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADEW01*. The type species for the genus is *Candidatus* Alticaria taraxisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alticella argumatica sp. nov.

Candidatus Alticella argumatica (NL. fem. n. *argumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3961 sp002385265*. The type genome for the species is the GenBank assembly GCA_002385265.1. The GC content of the type genome is 40.8 %

and the genome length is 4.12 Mbp.

Description of *Candidatus* Alticella gen. nov.

Candidatus Alticella (NL. fem. n. *Alticella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3961*. The type species for the genus is *Candidatus* Alticella argumatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alticella imbecitrix sp. nov.

Candidatus Alticella imbecitrix (NL. fem. n. *imbecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3961 sp014379515*. The type genome for the species is the GenBank assembly GCA_014379515.1. The GC content of the type genome is 42.56 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Alticella procricella sp. nov.

Candidatus Alticella procricella (NL. fem. n. *procricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3961 sp011357845*. The type genome for the species is the GenBank assembly GCA_011357845.1. The GC content of the type genome is 44.17 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Alticia accucicella sp. nov.

Candidatus Alticia accucicella (NL. fem. n. *accucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEUV01 sp001772575*. The type genome for the species is the GenBank assembly GCA_001772575.1. The GC content of the type genome is 33.53 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 19ft depth".

Description of *Candidatus* Alticia gen. nov.

Candidatus Alticia (NL. fem. n. *Alticia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MEUV01*. The type species for the genus is *Candidatus* Alticia accucicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Alticosa rorifatica sp. nov.

Candidatus Alticosa rorifatica (NL. fem. n. *rorifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VLJP01 sp007829525*. The type genome for the species is the GenBank assembly RS_GCF_007829525.1. The GC content of the type genome is 61.2 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Alticosa gen. nov.

Candidatus Alticosa (NL. fem. n. *Alticosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VLJP01*. The type species for the genus is *Candidatus* Alticosa rorifatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Alticula acropimonas sp. nov.

Candidatus Alticula acropimonas (NL. fem. n. *acropimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-57 sp005884305*. The type genome for the species is the GenBank assembly GCA_005884305.1. The GC content of the type genome is 68.93 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Alticula gen. nov.

Candidatus Alticula (NL. fem. n. *Alticula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-57*. The type species for the genus is *Candidatus* Alticula acropimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *70-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Altifana bicipivita sp. nov.

Candidatus Altifana bicipivita (NL. fem. n. *bicipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002790365 sp011052365*. The type genome for the species is the GenBank assembly GCA_011052365.1. The GC content of the type genome is 32.97 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Altifana gen. nov.

Candidatus Altifana (NL. fem. n. *Altifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002790365*. The type species for the genus is *Candidatus* Altifana bicipivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Altifana encomitia sp. nov.

Candidatus Altifana encomitia (NL. fem. n. *encomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002790365 sp002783525*. The type genome for the species is the GenBank assembly GCA_002783525.1. The GC content of the type genome is 30.09 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Altifana remedisca sp. nov.

Candidatus Altifana remedisca (NL. fem. n. *remedisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002790365 sp002790365*. The type genome for the species is the GenBank assembly GCA_002790365.1. The GC content of the type genome is 30.12 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Altifella adnicitura sp. nov.

Candidatus Altifella adnicitura (NL. fem. n. *adnicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *H2GEO sp003574885*. The type genome for the species is the GenBank assembly GCA_003574885.1. The GC content of the type genome is 56.12 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Altifella gen. nov.

Candidatus Altifella (NL. fem. n. *Altifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *H2GEO*. The type species for the genus is *Candidatus* Altifella adnicitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Altifida obtunicella sp. nov.

Candidatus Altifida obtunicella (NL. fem. n. *obtunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOT01 sp012838705*. The type genome for the species is the GenBank assembly GCA_012838705.1. The GC content of the type genome is 29.25 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Altifida gen. nov.

Candidatus Altifida (NL. fem. n. *Altifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DUOT01*. The type species for the genus is *Candidatus* Altifida obtunicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Altifosa depasitia sp. nov.

Candidatus Altifosa depasitia (NL. fem. n. *depasitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAGVW01 sp010681825*. The type genome for the species is the GenBank assembly RS_GCF_010681825.1. The GC content of the type genome is 58.5 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Altifosa gen. nov.

Candidatus Altifosa (NL. fem. n. *Altifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAGVW01*. The type species for the genus is *Candidatus* Altifosa depasitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLCJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifellaceae.

Description of *Candidatus* Altipella expugitio sp. nov.

Candidatus Altipella expugitio (NL. fem. n. *expugitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDMH01 sp013001805*. The type genome for the species is the GenBank assembly GCA_013001805.1. The GC content of the type genome is 43.19 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Altipella gen. nov.

Candidatus Altipella (NL. fem. n. *Altipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDMH01*. The type species for the genus is *Candidatus* Altipella expugitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Altipella fibicitura sp. nov.

Candidatus Altipella fibicitura (NL. fem. n. *fibicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDMH01 sp013001595*. The type genome for the species is the GenBank assembly GCA_013001595.1. The GC content of the type genome is 43.63 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Altipia adnubitura sp. nov.

Candidatus Altipia adnubitura (NL. fem. n. *adnubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HU2P27 sp014280935*. The type genome for the species is the GenBank assembly RS_GCF_014280935.1. The GC content of the type genome is 36.01 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Altipia gen. nov.

Candidatus Altipia (NL. fem. n. *Altipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HU2P27*. The type species for the genus is *Candidatus* Altipia adnubitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Altiposa exsatitas sp. nov.

Candidatus Altiposa exsatitas (NL. fem. n. *exsatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABUE01 sp011389535*. The type genome for the species is the

GenBank assembly GCA_011389535.1. The GC content of the type genome is 55.31 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Altiposa gen. nov.

Candidatus Altiposa (NL. fem. n. *Altiposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABUE01*. The type species for the genus is *Candidatus* Altiposa exsatitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Altipula xenodessa sp. nov.

Candidatus Altipula xenodessa (NL. fem. n. *xenodessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPE01 sp013203845*. The type genome for the species is the GenBank assembly GCA_013203845.1. The GC content of the type genome is 56.57 % and the genome length is 8.54 Mbp.

Description of *Candidatus* Altipula gen. nov.

Candidatus Altipula (NL. fem. n. *Altipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPE01*. The type species for the genus is *Candidatus* Altipula xenodessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Altivana adpanimonia sp. nov.

Candidatus Altivana adpanimonia (NL. fem. n. *adpanimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAKS01 sp003343685*. The type genome for the species is the GenBank assembly GCA_003343685.1. The GC content of the type genome is 51.36 %

and the genome length is 1.08 Mbp.

Description of *Candidatus* Altivana gen. nov.

Candidatus Altivana (NL. fem. n. *Altivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAKS01*. The type species for the genus is *Candidatus* Altivana adpanimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Altivaria nutabatica sp. nov.

Candidatus Altivaria nutabatica (NL. fem. n. *nutabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LB-PLM-3 sp003389325*. The type genome for the species is the GenBank assembly GCA_003389325.1. The GC content of the type genome is 64.65 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Altivaria gen. nov.

Candidatus Altivaria (NL. fem. n. *Altivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LB-PLM-3*. The type species for the genus is *Candidatus* Altivaria nutabatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-1355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopulaceae.

Description of *Candidatus* Altivella viragago sp. nov.

Candidatus Altivella viragago (NL. fem. n. *viragago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABKMX01 sp902373595*. The type genome for the species is the GenBank assembly GCA_902373595.1. The GC content of the type genome is 57.34 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Altivella gen. nov.

Candidatus Altivella (NL. fem. n. *Altivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABKMX01*. The type species for the genus is *Candidatus* Altivella viragago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3700*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicarellaceae.

Description of *Candidatus* Altivia endivitio sp. nov.

Candidatus Altivia endivitio (NL. fem. n. *endivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPQH01 sp003820375*. The type genome for the species is the GenBank assembly GCA_003820375.1. The GC content of the type genome is 34.8 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Altivia gen. nov.

Candidatus Altivia (NL. fem. n. *Altivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPQH01*. The type species for the genus is *Candidatus* Altivia endivitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Virecidaceae.

Description of *Candidatus* Altivida appagicella sp. nov.

Candidatus Altivida appagicella (NL. fem. n. *appagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIWI01 sp014361055*. The type genome for the species is the GenBank assembly GCA_014361055.1. The GC content of the type genome is 67.5 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Altivida gen. nov.

Candidatus Altivida (NL. fem. n. *Altivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIWI01*. The type species for the genus is *Candidatus* Altivida appagicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Altivosa vitupisca sp. nov.

Candidatus Altivosa vitupisca (NL. fem. n. *vitupisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-359 sp003246575*. The type genome for the species is the GenBank assembly GCA_003246575.1. The GC content of the type genome is 50.77 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Altivosa gen. nov.

Candidatus Altivosa (NL. fem. n. *Altivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-359*. The type species for the genus is *Candidatus* Altivosa vitupisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Altivula locupicella sp. nov.

Candidatus Altivula locupicella (NL. fem. n. *locupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTHG01 sp011370805*. The type genome for the species is the GenBank assembly GCA_011370805.1. The GC content of the type genome is 32.77 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Altivula gen. nov.

Candidatus Altivula (NL. fem. n. *Altivula* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTHG01*. The type species for the genus is *Candidatus* Altivula locupicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B12-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catapidaceae.

Description of *Candidatus* Amantichitinum anagnitura sp. nov.

Candidatus Amantichitinum anagnitura (NL. fem. n. *anagnitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amantichitinum sp001313065*. The type genome for the species is the GenBank assembly GCA_001313065.1. The GC content of the type genome is 59.6 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Amaricoccus adrenivita sp. nov.

Candidatus Amaricoccus adrenivita (NL. fem. n. *adrenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amaricoccus sp006385685*. The type genome for the species is the GenBank assembly RS_GCF_006385685.1. The GC content of the type genome is 69.62 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Amaricoccus colubicula sp. nov.

Candidatus Amaricoccus colubicula (NL. fem. n. *colubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amaricoccus sp003241785*. The type genome for the species is the GenBank assembly GCA_003241785.1. The GC content of the type genome is 69.86 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Amaricoccus funebimonas sp. nov.

Candidatus Amaricoccus funebimonas (NL. fem. n. *funebimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amaricoccus sp003258405*. The type genome for the species is the GenBank assembly RS_GCF_003258405.1. The GC content of the type genome is 66.5 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Amatrana vinolimonas sp. nov.

Candidatus Amatrana vinolimonas (NL. fem. n. *vinolimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-56-11 sp001796865*. The type genome for the species is the GenBank assembly GCA_001796865.1. The GC content of the type genome is 56.36 % and the genome length is 2.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Amatrana gen. nov.

Candidatus Amatrana (NL. fem. n. *Amatrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-56-11*. The type species for the genus is *Candidatus* Amatrana vinolimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-60-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunidaceae.

Description of *Candidatus* Amatraria milipugo sp. nov.

Candidatus Amatraria milipugo (NL. fem. n. *milipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM05190 sp900759815*. The type genome for the species is the GenBank assembly RS_GCF_900759815.1. The GC content of the type genome is 55.34 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Amatraria gen. nov.

Candidatus Amatraria (NL. fem. n. *Amatraria* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM05190*. The type species for the genus is *Candidatus* Amatraria milipugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amatria abinvedo sp. nov.

Candidatus Amatria abinvedo (NL. fem. n. *abinvedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2720865 sp002720865*. The type genome for the species is the GenBank assembly GCA_002720865.1. The GC content of the type genome is 38.32 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Amatria gen. nov.

Candidatus Amatria (NL. fem. n. *Amatria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2720865*. The type species for the genus is *Candidatus* Amatria abinvedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amatrula effacitas sp. nov.

Candidatus Amatrula effacitas (NL. fem. n. *effacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1246 sp002308315*. The type genome for the species is the GenBank assembly GCA_002308315.1. The GC content of the type genome is 58.28 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Amatrula gen. nov.

Candidatus Amatrula (NL. fem. n. *Amatrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1246*. The type species for the genus is *Candidatus* Amatrula effacitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambacana inaccugo sp. nov.

Candidatus Ambacana inaccugo (NL. fem. n. *inaccugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWAJ01 sp013361075*. The type genome for the species is the GenBank assembly GCA_013361075.1. The GC content of the type genome is 48.47 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Ambacana gen. nov.

Candidatus Ambacana (NL. fem. n. *Ambacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWAJ01*. The type species for the genus is *Candidatus* Ambacana inaccugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambacaria beniviforma sp. nov.

Candidatus Ambacaria beniviforma (NL. fem. n. *beniviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZHK01 sp012510745*. The type genome for the species is the GenBank assembly GCA_012510745.1. The GC content of the type genome is 25.73 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Ambacaria gen. nov.

Candidatus Ambacaria (NL. fem. n. *Ambacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZHK01*. The type species for the genus is *Candidatus* Ambacaria beniviforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Ambacella sceptitia sp. nov.

Candidatus Ambacella sceptitia (NL. fem. n. *sceptitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6259 sp002441135*. The type genome for the species is the GenBank assembly GCA_002441135.1. The GC content of the type genome is 35.02 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Ambacella gen. nov.

Candidatus Ambacella (NL. fem. n. *Ambacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6259*. The type species for the genus is *Candidatus* Ambacella sceptitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambacula diluvitica sp. nov.

Candidatus Ambacula diluvitica (NL. fem. n. *diluvitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM1970 sp013328345*. The type genome for the species is the GenBank assembly RS_GCF_013328345.1. The GC content of the type genome is 40.15 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Ambacula gen. nov.

Candidatus Ambacula (NL. fem. n. *Ambacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM1970*. The type species for the genus is *Candidatus* Ambacula diluvitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambadana chernago sp. nov.

Candidatus Ambadana chernago (NL. fem. n. *chernago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QFOI01 sp004337365*. The type genome for the species is the GenBank assembly RS_GCF_004337365.2. The GC content of the type genome is 34.18 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Ambadana gen. nov.

Candidatus Ambadana (NL. fem. n. *Ambadana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QFOI01*. The type species for the genus is *Candidatus* Ambadana chernago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambadana defeticula sp. nov.

Candidatus Ambadana defeticula (NL. fem. n. *defeticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QFOI01 sp003241175*. The type genome for the species is the GenBank assembly GCA_003241175.1. The GC content of the type genome is 37.45 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Ambadaria acculifica sp. nov.

Candidatus Ambadaria acculifica (NL. fem. n. *acculifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1139 sp003154095*. The type genome for the species is the GenBank assembly GCA_003154095.1. The GC content of the type genome is 56.99 % and the genome length is 8.66 Mbp.

Description of *Candidatus* Ambadaria gen. nov.

Candidatus Ambadaria (NL. fem. n. *Ambadaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1139*. The type species for the genus is *Candidatus* Ambadaria acculifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambadella impiritia sp. nov.

Candidatus Ambadella impiritia (NL. fem. n. *impiritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAEX01 sp013388635*. The type genome for the species is the GenBank assembly GCA_013388635.1. The GC content of the type genome is 50.52 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Ambadella gen. nov.

Candidatus Ambadella (NL. fem. n. *Ambadella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAEX01*. The type species for the genus is *Candidatus* Ambadella impiritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponidaceae.

Description of *Candidatus* Ambadia apharibra sp. nov.

Candidatus Ambadia apharibra (NL. fem. n. *apharibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An23 sp900544635*. The type genome for the species is the GenBank assembly GCA_900544635.1. The GC content of the type genome is 60.75 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Ambadia gen. nov.

Candidatus Ambadia (NL. fem. n. *Ambadia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *An23*. The type species for the genus is *Candidatus* Ambadia apharibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambadia inrefessa sp. nov.

Candidatus Ambadia inrefessa (NL. fem. n. *inrefessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An23 sp002159945*. The type genome for the species is the GenBank assembly RS_GCF_002159945.1. The GC content of the type genome is 57.91 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Ambadia insalitia sp. nov.

Candidatus Ambadia insalitia (NL. fem. n. *insalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An23 sp900545755*. The type genome for the species is the GenBank assembly GCA_900545755.1. The GC content of the type genome is 57.38 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Ambadida assicibra sp. nov.

Candidatus Ambadida assicibra (NL. fem. n. *assicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JC017 sp004296775*. The type genome for the species is the GenBank assembly RS_GCF_004296775.1. The GC content of the type genome is 40.23 % and the genome length is 6.72 Mbp.

Description of *Candidatus* Ambadida gen. nov.

Candidatus Ambadida (NL. fem. n. *Ambadida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JC017*. The type species for the genus is *Candidatus* Ambadida assicibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambadosa assibugo sp. nov.

Candidatus Ambadosa assibugo (NL. fem. n. *assibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVRU01 sp014534295*. The type genome for the species is the GenBank assembly GCA_014534295.1. The GC content of the type genome is 72.61 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Ambadosa gen. nov.

Candidatus Ambadosa (NL. fem. n. *Ambadosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACVRU01*. The type species for the genus is *Candidatus* Ambadosa assibugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambadula homagilega sp. nov.

Candidatus Ambadula homagilega (NL. fem. n. *homagilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUSV01 sp012032525*. The type genome for the species is the GenBank assembly GCA_012032525.1. The GC content of the type genome is 52.11 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Ambadula gen. nov.

Candidatus Ambadula (NL. fem. n. *Ambadula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUSV01*. The type species for the genus is *Candidatus* Ambadula homagilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambecaria voragibula sp. nov.

Candidatus Ambecaria voragibula (NL. fem. n. *voragibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFS01 sp009778695*. The type genome for the species is the GenBank assembly GCA_009778695.1. The GC content of the type genome is 30.29 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Ambecaria gen. nov.

Candidatus Ambecaria (NL. fem. n. *Ambecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFS01*. The type species for the genus is *Candidatus* Ambecaria voragibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Ambecella inlibimonia sp. nov.

Candidatus Ambecella inlibimonia (NL. fem. n. *inlibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHS01 sp013298485*. The type genome for the species is the GenBank assembly GCA_013298485.1. The GC content of the type genome is 63.04 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Ambecella gen. nov.

Candidatus Ambecella (NL. fem. n. *Ambecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHS01*. The type species for the genus is *Candidatus* Ambecella inlibimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambecia senacitoga sp. nov.

Candidatus Ambecia senacitoga (NL. fem. n. *senacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSI01 sp012524045*. The type genome for the species is the GenBank assembly GCA_012524045.1. The GC content of the type genome is 40.23 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Ambecia gen. nov.

Candidatus Ambecia (NL. fem. n. *Ambecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSI01*. The type species for the genus is *Candidatus* Ambecia senacitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambecida democessa sp. nov.

Candidatus Ambecida democessa (NL. fem. n. *democessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RHKX01 sp008363375*. The type genome for the species is the GenBank assembly GCA_008363375.1. The GC content of the type genome is 72.62 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Ambecida gen. nov.

Candidatus Ambecida (NL. fem. n. *Ambecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RHKX01*. The type species for the genus is *Candidatus* Ambecida democessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *70-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Ambecosa menapugo sp. nov.

Candidatus Ambecosa menapugo (NL. fem. n. *menapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKQW01 sp007118805*. The type genome for the species is the GenBank assembly GCA_007118805.1. The GC content of the type genome is 65.65 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Ambecosa gen. nov.

Candidatus Ambecosa (NL. fem. n. *Ambecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKQW01*. The type species for the genus is *Candidatus* Ambecosa menapugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambecula filifitura sp. nov.

Candidatus Ambecula filifitura (NL. fem. n. *filifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJW01 sp013002375*. The type genome for the species is the GenBank assembly GCA_013002375.1. The GC content of the type genome is 66.99 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Ambecula gen. nov.

Candidatus Ambecula (NL. fem. n. *Ambecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJW01*. The type species for the genus is *Candidatus* Ambecula filifitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHLQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mavorulaceae.

Description of *Candidatus* Ambidana tigurifica sp. nov.

Candidatus Ambidana tigurifica (NL. fem. n. *tigurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2711625 sp002711625*. The type genome for the species is the GenBank assembly GCA_002711625.1. The GC content of the type genome is 30.47 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Ambidana gen. nov.

Candidatus Ambidana (NL. fem. n. *Ambidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2711625*. The type species for the genus is *Candidatus* Ambidana tigurifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Ambidaria expecitoga sp. nov.

Candidatus Ambidaria expecitoga (NL. fem. n. *expecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVRN01 sp002067965*. The type genome for the species is the GenBank assembly GCA_002067965.1. The GC content of the type genome is 47.21 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Ambidaria gen. nov.

Candidatus Ambidaria (NL. fem. n. *Ambidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MVRN01*. The type species for the genus is *Candidatus* Ambidaria expecitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambidella immusastra sp. nov.

Candidatus Ambidella immusastra (NL. fem. n. *immusastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RDXD01 sp004292575*. The type genome for the species is the GenBank assembly GCA_004292575.1. The GC content of the type genome is 47.69 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Ambidella gen. nov.

Candidatus Ambidella (NL. fem. n. *Ambidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDXD01*. The type species for the genus is *Candidatus* Ambidella immusastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambidella semivibula sp. nov.

Candidatus Ambidella semivibula (NL. fem. n. *semivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXD01 sp009740285*. The type genome for the species is the GenBank assembly RS_GCF_009740285.1. The GC content of the type genome is 46.68 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Ambidida conipitura sp. nov.

Candidatus Ambidida conipitura (NL. fem. n. *conipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHZ01 sp013297675*. The type genome for the species is the GenBank assembly GCA_013297675.1. The GC content of the type genome is 45.28 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Ambidida gen. nov.

Candidatus Ambidida (NL. fem. n. *Ambidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHZ01*. The type species for the genus is *Candidatus* Ambidida conipitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambidosa monumitia sp. nov.

Candidatus Ambidosa monumitia (NL. fem. n. *monumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTPO01 sp011357885*. The type genome for the species is the GenBank assembly GCA_011357885.1. The GC content of the type genome is 59.15 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Ambidosa gen. nov.

Candidatus Ambidosa (NL. fem. n. *Ambidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTPO01*. The type species for the genus is *Candidatus* Ambidosa monumitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambifaria debucastra sp. nov.

Candidatus Ambifaria debucastra (NL. fem. n. *debucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-87 sp003231645*. The type genome for the species is the GenBank assembly GCA_003231645.1. The GC content of the type genome is 65.87 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Ambifaria gen. nov.

Candidatus Ambifaria (NL. fem. n. *Ambifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-87*. The type species for the genus is *Candidatus* Ambifaria debucastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11606*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifanaceae.

Description of *Candidatus* Ambifia infanimonia sp. nov.

Candidatus Ambifia infanimonia (NL. fem. n. *infanimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOZA01 sp903862655*. The type genome for the species is the GenBank assembly GCA_903862655.1. The GC content of the type genome is 35.52 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Ambifia gen. nov.

Candidatus Ambifia (NL. fem. n. *Ambifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOZA01*. The type species for the genus is *Candidatus* Ambifia infanimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Ambifida abmatugo sp. nov.

Candidatus Ambifida abmatugo (NL. fem. n. *abmatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKF01 sp009778165*. The type genome for the species is the GenBank assembly GCA_009778165.1. The GC content of the type genome is 39.96 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Ambifida gen. nov.

Candidatus Ambifida (NL. fem. n. *Ambifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKF01*. The type species for the genus is *Candidatus* Ambifida abmatugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5962*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenoculaceae.

Description of *Candidatus* Ambifosa vocifitas sp. nov.

Candidatus Ambifosa vocifitas (NL. fem. n. *vocifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGF01 sp013152545*. The type genome for the species is the GenBank assembly GCA_013152545.1. The GC content of the type genome is 44.27 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Ambifosa gen. nov.

Candidatus Ambifosa (NL. fem. n. *Ambifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGF01*. The type species for the genus is *Candidatus* Ambifosa vocifitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-152*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibulaceae.

Description of *Candidatus* Ambifula demadigena sp. nov.

Candidatus Ambifula demadigena (NL. fem. n. *demadigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14215 sp902796915*. The type genome for the species is the GenBank assembly GCA_902796915.1. The GC content of the type genome is 31.0 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Ambifula gen. nov.

Candidatus Ambifula (NL. fem. n. *Ambifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14215*. The type species for the genus is *Candidatus* Ambifula demadigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambusana conubicella sp. nov.

Candidatus Ambusana conubicella (NL. fem. n. *conubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-D09 sp003215935*. The type genome for the species is the GenBank assembly GCA_003215935.1. The GC content of the type genome is 34.14 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Ambusana gen. nov.

Candidatus Ambusana (NL. fem. n. *Ambusana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-D09*. The type species for the genus is *Candidatus* Ambusana conubicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambusaria idipsitia sp. nov.

Candidatus Ambusaria idipsitia (NL. fem. n. *idipsitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-FULL-47-11 sp001779455*. The type genome for the species is the GenBank assembly GCA_001779455.1. The GC content of the type genome is 47.32 % and the genome length is 0.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Ambusaria gen. nov.

Candidatus Ambusaria (NL. fem. n. *Ambusaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB1-FULL-47-11*. The type species for the genus is *Candidatus* Ambusaria idipsitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA927*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigellaceae.

Description of *Candidatus* Ambusella afranilega sp. nov.

Candidatus Ambusella afranilega (NL. fem. n. *afranilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFJQ01 sp009885995*. The type genome for the species is the GenBank assembly GCA_009885995.1. The GC content of the type genome is 65.17 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Ambusella gen. nov.

Candidatus Ambusella (NL. fem. n. *Ambusella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFJQ01*. The type species for the genus is *Candidatus* Ambusella afranilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambusia occucitica sp. nov.

Candidatus Ambusia occucitica (NL. fem. n. *occucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EB88 sp003858395*. The type genome for the species is the GenBank assembly RS_GCF_003858395.1. The GC content of the type genome is 62.55 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Ambusia gen. nov.

Candidatus Ambusia (NL. fem. n. *Ambusia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *EB88*. The type species for the genus is *Candidatus* Ambusia occucitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ambusida ignifitrix sp. nov.

Candidatus Ambusida ignifitrix (NL. fem. n. *ignifitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJC01 sp011333895*. The type genome for the species is the GenBank assembly GCA_011333895.1. The GC content of the type genome is 56.47 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Ambusida gen. nov.

Candidatus Ambusida (NL. fem. n. *Ambusida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJC01*. The type species for the genus is *Candidatus* Ambusida ignifitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTGP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viburellaceae.

Description of *Candidatus* Ambusula manubivita sp. nov.

Candidatus Ambusula manubivita (NL. fem. n. *manubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-N20 sp003280105*. The type genome for the species is the GenBank assembly GCA_003280105.1. The GC content of the type genome is 40.05 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Ambusula gen. nov.

Candidatus Ambusula (NL. fem. n. *Ambusula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-363-N20*. The type species for the genus is *Candidatus* Ambusula manubivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amercana delubessa sp. nov.

Candidatus Amercana delubessa (NL. fem. n. *delubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *L13 sp012955605*. The type genome for the species is the GenBank assembly RS_GCF_012955605.1. The GC content of the type genome is 43.68 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Amercana gen. nov.

Candidatus Amercana (NL. fem. n. *Amercana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *L13*. The type species for the genus is *Candidatus* Amercana delubessa .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Amercaria acusticella sp. nov.

Candidatus Amercaria acusticella (NL. fem. n. *acusticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2702655 sp002702655*. The type genome for the species is the GenBank assembly GCA_002702655.1. The GC content of the type genome is 64.36 % and the genome length is 7.42 Mbp.

Description of *Candidatus* Amercaria gen. nov.

Candidatus Amercaria (NL. fem. n. *Amercaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2702655*. The type species for the genus is *Candidatus* Amercaria acusticella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelariaceae.

Description of *Candidatus* Amercella dilacitoga sp. nov.

Candidatus Amercella dilacitoga (NL. fem. n. *dilacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACZNT01 sp902782635*. The type genome for the species is the GenBank assembly GCA_902782635.1. The GC content of the type genome is 65.6 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Amercella gen. nov.

Candidatus Amercella (NL. fem. n. *Amercella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACZNT01*. The type species for the genus is *Candidatus* Amercella dilacitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amercida repudedo sp. nov.

Candidatus Amercida repudedo (NL. fem. n. *repudedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWGF01 sp003554375*. The type genome for the species is the GenBank assembly GCA_003554375.1. The GC content of the type genome is 61.03 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Amercida gen. nov.

Candidatus Amercida (NL. fem. n. *Amercida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWGF01*. The type species for the genus is *Candidatus* Amercida repudedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKKC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papavosaceae.

Description of *Candidatus* Amercosa desucilenta sp. nov.

Candidatus Amercosa desucilenta (NL. fem. n. *desucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-45-25b sp001781035*. The type genome for the species is the GenBank assembly GCA_001781035.1. The GC content of the type genome is 45.25 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Amercosa gen. nov.

Candidatus Amercosa (NL. fem. n. *Amercosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-45-25b*. The type species for the genus is *Candidatus* Amercosa desucilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Amfitana cocibousia sp. nov.

Candidatus Amfitana cocibousia (NL. fem. n. *cocibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZP01 sp013695885*. The type genome for the species is the GenBank assembly GCA_013695885.1. The GC content of the type genome is 72.23 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Amfitana gen. nov.

Candidatus Amfitana (NL. fem. n. *Amfitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZP01*. The type species for the genus is *Candidatus* Amfitana cocibousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amfitia insenentia sp. nov.

Candidatus Amfitia insenentia (NL. fem. n. *insenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPCO01 sp013698385*. The type genome for the species is the GenBank assembly GCA_013698385.1. The GC content of the type genome is 69.44 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Amfitia gen. nov.

Candidatus Amfitia (NL. fem. n. *Amfitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPCO01*. The type species for the genus is *Candidatus* Amfitia insenentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Amfitia orgetifica sp. nov.

Candidatus Amfitia orgetifica (NL. fem. n. *orgetifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPCO01 sp004525275*. The type genome for the species is the GenBank assembly GCA_004525275.1. The GC content of the type genome is 67.2 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Amfitida nimiritudo sp. nov.

Candidatus Amfitida nimiritudo (NL. fem. n. *nimiritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABUFE01 sp013315265*. The type genome for the species is the GenBank assembly RS_GCF_013315265.1. The GC content of the type genome is 51.79 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Amfitida gen. nov.

Candidatus Amfitida (NL. fem. n. *Amfitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JABUFE01*. The type species for the genus is *Candidatus* Amfitida nimiritudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amfitosa telefago sp. nov.

Candidatus Amfitosa telefago (NL. fem. n. *telefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MPMV01 sp002238685*. The type genome for the species is the GenBank assembly GCA_002238685.1. The GC content of the type genome is 63.69 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Amfitosa gen. nov.

Candidatus Amfitosa (NL. fem. n. *Amfitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MPMV01*. The type species for the genus is *Candidatus* Amfitosa telefago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SP197*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Podagulaceae.

Description of *Candidatus* Amfitula conopibra sp. nov.

Candidatus Amfitula conopibra (NL. fem. n. *conopibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14282 sp902797565*. The type genome for the species is the GenBank assembly GCA_902797565.1. The GC content of the type genome is 52.64 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Amfitula gen. nov.

Candidatus Amfitula (NL. fem. n. *Amfitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14282*. The type species for the genus is *Candidatus* Amfitula

conopibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aminidesulfovibrio bucelessa sp. nov.

Candidatus Aminidesulfovibrio bucelessa (NL. fem. n. *bucelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminidesulfovibrio sp002382645*. The type genome for the species is the GenBank assembly GCA_003500825.1. The GC content of the type genome is 67.34 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Aminiphilus biverimonia sp. nov.

Candidatus Aminiphilus biverimonia (NL. fem. n. *biverimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminiphilus sp002425685*. The type genome for the species is the GenBank assembly GCA_002425845.1. The GC content of the type genome is 61.22 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Aminipila astapibra sp. nov.

Candidatus Aminipila astapibra (NL. fem. n. *astapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminipila sp010120715*. The type genome for the species is the GenBank assembly RS_GCF_010120715.1. The GC content of the type genome is 36.98 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Aminipila caduribula sp. nov.

Candidatus Aminipila caduribula (NL. fem. n. *caduribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminipila sp002455605*. The type genome for the species is the GenBank assembly GCA_002455605.1. The GC content of the type genome is 38.61 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Aminipila cnestousia sp. nov.

Candidatus Aminipila cnestousia (NL. fem. n. *cnestousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminipila sp004103735*. The type genome for the species is the GenBank assembly RS_GCF_004103735.1. The GC content of the type genome is 42.59 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Aminivibrio annecimonas sp. nov.

Candidatus Aminivibrio annecimonas (NL. fem. n. *annecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminivibrio sp001604435*. The type genome for the species is the GenBank assembly GCA_001604435.1. The GC content of the type genome is 58.87 % and the genome length is 3.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Aminivibrio coninibula sp. nov.

Candidatus Aminivibrio coninibula (NL. fem. n. *coninibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminivibrio sp002068355*. The type genome for the species is the GenBank assembly GCA_002068355.1. The GC content of the type genome is 63.47 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Aminivibrio estovugo sp. nov.

Candidatus Aminivibrio estovugo (NL. fem. n. *estovugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminivibrio sp012521675*. The type genome for the species is the GenBank assembly GCA_012521675.1. The GC content of the type genome is 60.61 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Aminivibrio indevitudo sp. nov.

Candidatus Aminivibrio indevitudo (NL. fem. n. *indevitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminivibrio sp012519165*. The type genome for the species is the GenBank assembly GCA_012519165.1. The GC content of the type genome is 58.63 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Aminivibrio menapitoga sp. nov.

Candidatus Aminivibrio menapitoga (NL. fem. n. *menapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminivibrio sp009929115*. The type genome for the species is the GenBank assembly GCA_009929115.1. The GC content of the type genome is 59.84 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Aminivibrio pocilugo sp. nov.

Candidatus Aminivibrio pocilugo (NL. fem. n. *pocilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminivibrio sp012523155*. The type genome for the species is the GenBank assembly GCA_012523155.1. The GC content of the type genome is 54.55 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Aminivibrio xeramitia sp. nov.

Candidatus Aminivibrio xeramitia (NL. fem. n. *xeramitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminivibrio sp002417725*. The type genome for the species is the GenBank assembly GCA_002417725.1. The GC content of the type genome is 54.62 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Aminnana inguritio sp. nov.

Candidatus Aminnana inguritio (NL. fem. n. *inguritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSAP01 sp011046415*. The type genome for the species is the GenBank assembly GCA_011046415.1. The GC content of the type genome is 57.17 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Aminnana gen. nov.

Candidatus Aminnana (NL. fem. n. *Aminnana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSAP01*. The type species for the genus is *Candidatus* Aminnana inguritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMRT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delaculaceae.

Description of *Candidatus* Aminnaria acropimonia sp. nov.

Candidatus Aminnaria acropimonia (NL. fem. n. *acropimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRME01 sp009777275*. The type genome for the species is the GenBank assembly GCA_009777275.1. The GC content of the type genome is 46.79 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Aminnaria gen. nov.

Candidatus Aminnaria (NL. fem. n. *Aminnaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRME01*. The type species for the genus is *Candidatus* Aminnaria acropimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aminnaria ineffifica sp. nov.

Candidatus Aminnaria ineffifica (NL. fem. n. *ineffifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRME01 sp009778115*. The type genome for the species is the GenBank assembly GCA_009778115.1. The GC content of the type genome is 43.83 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Aminnella bicubago sp. nov.

Candidatus Aminnella bicubago (NL. fem. n. *bicubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLOU01 sp007132385*. The type genome for the species is the GenBank assembly GCA_007132385.1. The GC content of the type genome is 44.37 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Aminnella gen. nov.

Candidatus Aminnella (NL. fem. n. *Aminnella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLOU01*. The type species for the genus is *Candidatus* Aminnella bicubago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aminnia acistitura sp. nov.

Candidatus Aminnia acistitura (NL. fem. n. *acistitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFBN01 sp001776425*. The type genome for the species is the GenBank assembly GCA_001776425.1. The GC content of the type genome is 36.68 % and the genome length is 0.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Aminnia gen. nov.

Candidatus Aminnia (NL. fem. n. *Aminnia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFBN01*. The type species for the genus is *Candidatus* Aminnia

acistitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-41-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Aminnosa rumifisca sp. nov.

Candidatus Aminnosa rumifisca (NL. fem. n. *rumifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1850 sp002338525*. The type genome for the species is the GenBank assembly GCA_002338525.1. The GC content of the type genome is 42.99 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Aminnosa gen. nov.

Candidatus Aminnosa (NL. fem. n. *Aminnosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1850*. The type species for the genus is *Candidatus* Aminnosa rumifisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aminnula adpecilenta sp. nov.

Candidatus Aminnula adpecilenta (NL. fem. n. *adpecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10908 sp012729355*. The type genome for the species is the GenBank assembly GCA_012729355.1. The GC content of the type genome is 53.8 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Aminnula gen. nov.

Candidatus Aminnula (NL. fem. n. *Aminnula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10908*. The type species for the genus is *Candidatus* Aminnula adpecilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aminnula mavoritrix sp. nov.

Candidatus Aminnula mavoritrix (NL. fem. n. *mavoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10908 sp003542355*. The type genome for the species is the GenBank assembly GCA_003542355.1. The GC content of the type genome is 52.92 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Aminnula offirastra sp. nov.

Candidatus Aminnula offirastra (NL. fem. n. *offirastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10908 sp012841925*. The type genome for the species is the GenBank assembly GCA_012841925.1. The GC content of the type genome is 56.28 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Aminobacter abnoratio sp. nov.

Candidatus Aminobacter abnoratio (NL. fem. n. *abnoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminobacter sp003148805*. The type genome for the species is the GenBank assembly RS_GCF_003148805.1. The GC content of the type genome is 62.06 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Aminobacter bimoticella sp. nov.

Candidatus Aminobacter bimoticella (NL. fem. n. *bimoticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminobacter sp001724355*. The type genome for the species is the GenBank assembly GCA_001724355.1. The GC content of the type genome is 64.63 % and the genome length is 3.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Aminobacter excalentia sp. nov.

Candidatus Aminobacter excalentia (NL. fem. n. *excalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminobacter sp000372965*. The type genome for the species is the GenBank assembly RS_GCF_000372965.1. The GC content of the type genome is 63.37 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Aminobacterium antefugo sp. nov.

Candidatus Aminobacterium antefugo (NL. fem. n. *antefugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aminobacterium sp002432275*. The type genome for the species is the GenBank assembly GCA_002432275.1. The GC content of the type genome is 41.07 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Ammatana adperetta sp. nov.

Candidatus Ammatana adperetta (NL. fem. n. *adperetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1603 sp900759005*. The type genome for the species is the GenBank assembly RS_GCF_900759005.1. The GC content of the type genome is 56.41 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Ammatana gen. nov.

Candidatus Ammatana (NL. fem. n. *Ammatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1603*. The type species for the genus is *Candidatus* Ammatana adperetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Ammatana occuciforma sp. nov.

Candidatus Ammatana occuciforma (NL. fem. n. *occuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1603 sp004555155*. The type genome for the species is the GenBank assembly GCA_004555155.1. The GC content of the type genome is 62.5 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Ammatana pragmilega sp. nov.

Candidatus Ammatana pragmilega (NL. fem. n. *pragmilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1603 sp900553265*. The type genome for the species is the GenBank assembly GCA_900553265.1. The GC content of the type genome is 62.77 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Ammatella ludimilega sp. nov.

Candidatus Ammatella ludimilega (NL. fem. n. *ludimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-680 sp003157385*. The type genome for the species is the GenBank assembly GCA_003157385.1. The GC content of the type genome is 63.99 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Ammatella gen. nov.

Candidatus Ammatella (NL. fem. n. *Ammatella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-680*. The type species for the genus is *Candidatus* Ammatella ludimilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-727*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Appugulaceae.

Description of *Candidatus* Ammatia acrocedo sp. nov.

Candidatus Ammatia acrocedo (NL. fem. n. *acrocedo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQTU01 sp009786125*. The type genome for the species is the GenBank assembly GCA_009786125.1. The GC content of the type genome is 39.15 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Ammatia gen. nov.

Candidatus Ammatia (NL. fem. n. *Ammatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQTU01*. The type species for the genus is *Candidatus* Ammatia acrocedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADAEX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibosaceae.

Description of *Candidatus* Ammatia desepitudo sp. nov.

Candidatus Ammatia desepitudo (NL. fem. n. *desepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQTU01 sp009780675*. The type genome for the species is the GenBank assembly GCA_009780675.1. The GC content of the type genome is 36.96 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Ammatia insubigena sp. nov.

Candidatus Ammatia insubigena (NL. fem. n. *insubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQTU01 sp009783755*. The type genome for the species is the GenBank assembly GCA_009783755.1. The GC content of the type genome is 34.48 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Ammatia rutabastra sp. nov.

Candidatus Ammatia rutabastra (NL. fem. n. *rutabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQTU01 sp009778835*. The type genome for the species is the GenBank assembly GCA_009778835.1. The GC content of the type genome is 36.15 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Ammatida alticetta sp. nov.

Candidatus Ammatida alticetta (NL. fem. n. *alticetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-51-16 sp002774795*. The type genome for the species is the GenBank assembly GCA_002774795.1. The GC content of the type genome is 51.46 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Ammatida gen. nov.

Candidatus Ammatida (NL. fem. n. *Ammatida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-51-16*. The type species for the genus is *Candidatus* Ammatida alticetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12445*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenodariaceae.

Description of *Candidatus* Ammatosa arremifica sp. nov.

Candidatus Ammatosa arremifica (NL. fem. n. *arremifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-227 sp011053935*. The type genome for the species is the GenBank assembly GCA_011053935.1. The GC content of the type genome is 36.44 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Ammatosa gen. nov.

Candidatus Ammatosa (NL. fem. n. *Ammatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-227*. The type species for the genus is *Candidatus* Ammatosa arremifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ammatula obnupilega sp. nov.

Candidatus Ammatula obnupilega (NL. fem. n. *obnupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSRV01 sp011331415*. The type genome for the species is the GenBank assembly GCA_011331415.1. The GC content of the type genome is 73.45 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Ammatula gen. nov.

Candidatus Ammatula (NL. fem. n. *Ammatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSRV01*. The type species for the genus is *Candidatus* Ammatula obnupilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Ammigana vatilitas sp. nov.

Candidatus Ammigana vatilitas (NL. fem. n. *vatilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYNH01 sp012520945*. The type genome for the species is the GenBank assembly GCA_012520945.1. The GC content of the type genome is 32.42 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Ammigana gen. nov.

Candidatus Ammigana (NL. fem. n. *Ammigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAYNH01*. The type species for the genus is *Candidatus* Ammigana vatilitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ammigaria nefaritia sp. nov.

Candidatus Ammigaria nefaritia (NL. fem. n. *nefaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTIS01 sp011338085*. The type genome for the species is the GenBank assembly GCA_011338085.1. The GC content of the type genome is 34.09 % and the genome length is 0.36 Mbp.

Description of *Candidatus* Ammigaria gen. nov.

Candidatus Ammigaria (NL. fem. n. *Ammigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTIS01*. The type species for the genus is *Candidatus* Ammigaria nefaritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subucidaceae.

Description of *Candidatus* Ammigella procrisca sp. nov.

Candidatus Ammigella procrisca (NL. fem. n. *procrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6920 sp002448875*. The type genome for the species is the GenBank assembly GCA_002448875.1. The GC content of the type genome is 59.64 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Ammigella gen. nov.

Candidatus Ammigella (NL. fem. n. *Ammigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6920*. The type species for the genus is *Candidatus* Ammigella

procrisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nicotariaceae.

Description of *Candidatus* Ammigida sitelitio sp. nov.

Candidatus Ammigida sitelitio (NL. fem. n. *sitelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFPI01 sp009926205*. The type genome for the species is the GenBank assembly GCA_009926205.1. The GC content of the type genome is 45.48 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Ammigida gen. nov.

Candidatus Ammigida (NL. fem. n. *Ammigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFPI01*. The type species for the genus is *Candidatus* Ammigida sitelitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ammigosa necubibra sp. nov.

Candidatus Ammigosa necubibra (NL. fem. n. *necubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYSU-D60015 sp003576705*. The type genome for the species is the GenBank assembly RS_GCF_003576705.1. The GC content of the type genome is 68.23 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Ammigosa gen. nov.

Candidatus Ammigosa (NL. fem. n. *Ammigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYSU-D60015*. The type species for the genus is *Candidatus* Ammigosa necubibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ammigula indupousia sp. nov.

Candidatus Ammigula indupousia (NL. fem. n. *indupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5536 sp002426795*. The type genome for the species is the GenBank assembly GCA_002426795.1. The GC content of the type genome is 43.33 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Ammigula gen. nov.

Candidatus Ammigula (NL. fem. n. *Ammigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5536*. The type species for the genus is *Candidatus* Ammigula indupousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Ammigula infenetta sp. nov.

Candidatus Ammigula infenetta (NL. fem. n. *infenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5536 sp002440975*. The type genome for the species is the GenBank assembly GCA_002440975.1. The GC content of the type genome is 41.61 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Ammixella defacatica sp. nov.

Candidatus Ammixella defacatica (NL. fem. n. *defacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSXF01 sp011367945*. The type genome for the species is the GenBank assembly GCA_011367945.1. The GC content of the type genome is 54.66 %

and the genome length is 3.17 Mbp.

Description of *Candidatus* Ammixella gen. nov.

Candidatus Ammixella (NL. fem. n. *Ammixella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSXF01*. The type species for the genus is *Candidatus* Ammixella defacatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Ammixia agnicitoga sp. nov.

Candidatus Ammixia agnicitoga (NL. fem. n. *agnicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-36-13 sp001777015*. The type genome for the species is the GenBank assembly GCA_001777015.1. The GC content of the type genome is 35.68 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Ammixia gen. nov.

Candidatus Ammixia (NL. fem. n. *Ammixia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-36-13*. The type species for the genus is *Candidatus* Ammixia agnicitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Ammixida colapentia sp. nov.

Candidatus Ammixida colapentia (NL. fem. n. *colapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXF01 sp013697295*. The type genome for the species is the GenBank assembly GCA_013697295.1. The GC content of the type genome is 64.28 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Ammixida gen. nov.

Candidatus Ammixida (NL. fem. n. *Ammixida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXF01*. The type species for the genus is *Candidatus* Ammixida colapentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHSQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recumanaceae.

Description of *Candidatus* Ammixosa pabilicula sp. nov.

Candidatus Ammixosa pabilicula (NL. fem. n. *pabilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-265 sp003235365*. The type genome for the species is the GenBank assembly GCA_003235365.1. The GC content of the type genome is 63.64 % and the genome length is 10.42 Mbp.

Description of *Candidatus* Ammixosa gen. nov.

Candidatus Ammixosa (NL. fem. n. *Ammixosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-265*. The type species for the genus is *Candidatus* Ammixosa pabilicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ammixula bipariforma sp. nov.

Candidatus Ammixula bipariforma (NL. fem. n. *bipariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAYHS01 sp012728785*. The type genome for the species is the GenBank assembly GCA_012728785.1. The GC content of the type genome is 41.72 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Ammixula gen. nov.

Candidatus Ammixula (NL. fem. n. *Ammixula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHS01*. The type species for the genus is *Candidatus* Ammixula bipariforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decenosaceae.

Description of *Candidatus* Ammixula lucelessa sp. nov.

Candidatus Ammixula lucelessa (NL. fem. n. *lucelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHS01 sp012735315*. The type genome for the species is the GenBank assembly GCA_012735315.1. The GC content of the type genome is 46.31 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Ammodana adnubilenta sp. nov.

Candidatus Ammodana adnubilenta (NL. fem. n. *adnubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKP01 sp009885495*. The type genome for the species is the GenBank assembly GCA_009885495.1. The GC content of the type genome is 42.06 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Ammodana gen. nov.

Candidatus Ammodana (NL. fem. n. *Ammodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKP01*. The type species for the genus is *Candidatus* Ammodana adnubilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cemenellaceae.

Description of *Candidatus* Ammodana encenifica sp. nov.

Candidatus Ammodana encenifica (NL. fem. n. *encenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKP01 sp009885895*. The type genome for the species is the GenBank assembly GCA_009885895.1. The GC content of the type genome is 42.86 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Ammodana illibifica sp. nov.

Candidatus Ammodana illibifica (NL. fem. n. *illibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKP01 sp009885935*. The type genome for the species is the GenBank assembly GCA_009885935.1. The GC content of the type genome is 42.35 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Ammodaria gasifitudo sp. nov.

Candidatus Ammodaria gasifitudo (NL. fem. n. *gasifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-40-13 sp001779235*. The type genome for the species is the GenBank assembly GCA_001779235.1. The GC content of the type genome is 39.65 % and the genome length is 1.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Ammodaria gen. nov.

Candidatus Ammodaria (NL. fem. n. *Ammodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-40-13*. The type species for the genus is *Candidatus* Ammodaria gasifitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefiaceae.

Description of *Candidatus* Ammodella oscilentia sp. nov.

Candidatus Ammodella oscilentia (NL. fem. n. *oscilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHZZ01 sp009692005*. The type genome for the species is the GenBank assembly GCA_009692005.1. The GC content of the type genome is 55.32 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Ammodella gen. nov.

Candidatus Ammodella (NL. fem. n. *Ammodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHZZ01*. The type species for the genus is *Candidatus* Ammodella oscilentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ammodida resuriforma sp. nov.

Candidatus Ammodida resuriforma (NL. fem. n. *resuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-56-14 sp001803705*. The type genome for the species is the GenBank assembly GCA_001803705.1. The GC content of the type genome is 56.44 % and the genome length is 3.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Ammodida gen. nov.

Candidatus Ammodida (NL. fem. n. *Ammodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-56-14*. The type species for the genus is *Candidatus* Ammodida

resuriforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9217*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volucosaceae.

Description of *Candidatus* Ammodosa nubifigena sp. nov.

Candidatus Ammodosa nubifigena (NL. fem. n. *nubifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBJ01 sp009784355*. The type genome for the species is the GenBank assembly GCA_009784355.1. The GC content of the type genome is 41.94 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Ammodosa gen. nov.

Candidatus Ammodosa (NL. fem. n. *Ammodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBJ01*. The type species for the genus is *Candidatus* Ammodosa nubifigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRAX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibulaceae.

Description of *Candidatus* Ammodosa vinacibula sp. nov.

Candidatus Ammodosa vinacibula (NL. fem. n. *vinacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBJ01 sp009784615*. The type genome for the species is the GenBank assembly GCA_009784615.1. The GC content of the type genome is 40.72 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Ammodula oppanicula sp. nov.

Candidatus Ammodula oppanicula (NL. fem. n. *oppanicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYOC01 sp005804965*. The type genome for the species is the GenBank assembly GCA_005804965.1. The GC content of the type genome is 56.79 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Ammodula gen. nov.

Candidatus Ammodula (NL. fem. n. *Ammodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYOC01*. The type species for the genus is *Candidatus* Ammodula oppanicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beneposaceae.

Description of *Candidatus* Ammulana adsibilenta sp. nov.

Candidatus Ammulana adsibilenta (NL. fem. n. *adsibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFF01 sp011065165*. The type genome for the species is the GenBank assembly GCA_011065165.1. The GC content of the type genome is 46.89 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Ammulana gen. nov.

Candidatus Ammulana (NL. fem. n. *Ammulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFF01*. The type species for the genus is *Candidatus* Ammulana adsibilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ammularia lanififica sp. nov.

Candidatus Ammularia lanififica (NL. fem. n. *lanififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2722105 sp002722105*. The type genome for the species is the GenBank assembly GCA_002722105.1. The GC content of the type genome is 35.01 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Ammularia gen. nov.

Candidatus Ammularia (NL. fem. n. *Ammularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2722105*. The type species for the genus is *Candidatus* Ammularia lanifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1611*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilariaceae.

Description of *Candidatus* Ammulella desuliforma sp. nov.

Candidatus Ammulella desuliforma (NL. fem. n. *desuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRBL01 sp903876815*. The type genome for the species is the GenBank assembly GCA_903876815.1. The GC content of the type genome is 34.86 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Ammulella gen. nov.

Candidatus Ammulella (NL. fem. n. *Ammulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRBL01*. The type species for the genus is *Candidatus* Ammulella desuliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-36-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mutabiaceae.

Description of *Candidatus* Ammulia casigetta sp. nov.

Candidatus Ammulia casigetta (NL. fem. n. *casigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-996 sp011332765*. The type genome for the species is the GenBank assembly GCA_011332765.1. The GC content of the type genome is 59.29 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Ammulia gen. nov.

Candidatus Ammulia (NL. fem. n. *Ammulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-996*. The type species for the genus is *Candidatus* Ammulia casigetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Ammulida democigena sp. nov.

Candidatus Ammulida democigena (NL. fem. n. *democigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-967 sp003151745*. The type genome for the species is the GenBank assembly GCA_003151745.1. The GC content of the type genome is 40.09 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Ammulida gen. nov.

Candidatus Ammulida (NL. fem. n. *Ammulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-967*. The type species for the genus is *Candidatus* Ammulida democigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2013-40CM-41-45*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vocifellaceae.

Description of *Candidatus* Ammurana avoncitudo sp. nov.

Candidatus Ammurana avoncitudo (NL. fem. n. *avoncitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002728855 sp002702405*. The type genome for the species is the GenBank assembly GCA_002702405.1. The GC content of the type genome is 31.15 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Ammurana gen. nov.

Candidatus Ammurana (NL. fem. n. *Ammurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002728855*. The type species for the genus is *Candidatus* Ammurana avoncitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ammurana defacentia sp. nov.

Candidatus Ammurana defacentia (NL. fem. n. *defacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002728855 sp002728855*. The type genome for the species is the GenBank assembly GCA_002728855.1. The GC content of the type genome is 30.57 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Ammurella denoratio sp. nov.

Candidatus Ammurella denoratio (NL. fem. n. *denoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRWO01 sp903882345*. The type genome for the species is the GenBank assembly GCA_903882345.1. The GC content of the type genome is 45.96 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Ammurella gen. nov.

Candidatus Ammurella (NL. fem. n. *Ammurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRWO01*. The type species for the genus is *Candidatus* Ammurella denoratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Ammurida visocitrix sp. nov.

Candidatus Ammurida visocitrix (NL. fem. n. *visocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYPC01 sp012519985*. The type genome for the species is the GenBank assembly GCA_012519985.1. The GC content of the type genome is 40.94 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Ammurida gen. nov.

Candidatus Ammurida (NL. fem. n. *Ammurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYPC01*. The type species for the genus is *Candidatus* Ammurida visocitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ammurosa femelicula sp. nov.

Candidatus Ammurosa femelicula (NL. fem. n. *femelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1-G9 sp003644335*. The type genome for the species is the GenBank assembly GCA_003644335.1. The GC content of the type genome is 55.01 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Ammurosa gen. nov.

Candidatus Ammurosa (NL. fem. n. *Ammurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1-G9*. The type species for the genus is *Candidatus* Ammurosa femelicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SM23-33. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Amnenana camilago sp. nov.

Candidatus Amnenana camilago (NL. fem. n. *camilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-117 sp003229095*. The type genome for the species is the GenBank assembly GCA_003229095.1. The GC content of the type genome is 54.12 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Amnenana gen. nov.

Candidatus Amnenana (NL. fem. n. *Amnenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-117*. The type species for the genus is *Candidatus* Amnenana camilago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amnenana redunessa sp. nov.

Candidatus Amnenana redunessa (NL. fem. n. *redunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-117 sp003645495*. The type genome for the species is the GenBank assembly GCA_003645495.1. The GC content of the type genome is 53.54 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Amnenana satacitrix sp. nov.

Candidatus Amnenana satacitrix (NL. fem. n. *satacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-117 sp004357475*. The type genome for the species is the GenBank assembly GCA_004357475.1. The GC content of the type genome is 55.96 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Amnenaria protribula sp. nov.

Candidatus Amnenaria protribula (NL. fem. n. *protribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1754 sp002315615*. The type genome for the species is the GenBank assembly GCA_002315615.1. The GC content of the type genome is 38.07 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Amnenaria gen. nov.

Candidatus Amnenaria (NL. fem. n. *Amnenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1754*. The type species for the genus is *Candidatus* Amnenaria protribula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amnenia atlanitia sp. nov.

Candidatus Amnenia atlanitia (NL. fem. n. *atlanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tener-01 sp001940985*. The type genome for the species is the GenBank assembly GCA_001940985.1. The GC content of the type genome is 28.48 % and the genome length is 1.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Phil the wombat".

Description of *Candidatus* Amnenia gen. nov.

Candidatus Amnenia (NL. fem. n. *Amnenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Tener-01*. The type species for the genus is *Candidatus* Amnenia atlanitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Amnenia tribrilega sp. nov.

Candidatus Amnenia tribrilega (NL. fem. n. *tribrilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tener-01 sp001604495*. The type genome for the species is the GenBank assembly GCA_001604495.1. The GC content of the type genome is 31.83 % and the genome length is 0.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Amnenida detenugo sp. nov.

Candidatus Amnenida detenugo (NL. fem. n. *detenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZYO01 sp009930325*. The type genome for the species is the GenBank assembly GCA_009930325.1. The GC content of the type genome is 27.67 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Amnenida gen. nov.

Candidatus Amnenida (NL. fem. n. *Amnenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RZYO01*. The type species for the genus is *Candidatus* Amnenida detenugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amnenosa idciratio sp. nov.

Candidatus Amnenosa idciratio (NL. fem. n. *idciratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8133 sp003509805*. The type genome for the species is the GenBank assembly GCA_003509805.1. The GC content of the type genome is 56.59 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Amnenosa gen. nov.

Candidatus Amnenosa (NL. fem. n. *Amnenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8133*. The type species for the genus is *Candidatus* Amnenosa idciratio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amnenula irrecentia sp. nov.

Candidatus Amnenula irrecentia (NL. fem. n. *irrecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBC038 sp009692685*. The type genome for the species is the GenBank assembly GCA_009692685.1. The GC content of the type genome is 67.4 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Amnenula gen. nov.

Candidatus Amnenula (NL. fem. n. *Amnenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBC038*. The type species for the genus is *Candidatus* Amnenula irrecentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Amnenula palifitura sp. nov.

Candidatus Amnenula palifitura (NL. fem. n. *palifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBC038 sp902827055*. The type genome for the species is the GenBank assembly GCA_902827055.1. The GC content of the type genome is 70.32 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Amnigana adinvitudo sp. nov.

Candidatus Amnigana adinvitudo (NL. fem. n. *adinvitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGZD01 sp002843155*. The type genome for the species is the GenBank assembly GCA_002843155.1. The GC content of the type genome is 50.69 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Amnigana gen. nov.

Candidatus Amnigana (NL. fem. n. *Amnigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGZD01*. The type species for the genus is *Candidatus* Amnigana adinvitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amnigaria desomentia sp. nov.

Candidatus Amnigaria desomentia (NL. fem. n. *desomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRKI01 sp011051875*. The type genome for the species is the GenBank assembly GCA_011051875.1. The GC content of the type genome is 62.5 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Amnigaria gen. nov.

Candidatus Amnigaria (NL. fem. n. *Amnigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRKI01*. The type species for the genus is *Candidatus* Amnigaria desomentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amnigella murilago sp. nov.

Candidatus Amnigella murilago (NL. fem. n. *murilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWK01 sp004356895*. The type genome for the species is the GenBank assembly GCA_004356895.1. The GC content of the type genome is 55.1 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Amnigella gen. nov.

Candidatus Amnigella (NL. fem. n. *Amnigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMWK01*. The type species for the genus is *Candidatus* Amnigella murilago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Amnigia bicipentia sp. nov.

Candidatus Amnigia bicipentia (NL. fem. n. *bicipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXSU01 sp005793345*. The type genome for the species is the GenBank assembly GCA_005793345.1. The GC content of the type genome is 31.36 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Amnigia gen. nov.

Candidatus Amnigia (NL. fem. n. *Amnigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXSU01*. The type species for the genus is *Candidatus* Amnigia bicipentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amnigida siminifica sp. nov.

Candidatus Amnigida siminifica (NL. fem. n. *siminifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFXV01 sp009921445*. The type genome for the species is the GenBank assembly GCA_009921445.1. The GC content of the type genome is 53.21 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Amnigida gen. nov.

Candidatus Amnigida (NL. fem. n. *Amnigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFXV01*. The type species for the genus is *Candidatus* Amnigida siminifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amnigosa celumiforma sp. nov.

Candidatus Amnigosa celumiforma (NL. fem. n. *celumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GW-Nitrospira-1 sp002839535*. The type genome for the species is the GenBank assembly GCA_002839535.1. The GC content of the type genome is 46.15 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Amnigosa gen. nov.

Candidatus Amnigosa (NL. fem. n. *Amnigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GW-Nitrospira-1*. The type species for the genus is *Candidatus* Amnigosa celumiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6898*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecunellaceae.

Description of *Candidatus* Amnigula aprugessa sp. nov.

Candidatus Amnigula aprugessa (NL. fem. n. *aprugessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SLOZ01 sp007132255*. The type genome for the species is the GenBank assembly GCA_007132255.1. The GC content of the type genome is 52.94 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Amnigula gen. nov.

Candidatus Amnigula (NL. fem. n. *Amnigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLOZ01*. The type species for the genus is *Candidatus* Amnigula aprugessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B1SED10-159*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilellaceae.

Description of *Candidatus* Amnigula tirocitudo sp. nov.

Candidatus Amnigula tirocitudo (NL. fem. n. *tirocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLOZ01 sp003559095*. The type genome for the species is the GenBank assembly GCA_003559095.1. The GC content of the type genome is 54.68 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Amoebophilus inornimonia sp. nov.

Candidatus Amoebophilus inornimonia (NL. fem. n. *inornimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amoebophilus sp001897825*. The type genome for the species is the GenBank assembly GCA_001897825.1. The GC content of the type genome is 36.17 % and the genome length is 1.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Ampenana delucicula sp. nov.

Candidatus Ampenana delucicula (NL. fem. n. *delucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JABDHB01 sp013288895*. The type genome for the species is the GenBank assembly GCA_013288895.1. The GC content of the type genome is 42.78 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Ampenana gen. nov.

Candidatus Ampenana (NL. fem. n. *Ampenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDHB01*. The type species for the genus is *Candidatus* Ampenana delucicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ampenana revulentia sp. nov.

Candidatus Ampenana revulentia (NL. fem. n. *revulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDHB01 sp013285775*. The type genome for the species is the GenBank assembly GCA_013285775.1. The GC content of the type genome is 40.52 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Ampenaria divolicella sp. nov.

Candidatus Ampenaria divolicella (NL. fem. n. *divolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4657 sp002405475*. The type genome for the species is the GenBank assembly GCA_002405475.1. The GC content of the type genome is 53.61 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Ampenaria gen. nov.

Candidatus Ampenaria (NL. fem. n. *Ampenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4657*. The type species for the genus is *Candidatus* Ampenaria divolicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ampenella betacimonia sp. nov.

Candidatus Ampenella betacimonia (NL. fem. n. *betacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11363 sp002862265*. The type genome for the species is the GenBank assembly GCA_002862265.1. The GC content of the type genome is 52.36 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Ampenella gen. nov.

Candidatus Ampenella (NL. fem. n. *Ampenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11363*. The type species for the genus is *Candidatus* Ampenella betacimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ampenella boniticella sp. nov.

Candidatus Ampenella boniticella (NL. fem. n. *boniticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11363 sp007752135*. The type genome for the species is the GenBank assembly RS_GCF_007752135.1. The GC content of the type genome is 55.28 % and the genome length is 8.44 Mbp.

Description of *Candidatus* Ampenella sacopousia sp. nov.

Candidatus Ampenella sacopousia (NL. fem. n. *sacopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11363 sp005798335*. The type genome for the species is the GenBank assembly GCA_005798335.1. The GC content of the type genome is 52.92 % and the genome length is 8.46 Mbp.

Description of *Candidatus* Ampenella scaccitas sp. nov.

Candidatus Ampenella scaccitas (NL. fem. n. *scaccitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11363 sp003695565*. The type genome for the species is the GenBank assembly GCA_003695565.1. The GC content of the type genome is 60.41 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Ampenia appacax sp. nov.

Candidatus Ampenia appacax (NL. fem. n. *appacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGZ01 sp013152045*. The type genome for the species is the GenBank assembly GCA_013152045.1. The GC content of the type genome is 49.25 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Ampenia gen. nov.

Candidatus Ampenia (NL. fem. n. *Ampenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGZ01*. The type species for the genus is *Candidatus* Ampenia appacax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubosaceae.

Description of *Candidatus* Ampenia expecicella sp. nov.

Candidatus Ampenia expecicella (NL. fem. n. *expecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGZ01 sp011052165*. The type genome for the species is the GenBank assembly GCA_011052165.1. The GC content of the type genome is 52.12 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Ampenida defalimonia sp. nov.

Candidatus Ampenida defalimonia (NL. fem. n. *defalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHCI01 sp002842205*. The type genome for the species is the GenBank assembly GCA_002842205.1. The GC content of the type genome is 65.14 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Ampenida gen. nov.

Candidatus Ampenida (NL. fem. n. *Ampenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHCI01*. The type species for the genus is *Candidatus* Ampenida defalimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ampenosa protriforma sp. nov.

Candidatus Ampenosa protriforma (NL. fem. n. *protriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-7367 sp000317065*. The type genome for the species is the GenBank assembly RS_GCF_000317065.1. The GC content of the type genome is 46.22 % and the genome length is 4.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Ampenosa gen. nov.

Candidatus Ampenosa (NL. fem. n. *Ampenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-7367*. The type species for the genus is *Candidatus* Ampenosa protriforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Amphibacillus halucitas sp. nov.

Candidatus Amphibacillus halucitas (NL. fem. n. *halucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amphibacillus sp012838505*. The type genome for the species is the GenBank assembly GCA_012838505.1. The GC content of the type genome is 36.96 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Amulumruptor armigastra sp. nov.

Candidatus Amulumruptor armigastra (NL. fem. n. *armigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amulumruptor sp900539915*. The type genome for the species is the GenBank assembly GCA_900539915.1. The GC content of the type genome is 52.51 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Amulumruptor deforitoga sp. nov.

Candidatus Amulumruptor deforitoga (NL. fem. n. *deforitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amulumruptor sp001689515*. The type genome for the species is the GenBank assembly GCA_009775505.1. The GC content of the type genome is 50.97 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Amulumruptor ficeditura sp. nov.

Candidatus Amulumruptor ficeditura (NL. fem. n. *ficeditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amulumruptor sp900547825*. The type genome for the species is the GenBank assembly GCA_902406015.1. The GC content of the type genome is 50.83 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Amycolatopsis ambusitrix sp. nov.

Candidatus Amycolatopsis ambusitrix (NL. fem. n. *ambusitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp000231075*. The type genome for the species is the GenBank assembly RS_GCF_000231075.2. The GC content of the type genome is 71.86 % and the genome length is 8.39 Mbp.

Description of *Candidatus* Amycolatopsis anarrimonia sp. nov.

Candidatus Amycolatopsis anarrimonia (NL. fem. n. *anarrimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp003977855*. The type genome for the species is the GenBank assembly RS_GCF_003977855.1. The GC content of the type genome is 69.13 % and the genome length is 8.73 Mbp.

Description of *Candidatus* Amycolatopsis attelessa sp. nov.

Candidatus Amycolatopsis attelessa (NL. fem. n. *attelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp013364075*. The type genome for the species is the GenBank assembly RS_GCF_013364075.1. The GC content of the type genome is 71.7 % and the genome length is 10.97 Mbp.

Description of *Candidatus* Amycolatopsis bimetago sp. nov.

Candidatus Amycolatopsis bimetago (NL. fem. n. *bimetago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp002904335*. The type genome for the species is the GenBank assembly RS_GCF_002904335.1. The GC content of the type genome is 71.39 % and the genome length is 10.49 Mbp.

Description of *Candidatus* Amycolatopsis bisacetta sp. nov.

Candidatus Amycolatopsis bisacetta (NL. fem. n. *bisacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp003947415*. The type genome for the species is the GenBank assembly RS_GCF_003947415.1. The GC content of the type genome is 68.65 % and the genome length is 9.07 Mbp.

Description of *Candidatus* Amycolatopsis cadaventia sp. nov.

Candidatus Amycolatopsis cadaventia (NL. fem. n. *cadaventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp009429145*. The type genome for the species is the GenBank assembly RS_GCF_009429145.1. The GC content of the type genome is 70.28 % and the genome length is 10.35 Mbp.

Description of *Candidatus* Amycolatopsis catafugo sp. nov.

Candidatus Amycolatopsis catafugo (NL. fem. n. *catafugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp014145675*. The type genome for the species is the GenBank assembly RS_GCF_014145675.1. The GC content of the type genome is 69.6 % and the genome length is 9.69 Mbp.

Description of *Candidatus* Amycolatopsis decinatica sp. nov.

Candidatus Amycolatopsis decinatica (NL. fem. n. *decinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp002849735*. The type genome for the species is the GenBank assembly RS_GCF_002890695.1. The GC content of the type genome is 68.86 % and the genome length is 9.44 Mbp.

Description of *Candidatus* Amycolatopsis divolatica sp. nov.

Candidatus Amycolatopsis divolatica (NL. fem. n. *divolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp902497555*. The type genome for the species is the GenBank assembly RS_GCF_902497555.1. The GC content of the type genome is 71.17 % and the genome length is 10.56 Mbp.

Description of *Candidatus* Amycolatopsis exsomentia sp. nov.

Candidatus Amycolatopsis exsomentia (NL. fem. n. *exsomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Amycolatopsis sp003937945*. The type genome for the species is the GenBank assembly RS_GCF_003937945.1. The GC content of the type genome is 71.84 % and the genome length is 10.23 Mbp.

Description of *Candidatus* Amycolatopsis funebax sp. nov.

Candidatus Amycolatopsis funebax (NL. fem. n. *funebax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp002904295*. The type genome for the species is the GenBank assembly RS_GCF_002904295.1. The GC content of the type genome is 71.83 % and the genome length is 10.16 Mbp.

Description of *Candidatus* Amycolatopsis infaciforma sp. nov.

Candidatus Amycolatopsis infaciforma (NL. fem. n. *infaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp012328925*. The type genome for the species is the GenBank assembly RS_GCF_012328925.1. The GC content of the type genome is 69.48 % and the genome length is 8.5 Mbp.

Description of *Candidatus* Amycolatopsis saxopessa sp. nov.

Candidatus Amycolatopsis saxopessa (NL. fem. n. *saxopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp002796545*. The type genome for the species is the GenBank assembly RS_GCF_000158875.1. The GC content of the type genome is 69.78 % and the genome length is 9.18 Mbp.

Description of *Candidatus* Amycolatopsis visocicula sp. nov.

Candidatus Amycolatopsis visocicula (NL. fem. n. *visocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis sp013870525*. The type genome for the species is the GenBank assembly RS_GCF_013870525.1. The GC content of the type genome is 68.67 % and the genome length is 8.42 Mbp.

Description of *Candidatus* Amycolatopsis citipibra sp. nov.

Candidatus Amycolatopsis citipibra (NL. fem. n. *citipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis_C sp009377395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009377395.1. The GC content of the type genome is 70.14 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Amycolatopsis delapimonas sp. nov.

Candidatus Amycolatopsis delapimonas (NL. fem. n. *delapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis_C sp009377385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009377385.1. The GC content of the type genome is 68.96 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Amycolatopsis indevicula sp. nov.

Candidatus Amycolatopsis indevicula (NL. fem. n. *indevicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis_C sp009377475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009377475.1. The GC content of the type genome is 69.01 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Amycolatopsis vocamessa sp. nov.

Candidatus Amycolatopsis vocamessa (NL. fem. n. *vocamessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amycolatopsis_C sp009379975*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009379975.1. The GC content of the type genome is 68.22 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Amylibacter arvecivita sp. nov.

Candidatus Amylibacter arvecivita (NL. fem. n. *arvecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amylibacter sp002469545*. The type genome for the species is the GenBank assembly GCA_002469545.1. The GC content of the type genome is 48.2 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Amylibacter baropessa sp. nov.

Candidatus Amylibacter baropessa (NL. fem. n. *baropessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amylibacter sp000153745*. The type genome for the species is the GenBank assembly GCA_000383155.1. The GC content of the type genome is 36.69 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Amylibacter dapifivita sp. nov.

Candidatus Amylibacter dapifivita (NL. fem. n. *dapifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amylibacter sp002387535*. The type genome for the species is the GenBank assembly GCA_002387535.1. The GC content of the type genome is 52.88 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Amylibacter defasetta sp. nov.

Candidatus Amylibacter defasetta (NL. fem. n. *defasetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amylibacter sp014323795*. The type genome for the species is the GenBank assembly GCA_014323795.1. The GC content of the type genome is 59.36 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Amylibacter detepicula sp. nov.

Candidatus Amylibacter detepicula (NL. fem. n. *detepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amylibacter sp009184395*. The type genome for the species is the GenBank assembly RS_GCF_009184395.1. The GC content of the type genome is 45.11 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Amylibacter lacinitia sp. nov.

Candidatus Amylibacter lacinitia (NL. fem. n. *lacinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amylibacter sp003447515*. The type genome for the species is the GenBank assembly GCA_003447515.1. The GC content of the type genome is 48.11 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Amylibacter manupicella sp. nov.

Candidatus Amylibacter manupicella (NL. fem. n. *manupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amylibacter sp900197625*. The type genome for the species is the GenBank assembly GCA_004212715.1. The GC content of the type genome is 36.35 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Amylibacter patibousia sp. nov.

Candidatus Amylibacter patibousia (NL. fem. n. *patibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Amylibacter sp002401045*. The type genome for the species is the GenBank assembly GCA_002401045.1. The GC content of the type genome is 48.78 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Anabaenopsis daducugo sp. nov.

Candidatus Anabaenopsis daducugo (NL. fem. n. *daducugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anabaenopsis sp003990705*. The type genome for the species is the GenBank assembly GCA_003990705.1. The GC content of the type genome is 40.43 % and the genome length is 7.53 Mbp.

Description of *Candidatus* Anabaenopsis octinilenta sp. nov.

Candidatus Anabaenopsis octinilenta (NL. fem. n. *octinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anabaenopsis sp000316625*. The type genome for the species is the GenBank assembly RS_GCF_000316625.1. The GC content of the type genome is 40.36 % and the genome length is 6.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "shallow pond".

Description of *Candidatus* Anaclana diponitrix sp. nov.

Candidatus Anaclana diponitrix (NL. fem. n. *diponitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYXZ01 sp012515635*. The type genome for the species is the GenBank assembly GCA_012515635.1. The GC content of the type genome is 40.58 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Anaclana gen. nov.

Candidatus Anaclana (NL. fem. n. *Anaclana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYXZ01*. The type species for the genus is *Candidatus* Anaclana diponitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B48-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamellaceae.

Description of *Candidatus* Anaclaria bisulimonas sp. nov.

Candidatus Anaclaria bisulimonas (NL. fem. n. *bisulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHWT01 sp013362195*. The type genome for the species is the GenBank assembly GCA_013362195.1. The GC content of the type genome is 68.29 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Anaclaria gen. nov.

Candidatus Anaclaria (NL. fem. n. *Anaclaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHWT01*. The type species for the genus is *Candidatus* Anaclaria bisulimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-66-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunidaceae.

Description of *Candidatus* Anaclaria detotitas sp. nov.

Candidatus Anaclaria detotitas (NL. fem. n. *detotitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHWT01 sp003222675*. The type genome for the species is the GenBank assembly GCA_003222675.1. The GC content of the type genome is 64.54 % and the genome length is 7.16 Mbp.

Description of *Candidatus* Anaclella extipisca sp. nov.

Candidatus Anaclella extipisca (NL. fem. n. *extipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRLC01 sp011053145*. The type genome for the species is the GenBank assembly GCA_011053145.1. The GC content of the type genome is 68.49 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Anaclella gen. nov.

Candidatus Anaclella (NL. fem. n. *Anaclella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRLC01*. The type species for the genus is *Candidatus* Anaclella extipisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Anaclia catocatica sp. nov.

Candidatus Anaclia catocatica (NL. fem. n. *catocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYVI01 sp012517235*. The type genome for the species is the GenBank assembly GCA_012517235.1. The GC content of the type genome is 38.01 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Anaclia gen. nov.

Candidatus Anaclia (NL. fem. n. *Anaclia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYVI01*. The type species for the genus is *Candidatus* Anaclia catocatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9959*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvidaceae.

Description of *Candidatus* Anaclida cinefigena sp. nov.

Candidatus Anaclida cinefigena (NL. fem. n. *cinefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-30 sp003963225*. The type genome for the species is the GenBank assembly GCA_003963225.1. The GC content of the type genome is 39.09 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Anaclida gen. nov.

Candidatus Anaclida (NL. fem. n. *Anaclida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AWTP1-30*. The type species for the genus is *Candidatus* Anaclida cinefigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anaclosa gen. nov.

Candidatus Anaclosa (NL. fem. n. *Anaclosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HyVt-443*. The type species for the genus is *Candidatus* Anaclosa thiotaurini_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anactana myalgilega sp. nov.

Candidatus Anactana myalgilega (NL. fem. n. *myalgilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7709 sp002482405*. The type genome for the species is the GenBank assembly GCA_002482405.1. The GC content of the type genome is 50.65 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Anactana gen. nov.

Candidatus Anactana (NL. fem. n. *Anactana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7709*. The type species for the genus is *Candidatus* Anactana myalgilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anactaria cerifetta sp. nov.

Candidatus Anactaria cerifetta (NL. fem. n. *cerifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAISGS01 sp903884915*. The type genome for the species is the GenBank assembly GCA_903884915.1. The GC content of the type genome is 60.72 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Anactaria gen. nov.

Candidatus Anactaria (NL. fem. n. *Anactaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISGS01*. The type species for the genus is *Candidatus* Anactaria cerifetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anactella adcubivita sp. nov.

Candidatus Anactella adcubivita (NL. fem. n. *adcubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFRZ01 sp009691855*. The type genome for the species is the GenBank assembly GCA_009691855.1. The GC content of the type genome is 71.03 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Anactella gen. nov.

Candidatus Anactella (NL. fem. n. *Anactella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFRZ01*. The type species for the genus is *Candidatus* Anactella adcubivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Anactella exsupiforma sp. nov.

Candidatus Anactella exsupiforma (NL. fem. n. *exsupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFRZ01 sp013140785*. The type genome for the species is the

GenBank assembly GCA_013140785.1. The GC content of the type genome is 69.67 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Anactida conipitio sp. nov.

Candidatus Anactida conipitio (NL. fem. n. *conipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG29 sp003222115*. The type genome for the species is the GenBank assembly GCA_003222115.1. The GC content of the type genome is 69.95 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Anactida gen. nov.

Candidatus Anactida (NL. fem. n. *Anactida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG29*. The type species for the genus is *Candidatus* Anactida conipitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Anactida semifilega sp. nov.

Candidatus Anactida semifilega (NL. fem. n. *semifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG29 sp003221995*. The type genome for the species is the GenBank assembly GCA_003221995.1. The GC content of the type genome is 70.43 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Anaerobacillus ammodibula sp. nov.

Candidatus Anaerobacillus ammodibula (NL. fem. n. *ammodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobacillus sp007118195*. The type genome for the species is the GenBank assembly GCA_007118195.1. The GC content of the type genome is 36.24 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Anaerobacillus inmorigena sp. nov.

Candidatus Anaerobacillus inmorigena (NL. fem. n. *inmorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobacillus sp007120055*. The type genome for the species is the GenBank assembly GCA_007120055.1. The GC content of the type genome is 35.91 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Anaerobacillus sicarivita sp. nov.

Candidatus Anaerobacillus sicarivita (NL. fem. n. *sicarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobacillus sp004116265*. The type genome for the species is the GenBank assembly RS_GCF_004116265.1. The GC content of the type genome is 36.9 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Anaerobacillus allacitura sp. nov.

Candidatus Anaerobacillus allacitura (NL. fem. n. *allacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobacillus_A sp009818105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009818105.1. The GC content of the type genome is 40.48 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Anaerobacillus turibatica sp. nov.

Candidatus Anaerobacillus turibatica (NL. fem. n. *turibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobacillus_A sp002563635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly

RS_GCF_002563635.1. The GC content of the type genome is 40.36 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Anaerobiospirillum cobalisca sp. nov.

Candidatus Anaerobiospirillum cobalisca (NL. fem. n. *cobalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobiospirillum sp900543125*. The type genome for the species is the GenBank assembly GCA_900756455.1. The GC content of the type genome is 39.63 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Anaerobutyricum acrimatica sp. nov.

Candidatus Anaerobutyricum acrimatica (NL. fem. n. *acrimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp902782815*. The type genome for the species is the GenBank assembly GCA_902782815.1. The GC content of the type genome is 49.34 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Anaerobutyricum ammigitio sp. nov.

Candidatus Anaerobutyricum ammigitio (NL. fem. n. *ammigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp900554965*. The type genome for the species is the GenBank assembly GCA_900554965.1. The GC content of the type genome is 37.42 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Anaerobutyricum arcificula sp. nov.

Candidatus Anaerobutyricum arcificula (NL. fem. n. *arcificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp902795715*. The type genome for the species is the GenBank assembly GCA_902795715.1. The GC content of the type genome is 45.56 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Anaerobutyricum celumilega sp. nov.

Candidatus Anaerobutyricum celumilega (NL. fem. n. *celumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp902796415*. The type genome for the species is the GenBank assembly GCA_902796415.1. The GC content of the type genome is 45.02 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Anaerobutyricum effinitia sp. nov.

Candidatus Anaerobutyricum effinitia (NL. fem. n. *effinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp902796045*. The type genome for the species is the GenBank assembly GCA_902796045.1. The GC content of the type genome is 49.49 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Anaerobutyricum excerivita sp. nov.

Candidatus Anaerobutyricum excerivita (NL. fem. n. *excerivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp900754855*. The type genome for the species is the GenBank assembly RS_GCF_900754855.1. The GC content of the type genome is 44.93 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Anaerobutyricum exhilentia sp. nov.

Candidatus Anaerobutyricum exhilentia (NL. fem. n. *exhilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp902767195*. The type genome for the species is the GenBank assembly GCA_902767195.1. The GC content of the type genome is 47.41 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Anaerobutyricum metucicula sp. nov.

Candidatus Anaerobutyricum metucicula (NL. fem. n. *metucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp902782625*. The type genome for the species is the GenBank assembly GCA_902782625.1. The GC content of the type genome is 44.9 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Anaerobutyricum selibifica sp. nov.

Candidatus Anaerobutyricum selibifica (NL. fem. n. *selibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp002161065*. The type genome for the species is the GenBank assembly RS_GCF_002161065.1. The GC content of the type genome is 46.78 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Anaerobutyricum tresvisca sp. nov.

Candidatus Anaerobutyricum tresvisca (NL. fem. n. *tresvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp902783205*. The type genome for the species is the GenBank assembly GCA_902783205.1. The GC content of the type genome is 48.9 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Anaerobutyricum verifitas sp. nov.

Candidatus Anaerobutyricum verifitas (NL. fem. n. *verifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp002494165*. The type genome for the species is the GenBank assembly GCA_902773175.1. The GC content of the type genome is 49.27 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Anaerobutyricum viragentia sp. nov.

Candidatus Anaerobutyricum viragentia (NL. fem. n. *viragentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerobutyricum sp900016875*. The type genome for the species is the GenBank assembly RS_GCF_900016875.1. The GC content of the type genome is 46.49

% and the genome length is 3.99 Mbp.

Description of *Candidatus* Anaerococcus benifitoga sp. nov.

Candidatus Anaerococcus benifitoga (NL. fem. n. *benifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerococcus sp900541365*. The type genome for the species is the GenBank assembly GCA_900766335.1. The GC content of the type genome is 32.05 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Anaerococcus dilecisca sp. nov.

Candidatus Anaerococcus dilecisca (NL. fem. n. *dilecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerococcus sp900258475*. The type genome for the species is the GenBank assembly GCA_900766515.1. The GC content of the type genome is 34.86 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Anaerococcus homagatio sp. nov.

Candidatus Anaerococcus homagatio (NL. fem. n. *homagatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerococcus sp900550345*. The type genome for the species is the GenBank assembly GCA_900550345.1. The GC content of the type genome is 29.08 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Anaerococcus nubigitio sp. nov.

Candidatus Anaerococcus nubigitio (NL. fem. n. *nubigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerococcus sp900232825*. The type genome for the species is the GenBank assembly RS_GCF_900232825.1. The GC content of the type genome is 31.27 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Anaerococcus pedepimonas sp. nov.

Candidatus Anaerococcus pedepimonas (NL. fem. n. *pedepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerococcus sp009696575*. The type genome for the species is the GenBank assembly RS_GCF_009696575.1. The GC content of the type genome is 29.62 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Anaerococcus selecitoga sp. nov.

Candidatus Anaerococcus selecitoga (NL. fem. n. *selecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerococcus sp900551095*. The type genome for the species is the GenBank assembly GCA_900551095.1. The GC content of the type genome is 32.27 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Anaerocolumna annubitio sp. nov.

Candidatus Anaerocolumna annubitio (NL. fem. n. *annubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerocolumna sp002294045*. The type genome for the species is the GenBank assembly GCA_002294045.1. The GC content of the type genome is 40.73 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Anaerocolumna cimelifica sp. nov.

Candidatus Anaerocolumna cimelifica (NL. fem. n. *cimelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerocolumna sp009931695*. The type genome for the species is the GenBank assembly RS_GCF_009931695.1. The GC content of the type genome is 36.73 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Anaerocolumna fetulessa sp. nov.

Candidatus Anaerocolumna fetulessa (NL. fem. n. *fetulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerocolumna sp002434335*. The type genome for the species is the GenBank assembly GCA_002434335.1. The GC content of the type genome is 38.74 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Anaerocolumna ludifimonas sp. nov.

Candidatus Anaerocolumna ludifimonas (NL. fem. n. *ludifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerocolumna sp014218355*. The type genome for the species is the GenBank assembly RS_GCF_014218355.1. The GC content of the type genome is 38.31 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Anaerocolumna venefago sp. nov.

Candidatus Anaerocolumna venefago (NL. fem. n. *venefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerocolumna sp000702945*. The type genome for the species is the GenBank assembly RS_GCF_000702945.1. The GC content of the type genome is 38.96 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Anaerofilum rosarifica sp. nov.

Candidatus Anaerofilum rosarifica (NL. fem. n. *rosarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerofilum sp002160015*. The type genome for the species is the GenBank assembly RS_GCF_002160015.1. The GC content of the type genome is 60.35 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Anaerofustis cuticastra sp. nov.

Candidatus Anaerofustis cuticastra (NL. fem. n. *cuticastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerofustis sp900549875*. The type genome for the species is the GenBank assembly GCA_900549875.1. The GC content of the type genome is 33.14 %

and the genome length is 2.22 Mbp.

Description of *Candidatus* Anaeroglobus baropiforma sp. nov.

Candidatus Anaeroglobus baropiforma (NL. fem. n. *baropiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeroglobus sp900240295*. The type genome for the species is the GenBank assembly RS_GCF_000478965.1. The GC content of the type genome is 49.79 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Anaeromassilibacillus buxifigena sp. nov.

Candidatus Anaeromassilibacillus buxifigena (NL. fem. n. *buxifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeromassilibacillus sp002159845*. The type genome for the species is the GenBank assembly GCA_900538635.1. The GC content of the type genome is 53.83 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Anaeromassilibacillus diluvimonas sp. nov.

Candidatus Anaeromassilibacillus diluvimonas (NL. fem. n. *diluvimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeromassilibacillus sp001305115*. The type genome for the species is the GenBank assembly RS_GCF_900169665.1. The GC content of the type genome is 49.12 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Anaeromusa dimidilenta sp. nov.

Candidatus Anaeromusa dimidilenta (NL. fem. n. *dimidilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeromusa sp009929485*. The type genome for the species is the GenBank assembly GCA_009929485.1. The GC content of the type genome is 50.17 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Anaeromyxobacter adlicibra sp. nov.

Candidatus Anaeromyxobacter adlicibra (NL. fem. n. *adlicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeromyxobacter sp000017505*. The type genome for the species is the GenBank assembly RS_GCF_000017505.1. The GC content of the type genome is 73.53 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Anaeromyxobacter rorifilega sp. nov.

Candidatus Anaeromyxobacter rorifilega (NL. fem. n. *rorifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeromyxobacter sp000964525*. The type genome for the species is the GenBank assembly RS_GCF_000964525.1. The GC content of the type genome is 74.41 % and the genome length is 4.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Anaeroplasma anancicella sp. nov.

Candidatus Anaeroplasma anancicella (NL. fem. n. *anancicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeroplasma sp902783745*. The type genome for the species is the GenBank assembly GCA_902783745.1. The GC content of the type genome is 28.05 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Anaeroplasma conibivita sp. nov.

Candidatus Anaeroplasma conibivita (NL. fem. n. *conibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeroplasma sp002449755*. The type genome for the species is the GenBank assembly GCA_002449755.1. The GC content of the type genome is 28.79 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Anaeroplasma curacatica sp. nov.

Candidatus Anaeroplasma curacatica (NL. fem. n. *curacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeroplasma sp900770055*. The type genome for the species is the GenBank assembly RS_GCF_900770055.1. The GC content of the type genome is 28.92 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Anaeroplasma inardicula sp. nov.

Candidatus Anaeroplasma inardicula (NL. fem. n. *inardicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeroplasma sp902796895*. The type genome for the species is the GenBank assembly GCA_902796895.1. The GC content of the type genome is 26.07 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Anaeroplasma loraritrix sp. nov.

Candidatus Anaeroplasma loraritrix (NL. fem. n. *loraritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaeroplasma sp900767915*. The type genome for the species is the GenBank assembly RS_GCF_900767915.1. The GC content of the type genome is 27.24 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Anaerosacchariphilus allacicella sp. nov.

Candidatus Anaerosacchariphilus allacicella (NL. fem. n. *allacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosacchariphilus sp002160825*. The type genome for the species is the GenBank assembly RS_GCF_002160825.1. The GC content of the type genome is 50.88 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Anaerosacchariphilus colipitrix sp. nov.

Candidatus Anaerosacchariphilus colipitrix (NL. fem. n. *colipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosacchariphilus sp900553635*. The type genome for the species is the GenBank assembly RS_GCF_900759545.1. The GC content of the type genome is

50.61 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Anaerosacchariphilus insurilenta sp. nov.

Candidatus Anaerosacchariphilus insurilenta (NL. fem. n. *insurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosacchariphilus sp002160765*. The type genome for the species is the GenBank assembly RS_GCF_002160765.1. The GC content of the type genome is 50.45 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Anaerosacchariphilus luxuredo sp. nov.

Candidatus Anaerosacchariphilus luxuredo (NL. fem. n. *luxuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosacchariphilus sp011959465*. The type genome for the species is the GenBank assembly RS_GCF_011959465.1. The GC content of the type genome is 47.05 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Anaerosacchariphilus masocax sp. nov.

Candidatus Anaerosacchariphilus masocax (NL. fem. n. *masocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosacchariphilus sp014290175*. The type genome for the species is the GenBank assembly RS_GCF_014290175.1. The GC content of the type genome is 50.38 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Anaerosacchariphilus omninicula sp. nov.

Candidatus Anaerosacchariphilus omninicula (NL. fem. n. *omninicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosacchariphilus sp009917555*. The type genome for the species is the GenBank assembly RS_GCF_009917555.1. The GC content of the type genome is 47.36 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Anaerosacchariphilus pacifatica sp. nov.

Candidatus Anaerosacchariphilus pacifatica (NL. fem. n. *pacifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosacchariphilus sp900066385*. The type genome for the species is the GenBank assembly GCA_900066575.1. The GC content of the type genome is 49.95 % and the genome length is 3.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Anaerosalibacter adaggicula sp. nov.

Candidatus Anaerosalibacter adaggicula (NL. fem. n. *adaggicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosalibacter_A sp900155565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900155565.1. The GC content of the type genome is 30.74 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Anaerospora reforugo sp. nov.

Candidatus Anaerospora reforugo (NL. fem. n. *reforugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerospora sp002337925*. The type genome for the species is the GenBank assembly GCA_002429845.1. The GC content of the type genome is 44.47 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Anaerosporobacter excocitoga sp. nov.

Candidatus Anaerosporobacter excocitoga (NL. fem. n. *excocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosporobacter sp012070565*. The type genome for the species is the GenBank assembly RS_GCF_012070565.1. The GC content of the type genome is 36.24 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Anaerosporomusa adfamentia sp. nov.

Candidatus Anaerosporomusa adfamentia (NL. fem. n. *adfamentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerosporomusa sp900542835*. The type genome for the species is the GenBank assembly GCA_900542835.1. The GC content of the type genome is 54.58 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Anaerostipes defosiforma sp. nov.

Candidatus Anaerostipes defosiforma (NL. fem. n. *defosiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerostipes sp000508985*. The type genome for the species is the GenBank assembly RS_GCF_000508985.1. The GC content of the type genome is 43.4 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Anaerostipes metucicella sp. nov.

Candidatus Anaerostipes metucicella (NL. fem. n. *metucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerostipes sp900756035*. The type genome for the species is the GenBank assembly GCA_900756035.1. The GC content of the type genome is 39.26 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Anaerostipes rorifastra sp. nov.

Candidatus Anaerostipes rorifastra (NL. fem. n. *rorifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerostipes sp001940315*. The type genome for the species is the GenBank assembly RS_GCF_001940315.1. The GC content of the type genome is 36.69 % and the genome length is 2.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces".

Description of *Candidatus* Anaerostipes sonivatica sp. nov.

Candidatus Anaerostipes sonivatica (NL. fem. n. *sonivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerostipes sp900066705*. The type genome for the species is the GenBank assembly RS_GCF_902362875.1. The GC content of the type genome is 37.68 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Anaerotignum inmoressa sp. nov.

Candidatus Anaerotignum inmoressa (NL. fem. n. *inmoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerotignum sp009929735*. The type genome for the species is the GenBank assembly GCA_009929735.1. The GC content of the type genome is 40.92 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Anaerotignum intoribra sp. nov.

Candidatus Anaerotignum intoribra (NL. fem. n. *intoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerotignum sp004557645*. The type genome for the species is the GenBank assembly GCA_004557645.1. The GC content of the type genome is 47.72 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Anaerotignum ontolousia sp. nov.

Candidatus Anaerotignum ontolousia (NL. fem. n. *ontolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerotignum sp002299545*. The type genome for the species is the GenBank assembly GCA_002299545.1. The GC content of the type genome is 38.88 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Anaerotignum rudecitudo sp. nov.

Candidatus Anaerotignum rudecitudo (NL. fem. n. *rudecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerotignum sp002316675*. The type genome for the species is the GenBank assembly GCA_002316675.1. The GC content of the type genome is 43.64 %

and the genome length is 2.55 Mbp.

Description of *Candidatus* Anaerotignum subodax sp. nov.

Candidatus Anaerotignum subodax (NL. fem. n. *subodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerotignum sp002380805*. The type genome for the species is the GenBank assembly GCA_002380805.1. The GC content of the type genome is 39.3 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Anaerotignum tirocisca sp. nov.

Candidatus Anaerotignum tirocisca (NL. fem. n. *tirocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerotignum sp001304995*. The type genome for the species is the GenBank assembly RS_GCF_902362335.1. The GC content of the type genome is 45.3 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Anaerotruncus innabastra sp. nov.

Candidatus Anaerotruncus innabastra (NL. fem. n. *innabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerotruncus sp014385085*. The type genome for the species is the GenBank assembly GCA_014385085.1. The GC content of the type genome is 47.65 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Anaerotruncus robigimonas sp. nov.

Candidatus Anaerotruncus robigimonas (NL. fem. n. *robigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerotruncus sp003612625*. The type genome for the species is the GenBank assembly RS_GCF_003612625.1. The GC content of the type genome is 44.73 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Anaerotruncus tegimimonia sp. nov.

Candidatus Anaerotruncus tegimimonia (NL. fem. n. *tegimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerotruncus sp000403395*. The type genome for the species is the GenBank assembly RS_GCF_009936075.1. The GC content of the type genome is 53.13 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Anaerovibrio colopicella sp. nov.

Candidatus Anaerovibrio colopicella (NL. fem. n. *colopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerovibrio sp902786545*. The type genome for the species is the GenBank assembly GCA_902786545.1. The GC content of the type genome is 45.21 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Anaerovibrio expasessa sp. nov.

Candidatus Anaerovibrio expasessa (NL. fem. n. *expasessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerovibrio sp000622005*. The type genome for the species is the GenBank assembly RS_GCF_000622005.1. The GC content of the type genome is 44.89 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Anaerovibrio metucimonas sp. nov.

Candidatus Anaerovibrio metucimonas (NL. fem. n. *metucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerovibrio sp900548165*. The type genome for the species is the GenBank assembly GCA_902762895.1. The GC content of the type genome is 44.06 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Anaerovibrio obfiratio sp. nov.

Candidatus Anaerovibrio obfiratio (NL. fem. n. *obfiratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerovibrio sp902785445*. The type genome for the species is the GenBank assembly GCA_902785445.1. The GC content of the type genome is 44.51 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Anaerovibrio peradatio sp. nov.

Candidatus Anaerovibrio peradatio (NL. fem. n. *peradatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerovibrio sp004553105*. The type genome for the species is the GenBank assembly GCA_004553105.1. The GC content of the type genome is 51.43 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Anaerovibrio rubigatio sp. nov.

Candidatus Anaerovibrio rubigatio (NL. fem. n. *rubigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerovibrio sp900768695*. The type genome for the species is the GenBank assembly GCA_900768695.1. The GC content of the type genome is 51.79 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Anaerovibrio televedo sp. nov.

Candidatus Anaerovibrio televedo (NL. fem. n. *televedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anaerovibrio sp002100115*. The type genome for the species is the GenBank assembly RS_GCF_002100115.1. The GC content of the type genome is 45.9 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Anagnana adlenugo sp. nov.

Candidatus Anagnana adlenugo (NL. fem. n. *adlenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIY01 sp012799725*. The type genome for the species is the GenBank assembly GCA_012799725.1. The GC content of the type genome is 49.98 %

and the genome length is 3.25 Mbp.

Description of *Candidatus* Anagnana gen. nov.

Candidatus Anagnana (NL. fem. n. *Anagnana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZIY01*. The type species for the genus is *Candidatus* Anagnana adlenugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semilidaceae.

Description of *Candidatus* Anagnana intacitas sp. nov.

Candidatus Anagnana intacitas (NL. fem. n. *intacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIY01 sp012800625*. The type genome for the species is the GenBank assembly GCA_012800625.1. The GC content of the type genome is 55.21 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Anagnaria decupitas sp. nov.

Candidatus Anagnaria decupitas (NL. fem. n. *decupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11530 sp900751685*. The type genome for the species is the GenBank assembly RS_GCF_900751685.1. The GC content of the type genome is 44.78 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Anagnaria gen. nov.

Candidatus Anagnaria (NL. fem. n. *Anagnaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11530*. The type species for the genus is *Candidatus* Anagnaria decupitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Melilosaceae.

Description of *Candidatus* Anagnella dimadifica sp. nov.

Candidatus Anagnella dimadifica (NL. fem. n. *dimadifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1231 sp002308275*. The type genome for the species is the GenBank assembly GCA_002308275.1. The GC content of the type genome is 33.89 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Anagnella gen. nov.

Candidatus Anagnella (NL. fem. n. *Anagnella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1231*. The type species for the genus is *Candidatus* Anagnella dimadifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caliposaceae.

Description of *Candidatus* Anagnella latibitura sp. nov.

Candidatus Anagnella latibitura (NL. fem. n. *latibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1231 sp002309035*. The type genome for the species is the GenBank assembly GCA_002309035.1. The GC content of the type genome is 30.18 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Anagnosa ancepimonas sp. nov.

Candidatus Anagnosa ancepimonas (NL. fem. n. *ancepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMJP01 sp014380545*. The type genome for the species is the GenBank assembly GCA_014380545.1. The GC content of the type genome is 34.13 %

and the genome length is 3.57 Mbp.

Description of *Candidatus* Anagnosa gen. nov.

Candidatus Anagnosa (NL. fem. n. *Anagnosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMJP01*. The type species for the genus is *Candidatus* Anagnosa ancepimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecellaceae.

Description of *Candidatus* Anagnula inretilega sp. nov.

Candidatus Anagnula inretilega (NL. fem. n. *inretilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-100 sp003232595*. The type genome for the species is the GenBank assembly GCA_003232595.1. The GC content of the type genome is 50.8 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Anagnula gen. nov.

Candidatus Anagnula (NL. fem. n. *Anagnula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-100*. The type species for the genus is *Candidatus* Anagnula inretilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anammoximicrobium accoriforma sp. nov.

Candidatus Anammoximicrobium accoriforma (NL. fem. n. *accoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anammoximicrobium sp012515235*. The type genome for the species is the GenBank assembly GCA_012515235.1. The GC content of the type genome is 64.4 % and the genome length is 9.67 Mbp.

Description of *Candidatus* Anamnana hexapedo sp. nov.

Candidatus Anamnana hexapedo (NL. fem. n. *hexapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1707 sp900554285*. The type genome for the species is the GenBank assembly GCA_900554285.1. The GC content of the type genome is 46.29 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Anamnana gen. nov.

Candidatus Anamnana (NL. fem. n. *Anamnana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1707*. The type species for the genus is *Candidatus* Anamnana hexapedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-314*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurariaceae.

Description of *Candidatus* Anamnella penecugo sp. nov.

Candidatus Anamnella penecugo (NL. fem. n. *penecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8158 sp003449595*. The type genome for the species is the GenBank assembly GCA_003449595.1. The GC content of the type genome is 44.2 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Anamnella gen. nov.

Candidatus Anamnella (NL. fem. n. *Anamnella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8158*. The type species for the genus is *Candidatus* Anamnella penecugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anamnosa depetitura sp. nov.

Candidatus Anamnosa depetitura (NL. fem. n. *depetitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12713 sp900754175*. The type genome for the species is the GenBank assembly RS_GCF_900754175.1. The GC content of the type genome is 54.41 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Anamnosa gen. nov.

Candidatus Anamnosa (NL. fem. n. *Anamnosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12713*. The type species for the genus is *Candidatus* Anamnosa depetitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Anamnosa regigimonia sp. nov.

Candidatus Anamnosa regigimonia (NL. fem. n. *regigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12713 sp900770605*. The type genome for the species is the GenBank assembly RS_GCF_900770605.1. The GC content of the type genome is 48.21 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Anamnula noviledo sp. nov.

Candidatus Anamnula noviledo (NL. fem. n. *noviledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWVT01 sp003562195*. The type genome for the species is the GenBank assembly GCA_003562195.1. The GC content of the type genome is 57.79 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Anamnula gen. nov.

Candidatus Anamnula (NL. fem. n. *Anamnula* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWVT01*. The type species for the genus is *Candidatus* Anamnula noviledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Anancana fetifatio sp. nov.

Candidatus Anancana fetifatio (NL. fem. n. *fetifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP165 sp002400895*. The type genome for the species is the GenBank assembly GCA_002400895.1. The GC content of the type genome is 55.18 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Anancana gen. nov.

Candidatus Anancana (NL. fem. n. *Anancana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NORP165*. The type species for the genus is *Candidatus* Anancana fetifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacellaceae.

Description of *Candidatus* Anancaria apperatica sp. nov.

Candidatus Anancaria apperatica (NL. fem. n. *apperatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPX01 sp012838085*. The type genome for the species is the GenBank assembly GCA_012838085.1. The GC content of the type genome is 33.14 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Anancaria gen. nov.

Candidatus Anancaria (NL. fem. n. *Anancaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPX01*. The type species for the genus is *Candidatus* Anancaria apperatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anancella artuficula sp. nov.

Candidatus Anancella artuficula (NL. fem. n. *artuficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-36 sp005878685*. The type genome for the species is the GenBank assembly GCA_005878685.1. The GC content of the type genome is 54.95 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Anancella gen. nov.

Candidatus Anancella (NL. fem. n. *Anancella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DP-36*. The type species for the genus is *Candidatus* Anancella artuficula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigosaceae.

Description of *Candidatus* Anancia relapitrix sp. nov.

Candidatus Anancia relapitrix (NL. fem. n. *relapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS2055 sp900557635*. The type genome for the species is the GenBank assembly GCA_900557635.1. The GC content of the type genome is 57.13 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Anancia gen. nov.

Candidatus Anancia (NL. fem. n. *Anancia* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS2055*. The type species for the genus is *Candidatus* Anancia relapitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Anancida decupisca sp. nov.

Candidatus Anancida decupisca (NL. fem. n. *decupisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBr16-161 sp007117355*. The type genome for the species is the GenBank assembly GCA_007117355.1. The GC content of the type genome is 35.01 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Anancida gen. nov.

Candidatus Anancida (NL. fem. n. *Anancida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBr16-161*. The type species for the genus is *Candidatus* Anancida decupisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anancida demaditia sp. nov.

Candidatus Anancida demaditia (NL. fem. n. *demaditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBr16-161 sp007117055*. The type genome for the species is the GenBank assembly GCA_007117055.1. The GC content of the type genome is 35.91 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Anancula capabimonas sp. nov.

Candidatus Anancula capabimonas (NL. fem. n. *capabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6267 sp002440745*. The type genome for the species is the GenBank assembly GCA_002440745.1. The GC content of the type genome is 37.35 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Anancula gen. nov.

Candidatus Anancula (NL. fem. n. *Anancula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6267*. The type species for the genus is *Candidatus* Anancula capabimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1556*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depopellaceae.

Description of *Candidatus* Anaplaria notacicella sp. nov.

Candidatus Anaplaria notacicella (NL. fem. n. *notacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-56-10 sp002772645*. The type genome for the species is the GenBank assembly GCA_002772645.1. The GC content of the type genome is 55.68 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Anaplaria gen. nov.

Candidatus Anaplaria (NL. fem. n. *Anaplaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-56-10*. The type species for the genus is *Candidatus* Anaplaria notacicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Anaplella paralimonas sp. nov.

Candidatus Anaplella paralimonas (NL. fem. n. *paralimonas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACFBG01 sp902564535*. The type genome for the species is the GenBank assembly GCA_902564535.1. The GC content of the type genome is 35.33 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Anaplella gen. nov.

Candidatus Anaplella (NL. fem. n. *Anaplella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACFBG01*. The type species for the genus is *Candidatus* Anaplella paralimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anaplia adfirimonia sp. nov.

Candidatus Anaplia adfirimonia (NL. fem. n. *adfirimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZB01 sp007125255*. The type genome for the species is the GenBank assembly GCA_007125255.1. The GC content of the type genome is 64.32 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Anaplia gen. nov.

Candidatus Anaplia (NL. fem. n. *Anaplia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKZB01*. The type species for the genus is *Candidatus* Anaplia adfirimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Anaplia artifitrix sp. nov.

Candidatus Anaplia artifitrix (NL. fem. n. *artifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZB01 sp007127615*. The type genome for the species is the GenBank assembly GCA_007127615.1. The GC content of the type genome is 63.47 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Anaplia dimidifica sp. nov.

Candidatus Anaplia dimidifica (NL. fem. n. *dimidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZB01 sp007693845*. The type genome for the species is the GenBank assembly GCA_007693845.1. The GC content of the type genome is 61.32 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Anaplosa accumax sp. nov.

Candidatus Anaplosa accumax (NL. fem. n. *accumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDY01 sp012729015*. The type genome for the species is the GenBank assembly GCA_012729015.1. The GC content of the type genome is 66.64 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Anaplosa gen. nov.

Candidatus Anaplosa (NL. fem. n. *Anaplosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYDY01*. The type species for the genus is *Candidatus* Anaplosa accumax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACEH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenotiaceae.

Description of *Candidatus* Anaplula artolitica sp. nov.

Candidatus Anaplula artolitica (NL. fem. n. *artolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGV01 sp013285825*. The type genome for the species is the GenBank assembly GCA_013285825.1. The GC content of the type genome is 42.91 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Anaplula gen. nov.

Candidatus Anaplula (NL. fem. n. *Anaplula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDGV01*. The type species for the genus is *Candidatus* Anaplula artolitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1388*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conabulaceae.

Description of *Candidatus* Anarrana benevifica sp. nov.

Candidatus Anarrana benevifica (NL. fem. n. *benevifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWDT01 sp002070825*. The type genome for the species is the GenBank assembly GCA_002070825.1. The GC content of the type genome is 64.74 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Anarrana gen. nov.

Candidatus Anarrana (NL. fem. n. *Anarrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWDT01*. The type species for the genus is *Candidatus* Anarrana benevifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anarraria mirabitio sp. nov.

Candidatus Anarraria mirabitio (NL. fem. n. *mirabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S7086C20 sp001751075*. The type genome for the species is the GenBank assembly GCA_001751075.1. The GC content of the type genome is 46.55 % and the genome length is 2.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sample #7086; 6-9 cm from methane seep sediment push core".

Description of *Candidatus* Anarraria gen. nov.

Candidatus Anarraria (NL. fem. n. *Anarraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *S7086C20*. The type species for the genus is *Candidatus* Anarraria mirabitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *C00003060*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubidaceae.

Description of *Candidatus* Anarrella domicatica sp. nov.

Candidatus Anarrella domicatica (NL. fem. n. *domicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJF01 sp011370595*. The type genome for the species is the GenBank assembly GCA_011370595.1. The GC content of the type genome is 59.45 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Anarrella gen. nov.

Candidatus Anarrella (NL. fem. n. *Anarrella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJF01*. The type species for the genus is *Candidatus* Anarrella domicatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Anarria diritigena sp. nov.

Candidatus Anarria diritigena (NL. fem. n. *diritigena* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACFE01 sp009937525*. The type genome for the species is the GenBank assembly GCA_009937525.1. The GC content of the type genome is 62.26 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Anarria gen. nov.

Candidatus Anarria (NL. fem. n. *Anarria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACFE01*. The type species for the genus is *Candidatus* Anarria diritigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anarria semidimonas sp. nov.

Candidatus Anarria semidimonas (NL. fem. n. *semidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACFE01 sp009937505*. The type genome for the species is the GenBank assembly GCA_009937505.1. The GC content of the type genome is 61.33 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Anarrida omnimitura sp. nov.

Candidatus Anarrida omnimitura (NL. fem. n. *omnimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12834 sp902783185*. The type genome for the species is the GenBank assembly GCA_902783185.1. The GC content of the type genome is 24.58 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Anarrida gen. nov.

Candidatus Anarrida (NL. fem. n. *Anarrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *RUG12834*. The type species for the genus is *Candidatus* Anarrida omnimitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Anarrosa favilicella sp. nov.

Candidatus Anarrosa favilicella (NL. fem. n. *favilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-45-37 sp001873515*. The type genome for the species is the GenBank assembly GCA_001873515.1. The GC content of the type genome is 45.08 % and the genome length is 0.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Anarrosa gen. nov.

Candidatus Anarrosa (NL. fem. n. *Anarrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-45-37*. The type species for the genus is *Candidatus* Anarrosa favilicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-42-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panifanaceae.

Description of *Candidatus* Anarrula meliligena sp. nov.

Candidatus Anarrula meliligena (NL. fem. n. *meliligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDS01 sp012729155*. The type genome for the species is the GenBank assembly GCA_012729155.1. The GC content of the type genome is 63.69 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Anarrula gen. nov.

Candidatus Anarrula (NL. fem. n. *Anarrula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYDS01*. The type species for the genus is *Candidatus* Anarrula meliligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Anastaria lugubifica sp. nov.

Candidatus Anastaria lugubifica (NL. fem. n. *lugubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXAA01 sp903917305*. The type genome for the species is the GenBank assembly GCA_903917305.1. The GC content of the type genome is 68.48 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Anastaria gen. nov.

Candidatus Anastaria (NL. fem. n. *Anastaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXAA01*. The type species for the genus is *Candidatus* Anastaria lugubifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubigariaceae.

Description of *Candidatus* Anastida adobrastra sp. nov.

Candidatus Anastida adobrastra (NL. fem. n. *adobrastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZJX01 sp012800155*. The type genome for the species is the GenBank assembly GCA_012800155.1. The GC content of the type genome is 29.68 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Anastida gen. nov.

Candidatus Anastida (NL. fem. n. *Anastida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZJX01*. The type species for the genus is *Candidatus* Anastida adobrastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Anastosa annecifica sp. nov.

Candidatus Anastosa annecifica (NL. fem. n. *annecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14871 sp902803495*. The type genome for the species is the GenBank assembly GCA_902803495.1. The GC content of the type genome is 48.33 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Anastosa gen. nov.

Candidatus Anastosa (NL. fem. n. *Anastosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14871*. The type species for the genus is *Candidatus* Anastosa annecifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anastula inmorilenta sp. nov.

Candidatus Anastula inmorilenta (NL. fem. n. *inmorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1211 sp002309585*. The type genome for the species is the GenBank assembly GCA_002309585.1. The GC content of the type genome is 61.02 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Anastula gen. nov.

Candidatus Anastula (NL. fem. n. *Anastula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1211*. The type species for the genus is *Candidatus* Anastula inmorilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Anatrana assudastra sp. nov.

Candidatus Anatrana assudastra (NL. fem. n. *assudastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MPNL01 sp002239005*. The type genome for the species is the GenBank assembly GCA_002239005.1. The GC content of the type genome is 62.23 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Anatrana gen. nov.

Candidatus Anatrana (NL. fem. n. *Anatrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MPNL01*. The type species for the genus is *Candidatus* Anatrana assudastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anatraria estovitura sp. nov.

Candidatus Anatraria estovitura (NL. fem. n. *estovitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-72 sp009649685*. The type genome for the species is the GenBank assembly RS_GCF_009649685.1. The GC content of the type genome is 33.51 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Anatraria gen. nov.

Candidatus Anatraria (NL. fem. n. *Anatraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-72*. The type species for the genus is *Candidatus* Anatraria estovitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anatraria omninugo sp. nov.

Candidatus Anatraria omninugo (NL. fem. n. *omninugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-72 sp003232435*. The type genome for the species is the GenBank assembly GCA_003232435.1. The GC content of the type genome is 40.94 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Anatria depocifica sp. nov.

Candidatus Anatria depocifica (NL. fem. n. *depocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISOI01 sp903886985*. The type genome for the species is the GenBank assembly GCA_903886985.1. The GC content of the type genome is 47.88 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Anatria gen. nov.

Candidatus Anatria (NL. fem. n. *Anatria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISOI01*. The type species for the genus is *Candidatus* Anatria depocifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBBX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senipanaceae.

Description of *Candidatus* Anatrula inobsicula sp. nov.

Candidatus Anatrula inobsicula (NL. fem. n. *inobsicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WYBW01 sp011525685*. The type genome for the species is the GenBank assembly GCA_011525685.1. The GC content of the type genome is 61.46 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Anatrula gen. nov.

Candidatus Anatrula (NL. fem. n. *Anatrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WYBW01*. The type species for the genus is *Candidatus* Anatrula inobsicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11358*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Loceliaceae.

Description of *Candidatus* Ancepana subacitura sp. nov.

Candidatus Ancepana subacitura (NL. fem. n. *subacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SB11 sp008933805*. The type genome for the species is the GenBank assembly GCA_008933805.1. The GC content of the type genome is 41.8 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Ancepana gen. nov.

Candidatus Ancepana (NL. fem. n. *Ancepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SB11*. The type species for the genus is *Candidatus* Ancepana subacitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8524*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabanaceae.

Description of *Candidatus* Anceparia aglasago sp. nov.

Candidatus Anceparia aglasago (NL. fem. n. *aglasago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-N21 sp003215415*. The type genome for the species is the GenBank assembly GCA_003215415.1. The GC content of the type genome is 38.96 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Anceparia gen. nov.

Candidatus Anceparia (NL. fem. n. *Anceparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-N21*. The type species for the genus is *Candidatus* Anceparia aglasago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ancepella immadugo sp. nov.

Candidatus Ancepella immadugo (NL. fem. n. *immadugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SB25 sp008933525*. The type genome for the species is the GenBank assembly GCA_008933525.1. The GC content of the type genome is 38.17 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Ancepella gen. nov.

Candidatus Ancepella (NL. fem. n. *Ancepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SB25*. The type species for the genus is *Candidatus* Ancepella immadugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BBW3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribiaceae.

Description of *Candidatus* Ancepia musulivita sp. nov.

Candidatus Ancepia musulivita (NL. fem. n. *musulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYIK01 sp012523465*. The type genome for the species is the GenBank assembly GCA_012523465.1. The GC content of the type genome is 65.95 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Ancepia gen. nov.

Candidatus Ancepia (NL. fem. n. *Ancepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYIK01*. The type species for the genus is *Candidatus* Ancepia musulivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AK92*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifidaceae.

Description of *Candidatus* Ancepida seposetta sp. nov.

Candidatus Ancepida seposetta (NL. fem. n. *seposetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14239 sp902797145*. The type genome for the species is the GenBank assembly GCA_902797145.1. The GC content of the type genome is 37.24 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Ancepida gen. nov.

Candidatus Ancepida (NL. fem. n. *Ancepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14239*. The type species for the genus is *Candidatus* Ancepida seposetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Anceposa allapitrix sp. nov.

Candidatus Anceposa allapitrix (NL. fem. n. *allapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-12-FULL-49-9 sp001794935*. The type genome for the species is the GenBank assembly GCA_001794935.1. The GC content of the type genome is 48.59 % and the genome length is 1.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Anceposa gen. nov.

Candidatus Anceposa (NL. fem. n. *Anceposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-12-FULL-49-9*. The type species for the genus is *Candidatus* Anceposa allapitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Ancepula pavicitia sp. nov.

Candidatus Ancepula pavicitia (NL. fem. n. *pavicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAEN01 sp013388845*. The type genome for the species is the GenBank assembly GCA_013388845.1. The GC content of the type genome is 48.59 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Ancepula gen. nov.

Candidatus Ancepula (NL. fem. n. *Ancepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAEN01*. The type species for the genus is *Candidatus* Ancepula pavicitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Ancipana carunibra sp. nov.

Candidatus Ancipana carunibra (NL. fem. n. *carunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1844 sp002338615*. The type genome for the species is the GenBank assembly GCA_002338615.1. The GC content of the type genome is 57.34 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Ancipana gen. nov.

Candidatus Ancipana (NL. fem. n. *Ancipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1844*. The type species for the genus is *Candidatus* Ancipana carunibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anciparia adlubousia sp. nov.

Candidatus Anciparia adlubousia (NL. fem. n. *adlubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002697625 sp902514225*. The type genome for the species is the GenBank assembly GCA_902514225.1. The GC content of the type genome is 30.86 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Anciparia gen. nov.

Candidatus Anciparia (NL. fem. n. *Anciparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002697625*. The type species for the genus is *Candidatus* Anciparia adlubousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Anciparia perexugo sp. nov.

Candidatus Anciparia perexugo (NL. fem. n. *perexugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002697625 sp002696275*. The type genome for the species is the GenBank assembly GCA_002696275.1. The GC content of the type genome is 30.04 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Anciparia sarabibula sp. nov.

Candidatus Anciparia sarabibula (NL. fem. n. *sarabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002697625 sp002710495*. The type genome for the species is the GenBank assembly GCA_002710495.1. The GC content of the type genome is 30.8 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Anciparia subacibra sp. nov.

Candidatus Anciparia subacibra (NL. fem. n. *subacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002697625 sp002697625*. The type genome for the species is the GenBank assembly GCA_002697625.1. The GC content of the type genome is 30.81 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Ancipella detenax sp. nov.

Candidatus Ancipella detenax (NL. fem. n. *detenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-49-21 sp001829455*. The type genome for the species is the GenBank assembly GCA_001829455.1. The GC content of the type genome is 51.35 % and the genome length is 3.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Ancipella gen. nov.

Candidatus Ancipella (NL. fem. n. *Ancipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-49-21*. The type species for the genus is *Candidatus* Ancipella detenax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5550*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velivanaceae.

Description of *Candidatus* Ancipella resuritica sp. nov.

Candidatus Ancipella resuritica (NL. fem. n. *resuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-49-21 sp001829495*. The type genome for the species is the GenBank assembly GCA_001829495.1. The GC content of the type genome is 50.35 % and the genome length is 3.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Ancipia munimimonas sp. nov.

Candidatus Ancipia munimimonas (NL. fem. n. *munimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTPU01 sp011332905*. The type genome for the species is the GenBank assembly GCA_011332905.1. The GC content of the type genome is 55.71 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Ancipia gen. nov.

Candidatus Ancipia (NL. fem. n. *Ancipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTPU01*. The type species for the genus is *Candidatus* Ancipia munimimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Anciposa acrocatio sp. nov.

Candidatus Anciposa acrocatio (NL. fem. n. *acrocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8079 sp002722515*. The type genome for the species is the GenBank assembly GCA_002722515.1. The GC content of the type genome is 56.56 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Anciposa gen. nov.

Candidatus Anciposa (NL. fem. n. *Anciposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8079*. The type species for the genus is *Candidatus* Anciposa acrocatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifariaceae.

Description of *Candidatus* Anciposa ectenimonia sp. nov.

Candidatus Anciposa ectenimonia (NL. fem. n. *ectenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8079 sp002724635*. The type genome for the species is the GenBank assembly GCA_002724635.1. The GC content of the type genome is 61.5 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Ancipula negiditas sp. nov.

Candidatus Ancipula negiditas (NL. fem. n. *negiditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-423 sp003246895*. The type genome for the species is the GenBank assembly GCA_003246895.1. The GC content of the type genome is 41.12 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Ancipula gen. nov.

Candidatus Ancipula (NL. fem. n. *Ancipula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-423*. The type species for the genus is *Candidatus* Ancipula negiditas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5550*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velivanaceae.

Description of *Candidatus* Ancrocorticia semiditura sp. nov.

Candidatus Ancrocorticia semiditura (NL. fem. n. *semiditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ancrocorticia sp014041995*. The type genome for the species is the GenBank assembly RS_GCF_014041995.1. The GC content of the type genome is 57.78 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Ancylobacter immusilega sp. nov.

Candidatus Ancylobacter immusilega (NL. fem. n. *immusilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ancylobacter sp009223885*. The type genome for the species is the GenBank assembly RS_GCF_009223885.1. The GC content of the type genome is 68.86 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Ancylobacter nicomessa sp. nov.

Candidatus Ancylobacter nicomessa (NL. fem. n. *nicomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ancylobacter sp000378025*. The type genome for the species is the GenBank assembly RS_GCF_000378025.1. The GC content of the type genome is 67.38 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Ancylomarina actutitas sp. nov.

Candidatus Ancylomarina actutitas (NL. fem. n. *actutitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ancylomarina sp009669305*. The type genome for the species is the GenBank assembly RS_GCF_009669305.1. The GC content of the type genome is 34.06 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Ancylomarina metucitrix sp. nov.

Candidatus Ancylomarina metucitrix (NL. fem. n. *metucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ancylomarina sp003863355*. The type genome for the species is the GenBank assembly RS_GCF_009735515.1. The GC content of the type genome is 35.75 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Andabana ensifousia sp. nov.

Candidatus Andabana ensifousia (NL. fem. n. *ensifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSR01 sp009379995*. The type genome for the species is the GenBank assembly GCA_009379995.1. The GC content of the type genome is 69.75 % and the genome length is 5.8 Mbp.

Description of *Candidatus* Andabana gen. nov.

Candidatus Andabana (NL. fem. n. *Andabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSR01*. The type species for the genus is *Candidatus* Andabana ensifousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Andabaria agricentia sp. nov.

Candidatus Andabaria agricentia (NL. fem. n. *agricentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAYNI01 sp012520995*. The type genome for the species is the GenBank assembly GCA_012520995.1. The GC content of the type genome is 40.54 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Andabaria gen. nov.

Candidatus Andabaria (NL. fem. n. *Andabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYNI01*. The type species for the genus is *Candidatus* Andabaria agricentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Andabia attesicella sp. nov.

Candidatus Andabia attesicella (NL. fem. n. *attesicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GJ-E10 sp900290295*. The type genome for the species is the GenBank assembly RS_GCF_900290295.1. The GC content of the type genome is 63.14 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Andabia gen. nov.

Candidatus Andabia (NL. fem. n. *Andabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GJ-E10*. The type species for the genus is *Candidatus* Andabia attesicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Andabia cenotentia sp. nov.

Candidatus Andabia cenotentia (NL. fem. n. *cenotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GJ-E10 sp000828975*. The type genome for the species is the GenBank assembly RS_GCF_000828975.1. The GC content of the type genome is 66.3 % and the genome length is 3.28 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "sediment".

Description of *Candidatus* Andabia exhoritas sp. nov.

Candidatus Andabia exhoritas (NL. fem. n. *exhoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GJ-E10 sp900290335*. The type genome for the species is the GenBank assembly RS_GCF_900290335.1. The GC content of the type genome is 66.25 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Andabia oratritio sp. nov.

Candidatus Andabia oratritio (NL. fem. n. *oratritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GJ-E10 sp903871435*. The type genome for the species is the GenBank assembly GCA_903871435.1. The GC content of the type genome is 65.92 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Andabula extinago sp. nov.

Candidatus Andabula extinago (NL. fem. n. *extinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-24 sp003233255*. The type genome for the species is the GenBank assembly GCA_003233255.1. The GC content of the type genome is 44.99 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Andabula gen. nov.

Candidatus Andabula (NL. fem. n. *Andabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-24*. The type species for the genus is *Candidatus* Andabula extinago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubosaceae.

Description of *Candidatus* Anderseniella fuligicella sp. nov.

Candidatus Anderseniella fuligicella (NL. fem. n. *fuligicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anderseniella sp013041995*. The type genome for the species is the GenBank assembly GCA_013041995.1. The GC content of the type genome is 56.76 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Anderseniella gemebitoga sp. nov.

Candidatus Anderseniella gemebitoga (NL. fem. n. *gemebitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Anderseniella sp900149695*. The type genome for the species is the GenBank assembly GCA_900149695.1. The GC content of the type genome is 57.87 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Andreprevotia invesetta sp. nov.

Candidatus Andreprevotia invesetta (NL. fem. n. *invesetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Andreprevotia sp009848685*. The type genome for the species is the GenBank assembly RS_GCF_009848685.1. The GC content of the type genome is 61.31 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Aneclana furibitica sp. nov.

Candidatus Aneclana furibitica (NL. fem. n. *furibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1672 sp002747015*. The type genome for the species is the GenBank assembly GCA_002747015.1. The GC content of the type genome is 42.27 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Aneclana gen. nov.

Candidatus Aneclana (NL. fem. n. *Aneclana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1672*. The type species for the genus is *Candidatus* Aneclana furibitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aneclana odonticula sp. nov.

Candidatus Aneclana odonticula (NL. fem. n. *odonticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1672 sp002320665*. The type genome for the species is the GenBank assembly GCA_002320665.1. The GC content of the type genome is 43.38 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Aneclana papavago sp. nov.

Candidatus Aneclana papavago (NL. fem. n. *papavago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1672 sp002401965*. The type genome for the species is the GenBank assembly GCA_002401965.1. The GC content of the type genome is 43.86 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Aneclana semodago sp. nov.

Candidatus Aneclana semodago (NL. fem. n. *semodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1672 sp002401695*. The type genome for the species is the GenBank assembly GCA_002401695.1. The GC content of the type genome is 44.93 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Aneclaria cerometta sp. nov.

Candidatus Aneclaria cerometta (NL. fem. n. *cerometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAXTT01 sp013336365*. The type genome for the species is the GenBank assembly GCA_013336365.1. The GC content of the type genome is 41.1 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Aneclaria gen. nov.

Candidatus Aneclaria (NL. fem. n. *Aneclaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXTT01*. The type species for the genus is *Candidatus* Aneclaria cerometta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aneclia diritibra sp. nov.

Candidatus Aneclia diritibra (NL. fem. n. *diritibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1152 sp003151595*. The type genome for the species is the GenBank assembly GCA_003151595.1. The GC content of the type genome is 68.64 % and the genome length is 7.56 Mbp.

Description of *Candidatus* Aneclia gen. nov.

Candidatus Aneclia (NL. fem. n. *Aneclia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1152*. The type species for the genus is *Candidatus* Aneclia diritibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aneclida tabifitura sp. nov.

Candidatus Aneclida tabifitura (NL. fem. n. *tabifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAV01 sp012719195*. The type genome for the species is the GenBank assembly GCA_012719195.1. The GC content of the type genome is 66.83 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Aneclida gen. nov.

Candidatus Aneclida (NL. fem. n. *Aneclida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAV01*. The type species for the genus is *Candidatus* Aneclida tabifitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRVO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momorariaceae.

Description of *Candidatus* Aneclosa aclasicula sp. nov.

Candidatus Aneclosa aclasicula (NL. fem. n. *aclasicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRLL01 sp009777625*. The type genome for the species is the GenBank assembly GCA_009777625.1. The GC content of the type genome is 48.8 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Aneclosa gen. nov.

Candidatus Aneclosa (NL. fem. n. *Aneclosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRLL01*. The type species for the genus is *Candidatus* Aneclosa aclasicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aneclula lenocisca sp. nov.

Candidatus Aneclula lenocisca (NL. fem. n. *lenocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSC01 sp009692435*. The type genome for the species is the GenBank assembly GCA_009692435.1. The GC content of the type genome is 56.35 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Aneclula gen. nov.

Candidatus Aneclula (NL. fem. n. *Aneclula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFSC01*. The type species for the genus is *Candidatus* Aneclula lenocisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beneposaceae.

Description of *Candidatus* Aneclula orgeticella sp. nov.

Candidatus Aneclula orgeticella (NL. fem. n. *orgeticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSC01 sp013140885*. The type genome for the species is the GenBank assembly GCA_013140885.1. The GC content of the type genome is 58.13 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Angelakisella amfitivita sp. nov.

Candidatus Angelakisella amfitivita (NL. fem. n. *amfitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Angelakisella sp013316495*. The type genome for the species is the GenBank assembly GCA_013316495.1. The GC content of the type genome is 59.69 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Angelakisella catobago sp. nov.

Candidatus Angelakisella catobago (NL. fem. n. *catobago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Angelakisella sp004557855*. The type genome for the species is the GenBank assembly RS_GCF_900763765.1. The GC content of the type genome is 59.81 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Angelakisella fecunentia sp. nov.

Candidatus Angelakisella fecunentia (NL. fem. n. *fecunentia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Angelakisella sp900552845*. The type genome for the species is the GenBank assembly RS_GCF_900753885.1. The GC content of the type genome is 55.5 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Angelakisella procliforma sp. nov.

Candidatus Angelakisella procliforma (NL. fem. n. *procliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Angelakisella sp003453215*. The type genome for the species is the GenBank assembly GCA_003453215.1. The GC content of the type genome is 55.35 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Angelakisella refacago sp. nov.

Candidatus Angelakisella refacago (NL. fem. n. *refacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Angelakisella sp900547385*. The type genome for the species is the GenBank assembly GCA_900547385.1. The GC content of the type genome is 57.15 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Angelakisella valefitrix sp. nov.

Candidatus Angelakisella valefitrix (NL. fem. n. *valefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Angelakisella sp004554485*. The type genome for the species is the GenBank assembly GCA_004554065.1. The GC content of the type genome is 61.37 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Angipana altipatio sp. nov.

Candidatus Angipana altipatio (NL. fem. n. *altipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RICK01 sp003932735*. The type genome for the species is the GenBank assembly RS_GCF_003932735.1. The GC content of the type genome is 33.01 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Angipana gen. nov.

Candidatus Angipana (NL. fem. n. *Angipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RICK01*. The type species for the genus is *Candidatus* Angipana altipatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *33-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Soliposaceae.

Description of *Candidatus* Angiparia allobisca sp. nov.

Candidatus Angiparia allobisca (NL. fem. n. *allobisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABSW01 sp011390155*. The type genome for the species is the GenBank assembly GCA_011390155.1. The GC content of the type genome is 44.69 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Angiparia gen. nov.

Candidatus Angiparia (NL. fem. n. *Angiparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABSW01*. The type species for the genus is *Candidatus* Angiparia allobisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Angipella peripugo sp. nov.

Candidatus Angipella peripugo (NL. fem. n. *peripugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *QAKL01 sp003343815*. The type genome for the species is the GenBank assembly GCA_003343815.1. The GC content of the type genome is 45.62 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Angipella gen. nov.

Candidatus Angipella (NL. fem. n. *Angipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAKL01*. The type species for the genus is *Candidatus* Angipella peripugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Angipia paracivita sp. nov.

Candidatus Angipia paracivita (NL. fem. n. *paracivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEFX01 sp902826715*. The type genome for the species is the GenBank assembly GCA_902826715.1. The GC content of the type genome is 63.48 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Angipia gen. nov.

Candidatus Angipia (NL. fem. n. *Angipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEFX01*. The type species for the genus is *Candidatus* Angipia paracivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Angipida visifastra sp. nov.

Candidatus Angipida visifastra (NL. fem. n. *visifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICJ01 sp009691505*. The type genome for the species is the GenBank assembly GCA_009691505.1. The GC content of the type genome is 39.37 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Angipida gen. nov.

Candidatus Angipida (NL. fem. n. *Angipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICJ01*. The type species for the genus is *Candidatus* Angipida visifastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Angiposa peropago sp. nov.

Candidatus Angiposa peropago (NL. fem. n. *peropago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABXJX01 sp013375375*. The type genome for the species is the GenBank assembly GCA_013375375.1. The GC content of the type genome is 48.24 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Angiposa gen. nov.

Candidatus Angiposa (NL. fem. n. *Angiposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABXJX01*. The type species for the genus is *Candidatus* Angiposa peropago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *C00003060*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubidaceae.

Description of *Candidatus* Angipula catecedo sp. nov.

Candidatus Angipula catecedo (NL. fem. n. *catecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WREB01 sp009779525*. The type genome for the species is the GenBank assembly GCA_009779525.1. The GC content of the type genome is 56.37 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Angipula gen. nov.

Candidatus Angipula (NL. fem. n. *Angipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WREB01*. The type species for the genus is *Candidatus* Angipula catecedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Angustibacter petulilenta sp. nov.

Candidatus Angustibacter petulilenta (NL. fem. n. *petulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Angustibacter sp001426435*. The type genome for the species is the GenBank assembly RS_GCF_001426435.1. The GC content of the type genome is 72.53 % and the genome length is 3.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Annecana visocitica sp. nov.

Candidatus Annecana visocitica (NL. fem. n. *visocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WOZL01 sp011620305*. The type genome for the species is the GenBank assembly GCA_011620305.1. The GC content of the type genome is 34.17 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Annecana gen. nov.

Candidatus Annecana (NL. fem. n. *Annecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WOZL01*. The type species for the genus is *Candidatus* Annecana visocitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Annecaria encolivita sp. nov.

Candidatus Annecaria encolivita (NL. fem. n. *encolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEF01 sp011176555*. The type genome for the species is the GenBank assembly GCA_011176555.1. The GC content of the type genome is 59.06 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Annecaria gen. nov.

Candidatus Annecaria (NL. fem. n. *Annecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUEF01*. The type species for the genus is *Candidatus* Annecaria encolivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deparosaceae.

Description of *Candidatus* Annecella nutabilenta sp. nov.

Candidatus Annecella nutabilenta (NL. fem. n. *nutabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIYD01 sp014360105*. The type genome for the species is the GenBank assembly GCA_014360105.1. The GC content of the type genome is 62.51 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Annecella gen. nov.

Candidatus Annecella (NL. fem. n. *Annecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIYD01*. The type species for the genus is *Candidatus* Annecella nutabilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLTJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidanaceae.

Description of *Candidatus* Annecia adnubentia sp. nov.

Candidatus Annecia adnubentia (NL. fem. n. *adnubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACEU01 sp011682355*. The type genome for the species is the GenBank assembly GCA_011682355.1. The GC content of the type genome is 40.13 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Annecia gen. nov.

Candidatus Annecia (NL. fem. n. *Annecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACEU01*. The type species for the genus is *Candidatus* Annecia adnubentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LOWO2-01-FULL-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifanaceae.

Description of *Candidatus* Annecida immatessa sp. nov.

Candidatus Annecida immatessa (NL. fem. n. *immatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-134 sp005880985*. The type genome for the species is the GenBank assembly GCA_005880985.1. The GC content of the type genome is 70.24 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Annecida gen. nov.

Candidatus Annecida (NL. fem. n. *Annecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-134*. The type species for the genus is *Candidatus* Annecida immatessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibiaceae.

Description of *Candidatus* Annecosa totiditura sp. nov.

Candidatus Annecosa totiditura (NL. fem. n. *totiditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRQR01 sp011371355*. The type genome for the species is the GenBank assembly GCA_011371355.1. The GC content of the type genome is 71.67 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Annecosa gen. nov.

Candidatus Annecosa (NL. fem. n. *Annecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRQR01*. The type species for the genus is *Candidatus* Annecosa totiditura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicellaceae.

Description of *Candidatus* Annecula ignositas sp. nov.

Candidatus Annecula ignositas (NL. fem. n. *ignositas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W281 sp011174795*. The type genome for the species is the GenBank assembly GCA_011174795.1. The GC content of the type genome is 54.11 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Annecula gen. nov.

Candidatus Annecula (NL. fem. n. *Annecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W281*. The type species for the genus is *Candidatus* Annecula ignositas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Corocosaceae.

Description of *Candidatus* Annicella demulatio sp. nov.

Candidatus Annicella demulatio (NL. fem. n. *demulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-87 sp013152715*. The type genome for the species is the GenBank assembly GCA_013152715.1. The GC content of the type genome is 44.57 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Annicella gen. nov.

Candidatus Annicella (NL. fem. n. *Annicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-87*. The type species for the genus is *Candidatus* Annicella demulatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AABM5-25-91*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Filifidaceae.

Description of *Candidatus* Annicella oblivousia sp. nov.

Candidatus Annicella oblivousia (NL. fem. n. *oblivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-87 sp002085355*. The type genome for the species is the GenBank assembly GCA_002085355.1. The GC content of the type genome is 42.87 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Annicia admodivita sp. nov.

Candidatus Annicia admodivita (NL. fem. n. *admodivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZAV01 sp012514145*. The type genome for the species is the GenBank assembly GCA_012514145.1. The GC content of the type genome is 53.59 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Annicia gen. nov.

Candidatus Annicia (NL. fem. n. *Annicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZAV01*. The type species for the genus is *Candidatus* Annicia admodivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Annicida smegmimonas sp. nov.

Candidatus Annicida smegmimonas (NL. fem. n. *smegmimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP181 sp002400675*. The type genome for the species is the GenBank assembly GCA_002400675.1. The GC content of the type genome is 59.33 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Annicida gen. nov.

Candidatus Annicida (NL. fem. n. *Annicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NORP181*. The type species for the genus is *Candidatus* Annicida smegmimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Annicosa ambacatica sp. nov.

Candidatus Annicosa ambacatica (NL. fem. n. *ambacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10518 sp003508005*. The type genome for the species is the GenBank assembly GCA_003508005.1. The GC content of the type genome is 57.91 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Annicosa gen. nov.

Candidatus Annicosa (NL. fem. n. *Annicosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10518*. The type species for the genus is *Candidatus* Annicosa ambacatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Annicosa inadfilenta sp. nov.

Candidatus Annicosa inadfilenta (NL. fem. n. *inadfilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10518 sp011372855*. The type genome for the species is the GenBank assembly GCA_011372855.1. The GC content of the type genome is 59.01 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Annicosa vehemitudo sp. nov.

Candidatus Annicosa vehemitudo (NL. fem. n. *vehemitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10518 sp003604995*. The type genome for the species is the GenBank assembly GCA_003604995.1. The GC content of the type genome is 59.65 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Annifana advoressa sp. nov.

Candidatus Annifana advoressa (NL. fem. n. *advoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QANA01 sp900554725*. The type genome for the species is the GenBank assembly GCA_900554725.1. The GC content of the type genome is 52.27 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Annifana gen. nov.

Candidatus Annifana (NL. fem. n. *Annifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *QANA01*. The type species for the genus is *Candidatus* Annifana advoressa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Annifana armifica sp. nov.

Candidatus Annifana armifica (NL. fem. n. *armifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QANA01 sp902782475*. The type genome for the species is the GenBank assembly GCA_902782475.1. The GC content of the type genome is 43.81 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Annifana diminicella sp. nov.

Candidatus Annifana diminicella (NL. fem. n. *diminicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QANA01 sp003149735*. The type genome for the species is the GenBank assembly GCA_003149735.1. The GC content of the type genome is 46.16 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Annifella altipitrix sp. nov.

Candidatus Annifella altipitrix (NL. fem. n. *altipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OXYD1-FULL-39-9 sp003599255*. The type genome for the species is the GenBank assembly GCA_003599255.1. The GC content of the type genome is 40.69 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Annifella gen. nov.

Candidatus Annifella (NL. fem. n. *Annifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OXYD1-FULL-39-9*. The type species for the genus is *Candidatus* Annifella altipitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA10185. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Annifella anastessa sp. nov.

Candidatus Annifella anastessa (NL. fem. n. *anastessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OXYD1-FULL-39-9 sp001773295*. The type genome for the species is the GenBank assembly GCA_001773295.1. The GC content of the type genome is 39.07 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Annifosa voragifica sp. nov.

Candidatus Annifosa voragifica (NL. fem. n. *voragifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED11-302 sp003561815*. The type genome for the species is the GenBank assembly GCA_003561815.1. The GC content of the type genome is 58.0 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Annifosa gen. nov.

Candidatus Annifosa (NL. fem. n. *Annifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED11-302*. The type species for the genus is *Candidatus* Annifosa voragifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigariaceae.

Description of *Candidatus* Annifula selecivita sp. nov.

Candidatus Annifula selecivita (NL. fem. n. *selecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *65-9 sp001899525*. The type genome for the species is the GenBank assembly GCA_001899525.1. The GC content of the type genome is 65.49 % and the genome length is 4.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Annifula gen. nov.

Candidatus Annifula (NL. fem. n. *Annifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *65-9*. The type species for the genus is *Candidatus* Annifula selecivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Annubaria hirudigena sp. nov.

Candidatus Annubaria hirudigena (NL. fem. n. *hirudigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZZS01 sp009929775*. The type genome for the species is the GenBank assembly GCA_009929775.1. The GC content of the type genome is 58.64 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Annubaria gen. nov.

Candidatus Annubaria (NL. fem. n. *Annubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RZZS01*. The type species for the genus is *Candidatus* Annubaria hirudigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Annubella cerimilenta sp. nov.

Candidatus Annubella cerimilenta (NL. fem. n. *cerimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVT01 sp011327825*. The type genome for the species is the GenBank assembly GCA_011327825.1. The GC content of the type genome is 55.96 %

and the genome length is 4.05 Mbp.

Description of *Candidatus* Annubella gen. nov.

Candidatus Annubella (NL. fem. n. *Annubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVT01*. The type species for the genus is *Candidatus* Annubella cerimilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-97*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desulidaceae.

Description of *Candidatus* Annubia adhinicella sp. nov.

Candidatus Annubia adhinicella (NL. fem. n. *adhinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMRA01 sp013202925*. The type genome for the species is the GenBank assembly GCA_013202925.1. The GC content of the type genome is 46.78 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Annubia gen. nov.

Candidatus Annubia (NL. fem. n. *Annubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMRA01*. The type species for the genus is *Candidatus* Annubia adhinicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10183*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domicosaceae.

Description of *Candidatus* Annubida cenobitio sp. nov.

Candidatus Annubida cenobitio (NL. fem. n. *cenobitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2692065 sp002692065*. The type genome for the species is the

GenBank assembly GCA_002692065.1. The GC content of the type genome is 26.89 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Annubida gen. nov.

Candidatus Annubida (NL. fem. n. *Annubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2692065*. The type species for the genus is *Candidatus* Annubida cenobitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7430*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desaciaceae.

Description of *Candidatus* Annubida cibarigena sp. nov.

Candidatus Annubida cibarigena (NL. fem. n. *cibarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2692065 sp902551855*. The type genome for the species is the GenBank assembly GCA_902551855.1. The GC content of the type genome is 27.1 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Annubosa resalatio sp. nov.

Candidatus Annubosa resalatio (NL. fem. n. *resalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-0-20-46-8 sp002796025*. The type genome for the species is the GenBank assembly GCA_002796025.1. The GC content of the type genome is 45.97 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Annubosa gen. nov.

Candidatus Annubosa (NL. fem. n. *Annubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-0-20-46-8*. The type species for the genus is *Candidatus* Annubosa resalatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UM-FILTER-53-11. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vavasosaceae.

Description of *Candidatus* Annubula recoredo sp. nov.

Candidatus Annubula recoredo (NL. fem. n. *recoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPX01 sp011331985*. The type genome for the species is the GenBank assembly GCA_011331985.1. The GC content of the type genome is 49.7 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Annubula gen. nov.

Candidatus Annubula (NL. fem. n. *Annubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPX01*. The type species for the genus is *Candidatus* Annubula recoredo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Annucana attesousia sp. nov.

Candidatus Annucana attesousia (NL. fem. n. *attesousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UWMA-0346 sp012959465*. The type genome for the species is the GenBank assembly GCA_012959465.1. The GC content of the type genome is 54.94 % and the genome length is 6.77 Mbp.

Description of *Candidatus* Annucana gen. nov.

Candidatus Annucana (NL. fem. n. *Annucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UWMA-0346*. The type species for the genus is *Candidatus* Annucana attesousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Annucaria defulastra sp. nov.

Candidatus Annucaria defulastra (NL. fem. n. *defulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3102 sp002365865*. The type genome for the species is the GenBank assembly GCA_002365865.1. The GC content of the type genome is 49.49 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Annucaria gen. nov.

Candidatus Annucaria (NL. fem. n. *Annucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3102*. The type species for the genus is *Candidatus* Annucaria defulastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Annucella desulugo sp. nov.

Candidatus Annucella desulugo (NL. fem. n. *desulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTV01 sp012523655*. The type genome for the species is the GenBank assembly GCA_012523655.1. The GC content of the type genome is 55.3 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Annucella gen. nov.

Candidatus Annucella (NL. fem. n. *Annucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYTV01*. The type species for the genus is *Candidatus* Annucella desulugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Renavosaceae.

Description of *Candidatus* Annucia manibentia sp. nov.

Candidatus Annucia manibentia (NL. fem. n. *manibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM10766 sp900757295*. The type genome for the species is the GenBank assembly RS_GCF_900757295.1. The GC content of the type genome is 25.21 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Annucia gen. nov.

Candidatus Annucia (NL. fem. n. *Annucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM10766*. The type species for the genus is *Candidatus* Annucia manibentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Annucida enimvifica sp. nov.

Candidatus Annucida enimvifica (NL. fem. n. *enimvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-111 sp013214355*. The type genome for the species is the GenBank assembly GCA_013214355.1. The GC content of the type genome is 44.12 % and the genome length is 11.19 Mbp.

Description of *Candidatus* Annucida gen. nov.

Candidatus Annucida (NL. fem. n. *Annucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-111*. The type species for the genus is *Candidatus* Annucida enimvifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Annucosa bigemilega sp. nov.

Candidatus Annucosa bigemilega (NL. fem. n. *bigemilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B134-G9 sp003644505*. The type genome for the species is the GenBank assembly GCA_003644505.1. The GC content of the type genome is 48.46 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Annucosa gen. nov.

Candidatus Annucosa (NL. fem. n. *Annucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B134-G9*. The type species for the genus is *Candidatus* Annucosa bigemilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKK-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colepellaceae.

Description of *Candidatus* Annucula homilimonia sp. nov.

Candidatus Annucula homilimonia (NL. fem. n. *homilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEED01 sp902826225*. The type genome for the species is the GenBank assembly GCA_902826225.1. The GC content of the type genome is 66.7 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Annucula gen. nov.

Candidatus Annucula (NL. fem. n. *Annucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEED01*. The type species for the genus is *Candidatus* Annucula homilimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antacana vehicisca sp. nov.

Candidatus Antacana vehicisca (NL. fem. n. *vehicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPDF01 sp004525055*. The type genome for the species is the GenBank assembly GCA_004525055.1. The GC content of the type genome is 66.67 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Antacana gen. nov.

Candidatus Antacana (NL. fem. n. *Antacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPDF01*. The type species for the genus is *Candidatus* Antacana vehicisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Antacia antacitoga sp. nov.

Candidatus Antacia antacitoga (NL. fem. n. *antacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2112 sp002331045*. The type genome for the species is the GenBank assembly GCA_002331045.1. The GC content of the type genome is 47.01 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Antacia gen. nov.

Candidatus Antacia (NL. fem. n. *Antacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2112*. The type species for the genus is *Candidatus* Antacia antacitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antacida insusatica sp. nov.

Candidatus Antacida insusatica (NL. fem. n. *insusatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRUT01 sp011370935*. The type genome for the species is the GenBank assembly GCA_011370935.1. The GC content of the type genome is 47.9 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Antacida gen. nov.

Candidatus Antacida (NL. fem. n. *Antacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRUT01*. The type species for the genus is *Candidatus* Antacida insusatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *0-14-0-80-59-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velifiaceae.

Description of *Candidatus* Antacosa incunitia sp. nov.

Candidatus Antacosa incunitia (NL. fem. n. *incunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUPA01 sp012034615*. The type genome for the species is the GenBank assembly GCA_012034615.1. The GC content of the type genome is 48.9 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Antacosa gen. nov.

Candidatus Antacosa (NL. fem. n. *Antacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUPA01*. The type species for the genus is *Candidatus* Antacosa incunitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antacula cituvetta sp. nov.

Candidatus Antacula cituvetta (NL. fem. n. *cituvetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2714055 sp002714055*. The type genome for the species is the GenBank assembly GCA_002714055.1. The GC content of the type genome is 31.13 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Antacula gen. nov.

Candidatus Antacula (NL. fem. n. *Antacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2714055*. The type species for the genus is *Candidatus* Antacula cituvetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifariaceae.

Description of *Candidatus* Antecana inergousia sp. nov.

Candidatus Antecana inergousia (NL. fem. n. *inergousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2733575 sp002733575*. The type genome for the species is the GenBank assembly GCA_002733575.1. The GC content of the type genome is 47.08 % and the genome length is 9.25 Mbp.

Description of *Candidatus* Antecana gen. nov.

Candidatus Antecana (NL. fem. n. *Antecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2733575*. The type species for the genus is *Candidatus* Antecana inergousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antecella indiditrix sp. nov.

Candidatus Antecella indiditrix (NL. fem. n. *indiditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2748355 sp002748355*. The type genome for the species is the GenBank assembly GCA_002748355.1. The GC content of the type genome is 62.75 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Antecella gen. nov.

Candidatus Antecella (NL. fem. n. *Antecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2748355*. The type species for the genus is *Candidatus* Antecella indiditrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002748355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisiaceae.

Description of *Candidatus* Antecida subucago sp. nov.

Candidatus Antecida subucago (NL. fem. n. *subucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VTWT01 sp008727925*. The type genome for the species is the GenBank assembly RS_GCF_008727925.1. The GC content of the type genome is 46.89 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Antecida gen. nov.

Candidatus Antecida (NL. fem. n. *Antecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VTWT01*. The type species for the genus is *Candidatus* Antecida subucago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antecula adrenousia sp. nov.

Candidatus Antecula adrenousia (NL. fem. n. *adrenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin10 sp004377135*. The type genome for the species is the

GenBank assembly GCA_004377135.1. The GC content of the type genome is 47.73 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Antecula gen. nov.

Candidatus Antecula (NL. fem. n. *Antecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin10*. The type species for the genus is *Candidatus* Antecula adrenousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Antecula advigitas sp. nov.

Candidatus Antecula advigitas (NL. fem. n. *advigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin10 sp004376545*. The type genome for the species is the GenBank assembly GCA_004376545.1. The GC content of the type genome is 47.33 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Antefaria adsesitica sp. nov.

Candidatus Antefaria adsesitica (NL. fem. n. *adsesitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM519 sp002869235*. The type genome for the species is the GenBank assembly GCA_002869235.1. The GC content of the type genome is 37.48 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Antefaria gen. nov.

Candidatus Antefaria (NL. fem. n. *Antefaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM519*. The type species for the genus is *Candidatus* Antefaria adsesitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GWA2-36-10. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mutabiaceae.

Description of *Candidatus* Antefaria bulapimonia sp. nov.

Candidatus Antefaria bulapimonia (NL. fem. n. *bulapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM519 sp003599205*. The type genome for the species is the GenBank assembly GCA_003599205.1. The GC content of the type genome is 37.61 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Antefosa ficededo sp. nov.

Candidatus Antefosa ficededo (NL. fem. n. *ficededo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZBW01 sp012513625*. The type genome for the species is the GenBank assembly GCA_012513625.1. The GC content of the type genome is 69.35 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Antefosa gen. nov.

Candidatus Antefosa (NL. fem. n. *Antefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZBW01*. The type species for the genus is *Candidatus* Antefosa ficededo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antegana direpicula sp. nov.

Candidatus Antegana direpicula (NL. fem. n. *direpicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YIM-102668 sp003687725*. The type genome for the species is the GenBank assembly RS_GCF_003687725.1. The GC content of the type genome is 30.59 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Antegana gen. nov.

Candidatus Antegana (NL. fem. n. *Antegana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YIM-102668*. The type species for the genus is *Candidatus* Antegana direpicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antegana irregiforma sp. nov.

Candidatus Antegana irregiforma (NL. fem. n. *irregiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YIM-102668 sp900770875*. The type genome for the species is the GenBank assembly RS_GCF_900770875.1. The GC content of the type genome is 31.53 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Antegella atrusitura sp. nov.

Candidatus Antegella atrusitura (NL. fem. n. *atrusitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAS1 sp007859745*. The type genome for the species is the GenBank assembly RS_GCF_007859745.1. The GC content of the type genome is 66.11 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Antegella gen. nov.

Candidatus Antegella (NL. fem. n. *Antegella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RAS1*. The type species for the genus is *Candidatus* Antegella atrusitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1342*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibariaceae.

Description of *Candidatus* Antegia ignobitrix sp. nov.

Candidatus Antegia ignobitrix (NL. fem. n. *ignobitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1295 sp003151825*. The type genome for the species is the GenBank assembly GCA_003151825.1. The GC content of the type genome is 51.96 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Antegia gen. nov.

Candidatus Antegia (NL. fem. n. *Antegia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1295*. The type species for the genus is *Candidatus* Antegia ignobitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1295*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Antegiaceae.

Description of *Candidatus* Antegiaceae fam. nov.

Candidatus Antegiaceae (NL. fem. n. *Antegiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1295.* The type genus for the taxon is *Candidatus* Antegia .

According to the original version of GTDB R06-RS202, this family belongs to the order *Palsa-1295*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Antegiales.

Description of *Candidatus* Antegiales ord. nov.

Candidatus Antegiales (NL. fem. n. *Antegiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1295.* The type genus for the taxon is *Candidatus* Antegia .

According to the GTDB R06-RS202, this order belongs to the class *Kapabacteria*.

Description of *Candidatus* Antegida effulastra sp. nov.

Candidatus Antegida effulastra (NL. fem. n. *effulastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NZ13-RE01 sp002878375*. The type genome for the species is the GenBank assembly GCA_002878375.1. The GC content of the type genome is 33.12 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Antegida gen. nov.

Candidatus Antegida (NL. fem. n. *Antegida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NZ13-RE01*. The type species for the genus is *Candidatus* Antegida effulastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antegosa ruricitura sp. nov.

Candidatus Antegosa ruricitura (NL. fem. n. *ruricitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCEO01 sp013416485*. The type genome for the species is the GenBank assembly RS_GCF_013416485.1. The GC content of the type genome is 50.54 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Antegosa gen. nov.

Candidatus Antegosa (NL. fem. n. *Antegosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCEO01*. The type species for the genus is *Candidatus* Antegosa ruricitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antegula eccisimonia sp. nov.

Candidatus Antegula eccisimonia (NL. fem. n. *eccisimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN26 sp002898875*. The type genome for the species is the GenBank assembly GCA_002898875.1. The GC content of the type genome is 67.88 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Antegula gen. nov.

Candidatus Antegula (NL. fem. n. *Antegula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN26*. The type species for the genus is *Candidatus* Antegula eccisimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anteparia ambusedo sp. nov.

Candidatus Anteparia ambusedo (NL. fem. n. *ambusedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-0-20-44-26 sp002779055*. The type genome for the species is the GenBank assembly GCA_002779055.1. The GC content of the type genome is 44.23 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Anteparia gen. nov.

Candidatus Anteparia (NL. fem. n. *Anteparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-0-20-44-26*. The type species for the genus is *Candidatus* Anteparia ambusedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG03*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laxitanaceae.

Description of *Candidatus* Antepida ecastivita sp. nov.

Candidatus Antepida ecastivita (NL. fem. n. *ecastivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-52-23 sp001820655*. The type genome for the species is the GenBank assembly GCA_001820655.1. The GC content of the type genome is 52.37 % and the genome length is 0.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Antepida gen. nov.

Candidatus Antepida (NL. fem. n. *Antepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-52-23*. The type species for the genus is *Candidatus* Antepida ecastivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-52-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vanitellaceae.

Description of *Candidatus* Anteposa chernicula sp. nov.

Candidatus Anteposa chernicula (NL. fem. n. *chernicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XBB1006 sp900115795*. The type genome for the species is the GenBank assembly RS_GCF_900115795.1. The GC content of the type genome is 42.09 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Anteposa gen. nov.

Candidatus Anteposa (NL. fem. n. *Anteposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XBB1006*. The type species for the genus is *Candidatus* Anteposa chernicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antepula didacitas sp. nov.

Candidatus Antepula didacitas (NL. fem. n. *didacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRDT01 sp003173995*. The type genome for the species is the GenBank assembly GCA_003173995.1. The GC content of the type genome is 38.16 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Antepula gen. nov.

Candidatus Antepula (NL. fem. n. *Antepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PRDT01*. The type species for the genus is *Candidatus* Antepula didacitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Antevana admoditura sp. nov.

Candidatus Antevana admoditura (NL. fem. n. *admoditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOIV01 sp004377005*. The type genome for the species is the GenBank assembly GCA_004377005.1. The GC content of the type genome is 42.06 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Antevana gen. nov.

Candidatus Antevana (NL. fem. n. *Antevana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SOIV01*. The type species for the genus is *Candidatus* Antevana admoditura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antevana obtesitio sp. nov.

Candidatus Antevana obtesitio (NL. fem. n. *obtesitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOIV01 sp011773465*. The type genome for the species is the GenBank assembly GCA_011773465.1. The GC content of the type genome is 41.5 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Antevana semimiforma sp. nov.

Candidatus Antevana semimiforma (NL. fem. n. *semimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOIV01 sp011049545*. The type genome for the species is the GenBank assembly GCA_011049545.1. The GC content of the type genome is 41.53 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Antevana tenebitudo sp. nov.

Candidatus Antevana tenebitudo (NL. fem. n. *tenebitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOIV01 sp011772475*. The type genome for the species is the GenBank assembly GCA_011772475.1. The GC content of the type genome is 42.26 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Antevaria anaclimonas sp. nov.

Candidatus Antevaria anaclimonas (NL. fem. n. *anaclimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGJ01 sp007376485*. The type genome for the species is the GenBank assembly GCA_007376485.1. The GC content of the type genome is 44.47 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Antevaria gen. nov.

Candidatus Antevaria (NL. fem. n. *Antevaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGJ01*. The type species for the genus is *Candidatus* Antevaria anaclimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family

IGHO2-01-FULL-4-A. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisulaceae.

Description of *Candidatus* Antevella depelitia sp. nov.

Candidatus Antevella depelitia (NL. fem. n. *depelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LZORAL124-50-18 sp002747395*. The type genome for the species is the GenBank assembly GCA_002747395.1. The GC content of the type genome is 49.68 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Antevella gen. nov.

Candidatus Antevella (NL. fem. n. *Antevella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LZORAL124-50-18*. The type species for the genus is *Candidatus* Antevella depelitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antevella innumivita sp. nov.

Candidatus Antevella innumivita (NL. fem. n. *innumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LZORAL124-50-18 sp002747055*. The type genome for the species is the GenBank assembly GCA_002747055.1. The GC content of the type genome is 48.17 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Antevia obfiredo sp. nov.

Candidatus Antevia obfiredo (NL. fem. n. *obfiredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-944 sp003134215*. The type genome for the species is the GenBank assembly GCA_003134215.1. The GC content of the type genome is 53.23 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Antevia gen. nov.

Candidatus Antevia (NL. fem. n. *Antevia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-944*. The type species for the genus is *Candidatus* Antevia obfiredo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antevida evangetta sp. nov.

Candidatus Antevida evangetta (NL. fem. n. *evangetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WD6-1 sp003122085*. The type genome for the species is the GenBank assembly RS_GCF_003122085.1. The GC content of the type genome is 69.46 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Antevida gen. nov.

Candidatus Antevida (NL. fem. n. *Antevida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WD6-1*. The type species for the genus is *Candidatus* Antevida evangetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antevosa depelax sp. nov.

Candidatus Antevosa depelax (NL. fem. n. *depelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2690645 sp002690645*. The type genome for the species is the GenBank assembly GCA_002690645.1. The GC content of the type genome is 30.74 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Antevosa gen. nov.

Candidatus Antevosa (NL. fem. n. *Antevosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2690645*. The type species for the genus is *Candidatus* Antevosa depelax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002719695*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifosaceae.

Description of *Candidatus* Antevula enigmastra sp. nov.

Candidatus Antevula enigmastra (NL. fem. n. *enigmastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077546 sp001464165*. The type genome for the species is the GenBank assembly GCA_001464165.1. The GC content of the type genome is 47.82 % and the genome length is 6.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Antevula gen. nov.

Candidatus Antevula (NL. fem. n. *Antevula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077546*. The type species for the genus is *Candidatus* Antevula enigmastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antimana luticitica sp. nov.

Candidatus Antimana luticitica (NL. fem. n. *luticitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACADV01 sp011388795*. The type genome for the species is the GenBank assembly GCA_011388795.1. The GC content of the type genome is 70.49 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Antimana gen. nov.

Candidatus Antimana (NL. fem. n. *Antimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACADV01*. The type species for the genus is *Candidatus* Antimana luticitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antimana sonipessa sp. nov.

Candidatus Antimana sonipessa (NL. fem. n. *sonipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACADV01 sp013388425*. The type genome for the species is the GenBank assembly GCA_013388425.1. The GC content of the type genome is 69.38 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Antimaria operciforma sp. nov.

Candidatus Antimaria operciforma (NL. fem. n. *operciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WSZY01 sp013139875*. The type genome for the species is the GenBank assembly GCA_013139875.1. The GC content of the type genome is 51.56 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Antimaria gen. nov.

Candidatus Antimaria (NL. fem. n. *Antimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WSZY01*. The type species for the genus is *Candidatus* Antimaria operciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antimella actarigena sp. nov.

Candidatus Antimella actarigena (NL. fem. n. *actarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNU01 sp009776435*. The type genome for the species is the GenBank assembly GCA_009776435.1. The GC content of the type genome is 58.71 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Antimella gen. nov.

Candidatus Antimella (NL. fem. n. *Antimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRNU01*. The type species for the genus is *Candidatus* Antimella actarigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antimella cadavifica sp. nov.

Candidatus Antimella cadavifica (NL. fem. n. *cadavifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNU01 sp009778425*. The type genome for the species is the GenBank assembly GCA_009778425.1. The GC content of the type genome is 58.73 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Antimella gabinax sp. nov.

Candidatus Antimella gabinax (NL. fem. n. *gabinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNU01 sp009779355*. The type genome for the species is the GenBank assembly GCA_009779355.1. The GC content of the type genome is 56.58 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Antimella immeditura sp. nov.

Candidatus Antimella immeditura (NL. fem. n. *immeditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNU01 sp009781085*. The type genome for the species is the

GenBank assembly GCA_009781085.1. The GC content of the type genome is 55.9 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Antimella inoblago sp. nov.

Candidatus Antimella inoblago (NL. fem. n. *inoblago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNU01 sp009782565*. The type genome for the species is the GenBank assembly GCA_009782565.1. The GC content of the type genome is 57.75 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Antimia abindago sp. nov.

Candidatus Antimia abindago (NL. fem. n. *abindago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-002020805 sp002020805*. The type genome for the species is the GenBank assembly RS_GCF_002020805.1. The GC content of the type genome is 55.59 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Antimia gen. nov.

Candidatus Antimia (NL. fem. n. *Antimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-002020805*. The type species for the genus is *Candidatus* Antimia abindago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antimida desacentia sp. nov.

Candidatus Antimida desacentia (NL. fem. n. *desacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-54-10 sp001872985*. The type genome for the species is the GenBank assembly GCA_001872985.1. The GC content of the type genome is 53.49 % and the genome length is 2.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um

filter".

Description of *Candidatus* Antimida gen. nov.

Candidatus Antimida (NL. fem. n. *Antimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-54-10*. The type species for the genus is *Candidatus* Antimida desacentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antimosa saxopago sp. nov.

Candidatus Antimosa saxopago (NL. fem. n. *saxopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZKA01 sp012800055*. The type genome for the species is the GenBank assembly GCA_012800055.1. The GC content of the type genome is 59.5 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Antimosa gen. nov.

Candidatus Antimosa (NL. fem. n. *Antimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZKA01*. The type species for the genus is *Candidatus* Antimosa saxopago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antipana detorivita sp. nov.

Candidatus Antipana detorivita (NL. fem. n. *detorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSSC01 sp013214635*. The type genome for the species is the GenBank assembly GCA_013214635.1. The GC content of the type genome is 59.14 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Antipana gen. nov.

Candidatus Antipana (NL. fem. n. *Antipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSSC01*. The type species for the genus is *Candidatus* Antipana detorivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antiparia irrecitia sp. nov.

Candidatus Antiparia irrecitia (NL. fem. n. *irrecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRHC01 sp903878275*. The type genome for the species is the GenBank assembly GCA_903878275.1. The GC content of the type genome is 40.03 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Antiparia gen. nov.

Candidatus Antiparia (NL. fem. n. *Antiparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRHC01*. The type species for the genus is *Candidatus* Antiparia irrecitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD1-FULL-46-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidellaceae.

Description of *Candidatus* Antipida ceracibula sp. nov.

Candidatus Antipida ceracibula (NL. fem. n. *ceracibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOX01 sp012838665*. The type genome for the species is the GenBank assembly GCA_012838665.1. The GC content of the type genome is 50.88 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Antipida gen. nov.

Candidatus Antipida (NL. fem. n. *Antipida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOX01*. The type species for the genus is *Candidatus* Antipida ceracibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antiposa gasifousia sp. nov.

Candidatus Antiposa gasifousia (NL. fem. n. *gasifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-425 sp003245675*. The type genome for the species is the GenBank assembly GCA_003245675.1. The GC content of the type genome is 39.74 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Antiposa gen. nov.

Candidatus Antiposa (NL. fem. n. *Antiposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-425*. The type species for the genus is *Candidatus* Antiposa gasifousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antirana emortetta sp. nov.

Candidatus Antirana emortetta (NL. fem. n. *emortetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-21 sp005884945*. The type genome for the species is the GenBank assembly GCA_005884945.1. The GC content of the type genome is 68.97 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Antirana gen. nov.

Candidatus Antirana (NL. fem. n. *Antirana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-21*. The type species for the genus is *Candidatus* Antirana emortetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antirana eviscugo sp. nov.

Candidatus Antirana eviscugo (NL. fem. n. *eviscugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-21 sp005883995*. The type genome for the species is the GenBank assembly GCA_005883995.1. The GC content of the type genome is 69.16 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Antirana salubimonia sp. nov.

Candidatus Antirana salubimonia (NL. fem. n. *salubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-21 sp005885125*. The type genome for the species is the GenBank assembly GCA_005885125.1. The GC content of the type genome is 68.4 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Antiraria annecicella sp. nov.

Candidatus Antiraria annecicella (NL. fem. n. *annecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2725445 sp002725445*. The type genome for the species is the GenBank assembly GCA_002725445.1. The GC content of the type genome is 52.02 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Antiraria gen. nov.

Candidatus Antiraria (NL. fem. n. *Antiraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2725445*. The type species for the genus is *Candidatus* Antiraria annecicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipariaceae.

Description of *Candidatus* Antirella dedigitrix sp. nov.

Candidatus Antirella dedigitrix (NL. fem. n. *dedigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACZRG01 sp902783485*. The type genome for the species is the GenBank assembly GCA_902783485.1. The GC content of the type genome is 44.45 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Antirella gen. nov.

Candidatus Antirella (NL. fem. n. *Antirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACZRG01*. The type species for the genus is *Candidatus* Antirella dedigitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9959*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvidaceae.

Description of *Candidatus* Antiria annecetta sp. nov.

Candidatus Antiria annecetta (NL. fem. n. *annecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748505 sp002748505*. The type genome for the species is the GenBank assembly GCA_002748505.1. The GC content of the type genome is 54.62 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Antiria gen. nov.

Candidatus Antiria (NL. fem. n. *Antiria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2748505*. The type species for the genus is *Candidatus* Antiria

annecetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antirida semivatica sp. nov.

Candidatus Antirida semivatica (NL. fem. n. *semivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFQB01 sp001784275*. The type genome for the species is the GenBank assembly GCA_001784275.1. The GC content of the type genome is 47.32 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Antirida gen. nov.

Candidatus Antirida (NL. fem. n. *Antirida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFQB01*. The type species for the genus is *Candidatus* Antirida semivatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Antirosa mavorugo sp. nov.

Candidatus Antirosa mavorugo (NL. fem. n. *mavorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1370 sp002306315*. The type genome for the species is the GenBank assembly GCA_002306315.1. The GC content of the type genome is 47.64 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Antirosa gen. nov.

Candidatus Antirosa (NL. fem. n. *Antirosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA1370*. The type species for the genus is *Candidatus* Antirosa mavorugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Antomana prospatica sp. nov.

Candidatus Antomana prospatica (NL. fem. n. *prospatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAR-2010-188 sp900104375*. The type genome for the species is the GenBank assembly RS_GCF_900104375.1. The GC content of the type genome is 36.89 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Antomana gen. nov.

Candidatus Antomana (NL. fem. n. *Antomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MAR-2010-188*. The type species for the genus is *Candidatus* Antomana prospatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antomaria venunivita sp. nov.

Candidatus Antomaria venunivita (NL. fem. n. *venunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKV01 sp011389205*. The type genome for the species is the GenBank assembly GCA_011389205.1. The GC content of the type genome is 51.32 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Antomaria gen. nov.

Candidatus Antomaria (NL. fem. n. *Antomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKV01*. The type species for the genus is *Candidatus* Antomaria

venunivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBBX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senipanaceae.

Description of *Candidatus* Antomia siminisca sp. nov.

Candidatus Antomia siminisca (NL. fem. n. *siminisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707185 sp002707185*. The type genome for the species is the GenBank assembly GCA_002707185.1. The GC content of the type genome is 44.03 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Antomia gen. nov.

Candidatus Antomia (NL. fem. n. *Antomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2707185*. The type species for the genus is *Candidatus* Antomia siminisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Antomida hexapitio sp. nov.

Candidatus Antomida hexapitio (NL. fem. n. *hexapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFXX01 sp013368795*. The type genome for the species is the GenBank assembly GCA_013368795.1. The GC content of the type genome is 68.26 % and the genome length is 9.81 Mbp.

Description of *Candidatus* Antomida gen. nov.

Candidatus Antomida (NL. fem. n. *Antomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JABFXX01*. The type species for the genus is *Candidatus* Antomida hexapitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antomida sacometta sp. nov.

Candidatus Antomida sacometta (NL. fem. n. *sacometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFXX01 sp013812655*. The type genome for the species is the GenBank assembly GCA_013812655.1. The GC content of the type genome is 68.65 % and the genome length is 8.13 Mbp.

Description of *Candidatus* Antomida vagabicella sp. nov.

Candidatus Antomida vagabicella (NL. fem. n. *vagabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFXX01 sp013813765*. The type genome for the species is the GenBank assembly GCA_013813765.1. The GC content of the type genome is 67.79 % and the genome length is 8.11 Mbp.

Description of *Candidatus* Antomosa immusatica sp. nov.

Candidatus Antomosa immusatica (NL. fem. n. *immusatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVIC01 sp009939295*. The type genome for the species is the GenBank assembly RS_GCF_009939295.1. The GC content of the type genome is 52.06 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Antomosa gen. nov.

Candidatus Antomosa (NL. fem. n. *Antomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVIC01*. The type species for the genus is *Candidatus* Antomosa immusatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Antomula megalatio sp. nov.

Candidatus Antomula megalatio (NL. fem. n. *megalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W425 sp011192005*. The type genome for the species is the GenBank assembly GCA_011192005.1. The GC content of the type genome is 50.69 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Antomula gen. nov.

Candidatus Antomula (NL. fem. n. *Antomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W425*. The type species for the genus is *Candidatus* Antomula megalatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-60-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunidaceae.

Description of *Candidatus* Anxifana infesatio sp. nov.

Candidatus Anxifana infesatio (NL. fem. n. *infesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWCQ01 sp002070105*. The type genome for the species is the GenBank assembly GCA_002070105.1. The GC content of the type genome is 43.95 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Anxifana gen. nov.

Candidatus Anxifana (NL. fem. n. *Anxifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCQ01*. The type species for the genus is *Candidatus* Anxifana infesatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Firm-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resulosaceae.

Description of *Candidatus* Anxifaria adrotibra sp. nov.

Candidatus Anxifaria adrotibra (NL. fem. n. *adrotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0074139 sp001464795*. The type genome for the species is the GenBank assembly GCA_001464795.1. The GC content of the type genome is 39.88 % and the genome length is 2.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Anxifaria gen. nov.

Candidatus Anxifaria (NL. fem. n. *Anxifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0074139*. The type species for the genus is *Candidatus* Anxifaria adrotibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anxifella ignobousia sp. nov.

Candidatus Anxifella ignobousia (NL. fem. n. *ignobousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIOZ-UU15 sp014383605*. The type genome for the species is the GenBank assembly GCA_014383605.1. The GC content of the type genome is 63.55 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Anxifella gen. nov.

Candidatus Anxifella (NL. fem. n. *Anxifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NIOZ-UU15*. The type species for the genus is *Candidatus* Anxifella ignobousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3071*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Codifellaceae.

Description of *Candidatus* Anxifia admurivita sp. nov.

Candidatus Anxifia admurivita (NL. fem. n. *admurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW121 sp003259155*. The type genome for the species is the GenBank assembly RS_GCF_003259155.1. The GC content of the type genome is 58.46 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Anxifia gen. nov.

Candidatus Anxifia (NL. fem. n. *Anxifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SW121*. The type species for the genus is *Candidatus* Anxifia admurivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anxifida fatifago sp. nov.

Candidatus Anxifida fatifago (NL. fem. n. *fatifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1162T-S-0a-05 sp000964245*. The type genome for the species is the GenBank assembly RS_GCF_000964245.1. The GC content of the type genome is 47.72 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Anxifida gen. nov.

Candidatus Anxifida (NL. fem. n. *Anxifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1162T-S-0a-05*. The type species for the genus is *Candidatus* Anxifida fatifago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Anxifula adculimonas sp. nov.

Candidatus Anxifula adculimonas (NL. fem. n. *adculimonas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDER01 sp013816275*. The type genome for the species is the GenBank assembly GCA_013816275.1. The GC content of the type genome is 68.63 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Anxifula gen. nov.

Candidatus Anxifula (NL. fem. n. *Anxifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDER01*. The type species for the genus is *Candidatus* Anxifula adculimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apercana refunicella sp. nov.

Candidatus Apercana refunicella (NL. fem. n. *refunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZFB01 sp012511915*. The type genome for the species is the GenBank assembly GCA_012511915.1. The GC content of the type genome is 39.56 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Apercana gen. nov.

Candidatus Apercana (NL. fem. n. *Apercana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZFB01*. The type species for the genus is *Candidatus* Apercana refunicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Firm-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resulosaceae.

Description of *Candidatus* Apercaria depocitio sp. nov.

Candidatus Apercaria depocitio (NL. fem. n. *depocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG714 sp900321665*. The type genome for the species is the GenBank assembly GCA_900321665.1. The GC content of the type genome is 47.74 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Apercaria gen. nov.

Candidatus Apercaria (NL. fem. n. *Apercaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG714*. The type species for the genus is *Candidatus* Apercaria depocitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apercella egritedo sp. nov.

Candidatus Apercella egritedo (NL. fem. n. *egritedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CWB-1 sp006494535*. The type genome for the species is the GenBank assembly RS_GCF_006494535.1. The GC content of the type genome is 36.31 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Apercella gen. nov.

Candidatus Apercella (NL. fem. n. *Apercella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CWB-1*. The type species for the genus is *Candidatus* Apercella egritedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apercia catilentia sp. nov.

Candidatus Apercia catilentia (NL. fem. n. *catilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJG01 sp012522505*. The type genome for the species is the GenBank assembly GCA_012522505.1. The GC content of the type genome is 42.91 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Apercia gen. nov.

Candidatus Apercia (NL. fem. n. *Apercia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYJG01*. The type species for the genus is *Candidatus* Apercia catilentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-8532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabidaceae.

Description of *Candidatus* Apercia oscilastra sp. nov.

Candidatus Apercia oscilastra (NL. fem. n. *oscilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJG01 sp012523055*. The type genome for the species is the GenBank assembly GCA_012523055.1. The GC content of the type genome is 45.55 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Apercida apraribula sp. nov.

Candidatus Apercida apraribula (NL. fem. n. *apraribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFS01 sp004557805*. The type genome for the species is the GenBank assembly GCA_004557805.1. The GC content of the type genome is 60.33 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Apercida gen. nov.

Candidatus Apercida (NL. fem. n. *Apercida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFFS01*. The type species for the genus is *Candidatus* Apercida

apraribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Apercula rubigibula sp. nov.

Candidatus Apercula rubigibula (NL. fem. n. *rubigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLH01 sp012799415*. The type genome for the species is the GenBank assembly GCA_012799415.1. The GC content of the type genome is 34.24 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Apercula gen. nov.

Candidatus Apercula (NL. fem. n. *Apercula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZLH01*. The type species for the genus is *Candidatus* Apercula rubigibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYNZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicapulaceae.

Description of *Candidatus* Apharana accorentia sp. nov.

Candidatus Apharana accorentia (NL. fem. n. *accorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708315 sp014382445*. The type genome for the species is the GenBank assembly GCA_014382445.1. The GC content of the type genome is 35.74 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Apharana gen. nov.

Candidatus Apharana (NL. fem. n. *Apharana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *GCA-002708315*. The type species for the genus is *Candidatus* Apharana accorentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Apharana cacomitia sp. nov.

Candidatus Apharana cacomitia (NL. fem. n. *cacomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708315 sp013203805*. The type genome for the species is the GenBank assembly GCA_013203805.1. The GC content of the type genome is 34.31 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Apharana idipsatica sp. nov.

Candidatus Apharana idipsatica (NL. fem. n. *idipsatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708315 sp002708315*. The type genome for the species is the GenBank assembly GCA_002708315.1. The GC content of the type genome is 34.18 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Apharana peropessa sp. nov.

Candidatus Apharana peropessa (NL. fem. n. *peropessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708315 sp002686705*. The type genome for the species is the GenBank assembly GCA_002686705.1. The GC content of the type genome is 34.54 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Apharella paracago sp. nov.

Candidatus Apharella paracago (NL. fem. n. *paracago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DUNY01 sp012839145*. The type genome for the species is the GenBank assembly GCA_012839145.1. The GC content of the type genome is 38.95 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Apharella gen. nov.

Candidatus Apharella (NL. fem. n. *Apharella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUNY01*. The type species for the genus is *Candidatus* Apharella paracago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apharida velififorma sp. nov.

Candidatus Apharida velififorma (NL. fem. n. *velififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMWS01 sp903845125*. The type genome for the species is the GenBank assembly GCA_903845125.1. The GC content of the type genome is 60.93 % and the genome length is 8.51 Mbp.

Description of *Candidatus* Apharida gen. nov.

Candidatus Apharida (NL. fem. n. *Apharida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMWS01*. The type species for the genus is *Candidatus* Apharida velififorma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1319*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecululaceae.

Description of *Candidatus* Aphoraria curabimonia sp. nov.

Candidatus Aphoraria curabimonia (NL. fem. n. *curabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLF01 sp003559475*. The type genome for the species is the

GenBank assembly GCA_003559475.1. The GC content of the type genome is 32.06 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Aphoraria gen. nov.

Candidatus Aphoraria (NL. fem. n. *Aphoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWLF01*. The type species for the genus is *Candidatus* Aphoraria curabimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Aphorella colutitia sp. nov.

Candidatus Aphorella colutitia (NL. fem. n. *colutitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCTB01 sp902805665*. The type genome for the species is the GenBank assembly GCA_902805665.1. The GC content of the type genome is 70.94 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Aphorella gen. nov.

Candidatus Aphorella (NL. fem. n. *Aphorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCTB01*. The type species for the genus is *Candidatus* Aphorella colutitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AC-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desonosaceae.

Description of *Candidatus* Aphorida locupitudo sp. nov.

Candidatus Aphorida locupitudo (NL. fem. n. *locupitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CADCWC01 sp902806305*. The type genome for the species is the GenBank assembly GCA_902806305.1. The GC content of the type genome is 73.9 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Aphorida gen. nov.

Candidatus Aphorida (NL. fem. n. *Aphorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWC01*. The type species for the genus is *Candidatus* Aphorida locupitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F1-60-MAGs149*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulanaceae.

Description of *Candidatus* Apibacter dilemimonia sp. nov.

Candidatus Apibacter dilemimonia (NL. fem. n. *dilemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Apibacter sp002964915*. The type genome for the species is the GenBank assembly RS_GCF_009827845.1. The GC content of the type genome is 30.76 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Apilactobacillus remedatio sp. nov.

Candidatus Apilactobacillus remedatio (NL. fem. n. *remedatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Apilactobacillus sp003627035*. The type genome for the species is the GenBank assembly RS_GCF_003627035.1. The GC content of the type genome is 34.1 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Aplesana derunicula sp. nov.

Candidatus Aplesana derunicula (NL. fem. n. *derunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFIN01 sp013297825*. The type genome for the species is the

GenBank assembly GCA_013297825.1. The GC content of the type genome is 31.19 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Aplesana gen. nov.

Candidatus Aplesana (NL. fem. n. *Aplesana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFIN01*. The type species for the genus is *Candidatus* Aplesana derunicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aplesia unetvitrix sp. nov.

Candidatus Aplesia unetvitrix (NL. fem. n. *unetvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-36-32 sp002778465*. The type genome for the species is the GenBank assembly GCA_002778465.1. The GC content of the type genome is 35.73 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Aplesia gen. nov.

Candidatus Aplesia (NL. fem. n. *Aplesia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-36-32*. The type species for the genus is *Candidatus* Aplesia unetvitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-37-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocariaceae.

Description of *Candidatus* Aplesida obveritoga sp. nov.

Candidatus Aplesida obveritoga (NL. fem. n. *obveritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIO3F2 sp010672165*. The type genome for the species is the GenBank assembly GCA_010672165.1. The GC content of the type genome is 49.19 %

and the genome length is 7.3 Mbp.

Description of *Candidatus* Aplesida gen. nov.

Candidatus Aplesida (NL. fem. n. *Aplesida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIO3F2*. The type species for the genus is *Candidatus* Aplesida obveritoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aplesosa inretigena sp. nov.

Candidatus Aplesosa inretigena (NL. fem. n. *inretigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HS-T3 sp000829755*. The type genome for the species is the GenBank assembly RS_GCF_000829755.1. The GC content of the type genome is 38.71 % and the genome length is 2.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Aplesosa gen. nov.

Candidatus Aplesosa (NL. fem. n. *Aplesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HS-T3*. The type species for the genus is *Candidatus* Aplesosa inretigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aplesosa nubifousia sp. nov.

Candidatus Aplesosa nubifousia (NL. fem. n. *nubifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HS-T3 sp011125455*. The type genome for the species is the GenBank assembly RS_GCF_011125455.1. The GC content of the type genome is 39.19 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Apograria urbicax sp. nov.

Candidatus Apograria urbicax (NL. fem. n. *urbicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YR4-1 sp011059145*. The type genome for the species is the GenBank assembly RS_GCF_011059145.1. The GC content of the type genome is 44.03 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Apograria gen. nov.

Candidatus Apograria (NL. fem. n. *Apograria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YR4-1*. The type species for the genus is *Candidatus* Apograria urbicax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apogrida navificula sp. nov.

Candidatus Apogrida navificula (NL. fem. n. *navificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WS-11 sp005893365*. The type genome for the species is the GenBank assembly GCA_005893365.1. The GC content of the type genome is 71.77 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Apogrida gen. nov.

Candidatus Apogrida (NL. fem. n. *Apogrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WS-11*. The type species for the genus is *Candidatus* Apogrida navificula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabidaceae.

Description of *Candidatus* Apogrula direcicula sp. nov.

Candidatus Apogrula direcicula (NL. fem. n. *direcicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG29 sp012031955*. The type genome for the species is the GenBank assembly GCA_012031955.1. The GC content of the type genome is 51.85 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Apogrula gen. nov.

Candidatus Apogrula (NL. fem. n. *Apogrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG29*. The type species for the genus is *Candidatus* Apogrula direcicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apogrula duricitio sp. nov.

Candidatus Apogrula duricitio (NL. fem. n. *duricitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG29 sp003242315*. The type genome for the species is the GenBank assembly GCA_003242315.1. The GC content of the type genome is 51.23 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Apoplana infisago sp. nov.

Candidatus Apoplana infisago (NL. fem. n. *infisago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSTM01 sp011329365*. The type genome for the species is the GenBank assembly GCA_011329365.1. The GC content of the type genome is 55.93 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Apoplana gen. nov.

Candidatus Apoplana (NL. fem. n. *Apoplana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSTM01*. The type species for the genus is *Candidatus* Apoplana infisago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Apoplaria adobritia sp. nov.

Candidatus Apoplaria adobritia (NL. fem. n. *adobritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VIKH01 sp008080515*. The type genome for the species is the GenBank assembly GCA_008080515.1. The GC content of the type genome is 59.29 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Apoplaria gen. nov.

Candidatus Apoplaria (NL. fem. n. *Apoplaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VIKH01*. The type species for the genus is *Candidatus* Apoplaria adobritia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apoplida unetvitoga sp. nov.

Candidatus Apoplida unetvitoga (NL. fem. n. *unetvitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEYI01 sp001773975*. The type genome for the species is the GenBank assembly GCA_001773975.1. The GC content of the type genome is 47.61 % and the genome length is 0.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Apoplida gen. nov.

Candidatus Apoplida (NL. fem. n. *Apoplida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MEYI01*. The type species for the genus is *Candidatus* Apoplida unetvitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *M10-OD1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorifidaceae.

Description of *Candidatus* Apoplosa abverilega sp. nov.

Candidatus Apoplosa abverilega (NL. fem. n. *abverilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRDV01 sp003174035*. The type genome for the species is the GenBank assembly GCA_003174035.1. The GC content of the type genome is 41.06 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Apoplosa gen. nov.

Candidatus Apoplosa (NL. fem. n. *Apoplosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PRDV01*. The type species for the genus is *Candidatus* Apoplosa abverilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apoplosa emancatica sp. nov.

Candidatus Apoplosa emancatica (NL. fem. n. *emancatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRDV01 sp013288045*. The type genome for the species is the GenBank assembly GCA_013288045.1. The GC content of the type genome is 42.22 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Apoplosa remedicella sp. nov.

Candidatus Apoplosa remedicella (NL. fem. n. *remedicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRDV01 sp013815795*. The type genome for the species is the GenBank assembly GCA_013815795.1. The GC content of the type genome is 37.07 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Apoplula albogousia sp. nov.

Candidatus Apoplula albogousia (NL. fem. n. *albogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12814 sp900770165*. The type genome for the species is the GenBank assembly RS_GCF_900770165.1. The GC content of the type genome is 31.8 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Apoplula gen. nov.

Candidatus Apoplula (NL. fem. n. *Apoplula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12814*. The type species for the genus is *Candidatus* Apoplula albogousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appacana binocicula sp. nov.

Candidatus Appacana binocicula (NL. fem. n. *binocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWHX01 sp003555415*. The type genome for the species is the GenBank assembly GCA_003555415.1. The GC content of the type genome is 39.42 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Appacana gen. nov.

Candidatus Appacana (NL. fem. n. *Appacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWHX01*. The type species for the genus is *Candidatus* Appacana binocicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudiciaceae.

Description of *Candidatus* Appacaria accogessa sp. nov.

Candidatus Appacaria accogessa (NL. fem. n. *accogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGY01 sp012735575*. The type genome for the species is the GenBank assembly GCA_012735575.1. The GC content of the type genome is 37.85 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Appacaria gen. nov.

Candidatus Appacaria (NL. fem. n. *Appacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYGY01*. The type species for the genus is *Candidatus* Appacaria accogessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3941*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabulaceae.

Description of *Candidatus* Appacaria demogicula sp. nov.

Candidatus Appacaria demogicula (NL. fem. n. *demogicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGY01 sp012522165*. The type genome for the species is the GenBank assembly GCA_012522165.1. The GC content of the type genome is 36.54 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Appacella insopivita sp. nov.

Candidatus Appacella insopivita (NL. fem. n. *insopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAYJH01 sp012523035*. The type genome for the species is the GenBank assembly GCA_012523035.1. The GC content of the type genome is 37.69 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Appacella gen. nov.

Candidatus Appacella (NL. fem. n. *Appacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYJH01*. The type species for the genus is *Candidatus* Appacella insopivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appacida prodratica sp. nov.

Candidatus Appacida prodratica (NL. fem. n. *prodratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWAY01 sp013360825*. The type genome for the species is the GenBank assembly GCA_013360825.1. The GC content of the type genome is 69.22 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Appacida gen. nov.

Candidatus Appacida (NL. fem. n. *Appacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWAY01*. The type species for the genus is *Candidatus* Appacida prodratica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WSZJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadurosaceae.

Description of *Candidatus* Appacosa assibifica sp. nov.

Candidatus Appacosa assibifica (NL. fem. n. *assibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULI01 sp012840445*. The type genome for the species is the

GenBank assembly GCA_012840445.1. The GC content of the type genome is 44.85 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Appacosa gen. nov.

Candidatus Appacosa (NL. fem. n. *Appacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DULI01*. The type species for the genus is *Candidatus* Appacosa assibifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appacula adhinousia sp. nov.

Candidatus Appacula adhinousia (NL. fem. n. *adhinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2402195 sp003963235*. The type genome for the species is the GenBank assembly GCA_003963235.1. The GC content of the type genome is 30.89 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Appacula gen. nov.

Candidatus Appacula (NL. fem. n. *Appacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2402195*. The type species for the genus is *Candidatus* Appacula adhinousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appacula insalitio sp. nov.

Candidatus Appacula insalitio (NL. fem. n. *insalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2402195 sp002402195*. The type genome for the species is the GenBank assembly GCA_002402195.1. The GC content of the type genome is 40.57 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Appacula obtenicella sp. nov.

Candidatus Appacula obtenicella (NL. fem. n. *obtenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2402195 sp013298405*. The type genome for the species is the GenBank assembly GCA_013298405.1. The GC content of the type genome is 34.96 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Appagella catilatio sp. nov.

Candidatus Appagella catilatio (NL. fem. n. *catilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZODW24 sp003340475*. The type genome for the species is the GenBank assembly RS_GCF_003340475.1. The GC content of the type genome is 60.82 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Appagella gen. nov.

Candidatus Appagella (NL. fem. n. *Appagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZODW24*. The type species for the genus is *Candidatus* Appagella catilatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appagia solivitia sp. nov.

Candidatus Appagia solivitia (NL. fem. n. *solivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQC01 sp007131625*. The type genome for the species is the GenBank assembly GCA_007131625.1. The GC content of the type genome is 47.42 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Appagia gen. nov.

Candidatus Appagia (NL. fem. n. *Appagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLQC01*. The type species for the genus is *Candidatus* Appagia solivitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinulaceae.

Description of *Candidatus* Appagida peropentia sp. nov.

Candidatus Appagida peropentia (NL. fem. n. *peropentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YIM-B00363 sp011421635*. The type genome for the species is the GenBank assembly RS_GCF_011421635.1. The GC content of the type genome is 50.43 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Appagida gen. nov.

Candidatus Appagida (NL. fem. n. *Appagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YIM-B00363*. The type species for the genus is *Candidatus* Appagida peropentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appagosa direciforma sp. nov.

Candidatus Appagosa direciforma (NL. fem. n. *direciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIWX01 sp014360755*. The type genome for the species is the GenBank assembly GCA_014360755.1. The GC content of the type genome is 54.8 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Appagosa gen. nov.

Candidatus Appagosa (NL. fem. n. *Appagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIWX01*. The type species for the genus is *Candidatus* Appagosa direciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2200*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homunulaceae.

Description of *Candidatus* Appagosa edissatio sp. nov.

Candidatus Appagosa edissatio (NL. fem. n. *edissatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIWX01 sp014360905*. The type genome for the species is the GenBank assembly GCA_014360905.1. The GC content of the type genome is 53.8 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Appecana cerariforma sp. nov.

Candidatus Appecana cerariforma (NL. fem. n. *cerariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHF01 sp012271025*. The type genome for the species is the GenBank assembly GCA_012271025.1. The GC content of the type genome is 63.1 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Appecana gen. nov.

Candidatus Appecana (NL. fem. n. *Appecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXHF01*. The type species for the genus is *Candidatus* Appecana cerariforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beneposaceae.

Description of *Candidatus* Appecana redunitia sp. nov.

Candidatus Appecana redunitia (NL. fem. n. *redunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHF01 sp011523315*. The type genome for the species is the GenBank assembly GCA_011523315.1. The GC content of the type genome is 62.82 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Appecaria adcesibula sp. nov.

Candidatus Appecaria adcesibula (NL. fem. n. *adcesibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-129 sp003167255*. The type genome for the species is the GenBank assembly GCA_003167255.1. The GC content of the type genome is 62.24 % and the genome length is 7.35 Mbp.

Description of *Candidatus* Appecaria gen. nov.

Candidatus Appecaria (NL. fem. n. *Appecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-129*. The type species for the genus is *Candidatus* Appecaria adcesibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appecaria pragmousia sp. nov.

Candidatus Appecaria pragmousia (NL. fem. n. *pragmousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-129 sp003152325*. The type genome for the species is the GenBank assembly GCA_003152325.1. The GC content of the type genome is 62.19 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Appecella modifessa sp. nov.

Candidatus Appecella modifessa (NL. fem. n. *modifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *WQVM01 sp009783985*. The type genome for the species is the GenBank assembly GCA_009783985.1. The GC content of the type genome is 40.78 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Appecella gen. nov.

Candidatus Appecella (NL. fem. n. *Appecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVM01*. The type species for the genus is *Candidatus* Appecella modifessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Appecia cotenigena sp. nov.

Candidatus Appecia cotenigena (NL. fem. n. *cotenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WYBB01 sp011526585*. The type genome for the species is the GenBank assembly GCA_011526585.1. The GC content of the type genome is 71.61 % and the genome length is 6.94 Mbp.

Description of *Candidatus* Appecia gen. nov.

Candidatus Appecia (NL. fem. n. *Appecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WYBB01*. The type species for the genus is *Candidatus* Appecia cotenigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHBI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colepariaceae.

Description of *Candidatus* Appecida cepulivita sp. nov.

Candidatus Appecida cepulivita (NL. fem. n. *cepulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFX2 sp903864435*. The type genome for the species is the GenBank assembly GCA_903864435.1. The GC content of the type genome is 58.85 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Appecida gen. nov.

Candidatus Appecida (NL. fem. n. *Appecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CFX2*. The type species for the genus is *Candidatus* Appecida cepulivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Appecida detuniforma sp. nov.

Candidatus Appecida detuniforma (NL. fem. n. *detuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFX2 sp013388735*. The type genome for the species is the GenBank assembly GCA_013388735.1. The GC content of the type genome is 61.29 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Appecida ecasticella sp. nov.

Candidatus Appecida ecasticella (NL. fem. n. *ecasticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFX2 sp014338005*. The type genome for the species is the GenBank assembly GCA_014338005.1. The GC content of the type genome is 60.87 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Appecula notacousia sp. nov.

Candidatus Appecula notacousia (NL. fem. n. *notacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *WTBX01 sp013138855*. The type genome for the species is the GenBank assembly GCA_013138855.1. The GC content of the type genome is 37.91 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Appecula gen. nov.

Candidatus Appecula (NL. fem. n. *Appecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTBX01*. The type species for the genus is *Candidatus* Appecula notacousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apperana didacicula sp. nov.

Candidatus Apperana didacicula (NL. fem. n. *didacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BSW11-IV sp000447755*. The type genome for the species is the GenBank assembly RS_GCF_000447755.1. The GC content of the type genome is 36.93 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Apperana gen. nov.

Candidatus Apperana (NL. fem. n. *Apperana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BSW11-IV*. The type species for the genus is *Candidatus* Apperana didacicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apperella decititas sp. nov.

Candidatus Apperella decititas (NL. fem. n. *decititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-35 sp013214425*. The type genome for the species is the GenBank assembly GCA_013214425.1. The GC content of the type genome is 34.05 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Apperella gen. nov.

Candidatus Apperella (NL. fem. n. *Apperella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-35*. The type species for the genus is *Candidatus* Apperella decititas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apperia adnumiforma sp. nov.

Candidatus Apperia adnumiforma (NL. fem. n. *adnumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-421 sp003245715*. The type genome for the species is the GenBank assembly GCA_003245715.1. The GC content of the type genome is 47.32 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Apperia gen. nov.

Candidatus Apperia (NL. fem. n. *Apperia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-421*. The type species for the genus is *Candidatus* Apperia adnumiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-567*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viripanaceae.

Description of *Candidatus* Apperida incenitio sp. nov.

Candidatus Apperida incenitio (NL. fem. n. *incenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KOR42 sp007744255*. The type genome for the species is the GenBank assembly RS_GCF_007744255.1. The GC content of the type genome is 50.31 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Apperida gen. nov.

Candidatus Apperida (NL. fem. n. *Apperida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KOR42*. The type species for the genus is *Candidatus* Apperida incenitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apperida indifilenta sp. nov.

Candidatus Apperida indifilenta (NL. fem. n. *indifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KOR42 sp007859735*. The type genome for the species is the GenBank assembly RS_GCF_007859735.1. The GC content of the type genome is 52.76 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Apperula antomatica sp. nov.

Candidatus Apperula antomatica (NL. fem. n. *antomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAL01 sp012719395*. The type genome for the species is the GenBank assembly GCA_012719395.1. The GC content of the type genome is 65.17 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Apperula gen. nov.

Candidatus Apperula (NL. fem. n. *Apperula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAL01*. The type species for the genus is *Candidatus* Apperula antomatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demululaceae.

Description of *Candidatus* Appicana susicitudo sp. nov.

Candidatus Appicana susicitudo (NL. fem. n. *susicitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2717385 sp002717385*. The type genome for the species is the GenBank assembly GCA_002717385.1. The GC content of the type genome is 31.56 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Appicana gen. nov.

Candidatus Appicana (NL. fem. n. *Appicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2717385*. The type species for the genus is *Candidatus* Appicana susicitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelanaceae.

Description of *Candidatus* Appicella detoritio sp. nov.

Candidatus Appicella detoritio (NL. fem. n. *detoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-104 sp002084435*. The type genome for the species is the GenBank assembly GCA_002084435.1. The GC content of the type genome is 29.29 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Appicella gen. nov.

Candidatus Appicella (NL. fem. n. *Appicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4572-104*. The type species for the genus is *Candidatus* Appicella detoritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5603*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divululaceae.

Description of *Candidatus* Appicella regigitrix sp. nov.

Candidatus Appicella regigitrix (NL. fem. n. *regigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-104 sp003245625*. The type genome for the species is the GenBank assembly GCA_003245625.1. The GC content of the type genome is 37.17 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Appicia absoricella sp. nov.

Candidatus Appicia absoricella (NL. fem. n. *absoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PSRJ01 sp003175985*. The type genome for the species is the GenBank assembly GCA_003175985.1. The GC content of the type genome is 60.09 % and the genome length is 7.44 Mbp.

Description of *Candidatus* Appicia gen. nov.

Candidatus Appicia (NL. fem. n. *Appicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PSRJ01*. The type species for the genus is *Candidatus* Appicia absoricella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appicida bulapifica sp. nov.

Candidatus Appicida bulapifica (NL. fem. n. *bulapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQUF01 sp009785875*. The type genome for the species is the GenBank assembly GCA_009785875.1. The GC content of the type genome is 32.39 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Appicida gen. nov.

Candidatus Appicida (NL. fem. n. *Appicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQUF01*. The type species for the genus is *Candidatus* Appicida bulapifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appicosa affanitica sp. nov.

Candidatus Appicosa affanitica (NL. fem. n. *affanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAKR01 sp003343705*. The type genome for the species is the GenBank assembly GCA_003343705.1. The GC content of the type genome is 36.45 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Appicosa gen. nov.

Candidatus Appicosa (NL. fem. n. *Appicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAKR01*. The type species for the genus is *Candidatus* Appicosa affanitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA644*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bifisanaceae.

Description of *Candidatus* Appicula inoccimonia sp. nov.

Candidatus Appicula inoccimonia (NL. fem. n. *inoccimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHZT01 sp009692185*. The type genome for the species is the GenBank assembly GCA_009692185.1. The GC content of the type genome is 66.42 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Appicula gen. nov.

Candidatus Appicula (NL. fem. n. *Appicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SHZT01*. The type species for the genus is *Candidatus* Appicula inoccimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Apporana decometta sp. nov.

Candidatus Apporana decometta (NL. fem. n. *decometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-57-11 sp001795165*. The type genome for the species is the GenBank assembly GCA_001795165.1. The GC content of the type genome is 56.35 % and the genome length is 4.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Apporana gen. nov.

Candidatus Apporana (NL. fem. n. *Apporana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-57-11*. The type species for the genus is *Candidatus* Apporana decometta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Apporella ampenicella sp. nov.

Candidatus Apporella ampenicella (NL. fem. n. *ampenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFLI01 sp009885105*. The type genome for the species is the GenBank assembly GCA_009885105.1. The GC content of the type genome is 49.68 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Apporella gen. nov.

Candidatus Apporella (NL. fem. n. *Apporella* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFLI01*. The type species for the genus is *Candidatus* Apporella ampenicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apporida fidenastra sp. nov.

Candidatus Apporida fidenastra (NL. fem. n. *fidenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXZD01 sp005788065*. The type genome for the species is the GenBank assembly GCA_005788065.1. The GC content of the type genome is 58.23 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Apporida gen. nov.

Candidatus Apporida (NL. fem. n. *Apporida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXZD01*. The type species for the genus is *Candidatus* Apporida fidenastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apporosa effarisca sp. nov.

Candidatus Apporosa effarisca (NL. fem. n. *effarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGZG01 sp002840115*. The type genome for the species is the GenBank assembly GCA_002840115.1. The GC content of the type genome is 55.02 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Apporosa gen. nov.

Candidatus Apporosa (NL. fem. n. *Apporosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGZG01*. The type species for the genus is *Candidatus* Apporosa effarisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apporula pinifago sp. nov.

Candidatus Apporula pinifago (NL. fem. n. *pinifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MnTg02 sp008974985*. The type genome for the species is the GenBank assembly GCA_008974985.1. The GC content of the type genome is 54.58 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Apporula gen. nov.

Candidatus Apporula (NL. fem. n. *Apporula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MnTg02*. The type species for the genus is *Candidatus* Apporula pinifago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apposana caravibula sp. nov.

Candidatus Apposana caravibula (NL. fem. n. *caravibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNJF01 sp014382695*. The type genome for the species is the GenBank assembly GCA_014382695.1. The GC content of the type genome is 49.69 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Apposana gen. nov.

Candidatus Apposana (NL. fem. n. *Apposana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNJF01*. The type species for the genus is *Candidatus* Apposana caravibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-001735895*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siticanaceae.

Description of *Candidatus* Apposaria coturilega sp. nov.

Candidatus Apposaria coturilega (NL. fem. n. *coturilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FKL33 sp005222915*. The type genome for the species is the GenBank assembly RS_GCF_005222915.1. The GC content of the type genome is 62.01 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Apposaria gen. nov.

Candidatus Apposaria (NL. fem. n. *Apposaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FKL33*. The type species for the genus is *Candidatus* Apposaria coturilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apposaria encolentia sp. nov.

Candidatus Apposaria encolentia (NL. fem. n. *encolentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FKL33 sp014158035*. The type genome for the species is the GenBank assembly RS_GCF_014158035.1. The GC content of the type genome is 62.54 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Apposella episcitrix sp. nov.

Candidatus Apposella episcitrix (NL. fem. n. *episcitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACXMZ01 sp902768975*. The type genome for the species is the GenBank assembly GCA_902768975.1. The GC content of the type genome is 53.35 %

and the genome length is 1.89 Mbp.

Description of *Candidatus* Apposella gen. nov.

Candidatus Apposella (NL. fem. n. *Apposella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACXMZ01*. The type species for the genus is *Candidatus* Apposella episcitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apposella genocugo sp. nov.

Candidatus Apposella genocugo (NL. fem. n. *genocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACXMZ01 sp902767025*. The type genome for the species is the GenBank assembly GCA_902767025.1. The GC content of the type genome is 63.81 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Apposida adoscago sp. nov.

Candidatus Apposida adoscago (NL. fem. n. *adoscago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHUZ01 sp009694415*. The type genome for the species is the GenBank assembly GCA_009694415.1. The GC content of the type genome is 58.2 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Apposida gen. nov.

Candidatus Apposida (NL. fem. n. *Apposida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHUZ01*. The type species for the genus is *Candidatus* Apposida adoscago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *IMCC26256*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosarellaceae.

Description of *Candidatus* Appososa sicarousia sp. nov.

Candidatus Appososa sicarousia (NL. fem. n. *sicarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHK01 sp013151835*. The type genome for the species is the GenBank assembly GCA_013151835.1. The GC content of the type genome is 49.88 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Appososa gen. nov.

Candidatus Appososa (NL. fem. n. *Appososa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHK01*. The type species for the genus is *Candidatus* Appososa sicarousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarulaceae.

Description of *Candidatus* Apposula cacomibula sp. nov.

Candidatus Apposula cacomibula (NL. fem. n. *cacomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTBCD1 sp005883765*. The type genome for the species is the GenBank assembly GCA_005883765.1. The GC content of the type genome is 41.8 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Apposula gen. nov.

Candidatus Apposula (NL. fem. n. *Apposula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UTBCD1*. The type species for the genus is *Candidatus* Apposula cacomibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apposula hexamitrix sp. nov.

Candidatus Apposula hexamitrix (NL. fem. n. *hexamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTBCD1 sp002066995*. The type genome for the species is the GenBank assembly GCA_002066995.1. The GC content of the type genome is 40.99 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Appugana cadurisca sp. nov.

Candidatus Appugana cadurisca (NL. fem. n. *cadurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-611 sp003249215*. The type genome for the species is the GenBank assembly GCA_003249215.1. The GC content of the type genome is 66.9 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Appugana gen. nov.

Candidatus Appugana (NL. fem. n. *Appugana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-611*. The type species for the genus is *Candidatus* Appugana cadurisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Appugaria abligigena sp. nov.

Candidatus Appugaria abligigena (NL. fem. n. *abligigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCD01 sp013288305*. The type genome for the species is the GenBank assembly GCA_013288305.1. The GC content of the type genome is 56.28 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Appugaria gen. nov.

Candidatus Appugaria (NL. fem. n. *Appugaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCD01*. The type species for the genus is *Candidatus* Appugaria abligigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXRF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatariaceae.

Description of *Candidatus* Appugella redacitio sp. nov.

Candidatus Appugella redacitio (NL. fem. n. *redacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7584 sp002477805*. The type genome for the species is the GenBank assembly GCA_002477805.1. The GC content of the type genome is 32.32 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Appugella gen. nov.

Candidatus Appugella (NL. fem. n. *Appugella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7584*. The type species for the genus is *Candidatus* Appugella redacitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Appugia ridibimonia sp. nov.

Candidatus Appugia ridibimonia (NL. fem. n. *ridibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFTO01 sp009923375*. The type genome for the species is the GenBank assembly GCA_009923375.1. The GC content of the type genome is 59.49 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Appugia gen. nov.

Candidatus Appugia (NL. fem. n. *Appugia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFTO01*. The type species for the genus is *Candidatus* Appugia ridibimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5976*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divulellaceae.

Description of *Candidatus* Appugia tabitivita sp. nov.

Candidatus Appugia tabitivita (NL. fem. n. *tabitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFTO01 sp009918865*. The type genome for the species is the GenBank assembly GCA_009918865.1. The GC content of the type genome is 57.61 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Appugida funamessa sp. nov.

Candidatus Appugida funamessa (NL. fem. n. *funamessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-99 sp003553225*. The type genome for the species is the GenBank assembly GCA_003553225.1. The GC content of the type genome is 40.04 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Appugida gen. nov.

Candidatus Appugida (NL. fem. n. *Appugida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1SED10-99*. The type species for the genus is *Candidatus* Appugida funamessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSSED10-376*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerevulaceae.

Description of *Candidatus* Appugosa adgubetta sp. nov.

Candidatus Appugosa adgubetta (NL. fem. n. *adgubetta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAAOH01 sp009908925*. The type genome for the species is the GenBank assembly GCA_009908925.1. The GC content of the type genome is 62.85 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Appugosa gen. nov.

Candidatus Appugosa (NL. fem. n. *Appugosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAAOH01*. The type species for the genus is *Candidatus* Appugosa adgubetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWMO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bonifosaceae.

Description of *Candidatus* Appugosa cnestitoga sp. nov.

Candidatus Appugosa cnestitoga (NL. fem. n. *cnestitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAAOH01 sp009908735*. The type genome for the species is the GenBank assembly GCA_009908735.1. The GC content of the type genome is 61.21 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Appugula apsolitio sp. nov.

Candidatus Appugula apsolitio (NL. fem. n. *apsolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-727 sp003154635*. The type genome for the species is the GenBank assembly GCA_003154635.1. The GC content of the type genome is 59.24 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Appugula gen. nov.

Candidatus Appugula (NL. fem. n. *Appugula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-727*. The type species for the genus is *Candidatus* Appugula apsolitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-727*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Appugulaceae.

Description of *Candidatus* Appugulaceae fam. nov.

Candidatus Appugulaceae (NL. fem. n. *Appugulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-727.* The type genus for the taxon is *Candidatus* Appugula .

According to the original version of GTDB R06-RS202, this family belongs to the order *Fen-727*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Appugulales.

Description of *Candidatus* Appugulales ord. nov.

Candidatus Appugulales (NL. fem. n. *Appugulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-727.* The type genus for the taxon is *Candidatus* Appugula .

According to the original version of GTDB R06-RS202, this family belongs to the class *RBG-13-55-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Salubiae.

Description of *Candidatus* Aprararia infucitudo sp. nov.

Candidatus Aprararia infucitudo (NL. fem. n. *infucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA699 sp002298915*. The type genome for the species is the GenBank assembly GCA_002298915.1. The GC content of the type genome is 49.04 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Aprararia gen. nov.

Candidatus Aprararia (NL. fem. n. *Aprararia* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA699*. The type species for the genus is *Candidatus* Aprararia infucitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apraria divulax sp. nov.

Candidatus Apraria divulax (NL. fem. n. *divulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RECM01 sp007694035*. The type genome for the species is the GenBank assembly GCA_007694035.1. The GC content of the type genome is 51.02 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Apraria gen. nov.

Candidatus Apraria (NL. fem. n. *Apraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RECM01*. The type species for the genus is *Candidatus* Apraria divulax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PXAI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapicellaceae.

Description of *Candidatus* Aprarida obsolibula sp. nov.

Candidatus Aprarida obsolibula (NL. fem. n. *obsolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXRI01 sp005793615*. The type genome for the species is the GenBank assembly GCA_005793615.1. The GC content of the type genome is 51.79 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Aprarida gen. nov.

Candidatus Aprarida (NL. fem. n. *Aprarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXRI01*. The type species for the genus is *Candidatus* Aprarida obsolibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aprarosa homolilega sp. nov.

Candidatus Aprarosa homolilega (NL. fem. n. *homolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1601 sp900553335*. The type genome for the species is the GenBank assembly GCA_900553335.1. The GC content of the type genome is 39.41 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Aprarosa gen. nov.

Candidatus Aprarosa (NL. fem. n. *Aprarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1601*. The type species for the genus is *Candidatus* Aprarosa homolilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aprarosa peridiforma sp. nov.

Candidatus Aprarosa peridiforma (NL. fem. n. *peridiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1601 sp900545345*. The type genome for the species is the GenBank assembly GCA_900545345.1. The GC content of the type genome is 36.06 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Aprarula antipicula sp. nov.

Candidatus Aprarula antipicula (NL. fem. n. *antipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *J013 sp003697125*. The type genome for the species is the GenBank assembly GCA_003697125.1. The GC content of the type genome is 71.39 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Aprarula gen. nov.

Candidatus Aprarula (NL. fem. n. *Aprarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J013*. The type species for the genus is *Candidatus* Aprarula antipicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aprarula megalitrix sp. nov.

Candidatus Aprarula megalitrix (NL. fem. n. *megalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J013 sp003695135*. The type genome for the species is the GenBank assembly GCA_003695135.1. The GC content of the type genome is 68.06 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Aprucana homogastra sp. nov.

Candidatus Aprucana homogastra (NL. fem. n. *homogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686365 sp002686365*. The type genome for the species is the GenBank assembly GCA_002686365.1. The GC content of the type genome is 43.24 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Aprucana gen. nov.

Candidatus Aprucana (NL. fem. n. *Aprucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2686365*. The type species for the genus is *Candidatus* Aprucana homogastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Aprucaria cilibastra sp. nov.

Candidatus Aprucaria cilibastra (NL. fem. n. *cilibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS2016 sp900557185*. The type genome for the species is the GenBank assembly GCA_900557185.1. The GC content of the type genome is 30.71 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Aprucaria gen. nov.

Candidatus Aprucaria (NL. fem. n. *Aprucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS2016*. The type species for the genus is *Candidatus* Aprucaria cilibastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Aprucia solivibula sp. nov.

Candidatus Aprucia solivibula (NL. fem. n. *solivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PMMR1 sp000733915*. The type genome for the species is the GenBank assembly RS_GCF_000733915.1. The GC content of the type genome is 71.09 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Aprucia gen. nov.

Candidatus Aprucia (NL. fem. n. *Aprucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PMMR1*. The type species for the genus is *Candidatus* Aprucia solivibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aprucida ficulitrix sp. nov.

Candidatus Aprucida ficulitrix (NL. fem. n. *ficulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *URHD0088 sp000518365*. The type genome for the species is the GenBank assembly RS_GCF_000518365.1. The GC content of the type genome is 66.69 % and the genome length is 6.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Aprucida gen. nov.

Candidatus Aprucida (NL. fem. n. *Aprucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *URHD0088*. The type species for the genus is *Candidatus* Aprucida ficulitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aprucula arremivita sp. nov.

Candidatus Aprucula arremivita (NL. fem. n. *arremivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFX5 sp003577005*. The type genome for the species is the GenBank assembly GCA_003577005.1. The GC content of the type genome is 59.4 % and the genome length is 9.37 Mbp.

Description of *Candidatus* Aprucula gen. nov.

Candidatus Aprucula (NL. fem. n. *Aprucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CFX5*. The type species for the genus is *Candidatus* Aprucula arremivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aprugaria catobitio sp. nov.

Candidatus Aprugaria catobitio (NL. fem. n. *catobitio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2264 sp002347475*. The type genome for the species is the GenBank assembly GCA_002347475.1. The GC content of the type genome is 44.68 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Aprugaria gen. nov.

Candidatus Aprugaria (NL. fem. n. *Aprugaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2264*. The type species for the genus is *Candidatus* Aprugaria catobitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aprugella ammixitudo sp. nov.

Candidatus Aprugella ammixitudo (NL. fem. n. *ammixitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2700405 sp014239895*. The type genome for the species is the GenBank assembly GCA_014239895.1. The GC content of the type genome is 29.78 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Aprugella gen. nov.

Candidatus Aprugella (NL. fem. n. *Aprugella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2700405*. The type species for the genus is *Candidatus* Aprugella ammixitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aprugella catabitrix sp. nov.

Candidatus Aprugella catabitrix (NL. fem. n. *catabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2700405 sp004213965*. The type genome for the species is the GenBank assembly GCA_004213965.1. The GC content of the type genome is 29.72 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Aprugella corocousia sp. nov.

Candidatus Aprugella corocousia (NL. fem. n. *corocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2700405 sp002700405*. The type genome for the species is the GenBank assembly GCA_002700405.1. The GC content of the type genome is 29.97 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Aprugella maxumitura sp. nov.

Candidatus Aprugella maxumitura (NL. fem. n. *maxumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2700405 sp902512065*. The type genome for the species is the GenBank assembly GCA_902512065.1. The GC content of the type genome is 30.1 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Aprugida actaritia sp. nov.

Candidatus Aprugida actaritia (NL. fem. n. *actaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4736 sp002404015*. The type genome for the species is the GenBank assembly GCA_002404015.1. The GC content of the type genome is 69.48 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Aprugida gen. nov.

Candidatus Aprugida (NL. fem. n. *Aprugida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4736*. The type species for the genus is *Candidatus* Aprugida actaritia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aprugula enigmedo sp. nov.

Candidatus Aprugula enigmedo (NL. fem. n. *enigmedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-9 sp003599535*. The type genome for the species is the GenBank assembly GCA_003599535.1. The GC content of the type genome is 62.97 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Aprugula gen. nov.

Candidatus Aprugula (NL. fem. n. *Aprugula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-9*. The type species for the genus is *Candidatus* Aprugula enigmedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B3-LCP*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lavacosaceae.

Description of *Candidatus* Apsegana citivousia sp. nov.

Candidatus Apsegana citivousia (NL. fem. n. *citivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2720195 sp002720195*. The type genome for the species is the GenBank assembly GCA_002720195.1. The GC content of the type genome is 33.02 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Apsegana gen. nov.

Candidatus Apsegana (NL. fem. n. *Apsegana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2720195*. The type species for the genus is *Candidatus* Apsegana citivousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GCA-002716945. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecidaceae.

Description of *Candidatus* Apsegana monogilenta sp. nov.

Candidatus Apsegana monogilenta (NL. fem. n. *monogilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2720195 sp902628335*. The type genome for the species is the GenBank assembly GCA_902628335.1. The GC content of the type genome is 33.49 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Apsegana virecimonia sp. nov.

Candidatus Apsegana virecimonia (NL. fem. n. *virecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2720195 sp902632305*. The type genome for the species is the GenBank assembly GCA_902632305.1. The GC content of the type genome is 33.06 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Apsegaria fefeledo sp. nov.

Candidatus Apsegaria fefeledo (NL. fem. n. *fefeledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNKE01 sp003487005*. The type genome for the species is the GenBank assembly GCA_003487005.1. The GC content of the type genome is 64.19 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Apsegaria gen. nov.

Candidatus Apsegaria (NL. fem. n. *Apsegaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNKE01*. The type species for the genus is *Candidatus* Apsegaria fefeledo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsegaria inredugo sp. nov.

Candidatus Apsegaria inredugo (NL. fem. n. *inredugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNKE01 sp013822245*. The type genome for the species is the GenBank assembly GCA_013822245.1. The GC content of the type genome is 64.46 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Apsegella remedilenta sp. nov.

Candidatus Apsegella remedilenta (NL. fem. n. *remedilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CCP2 sp003003615*. The type genome for the species is the GenBank assembly RS_GCF_003003615.1. The GC content of the type genome is 48.45 % and the genome length is 6.95 Mbp.

Description of *Candidatus* Apsegella gen. nov.

Candidatus Apsegella (NL. fem. n. *Apsegella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CCP2*. The type species for the genus is *Candidatus* Apsegella remedilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsegia divoletta sp. nov.

Candidatus Apsegia divoletta (NL. fem. n. *divoletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707495 sp002707495*. The type genome for the species is the GenBank assembly GCA_002707495.1. The GC content of the type genome is 37.46 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Apsegia gen. nov.

Candidatus Apsegia (NL. fem. n. *Apsegia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2707495*. The type species for the genus is *Candidatus* Apsegia divoletta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsegida edissitica sp. nov.

Candidatus Apsegida edissitica (NL. fem. n. *edissitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BHEP01 sp003851245*. The type genome for the species is the GenBank assembly GCA_003851245.1. The GC content of the type genome is 39.67 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Apsegida gen. nov.

Candidatus Apsegida (NL. fem. n. *Apsegida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BHEP01*. The type species for the genus is *Candidatus* Apsegida edissitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsegosa denavisca sp. nov.

Candidatus Apsegosa denavisca (NL. fem. n. *denavisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-894 sp005884685*. The type genome for the species is the GenBank assembly GCA_005884685.1. The GC content of the type genome is 65.56 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Apsegosa gen. nov.

Candidatus Apsegosa (NL. fem. n. *Apsegosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-894*. The type species for the genus is *Candidatus* Apsegosa

denavisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsegosa hexagastra sp. nov.

Candidatus Apsegosa hexagastra (NL. fem. n. *hexagastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-894 sp003140315*. The type genome for the species is the GenBank assembly GCA_003140315.1. The GC content of the type genome is 64.36 % and the genome length is 6.07 Mbp.

Description of *Candidatus* Apsegula monocitura sp. nov.

Candidatus Apsegula monocitura (NL. fem. n. *monocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPA01 sp011046795*. The type genome for the species is the GenBank assembly GCA_011046795.1. The GC content of the type genome is 63.39 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Apsegula gen. nov.

Candidatus Apsegula (NL. fem. n. *Apsegula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPA01*. The type species for the genus is *Candidatus* Apsegula monocitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Gp1-AA112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipanaceae.

Description of *Candidatus* Apsenana semoditudo sp. nov.

Candidatus Apsenana semoditudo (NL. fem. n. *semoditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QEYE01 sp003122205*. The type genome for the species is the

GenBank assembly RS_GCF_003122205.1. The GC content of the type genome is 65.99 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Apsenana gen. nov.

Candidatus Apsenana (NL. fem. n. *Apsenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QEYE01*. The type species for the genus is *Candidatus* Apsenana semoditudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsenaria betacatica sp. nov.

Candidatus Apsenaria betacatica (NL. fem. n. *betacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYOH01 sp012520375*. The type genome for the species is the GenBank assembly GCA_012520375.1. The GC content of the type genome is 59.59 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Apsenaria gen. nov.

Candidatus Apsenaria (NL. fem. n. *Apsenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYOH01*. The type species for the genus is *Candidatus* Apsenaria betacatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Apsenella acrufago sp. nov.

Candidatus Apsenella acrufago (NL. fem. n. *acrufago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUE01 sp012521345*. The type genome for the species is the GenBank assembly GCA_012521345.1. The GC content of the type genome is 52.92 %

and the genome length is 2.06 Mbp.

Description of *Candidatus* Apsenella gen. nov.

Candidatus Apsenella (NL. fem. n. *Apsenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUUE01*. The type species for the genus is *Candidatus* Apsenella acrufago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsenella fibicitia sp. nov.

Candidatus Apsenella fibicitia (NL. fem. n. *fibicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUE01 sp012841735*. The type genome for the species is the GenBank assembly GCA_012841735.1. The GC content of the type genome is 52.88 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Apsenella impigastra sp. nov.

Candidatus Apsenella impigastra (NL. fem. n. *impigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUE01 sp012522075*. The type genome for the species is the GenBank assembly GCA_012522075.1. The GC content of the type genome is 51.65 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Apsenia anarrentia sp. nov.

Candidatus Apsenia anarrentia (NL. fem. n. *anarrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXWG01 sp013350285*. The type genome for the species is the GenBank assembly GCA_013350285.1. The GC content of the type genome is 26.32 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Apsenia gen. nov.

Candidatus Apsenia (NL. fem. n. *Apsenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXWG01*. The type species for the genus is *Candidatus* Apsenia anarrentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6164*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifellaceae.

Description of *Candidatus* Apsenida inlusitia sp. nov.

Candidatus Apsenida inlusitia (NL. fem. n. *inlusitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKGP01 sp011043545*. The type genome for the species is the GenBank assembly RS_GCF_011043545.1. The GC content of the type genome is 69.09 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Apsenida gen. nov.

Candidatus Apsenida (NL. fem. n. *Apsenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKGP01*. The type species for the genus is *Candidatus* Apsenida inlusitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsenosa denomitio sp. nov.

Candidatus Apsenosa denomitio (NL. fem. n. *denomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-33-9 sp002785065*. The type genome for the species is the GenBank assembly GCA_002785065.1. The GC content of the type genome is 33.4 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Apsenosa gen. nov.

Candidatus Apsenosa (NL. fem. n. *Apsenosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-33-9*. The type species for the genus is *Candidatus* Apsenosa denomitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Apsenula incucigena sp. nov.

Candidatus Apsenula incucigena (NL. fem. n. *incucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEC069 sp004514475*. The type genome for the species is the GenBank assembly RS_GCF_004514475.1. The GC content of the type genome is 55.69 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Apsenula gen. nov.

Candidatus Apsenula (NL. fem. n. *Apsenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MEC069*. The type species for the genus is *Candidatus* Apsenula incucigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsimana supelimonia sp. nov.

Candidatus Apsimana supelimonia (NL. fem. n. *supelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTJZ01 sp011524615*. The type genome for the species is the GenBank assembly GCA_011524615.1. The GC content of the type genome is 49.93 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Apsimana gen. nov.

Candidatus Apsimana (NL. fem. n. *Apsimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTJZ01*. The type species for the genus is *Candidatus* Apsimana supelimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsimaria cetaretta sp. nov.

Candidatus Apsimaria cetaretta (NL. fem. n. *cetaretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-45-10-B sp001818835*. The type genome for the species is the GenBank assembly GCA_001818835.1. The GC content of the type genome is 45.43 % and the genome length is 0.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Apsimaria gen. nov.

Candidatus Apsimaria (NL. fem. n. *Apsimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-45-10-B*. The type species for the genus is *Candidatus* Apsimaria cetaretta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10009*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibellaceae.

Description of *Candidatus* Apsimia abascilenta sp. nov.

Candidatus Apsimia abascilenta (NL. fem. n. *abascilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-968 sp013287545*. The type genome for the species is the GenBank assembly GCA_013287545.1. The GC content of the type genome is 35.16 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Apsimia gen. nov.

Candidatus Apsimia (NL. fem. n. *Apsimia* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-968*. The type species for the genus is *Candidatus* Apsimia abascilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-17BO*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogariaceae.

Description of *Candidatus* Apsimia crabratica sp. nov.

Candidatus Apsimia crabratica (NL. fem. n. *crabratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-968 sp903970545*. The type genome for the species is the GenBank assembly GCA_903970545.1. The GC content of the type genome is 36.56 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Apsimia deculisca sp. nov.

Candidatus Apsimia deculisca (NL. fem. n. *deculisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-968 sp003153315*. The type genome for the species is the GenBank assembly GCA_003153315.1. The GC content of the type genome is 36.51 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Apsimia depocitura sp. nov.

Candidatus Apsimia depocitura (NL. fem. n. *depocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-968 sp903923915*. The type genome for the species is the GenBank assembly GCA_903923915.1. The GC content of the type genome is 35.01 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Apsimia horomago sp. nov.

Candidatus Apsimia horomago (NL. fem. n. *horomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-968 sp013288015*. The type genome for the species is the GenBank assembly GCA_013288015.1. The GC content of the type genome is 35.28 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Apsimida colapago sp. nov.

Candidatus Apsimida colapago (NL. fem. n. *colapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10438 sp003488525*. The type genome for the species is the GenBank assembly GCA_003488525.1. The GC content of the type genome is 57.7 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Apsimida gen. nov.

Candidatus Apsimida (NL. fem. n. *Apsimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10438*. The type species for the genus is *Candidatus* Apsimida colapago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsimida eclipetta sp. nov.

Candidatus Apsimida eclipetta (NL. fem. n. *eclipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10438 sp903939735*. The type genome for the species is the GenBank assembly GCA_903939735.1. The GC content of the type genome is 54.27 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Apsimida rubigitia sp. nov.

Candidatus Apsimida rubigitia (NL. fem. n. *rubigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA10438 sp002426145*. The type genome for the species is the GenBank assembly GCA_002426145.1. The GC content of the type genome is 53.65 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Apsimosa genufitas sp. nov.

Candidatus Apsimosa genufitas (NL. fem. n. *genufitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LiPW-41 sp007375535*. The type genome for the species is the GenBank assembly GCA_007375535.1. The GC content of the type genome is 37.31 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Apsimosa gen. nov.

Candidatus Apsimosa (NL. fem. n. *Apsimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LiPW-41*. The type species for the genus is *Candidatus* Apsimosa genufitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Apsocana obnunitas sp. nov.

Candidatus Apsocana obnunitas (NL. fem. n. *obnunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RXIW01 sp003989065*. The type genome for the species is the GenBank assembly GCA_003989065.1. The GC content of the type genome is 61.51 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Apsocana gen. nov.

Candidatus Apsocana (NL. fem. n. *Apsocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RXIW01*. The type species for the genus is *Candidatus* Apsocana obnunitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsocaria visifitrix sp. nov.

Candidatus Apsocaria visifitrix (NL. fem. n. *visifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSY01 sp007130145*. The type genome for the species is the GenBank assembly GCA_007130145.1. The GC content of the type genome is 55.82 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Apsocaria gen. nov.

Candidatus Apsocaria (NL. fem. n. *Apsocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLSY01*. The type species for the genus is *Candidatus* Apsocaria visifitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8153*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detosidaceae.

Description of *Candidatus* Apsocella derunitura sp. nov.

Candidatus Apsocella derunitura (NL. fem. n. *derunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKJI01 sp007115995*. The type genome for the species is the GenBank assembly GCA_007115995.1. The GC content of the type genome is 33.38 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Apsocella gen. nov.

Candidatus Apsocella (NL. fem. n. *Apsocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKJI01*. The type species for the genus is *Candidatus* Apsocella derunitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family

X112. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Apsocia abluvousia sp. nov.

Candidatus Apsocia abluvousia (NL. fem. n. *abluvousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKD01 sp012522555*. The type genome for the species is the GenBank assembly GCA_012522555.1. The GC content of the type genome is 52.84 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Apsocia gen. nov.

Candidatus Apsocia (NL. fem. n. *Apsocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKD01*. The type species for the genus is *Candidatus* Apsocia abluvousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicellaceae.

Description of *Candidatus* Apsocia antimessa sp. nov.

Candidatus Apsocia antimessa (NL. fem. n. *antimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKD01 sp011371645*. The type genome for the species is the GenBank assembly GCA_011371645.1. The GC content of the type genome is 61.08 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Apsocia antirilega sp. nov.

Candidatus Apsocia antirilega (NL. fem. n. *antirilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKD01 sp011333675*. The type genome for the species is the

GenBank assembly GCA_011333675.1. The GC content of the type genome is 53.24 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Apsocia diluvimonia sp. nov.

Candidatus Apsocia diluvimonia (NL. fem. n. *diluvimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKD01 sp012522575*. The type genome for the species is the GenBank assembly GCA_012522575.1. The GC content of the type genome is 52.66 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Apsocida aspiliforma sp. nov.

Candidatus Apsocida aspiliforma (NL. fem. n. *aspiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-44-10 sp001792465*. The type genome for the species is the GenBank assembly GCA_001792465.1. The GC content of the type genome is 43.61 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Apsocida gen. nov.

Candidatus Apsocida (NL. fem. n. *Apsocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-44-10*. The type species for the genus is *Candidatus* Apsocida aspiliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Apsocosa anastibula sp. nov.

Candidatus Apsocosa anastibula (NL. fem. n. *anastibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Ac37b sp000746585*. The type genome for the species is the GenBank assembly RS_GCF_000746585.1. The GC content of the type genome is 30.77 % and the genome length is 1.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Amblyomma Tick".

Description of *Candidatus* Apsocosa gen. nov.

Candidatus Apsocosa (NL. fem. n. *Apsocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ac37b*. The type species for the genus is *Candidatus* Apsocosa anastibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsocula milipousia sp. nov.

Candidatus Apsocula milipousia (NL. fem. n. *milipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKI01 sp009885665*. The type genome for the species is the GenBank assembly GCA_009885665.1. The GC content of the type genome is 46.43 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Apsocula gen. nov.

Candidatus Apsocula (NL. fem. n. *Apsocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKI01*. The type species for the genus is *Candidatus* Apsocula milipousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Apsolana notacetta sp. nov.

Candidatus Apsolana notacetta (NL. fem. n. *notacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DSWF01 sp011368195*. The type genome for the species is the GenBank assembly GCA_011368195.1. The GC content of the type genome is 57.47 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Apsolana gen. nov.

Candidatus Apsolana (NL. fem. n. *Apsolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSWF01*. The type species for the genus is *Candidatus* Apsolana notacetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Apsolaria ecnepigena sp. nov.

Candidatus Apsolaria ecnepigena (NL. fem. n. *ecnepigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBOC01 sp005877655*. The type genome for the species is the GenBank assembly GCA_005877655.1. The GC content of the type genome is 56.56 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Apsolaria gen. nov.

Candidatus Apsolaria (NL. fem. n. *Apsolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBOC01*. The type species for the genus is *Candidatus* Apsolaria ecnepigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-254*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarellaceae.

Description of *Candidatus* Apsolella invinitura sp. nov.

Candidatus Apsolella invinitura (NL. fem. n. *invinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA996 sp002291955*. The type genome for the species is the GenBank assembly GCA_002291955.1. The GC content of the type genome is 70.28 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Apsolella gen. nov.

Candidatus Apsolella (NL. fem. n. *Apsolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA996*. The type species for the genus is *Candidatus* Apsolella invinitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsolia diludetta sp. nov.

Candidatus Apsolia diludetta (NL. fem. n. *diludetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVRN01 sp014534425*. The type genome for the species is the GenBank assembly GCA_014534425.1. The GC content of the type genome is 56.68 % and the genome length is 5.43 Mbp.

Description of *Candidatus* Apsolia gen. nov.

Candidatus Apsolia (NL. fem. n. *Apsolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACVRN01*. The type species for the genus is *Candidatus* Apsolia diludetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsolida altivibula sp. nov.

Candidatus Apsolida altivibula (NL. fem. n. *altivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJV01 sp002070275*. The type genome for the species is the GenBank assembly GCA_002070275.1. The GC content of the type genome is 52.48 %

and the genome length is 3.51 Mbp.

Description of *Candidatus* Apsolida gen. nov.

Candidatus Apsolida (NL. fem. n. *Apsolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYJV01*. The type species for the genus is *Candidatus* Apsolida altivibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilulaceae.

Description of *Candidatus* Apsolida inpericella sp. nov.

Candidatus Apsolida inpericella (NL. fem. n. *inpericella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJV01 sp012522755*. The type genome for the species is the GenBank assembly GCA_012522755.1. The GC content of the type genome is 51.64 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Apsolosa negidiforma sp. nov.

Candidatus Apsolosa negidiforma (NL. fem. n. *negidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2862225 sp002862225*. The type genome for the species is the GenBank assembly GCA_002862225.1. The GC content of the type genome is 53.47 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Apsolosa gen. nov.

Candidatus Apsolosa (NL. fem. n. *Apsolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2862225*. The type species for the genus is *Candidatus* Apsolosa negidiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsolula allobago sp. nov.

Candidatus Apsolula allobago (NL. fem. n. *allobago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1Sed10-97 sp003553245*. The type genome for the species is the GenBank assembly GCA_003553245.1. The GC content of the type genome is 47.42 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Apsolula gen. nov.

Candidatus Apsolula (NL. fem. n. *Apsolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1Sed10-97*. The type species for the genus is *Candidatus* Apsolula allobago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Apsorana exorbicula sp. nov.

Candidatus Apsorana exorbicula (NL. fem. n. *exorbicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-41-28 sp002773755*. The type genome for the species is the GenBank assembly GCA_002773755.1. The GC content of the type genome is 40.82 % and the genome length is 0.39 Mbp.

Description of *Candidatus* Apsorana gen. nov.

Candidatus Apsorana (NL. fem. n. *Apsorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-41-28*. The type species for the genus is *Candidatus* Apsorana exorbicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsoraria retunedo sp. nov.

Candidatus Apsoraria retunedo (NL. fem. n. *retunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AG-212-F23 sp001644445*. The type genome for the species is the GenBank assembly GCA_001644445.1. The GC content of the type genome is 38.46 % and the genome length is 1.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Single cell amplified by WGA-X; soil".

Description of *Candidatus* Apsoraria gen. nov.

Candidatus Apsoraria (NL. fem. n. *Apsoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCGC-AG-212-F23*. The type species for the genus is *Candidatus* Apsoraria retunedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Apsoria adculilega sp. nov.

Candidatus Apsoria adculilega (NL. fem. n. *adculilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTI01 sp013694595*. The type genome for the species is the GenBank assembly GCA_013694595.1. The GC content of the type genome is 61.58 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Apsoria gen. nov.

Candidatus Apsoria (NL. fem. n. *Apsoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCTI01*. The type species for the genus is *Candidatus* Apsoria adculilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Apsoria adfulicula sp. nov.

Candidatus Apsoria adfulicula (NL. fem. n. *adfulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTI01 sp013812515*. The type genome for the species is the GenBank assembly GCA_013812515.1. The GC content of the type genome is 59.57 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Apsoria catafiforma sp. nov.

Candidatus Apsoria catafiforma (NL. fem. n. *catafiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTI01 sp013697365*. The type genome for the species is the GenBank assembly GCA_013697365.1. The GC content of the type genome is 59.8 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Apsoria dupunugo sp. nov.

Candidatus Apsoria dupunugo (NL. fem. n. *dupunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTI01 sp013695905*. The type genome for the species is the GenBank assembly GCA_013695905.1. The GC content of the type genome is 62.85 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Apsoria immuritoga sp. nov.

Candidatus Apsoria immuritoga (NL. fem. n. *immuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTI01 sp013694945*. The type genome for the species is the GenBank assembly GCA_013694945.1. The GC content of the type genome is 59.23 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Apsoria munifatica sp. nov.

Candidatus Apsoria munifatica (NL. fem. n. *munifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTI01 sp902805675*. The type genome for the species is the GenBank assembly GCA_902805675.1. The GC content of the type genome is 62.99 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Apsoria orgetigena sp. nov.

Candidatus Apsoria orgetigena (NL. fem. n. *orgetigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTI01 sp013820755*. The type genome for the species is the GenBank assembly GCA_013820755.1. The GC content of the type genome is 58.91 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Apsorida citipitia sp. nov.

Candidatus Apsorida citipitia (NL. fem. n. *citipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS75 sp900752975*. The type genome for the species is the GenBank assembly RS_GCF_900752975.1. The GC content of the type genome is 30.27 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Apsorida gen. nov.

Candidatus Apsorida (NL. fem. n. *Apsorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS75*. The type species for the genus is *Candidatus* Apsorida citipitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caliposaceae.

Description of *Candidatus* Apsorida inmutessa sp. nov.

Candidatus Apsorida inmutessa (NL. fem. n. *inmutessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS75 sp900538885*. The type genome for the species is the GenBank assembly GCA_900538885.1. The GC content of the type genome is 30.02 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Apsorosa admutilega sp. nov.

Candidatus Apsorosa admutilega (NL. fem. n. *admutilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2521 sp002341165*. The type genome for the species is the GenBank assembly GCA_002341165.1. The GC content of the type genome is 38.93 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Apsorosa gen. nov.

Candidatus Apsorosa (NL. fem. n. *Apsorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2521*. The type species for the genus is *Candidatus* Apsorosa admutilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsurana catabitoga sp. nov.

Candidatus Apsurana catabitoga (NL. fem. n. *catabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZFE01 sp012511885*. The type genome for the species is the GenBank assembly GCA_012511885.1. The GC content of the type genome is 62.32 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Apsurana gen. nov.

Candidatus Apsurana (NL. fem. n. *Apsurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZFE01*. The type species for the genus is *Candidatus* Apsurana catabitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Lenti-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lavacariaceae.

Description of *Candidatus* Apsuraria invesentia sp. nov.

Candidatus Apsuraria invesentia (NL. fem. n. *invesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINXF01 sp903854795*. The type genome for the species is the GenBank assembly GCA_903854795.1. The GC content of the type genome is 56.35 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Apsuraria gen. nov.

Candidatus Apsuraria (NL. fem. n. *Apsuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINXF01*. The type species for the genus is *Candidatus* Apsuraria invesentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBBC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pinacellaceae.

Description of *Candidatus* Apsurella aprugifica sp. nov.

Candidatus Apsurella aprugifica (NL. fem. n. *aprugifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYQA01 sp012519495*. The type genome for the species is the GenBank assembly GCA_012519495.1. The GC content of the type genome is 51.68 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Apsurella gen. nov.

Candidatus Apsurella (NL. fem. n. *Apsurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYQA01*. The type species for the genus is *Candidatus* Apsurella

aprugifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsuria hibisisca sp. nov.

Candidatus Apsuria hibisisca (NL. fem. n. *hibisisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTG01 sp012518075*. The type genome for the species is the GenBank assembly GCA_012518075.1. The GC content of the type genome is 39.0 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Apsuria gen. nov.

Candidatus Apsuria (NL. fem. n. *Apsuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYTG01*. The type species for the genus is *Candidatus* Apsuria hibisisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3941*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabulaceae.

Description of *Candidatus* Apsurida ignigifica sp. nov.

Candidatus Apsurida ignigifica (NL. fem. n. *ignigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDBC01 sp013288825*. The type genome for the species is the GenBank assembly GCA_013288825.1. The GC content of the type genome is 41.8 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Apsurida gen. nov.

Candidatus Apsurida (NL. fem. n. *Apsurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDBC01*. The type species for the genus is *Candidatus* Apsurida ignigifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Apsurosa effuligena sp. nov.

Candidatus Apsurosa effuligena (NL. fem. n. *effuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZNV01 sp012798115*. The type genome for the species is the GenBank assembly GCA_012798115.1. The GC content of the type genome is 33.65 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Apsurosa gen. nov.

Candidatus Apsurosa (NL. fem. n. *Apsurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZNV01*. The type species for the genus is *Candidatus* Apsurosa effuligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Apsurula irrefugo sp. nov.

Candidatus Apsurula irrefugo (NL. fem. n. *irrefugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1322 sp003140915*. The type genome for the species is the GenBank assembly GCA_003140915.1. The GC content of the type genome is 48.89 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Apsurula gen. nov.

Candidatus Apsurula (NL. fem. n. *Apsurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1322*. The type species for the genus is *Candidatus* Apsurula irrefugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

2-01-FULL-45-10. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxanulaceae.

Description of *Candidatus* Aquabacter fumifentia sp. nov.

Candidatus Aquabacter fumifentia (NL. fem. n. *fumifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacter sp002279855*. The type genome for the species is the GenBank assembly GCA_002281075.1. The GC content of the type genome is 67.64 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Aquabacter turilitio sp. nov.

Candidatus Aquabacter turilitio (NL. fem. n. *turilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacter sp013911975*. The type genome for the species is the GenBank assembly GCA_013911975.1. The GC content of the type genome is 69.04 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Aquabacterium adculatio sp. nov.

Candidatus Aquabacterium adculatio (NL. fem. n. *adculatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp000768065*. The type genome for the species is the GenBank assembly RS_GCF_000768065.1. The GC content of the type genome is 63.76 % and the genome length is 5.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil".

Description of *Candidatus* Aquabacterium bipalitica sp. nov.

Candidatus Aquabacterium bipalitica (NL. fem. n. *bipalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp002339015*. The type genome for the species is the GenBank assembly GCA_002339015.1. The GC content of the type genome is 65.92 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Aquabacterium capiledo sp. nov.

Candidatus Aquabacterium capiledo (NL. fem. n. *capiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp903894125*. The type genome for the species is the GenBank assembly GCA_903894125.1. The GC content of the type genome is 66.81 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Aquabacterium dedigilega sp. nov.

Candidatus Aquabacterium dedigilega (NL. fem. n. *dedigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp004322345*. The type genome for the species is the GenBank assembly GCA_004322345.1. The GC content of the type genome is 69.91 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Aquabacterium denupicella sp. nov.

Candidatus Aquabacterium denupicella (NL. fem. n. *denupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp004297345*. The type genome for the species is the GenBank assembly GCA_004297345.1. The GC content of the type genome is 61.26 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Aquabacterium detorousia sp. nov.

Candidatus Aquabacterium detorousia (NL. fem. n. *detorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp005502875*. The type genome for the species is the GenBank assembly RS_GCF_005502875.1. The GC content of the type genome is 66.07 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Aquabacterium filifibula sp. nov.

Candidatus Aquabacterium filifibula (NL. fem. n. *filifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp001770775*. The type genome for the species is the GenBank assembly GCA_001772175.1. The GC content of the type genome is 64.22 % and the genome length is 4.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Aquabacterium gerunifica sp. nov.

Candidatus Aquabacterium gerunifica (NL. fem. n. *gerunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp003933735*. The type genome for the species is the GenBank assembly RS_GCF_003933735.1. The GC content of the type genome is 65.75 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Aquabacterium plostousia sp. nov.

Candidatus Aquabacterium plostousia (NL. fem. n. *plostousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp003963115*. The type genome for the species is the GenBank assembly GCA_003963115.1. The GC content of the type genome is 62.93 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Aquabacterium pudibisca sp. nov.

Candidatus Aquabacterium pudibisca (NL. fem. n. *pudibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp903871865*. The type genome for the species is the GenBank assembly GCA_903871865.1. The GC content of the type genome is 67.52 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Aquabacterium rorifigena sp. nov.

Candidatus Aquabacterium rorifigena (NL. fem. n. *rorifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp004310865*. The type genome for the species is the GenBank assembly RS_GCF_004310865.1. The GC content of the type genome is 65.44 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Aquabacterium suboditio sp. nov.

Candidatus Aquabacterium suboditio (NL. fem. n. *suboditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp014378415*. The type genome for the species is the GenBank assembly GCA_014378415.1. The GC content of the type genome is 62.93 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Aquabacterium vacilastra sp. nov.

Candidatus Aquabacterium vacilastra (NL. fem. n. *vacilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp001770725*. The type genome for the species is the GenBank assembly GCA_001770725.1. The GC content of the type genome is 66.69 % and the genome length is 4.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Aquabacterium viburilenta sp. nov.

Candidatus Aquabacterium viburilenta (NL. fem. n. *viburilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium sp013822685*. The type genome for the species is the GenBank assembly GCA_013822685.1. The GC content of the type genome is 63.33 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Aquabacterium almitigena sp. nov.

Candidatus Aquabacterium almitigena (NL. fem. n. *almitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Aquabacterium_A sp013266755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013266755.1. The GC content of the type genome is 69.44 % and the genome length is 8.04 Mbp.

Description of *Candidatus* Aquabacterium antimitas sp. nov.

Candidatus Aquabacterium antimitas (NL. fem. n. *antimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium_A sp001770815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001770815.1. The GC content of the type genome is 69.43 % and the genome length is 5.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Aquabacterium catafitas sp. nov.

Candidatus Aquabacterium catafitas (NL. fem. n. *catafitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium_A sp008933545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_008933545.1. The GC content of the type genome is 69.36 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Aquabacterium inhumousia sp. nov.

Candidatus Aquabacterium inhumousia (NL. fem. n. *inhumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium_A sp000244995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000244995.1. The GC content of the type genome is 68.76 % and the genome

length is 5.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Aquabacterium optumilenta sp. nov.

Candidatus Aquabacterium optumilenta (NL. fem. n. *optumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium_A sp013360485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013360485.1. The GC content of the type genome is 67.68 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Aquabacterium pericibula sp. nov.

Candidatus Aquabacterium pericibula (NL. fem. n. *pericibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium_A sp002198735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002198735.1. The GC content of the type genome is 70.11 % and the genome length is 6.98 Mbp.

Description of *Candidatus* Aquabacterium rurigatio sp. nov.

Candidatus Aquabacterium rurigatio (NL. fem. n. *rurigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquabacterium_A sp010030205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_010030205.1. The GC content of the type genome is 64.69 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Aquamicrobium afranivita sp. nov.

Candidatus Aquamicrobium afranivita (NL. fem. n. *afranivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquamicrobium_A sp003577315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003577315.1. The GC content of the type genome is 69.45 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Aquamicrobium bigemiforma sp. nov.

Candidatus Aquamicrobium bigemiforma (NL. fem. n. *bigemiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquamicrobium_A sp008180155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008180155.1. The GC content of the type genome is 64.14 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Aquamicrobium enuntatio sp. nov.

Candidatus Aquamicrobium enuntatio (NL. fem. n. *enuntatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquamicrobium_A sp001014615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001014615.2. The GC content of the type genome is 64.06 % and the genome length is 6.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "cave surface layer".

Description of *Candidatus* Aquamicrobium lanifentia sp. nov.

Candidatus Aquamicrobium lanifentia (NL. fem. n. *lanifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquamicrobium_A sp000526635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly RS_GCF_000526635.1. The GC content of the type genome is 63.34 % and the genome length is 4.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Aquarickettsia cerifimonia sp. nov.

Candidatus Aquarickettsia cerifimonia (NL. fem. n. *cerifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquarickettsia sp903887235*. The type genome for the species is the GenBank assembly GCA_903903795.1. The GC content of the type genome is 30.91 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Aquaticitalea allacessa sp. nov.

Candidatus Aquaticitalea allacessa (NL. fem. n. *allacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquaticitalea sp002426755*. The type genome for the species is the GenBank assembly GCA_002426755.1. The GC content of the type genome is 36.78 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Aquaticitalea obmuritudo sp. nov.

Candidatus Aquaticitalea obmuritudo (NL. fem. n. *obmuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquaticitalea sp002426015*. The type genome for the species is the GenBank assembly GCA_002426015.1. The GC content of the type genome is 35.21 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Aquicella reforatica sp. nov.

Candidatus Aquicella reforatica (NL. fem. n. *reforatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquicella sp004322325*. The type genome for the species is the GenBank assembly GCA_004322325.1. The GC content of the type genome is 41.55 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Aquicella denomitia sp. nov.

Candidatus Aquicella denomitia (NL. fem. n. *denomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquicella_A sp013286525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013286525.1. The GC content of the type genome is 39.92 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Aquicella excamibra sp. nov.

Candidatus Aquicella excamibra (NL. fem. n. *excamibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquicella_A sp013286495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013286495.1. The GC content of the type genome is 39.98 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Aquicoccus depocicella sp. nov.

Candidatus Aquicoccus depocicella (NL. fem. n. *depocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquicoccus sp011389685*. The type genome for the species is the GenBank assembly GCA_011389685.1. The GC content of the type genome is 64.71 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Aquicoccus desulilenta sp. nov.

Candidatus Aquicoccus desulilenta (NL. fem. n. *desulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquicoccus sp001314705*. The type genome for the species is the GenBank assembly GCA_001314705.1. The GC content of the type genome is 63.83 % and the genome length is 3.43 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "enrichment culture HLUCC-O from microbial mat sample; contains cyanobacterium Phormidium OSCR and associated heterotrophs".

Description of *Candidatus* Aquidulcibacter feficilenta sp. nov.

Candidatus Aquidulcibacter feficilenta (NL. fem. n. *feficilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquidulcibacter sp001602435*. The type genome for the species is the GenBank assembly GCA_003525785.1. The GC content of the type genome is 56.1 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Aquifex affunitrix sp. nov.

Candidatus Aquifex affunitrix (NL. fem. n. *affunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquifex sp013154375*. The type genome for the species is the GenBank assembly GCA_013154375.1. The GC content of the type genome is 57.66 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Aquifex obsolitrix sp. nov.

Candidatus Aquifex obsolitrix (NL. fem. n. *obsolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquifex sp013153455*. The type genome for the species is the GenBank assembly GCA_013153455.1. The GC content of the type genome is 51.58 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Aquifex patibentia sp. nov.

Candidatus Aquifex patibentia (NL. fem. n. *patibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquifex sp003978875*. The type genome for the species is the GenBank assembly GCA_003978875.1. The GC content of the type genome is 38.29 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Aquiflexum lanugibra sp. nov.

Candidatus Aquiflexum lanugibra (NL. fem. n. *lanugibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiflexum sp003316845*. The type genome for the species is the GenBank assembly RS_GCF_003316845.1. The GC content of the type genome is 41.19 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Aquiluna astipilega sp. nov.

Candidatus Aquiluna astipilega (NL. fem. n. *astipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp900100865*. The type genome for the species is the GenBank assembly RS_GCF_900100865.1. The GC content of the type genome is 51.86 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Aquiluna cadavatio sp. nov.

Candidatus Aquiluna cadavatio (NL. fem. n. *cadavatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp009704945*. The type genome for the species is the GenBank assembly GCA_009704475.1. The GC content of the type genome is 49.46 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Aquiluna celumimonas sp. nov.

Candidatus Aquiluna celumimonas (NL. fem. n. *celumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp009923455*. The type genome for the species is the GenBank assembly GCA_009923455.1. The GC content of the type genome is 52.67 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Aquiluna cunabitia sp. nov.

Candidatus Aquiluna cunabitia (NL. fem. n. *cunabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp002390305*. The type genome for the species is the GenBank assembly GCA_002385055.1. The GC content of the type genome is 51.33 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Aquiluna feficisca sp. nov.

Candidatus Aquiluna feficisca (NL. fem. n. *feficisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp002333405*. The type genome for the species is the GenBank assembly GCA_002333405.1. The GC content of the type genome is 53.5 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Aquiluna invigedo sp. nov.

Candidatus Aquiluna invigedo (NL. fem. n. *invigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp000257665*. The type genome for the species is the GenBank assembly RS_GCF_000257665.1. The GC content of the type genome is 51.66 % and the genome length is 1.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water".

Description of *Candidatus* Aquiluna ludificula sp. nov.

Candidatus Aquiluna ludificula (NL. fem. n. *ludificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp003149555*. The type genome for the species is the GenBank assembly GCA_003149555.1. The GC content of the type genome is 53.98 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Aquiluna malivastra sp. nov.

Candidatus Aquiluna malivastra (NL. fem. n. *malivastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp002478545*. The type genome for the species is the GenBank assembly GCA_002478545.1. The GC content of the type genome is 53.63 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Aquiluna semapisca sp. nov.

Candidatus Aquiluna semapisca (NL. fem. n. *semapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp002479805*. The type genome for the species is the GenBank assembly GCA_002479805.1. The GC content of the type genome is 54.32 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Aquiluna utpotibula sp. nov.

Candidatus Aquiluna utpotibula (NL. fem. n. *utpotibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquiluna sp013283855*. The type genome for the species is the GenBank assembly RS_GCF_013283855.1. The GC content of the type genome is 54.83 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Aquimarina acrifigena sp. nov.

Candidatus Aquimarina acrifigena (NL. fem. n. *acrifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp900299505*. The type genome for the species is the GenBank assembly RS_GCF_900299505.1. The GC content of the type genome is 31.92 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Aquimarina adhosousia sp. nov.

Candidatus Aquimarina adhosousia (NL. fem. n. *adhosousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp011524575*. The type genome for the species is the GenBank assembly GCA_011524575.1. The GC content of the type genome is 32.27 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Aquimarina binocimonia sp. nov.

Candidatus Aquimarina binocimonia (NL. fem. n. *binocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp008370685*. The type genome for the species is the GenBank assembly RS_GCF_008370685.1. The GC content of the type genome is 32.98 % and the genome length is 7.04 Mbp.

Description of *Candidatus* Aquimarina catilitas sp. nov.

Candidatus Aquimarina catilitas (NL. fem. n. *catilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp900299535*. The type genome for the species is the GenBank assembly RS_GCF_900299535.1. The GC content of the type genome is 32.32 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Aquimarina cenodatio sp. nov.

Candidatus Aquimarina cenodatio (NL. fem. n. *cenodatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp003443675*. The type genome for the species is the GenBank assembly RS_GCF_003443675.1. The GC content of the type genome is 32.94 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Aquimarina cerebilega sp. nov.

Candidatus Aquimarina cerebilega (NL. fem. n. *cerebilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp900312745*. The type genome for the species is the GenBank assembly RS_GCF_900299485.1. The GC content of the type genome is 32.89 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Aquimarina epicrimonia sp. nov.

Candidatus Aquimarina epicrimonia (NL. fem. n. *epicrimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp900312815*. The type genome for the species is the GenBank assembly RS_GCF_900312815.1. The GC content of the type genome is 33.0 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Aquimarina expalifica sp. nov.

Candidatus Aquimarina expalifica (NL. fem. n. *expalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp002697475*. The type genome for the species is the GenBank assembly GCA_002697475.1. The GC content of the type genome is 34.54 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Aquimarina immemilenta sp. nov.

Candidatus Aquimarina immemilenta (NL. fem. n. *immemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp013365535*. The type genome for the species is the GenBank assembly RS_GCF_013365535.1. The GC content of the type genome is 35.07 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Aquimarina minagitio sp. nov.

Candidatus Aquimarina minagitio (NL. fem. n. *minagitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp002846555*. The type genome for the species is the GenBank assembly RS_GCF_002846555.1. The GC content of the type genome is 32.81 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Aquimarina mirifivita sp. nov.

Candidatus Aquimarina mirifivita (NL. fem. n. *mirifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Aquimarina sp900299525*. The type genome for the species is the GenBank assembly RS_GCF_900299525.1. The GC content of the type genome is 32.89 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Aquimarina sotulax sp. nov.

Candidatus Aquimarina sotulax (NL. fem. n. *sotulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimarina sp006443095*. The type genome for the species is the GenBank assembly RS_GCF_006443095.1. The GC content of the type genome is 32.4 % and the genome length is 5.89 Mbp.

Description of *Candidatus* Aquimonas defetimonia sp. nov.

Candidatus Aquimonas defetimonia (NL. fem. n. *defetimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimonas sp002352135*. The type genome for the species is the GenBank assembly GCA_002352135.1. The GC content of the type genome is 61.79 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Aquimonas murilivita sp. nov.

Candidatus Aquimonas murilivita (NL. fem. n. *murilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquimonas sp002068275*. The type genome for the species is the GenBank assembly GCA_002068275.1. The GC content of the type genome is 60.27 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Aquirufa adsigetta sp. nov.

Candidatus Aquirufa adsigetta (NL. fem. n. *adsigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquirufa sp903837305*. The type genome for the species is the GenBank assembly GCA_903837305.1. The GC content of the type genome is 40.94 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Aquirufa clancedo sp. nov.

Candidatus Aquirufa clancedo (NL. fem. n. *clancedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquirufa sp013205605*. The type genome for the species is the GenBank assembly GCA_013205605.1. The GC content of the type genome is 38.12 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Aquirufa edulcitura sp. nov.

Candidatus Aquirufa edulcitura (NL. fem. n. *edulcitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquirufa sp005791165*. The type genome for the species is the GenBank assembly GCA_005791165.1. The GC content of the type genome is 38.23 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Aquirufa incocugo sp. nov.

Candidatus Aquirufa incocugo (NL. fem. n. *incocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquirufa sp903907915*. The type genome for the species is the GenBank assembly GCA_903907915.1. The GC content of the type genome is 41.37 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Aquirufa melilitica sp. nov.

Candidatus Aquirufa melilitica (NL. fem. n. *melilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquirufa sp903898715*. The type genome for the species is the GenBank assembly GCA_903958475.1. The GC content of the type genome is 42.33 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Aquirufa repudousia sp. nov.

Candidatus Aquirufa repudousia (NL. fem. n. *repudousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquirufa sp002479785*. The type genome for the species is the GenBank assembly GCA_002479785.1. The GC content of the type genome is 42.28 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Aquirufa rutabigena sp. nov.

Candidatus Aquirufa rutabigena (NL. fem. n. *rutabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquirufa sp903933935*. The type genome for the species is the GenBank assembly GCA_903938715.1. The GC content of the type genome is 38.24 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Aquirufa telefifica sp. nov.

Candidatus Aquirufa telefifica (NL. fem. n. *telefifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquirufa sp903907745*. The type genome for the species is the GenBank assembly GCA_903890015.1. The GC content of the type genome is 42.06 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Aquirufa velifitrix sp. nov.

Candidatus Aquirufa velifitrix (NL. fem. n. *velifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquirufa sp903960725*. The type genome for the species is the GenBank assembly GCA_903960725.1. The GC content of the type genome is 41.91 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Aquirufa venunimonia sp. nov.

Candidatus Aquirufa venunimonia (NL. fem. n. *venunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Aquirufa sp002454335*. The type genome for the species is the GenBank assembly GCA_002454335.1. The GC content of the type genome is 41.58 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Aquisalimonas abluvatica sp. nov.

Candidatus Aquisalimonas abluvatica (NL. fem. n. *abluvatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquisalimonas sp007133445*. The type genome for the species is the GenBank assembly GCA_007133445.1. The GC content of the type genome is 66.52 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Aquisalimonas bifaribula sp. nov.

Candidatus Aquisalimonas bifaribula (NL. fem. n. *bifaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquisalimonas sp007127625*. The type genome for the species is the GenBank assembly GCA_007119565.1. The GC content of the type genome is 66.17 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Aquisalimonas salubimonas sp. nov.

Candidatus Aquisalimonas salubimonas (NL. fem. n. *salubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquisalimonas sp007126095*. The type genome for the species is the GenBank assembly GCA_007120405.1. The GC content of the type genome is 66.22 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Aquisalimonas virecatio sp. nov.

Candidatus Aquisalimonas virecatio (NL. fem. n. *virecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquisalimonas sp007120195*. The type genome for the species is the GenBank assembly GCA_007120195.1. The GC content of the type genome is 64.03 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Aquisphaera catapentia sp. nov.

Candidatus Aquisphaera catapentia (NL. fem. n. *catapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquisphaera sp011064615*. The type genome for the species is the GenBank assembly RS_GCF_011064615.1. The GC content of the type genome is 68.5 % and the genome length is 10.04 Mbp.

Description of *Candidatus* Aquitalea loripetta sp. nov.

Candidatus Aquitalea loripetta (NL. fem. n. *loripetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquitalea sp005155025*. The type genome for the species is the GenBank assembly RS_GCF_005155025.1. The GC content of the type genome is 59.72 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Aquitalea negotitudo sp. nov.

Candidatus Aquitalea negotitudo (NL. fem. n. *negotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquitalea sp013391415*. The type genome for the species is the GenBank assembly RS_GCF_013391415.1. The GC content of the type genome is 58.61 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Aquitalea utralifica sp. nov.

Candidatus Aquitalea utralifica (NL. fem. n. *utralifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aquitalea sp003693445*. The type genome for the species is the GenBank assembly RS_GCF_003693445.1. The GC content of the type genome is 60.27 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Arachidicoccus nocumentia sp. nov.

Candidatus Arachidicoccus nocumentia (NL. fem. n. *nocumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachidicoccus sp003600625*. The type genome for the species is the GenBank assembly RS_GCF_003600625.1. The GC content of the type genome is 36.42 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Arachidicoccus tabititas sp. nov.

Candidatus Arachidicoccus tabititas (NL. fem. n. *tabititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachidicoccus sp001659705*. The type genome for the species is the GenBank assembly RS_GCF_001659705.1. The GC content of the type genome is 39.31 % and the genome length is 3.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Compost".

Description of *Candidatus* Arachnia adsecitrix sp. nov.

Candidatus Arachnia adsecitrix (NL. fem. n. *adsecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp011174705*. The type genome for the species is the GenBank assembly GCA_011174705.1. The GC content of the type genome is 69.04 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Arachnia agricago sp. nov.

Candidatus Arachnia agricago (NL. fem. n. *agricago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp000619965*. The type genome for the species is the GenBank assembly RS_GCF_000619965.1. The GC content of the type genome is 69.33 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Arachnia depubitoga sp. nov.

Candidatus Arachnia depubitoga (NL. fem. n. *depubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp012837465*. The type genome for the species is the GenBank assembly GCA_012837465.1. The GC content of the type genome is 68.67 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Arachnia dimidago sp. nov.

Candidatus Arachnia dimidago (NL. fem. n. *dimidago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp013333945*. The type genome for the species is the GenBank assembly GCA_013333945.2. The GC content of the type genome is 63.71 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Arachnia offunitica sp. nov.

Candidatus Arachnia offunitica (NL. fem. n. *offunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp900607225*. The type genome for the species is the GenBank assembly RS_GCF_900607225.1. The GC content of the type genome is 66.08 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Arachnia perabastra sp. nov.

Candidatus Arachnia perabastra (NL. fem. n. *perabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp012514785*. The type genome for the species is the GenBank assembly GCA_012514785.1. The GC content of the type genome is 69.27 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Arachnia rosacax sp. nov.

Candidatus Arachnia rosacax (NL. fem. n. *rosacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp001956895*. The type genome for the species is the GenBank assembly RS_GCF_001956895.1. The GC content of the type genome is 68.39 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Arachnia sanabitura sp. nov.

Candidatus Arachnia sanabitura (NL. fem. n. *sanabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp014164775*. The type genome for the species is the GenBank assembly RS_GCF_014164725.1. The GC content of the type genome is 68.81 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Arachnia tomogibula sp. nov.

Candidatus Arachnia tomogibula (NL. fem. n. *tomogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp013333735*. The type genome for the species is the GenBank assembly GCA_013333895.2. The GC content of the type genome is 64.64 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Arachnia xenodisca sp. nov.

Candidatus Arachnia xenodisca (NL. fem. n. *xenodisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arachnia sp003932855*. The type genome for the species is the GenBank assembly RS_GCF_003932855.1. The GC content of the type genome is 65.47 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Arancana repepifica sp. nov.

Candidatus Arancana repepifica (NL. fem. n. *repepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZGA01 sp903932385*. The type genome for the species is the GenBank assembly GCA_903932385.1. The GC content of the type genome is 57.34 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Arancana gen. nov.

Candidatus Arancana (NL. fem. n. *Arancana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZGA01*. The type species for the genus is *Candidatus* Arancana repepifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arancaria venefibra sp. nov.

Candidatus Arancaria venefibra (NL. fem. n. *venefibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGP01 sp009787135*. The type genome for the species is the GenBank assembly GCA_009787135.1. The GC content of the type genome is 58.11 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Arancaria gen. nov.

Candidatus Arancaria (NL. fem. n. *Arancaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGP01*. The type species for the genus is *Candidatus* Arancaria venefibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Arancida effigibula sp. nov.

Candidatus Arancida effigibula (NL. fem. n. *effigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NM07-P-09 sp004793665*. The type genome for the species is the GenBank assembly RS_GCF_004793665.1. The GC content of the type genome is 69.12 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Arancida gen. nov.

Candidatus Arancida (NL. fem. n. *Arancida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NM07-P-09*. The type species for the genus is *Candidatus* Arancida effigibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arancida medimitrix sp. nov.

Candidatus Arancida medimitrix (NL. fem. n. *medimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NM07-P-09 sp004793925*. The type genome for the species is the GenBank assembly RS_GCF_004793925.1. The GC content of the type genome is 58.8 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Arancida recocitrix sp. nov.

Candidatus Arancida recocitrix (NL. fem. n. *recocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NM07-P-09 sp012584445*. The type genome for the species is the GenBank assembly RS_GCF_012584445.1. The GC content of the type genome is 59.19 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Arbavana abagmibra sp. nov.

Candidatus Arbavana abagmibra (NL. fem. n. *abagmibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTVJ01 sp012963565*. The type genome for the species is the GenBank assembly GCA_012963565.1. The GC content of the type genome is 38.25 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Arbavana gen. nov.

Candidatus Arbavana (NL. fem. n. *Arbavana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTVJ01*. The type species for the genus is *Candidatus* Arbavana abagmibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arbavaria agravilenta sp. nov.

Candidatus Arbavaria agravilenta (NL. fem. n. *agravilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11872 sp902773425*. The type genome for the species is the GenBank assembly GCA_902773425.1. The GC content of the type genome is 47.14 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Arbavaria gen. nov.

Candidatus Arbavaria (NL. fem. n. *Arbavaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11872*. The type species for the genus is *Candidatus* Arbavaria agravilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arbavaria inpurousia sp. nov.

Candidatus Arbavaria inpurousia (NL. fem. n. *inpurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11872 sp902782505*. The type genome for the species is the GenBank assembly GCA_902782505.1. The GC content of the type genome is 50.97 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Arbavella antirastra sp. nov.

Candidatus Arbavella antirastra (NL. fem. n. *antirastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSX01 sp014377245*. The type genome for the species is the GenBank assembly GCA_014377245.1. The GC content of the type genome is 40.69 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Arbavella gen. nov.

Candidatus Arbavella (NL. fem. n. *Arbavella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFSX01*. The type species for the genus is *Candidatus* Arbavella antirastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visifosaceae.

Description of *Candidatus* Arbavella assubentia sp. nov.

Candidatus Arbavella assubentia (NL. fem. n. *assubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSX01 sp014377305*. The type genome for the species is the GenBank assembly GCA_014377305.1. The GC content of the type genome is 42.31 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Arbavella vinolitas sp. nov.

Candidatus Arbavella vinolitas (NL. fem. n. *vinolitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSX01 sp013268835*. The type genome for the species is the GenBank assembly GCA_013268835.1. The GC content of the type genome is 36.24 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Arbavia decinilenta sp. nov.

Candidatus Arbavia decinilenta (NL. fem. n. *decinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1401 sp002305115*. The type genome for the species is the GenBank assembly GCA_002305115.1. The GC content of the type genome is 40.35 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Arbavia gen. nov.

Candidatus Arbavia (NL. fem. n. *Arbavia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1401*. The type species for the genus is *Candidatus* Arbavia decinilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Arbavida anamnatica sp. nov.

Candidatus Arbavida anamnatica (NL. fem. n. *anamnatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUQL01 sp012033595*. The type genome for the species is the GenBank assembly GCA_012033595.1. The GC content of the type genome is 44.07 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Arbavida gen. nov.

Candidatus Arbavida (NL. fem. n. *Arbavida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUQL01*. The type species for the genus is *Candidatus* Arbavida anamnatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcanobacterium inretimonia sp. nov.

Candidatus Arcanobacterium inretimonia (NL. fem. n. *inretimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcanobacterium sp012563545*. The type genome for the species is the GenBank assembly RS_GCF_012563545.1. The GC content of the type genome is 48.95 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Arcanobacterium melilibula sp. nov.

Candidatus Arcanobacterium melilibula (NL. fem. n. *melilibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcanobacterium sp012516575*. The type genome for the species is the GenBank assembly GCA_012516575.1. The GC content of the type genome is 53.14 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Arcanobacterium afranedo sp. nov.

Candidatus Arcanobacterium afranedo (NL. fem. n. *afranedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcanobacterium_A sp000758825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000758825.1. The GC content of the type genome is 55.77 % and the genome length is 1.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Arcanobacterium buxifatica sp. nov.

Candidatus Arcanobacterium buxifatica (NL. fem. n. *buxifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcanobacterium_A sp004331995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004331995.1. The GC content of the type genome is 51.63 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Arcatana maligitas sp. nov.

Candidatus Arcatana maligitas (NL. fem. n. *maligitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1397 sp002305205*. The type genome for the species is the GenBank assembly GCA_002305205.1. The GC content of the type genome is 34.22 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Arcatana gen. nov.

Candidatus Arcatana (NL. fem. n. *Arcatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1397*. The type species for the genus is *Candidatus* Arcatana maligitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Arcataria timefimonia sp. nov.

Candidatus Arcataria timefimonia (NL. fem. n. *timefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2683825 sp002683825*. The type genome for the species is the GenBank assembly GCA_002683825.1. The GC content of the type genome is 64.12 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Arcataria gen. nov.

Candidatus Arcataria (NL. fem. n. *Arcataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2683825*. The type species for the genus is *Candidatus* Arcataria timefimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Arcatosa tegumugo sp. nov.

Candidatus Arcatosa tegumugo (NL. fem. n. *tegumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCUT-3 sp014083985*. The type genome for the species is the GenBank assembly RS_GCF_014083985.1. The GC content of the type genome is 73.95 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Arcatosa gen. nov.

Candidatus Arcatosa (NL. fem. n. *Arcatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCUT-3*. The type species for the genus is *Candidatus* Arcatosa tegumugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcebana depociforma sp. nov.

Candidatus Arcebana depociforma (NL. fem. n. *depociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFTL01 sp001786825*. The type genome for the species is the GenBank assembly GCA_001786825.1. The GC content of the type genome is 38.84 % and the genome length is 0.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Arcebana gen. nov.

Candidatus Arcebana (NL. fem. n. *Arcebana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFTL01*. The type species for the genus is *Candidatus* Arcebana depociforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relaposaceae.

Description of *Candidatus* Arcebaria carunatica sp. nov.

Candidatus Arcebaria carunatica (NL. fem. n. *carunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1251 sp003141205*. The type genome for the species is the GenBank assembly GCA_003141205.1. The GC content of the type genome is 67.76 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Arcebaria gen. nov.

Candidatus Arcebaria (NL. fem. n. *Arcebaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1251*. The type species for the genus is *Candidatus* Arcebaria carunatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcebella aspilentia sp. nov.

Candidatus Arcebella aspilentia (NL. fem. n. *aspilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Iso899 sp000421445*. The type genome for the species is the GenBank assembly RS_GCF_000421445.1. The GC content of the type genome is 63.39 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Arcebella gen. nov.

Candidatus Arcebella (NL. fem. n. *Arcebella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Iso899*. The type species for the genus is *Candidatus* Arcebella aspilentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcebia pericitica sp. nov.

Candidatus Arcebia pericitica (NL. fem. n. *pericitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B14 sp000307305*. The type genome for the species is the GenBank assembly RS_GCF_000307305.1. The GC content of the type genome is 45.89 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Arcebia gen. nov.

Candidatus Arcebia (NL. fem. n. *Arcebia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B14*. The type species for the genus is *Candidatus* Arcebia pericitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcebida amercitoga sp. nov.

Candidatus Arcebida amercitoga (NL. fem. n. *amercitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E85 sp003149435*. The type genome for the species is the GenBank assembly RS_GCF_003149435.1. The GC content of the type genome is 69.66 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Arcebida gen. nov.

Candidatus Arcebida (NL. fem. n. *Arcebida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E85*. The type species for the genus is *Candidatus* Arcebida amercitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcebula faticimonia sp. nov.

Candidatus Arcebula faticimonia (NL. fem. n. *faticimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUQX01 sp012520035*. The type genome for the species is the GenBank assembly GCA_012520035.1. The GC content of the type genome is 45.23 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Arcebula gen. nov.

Candidatus Arcebula (NL. fem. n. *Arcebula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUQX01*. The type species for the genus is *Candidatus* Arcebula

faticimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubiaceae.

Description of *Candidatus* Arcebula infiredo sp. nov.

Candidatus Arcebula infiredo (NL. fem. n. *infiredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUQX01 sp012837615*. The type genome for the species is the GenBank assembly GCA_012837615.1. The GC content of the type genome is 44.57 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Arcelana bicinimonia sp. nov.

Candidatus Arcelana bicinimonia (NL. fem. n. *bicinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFBO01 sp001774995*. The type genome for the species is the GenBank assembly GCA_001774995.1. The GC content of the type genome is 38.28 % and the genome length is 0.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Arcelana gen. nov.

Candidatus Arcelana (NL. fem. n. *Arcelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFBO01*. The type species for the genus is *Candidatus* Arcelana bicinimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-41-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Arcelaria conifugo sp. nov.

Candidatus Arcelaria conifugo (NL. fem. n. *conifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2103 sp002331145*. The type genome for the species is the GenBank assembly GCA_002331145.1. The GC content of the type genome is 43.31 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Arcelaria gen. nov.

Candidatus Arcelaria (NL. fem. n. *Arcelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2103*. The type species for the genus is *Candidatus* Arcelaria conifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Arcelaria rudecetta sp. nov.

Candidatus Arcelaria rudecetta (NL. fem. n. *rudecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2103 sp002376865*. The type genome for the species is the GenBank assembly GCA_002376865.1. The GC content of the type genome is 42.22 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Arcelia rurigibra sp. nov.

Candidatus Arcelia rurigibra (NL. fem. n. *rurigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B8-G4 sp003648285*. The type genome for the species is the GenBank assembly GCA_003648285.1. The GC content of the type genome is 45.16 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Arcelia gen. nov.

Candidatus Arcelia (NL. fem. n. *Arcelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B8-G4*. The type species for the genus is *Candidatus* Arcelia rurigibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcelosa cerebastra sp. nov.

Candidatus Arcelosa cerebastra (NL. fem. n. *cerebastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJHL01 sp014192545*. The type genome for the species is the GenBank assembly GCA_014192545.1. The GC content of the type genome is 60.14 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Arcelosa gen. nov.

Candidatus Arcelosa (NL. fem. n. *Arcelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJHL01*. The type species for the genus is *Candidatus* Arcelosa cerebastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Archangium xeropitudo sp. nov.

Candidatus Archangium xeropitudo (NL. fem. n. *xeropitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Archangium_A sp903905455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903861945.1. The GC content of the type genome is 70.08 % and the genome length is 8.68 Mbp.

Description of *Candidatus* Arcicella excocitas sp. nov.

Candidatus Arcicella excocitas (NL. fem. n. *excocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcicella sp013298125*. The type genome for the species is the GenBank assembly GCA_013298125.1. The GC content of the type genome is 37.0 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Arcicella impavitura sp. nov.

Candidatus Arcicella impavitura (NL. fem. n. *impavitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcicella sp013298805*. The type genome for the species is the GenBank assembly GCA_013298805.1. The GC content of the type genome is 35.9 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Arcicella suboficella sp. nov.

Candidatus Arcicella suboficella (NL. fem. n. *suboficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcicella sp014376355*. The type genome for the species is the GenBank assembly GCA_014376355.1. The GC content of the type genome is 34.72 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Arcifana extinimonia sp. nov.

Candidatus Arcifana extinimonia (NL. fem. n. *extinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-6802 sp000332175*. The type genome for the species is the GenBank assembly RS_GCF_000332175.1. The GC content of the type genome is 47.83 % and the genome length is 5.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Arcifana gen. nov.

Candidatus Arcifana (NL. fem. n. *Arcifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-6802*. The type species for the genus is *Candidatus* Arcifana

extinimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcifaria inoffimonia sp. nov.

Candidatus Arcifaria inoffimonia (NL. fem. n. *inoffimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-36-15 sp001782015*. The type genome for the species is the GenBank assembly GCA_001782015.1. The GC content of the type genome is 35.37 % and the genome length is 1.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Arcifaria gen. nov.

Candidatus Arcifaria (NL. fem. n. *Arcifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-36-15*. The type species for the genus is *Candidatus* Arcifaria inoffimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA1-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefellaceae.

Description of *Candidatus* Arcifia decenibula sp. nov.

Candidatus Arcifia decenibula (NL. fem. n. *decenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1738 sp003453455*. The type genome for the species is the GenBank assembly GCA_003453455.1. The GC content of the type genome is 39.88 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Arcifia gen. nov.

Candidatus Arcifia (NL. fem. n. *Arcifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA1738*. The type species for the genus is *Candidatus* Arcifia decenibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilosaceae.

Description of *Candidatus* Arcifia detenessa sp. nov.

Candidatus Arcifia detenessa (NL. fem. n. *detenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1738 sp002315735*. The type genome for the species is the GenBank assembly GCA_002315735.1. The GC content of the type genome is 35.17 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Arcifida horomessa sp. nov.

Candidatus Arcifida horomessa (NL. fem. n. *horomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1729 sp002315945*. The type genome for the species is the GenBank assembly GCA_002315945.1. The GC content of the type genome is 40.65 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Arcifida gen. nov.

Candidatus Arcifida (NL. fem. n. *Arcifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1729*. The type species for the genus is *Candidatus* Arcifida horomessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcifosa apsenousia sp. nov.

Candidatus Arcifosa apsenousia (NL. fem. n. *apsenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *HGW-BRC1-1 sp002842095*. The type genome for the species is the GenBank assembly GCA_002842095.1. The GC content of the type genome is 58.42 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Arcifosa gen. nov.

Candidatus Arcifosa (NL. fem. n. *Arcifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGW-BRC1-1*. The type species for the genus is *Candidatus* Arcifosa apsenousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcipana adtubentia sp. nov.

Candidatus Arcipana adtubentia (NL. fem. n. *adtubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSRY01 sp011331385*. The type genome for the species is the GenBank assembly GCA_011331385.1. The GC content of the type genome is 72.35 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Arcipana gen. nov.

Candidatus Arcipana (NL. fem. n. *Arcipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSRY01*. The type species for the genus is *Candidatus* Arcipana adtubentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navifellaceae.

Description of *Candidatus* Arciparia tegimitio sp. nov.

Candidatus Arciparia tegimitio (NL. fem. n. *tegimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-67-18 sp001724715*. The type genome for the species is the

GenBank assembly GCA_001724715.1. The GC content of the type genome is 66.77 % and the genome length is 3.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Arciparia gen. nov.

Candidatus Arciparia (NL. fem. n. *Arciparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCN-67-18*. The type species for the genus is *Candidatus* Arciparia tegimitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcipella apopliforma sp. nov.

Candidatus Arcipella apopliforma (NL. fem. n. *apopliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-44-11 sp001817345*. The type genome for the species is the GenBank assembly GCA_001817345.1. The GC content of the type genome is 44.12 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Arcipella gen. nov.

Candidatus Arcipella (NL. fem. n. *Arcipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-44-11*. The type species for the genus is *Candidatus* Arcipella apopliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecariaceae.

Description of *Candidatus* Arcipia adsusibra sp. nov.

Candidatus Arcipia adsusibra (NL. fem. n. *adsusibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MADRE1 sp004796465*. The type genome for the species is the GenBank assembly GCA_004796465.1. The GC content of the type genome is 59.76 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Arcipia gen. nov.

Candidatus Arcipia (NL. fem. n. *Arcipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MADRE1*. The type species for the genus is *Candidatus* Arcipia adsusibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arciposa cinipousia sp. nov.

Candidatus Arciposa cinipousia (NL. fem. n. *cinipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2688435 sp002688435*. The type genome for the species is the GenBank assembly GCA_002688435.1. The GC content of the type genome is 52.13 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Arciposa gen. nov.

Candidatus Arciposa (NL. fem. n. *Arciposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2688435*. The type species for the genus is *Candidatus* Arciposa cinipousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-60-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunidaceae.

Description of *Candidatus* Arcipula effacifica sp. nov.

Candidatus Arcipula effacifica (NL. fem. n. *effacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *QHBW01 sp003244205*. The type genome for the species is the GenBank assembly GCA_003244205.1. The GC content of the type genome is 69.64 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Arcipula gen. nov.

Candidatus Arcipula (NL. fem. n. *Arcipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHBW01*. The type species for the genus is *Candidatus* Arcipula effacifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcitaria vehicimonia sp. nov.

Candidatus Arcitaria vehicimonia (NL. fem. n. *vehicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFX10 sp013112715*. The type genome for the species is the GenBank assembly GCA_013112715.1. The GC content of the type genome is 51.17 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Arcitaria gen. nov.

Candidatus Arcitaria (NL. fem. n. *Arcitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CFX10*. The type species for the genus is *Candidatus* Arcitaria vehicimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J027*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemellaceae.

Description of *Candidatus* Arcitella revulitoga sp. nov.

Candidatus Arcitella revulitoga (NL. fem. n. *revulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCM-19058 sp001310555*. The type genome for the species is the

GenBank assembly GCA_001310555.1. The GC content of the type genome is 42.66 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Arcitella gen. nov.

Candidatus Arcitella (NL. fem. n. *Arcitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JCM-19058*. The type species for the genus is *Candidatus* Arcitella revulitoga .

According to GTDB R06-RS202, this genus belongs to the family _D.

Description of *Candidatus* Arcitia defasugo sp. nov.

Candidatus Arcitia defasugo (NL. fem. n. *defasugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-402-N21 sp003216435*. The type genome for the species is the GenBank assembly GCA_003216435.1. The GC content of the type genome is 36.11 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Arcitia gen. nov.

Candidatus Arcitia (NL. fem. n. *Arcitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-402-N21*. The type species for the genus is *Candidatus* Arcitia defasugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arcitia pericitia sp. nov.

Candidatus Arcitia pericitia (NL. fem. n. *pericitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-402-N21 sp902587615*. The type genome for the species is the GenBank assembly GCA_902587615.1. The GC content of the type genome is 35.8 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Arcitida insubessa sp. nov.

Candidatus Arcitida insubessa (NL. fem. n. *insubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ECT2AJA-110-A sp006969385*. The type genome for the species is the GenBank assembly GCA_006969385.1. The GC content of the type genome is 57.34 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Arcitida gen. nov.

Candidatus Arcitida (NL. fem. n. *Arcitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ECT2AJA-110-A*. The type species for the genus is *Candidatus* Arcitida insubessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UTPLA1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumidaceae.

Description of *Candidatus* Arcitula inabrax sp. nov.

Candidatus Arcitula inabrax (NL. fem. n. *inabrax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PTKB01 sp002937555*. The type genome for the species is the GenBank assembly GCA_002937555.1. The GC content of the type genome is 61.32 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Arcitula gen. nov.

Candidatus Arcitula (NL. fem. n. *Arcitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PTKB01*. The type species for the genus is *Candidatus* Arcitula inabrax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA828*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hegumosaceae.

Description of *Candidatus* Arcobacter epogdilenta sp. nov.

Candidatus Arcobacter epogdilenta (NL. fem. n. *epogdilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcobacter sp004116465*. The type genome for the species is the GenBank assembly RS_GCF_004116465.1. The GC content of the type genome is 28.11 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Arcobacter panifitio sp. nov.

Candidatus Arcobacter panifitio (NL. fem. n. *panifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcobacter sp002869535*. The type genome for the species is the GenBank assembly GCA_002869535.1. The GC content of the type genome is 28.95 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Arcobacter benepitio sp. nov.

Candidatus Arcobacter benepitio (NL. fem. n. *benepitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arcobacter_A sp001655195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001655195.1. The GC content of the type genome is 31.94 % and the genome length is 3.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "culture containing one eukaryotic species and its associated bacterial epibionts isolated from marine sediment".

Description of *Candidatus* Arcubaria sicunicella sp. nov.

Candidatus Arcubaria sicunicella (NL. fem. n. *sicunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGX01 sp007376805*. The type genome for the species is the GenBank assembly GCA_007376805.1. The GC content of the type genome is 32.3 %

and the genome length is 0.63 Mbp.

Description of *Candidatus* Arcubaria gen. nov.

Candidatus Arcubaria (NL. fem. n. *Arcubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGX01*. The type species for the genus is *Candidatus* Arcubaria sicunicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *21-14-all-36-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ridibanaceae.

Description of *Candidatus* Arcubella atricilega sp. nov.

Candidatus Arcubella atricilega (NL. fem. n. *atricilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFHE01 sp001778495*. The type genome for the species is the GenBank assembly GCA_001778495.1. The GC content of the type genome is 46.75 % and the genome length is 0.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Arcubella gen. nov.

Candidatus Arcubella (NL. fem. n. *Arcubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFHE01*. The type species for the genus is *Candidatus* Arcubella atricilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-45-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tametellaceae.

Description of *Candidatus* Arcubia esculatica sp. nov.

Candidatus Arcubia esculatica (NL. fem. n. *esculatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAA01 sp009780015*. The type genome for the species is the GenBank assembly GCA_009780015.1. The GC content of the type genome is 51.25 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Arcubia gen. nov.

Candidatus Arcubia (NL. fem. n. *Arcubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAA01*. The type species for the genus is *Candidatus* Arcubia esculatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Arcubia refinitudo sp. nov.

Candidatus Arcubia refinitudo (NL. fem. n. *refinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAA01 sp009780445*. The type genome for the species is the GenBank assembly GCA_009780445.1. The GC content of the type genome is 57.71 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Arcubida resacigena sp. nov.

Candidatus Arcubida resacigena (NL. fem. n. *resacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBK01 sp009781625*. The type genome for the species is the GenBank assembly GCA_009781625.1. The GC content of the type genome is 47.13 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Arcubida gen. nov.

Candidatus Arcubida (NL. fem. n. *Arcubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBK01*. The type species for the genus is *Candidatus* Arcubida

resacigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRAX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibulaceae.

Description of *Candidatus* Arcubida vacilitio sp. nov.

Candidatus Arcubida vacilitio (NL. fem. n. *vacilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBK01 sp009784575*. The type genome for the species is the GenBank assembly GCA_009784575.1. The GC content of the type genome is 42.6 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Arcubosa attubicula sp. nov.

Candidatus Arcubosa attubicula (NL. fem. n. *attubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWNV01 sp003551425*. The type genome for the species is the GenBank assembly GCA_003551425.1. The GC content of the type genome is 41.29 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Arcubosa gen. nov.

Candidatus Arcubosa (NL. fem. n. *Arcubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWNV01*. The type species for the genus is *Candidatus* Arcubosa attubicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWPS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lacinidaceae.

Description of *Candidatus* Arcubosa obverastra sp. nov.

Candidatus Arcubosa obverastra (NL. fem. n. *obverastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWNV01 sp003557645*. The type genome for the species is the GenBank assembly GCA_003557645.1. The GC content of the type genome is 36.77 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Ardifana immusessa sp. nov.

Candidatus Ardifana immusessa (NL. fem. n. *immusessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7109 sp002492335*. The type genome for the species is the GenBank assembly GCA_002492335.1. The GC content of the type genome is 43.18 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Ardifana gen. nov.

Candidatus Ardifana (NL. fem. n. *Ardifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7109*. The type species for the genus is *Candidatus* Ardifana immusessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ardifaria laculentia sp. nov.

Candidatus Ardifaria laculentia (NL. fem. n. *laculentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTG01 sp009377835*. The type genome for the species is the GenBank assembly GCA_009377835.1. The GC content of the type genome is 68.74 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Ardifaria gen. nov.

Candidatus Ardifaria (NL. fem. n. *Ardifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTG01*. The type species for the genus is *Candidatus* Ardifaria laculentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ardifella assudax sp. nov.

Candidatus Ardifella assudax (NL. fem. n. *assudax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDQW01 sp013042055*. The type genome for the species is the GenBank assembly GCA_013042055.1. The GC content of the type genome is 51.64 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Ardifella gen. nov.

Candidatus Ardifella (NL. fem. n. *Ardifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDQW01*. The type species for the genus is *Candidatus* Ardifella assudax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-229*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunanaceae.

Description of *Candidatus* Ardifia acistibra sp. nov.

Candidatus Ardifia acistibra (NL. fem. n. *acistibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSBD01 sp011049365*. The type genome for the species is the GenBank assembly GCA_011049365.1. The GC content of the type genome is 34.77 % and the genome length is 0.44 Mbp.

Description of *Candidatus* Ardifia gen. nov.

Candidatus Ardifia (NL. fem. n. *Ardifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSBD01*. The type species for the genus is *Candidatus* Ardifia acistibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD1-FULL-46-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidellaceae.

Description of *Candidatus* Ardifida lapiciforma sp. nov.

Candidatus Ardifida lapiciforma (NL. fem. n. *lapiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OESV01 sp900240995*. The type genome for the species is the GenBank assembly RS_GCF_900240995.1. The GC content of the type genome is 36.07 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Ardifida gen. nov.

Candidatus Ardifida (NL. fem. n. *Ardifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OESV01*. The type species for the genus is *Candidatus* Ardifida lapiciforma .

According to GTDB R06-RS202, this genus belongs to the family _J.

Description of *Candidatus* Ardifosa energitura sp. nov.

Candidatus Ardifosa energitura (NL. fem. n. *energitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHXW01 sp003223115*. The type genome for the species is the GenBank assembly GCA_003223115.1. The GC content of the type genome is 58.43 % and the genome length is 9.14 Mbp.

Description of *Candidatus* Ardifosa gen. nov.

Candidatus Ardifosa (NL. fem. n. *Ardifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHXW01*. The type species for the genus is *Candidatus* Ardifosa energitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ardifula insubatica sp. nov.

Candidatus Ardifula insubatica (NL. fem. n. *insubatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUMZ01 sp003551565*. The type genome for the species is the GenBank assembly GCA_003551565.1. The GC content of the type genome is 56.89 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Ardifula gen. nov.

Candidatus Ardifula (NL. fem. n. *Ardifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUMZ01*. The type species for the genus is *Candidatus* Ardifula insubatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rarefulaceae.

Description of *Candidatus* Arenibacter ambacitoga sp. nov.

Candidatus Arenibacter ambacitoga (NL. fem. n. *ambacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenibacter sp014397245*. The type genome for the species is the GenBank assembly RS_GCF_014397245.1. The GC content of the type genome is 38.74 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Arenibacter bicoditica sp. nov.

Candidatus Arenibacter bicoditica (NL. fem. n. *bicoditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenibacter sp003426735*. The type genome for the species is the GenBank assembly RS_GCF_003426735.1. The GC content of the type genome is 40.93 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Arenibacter duricitia sp. nov.

Candidatus Arenibacter duricitia (NL. fem. n. *duricitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenibacter sp002150785*. The type genome for the species is the GenBank assembly RS_GCF_002150785.1. The GC content of the type genome is 40.83 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Arenibacter utputibra sp. nov.

Candidatus Arenibacter utputibra (NL. fem. n. *utputibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenibacter sp012272855*. The type genome for the species is the GenBank assembly RS_GCF_012272855.1. The GC content of the type genome is 38.96 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Arenibacter vinulitas sp. nov.

Candidatus Arenibacter vinulitas (NL. fem. n. *vinulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenibacter sp003201775*. The type genome for the species is the GenBank assembly RS_GCF_003201775.1. The GC content of the type genome is 39.64 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Arenicella bicipicula sp. nov.

Candidatus Arenicella bicipicula (NL. fem. n. *bicipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenicella sp002470515*. The type genome for the species is the GenBank assembly GCA_002470515.1. The GC content of the type genome is 46.0 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Arenicella lubenax sp. nov.

Candidatus Arenicella lubenax (NL. fem. n. *lubenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Arenicella sp013002025*. The type genome for the species is the GenBank assembly GCA_013002025.1. The GC content of the type genome is 52.96 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Arenimonas adtumitia sp. nov.

Candidatus Arenimonas adtumitia (NL. fem. n. *adtumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenimonas sp001801685*. The type genome for the species is the GenBank assembly GCA_001801685.1. The GC content of the type genome is 63.81 % and the genome length is 4.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Arenimonas conibatio sp. nov.

Candidatus Arenimonas conibatio (NL. fem. n. *conibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenimonas sp903942465*. The type genome for the species is the GenBank assembly GCA_903938705.1. The GC content of the type genome is 60.71 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Arenimonas egregitica sp. nov.

Candidatus Arenimonas egregitica (NL. fem. n. *egregitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenimonas sp003241895*. The type genome for the species is the GenBank assembly GCA_003241895.1. The GC content of the type genome is 68.28 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Arenimonas megalessa sp. nov.

Candidatus Arenimonas megalessa (NL. fem. n. *megalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenimonas sp003497545*. The type genome for the species is the GenBank assembly GCA_001830235.1. The GC content of the type genome is 69.74 %

and the genome length is 2.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.1 filter".

Description of *Candidatus* Arenimonas metabibra sp. nov.

Candidatus Arenimonas metabibra (NL. fem. n. *metabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenimonas sp001724815*. The type genome for the species is the GenBank assembly GCA_001724815.1. The GC content of the type genome is 70.26 % and the genome length is 2.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Arenimonas supeledo sp. nov.

Candidatus Arenimonas supeledo (NL. fem. n. *supeledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arenimonas sp008386465*. The type genome for the species is the GenBank assembly RS_GCF_008386465.1. The GC content of the type genome is 69.77 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Argimaria impirifica sp. nov.

Candidatus Argimaria impirifica (NL. fem. n. *impirifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-411 sp003245895*. The type genome for the species is the GenBank assembly GCA_003245895.1. The GC content of the type genome is 44.76 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Argimaria gen. nov.

Candidatus Argimaria (NL. fem. n. *Argimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-411*. The type species for the genus is *Candidatus* Argimaria impirifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Argimida tresvitudo sp. nov.

Candidatus Argimida tresvitudo (NL. fem. n. *tresvitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LJUQ01 sp001304505*. The type genome for the species is the GenBank assembly GCA_001304505.1. The GC content of the type genome is 40.12 % and the genome length is 4.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Argimida gen. nov.

Candidatus Argimida (NL. fem. n. *Argimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LJUQ01*. The type species for the genus is *Candidatus* Argimida tresvitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-62*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibellaceae.

Description of *Candidatus* Argimosa inobsentia sp. nov.

Candidatus Argimosa inobsentia (NL. fem. n. *inobsentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-994 sp903970305*. The type genome for the species is the GenBank assembly GCA_903970305.1. The GC content of the type genome is 62.22 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Argimosa gen. nov.

Candidatus Argimosa (NL. fem. n. *Argimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-994*. The type species for the genus is *Candidatus* Argimosa inobsentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Argimosa scammibula sp. nov.

Candidatus Argimosa scammibula (NL. fem. n. *scammibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-994 sp003136595*. The type genome for the species is the GenBank assembly GCA_003136595.1. The GC content of the type genome is 64.85 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Argimula catecentia sp. nov.

Candidatus Argimula catecentia (NL. fem. n. *catecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA876 sp002294665*. The type genome for the species is the GenBank assembly GCA_002294665.1. The GC content of the type genome is 56.77 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Argimula gen. nov.

Candidatus Argimula (NL. fem. n. *Argimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA876*. The type species for the genus is *Candidatus* Argimula catecentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucosaceae.

Description of *Candidatus* Argimula taxilatica sp. nov.

Candidatus Argimula taxilatica (NL. fem. n. *taxilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA876 sp011049425*. The type genome for the species is the GenBank assembly GCA_011049425.1. The GC content of the type genome is 55.61 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Argitaria obtenugo sp. nov.

Candidatus Argitaria obtenugo (NL. fem. n. *obtenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-B05 sp003216075*. The type genome for the species is the GenBank assembly GCA_003216075.1. The GC content of the type genome is 38.86 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Argitaria gen. nov.

Candidatus Argitaria (NL. fem. n. *Argitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-B05*. The type species for the genus is *Candidatus* Argitaria obtenugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Argitella fetutiforma sp. nov.

Candidatus Argitella fetutiforma (NL. fem. n. *fetutiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5628 sp002421565*. The type genome for the species is the GenBank assembly GCA_002421565.1. The GC content of the type genome is 60.1 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Argitella gen. nov.

Candidatus Argitella (NL. fem. n. *Argitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5628*. The type species for the genus is *Candidatus* Argitella fetutiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Argitida decitiforma sp. nov.

Candidatus Argitida decitiforma (NL. fem. n. *decitiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1329 sp003154375*. The type genome for the species is the GenBank assembly GCA_003154375.1. The GC content of the type genome is 50.99 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Argitida gen. nov.

Candidatus Argitida (NL. fem. n. *Argitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1329*. The type species for the genus is *Candidatus* Argitida decitiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-43-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ruricariaceae.

Description of *Candidatus* Argitosa alismilega sp. nov.

Candidatus Argitosa alismilega (NL. fem. n. *alismilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHUE01 sp009377375*. The type genome for the species is the GenBank assembly GCA_009377375.1. The GC content of the type genome is 68.28 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Argitosa gen. nov.

Candidatus Argitosa (NL. fem. n. *Argitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHUE01*. The type species for the genus is *Candidatus* Argitosa alismilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2964*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibidaceae.

Description of *Candidatus* Argitula miracousia sp. nov.

Candidatus Argitula miracousia (NL. fem. n. *miracousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCIW01 sp903970455*. The type genome for the species is the GenBank assembly GCA_903970455.1. The GC content of the type genome is 46.01 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Argitula gen. nov.

Candidatus Argitula (NL. fem. n. *Argitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCIW01*. The type species for the genus is *Candidatus* Argitula miracousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Argumana rosaredo sp. nov.

Candidatus Argumana rosaredo (NL. fem. n. *rosaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSQV01 sp013215565*. The type genome for the species is the GenBank assembly GCA_013215565.1. The GC content of the type genome is 66.89 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Argumana gen. nov.

Candidatus Argumana (NL. fem. n. *Argumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSQV01*. The type species for the genus is *Candidatus* Argumana rosaredo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomaciaceae.

Description of *Candidatus* Argumaria cenodivita sp. nov.

Candidatus Argumaria cenodivita (NL. fem. n. *cenodivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBB01 sp009779895*. The type genome for the species is the GenBank assembly GCA_009779895.1. The GC content of the type genome is 40.18 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Argumaria gen. nov.

Candidatus Argumaria (NL. fem. n. *Argumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBB01*. The type species for the genus is *Candidatus* Argumaria cenodivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Argumella irregibula sp. nov.

Candidatus Argumella irregibula (NL. fem. n. *irregibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTK01 sp004298905*. The type genome for the species is the GenBank assembly GCA_004298905.1. The GC content of the type genome is 58.39 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Argumella gen. nov.

Candidatus Argumella (NL. fem. n. *Argumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTK01*. The type species for the genus is *Candidatus* Argumella irregibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Argumia ruricago sp. nov.

Candidatus Argumia ruricago (NL. fem. n. *ruricago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11215 sp902766875*. The type genome for the species is the

GenBank assembly GCA_902766875.1. The GC content of the type genome is 24.98 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Argumia gen. nov.

Candidatus Argumia (NL. fem. n. *Argumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11215*. The type species for the genus is *Candidatus* Argumia ruricago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Argumida dicanimonia sp. nov.

Candidatus Argumida dicanimonia (NL. fem. n. *dicanimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6139 sp002423285*. The type genome for the species is the GenBank assembly GCA_002423285.1. The GC content of the type genome is 52.06 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Argumida gen. nov.

Candidatus Argumida (NL. fem. n. *Argumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6139*. The type species for the genus is *Candidatus* Argumida dicanimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Argumosa xeramimonas sp. nov.

Candidatus Argumosa xeramimonas (NL. fem. n. *xeramimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin25 sp002238525*. The type genome for the species is the GenBank assembly GCA_002238525.1. The GC content of the type genome is 36.18 % and the

genome length is 2.96 Mbp.

Description of *Candidatus* Argumosa gen. nov.

Candidatus Argumosa (NL. fem. n. *Argumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin25*. The type species for the genus is *Candidatus* Argumosa xeramimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Argumula exorbiforma sp. nov.

Candidatus Argumula exorbiforma (NL. fem. n. *exorbiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1611 sp900553435*. The type genome for the species is the GenBank assembly GCA_900553435.1. The GC content of the type genome is 26.72 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Argumula gen. nov.

Candidatus Argumula (NL. fem. n. *Argumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1611*. The type species for the genus is *Candidatus* Argumula exorbiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Arillana clancitio sp. nov.

Candidatus Arillana clancitio (NL. fem. n. *clancitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAKD01 sp003343965*. The type genome for the species is the GenBank assembly GCA_003343965.1. The GC content of the type genome is 44.09 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Arillana gen. nov.

Candidatus Arillana (NL. fem. n. *Arillana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAKD01*. The type species for the genus is *Candidatus* Arillana clancitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arillella adnunitoga sp. nov.

Candidatus Arillella adnunitoga (NL. fem. n. *adnunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11507 sp900761005*. The type genome for the species is the GenBank assembly RS_GCF_900761005.1. The GC content of the type genome is 45.16 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Arillella gen. nov.

Candidatus Arillella (NL. fem. n. *Arillella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11507*. The type species for the genus is *Candidatus* Arillella adnunitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1840*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicubulaceae.

Description of *Candidatus* Arillia umbililega sp. nov.

Candidatus Arillia umbililega (NL. fem. n. *umbililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSD01 sp012518465*. The type genome for the species is the GenBank assembly GCA_012518465.1. The GC content of the type genome is 34.58 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Arillia gen. nov.

Candidatus Arillia (NL. fem. n. *Arillia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSD01*. The type species for the genus is *Candidatus* Arillia umbililega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arillida denupitoga sp. nov.

Candidatus Arillida denupitoga (NL. fem. n. *denupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-39-15 sp000993565*. The type genome for the species is the GenBank assembly GCA_000993565.1. The GC content of the type genome is 38.73 % and the genome length is 0.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Arillida gen. nov.

Candidatus Arillida (NL. fem. n. *Arillida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-39-15*. The type species for the genus is *Candidatus* Arillida denupitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Arillula capucitas sp. nov.

Candidatus Arillula capucitas (NL. fem. n. *capucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSAU01 sp011046315*. The type genome for the species is the GenBank assembly GCA_011046315.1. The GC content of the type genome is 43.28 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Arillula gen. nov.

Candidatus Arillula (NL. fem. n. *Arillula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSAU01*. The type species for the genus is *Candidatus* Arillula capucitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AABM5-25-91*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Filifidaceae.

Description of *Candidatus* Armicella colutitas sp. nov.

Candidatus Armicella colutitas (NL. fem. n. *colutitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADFK01 sp013152925*. The type genome for the species is the GenBank assembly GCA_013152925.1. The GC content of the type genome is 67.61 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Armicella gen. nov.

Candidatus Armicella (NL. fem. n. *Armicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFK01*. The type species for the genus is *Candidatus* Armicella colutitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEB-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denoridaceae.

Description of *Candidatus* Armicia ardifatica sp. nov.

Candidatus Armicia ardifatica (NL. fem. n. *ardifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MLS-D sp002030015*. The type genome for the species is the GenBank assembly GCA_002030015.1. The GC content of the type genome is 55.2 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Armicia gen. nov.

Candidatus Armicia (NL. fem. n. *Armicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MLS-D*. The type species for the genus is *Candidatus* Armicia ardifatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2210*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Haricanaceae.

Description of *Candidatus* Armicia lucifitas sp. nov.

Candidatus Armicia lucifitas (NL. fem. n. *lucifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MLS-D sp011056825*. The type genome for the species is the GenBank assembly GCA_011056825.1. The GC content of the type genome is 55.61 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Armicida tenebigena sp. nov.

Candidatus Armicida tenebigena (NL. fem. n. *tenebigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTJ01 sp009377795*. The type genome for the species is the GenBank assembly GCA_009377795.1. The GC content of the type genome is 68.9 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Armicida gen. nov.

Candidatus Armicida (NL. fem. n. *Armicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTJ01*. The type species for the genus is *Candidatus* Armicida tenebigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armicosa visocago sp. nov.

Candidatus Armicosa visocago (NL. fem. n. *visocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACFF01 sp009937635*. The type genome for the species is the GenBank assembly GCA_009937635.1. The GC content of the type genome is 52.08 % and the genome length is 6.56 Mbp.

Description of *Candidatus* Armicosa gen. nov.

Candidatus Armicosa (NL. fem. n. *Armicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACFF01*. The type species for the genus is *Candidatus* Armicosa visocago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armicula ceraressa sp. nov.

Candidatus Armicula ceraressa (NL. fem. n. *ceraressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFVR01 sp004561455*. The type genome for the species is the GenBank assembly GCA_004561455.1. The GC content of the type genome is 38.58 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Armicula gen. nov.

Candidatus Armicula (NL. fem. n. *Armicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFVR01*. The type species for the genus is *Candidatus* Armicula ceraressa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armicula inhorimonia sp. nov.

Candidatus Armicula inhorimonia (NL. fem. n. *inhorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFVR01 sp900769035*. The type genome for the species is the GenBank assembly RS_GCF_900769035.1. The GC content of the type genome is 36.96 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Armicula nubifetta sp. nov.

Candidatus Armicula nubifetta (NL. fem. n. *nubifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFVR01 sp900771035*. The type genome for the species is the GenBank assembly RS_GCF_900771035.1. The GC content of the type genome is 47.4 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Armidana fetutago sp. nov.

Candidatus Armidana fetutago (NL. fem. n. *fetutago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWNM01 sp003557825*. The type genome for the species is the GenBank assembly GCA_003557825.1. The GC content of the type genome is 56.77 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Armidana gen. nov.

Candidatus Armidana (NL. fem. n. *Armidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWNM01*. The type species for the genus is *Candidatus* Armidana fetutago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLHB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegulaceae.

Description of *Candidatus* Armidaria nugigifica sp. nov.

Candidatus Armidaria nugigifica (NL. fem. n. *nugigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOLF01 sp903859075*. The type genome for the species is the GenBank assembly GCA_903859075.1. The GC content of the type genome is 45.83 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Armidaria gen. nov.

Candidatus Armidaria (NL. fem. n. *Armidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOLF01*. The type species for the genus is *Candidatus* Armidaria nugigifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-39-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dibapiaceae.

Description of *Candidatus* Armidella aglasitrix sp. nov.

Candidatus Armidella aglasitrix (NL. fem. n. *aglasitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-955 sp002050465*. The type genome for the species is the GenBank assembly GCA_002050465.1. The GC content of the type genome is 35.68 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Armidella gen. nov.

Candidatus Armidella (NL. fem. n. *Armidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-955*. The type species for the genus is *Candidatus* Armidella aglasitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armidella appecetta sp. nov.

Candidatus Armidella appecetta (NL. fem. n. *appecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Palsa-955 sp003721595*. The type genome for the species is the GenBank assembly RS_GCF_003721595.1. The GC content of the type genome is 39.05 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Armidella enucletta sp. nov.

Candidatus Armidella enucletta (NL. fem. n. *enucletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-955 sp008710285*. The type genome for the species is the GenBank assembly RS_GCF_008710285.1. The GC content of the type genome is 37.64 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Armidella eviscitia sp. nov.

Candidatus Armidella eviscitia (NL. fem. n. *eviscitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-955 sp003132765*. The type genome for the species is the GenBank assembly GCA_003132765.1. The GC content of the type genome is 37.22 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Armidella pinigitudo sp. nov.

Candidatus Armidella pinigitudo (NL. fem. n. *pinigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-955 sp013694745*. The type genome for the species is the GenBank assembly GCA_013694745.1. The GC content of the type genome is 38.36 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Armidida inadfitrix sp. nov.

Candidatus Armidida inadfitrix (NL. fem. n. *inadfitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W5053 sp000467935*. The type genome for the species is the GenBank assembly RS_GCF_000467935.1. The GC content of the type genome is 37.1 % and the genome length is 2.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity- mouth".

Description of *Candidatus* Armidida gen. nov.

Candidatus Armidida (NL. fem. n. *Armidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W5053*. The type species for the genus is *Candidatus* Armidida inadfitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armidula aprarigena sp. nov.

Candidatus Armidula aprarigena (NL. fem. n. *aprarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFBF01 sp001774865*. The type genome for the species is the GenBank assembly GCA_001774865.1. The GC content of the type genome is 41.73 % and the genome length is 0.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Armidula gen. nov.

Candidatus Armidula (NL. fem. n. *Armidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFBF01*. The type species for the genus is *Candidatus* Armidula aprarigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-41-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Armifana oppugax sp. nov.

Candidatus Armifana oppugax (NL. fem. n. *oppugax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12567 sp003520025*. The type genome for the species is the GenBank assembly GCA_003520025.1. The GC content of the type genome is 60.55 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Armifana gen. nov.

Candidatus Armifana (NL. fem. n. *Armifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12567*. The type species for the genus is *Candidatus* Armifana oppugax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Armifella omnigibra sp. nov.

Candidatus Armifella omnigibra (NL. fem. n. *omnigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3379 sp002359025*. The type genome for the species is the GenBank assembly GCA_002359025.1. The GC content of the type genome is 29.86 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Armifella gen. nov.

Candidatus Armifella (NL. fem. n. *Armifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3379*. The type species for the genus is *Candidatus* Armifella omnigibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armifida adcogedo sp. nov.

Candidatus Armifida adcogedo (NL. fem. n. *adcogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0027 sp006227905*. The type genome for the species is the GenBank assembly GCA_006227905.1. The GC content of the type genome is 32.4 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Armifida gen. nov.

Candidatus Armifida (NL. fem. n. *Armifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M0027*. The type species for the genus is *Candidatus* Armifida adcogedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armifula conamousia sp. nov.

Candidatus Armifula conamousia (NL. fem. n. *conamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQWV01 sp009785175*. The type genome for the species is the GenBank assembly GCA_009785175.1. The GC content of the type genome is 52.4 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Armifula gen. nov.

Candidatus Armifula (NL. fem. n. *Armifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQWV01*. The type species for the genus is *Candidatus* Armifula conamousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACZYB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coturariaceae.

Description of *Candidatus* Armigaria innumitia sp. nov.

Candidatus Armigaria innumitia (NL. fem. n. *innumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZGD01 sp012511395*. The type genome for the species is the GenBank assembly GCA_012511395.1. The GC content of the type genome is 40.74 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Armigaria gen. nov.

Candidatus Armigaria (NL. fem. n. *Armigaria* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZGD01*. The type species for the genus is *Candidatus* Armigaria innumitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armigella enimvetta sp. nov.

Candidatus Armigella enimvetta (NL. fem. n. *enimvetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYGV01 sp004296885*. The type genome for the species is the GenBank assembly GCA_004296885.1. The GC content of the type genome is 61.97 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Armigella gen. nov.

Candidatus Armigella (NL. fem. n. *Armigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYGV01*. The type species for the genus is *Candidatus* Armigella enimvetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armigella pocililega sp. nov.

Candidatus Armigella pocililega (NL. fem. n. *pocililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYGV01 sp005799365*. The type genome for the species is the GenBank assembly GCA_005799365.1. The GC content of the type genome is 63.17 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Armigia imbecitudo sp. nov.

Candidatus Armigia imbecitudo (NL. fem. n. *imbecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1792 sp002315155*. The type genome for the species is the GenBank assembly GCA_002315155.1. The GC content of the type genome is 41.6 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Armigia gen. nov.

Candidatus Armigia (NL. fem. n. *Armigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1792*. The type species for the genus is *Candidatus* Armigia imbecitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armigida induvousia sp. nov.

Candidatus Armigida induvousia (NL. fem. n. *induvousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-51-18 sp903915565*. The type genome for the species is the GenBank assembly GCA_903915565.1. The GC content of the type genome is 50.95 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Armigida gen. nov.

Candidatus Armigida (NL. fem. n. *Armigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-51-18*. The type species for the genus is *Candidatus* Armigida induvousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-60-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunidaceae.

Description of *Candidatus* Armigida pomifitas sp. nov.

Candidatus Armigida pomifitas (NL. fem. n. *pomifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-51-18 sp001796525*. The type genome for the species is the GenBank assembly GCA_001796525.1. The GC content of the type genome is 49.74 % and the genome length is 1.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Armigida vecorugo sp. nov.

Candidatus Armigida vecorugo (NL. fem. n. *vecorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-51-18 sp001796495*. The type genome for the species is the GenBank assembly GCA_001796495.1. The GC content of the type genome is 51.01 % and the genome length is 1.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Armigosa fusifousia sp. nov.

Candidatus Armigosa fusifousia (NL. fem. n. *fusifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5614 sp002435865*. The type genome for the species is the GenBank assembly GCA_002435865.1. The GC content of the type genome is 39.07 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Armigosa gen. nov.

Candidatus Armigosa (NL. fem. n. *Armigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5614*. The type species for the genus is *Candidatus* Armigosa fusifousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armigosa xenoditio sp. nov.

Candidatus Armigosa xenoditio (NL. fem. n. *xenoditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5614 sp002424605*. The type genome for the species is the GenBank assembly GCA_002424605.1. The GC content of the type genome is 48.0 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Armigula subodetta sp. nov.

Candidatus Armigula subodetta (NL. fem. n. *subodetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBWE01 sp006218065*. The type genome for the species is the GenBank assembly GCA_006218065.1. The GC content of the type genome is 50.71 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Armigula gen. nov.

Candidatus Armigula (NL. fem. n. *Armigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBWE01*. The type species for the genus is *Candidatus* Armigula subodetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-965*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponanaceae.

Description of *Candidatus* Armipana irredimonia sp. nov.

Candidatus Armipana irredimonia (NL. fem. n. *irredimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIO4C1 sp010671975*. The type genome for the species is the GenBank assembly GCA_010671975.1. The GC content of the type genome is 54.81 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Armipana gen. nov.

Candidatus Armipana (NL. fem. n. *Armipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SIO4C1*. The type species for the genus is *Candidatus* Armipana irredimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armiparia terebax sp. nov.

Candidatus Armiparia terebax (NL. fem. n. *terebax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-39-12 sp000993405*. The type genome for the species is the GenBank assembly GCA_000993405.1. The GC content of the type genome is 38.95 % and the genome length is 1.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Armiparia gen. nov.

Candidatus Armiparia (NL. fem. n. *Armiparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-39-12*. The type species for the genus is *Candidatus* Armiparia terebax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Armipia aclasitrix sp. nov.

Candidatus Armipia aclasitrix (NL. fem. n. *aclasitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKQL01 sp007119035*. The type genome for the species is the GenBank assembly GCA_007119035.1. The GC content of the type genome is 70.12 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Armipia gen. nov.

Candidatus Armipia (NL. fem. n. *Armipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SKQL01*. The type species for the genus is *Candidatus* Armipia aclasitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Armipida ossarilega sp. nov.

Candidatus Armipida ossarilega (NL. fem. n. *ossarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-42-9 sp001793775*. The type genome for the species is the GenBank assembly GCA_001793775.1. The GC content of the type genome is 42.07 % and the genome length is 0.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.1 filter".

Description of *Candidatus* Armipida gen. nov.

Candidatus Armipida (NL. fem. n. *Armipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-42-9*. The type species for the genus is *Candidatus* Armipida ossarilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9933*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capilanaceae.

Description of *Candidatus* Armiposa inresastra sp. nov.

Candidatus Armiposa inresastra (NL. fem. n. *inresastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPO01 sp013203015*. The type genome for the species is the GenBank assembly GCA_013203015.1. The GC content of the type genome is 43.28 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Armiposa gen. nov.

Candidatus Armiposa (NL. fem. n. *Armiposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPO01*. The type species for the genus is *Candidatus* Armiposa inresastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS56*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turiciaceae.

Description of *Candidatus* Arnacana venefetta sp. nov.

Candidatus Arnacana venefetta (NL. fem. n. *venefetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-25 sp003598135*. The type genome for the species is the GenBank assembly GCA_003598135.1. The GC content of the type genome is 45.85 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Arnacana gen. nov.

Candidatus Arnacana (NL. fem. n. *Arnacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-25*. The type species for the genus is *Candidatus* Arnacana venefetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Arnacia altipimonas sp. nov.

Candidatus Arnacia altipimonas (NL. fem. n. *altipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUVQ01 sp012840965*. The type genome for the species is the GenBank assembly GCA_012840965.1. The GC content of the type genome is 50.33 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Arnacia gen. nov.

Candidatus Arnacia (NL. fem. n. *Arnacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUVQ01*. The type species for the genus is *Candidatus* Arnacia altipimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTJE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucelulaceae.

Description of *Candidatus* Arnacida dehisitura sp. nov.

Candidatus Arnacida dehisitura (NL. fem. n. *dehisitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDYT01 sp902810755*. The type genome for the species is the GenBank assembly RS_GCF_902810755.1. The GC content of the type genome is 58.26 % and the genome length is 6.69 Mbp.

Description of *Candidatus* Arnacida gen. nov.

Candidatus Arnacida (NL. fem. n. *Arnacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDYT01*. The type species for the genus is *Candidatus* Arnacida dehisitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arnogana susicitica sp. nov.

Candidatus Arnogana susicitica (NL. fem. n. *susicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-204 sp003228585*. The type genome for the species is the GenBank assembly GCA_003228585.1. The GC content of the type genome is 53.96 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Arnogana gen. nov.

Candidatus Arnogana (NL. fem. n. *Arnogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-204*. The type species for the genus is *Candidatus* Arnogana susicitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3Abin14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapellaceae.

Description of *Candidatus* Arnogella anaclicula sp. nov.

Candidatus Arnogella anaclicula (NL. fem. n. *anaclicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-647 sp003132585*. The type genome for the species is the GenBank assembly GCA_003132585.1. The GC content of the type genome is 67.1 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Arnogella gen. nov.

Candidatus Arnogella (NL. fem. n. *Arnogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-647*. The type species for the genus is *Candidatus* Arnogella anaclicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2241*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocariaceae.

Description of *Candidatus* Arnogida labecivita sp. nov.

Candidatus Arnogida labecivita (NL. fem. n. *labecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FJAT-44876 sp002335745*. The type genome for the species is the GenBank assembly RS_GCF_002335745.1. The GC content of the type genome is 38.26 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Arnogida gen. nov.

Candidatus Arnogida (NL. fem. n. *Arnogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FJAT-44876*. The type species for the genus is *Candidatus* Arnogida labecivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arnogula inhonifica sp. nov.

Candidatus Arnogula inhonifica (NL. fem. n. *inhonifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1335 sp003153355*. The type genome for the species is the GenBank assembly GCA_003153355.1. The GC content of the type genome is 46.12 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Arnogula gen. nov.

Candidatus Arnogula (NL. fem. n. *Arnogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1335*. The type species for the genus is *Candidatus* Arnogula inhonifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malogiaceae.

Description of *Candidatus* Aromatoleum appecifica sp. nov.

Candidatus Aromatoleum appecifica (NL. fem. n. *appecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aromatoleum sp003628555*. The type genome for the species is the GenBank assembly RS_GCF_003628555.1. The GC content of the type genome is 66.3 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Aromatoleum cisalivita sp. nov.

Candidatus Aromatoleum cisalivita (NL. fem. n. *cisalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aromatoleum sp000349945*. The type genome for the species is the GenBank assembly RS_GCF_000349945.1. The GC content of the type genome is 65.03 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Aromatoleum fumacugo sp. nov.

Candidatus Aromatoleum fumacugo (NL. fem. n. *fumacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aromatoleum sp001190925*. The type genome for the species is the GenBank assembly RS_GCF_001190925.1. The GC content of the type genome is 65.84 % and the genome length is 5.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "reisolated from a DSMZ cell culture".

Description of *Candidatus* Aromatoleum maxumitia sp. nov.

Candidatus Aromatoleum maxumitia (NL. fem. n. *maxumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aromatoleum sp001274695*. The type genome for the species is the GenBank assembly RS_GCF_001274695.1. The GC content of the type genome is 66.08 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Wastewater treatment plant".

Description of *Candidatus* Arrabana colimitudo sp. nov.

Candidatus Arrabana colimitudo (NL. fem. n. *colimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSQW01 sp011362745*. The type genome for the species is the GenBank assembly GCA_011362745.1. The GC content of the type genome is 64.56 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Arrabana gen. nov.

Candidatus Arrabana (NL. fem. n. *Arrabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSQW01*. The type species for the genus is *Candidatus* Arrabana

colimitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAUTS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifellaceae.

Description of *Candidatus* Arrabaria caselitura sp. nov.

Candidatus Arrabaria caselitura (NL. fem. n. *caselitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2732755 sp009827205*. The type genome for the species is the GenBank assembly GCA_009827205.1. The GC content of the type genome is 60.4 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Arrabaria gen. nov.

Candidatus Arrabaria (NL. fem. n. *Arrabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2732755*. The type species for the genus is *Candidatus* Arrabaria caselitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Arrabaria frigdousia sp. nov.

Candidatus Arrabaria frigdousia (NL. fem. n. *frigdousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2732755 sp002732755*. The type genome for the species is the GenBank assembly GCA_002732755.1. The GC content of the type genome is 58.82 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Arrabaria infelimonas sp. nov.

Candidatus Arrabaria infelimonas (NL. fem. n. *infelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2732755 sp011053195*. The type genome for the species is the GenBank assembly GCA_011053195.1. The GC content of the type genome is 62.18 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Arrabaria irreditura sp. nov.

Candidatus Arrabaria irreditura (NL. fem. n. *irreditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2732755 sp003712165*. The type genome for the species is the GenBank assembly GCA_003712165.1. The GC content of the type genome is 61.23 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Arrabella conabitio sp. nov.

Candidatus Arrabella conabitio (NL. fem. n. *conabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2184 sp002328745*. The type genome for the species is the GenBank assembly GCA_002328745.1. The GC content of the type genome is 67.82 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Arrabella gen. nov.

Candidatus Arrabella (NL. fem. n. *Arrabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2184*. The type species for the genus is *Candidatus* Arrabella conabitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2279*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depeciaceae.

Description of *Candidatus* Arrabosa divolilenta sp. nov.

Candidatus Arrabosa divolilenta (NL. fem. n. *divolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1224 sp002309235*. The type genome for the species is the GenBank assembly GCA_002309235.1. The GC content of the type genome is 54.13 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Arrabosa gen. nov.

Candidatus Arrabosa (NL. fem. n. *Arrabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1224*. The type species for the genus is *Candidatus* Arrabosa divolilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Arrabosa repecigena sp. nov.

Candidatus Arrabosa repecigena (NL. fem. n. *repecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1224 sp902782795*. The type genome for the species is the GenBank assembly GCA_902782795.1. The GC content of the type genome is 65.19 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Arrabula excucetta sp. nov.

Candidatus Arrabula excucetta (NL. fem. n. *excucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1880 sp900555875*. The type genome for the species is the GenBank assembly GCA_900555875.1. The GC content of the type genome is 54.2 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Arrabula gen. nov.

Candidatus Arrabula (NL. fem. n. *Arrabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1880*. The type species for the genus is *Candidatus* Arrabula excucetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Arrabula spastibra sp. nov.

Candidatus Arrabula spastibra (NL. fem. n. *spastibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1880 sp900761765*. The type genome for the species is the GenBank assembly RS_GCF_900761765.1. The GC content of the type genome is 58.61 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Arrecaria anacliforma sp. nov.

Candidatus Arrecaria anacliforma (NL. fem. n. *anacliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B6-G13 sp003641785*. The type genome for the species is the GenBank assembly GCA_003641785.1. The GC content of the type genome is 42.84 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Arrecaria gen. nov.

Candidatus Arrecaria (NL. fem. n. *Arrecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B6-G13*. The type species for the genus is *Candidatus* Arrecaria anacliforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arrecella expasugo sp. nov.

Candidatus Arrecella expasugo (NL. fem. n. *expasugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7994 sp003527145*. The type genome for the species is the GenBank assembly GCA_003527145.1. The GC content of the type genome is 39.34 %

and the genome length is 3.3 Mbp.

Description of *Candidatus* Arrecella gen. nov.

Candidatus Arrecella (NL. fem. n. *Arrecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7994*. The type species for the genus is *Candidatus* Arrecella expasugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arrecosa adalgisca sp. nov.

Candidatus Arrecosa adalgisca (NL. fem. n. *adalgisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HLUCCA09 sp003340565*. The type genome for the species is the GenBank assembly RS_GCF_003340565.1. The GC content of the type genome is 70.78 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Arrecosa gen. nov.

Candidatus Arrecosa (NL. fem. n. *Arrecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HLUCCA09*. The type species for the genus is *Candidatus* Arrecosa adalgisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arrecosa irrefibula sp. nov.

Candidatus Arrecosa irrefibula (NL. fem. n. *irrefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HLUCCA09 sp003390865*. The type genome for the species is the GenBank assembly RS_GCF_003390865.1. The GC content of the type genome is 66.7 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Arrecosa oblocitia sp. nov.

Candidatus Arrecosa oblocitia (NL. fem. n. *oblocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HLUCCA09 sp001314685*. The type genome for the species is the GenBank assembly GCA_001314685.1. The GC content of the type genome is 71.12 % and the genome length is 4.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-A from microbial mat sample; contains cyanobacterium Phormidesmis priestleyi ANA and associated heterotrophs".

Description of *Candidatus* Arrecula adtorago sp. nov.

Candidatus Arrecula adtorago (NL. fem. n. *adtorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MADRE2 sp004796375*. The type genome for the species is the GenBank assembly GCA_004796375.1. The GC content of the type genome is 50.5 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Arrecula gen. nov.

Candidatus Arrecula (NL. fem. n. *Arrecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MADRE2*. The type species for the genus is *Candidatus* Arrecula adtorago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arremana cerebitio sp. nov.

Candidatus Arremana cerebitio (NL. fem. n. *cerebitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LSUCC0057 sp004535795*. The type genome for the species is the GenBank assembly RS_GCF_004535795.1. The GC content of the type genome is 59.3 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Arremana gen. nov.

Candidatus Arremana (NL. fem. n. *Arremana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LSUCC0057*. The type species for the genus is *Candidatus* Arremana cerebitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arremella bucelilega sp. nov.

Candidatus Arremella bucelilega (NL. fem. n. *bucelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4087 sp002382615*. The type genome for the species is the GenBank assembly GCA_002382615.1. The GC content of the type genome is 48.23 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Arremella gen. nov.

Candidatus Arremella (NL. fem. n. *Arremella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4087*. The type species for the genus is *Candidatus* Arremella bucelilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arremida divulessa sp. nov.

Candidatus Arremida divulessa (NL. fem. n. *divulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-360 sp003247275*. The type genome for the species is the GenBank assembly GCA_003247275.1. The GC content of the type genome is 42.03 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Arremida gen. nov.

Candidatus Arremida (NL. fem. n. *Arremida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-360*. The type species for the genus is *Candidatus* Arremida divulessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-45-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorifosaceae.

Description of *Candidatus* Arremosa siminitura sp. nov.

Candidatus Arremosa siminitura (NL. fem. n. *siminitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCPH02 sp013333235*. The type genome for the species is the GenBank assembly GCA_013333235.2. The GC content of the type genome is 29.04 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Arremosa gen. nov.

Candidatus Arremosa (NL. fem. n. *Arremosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCPH02*. The type species for the genus is *Candidatus* Arremosa siminitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arrugana dehonilenta sp. nov.

Candidatus Arrugana dehonilenta (NL. fem. n. *dehonilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLPE01 sp007132145*. The type genome for the species is the GenBank assembly GCA_007132145.1. The GC content of the type genome is 51.89 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Arrugana gen. nov.

Candidatus Arrugana (NL. fem. n. *Arrugana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLPE01*. The type species for the genus is *Candidatus* Arrugana dehonilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arrugella adhorigena sp. nov.

Candidatus Arrugella adhorigena (NL. fem. n. *adhorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGQ01 sp013285965*. The type genome for the species is the GenBank assembly GCA_013285965.1. The GC content of the type genome is 37.07 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Arrugella gen. nov.

Candidatus Arrugella (NL. fem. n. *Arrugella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDGQ01*. The type species for the genus is *Candidatus* Arrugella adhorigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arrugida remulatio sp. nov.

Candidatus Arrugida remulatio (NL. fem. n. *remulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5499 sp002426275*. The type genome for the species is the GenBank assembly GCA_002426275.1. The GC content of the type genome is 52.46 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Arrugida gen. nov.

Candidatus Arrugida (NL. fem. n. *Arrugida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5499*. The type species for the genus is *Candidatus* Arrugida remulatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU084*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabellaceae.

Description of *Candidatus* Arrugosa velifitoga sp. nov.

Candidatus Arrugosa velifitoga (NL. fem. n. *velifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJ22 sp014584305*. The type genome for the species is the GenBank assembly GCA_014584305.1. The GC content of the type genome is 56.64 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Arrugosa gen. nov.

Candidatus Arrugosa (NL. fem. n. *Arrugosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJ22*. The type species for the genus is *Candidatus* Arrugosa velifitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arrugula infenentia sp. nov.

Candidatus Arrugula infenentia (NL. fem. n. *infenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-60-11 sp001799975*. The type genome for the species is the GenBank assembly GCA_001799975.1. The GC content of the type genome is 54.23 % and the genome length is 1.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Arrugula gen. nov.

Candidatus Arrugula (NL. fem. n. *Arrugula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-60-11*. The type species for the genus is *Candidatus* Arrugula infenentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirocanaceae.

Description of *Candidatus* Arrugula insufitoga sp. nov.

Candidatus Arrugula insufitoga (NL. fem. n. *insufitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-60-11 sp001800085*. The type genome for the species is the GenBank assembly GCA_001800085.1. The GC content of the type genome is 59.68 % and the genome length is 1.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Arsenicicoccus indirago sp. nov.

Candidatus Arsenicicoccus indirago (NL. fem. n. *indirago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arsenicicoccus sp009707125*. The type genome for the species is the GenBank assembly RS_GCF_009707125.1. The GC content of the type genome is 71.98 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Arsenicicoccus murilitura sp. nov.

Candidatus Arsenicicoccus murilitura (NL. fem. n. *murilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arsenicicoccus sp001189535*. The type genome for the species is the GenBank assembly RS_GCF_001189535.1. The GC content of the type genome is 72.73 % and the genome length is 3.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "curette".

Description of *Candidatus* Arsenophonus capabicula sp. nov.

Candidatus Arsenophonus capabicula (NL. fem. n. *capabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Arsenophonus sp902713415*. The type genome for the species is the GenBank assembly RS_GCF_902713415.1. The GC content of the type genome is 36.87 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Arsenophonus nubecago sp. nov.

Candidatus Arsenophonus nubecago (NL. fem. n. *nubecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arsenophonus sp900343025*. The type genome for the species is the GenBank assembly RS_GCF_900343025.1. The GC content of the type genome is 36.95 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Arsenophonus redunatio sp. nov.

Candidatus Arsenophonus redunatio (NL. fem. n. *redunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arsenophonus sp900343015*. The type genome for the species is the GenBank assembly RS_GCF_900343015.1. The GC content of the type genome is 32.19 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Arsenophonus scorbisca sp. nov.

Candidatus Arsenophonus scorbisca (NL. fem. n. *scorbisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arsenophonus sp903968575*. The type genome for the species is the GenBank assembly RS_GCF_903968575.1. The GC content of the type genome is 37.46 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Arsenophonus tegumicula sp. nov.

Candidatus Arsenophonus tegumicula (NL. fem. n. *tegumicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arsenophonus sp000757905*. The type genome for the species is the GenBank assembly RS_GCF_000757905.1. The GC content of the type genome is 37.59 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Arsukibacterium encoletta sp. nov.

Candidatus Arsukibacterium encoletta (NL. fem. n. *encoletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arsukibacterium sp000987765*. The type genome for the species is the GenBank assembly RS_GCF_000987765.1. The GC content of the type genome is 46.36 % and the genome length is 3.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "microbial mat of sediment".

Description of *Candidatus* Arsukibacterium tametiforma sp. nov.

Candidatus Arsukibacterium tametiforma (NL. fem. n. *tametiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arsukibacterium sp002415085*. The type genome for the species is the GenBank assembly GCA_002364035.1. The GC content of the type genome is 48.45 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Arsukibacterium vecoritudo sp. nov.

Candidatus Arsukibacterium vecoritudo (NL. fem. n. *vecoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arsukibacterium sp002364615*. The type genome for the species is the GenBank assembly GCA_002685395.1. The GC content of the type genome is 46.41 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Arthrobacter ciminousia sp. nov.

Candidatus Arthrobacter ciminousia (NL. fem. n. *ciminousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter sp002008315*. The type genome for the species is the GenBank assembly RS_GCF_002008315.2. The GC content of the type genome is 66.13 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Arthrobacter luculax sp. nov.

Candidatus Arthrobacter luculax (NL. fem. n. *luculax* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter sp002892795*. The type genome for the species is the GenBank assembly RS_GCF_002892795.1. The GC content of the type genome is 65.88 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Arthrobacter omnimitoga sp. nov.

Candidatus Arthrobacter omnimitoga (NL. fem. n. *omnimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter sp002929275*. The type genome for the species is the GenBank assembly RS_GCF_002929275.1. The GC content of the type genome is 65.74 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Arthrobacter saxopibula sp. nov.

Candidatus Arthrobacter saxopibula (NL. fem. n. *saxopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter sp001428005*. The type genome for the species is the GenBank assembly RS_GCF_001428005.1. The GC content of the type genome is 65.45 % and the genome length is 5.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Arthrobacter vicecimonia sp. nov.

Candidatus Arthrobacter vicecimonia (NL. fem. n. *vicecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter sp001969265*. The type genome for the species is the GenBank assembly RS_GCF_001969265.1. The GC content of the type genome is 66.0 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Arthrobacter bonifitio sp. nov.

Candidatus Arthrobacter bonifitio (NL. fem. n. *bonifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_A sp002929705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002929705.1. The GC content of the type genome is 60.5 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Arthrobacter catobitica sp. nov.

Candidatus Arthrobacter catobitica (NL. fem. n. *catobitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_A sp013376095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013376095.1. The GC content of the type genome is 66.83 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Arthrobacter cicaritio sp. nov.

Candidatus Arthrobacter cicaritio (NL. fem. n. *cicaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_A sp002929305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002929305.1. The GC content of the type genome is 61.35 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Arthrobacter depopitura sp. nov.

Candidatus Arthrobacter depopitura (NL. fem. n. *depopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_A sp000785535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000785535.1. The GC content of the type genome is 62.79 % and the genome length is 4.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as

"environmental".

Description of *Candidatus* Arthrobacter ignobentia sp. nov.

Candidatus Arthrobacter ignobentia (NL. fem. n. *ignobentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_A sp001281315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001281315.1. The GC content of the type genome is 65.37 % and the genome length is 4.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "stream water".

Description of *Candidatus* Arthrobacter manomifica sp. nov.

Candidatus Arthrobacter manomifica (NL. fem. n. *manomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_A sp013376105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013376105.1. The GC content of the type genome is 67.28 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Arthrobacter oblucitia sp. nov.

Candidatus Arthrobacter oblucitia (NL. fem. n. *oblucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_A sp000482545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000482545.1. The GC content of the type genome is 66.82 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Arthrobacter rubecago sp. nov.

Candidatus Arthrobacter rubecago (NL. fem. n. *rubecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_A sp003946885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003946885.1. The GC content of the type genome is 68.83 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Arthrobacter televilega sp. nov.

Candidatus Arthrobacter televilega (NL. fem. n. *televilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_B sp002929435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002929385.1. The GC content of the type genome is 64.47 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Arthrobacter vocamimonas sp. nov.

Candidatus Arthrobacter vocamimonas (NL. fem. n. *vocamimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_B sp001307035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009696625.1. The GC content of the type genome is 64.85 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Arthrobacter xeramitudo sp. nov.

Candidatus Arthrobacter xeramitudo (NL. fem. n. *xeramitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_B sp007923395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009192775.1. The GC content of the type genome is 66.1 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Arthrobacter annubugo sp. nov.

Candidatus Arthrobacter annubugo (NL. fem. n. *annubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_C sp000520495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000520495.1. The GC content of the type genome is 62.16 % and the genome length is 4.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Arthrobacter adbelitrix sp. nov.

Candidatus Arthrobacter adbelitrix (NL. fem. n. *adbelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp004001285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004001285.1. The GC content of the type genome is 68.82 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Arthrobacter adsudatio sp. nov.

Candidatus Arthrobacter adsudatio (NL. fem. n. *adsudatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp002384315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002384315.1. The GC content of the type genome is 63.77 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Arthrobacter aggenitica sp. nov.

Candidatus Arthrobacter aggenitica (NL. fem. n. *aggenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Arthrobacter_D sp000520555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000520555.1. The GC content of the type genome is 65.98 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Arthrobacter benivousia sp. nov.

Candidatus Arthrobacter benivousia (NL. fem. n. *benivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp000816565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000816565.1. The GC content of the type genome is 69.85 % and the genome length is 3.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Water".

Description of *Candidatus* Arthrobacter cacalitrix sp. nov.

Candidatus Arthrobacter cacalitrix (NL. fem. n. *cacalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp003075455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000294595.1. The GC content of the type genome is 63.32 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sponge from Terra Nova Bay".

Description of *Candidatus* Arthrobacter ceraritia sp. nov.

Candidatus Arthrobacter ceraritia (NL. fem. n. *ceraritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp001187915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001187915.1. The GC

content of the type genome is 69.38 % and the genome length is 3.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "internal stem tissue".

Description of *Candidatus* Arthrobacter cibicimonia sp. nov.

Candidatus Arthrobacter cibicimonia (NL. fem. n. *cibicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp009828605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009828595.1. The GC content of the type genome is 67.98 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Arthrobacter depetitica sp. nov.

Candidatus Arthrobacter depetitica (NL. fem. n. *depetitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp001428435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001428435.1. The GC content of the type genome is 63.4 % and the genome length is 3.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Arthrobacter dilicitrix sp. nov.

Candidatus Arthrobacter dilicitrix (NL. fem. n. *dilicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp002929355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002929355.1. The GC content of the type genome is 68.8 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Arthrobacter evangatio sp. nov.

Candidatus Arthrobacter evangatio (NL. fem. n. *evangatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp002929375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002929375.1. The GC content of the type genome is 69.3 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Arthrobacter humecicula sp. nov.

Candidatus Arthrobacter humecicula (NL. fem. n. *humecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp000520595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000520595.1. The GC content of the type genome is 62.45 % and the genome length is 4.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Arthrobacter lenimivita sp. nov.

Candidatus Arthrobacter lenimivita (NL. fem. n. *lenimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp002929745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005281365.1. The GC content of the type genome is 67.55 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Arthrobacter macilivita sp. nov.

Candidatus Arthrobacter macilivita (NL. fem. n. *macilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp003602275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003602275.1. The GC

content of the type genome is 66.22 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Arthrobacter nicomivita sp. nov.

Candidatus Arthrobacter nicomivita (NL. fem. n. *nicomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp000520515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000520515.1. The GC content of the type genome is 62.87 % and the genome length is 3.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Arthrobacter obsorax sp. nov.

Candidatus Arthrobacter obsorax (NL. fem. n. *obsorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp002929295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002929295.1. The GC content of the type genome is 68.94 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Arthrobacter progritura sp. nov.

Candidatus Arthrobacter progritura (NL. fem. n. *progritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp000520535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000520535.1. The GC content of the type genome is 66.09 % and the genome length is 3.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Arthrobacter roruligena sp. nov.

Candidatus Arthrobacter roruligena (NL. fem. n. *roruligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp001422665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001422665.1. The GC content of the type genome is 69.4 % and the genome length is 3.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Arthrobacter rumificula sp. nov.

Candidatus Arthrobacter rumificula (NL. fem. n. *rumificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp003602285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902805515.1. The GC content of the type genome is 68.45 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Arthrobacter veridicula sp. nov.

Candidatus Arthrobacter veridicula (NL. fem. n. *veridicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp009728235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009728235.1. The GC content of the type genome is 67.42 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Arthrobacter vitupastra sp. nov.

Candidatus Arthrobacter vitupastra (NL. fem. n. *vitupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_D sp013116745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013116745.1. The GC content of the type genome is 64.36 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Arthrobacter ciminitas sp. nov.

Candidatus Arthrobacter ciminitas (NL. fem. n. *ciminitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_F sp012952295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012952295.1. The GC content of the type genome is 64.28 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Arthrobacter ignomago sp. nov.

Candidatus Arthrobacter ignomago (NL. fem. n. *ignomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_F sp012395835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012395835.1. The GC content of the type genome is 68.69 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Arthrobacter octacetta sp. nov.

Candidatus Arthrobacter octacetta (NL. fem. n. *octacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_F sp004000035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004000035.1. The GC content of the type genome is 65.93 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Arthrobacter vagabentia sp. nov.

Candidatus Arthrobacter vagabentia (NL. fem. n. *vagabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_F sp005047635*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005047635.1. The GC content of the type genome is 65.96 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Arthrobacter effigitura sp. nov.

Candidatus Arthrobacter effigitura (NL. fem. n. *effigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_G sp003614925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003614925.1. The GC content of the type genome is 67.04 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Arthrobacter vivifitas sp. nov.

Candidatus Arthrobacter vivifitas (NL. fem. n. *vivifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_G sp001766675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001766675.1. The GC content of the type genome is 66.58 % and the genome length is 4.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sludge".

Description of *Candidatus* Arthrobacter abrepitudo sp. nov.

Candidatus Arthrobacter abrepitudo (NL. fem. n. *abrepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp001428365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001428365.1. The GC content of the type genome is 68.94 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Arthrobacter adcelitica sp. nov.

Candidatus Arthrobacter adcelitica (NL. fem. n. *adcelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp004798705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004798705.1. The GC content of the type genome is 66.71 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Arthrobacter adnulessa sp. nov.

Candidatus Arthrobacter adnulessa (NL. fem. n. *adnulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp900102785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900102785.1. The GC content of the type genome is 66.29 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Arthrobacter adporatio sp. nov.

Candidatus Arthrobacter adporatio (NL. fem. n. *adporatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp007858535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007858535.1. The GC content of the type genome is 68.52 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Arthrobacter ammatatica sp. nov.

Candidatus Arthrobacter ammatatica (NL. fem. n. *ammatatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp005280255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_005280255.1. The GC content of the type genome is 65.07 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Arthrobacter arbavugo sp. nov.

Candidatus Arthrobacter arbavugo (NL. fem. n. *arbavugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp000685965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000685965.1. The GC content of the type genome is 65.8 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Arthrobacter arundisca sp. nov.

Candidatus Arthrobacter arundisca (NL. fem. n. *arundisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp001422645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001422645.1. The GC content of the type genome is 66.97 % and the genome length is 4.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Arthrobacter carecitudo sp. nov.

Candidatus Arthrobacter carecitudo (NL. fem. n. *carecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp000876655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000876655.1. The GC content of the type genome is 65.72 % and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "diesel contaminated soil".

Description of *Candidatus* Arthrobacter cisalisca sp. nov.

Candidatus Arthrobacter cisalisca (NL. fem. n. *cisalisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp001512305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001512305.1. The GC content of the type genome is 67.84 % and the genome length is 4.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "stem and leaf".

Description of *Candidatus* Arthrobacter decapicella sp. nov.

Candidatus Arthrobacter decapicella (NL. fem. n. *decapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp005937985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005937985.2. The GC content of the type genome is 67.92 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Arthrobacter defaledo sp. nov.

Candidatus Arthrobacter defaledo (NL. fem. n. *defaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp000196235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000196235.1. The GC content of the type genome is 65.39 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Arthrobacter delubitoga sp. nov.

Candidatus Arthrobacter delubitoga (NL. fem. n. *delubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp007679325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007679325.1. The GC content of the type genome is 67.17 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Arthrobacter domipessa sp. nov.

Candidatus Arthrobacter domipessa (NL. fem. n. *domipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp000374925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000620385.1. The GC content of the type genome is 67.16 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Arthrobacter ducililega sp. nov.

Candidatus Arthrobacter ducililega (NL. fem. n. *ducililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp009928425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009928425.1. The GC content of the type genome is 66.62 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Arthrobacter forabilenta sp. nov.

Candidatus Arthrobacter forabilenta (NL. fem. n. *forabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp003097355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900104405.1. The GC content of the type genome is 66.24 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Arthrobacter ignomibula sp. nov.

Candidatus Arthrobacter ignomibula (NL. fem. n. *ignomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp003352915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003352915.1. The GC content of the type genome is 67.93 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Arthrobacter lucubifica sp. nov.

Candidatus Arthrobacter lucubifica (NL. fem. n. *lucubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp900116495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900116495.1. The GC content of the type genome is 66.44 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Arthrobacter manomastra sp. nov.

Candidatus Arthrobacter manomastra (NL. fem. n. *manomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp000427315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000427315.1. The GC content of the type genome is 66.4 % and the genome length is 4.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sponge".

Description of *Candidatus* Arthrobacter masocitura sp. nov.

Candidatus Arthrobacter masocitura (NL. fem. n. *masocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp900102895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900102895.1. The GC content of the type genome is 66.47 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Arthrobacter obvolago sp. nov.

Candidatus Arthrobacter obvolago (NL. fem. n. *obvolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp013359735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013359735.1. The GC content of the type genome is 67.6 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Arthrobacter sacopivita sp. nov.

Candidatus Arthrobacter sacopivita (NL. fem. n. *sacopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp001750145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001750145.1. The GC content of the type genome is 66.34 % and the genome length is 4.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Lake Untersee".

Description of *Candidatus* Arthrobacter semapousia sp. nov.

Candidatus Arthrobacter semapousia (NL. fem. n. *semapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp002929335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002929335.1. The GC content of the type genome is 65.41 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Arthrobacter tubicilenta sp. nov.

Candidatus Arthrobacter tubicilenta (NL. fem. n. *tubicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp900168135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000520575.1. The GC content of the type genome is 67.0 % and the genome length is 4.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Arthrobacter vavasitica sp. nov.

Candidatus Arthrobacter vavasitica (NL. fem. n. *vavasitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Arthrobacter_I sp001423745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001423745.1. The GC content of the type genome is 65.4 % and the genome length is 5.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Artifaria ecfunentia sp. nov.

Candidatus Artifaria ecfunentia (NL. fem. n. *ecfunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPRB01 sp003818285*. The type genome for the species is the GenBank assembly GCA_003818285.1. The GC content of the type genome is 70.58 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Artifaria gen. nov.

Candidatus Artifaria (NL. fem. n. *Artifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPRB01*. The type species for the genus is *Candidatus* Artifaria ecfunentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artifia exorcicula sp. nov.

Candidatus Artifia exorcicula (NL. fem. n. *exorcicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NHYM01 sp003288815*. The type genome for the species is the GenBank assembly RS_GCF_003288815.1. The GC content of the type genome is 33.27 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Artifia gen. nov.

Candidatus Artifia (NL. fem. n. *Artifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NHYM01*. The type species for the genus is *Candidatus* Artifia exorcicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artifia hexamitas sp. nov.

Candidatus Artifia hexamitas (NL. fem. n. *hexamitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NHYM01 sp003364295*. The type genome for the species is the GenBank assembly RS_GCF_003364295.1. The GC content of the type genome is 29.39 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Artifida paropitudo sp. nov.

Candidatus Artifida paropitudo (NL. fem. n. *paropitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVQL01 sp002067205*. The type genome for the species is the GenBank assembly GCA_002067205.1. The GC content of the type genome is 46.52 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Artifida gen. nov.

Candidatus Artifida (NL. fem. n. *Artifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MVQL01*. The type species for the genus is *Candidatus* Artifida

paropitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artifosa unetvetta sp. nov.

Candidatus Artifosa unetvetta (NL. fem. n. *unetvetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-202 sp007116995*. The type genome for the species is the GenBank assembly GCA_007116995.1. The GC content of the type genome is 43.75 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Artifosa gen. nov.

Candidatus Artifosa (NL. fem. n. *Artifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBR16-202*. The type species for the genus is *Candidatus* Artifosa unetvetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU012*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homolellaceae.

Description of *Candidatus* Artilana diponitudo sp. nov.

Candidatus Artilana diponitudo (NL. fem. n. *diponitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HA3dbin3 sp002753495*. The type genome for the species is the GenBank assembly GCA_002753495.1. The GC content of the type genome is 61.72 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Artilana gen. nov.

Candidatus Artilana (NL. fem. n. *Artilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HA3dbin3*. The type species for the genus is *Candidatus* Artilana diponitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DC0425bin3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cunabidaceae.

Description of *Candidatus* Artilaria pocilitudo sp. nov.

Candidatus Artilaria pocilitudo (NL. fem. n. *pocilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-157 sp003554535*. The type genome for the species is the GenBank assembly GCA_003554535.1. The GC content of the type genome is 41.17 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Artilaria gen. nov.

Candidatus Artilaria (NL. fem. n. *Artilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1SED10-157*. The type species for the genus is *Candidatus* Artilaria pocilitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWGO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenodiaceae.

Description of *Candidatus* Artilella adposibra sp. nov.

Candidatus Artilella adposibra (NL. fem. n. *adposibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAV01 sp009784625*. The type genome for the species is the GenBank assembly GCA_009784625.1. The GC content of the type genome is 53.97 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Artilella gen. nov.

Candidatus Artilella (NL. fem. n. *Artilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAV01*. The type species for the genus is *Candidatus* Artilella

adposibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artilella defunivita sp. nov.

Candidatus Artilella defunivita (NL. fem. n. *defunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAV01 sp009777635*. The type genome for the species is the GenBank assembly GCA_009777635.1. The GC content of the type genome is 50.1 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Artilella innasibula sp. nov.

Candidatus Artilella innasibula (NL. fem. n. *innasibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAV01 sp009780025*. The type genome for the species is the GenBank assembly GCA_009780025.1. The GC content of the type genome is 53.28 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Artilella menapimonia sp. nov.

Candidatus Artilella menapimonia (NL. fem. n. *menapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAV01 sp009776345*. The type genome for the species is the GenBank assembly GCA_009776345.1. The GC content of the type genome is 53.67 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Artilida nefarifica sp. nov.

Candidatus Artilida nefarifica (NL. fem. n. *nefarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS-M25 sp009866805*. The type genome for the species is the GenBank assembly RS_GCF_009866805.1. The GC content of the type genome is 62.26 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Artilida gen. nov.

Candidatus Artilida (NL. fem. n. *Artilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KS-M25*. The type species for the genus is *Candidatus* Artilida nefarifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artilula abpatitoga sp. nov.

Candidatus Artilula abpatitoga (NL. fem. n. *abpatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYLJ01 sp012521935*. The type genome for the species is the GenBank assembly GCA_012521935.1. The GC content of the type genome is 33.57 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Artilula gen. nov.

Candidatus Artilula (NL. fem. n. *Artilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYLJ01*. The type species for the genus is *Candidatus* Artilula abpatitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1877*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosidosaceae.

Description of *Candidatus* Artocaria antomitoga sp. nov.

Candidatus Artocaria antomitoga (NL. fem. n. *antomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2794515 sp002794515*. The type genome for the species is the GenBank assembly GCA_002794515.1. The GC content of the type genome is 48.07 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Artocaria gen. nov.

Candidatus Artocaria (NL. fem. n. *Artocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2794515*. The type species for the genus is *Candidatus* Artocaria antomitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Artocia bovicitrix sp. nov.

Candidatus Artocia bovicitrix (NL. fem. n. *bovicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-178 sp003170915*. The type genome for the species is the GenBank assembly GCA_003170915.1. The GC content of the type genome is 62.93 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Artocia gen. nov.

Candidatus Artocia (NL. fem. n. *Artocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-178*. The type species for the genus is *Candidatus* Artocia bovicitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artocia detecousia sp. nov.

Candidatus Artocia detecousia (NL. fem. n. *detecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-178 sp003142355*. The type genome for the species is the GenBank assembly GCA_003142355.1. The GC content of the type genome is 62.99 % and the genome length is 6.56 Mbp.

Description of *Candidatus* Artocosa infesitica sp. nov.

Candidatus Artocosa infesitica (NL. fem. n. *infesitica* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FJAT-45350 sp002335805*. The type genome for the species is the GenBank assembly RS_GCF_002335805.1. The GC content of the type genome is 36.16 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Artocosa gen. nov.

Candidatus Artocosa (NL. fem. n. *Artocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FJAT-45350*. The type species for the genus is *Candidatus* Artocosa infesitica .

According to GTDB R06-RS202, this genus belongs to the family _F.

Description of *Candidatus* Artocula acontousia sp. nov.

Candidatus Artocula acontousia (NL. fem. n. *acontousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6078 sp002428735*. The type genome for the species is the GenBank assembly GCA_002428735.1. The GC content of the type genome is 54.29 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Artocula gen. nov.

Candidatus Artocula (NL. fem. n. *Artocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6078*. The type species for the genus is *Candidatus* Artocula acontousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2210*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Haricanaceae.

Description of *Candidatus* Artolana extorilega sp. nov.

Candidatus Artolana extorilega (NL. fem. n. *extorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM04792 sp900770705*. The type genome for the species is the GenBank assembly RS_GCF_900770705.1. The GC content of the type genome is 56.97 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Artolana gen. nov.

Candidatus Artolana (NL. fem. n. *Artolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM04792*. The type species for the genus is *Candidatus* Artolana extorilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artolaria effunugo sp. nov.

Candidatus Artolaria effunugo (NL. fem. n. *effunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXWW01 sp013334765*. The type genome for the species is the GenBank assembly GCA_013334765.1. The GC content of the type genome is 46.2 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Artolaria gen. nov.

Candidatus Artolaria (NL. fem. n. *Artolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXWW01*. The type species for the genus is *Candidatus* Artolaria effunugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Artolella appicatio sp. nov.

Candidatus Artolella appicatio (NL. fem. n. *appicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DE0126 sp007679095*. The type genome for the species is the GenBank assembly RS_GCF_007679095.1. The GC content of the type genome is 36.16 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Artolella gen. nov.

Candidatus Artolella (NL. fem. n. *Artolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DE0126*. The type species for the genus is *Candidatus* Artolella appicatio .

According to GTDB R06-RS202, this genus belongs to the family _C.

Description of *Candidatus* Artolosa pabilatica sp. nov.

Candidatus Artolosa pabilatica (NL. fem. n. *pabilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5314 sp002410325*. The type genome for the species is the GenBank assembly GCA_002410325.1. The GC content of the type genome is 49.86 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Artolosa gen. nov.

Candidatus Artolosa (NL. fem. n. *Artolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5314*. The type species for the genus is *Candidatus* Artolosa pabilatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artolula detesessa sp. nov.

Candidatus Artolula detesessa (NL. fem. n. *detesessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-M05 sp003215435*. The type genome for the species is the

GenBank assembly GCA_003215435.1. The GC content of the type genome is 40.7 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Artolula gen. nov.

Candidatus Artolula (NL. fem. n. *Artolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-M05*. The type species for the genus is *Candidatus* Artolula detesessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artopana absoritrix sp. nov.

Candidatus Artopana absoritrix (NL. fem. n. *absoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GN02-873 sp003260345*. The type genome for the species is the GenBank assembly GCA_003260345.1. The GC content of the type genome is 36.57 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Artopana gen. nov.

Candidatus Artopana (NL. fem. n. *Artopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GN02-873*. The type species for the genus is *Candidatus* Artopana absoritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visifosaceae.

Description of *Candidatus* Artopana adpecitoga sp. nov.

Candidatus Artopana adpecitoga (NL. fem. n. *adpecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GN02-873 sp002747975*. The type genome for the species is the GenBank assembly GCA_002747975.1. The GC content of the type genome is 35.46 %

and the genome length is 0.98 Mbp.

Description of *Candidatus* Artopana apporetta sp. nov.

Candidatus Artopana apporetta (NL. fem. n. *apporetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GN02-873 sp013332525*. The type genome for the species is the GenBank assembly GCA_013332525.2. The GC content of the type genome is 37.02 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Artopella arbavibra sp. nov.

Candidatus Artopella arbavibra (NL. fem. n. *arbavibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch71 sp013178015*. The type genome for the species is the GenBank assembly GCA_013178015.1. The GC content of the type genome is 65.95 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Artopella gen. nov.

Candidatus Artopella (NL. fem. n. *Artopella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch71*. The type species for the genus is *Candidatus* Artopella arbavibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRVO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momorariaceae.

Description of *Candidatus* Artopia adoscimonas sp. nov.

Candidatus Artopia adoscimonas (NL. fem. n. *adoscimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-116 sp003229115*. The type genome for the species is the GenBank assembly GCA_003229115.1. The GC content of the type genome is 45.94 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Artopia gen. nov.

Candidatus Artopia (NL. fem. n. *Artopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-116*. The type species for the genus is *Candidatus* Artopia adoscimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-229*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunanaceae.

Description of *Candidatus* Artopida incoritrix sp. nov.

Candidatus Artopida incoritrix (NL. fem. n. *incoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBr16-57R1 sp007116505*. The type genome for the species is the GenBank assembly GCA_007116505.1. The GC content of the type genome is 73.24 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Artopida gen. nov.

Candidatus Artopida (NL. fem. n. *Artopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBr16-57R1*. The type species for the genus is *Candidatus* Artopida incoritrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artoposa errabibula sp. nov.

Candidatus Artoposa errabibula (NL. fem. n. *errabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B12-G4 sp003641745*. The type genome for the species is the GenBank assembly GCA_003641745.1. The GC content of the type genome is 58.28 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Artoposa gen. nov.

Candidatus Artoposa (NL. fem. n. *Artoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B12-G4*. The type species for the genus is *Candidatus* Artoposa errabibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artufaria inpudicula sp. nov.

Candidatus Artufaria inpudicula (NL. fem. n. *inpudicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077541 sp001464995*. The type genome for the species is the GenBank assembly GCA_001464995.1. The GC content of the type genome is 73.85 % and the genome length is 3.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Artufaria gen. nov.

Candidatus Artufaria (NL. fem. n. *Artufaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077541*. The type species for the genus is *Candidatus* Artufaria inpudicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077560*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadurellaceae.

Description of *Candidatus* Artufella adtolibra sp. nov.

Candidatus Artufella adtolibra (NL. fem. n. *adtolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB15 sp013360465*. The type genome for the species is the GenBank assembly GCA_013360465.1. The GC content of the type genome is 61.88 % and the genome length is 5.93 Mbp.

Description of *Candidatus* Artufella gen. nov.

Candidatus Artufella (NL. fem. n. *Artufella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB15*. The type species for the genus is *Candidatus* Artufella adtolibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Artufella andabiforma sp. nov.

Candidatus Artufella andabiforma (NL. fem. n. *andabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB15 sp010092805*. The type genome for the species is the GenBank assembly GCA_010092805.1. The GC content of the type genome is 61.67 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Artufella oppanitia sp. nov.

Candidatus Artufella oppanitia (NL. fem. n. *oppanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB15 sp011047115*. The type genome for the species is the GenBank assembly GCA_011047115.1. The GC content of the type genome is 54.81 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Artufella sacomax sp. nov.

Candidatus Artufella sacomax (NL. fem. n. *sacomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB15 sp001567085*. The type genome for the species is the GenBank assembly GCA_001567085.1. The GC content of the type genome is 54.66 % and the genome length is 3.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato

processing industry".

Description of *Candidatus* Artufia infunivita sp. nov.

Candidatus Artufia infunivita (NL. fem. n. *infunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRHT01 sp009782775*. The type genome for the species is the GenBank assembly GCA_009782775.1. The GC content of the type genome is 58.18 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Artufia gen. nov.

Candidatus Artufia (NL. fem. n. *Artufia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRHT01*. The type species for the genus is *Candidatus* Artufia infunivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artufia verifilega sp. nov.

Candidatus Artufia verifilega (NL. fem. n. *verifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRHT01 sp009783115*. The type genome for the species is the GenBank assembly GCA_009783115.1. The GC content of the type genome is 58.14 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Artufida gen. nov.

Candidatus Artufida (NL. fem. n. *Artufida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVQ01*. The type species for the genus is *Candidatus* Artufida paludicola_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Artufosa velifigena sp. nov.

Candidatus Artufosa velifigena (NL. fem. n. *velifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA924 sp002293725*. The type genome for the species is the GenBank assembly GCA_002293725.1. The GC content of the type genome is 44.72 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Artufosa gen. nov.

Candidatus Artufosa (NL. fem. n. *Artufosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA924*. The type species for the genus is *Candidatus* Artufosa velifigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Arundana inexsastra sp. nov.

Candidatus Arundana inexsastra (NL. fem. n. *inexsastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PMNU01 sp002952755*. The type genome for the species is the GenBank assembly RS_GCF_002952755.1. The GC content of the type genome is 49.95 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Arundana gen. nov.

Candidatus Arundana (NL. fem. n. *Arundana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PMNU01*. The type species for the genus is *Candidatus* Arundana inexsastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Arundaria bicorugo sp. nov.

Candidatus Arundaria bicorugo (NL. fem. n. *bicorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCQ01 sp013288075*. The type genome for the species is the GenBank assembly GCA_013288075.1. The GC content of the type genome is 39.28 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Arundaria gen. nov.

Candidatus Arundaria (NL. fem. n. *Arundaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCQ01*. The type species for the genus is *Candidatus* Arundaria bicorugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arundella devecimonia sp. nov.

Candidatus Arundella devecimonia (NL. fem. n. *devecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *K2R23-3 sp003595195*. The type genome for the species is the GenBank assembly RS_GCF_003595195.1. The GC content of the type genome is 39.79 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Arundella gen. nov.

Candidatus Arundella (NL. fem. n. *Arundella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *K2R23-3*. The type species for the genus is *Candidatus* Arundella devecimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arundia curabitudo sp. nov.

Candidatus Arundia curabitudo (NL. fem. n. *curabitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPM01 sp012838315*. The type genome for the species is the GenBank assembly GCA_012838315.1. The GC content of the type genome is 45.71 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Arundia gen. nov.

Candidatus Arundia (NL. fem. n. *Arundia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPM01*. The type species for the genus is *Candidatus* Arundia curabitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arundia expecessa sp. nov.

Candidatus Arundia expecessa (NL. fem. n. *expecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPM01 sp012718915*. The type genome for the species is the GenBank assembly GCA_012718915.1. The GC content of the type genome is 44.89 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Arundosa abascetta sp. nov.

Candidatus Arundosa abascetta (NL. fem. n. *abascetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN39 sp002898955*. The type genome for the species is the GenBank assembly GCA_002898955.1. The GC content of the type genome is 72.63 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Arundosa gen. nov.

Candidatus Arundosa (NL. fem. n. *Arundosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *HRBIN39*. The type species for the genus is *Candidatus* Arundosa abascetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arundula visibibula sp. nov.

Candidatus Arundula visibibula (NL. fem. n. *visibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCJ01 sp009784085*. The type genome for the species is the GenBank assembly GCA_009784085.1. The GC content of the type genome is 58.82 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Arundula gen. nov.

Candidatus Arundula (NL. fem. n. *Arundula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRCJ01*. The type species for the genus is *Candidatus* Arundula visibibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aruspana dehonifica sp. nov.

Candidatus Aruspana dehonifica (NL. fem. n. *dehonifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADBNZ01 sp902796155*. The type genome for the species is the GenBank assembly GCA_902796155.1. The GC content of the type genome is 37.8 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Aruspana gen. nov.

Candidatus Aruspana (NL. fem. n. *Aruspana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADBNZ01*. The type species for the genus is *Candidatus* Aruspana dehonifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3830*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Parocellaceae.

Description of *Candidatus* Arusparia cobalitio sp. nov.

Candidatus Arusparia cobalitio (NL. fem. n. *cobalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2720125 sp002720125*. The type genome for the species is the GenBank assembly GCA_002720125.1. The GC content of the type genome is 30.04 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Arusparia gen. nov.

Candidatus Arusparia (NL. fem. n. *Arusparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2720125*. The type species for the genus is *Candidatus* Arusparia cobalitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citoculaceae.

Description of *Candidatus* Aruspella monodessa sp. nov.

Candidatus Aruspella monodessa (NL. fem. n. *monodessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002840305 sp002840305*. The type genome for the species is the GenBank assembly GCA_002840305.1. The GC content of the type genome is 32.96 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Aruspella gen. nov.

Candidatus Aruspella (NL. fem. n. *Aruspella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002840305*. The type species for the genus is *Candidatus*

Aruspella monodessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Aruspida videlitoga sp. nov.

Candidatus Aruspida videlitoga (NL. fem. n. *videlitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZBY01 sp012513595*. The type genome for the species is the GenBank assembly GCA_012513595.1. The GC content of the type genome is 69.07 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Aruspida gen. nov.

Candidatus Aruspida (NL. fem. n. *Aruspida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZBY01*. The type species for the genus is *Candidatus* Aruspida videlitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Aruspula chernessa sp. nov.

Candidatus Aruspula chernessa (NL. fem. n. *chernessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1305 sp002307275*. The type genome for the species is the GenBank assembly GCA_002307275.1. The GC content of the type genome is 43.51 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Aruspula gen. nov.

Candidatus Aruspula (NL. fem. n. *Aruspula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA1305*. The type species for the genus is *Candidatus* Aruspula chernessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arvecia acrotitudo sp. nov.

Candidatus Arvecia acrotitudo (NL. fem. n. *acrotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSBN01 sp011046055*. The type genome for the species is the GenBank assembly GCA_011046055.1. The GC content of the type genome is 55.48 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Arvecia gen. nov.

Candidatus Arvecia (NL. fem. n. *Arvecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSBN01*. The type species for the genus is *Candidatus* Arvecia acrotitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arvecida obsigitoga sp. nov.

Candidatus Arvecida obsigitoga (NL. fem. n. *obsigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721105 sp002721105*. The type genome for the species is the GenBank assembly GCA_002721105.1. The GC content of the type genome is 41.28 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Arvecida gen. nov.

Candidatus Arvecida (NL. fem. n. *Arvecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2721105*. The type species for the genus is *Candidatus* Arvecida obsigitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA868*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotanaceae.

Description of *Candidatus* Arvecosa oblocisca sp. nov.

Candidatus Arvecosa oblocisca (NL. fem. n. *oblocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2791 sp002352105*. The type genome for the species is the GenBank assembly GCA_002352105.1. The GC content of the type genome is 48.33 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Arvecosa gen. nov.

Candidatus Arvecosa (NL. fem. n. *Arvecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2791*. The type species for the genus is *Candidatus* Arvecosa oblocisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Arvecosa semapitudo sp. nov.

Candidatus Arvecosa semapitudo (NL. fem. n. *semapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2791 sp014379345*. The type genome for the species is the GenBank assembly GCA_014379345.1. The GC content of the type genome is 41.25 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Arvecula insenitica sp. nov.

Candidatus Arvecula insenitica (NL. fem. n. *insenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCM-19050 sp001310455*. The type genome for the species is the GenBank assembly RS_GCF_001310455.1. The GC content of the type genome is 50.1

% and the genome length is 5.44 Mbp.

Description of *Candidatus* Arvecula gen. nov.

Candidatus Arvecula (NL. fem. n. *Arvecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JCM-19050*. The type species for the genus is *Candidatus* Arvecula insenitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Asaia semigastra sp. nov.

Candidatus Asaia semigastra (NL. fem. n. *semigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Asaia sp003994335*. The type genome for the species is the GenBank assembly RS_GCF_003994335.1. The GC content of the type genome is 60.36 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Asbesana extunessa sp. nov.

Candidatus Asbesana extunessa (NL. fem. n. *extunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-I11 sp003215725*. The type genome for the species is the GenBank assembly GCA_003215725.1. The GC content of the type genome is 37.56 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Asbesana gen. nov.

Candidatus Asbesana (NL. fem. n. *Asbesana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-I11*. The type species for the genus is *Candidatus* Asbesana extunessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Asbesella adsuditoga sp. nov.

Candidatus Asbesella adsuditoga (NL. fem. n. *adsuditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11237 sp902767135*. The type genome for the species is the GenBank assembly GCA_902767135.1. The GC content of the type genome is 38.74 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Asbesella gen. nov.

Candidatus Asbesella (NL. fem. n. *Asbesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11237*. The type species for the genus is *Candidatus* Asbesella adsuditoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Asbesia recomitoga sp. nov.

Candidatus Asbesia recomitoga (NL. fem. n. *recomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDGH01 sp013815395*. The type genome for the species is the GenBank assembly GCA_013815395.1. The GC content of the type genome is 38.36 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Asbesia gen. nov.

Candidatus Asbesia (NL. fem. n. *Asbesia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDGH01*. The type species for the genus is *Candidatus* Asbesia recomitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Asbesida acrotetta sp. nov.

Candidatus Asbesida acrotetta (NL. fem. n. *acrotetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8130 sp003509305*. The type genome for the species is the GenBank assembly GCA_003509305.1. The GC content of the type genome is 56.07 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Asbesida gen. nov.

Candidatus Asbesida (NL. fem. n. *Asbesida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8130*. The type species for the genus is *Candidatus* Asbesida acrotetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Asbesula inrelitia sp. nov.

Candidatus Asbesula inrelitia (NL. fem. n. *inrelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7706 sp002482465*. The type genome for the species is the GenBank assembly GCA_002482465.1. The GC content of the type genome is 39.52 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Asbesula gen. nov.

Candidatus Asbesula (NL. fem. n. *Asbesula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7706*. The type species for the genus is *Candidatus* Asbesula inrelitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Ascalaria odollilega sp. nov.

Candidatus Ascalaria odollilega (NL. fem. n. *odollilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11523 sp900756545*. The type genome for the species is the GenBank assembly RS_GCF_900756545.1. The GC content of the type genome is 45.29 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Ascalaria gen. nov.

Candidatus Ascalaria (NL. fem. n. *Ascalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11523*. The type species for the genus is *Candidatus* Ascalaria odollilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilosaceae.

Description of *Candidatus* Ascalella desoratica sp. nov.

Candidatus Ascalella desoratica (NL. fem. n. *desoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINWJ01 sp903854455*. The type genome for the species is the GenBank assembly GCA_903854455.1. The GC content of the type genome is 53.7 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Ascalella gen. nov.

Candidatus Ascalella (NL. fem. n. *Ascalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINWJ01*. The type species for the genus is *Candidatus* Ascalella desoratica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascalia depupedo sp. nov.

Candidatus Ascalia depupedo (NL. fem. n. *depupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAUSG01 sp012034055*. The type genome for the species is the GenBank assembly GCA_012034055.1. The GC content of the type genome is 50.65 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Ascalia gen. nov.

Candidatus Ascalia (NL. fem. n. *Ascalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUSG01*. The type species for the genus is *Candidatus* Ascalia depupedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascalida grallimonia sp. nov.

Candidatus Ascalida grallimonia (NL. fem. n. *grallimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1375 sp002305795*. The type genome for the species is the GenBank assembly GCA_002305795.1. The GC content of the type genome is 55.4 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Ascalida gen. nov.

Candidatus Ascalida (NL. fem. n. *Ascalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1375*. The type species for the genus is *Candidatus* Ascalida grallimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascalosa cerucigena sp. nov.

Candidatus Ascalosa cerucigena (NL. fem. n. *cerucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAN01 sp012719345*. The type genome for the species is the GenBank assembly GCA_012719345.1. The GC content of the type genome is 35.14 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Ascalosa gen. nov.

Candidatus Ascalosa (NL. fem. n. *Ascalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAN01*. The type species for the genus is *Candidatus* Ascalosa cerucigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascelana ammigitia sp. nov.

Candidatus Ascelana ammigitia (NL. fem. n. *ammigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIC37A-2 sp002085155*. The type genome for the species is the GenBank assembly GCA_002085155.1. The GC content of the type genome is 63.75 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Ascelana gen. nov.

Candidatus Ascelana (NL. fem. n. *Ascelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NIC37A-2*. The type species for the genus is *Candidatus* Ascelana ammigitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascelana depacatio sp. nov.

Candidatus Ascelana depacatio (NL. fem. n. *depacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIC37A-2 sp012514535*. The type genome for the species is the GenBank assembly GCA_012514535.1. The GC content of the type genome is 70.35 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Ascelaria arnacentia sp. nov.

Candidatus Ascelaria arnacentia (NL. fem. n. *arnacentia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTD01 sp012518115*. The type genome for the species is the GenBank assembly GCA_012518115.1. The GC content of the type genome is 31.39 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Ascelaria gen. nov.

Candidatus Ascelaria (NL. fem. n. *Ascelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYTD01*. The type species for the genus is *Candidatus* Ascelaria arnacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Ascelella amercicella sp. nov.

Candidatus Ascelella amercicella (NL. fem. n. *amercicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVX01 sp009785615*. The type genome for the species is the GenBank assembly GCA_009785615.1. The GC content of the type genome is 38.1 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Ascelella gen. nov.

Candidatus Ascelella (NL. fem. n. *Ascelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVX01*. The type species for the genus is *Candidatus* Ascelella amercicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Ascelia conigilenta sp. nov.

Candidatus Ascelia conigilenta (NL. fem. n. *conigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMQX01 sp014376765*. The type genome for the species is the GenBank assembly GCA_014376765.1. The GC content of the type genome is 63.34 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Ascelia gen. nov.

Candidatus Ascelia (NL. fem. n. *Ascelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMQX01*. The type species for the genus is *Candidatus* Ascelia conigilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascelia excalago sp. nov.

Candidatus Ascelia excalago (NL. fem. n. *excalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMQX01 sp013297875*. The type genome for the species is the GenBank assembly GCA_013297875.1. The GC content of the type genome is 60.66 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Ascelida armifisca sp. nov.

Candidatus Ascelida armifisca (NL. fem. n. *armifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMPA01 sp014377695*. The type genome for the species is the GenBank assembly GCA_014377695.1. The GC content of the type genome is 48.49 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Ascelida gen. nov.

Candidatus Ascelida (NL. fem. n. *Ascelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMPA01*. The type species for the genus is *Candidatus* Ascelida armifisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Ascelida illepilega sp. nov.

Candidatus Ascelida illepilega (NL. fem. n. *illepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMPA01 sp013289705*. The type genome for the species is the GenBank assembly GCA_013289705.1. The GC content of the type genome is 47.97 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Ascelula problimonas sp. nov.

Candidatus Ascelula problimonas (NL. fem. n. *problimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM10836 sp900772095*. The type genome for the species is the GenBank assembly RS_GCF_900772095.1. The GC content of the type genome is 31.81 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Ascelula gen. nov.

Candidatus Ascelula (NL. fem. n. *Ascelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM10836*. The type species for the genus is *Candidatus* Ascelula problimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Ascenana arrabicula sp. nov.

Candidatus Ascenana arrabicula (NL. fem. n. *arrabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDAI01 sp013289195*. The type genome for the species is the GenBank assembly GCA_013289195.1. The GC content of the type genome is 35.53 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Ascenana gen. nov.

Candidatus Ascenana (NL. fem. n. *Ascenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDAI01*. The type species for the genus is *Candidatus* Ascenana arrabicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-43-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forinanaceae.

Description of *Candidatus* Ascenaria almucedo sp. nov.

Candidatus Ascenaria almucedo (NL. fem. n. *almucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHK01 sp013297565*. The type genome for the species is the GenBank assembly GCA_013297565.1. The GC content of the type genome is 38.85 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Ascenaria gen. nov.

Candidatus Ascenaria (NL. fem. n. *Ascenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHK01*. The type species for the genus is *Candidatus* Ascenaria almucedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascenella colapitica sp. nov.

Candidatus Ascenella colapitica (NL. fem. n. *colapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOU01 sp012838685*. The type genome for the species is the GenBank assembly GCA_012838685.1. The GC content of the type genome is 43.48 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Ascenella gen. nov.

Candidatus Ascenella (NL. fem. n. *Ascenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOU01*. The type species for the genus is *Candidatus* Ascenella colapitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VadinHA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categariaceae.

Description of *Candidatus* Ascenia adnumedo sp. nov.

Candidatus Ascenia adnumedo (NL. fem. n. *adnumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSEL01 sp008012315*. The type genome for the species is the GenBank assembly GCA_008012315.1. The GC content of the type genome is 61.26 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Ascenia gen. nov.

Candidatus Ascenia (NL. fem. n. *Ascenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSEL01*. The type species for the genus is *Candidatus* Ascenia adnumedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascenida algifigena sp. nov.

Candidatus Ascenida algifigena (NL. fem. n. *algifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WFHF3C12 sp013519935*. The type genome for the species is the GenBank assembly GCA_013519935.1. The GC content of the type genome is 66.47 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Ascenida gen. nov.

Candidatus Ascenida (NL. fem. n. *Ascenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WFHF3C12*. The type species for the genus is *Candidatus* Ascenida algifigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascenosa antecitura sp. nov.

Candidatus Ascenosa antecitura (NL. fem. n. *antecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066_A sp002308255*. The type genome for the species is the GenBank assembly GCA_002308255.1. The GC content of the type genome is 54.07 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Ascenosa gen. nov.

Candidatus Ascenosa (NL. fem. n. *Ascenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1066_A*. The type species for the genus is *Candidatus* Ascenosa antecitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascenula bicubiforma sp. nov.

Candidatus Ascenula bicubiforma (NL. fem. n. *bicubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCA01 sp009784275*. The type genome for the species is the GenBank assembly GCA_009784275.1. The GC content of the type genome is 44.48 %

and the genome length is 0.89 Mbp.

Description of *Candidatus* Ascenula gen. nov.

Candidatus Ascenula (NL. fem. n. *Ascenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRCA01*. The type species for the genus is *Candidatus* Ascenula bicubiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Rs-D84*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delapiaceae.

Description of *Candidatus* Ascenula exsuritia sp. nov.

Candidatus Ascenula exsuritia (NL. fem. n. *exsuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCA01 sp009783145*. The type genome for the species is the GenBank assembly GCA_009783145.1. The GC content of the type genome is 50.07 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Ascidiaceihabitans scellivita sp. nov.

Candidatus Ascidiaceihabitans scellivita (NL. fem. n. *scellivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ascidiaceihabitans sp002478745*. The type genome for the species is the GenBank assembly GCA_002478745.1. The GC content of the type genome is 51.56 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Ascisana bonifibra sp. nov.

Candidatus Ascisana bonifibra (NL. fem. n. *bonifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXDG01 sp003565105*. The type genome for the species is the GenBank assembly GCA_003565105.1. The GC content of the type genome is 39.66 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Ascisana gen. nov.

Candidatus Ascisana (NL. fem. n. *Ascisana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXDG01*. The type species for the genus is *Candidatus* Ascisana bonifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SW-4-49-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catagidaceae.

Description of *Candidatus* Ascisaria manibousia sp. nov.

Candidatus Ascisaria manibousia (NL. fem. n. *manibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWCH01 sp002069945*. The type genome for the species is the GenBank assembly GCA_002069945.1. The GC content of the type genome is 40.76 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Ascisaria gen. nov.

Candidatus Ascisaria (NL. fem. n. *Ascisaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCH01*. The type species for the genus is *Candidatus* Ascisaria manibousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-40-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifellaceae.

Description of *Candidatus* Ascisella abluvilenta sp. nov.

Candidatus Ascisella abluvilenta (NL. fem. n. *abluvilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2834 sp002371895*. The type genome for the species is the GenBank assembly GCA_002371895.1. The GC content of the type genome is 45.38 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Ascisella gen. nov.

Candidatus Ascisella (NL. fem. n. *Ascisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2834*. The type species for the genus is *Candidatus* Ascisella abluvilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascisella alsidimonia sp. nov.

Candidatus Ascisella alsidimonia (NL. fem. n. *alsidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2834 sp004561445*. The type genome for the species is the GenBank assembly GCA_004561445.1. The GC content of the type genome is 44.17 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Ascisella argimitia sp. nov.

Candidatus Ascisella argimitia (NL. fem. n. *argimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2834 sp002351365*. The type genome for the species is the GenBank assembly GCA_002351365.1. The GC content of the type genome is 45.26 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Ascisella cimitax sp. nov.

Candidatus Ascisella cimitax (NL. fem. n. *cimitax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2834 sp009783305*. The type genome for the species is the GenBank assembly GCA_009783305.1. The GC content of the type genome is 47.53 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Ascisella ensigitrix sp. nov.

Candidatus Ascisella ensigitrix (NL. fem. n. *ensigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2834 sp002391075*. The type genome for the species is the GenBank assembly GCA_002391075.1. The GC content of the type genome is 48.78 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Ascisella immatibula sp. nov.

Candidatus Ascisella immatibula (NL. fem. n. *immatibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2834 sp002363515*. The type genome for the species is the GenBank assembly GCA_002363515.1. The GC content of the type genome is 43.38 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Ascisella perexedo sp. nov.

Candidatus Ascisella perexedo (NL. fem. n. *perexedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2834 sp002361425*. The type genome for the species is the GenBank assembly GCA_002361425.1. The GC content of the type genome is 46.07 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Ascisia abreligena sp. nov.

Candidatus Ascisia abreligena (NL. fem. n. *abreligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCB01 sp012744395*. The type genome for the species is the GenBank assembly GCA_012744395.1. The GC content of the type genome is 66.02 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Ascisia gen. nov.

Candidatus Ascisia (NL. fem. n. *Ascisia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYCB01*. The type species for the genus is *Candidatus* Ascisia

abreligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascisosa ludibilenta sp. nov.

Candidatus Ascisosa ludibilenta (NL. fem. n. *ludibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAAGED01 sp900768505*. The type genome for the species is the GenBank assembly RS_GCF_900768505.1. The GC content of the type genome is 46.42 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Ascisosa gen. nov.

Candidatus Ascisosa (NL. fem. n. *Ascisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAAGED01*. The type species for the genus is *Candidatus* Ascisosa ludibilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ascisula indidastra sp. nov.

Candidatus Ascisula indidastra (NL. fem. n. *indidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEDH01 sp902826025*. The type genome for the species is the GenBank assembly GCA_902826025.1. The GC content of the type genome is 71.03 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Ascisula gen. nov.

Candidatus Ascisula (NL. fem. n. *Ascisula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEDH01*. The type species for the genus is *Candidatus* Ascisula indidastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SZUA-35. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipatosaceae.

Description of *Candidatus* Aseptana butubivita sp. nov.

Candidatus Aseptana butubivita (NL. fem. n. *butubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEGZ01 sp013286785*. The type genome for the species is the GenBank assembly GCA_013286785.1. The GC content of the type genome is 42.03 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Aseptana gen. nov.

Candidatus Aseptana (NL. fem. n. *Aseptana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEGZ01*. The type species for the genus is *Candidatus* Aseptana butubivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6186*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laniganaceae.

Description of *Candidatus* Aseptana indiribula sp. nov.

Candidatus Aseptana indiribula (NL. fem. n. *indiribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEGZ01 sp902827015*. The type genome for the species is the GenBank assembly GCA_902827015.1. The GC content of the type genome is 37.55 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Aseptosa catilitio sp. nov.

Candidatus Aseptosa catilitio (NL. fem. n. *catilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSX01 sp012518255*. The type genome for the species is the

GenBank assembly GCA_012518255.1. The GC content of the type genome is 35.01 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Aseptosa gen. nov.

Candidatus Aseptosa (NL. fem. n. *Aseptosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSX01*. The type species for the genus is *Candidatus* Aseptosa catilitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aseptula culigifica sp. nov.

Candidatus Aseptula culigifica (NL. fem. n. *culigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2732805 sp002732805*. The type genome for the species is the GenBank assembly GCA_002732805.1. The GC content of the type genome is 43.88 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Aseptula gen. nov.

Candidatus Aseptula (NL. fem. n. *Aseptula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2732805*. The type species for the genus is *Candidatus* Aseptula culigifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aspilida sonipitas sp. nov.

Candidatus Aspilida sonipitas (NL. fem. n. *sonipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNFS01 sp014384515*. The type genome for the species is the GenBank assembly GCA_014384515.1. The GC content of the type genome is 50.91 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Aspilida gen. nov.

Candidatus Aspilida (NL. fem. n. *Aspilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNFS01*. The type species for the genus is *Candidatus* Aspilida sonipitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5620*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semaposaceae.

Description of *Candidatus* Aspilula nicotessa sp. nov.

Candidatus Aspilula nicotessa (NL. fem. n. *nicotessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXGX01 sp012271165*. The type genome for the species is the GenBank assembly GCA_012271165.1. The GC content of the type genome is 71.38 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Aspilula gen. nov.

Candidatus Aspilula (NL. fem. n. *Aspilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXGX01*. The type species for the genus is *Candidatus* Aspilula nicotessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8438*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citiposaceae.

Description of *Candidatus* Asporana capudatio sp. nov.

Candidatus Asporana capudatio (NL. fem. n. *capudatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMFS01 sp007376185*. The type genome for the species is the GenBank assembly GCA_007376185.1. The GC content of the type genome is 44.19 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Asporana gen. nov.

Candidatus Asporana (NL. fem. n. *Asporana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMFS01*. The type species for the genus is *Candidatus* Asporana capudatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-40-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nehalidaceae.

Description of *Candidatus* Asporaria inconitio sp. nov.

Candidatus Asporaria inconitio (NL. fem. n. *inconitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pan265 sp007748075*. The type genome for the species is the GenBank assembly RS_GCF_007748075.1. The GC content of the type genome is 63.92 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Asporaria gen. nov.

Candidatus Asporaria (NL. fem. n. *Asporaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pan265*. The type species for the genus is *Candidatus* Asporaria inconitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Asporella refulastra sp. nov.

Candidatus Asporella refulastra (NL. fem. n. *refulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMG01 sp012798935*. The type genome for the species is the GenBank assembly GCA_012798935.1. The GC content of the type genome is 30.99 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Asporella gen. nov.

Candidatus Asporella (NL. fem. n. *Asporella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZMG01*. The type species for the genus is *Candidatus* Asporella refulastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Asporia ossarimonia sp. nov.

Candidatus Asporia ossarimonia (NL. fem. n. *ossarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C-114 sp005881055*. The type genome for the species is the GenBank assembly GCA_005881055.1. The GC content of the type genome is 71.43 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Asporia gen. nov.

Candidatus Asporia (NL. fem. n. *Asporia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C-114*. The type species for the genus is *Candidatus* Asporia ossarimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Asporida betacibra sp. nov.

Candidatus Asporida betacibra (NL. fem. n. *betacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8389 sp012718945*. The type genome for the species is the GenBank assembly GCA_012718945.1. The GC content of the type genome is 49.86 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Asporida gen. nov.

Candidatus Asporida (NL. fem. n. *Asporida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8389*. The type species for the genus is *Candidatus* Asporida betacibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1402*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicimidaceae.

Description of *Candidatus* Asporida monogitudo sp. nov.

Candidatus Asporida monogitudo (NL. fem. n. *monogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8389 sp003506275*. The type genome for the species is the GenBank assembly GCA_003506275.1. The GC content of the type genome is 50.64 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Asporosa fiducitura sp. nov.

Candidatus Asporosa fiducitura (NL. fem. n. *fiducitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACRTK01 sp014385225*. The type genome for the species is the GenBank assembly GCA_014385225.1. The GC content of the type genome is 30.85 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Asporosa gen. nov.

Candidatus Asporosa (NL. fem. n. *Asporosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACRTK01*. The type species for the genus is *Candidatus* Asporosa fiducitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assefana sacopitudo sp. nov.

Candidatus Assefana sacopitudo (NL. fem. n. *sacopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDEK01 sp013816445*. The type genome for the species is the GenBank assembly GCA_013816445.1. The GC content of the type genome is 40.17 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Assefana gen. nov.

Candidatus Assefana (NL. fem. n. *Assefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDEK01*. The type species for the genus is *Candidatus* Assefana sacopitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAILAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigemosaceae.

Description of *Candidatus* Assefaria allacimonas sp. nov.

Candidatus Assefaria allacimonas (NL. fem. n. *allacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W1033 sp011192015*. The type genome for the species is the GenBank assembly GCA_011192015.1. The GC content of the type genome is 57.25 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Assefaria gen. nov.

Candidatus Assefaria (NL. fem. n. *Assefaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W1033*. The type species for the genus is *Candidatus* Assefaria allacimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Binocidaceae.

Description of *Candidatus* Assefella dapifugo sp. nov.

Candidatus Assefella dapifugo (NL. fem. n. *dapifugo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZPT01 sp012797085*. The type genome for the species is the GenBank assembly GCA_012797085.1. The GC content of the type genome is 35.26 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Assefella gen. nov.

Candidatus Assefella (NL. fem. n. *Assefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZPT01*. The type species for the genus is *Candidatus* Assefella dapifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Assefia excinicula sp. nov.

Candidatus Assefia excinicula (NL. fem. n. *excinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2773 sp002352465*. The type genome for the species is the GenBank assembly GCA_002352465.1. The GC content of the type genome is 32.07 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Assefia gen. nov.

Candidatus Assefia (NL. fem. n. *Assefia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2773*. The type species for the genus is *Candidatus* Assefia excinicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2193*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laxitellaceae.

Description of *Candidatus* Assefida nocenitio sp. nov.

Candidatus Assefida nocenitio (NL. fem. n. *nocenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKG01 sp009782245*. The type genome for the species is the GenBank assembly GCA_009782245.1. The GC content of the type genome is 43.92 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Assefida gen. nov.

Candidatus Assefida (NL. fem. n. *Assefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKG01*. The type species for the genus is *Candidatus* Assefida nocenitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Assefida ulcisicella sp. nov.

Candidatus Assefida ulcisicella (NL. fem. n. *ulcisicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKG01 sp009778185*. The type genome for the species is the GenBank assembly GCA_009778185.1. The GC content of the type genome is 40.28 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Assefosa ludifigena sp. nov.

Candidatus Assefosa ludifigena (NL. fem. n. *ludifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVL01 sp009785865*. The type genome for the species is the GenBank assembly GCA_009785865.1. The GC content of the type genome is 33.09 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Assefosa gen. nov.

Candidatus Assefosa (NL. fem. n. *Assefosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVL01*. The type species for the genus is *Candidatus* Assefosa ludifigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Assibaria alluvitudo sp. nov.

Candidatus Assibaria alluvitudo (NL. fem. n. *alluvitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J010 sp003697065*. The type genome for the species is the GenBank assembly GCA_003697065.1. The GC content of the type genome is 72.75 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Assibaria gen. nov.

Candidatus Assibaria (NL. fem. n. *Assibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J010*. The type species for the genus is *Candidatus* Assibaria alluvitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11606*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifanaceae.

Description of *Candidatus* Assibia eviscax sp. nov.

Candidatus Assibia eviscax (NL. fem. n. *eviscax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6082 sp002428665*. The type genome for the species is the GenBank assembly GCA_002428665.1. The GC content of the type genome is 57.89 % and the genome length is 6.89 Mbp.

Description of *Candidatus* Assibia gen. nov.

Candidatus Assibia (NL. fem. n. *Assibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6082*. The type species for the genus is *Candidatus* Assibia eviscax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabitidaceae.

Description of *Candidatus* Assibida obrigimonas sp. nov.

Candidatus Assibida obrigimonas (NL. fem. n. *obrigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXPC01 sp005778225*. The type genome for the species is the GenBank assembly GCA_005778225.1. The GC content of the type genome is 54.39 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Assibida gen. nov.

Candidatus Assibida (NL. fem. n. *Assibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXPC01*. The type species for the genus is *Candidatus* Assibida obrigimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assibosa conabessa sp. nov.

Candidatus Assibosa conabessa (NL. fem. n. *conabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGVC01 sp010027485*. The type genome for the species is the GenBank assembly GCA_010027485.1. The GC content of the type genome is 39.98 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Assibosa gen. nov.

Candidatus Assibosa (NL. fem. n. *Assibosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGVC01*. The type species for the genus is *Candidatus* Assibosa conabessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Assicida adhoritia sp. nov.

Candidatus Assicida adhoritia (NL. fem. n. *adhoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11600 sp002720285*. The type genome for the species is the GenBank assembly GCA_002720285.1. The GC content of the type genome is 54.13 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Assicida gen. nov.

Candidatus Assicida (NL. fem. n. *Assicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11600*. The type species for the genus is *Candidatus* Assicida adhoritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Metapiaceae.

Description of *Candidatus* Assicida citocitura sp. nov.

Candidatus Assicida citocitura (NL. fem. n. *citocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11600 sp002717745*. The type genome for the species is the GenBank assembly GCA_002717745.1. The GC content of the type genome is 55.29 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Assicida docibitoga sp. nov.

Candidatus Assicida docibitoga (NL. fem. n. *docibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11600 sp002714165*. The type genome for the species is the GenBank assembly GCA_002714165.1. The GC content of the type genome is 54.4 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Assicida effemitas sp. nov.

Candidatus Assicida effemitas (NL. fem. n. *effemitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11600 sp002730735*. The type genome for the species is the GenBank assembly GCA_002730735.1. The GC content of the type genome is 55.26 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Assicosa fuligigena sp. nov.

Candidatus Assicosa fuligigena (NL. fem. n. *fuligigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIO1A7 sp010672965*. The type genome for the species is the GenBank assembly GCA_010672965.1. The GC content of the type genome is 47.9 % and the genome length is 9.08 Mbp.

Description of *Candidatus* Assicosa gen. nov.

Candidatus Assicosa (NL. fem. n. *Assicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIO1A7*. The type species for the genus is *Candidatus* Assicosa fuligigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assicula verecitura sp. nov.

Candidatus Assicula verecitura (NL. fem. n. *verecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSXH01 sp011367925*. The type genome for the species is the GenBank assembly GCA_011367925.1. The GC content of the type genome is 34.13 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Assicula gen. nov.

Candidatus Assicula (NL. fem. n. *Assicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSXH01*. The type species for the genus is *Candidatus* Assicula verecitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assifaria armifimonia sp. nov.

Candidatus Assifaria armifimonia (NL. fem. n. *armifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSA4 sp013414705*. The type genome for the species is the GenBank assembly GCA_013414705.1. The GC content of the type genome is 63.6 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Assifaria gen. nov.

Candidatus Assifaria (NL. fem. n. *Assifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSA4*. The type species for the genus is *Candidatus* Assifaria armifimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UXAT02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peraculaceae.

Description of *Candidatus* Assifida dimacago sp. nov.

Candidatus Assifida dimacago (NL. fem. n. *dimacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAV01 sp014238595*. The type genome for the species is the GenBank assembly GCA_014238595.1. The GC content of the type genome is 39.59 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Assifida gen. nov.

Candidatus Assifida (NL. fem. n. *Assifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABAAV01*. The type species for the genus is *Candidatus* Assifida dimacago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J016*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedepiaceae.

Description of *Candidatus* Assifosa casabicella sp. nov.

Candidatus Assifosa casabicella (NL. fem. n. *casabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11090 sp002839205*. The type genome for the species is the GenBank assembly GCA_002839205.1. The GC content of the type genome is 56.64 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Assifosa gen. nov.

Candidatus Assifosa (NL. fem. n. *Assifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11090*. The type species for the genus is *Candidatus* Assifosa casabicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponosaceae.

Description of *Candidatus* Assifula mureletta sp. nov.

Candidatus Assifula mureletta (NL. fem. n. *mureletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REEP01 sp007695045*. The type genome for the species is the GenBank assembly GCA_007695045.1. The GC content of the type genome is 66.06 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Assifula gen. nov.

Candidatus Assifula (NL. fem. n. *Assifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REEP01*. The type species for the genus is *Candidatus* Assifula mureletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UXAT02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peraculaceae.

Description of *Candidatus* Assifula penicago sp. nov.

Candidatus Assifula penicago (NL. fem. n. *penicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REEP01 sp007694935*. The type genome for the species is the GenBank assembly GCA_007694935.1. The GC content of the type genome is 67.37 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Assubana depelibula sp. nov.

Candidatus Assubana depelibula (NL. fem. n. *depelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQUT01 sp009781955*. The type genome for the species is the GenBank assembly GCA_009781955.1. The GC content of the type genome is 52.59 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Assubana gen. nov.

Candidatus Assubana (NL. fem. n. *Assubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *WQUT01*. The type species for the genus is *Candidatus* Assubana depelibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Rs-D84*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delapiaceae.

Description of *Candidatus* Assubaria immadimonia sp. nov.

Candidatus Assubaria immadimonia (NL. fem. n. *immadimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-432-D11 sp003212885*. The type genome for the species is the GenBank assembly GCA_003212885.1. The GC content of the type genome is 35.5 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Assubaria gen. nov.

Candidatus Assubaria (NL. fem. n. *Assubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-432-D11*. The type species for the genus is *Candidatus* Assubaria immadimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assubella incucisca sp. nov.

Candidatus Assubella incucisca (NL. fem. n. *incucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BK-30 sp002837145*. The type genome for the species is the GenBank assembly RS_GCF_002837145.1. The GC content of the type genome is 67.35 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Assubella gen. nov.

Candidatus Assubella (NL. fem. n. *Assubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BK-30*. The type species for the genus is *Candidatus* Assubella

incucisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assubosa revecitio sp. nov.

Candidatus Assubosa revecitio (NL. fem. n. *revecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MO-CFX2 sp003569045*. The type genome for the species is the GenBank assembly RS_GCF_003569045.1. The GC content of the type genome is 62.94 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Assubosa gen. nov.

Candidatus Assubosa (NL. fem. n. *Assubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MO-CFX2*. The type species for the genus is *Candidatus* Assubosa revecitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selibariaceae.

Description of *Candidatus* Assucana allobigena sp. nov.

Candidatus Assucana allobigena (NL. fem. n. *allobigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHZY01 sp009692065*. The type genome for the species is the GenBank assembly GCA_009692065.1. The GC content of the type genome is 60.84 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Assucana gen. nov.

Candidatus Assucana (NL. fem. n. *Assucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHZY01*. The type species for the genus is *Candidatus* Assucana allobigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assucaria amnigigena sp. nov.

Candidatus Assucaria amnigigena (NL. fem. n. *amnigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c25 sp001515955*. The type genome for the species is the GenBank assembly GCA_001515955.1. The GC content of the type genome is 40.76 % and the genome length is 5.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Assucaria gen. nov.

Candidatus Assucaria (NL. fem. n. *Assucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BRH-c25*. The type species for the genus is *Candidatus* Assucaria amnigigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assucaria hexamitoga sp. nov.

Candidatus Assucaria hexamitoga (NL. fem. n. *hexamitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c25 sp012519325*. The type genome for the species is the GenBank assembly GCA_012519325.1. The GC content of the type genome is 40.99 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Assucella adfabimonia sp. nov.

Candidatus Assucella adfabimonia (NL. fem. n. *adfabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5793 sp002418285*. The type genome for the species is the GenBank assembly GCA_002418285.1. The GC content of the type genome is 61.9 %

and the genome length is 4.84 Mbp.

Description of *Candidatus* Assucella gen. nov.

Candidatus Assucella (NL. fem. n. *Assucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5793*. The type species for the genus is *Candidatus* Assucella adfabimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Assucella ascenibula sp. nov.

Candidatus Assucella ascenibula (NL. fem. n. *ascenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5793 sp011525805*. The type genome for the species is the GenBank assembly GCA_011525805.1. The GC content of the type genome is 67.05 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Assucella binocentia sp. nov.

Candidatus Assucella binocentia (NL. fem. n. *binocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5793 sp900696685*. The type genome for the species is the GenBank assembly GCA_900696685.1. The GC content of the type genome is 65.84 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Assucia inrefastra sp. nov.

Candidatus Assucia inrefastra (NL. fem. n. *inrefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1448 sp002329405*. The type genome for the species is the GenBank assembly GCA_002329405.1. The GC content of the type genome is 52.19 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Assucia gen. nov.

Candidatus Assucia (NL. fem. n. *Assucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1448*. The type species for the genus is *Candidatus* Assucia inrefastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assucula adsucentia sp. nov.

Candidatus Assucula adsucentia (NL. fem. n. *adsucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCX01 sp012729555*. The type genome for the species is the GenBank assembly GCA_012729555.1. The GC content of the type genome is 66.43 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Assucula gen. nov.

Candidatus Assucula (NL. fem. n. *Assucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYCX01*. The type species for the genus is *Candidatus* Assucula adsucentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6911*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decomulaceae.

Description of *Candidatus* Assucula adtemitas sp. nov.

Candidatus Assucula adtemitas (NL. fem. n. *adtemitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCX01 sp012719455*. The type genome for the species is the GenBank assembly GCA_012719455.1. The GC content of the type genome is 64.64 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Assudaria thapsastra sp. nov.

Candidatus Assudaria thapsastra (NL. fem. n. *thapsastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BHEQ01 sp003864535*. The type genome for the species is the GenBank assembly GCA_003864535.1. The GC content of the type genome is 36.78 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Assudaria gen. nov.

Candidatus Assudaria (NL. fem. n. *Assudaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BHEQ01*. The type species for the genus is *Candidatus* Assudaria thapsastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assudella bucolastra sp. nov.

Candidatus Assudella bucolastra (NL. fem. n. *bucolastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYMV01 sp012521185*. The type genome for the species is the GenBank assembly GCA_012521185.1. The GC content of the type genome is 38.28 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Assudella gen. nov.

Candidatus Assudella (NL. fem. n. *Assudella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYMV01*. The type species for the genus is *Candidatus* Assudella bucolastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU012*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homolellaceae.

Description of *Candidatus* Assudia bulapitia sp. nov.

Candidatus Assudia bulapitia (NL. fem. n. *bulapitia* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICL01 sp009691445*. The type genome for the species is the GenBank assembly GCA_009691445.1. The GC content of the type genome is 46.97 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Assudia gen. nov.

Candidatus Assudia (NL. fem. n. *Assudia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICL01*. The type species for the genus is *Candidatus* Assudia bulapitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-52-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semidulaceae.

Description of *Candidatus* Assudida semifisca sp. nov.

Candidatus Assudida semifisca (NL. fem. n. *semifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PTKQ01 sp002937815*. The type genome for the species is the GenBank assembly GCA_002937815.1. The GC content of the type genome is 28.13 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Assudida gen. nov.

Candidatus Assudida (NL. fem. n. *Assudida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PTKQ01*. The type species for the genus is *Candidatus* Assudida semifisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002720895*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desomariaceae.

Description of *Candidatus* Assudosa didacitica sp. nov.

Candidatus Assudosa didacitica (NL. fem. n. *didacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABRD01 sp011391085*. The type genome for the species is the GenBank assembly GCA_011391085.1. The GC content of the type genome is 46.05 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Assudosa gen. nov.

Candidatus Assudosa (NL. fem. n. *Assudosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABRD01*. The type species for the genus is *Candidatus* Assudosa didacitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Assudula denavimonia sp. nov.

Candidatus Assudula denavimonia (NL. fem. n. *denavimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-147 sp003230015*. The type genome for the species is the GenBank assembly GCA_003230015.1. The GC content of the type genome is 61.14 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Assudula gen. nov.

Candidatus Assudula (NL. fem. n. *Assudula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-147*. The type species for the genus is *Candidatus* Assudula denavimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifariaceae.

Description of *Candidatus* Astaparia ranunitia sp. nov.

Candidatus Astaparia ranunitia (NL. fem. n. *ranunitia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QLIT01 sp003574485*. The type genome for the species is the GenBank assembly RS_GCF_003574485.1. The GC content of the type genome is 37.76 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Astaparia gen. nov.

Candidatus Astaparia (NL. fem. n. *Astaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QLIT01*. The type species for the genus is *Candidatus* Astaparia ranunitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Astapella evangax sp. nov.

Candidatus Astapella evangax (NL. fem. n. *evangax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADIZ01 sp013151055*. The type genome for the species is the GenBank assembly GCA_013151055.1. The GC content of the type genome is 31.95 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Astapella gen. nov.

Candidatus Astapella (NL. fem. n. *Astapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADIZ01*. The type species for the genus is *Candidatus* Astapella evangax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Astapia pocilisca sp. nov.

Candidatus Astapia pocilisca (NL. fem. n. *pocilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGA01 sp011523765*. The type genome for the species is the GenBank assembly GCA_011523765.1. The GC content of the type genome is 56.95 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Astapia gen. nov.

Candidatus Astapia (NL. fem. n. *Astapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTGA01*. The type species for the genus is *Candidatus* Astapia pocilisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LS-SOB*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repeciaceae.

Description of *Candidatus* Astapula abnepatio sp. nov.

Candidatus Astapula abnepatio (NL. fem. n. *abnepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2282 sp000995125*. The type genome for the species is the GenBank assembly GCA_000995125.1. The GC content of the type genome is 38.52 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Astapula gen. nov.

Candidatus Astapula (NL. fem. n. *Astapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2282*. The type species for the genus is *Candidatus* Astapula abnepatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Astapula ossaritudo sp. nov.

Candidatus Astapula ossaritudo (NL. fem. n. *ossaritudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2282 sp002345745*. The type genome for the species is the GenBank assembly GCA_002345745.1. The GC content of the type genome is 36.09 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Asticcacaulis adlenimonia sp. nov.

Candidatus Asticcacaulis adlenimonia (NL. fem. n. *adlenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Asticcacaulis sp000495795*. The type genome for the species is the GenBank assembly RS_GCF_000495795.1. The GC content of the type genome is 62.01 % and the genome length is 5.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "school street marsh".

Description of *Candidatus* Asticcacaulis esculedo sp. nov.

Candidatus Asticcacaulis esculedo (NL. fem. n. *esculedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Asticcacaulis sp003053985*. The type genome for the species is the GenBank assembly RS_GCF_003053985.1. The GC content of the type genome is 61.96 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Asticcacaulis extunimonia sp. nov.

Candidatus Asticcacaulis extunimonia (NL. fem. n. *extunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Asticcacaulis sp000495815*. The type genome for the species is the GenBank assembly RS_GCF_000495815.1. The GC content of the type genome is 58.84 % and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "school street marsh".

Description of *Candidatus* Asticcacaulis homicicella sp. nov.

Candidatus Asticcacaulis homicicella (NL. fem. n. *homicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Asticcacaulis sp002342035*. The type genome for the species is the GenBank assembly GCA_002342035.1. The GC content of the type genome is 56.92 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Asticcacaulis inabritio sp. nov.

Candidatus Asticcacaulis inabritio (NL. fem. n. *inabritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Asticcacaulis sp000495855*. The type genome for the species is the GenBank assembly RS_GCF_000495855.1. The GC content of the type genome is 60.67 % and the genome length is 4.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "lake water".

Description of *Candidatus* Asticcacaulis omnigedo sp. nov.

Candidatus Asticcacaulis omnigedo (NL. fem. n. *omnigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Asticcacaulis sp000495835*. The type genome for the species is the GenBank assembly RS_GCF_000495835.1. The GC content of the type genome is 60.44 % and the genome length is 4.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "lake water".

Description of *Candidatus* Astipana dimiditas sp. nov.

Candidatus Astipana dimiditas (NL. fem. n. *dimiditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-190 sp011055945*. The type genome for the species is the GenBank assembly GCA_011055945.1. The GC content of the type genome is 73.71 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Astipana gen. nov.

Candidatus Astipana (NL. fem. n. *Astipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-190*. The type species for the genus is *Candidatus* Astipana

dimiditas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minagiaceae.

Description of *Candidatus* Astipia cilotitudo sp. nov.

Candidatus Astipia cilotitudo (NL. fem. n. *cilotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2296 sp002345475*. The type genome for the species is the GenBank assembly GCA_002345475.1. The GC content of the type genome is 54.65 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Astipia gen. nov.

Candidatus Astipia (NL. fem. n. *Astipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2296*. The type species for the genus is *Candidatus* Astipia cilotitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA994*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehonellaceae.

Description of *Candidatus* Astipida nimiritrix sp. nov.

Candidatus Astipida nimiritrix (NL. fem. n. *nimiritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11400 sp003448835*. The type genome for the species is the GenBank assembly GCA_003448835.1. The GC content of the type genome is 40.09 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Astipida gen. nov.

Candidatus Astipida (NL. fem. n. *Astipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA11400*. The type species for the genus is *Candidatus* Astipida nimiritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HLUCCA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubiganaceae.

Description of *Candidatus* Astiposa apperigena sp. nov.

Candidatus Astiposa apperigena (NL. fem. n. *apperigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEEZ01 sp902826485*. The type genome for the species is the GenBank assembly GCA_902826485.1. The GC content of the type genome is 37.63 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Astiposa gen. nov.

Candidatus Astiposa (NL. fem. n. *Astiposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEEZ01*. The type species for the genus is *Candidatus* Astiposa apperigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Astipula revecitas sp. nov.

Candidatus Astipula revecitas (NL. fem. n. *revecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1265 sp902803145*. The type genome for the species is the GenBank assembly GCA_902803145.1. The GC content of the type genome is 43.6 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Astipula gen. nov.

Candidatus Astipula (NL. fem. n. *Astipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1265*. The type species for the genus is *Candidatus* Astipula

revecitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Astipula siticimonas sp. nov.

Candidatus Astipula siticimonas (NL. fem. n. *siticimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1265 sp002308475*. The type genome for the species is the GenBank assembly GCA_002308475.1. The GC content of the type genome is 44.17 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Aterrana subofimonia sp. nov.

Candidatus Aterrana subofimonia (NL. fem. n. *subofimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED123 sp002170165*. The type genome for the species is the GenBank assembly GCA_002170165.1. The GC content of the type genome is 38.5 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Aterrana gen. nov.

Candidatus Aterrana (NL. fem. n. *Aterrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED123*. The type species for the genus is *Candidatus* Aterrana subofimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Aterrella depeciforma sp. nov.

Candidatus Aterrella depeciforma (NL. fem. n. *depeciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJT01 sp013003335*. The type genome for the species is the

GenBank assembly GCA_013003335.1. The GC content of the type genome is 56.43 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Aterrella gen. nov.

Candidatus Aterrella (NL. fem. n. *Aterrella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJT01*. The type species for the genus is *Candidatus* Aterrella depeciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DEV007*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragosaceae.

Description of *Candidatus* Aterrosa indirax sp. nov.

Candidatus Aterrosa indirax (NL. fem. n. *indirax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVRR01 sp014534345*. The type genome for the species is the GenBank assembly GCA_014534345.1. The GC content of the type genome is 73.78 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Aterrosa gen. nov.

Candidatus Aterrosa (NL. fem. n. *Aterrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACVRR01*. The type species for the genus is *Candidatus* Aterrosa indirax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Aterrula adlubitudo sp. nov.

Candidatus Aterrula adlubitudo (NL. fem. n. *adlubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1633 sp900553645*. The type genome for the species is the GenBank assembly GCA_900553645.1. The GC content of the type genome is 58.04 %

and the genome length is 1.94 Mbp.

Description of *Candidatus* Aterrula gen. nov.

Candidatus Aterrula (NL. fem. n. *Aterrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1633*. The type species for the genus is *Candidatus* Aterrula adlubitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Athalassotoga reduvastra sp. nov.

Candidatus Athalassotoga reduvastra (NL. fem. n. *reduvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Athalassotoga sp002878315*. The type genome for the species is the GenBank assembly GCA_002878335.1. The GC content of the type genome is 40.76 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Atlanana inmementia sp. nov.

Candidatus Atlanana inmementia (NL. fem. n. *inmementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPM01 sp011054455*. The type genome for the species is the GenBank assembly GCA_011054455.1. The GC content of the type genome is 68.92 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Atlanana gen. nov.

Candidatus Atlanana (NL. fem. n. *Atlanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPM01*. The type species for the genus is *Candidatus* Atlanana inmementia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1342*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Docibariaceae.

Description of *Candidatus* Atlanaria adluvousia sp. nov.

Candidatus Atlanaria adluvousia (NL. fem. n. *adluvousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FW300-bin19 sp004297825*. The type genome for the species is the GenBank assembly GCA_004297825.1. The GC content of the type genome is 57.78 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Atlanaria gen. nov.

Candidatus Atlanaria (NL. fem. n. *Atlanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FW300-bin19*. The type species for the genus is *Candidatus* Atlanaria adluvousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5368*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuferariaceae.

Description of *Candidatus* Atlania denicitura sp. nov.

Candidatus Atlania denicitura (NL. fem. n. *denicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp7-AA10 sp003223695*. The type genome for the species is the GenBank assembly GCA_003223695.1. The GC content of the type genome is 60.27 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Atlania gen. nov.

Candidatus Atlania (NL. fem. n. *Atlania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp7-AA10*. The type species for the genus is *Candidatus* Atlania denicitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family

Gp7-AA8. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viburanaceae.

Description of *Candidatus* Atlania octobibula sp. nov.

Candidatus Atlania octobibula (NL. fem. n. *octobibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp7-AA10 sp003222375*. The type genome for the species is the GenBank assembly GCA_003222375.1. The GC content of the type genome is 61.01 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Atlanida abluvibra sp. nov.

Candidatus Atlanida abluvibra (NL. fem. n. *abluvibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP256 sp002714185*. The type genome for the species is the GenBank assembly GCA_002714185.1. The GC content of the type genome is 28.4 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Atlanida gen. nov.

Candidatus Atlanida (NL. fem. n. *Atlanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SP256*. The type species for the genus is *Candidatus* Atlanida abluvibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fusifulaceae.

Description of *Candidatus* Atlanida arrabago sp. nov.

Candidatus Atlanida arrabago (NL. fem. n. *arrabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP256 sp002713285*. The type genome for the species is the GenBank

assembly GCA_002713285.1. The GC content of the type genome is 30.1 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Atlanida cetaratica sp. nov.

Candidatus Atlanida cetaratica (NL. fem. n. *cetaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP256 sp002722215*. The type genome for the species is the GenBank assembly GCA_002722215.1. The GC content of the type genome is 31.55 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Atlantibacter funivimonas sp. nov.

Candidatus Atlantibacter funivimonas (NL. fem. n. *funivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Atlantibacter sp002345315*. The type genome for the species is the GenBank assembly RS_GCF_014193285.1. The GC content of the type genome is 54.99 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Atlantibacter saxifitica sp. nov.

Candidatus Atlantibacter saxifitica (NL. fem. n. *saxifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Atlantibacter sp002358165*. The type genome for the species is the GenBank assembly GCA_002478805.1. The GC content of the type genome is 52.89 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Atlanula dilemimonas sp. nov.

Candidatus Atlanula dilemimonas (NL. fem. n. *dilemimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGU01 sp011523425*. The type genome for the species is the GenBank assembly GCA_011523425.1. The GC content of the type genome is 70.07 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Atlanula gen. nov.

Candidatus Atlanula (NL. fem. n. *Atlanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTGU01*. The type species for the genus is *Candidatus* Atlanula dilemimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA828*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hegumosaceae.

Description of *Candidatus* Atopobacter cerucicula sp. nov.

Candidatus Atopobacter cerucicula (NL. fem. n. *cerucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Atopobacter sp003664595*. The type genome for the species is the GenBank assembly RS_GCF_003664595.1. The GC content of the type genome is 38.58 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Atricaria exheritrix sp. nov.

Candidatus Atricaria exheritrix (NL. fem. n. *exheritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002728675 sp002728675*. The type genome for the species is the GenBank assembly GCA_002728675.1. The GC content of the type genome is 63.4 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Atricaria gen. nov.

Candidatus Atricaria (NL. fem. n. *Atricaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002728675*. The type species for the genus is *Candidatus* Atricaria exheritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Atricaria exhorigena sp. nov.

Candidatus Atricaria exhorigena (NL. fem. n. *exhorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002728675 sp002714125*. The type genome for the species is the GenBank assembly GCA_002714125.1. The GC content of the type genome is 58.03 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Atricida peribiforma sp. nov.

Candidatus Atricida peribiforma (NL. fem. n. *peribiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWCU01 sp002070205*. The type genome for the species is the GenBank assembly GCA_002070205.1. The GC content of the type genome is 48.63 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Atricida gen. nov.

Candidatus Atricida (NL. fem. n. *Atricida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCU01*. The type species for the genus is *Candidatus* Atricida peribiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Atricosa lapilessa sp. nov.

Candidatus Atricosa lapilessa (NL. fem. n. *lapilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13091 sp902785645*. The type genome for the species is the GenBank assembly GCA_902785645.1. The GC content of the type genome is 34.88 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Atricosa gen. nov.

Candidatus Atricosa (NL. fem. n. *Atricosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13091*. The type species for the genus is *Candidatus* Atricosa lapilessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Atricula ammigimonia sp. nov.

Candidatus Atricula ammigimonia (NL. fem. n. *ammigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYCT01 sp903924765*. The type genome for the species is the GenBank assembly GCA_903924765.1. The GC content of the type genome is 57.63 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Atricula gen. nov.

Candidatus Atricula (NL. fem. n. *Atricula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYCT01*. The type species for the genus is *Candidatus* Atricula ammigimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Atropana bucelivita sp. nov.

Candidatus Atropana bucelivita (NL. fem. n. *bucelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFB01 sp013286765*. The type genome for the species is the GenBank assembly GCA_013286765.1. The GC content of the type genome is 44.73 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Atropana gen. nov.

Candidatus Atropana (NL. fem. n. *Atropana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDFB01*. The type species for the genus is *Candidatus* Atropana bucelivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Atropida conibitura sp. nov.

Candidatus Atropida conibitura (NL. fem. n. *conibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6240 sp002441445*. The type genome for the species is the GenBank assembly GCA_002441445.1. The GC content of the type genome is 62.46 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Atropida gen. nov.

Candidatus Atropida (NL. fem. n. *Atropida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6240*. The type species for the genus is *Candidatus* Atropida conibitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Atroposa allapifica sp. nov.

Candidatus Atroposa allapifica (NL. fem. n. *allapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GLR113 sp013139935*. The type genome for the species is the GenBank assembly GCA_013139935.1. The GC content of the type genome is 60.28 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Atroposa gen. nov.

Candidatus Atroposa (NL. fem. n. *Atroposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GLR113*. The type species for the genus is *Candidatus* Atroposa allapifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4811*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribariaceae.

Description of *Candidatus* Atropula siticitoga sp. nov.

Candidatus Atropula siticitoga (NL. fem. n. *siticitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRDS01 sp009779675*. The type genome for the species is the GenBank assembly GCA_009779675.1. The GC content of the type genome is 59.75 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Atropula gen. nov.

Candidatus Atropula (NL. fem. n. *Atropula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRDS01*. The type species for the genus is *Candidatus* Atropula siticitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHET01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pavimulaceae.

Description of *Candidatus* Atrusana octusibra sp. nov.

Candidatus Atrusana octusibra (NL. fem. n. *octusibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGXY01 sp002839375*. The type genome for the species is the GenBank assembly GCA_002839375.1. The GC content of the type genome is 47.52 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Atrusana gen. nov.

Candidatus Atrusana (NL. fem. n. *Atrusana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGXY01*. The type species for the genus is *Candidatus* Atrusana octusibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5550*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velivanaceae.

Description of *Candidatus* Atrusella tomogilenta sp. nov.

Candidatus Atrusella tomogilenta (NL. fem. n. *tomogilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHVT01 sp003223645*. The type genome for the species is the GenBank assembly GCA_003223645.1. The GC content of the type genome is 63.61 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Atrusella gen. nov.

Candidatus Atrusella (NL. fem. n. *Atrusella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHVT01*. The type species for the genus is *Candidatus* Atrusella tomogilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Gp7-AA8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viburanaceae.

Description of *Candidatus* Atrusida coticicula sp. nov.

Candidatus Atrusida coticicula (NL. fem. n. *coticicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAFB01 sp013388545*. The type genome for the species is the GenBank assembly GCA_013388545.1. The GC content of the type genome is 36.04 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Atrusida gen. nov.

Candidatus Atrusida (NL. fem. n. *Atrusida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAFB01*. The type species for the genus is *Candidatus* Atrusida coticicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Atrusosa cohurilega sp. nov.

Candidatus Atrusosa cohurilega (NL. fem. n. *cohurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBB01 sp012719075*. The type genome for the species is the GenBank assembly GCA_012719075.1. The GC content of the type genome is 65.24 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Atrusosa gen. nov.

Candidatus Atrusosa (NL. fem. n. *Atrusosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBB01*. The type species for the genus is *Candidatus* Atrusosa cohurilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BX7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipiniaceae.

Description of *Candidatus* Atrusula adtemibula sp. nov.

Candidatus Atrusula adtemibula (NL. fem. n. *adtemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSEF01 sp008012175*. The type genome for the species is the GenBank assembly GCA_008012175.1. The GC content of the type genome is 53.71 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Atrusula gen. nov.

Candidatus Atrusula (NL. fem. n. *Atrusula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSEF01*. The type species for the genus is *Candidatus* Atrusula adtemibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1568*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicalulaceae.

Description of *Candidatus* Attegaria allapicula sp. nov.

Candidatus Attegaria allapicula (NL. fem. n. *allapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPT01 sp012799095*. The type genome for the species is the GenBank assembly GCA_012799095.1. The GC content of the type genome is 47.43 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Attegaria gen. nov.

Candidatus Attegaria (NL. fem. n. *Attegaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPT01*. The type species for the genus is *Candidatus* Attegaria allapicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attegaria cituvicella sp. nov.

Candidatus Attegaria cituvicella (NL. fem. n. *cituvicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPT01 sp012838225*. The type genome for the species is the GenBank assembly GCA_012838225.1. The GC content of the type genome is 53.33 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Attegida irregitrix sp. nov.

Candidatus Attegida irregitrix (NL. fem. n. *irregitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J134 sp003694205*. The type genome for the species is the GenBank assembly GCA_003694205.1. The GC content of the type genome is 66.24 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Attegida gen. nov.

Candidatus Attegida (NL. fem. n. *Attegida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J134*. The type species for the genus is *Candidatus* Attegida irregitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attegosa irrecitas sp. nov.

Candidatus Attegosa irrecitas (NL. fem. n. *irrecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-0-10-47-8 sp002773975*. The type genome for the species is the GenBank assembly GCA_002773975.1. The GC content of the type genome is 46.82 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Attegosa gen. nov.

Candidatus Attegosa (NL. fem. n. *Attegosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-0-10-47-8*. The type species for the genus is *Candidatus* Attegosa irrecitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attegula tegumitoga sp. nov.

Candidatus Attegula tegumitoga (NL. fem. n. *tegumitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *PHAA01 sp012522705*. The type genome for the species is the GenBank assembly GCA_012522705.1. The GC content of the type genome is 51.68 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Attegula gen. nov.

Candidatus Attegula (NL. fem. n. *Attegula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHAA01*. The type species for the genus is *Candidatus* Attegula tegumitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attegula volucitudo sp. nov.

Candidatus Attegula volucitudo (NL. fem. n. *volucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHAA01 sp012798055*. The type genome for the species is the GenBank assembly GCA_012798055.1. The GC content of the type genome is 51.53 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Attegula xeramitoga sp. nov.

Candidatus Attegula xeramitoga (NL. fem. n. *xeramitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHAA01 sp002840245*. The type genome for the species is the GenBank assembly GCA_002840245.1. The GC content of the type genome is 42.49 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Attelana innasentia sp. nov.

Candidatus Attelana innasentia (NL. fem. n. *innasentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRKF01 sp011051915*. The type genome for the species is the GenBank assembly GCA_011051915.1. The GC content of the type genome is 68.44 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Attelana gen. nov.

Candidatus Attelana (NL. fem. n. *Attelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRKF01*. The type species for the genus is *Candidatus* Attelana innasentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TK06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaculaceae.

Description of *Candidatus* Attelella progritio sp. nov.

Candidatus Attelella progritio (NL. fem. n. *progritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RQOF01 sp003854955*. The type genome for the species is the GenBank assembly GCA_003854955.1. The GC content of the type genome is 43.58 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Attelella gen. nov.

Candidatus Attelella (NL. fem. n. *Attelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RQOF01*. The type species for the genus is *Candidatus* Attelella progritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogiaceae.

Description of *Candidatus* Attelia apercimonia sp. nov.

Candidatus Attelia apercimonia (NL. fem. n. *apercimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLA01 sp012799545*. The type genome for the species is the GenBank assembly GCA_012799545.1. The GC content of the type genome is 38.5 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Attelia gen. nov.

Candidatus Attelia (NL. fem. n. *Attelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZLA01*. The type species for the genus is *Candidatus* Attelia apercimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attelosa adtubitia sp. nov.

Candidatus Attelosa adtubitia (NL. fem. n. *adtubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-32 sp005883965*. The type genome for the species is the GenBank assembly GCA_005883965.1. The GC content of the type genome is 70.17 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Attelosa gen. nov.

Candidatus Attelosa (NL. fem. n. *Attelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-32*. The type species for the genus is *Candidatus* Attelosa adtubitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attelosa dicibax sp. nov.

Candidatus Attelosa dicibax (NL. fem. n. *dicibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-32 sp005884155*. The type genome for the species is the GenBank assembly GCA_005884155.1. The GC content of the type genome is 69.57 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Attelosa milipilenta sp. nov.

Candidatus Attelosa milipilenta (NL. fem. n. *milipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-32 sp005883335*. The type genome for the species is the GenBank assembly GCA_005883335.1. The GC content of the type genome is 69.76 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Attelula excinifica sp. nov.

Candidatus Attelula excinifica (NL. fem. n. *excinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12931 sp902784045*. The type genome for the species is the GenBank assembly GCA_902784045.1. The GC content of the type genome is 45.78 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Attelula gen. nov.

Candidatus Attelula (NL. fem. n. *Attelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12931*. The type species for the genus is *Candidatus* Attelula excinifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attemana octopousia sp. nov.

Candidatus Attemana octopousia (NL. fem. n. *octopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NSJ-54 sp014385095*. The type genome for the species is the GenBank assembly GCA_014385095.1. The GC content of the type genome is 56.38 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Attemana gen. nov.

Candidatus Attemana (NL. fem. n. *Attemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NSJ-54*. The type species for the genus is *Candidatus* Attemana

octopousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attemaria necopessa sp. nov.

Candidatus Attemaria necopessa (NL. fem. n. *necopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVY01 sp009694045*. The type genome for the species is the GenBank assembly GCA_009694045.1. The GC content of the type genome is 68.13 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Attemaria gen. nov.

Candidatus Attemaria (NL. fem. n. *Attemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVY01*. The type species for the genus is *Candidatus* Attemaria necopessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SP197*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Podagulaceae.

Description of *Candidatus* Attemida relenatio sp. nov.

Candidatus Attemida relenatio (NL. fem. n. *relenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA17 sp003140235*. The type genome for the species is the GenBank assembly GCA_003140235.1. The GC content of the type genome is 56.59 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Attemida gen. nov.

Candidatus Attemida (NL. fem. n. *Attemida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp1-AA17*. The type species for the genus is *Candidatus* Attemida relenatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Gp1-AA117*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigellaceae.

Description of *Candidatus* Attemida sicinitio sp. nov.

Candidatus Attemida sicinitio (NL. fem. n. *sicinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA17 sp003223515*. The type genome for the species is the GenBank assembly GCA_003223515.1. The GC content of the type genome is 54.75 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Attemosa excanugo sp. nov.

Candidatus Attemosa excanugo (NL. fem. n. *excanugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Hel1-33-131 sp001735745*. The type genome for the species is the GenBank assembly RS_GCF_001735745.1. The GC content of the type genome is 36.61 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Attemosa gen. nov.

Candidatus Attemosa (NL. fem. n. *Attemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Hel1-33-131*. The type species for the genus is *Candidatus* Attemosa excanugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attemula elastisca sp. nov.

Candidatus Attemula elastisca (NL. fem. n. *elastisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB2-37-7 sp001797185*. The type genome for the species is the GenBank assembly GCA_001797185.1. The GC content of the type genome is 37.22 %

and the genome length is 3.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 2 / B; 5m depth; 0.2 filter".

Description of *Candidatus* Attemula gen. nov.

Candidatus Attemula (NL. fem. n. *Attemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB2-37-7*. The type species for the genus is *Candidatus* Attemula elastisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attesaria adfabibra sp. nov.

Candidatus Attesaria adfabibra (NL. fem. n. *adfabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZE01 sp013696105*. The type genome for the species is the GenBank assembly GCA_013696105.1. The GC content of the type genome is 66.89 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Attesaria gen. nov.

Candidatus Attesaria (NL. fem. n. *Attesaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZE01*. The type species for the genus is *Candidatus* Attesaria adfabibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisorariaceae.

Description of *Candidatus* Attesaria infesatica sp. nov.

Candidatus Attesaria infesatica (NL. fem. n. *infesatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZE01 sp013816415*. The type genome for the species is the

GenBank assembly GCA_013816415.1. The GC content of the type genome is 66.43 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Attesella infisax sp. nov.

Candidatus Attesella infisax (NL. fem. n. *infisax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSY01 sp004298625*. The type genome for the species is the GenBank assembly GCA_004298625.1. The GC content of the type genome is 45.48 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Attesella gen. nov.

Candidatus Attesella (NL. fem. n. *Attesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCSY01*. The type species for the genus is *Candidatus* Attesella infisax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1546*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denecellaceae.

Description of *Candidatus* Attesella pinigousia sp. nov.

Candidatus Attesella pinigousia (NL. fem. n. *pinigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSY01 sp009773185*. The type genome for the species is the GenBank assembly GCA_009773185.1. The GC content of the type genome is 43.63 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Attesida dupunilega sp. nov.

Candidatus Attesida dupunilega (NL. fem. n. *dupunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMJD01 sp014380825*. The type genome for the species is the GenBank assembly GCA_014380825.1. The GC content of the type genome is 60.47 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Attesida gen. nov.

Candidatus Attesida (NL. fem. n. *Attesida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMJD01*. The type species for the genus is *Candidatus* Attesida dupunilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hariciaceae.

Description of *Candidatus* Attesosa bonifentia sp. nov.

Candidatus Attesosa bonifentia (NL. fem. n. *bonifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXPZ01 sp012329065*. The type genome for the species is the GenBank assembly GCA_012329065.1. The GC content of the type genome is 38.34 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Attesosa gen. nov.

Candidatus Attesosa (NL. fem. n. *Attesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXPZ01*. The type species for the genus is *Candidatus* Attesosa bonifentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attesula peribigena sp. nov.

Candidatus Attesula peribigena (NL. fem. n. *peribigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11247 sp902767315*. The type genome for the species is the GenBank assembly GCA_902767315.1. The GC content of the type genome is 59.38 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Attesula gen. nov.

Candidatus Attesula (NL. fem. n. *Attesula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11247*. The type species for the genus is *Candidatus* Attesula peribigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Attolana ambusetta sp. nov.

Candidatus Attolana ambusetta (NL. fem. n. *ambusetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QS-8-64-29 sp003022125*. The type genome for the species is the GenBank assembly GCA_003022125.1. The GC content of the type genome is 64.39 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Attolana gen. nov.

Candidatus Attolana (NL. fem. n. *Attolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QS-8-64-29*. The type species for the genus is *Candidatus* Attolana ambusetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attolaria cunabilega sp. nov.

Candidatus Attolaria cunabilega (NL. fem. n. *cunabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1515 sp903970385*. The type genome for the species is the GenBank assembly GCA_903970385.1. The GC content of the type genome is 67.17 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Attolaria gen. nov.

Candidatus Attolaria (NL. fem. n. *Attolaria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1515*. The type species for the genus is *Candidatus* Attolaria cunabilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attolella tomacedo sp. nov.

Candidatus Attolella tomacedo (NL. fem. n. *tomacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DG-78 sp001303225*. The type genome for the species is the GenBank assembly GCA_001303225.1. The GC content of the type genome is 40.1 % and the genome length is 2.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Methane-rich estuary sediments 52-54 cm".

Description of *Candidatus* Attolella gen. nov.

Candidatus Attolella (NL. fem. n. *Attolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DG-78*. The type species for the genus is *Candidatus* Attolella tomacedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-42*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Labeciaceae.

Description of *Candidatus* Attolia cetaritrix sp. nov.

Candidatus Attolia cetaritrix (NL. fem. n. *cetaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11869 sp002721165*. The type genome for the species is the GenBank assembly GCA_002721165.1. The GC content of the type genome is 35.66 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Attolia gen. nov.

Candidatus Attolia (NL. fem. n. *Attolia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11869*. The type species for the genus is *Candidatus* Attolia cetaritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Attolia epigrimonas sp. nov.

Candidatus Attolia epigrimonas (NL. fem. n. *epigrimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11869 sp014239225*. The type genome for the species is the GenBank assembly GCA_014239225.1. The GC content of the type genome is 35.33 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Attolia vanitiforma sp. nov.

Candidatus Attolia vanitiforma (NL. fem. n. *vanitiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11869 sp002692205*. The type genome for the species is the GenBank assembly GCA_002692205.1. The GC content of the type genome is 35.09 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Attolia verifitio sp. nov.

Candidatus Attolia verifitio (NL. fem. n. *verifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11869 sp002698845*. The type genome for the species is the GenBank assembly GCA_002698845.1. The GC content of the type genome is 34.71 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Attolida arundatio sp. nov.

Candidatus Attolida arundatio (NL. fem. n. *arundatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTPRO2 sp008933825*. The type genome for the species is the GenBank assembly GCA_008933825.1. The GC content of the type genome is 65.53 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Attolida gen. nov.

Candidatus Attolida (NL. fem. n. *Attolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UTPRO2*. The type species for the genus is *Candidatus* Attolida arundatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attolida murelicula sp. nov.

Candidatus Attolida murelicula (NL. fem. n. *murelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTPRO2 sp002840845*. The type genome for the species is the GenBank assembly GCA_002840845.1. The GC content of the type genome is 63.82 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Attolida negidibula sp. nov.

Candidatus Attolida negidibula (NL. fem. n. *negidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTPRO2 sp003105015*. The type genome for the species is the GenBank assembly GCA_003105015.1. The GC content of the type genome is 65.95 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Attolida nitelisca sp. nov.

Candidatus Attolida nitelisca (NL. fem. n. *nitelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UTPRO2 sp011526165*. The type genome for the species is the GenBank assembly GCA_011526165.1. The GC content of the type genome is 67.21 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Attolida rubiciforma sp. nov.

Candidatus Attolida rubiciforma (NL. fem. n. *rubiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTPRO2 sp002066955*. The type genome for the species is the GenBank assembly GCA_002066955.1. The GC content of the type genome is 66.9 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Attolosa rudicitrix sp. nov.

Candidatus Attolosa rudicitrix (NL. fem. n. *rudicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-32 sp013214065*. The type genome for the species is the GenBank assembly GCA_013214065.1. The GC content of the type genome is 47.2 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Attolosa gen. nov.

Candidatus Attolosa (NL. fem. n. *Attolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-32*. The type species for the genus is *Candidatus* Attolosa rudicitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attolula democetta sp. nov.

Candidatus Attolula democetta (NL. fem. n. *democetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-37-16 sp001801285*. The type genome for the species is the GenBank assembly GCA_001801285.1. The GC content of the type genome is 37.38 % and the genome length is 1.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 5 / E; 5m

depth; 0.2 filter".

Description of *Candidatus* Attolula gen. nov.

Candidatus Attolula (NL. fem. n. *Attolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE2-37-16*. The type species for the genus is *Candidatus* Attolula democetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9339*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetutanaceae.

Description of *Candidatus* Attorana demulilega sp. nov.

Candidatus Attorana demulilega (NL. fem. n. *demulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PTET01 sp004359435*. The type genome for the species is the GenBank assembly GCA_004359435.1. The GC content of the type genome is 37.78 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Attorana gen. nov.

Candidatus Attorana (NL. fem. n. *Attorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PTET01*. The type species for the genus is *Candidatus* Attorana demulilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attorella desupax sp. nov.

Candidatus Attorella desupax (NL. fem. n. *desupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKT01 sp011371605*. The type genome for the species is the GenBank assembly GCA_011371605.1. The GC content of the type genome is 32.65 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Attorella gen. nov.

Candidatus Attorella (NL. fem. n. *Attorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKT01*. The type species for the genus is *Candidatus* Attorella desupax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subucidaceae.

Description of *Candidatus* Attorida oblocilega sp. nov.

Candidatus Attorida oblocilega (NL. fem. n. *oblocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUDO01 sp903897935*. The type genome for the species is the GenBank assembly GCA_903897935.1. The GC content of the type genome is 71.58 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Attorida gen. nov.

Candidatus Attorida (NL. fem. n. *Attorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUDO01*. The type species for the genus is *Candidatus* Attorida oblocilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2862545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tolutanaceae.

Description of *Candidatus* Attorosa domigentia sp. nov.

Candidatus Attorosa domigentia (NL. fem. n. *domigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-10 sp003605055*. The type genome for the species is the GenBank assembly GCA_003605055.1. The GC content of the type genome is 66.98 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Attorosa gen. nov.

Candidatus Attorosa (NL. fem. n. *Attorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-10*. The type species for the genus is *Candidatus* Attorosa domigentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attubaria adoscitudo sp. nov.

Candidatus Attubaria adoscitudo (NL. fem. n. *adoscitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-13 sp003644215*. The type genome for the species is the GenBank assembly GCA_003644215.1. The GC content of the type genome is 50.48 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Attubaria gen. nov.

Candidatus Attubaria (NL. fem. n. *Attubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4572-13*. The type species for the genus is *Candidatus* Attubaria adoscitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attubaria coticatica sp. nov.

Candidatus Attubaria coticatica (NL. fem. n. *coticatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-13 sp002084585*. The type genome for the species is the GenBank assembly GCA_002084585.1. The GC content of the type genome is 50.06 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Attubia algebugo sp. nov.

Candidatus Attubia algebugo (NL. fem. n. *algebugo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-16 sp003605035*. The type genome for the species is the GenBank assembly GCA_003605035.1. The GC content of the type genome is 57.21 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Attubia gen. nov.

Candidatus Attubia (NL. fem. n. *Attubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-16*. The type species for the genus is *Candidatus* Attubia algebugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Attubia resurax sp. nov.

Candidatus Attubia resurax (NL. fem. n. *resurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-16 sp003249165*. The type genome for the species is the GenBank assembly GCA_003249165.1. The GC content of the type genome is 45.36 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Attubida infisousia sp. nov.

Candidatus Attubida infisousia (NL. fem. n. *infisousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FW602-bin19 sp004322375*. The type genome for the species is the GenBank assembly GCA_004322375.1. The GC content of the type genome is 44.7 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Attubida gen. nov.

Candidatus Attubida (NL. fem. n. *Attubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *FW602-bin19*. The type species for the genus is *Candidatus* Attubida infisousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-254*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarellaceae.

Description of *Candidatus* Attubosa coticitrix sp. nov.

Candidatus Attubosa coticitrix (NL. fem. n. *coticitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2717625 sp002717625*. The type genome for the species is the GenBank assembly GCA_002717625.1. The GC content of the type genome is 28.99 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Attubosa gen. nov.

Candidatus Attubosa (NL. fem. n. *Attubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2717625*. The type species for the genus is *Candidatus* Attubosa coticitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002707645*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipiaceae.

Description of *Candidatus* Attubula cisoricula sp. nov.

Candidatus Attubula cisoricula (NL. fem. n. *cisoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-688 sp003156795*. The type genome for the species is the GenBank assembly GCA_003156795.1. The GC content of the type genome is 66.22 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Attubula gen. nov.

Candidatus Attubula (NL. fem. n. *Attubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-688*. The type species for the genus is *Candidatus* Attubula cisoricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-688*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Attubulaceae.

Description of *Candidatus* Attubulaceae fam. nov.

Candidatus Attubulaceae (NL. fem. n. *Attubulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-688.* The type genus for the taxon is *Candidatus* Attubula .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Aulosira chalbitoga sp. nov.

Candidatus Aulosira chalbitoga (NL. fem. n. *chalbitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aulosira sp011769525*. The type genome for the species is the GenBank assembly RS_GCF_011769525.1. The GC content of the type genome is 40.59 % and the genome length is 8.76 Mbp.

Description of *Candidatus* Aulosira ciminax sp. nov.

Candidatus Aulosira ciminax (NL. fem. n. *ciminax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aulosira sp002368175*. The type genome for the species is the GenBank assembly RS_GCF_002368175.1. The GC content of the type genome is 41.18 % and the genome length is 8.88 Mbp.

Description of *Candidatus* Aulosira conaritura sp. nov.

Candidatus Aulosira conaritura (NL. fem. n. *conaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Aulosira sp002368195*. The type genome for the species is the GenBank assembly RS_GCF_002368195.1. The GC content of the type genome is 41.45 % and the genome length is 9.96 Mbp.

Description of *Candidatus* Aulosira dimadetta sp. nov.

Candidatus Aulosira dimadetta (NL. fem. n. *dimadetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aulosira sp002154725*. The type genome for the species is the GenBank assembly RS_GCF_002154725.1. The GC content of the type genome is 41.29 % and the genome length is 8.66 Mbp.

Description of *Candidatus* Aulosira recomatio sp. nov.

Candidatus Aulosira recomatio (NL. fem. n. *recomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aulosira sp002154695*. The type genome for the species is the GenBank assembly RS_GCF_002154695.1. The GC content of the type genome is 41.52 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Aurantimicrobium levificula sp. nov.

Candidatus Aurantimicrobium levificula (NL. fem. n. *levificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aurantimicrobium sp003325955*. The type genome for the species is the GenBank assembly RS_GCF_003325955.1. The GC content of the type genome is 52.38 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Aurantimicrobium senacigena sp. nov.

Candidatus Aurantimicrobium senacigena (NL. fem. n. *senacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aurantimicrobium sp003194085*. The type genome for the species is the GenBank assembly RS_GCF_003194085.1. The GC content of the type genome is 54.56 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Aureibacillus illibitas sp. nov.

Candidatus Aureibacillus illibitas (NL. fem. n. *illibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureibacillus sp011058155*. The type genome for the species is the GenBank assembly RS_GCF_011058155.1. The GC content of the type genome is 43.14 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Aureibaculum defanedo sp. nov.

Candidatus Aureibaculum defanedo (NL. fem. n. *defanedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureibaculum sp011330545*. The type genome for the species is the GenBank assembly GCA_011330545.1. The GC content of the type genome is 35.46 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Aureibaculum detoressa sp. nov.

Candidatus Aureibaculum detoressa (NL. fem. n. *detoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureibaculum sp002352665*. The type genome for the species is the GenBank assembly GCA_002352665.1. The GC content of the type genome is 31.28 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Aureibaculum dilogax sp. nov.

Candidatus Aureibaculum dilogax (NL. fem. n. *dilogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureibaculum sp003511845*. The type genome for the species is the GenBank assembly GCA_003511845.1. The GC content of the type genome is 30.98 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Aureibaculum ensicessa sp. nov.

Candidatus Aureibaculum ensicessa (NL. fem. n. *ensicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureibaculum sp002747735*. The type genome for the species is the GenBank assembly GCA_002747735.1. The GC content of the type genome is 35.32 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Aureibaculum hirunibula sp. nov.

Candidatus Aureibaculum hirunibula (NL. fem. n. *hirunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureibaculum sp003449015*. The type genome for the species is the GenBank assembly RS_GCF_003449015.1. The GC content of the type genome is 32.0 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Aureibaculum intamitrix sp. nov.

Candidatus Aureibaculum intamitrix (NL. fem. n. *intamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureibaculum sp006065315*. The type genome for the species is the GenBank assembly RS_GCF_006065315.1. The GC content of the type genome is 32.21 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Aureimonas accomitia sp. nov.

Candidatus Aureimonas accomitia (NL. fem. n. *accomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas sp001463705*. The type genome for the species is the GenBank assembly RS_GCF_001463705.1. The GC content of the type genome is 67.74 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Aureimonas adtoritoga sp. nov.

Candidatus Aureimonas adtoritoga (NL. fem. n. *adtoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Aureimonas sp014058705*. The type genome for the species is the GenBank assembly RS_GCF_014058705.1. The GC content of the type genome is 66.81 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Aureimonas ceromicella sp. nov.

Candidatus Aureimonas ceromicella (NL. fem. n. *ceromicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas sp001442755*. The type genome for the species is the GenBank assembly RS_GCF_001463725.1. The GC content of the type genome is 66.75 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Aureimonas desorilenta sp. nov.

Candidatus Aureimonas desorilenta (NL. fem. n. *desorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas sp001463765*. The type genome for the species is the GenBank assembly RS_GCF_001463765.1. The GC content of the type genome is 68.66 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Aureimonas ecligatica sp. nov.

Candidatus Aureimonas ecligatica (NL. fem. n. *ecligatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas sp001423245*. The type genome for the species is the GenBank assembly RS_GCF_001423245.1. The GC content of the type genome is 68.1 % and the genome length is 4.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Aureimonas enigmimonas sp. nov.

Candidatus Aureimonas enigmimonas (NL. fem. n. *enigmimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas sp001463745*. The type genome for the species is the GenBank assembly RS_GCF_001463745.1. The GC content of the type genome is 67.66 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Aureimonas furibedo sp. nov.

Candidatus Aureimonas furibedo (NL. fem. n. *furibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas sp008369445*. The type genome for the species is the GenBank assembly RS_GCF_008369445.1. The GC content of the type genome is 56.74 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Aureimonas lucubessa sp. nov.

Candidatus Aureimonas lucubessa (NL. fem. n. *lucubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas sp903970965*. The type genome for the species is the GenBank assembly RS_GCF_903970965.1. The GC content of the type genome is 66.89 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Aureimonas accerilega sp. nov.

Candidatus Aureimonas accerilega (NL. fem. n. *accerilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas_A sp001424685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001424685.1. The GC content of the type genome is 67.1 % and the genome length is 4.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Aureimonas aggubitio sp. nov.

Candidatus Aureimonas aggubitio (NL. fem. n. *aggubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas_A sp014380965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014380965.1. The GC

content of the type genome is 65.77 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Aureimonas capucimonia sp. nov.

Candidatus Aureimonas capucimonia (NL. fem. n. *capucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas_A sp001425485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001425485.1. The GC content of the type genome is 67.02 % and the genome length is 5.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Aureimonas haricitoga sp. nov.

Candidatus Aureimonas haricitoga (NL. fem. n. *haricitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureimonas_A sp009176975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009176975.1. The GC content of the type genome is 64.64 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Aureispira irrecitudo sp. nov.

Candidatus Aureispira irrecitudo (NL. fem. n. *irrecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Aureispira sp000724545*. The type genome for the species is the GenBank assembly RS_GCF_000724545.1. The GC content of the type genome is 35.69 % and the genome length is 7.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seaweed".

Description of *Candidatus* Aureispira obsatedo sp. nov.

Candidatus Aureispira obsatedo (NL. fem. n. *obsatedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Aureispira sp902727865*. The type genome for the species is the GenBank assembly GCA_902727865.1. The GC content of the type genome is 37.24 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Avoncaria ossucivita sp. nov.

Candidatus Avoncaria ossucivita (NL. fem. n. *ossucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-L18 sp003215535*. The type genome for the species is the GenBank assembly GCA_003215535.1. The GC content of the type genome is 40.52 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Avoncaria gen. nov.

Candidatus Avoncaria (NL. fem. n. *Avoncaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-L18*. The type species for the genus is *Candidatus* Avoncaria ossucivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Avoncella sicuniforma sp. nov.

Candidatus Avoncella sicuniforma (NL. fem. n. *sicuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2339 sp002344785*. The type genome for the species is the GenBank assembly GCA_002344785.1. The GC content of the type genome is 55.91 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Avoncella gen. nov.

Candidatus Avoncella (NL. fem. n. *Avoncella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2339*. The type species for the genus is *Candidatus* Avoncella sicuniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Avoncia effemitoga sp. nov.

Candidatus Avoncia effemitoga (NL. fem. n. *effemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYML01 sp012521395*. The type genome for the species is the GenBank assembly GCA_012521395.1. The GC content of the type genome is 33.85 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Avoncia gen. nov.

Candidatus Avoncia (NL. fem. n. *Avoncia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYML01*. The type species for the genus is *Candidatus* Avoncia effemitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Avoncia omnimago sp. nov.

Candidatus Avoncia omnimago (NL. fem. n. *omnimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYML01 sp012518815*. The type genome for the species is the GenBank assembly GCA_012518815.1. The GC content of the type genome is 30.64 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Avoncida indivitura sp. nov.

Candidatus Avoncida indivitura (NL. fem. n. *indivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-31-9 sp001768155*. The type genome for the species is the GenBank assembly GCA_001768155.1. The GC content of the type genome is 30.21 % and the genome length is 4.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Avoncida gen. nov.

Candidatus Avoncida (NL. fem. n. *Avoncida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-31-9*. The type species for the genus is *Candidatus* Avoncida indivitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-33-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mimogiaceae.

Description of *Candidatus* Avoncida vavasibula sp. nov.

Candidatus Avoncida vavasibula (NL. fem. n. *vavasibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-31-9 sp001768975*. The type genome for the species is the GenBank assembly GCA_001768975.1. The GC content of the type genome is 30.4 % and the genome length is 4.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Avoncosa antimousia sp. nov.

Candidatus Avoncosa antimousia (NL. fem. n. *antimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC21906 sp001010805*. The type genome for the species is the GenBank assembly RS_GCF_001010805.1. The GC content of the type genome is 50.66 % and the genome length is 3.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Seawater".

Description of *Candidatus* Avoncosa gen. nov.

Candidatus Avoncosa (NL. fem. n. *Avoncosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IMCC21906*. The type species for the genus is *Candidatus* Avoncosa antimousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Avoncula istinimonia sp. nov.

Candidatus Avoncula istinimonia (NL. fem. n. *istinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBJ01 sp013360595*. The type genome for the species is the GenBank assembly GCA_013360595.1. The GC content of the type genome is 69.27 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Avoncula gen. nov.

Candidatus Avoncula (NL. fem. n. *Avoncula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBJ01*. The type species for the genus is *Candidatus* Avoncula istinimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Avuncana lucelitura sp. nov.

Candidatus Avuncana lucelitura (NL. fem. n. *lucelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1664 sp002401195*. The type genome for the species is the GenBank assembly GCA_002401195.1. The GC content of the type genome is 44.28 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Avuncana gen. nov.

Candidatus Avuncana (NL. fem. n. *Avuncana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1664*. The type species for the genus is *Candidatus* Avuncana lucelitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Avuncana siligibula sp. nov.

Candidatus Avuncana siligibula (NL. fem. n. *siligibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1664 sp002320485*. The type genome for the species is the GenBank assembly GCA_002320485.1. The GC content of the type genome is 44.61 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Avuncaria obnupatio sp. nov.

Candidatus Avuncaria obnupatio (NL. fem. n. *obnupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCT01 sp012523365*. The type genome for the species is the GenBank assembly GCA_012523365.1. The GC content of the type genome is 50.94 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Avuncaria gen. nov.

Candidatus Avuncaria (NL. fem. n. *Avuncaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYCT01*. The type species for the genus is *Candidatus* Avuncaria obnupatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Avuncaria remedibra sp. nov.

Candidatus Avuncaria remedibra (NL. fem. n. *remedibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCT01 sp012729635*. The type genome for the species is the GenBank assembly GCA_012729635.1. The GC content of the type genome is 49.4 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Avuncella homolivita sp. nov.

Candidatus Avuncella homolivita (NL. fem. n. *homolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2699125 sp002699125*. The type genome for the species is the GenBank assembly GCA_002699125.1. The GC content of the type genome is 53.96 % and the genome length is 8.05 Mbp.

Description of *Candidatus* Avuncella gen. nov.

Candidatus Avuncella (NL. fem. n. *Avuncella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2699125*. The type species for the genus is *Candidatus* Avuncella homolivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Avuncia adcucitura sp. nov.

Candidatus Avuncia adcucitura (NL. fem. n. *adcucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCIS01 sp903970435*. The type genome for the species is the GenBank assembly GCA_903970435.1. The GC content of the type genome is 64.08 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Avuncia gen. nov.

Candidatus Avuncia (NL. fem. n. *Avuncia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCIS01*. The type species for the genus is *Candidatus* Avuncia adcucitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Avuncosa rubefitrix sp. nov.

Candidatus Avuncosa rubefitrix (NL. fem. n. *rubefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-52-11 sp001797745*. The type genome for the species is the GenBank assembly GCA_001797745.1. The GC content of the type genome is 52.05 %

and the genome length is 2.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Avuncosa gen. nov.

Candidatus Avuncosa (NL. fem. n. *Avuncosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-52-11*. The type species for the genus is *Candidatus* Avuncosa rubefitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-54-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funivariaceae.

Description of *Candidatus* Avuncula verecisca sp. nov.

Candidatus Avuncula verecisca (NL. fem. n. *verecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-1730015 sp001730015*. The type genome for the species is the GenBank assembly GCA_001730015.1. The GC content of the type genome is 50.36 % and the genome length is 7.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ovicells".

Description of *Candidatus* Avuncula gen. nov.

Candidatus Avuncula (NL. fem. n. *Avuncula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-1730015*. The type species for the genus is *Candidatus* Avuncula verecisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Azoarcus omnivitudo sp. nov.

Candidatus Azoarcus omnivitudo (NL. fem. n. *omnivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Azoarcus sp006496635*. The type genome for the species is the GenBank assembly RS_GCF_006496635.1. The GC content of the type genome is 66.68 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Azoarcus resalicella sp. nov.

Candidatus Azoarcus resalicella (NL. fem. n. *resalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azoarcus sp012911025*. The type genome for the species is the GenBank assembly RS_GCF_012911025.1. The GC content of the type genome is 67.67 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Azoarcus aspilitura sp. nov.

Candidatus Azoarcus aspilitura (NL. fem. n. *aspilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azoarcus_D sp013911595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013911595.1. The GC content of the type genome is 65.68 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Azoarcus proclivita sp. nov.

Candidatus Azoarcus proclivita (NL. fem. n. *proclivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azoarcus_D sp002872475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002872475.1. The GC content of the type genome is 66.53 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Azohydromonas adhosatica sp. nov.

Candidatus Azohydromonas adhosatica (NL. fem. n. *adhosatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Azohydromonas sp009760915*. The type genome for the species is the GenBank assembly RS_GCF_009760915.1. The GC content of the type genome is 70.3 % and the genome length is 7.82 Mbp.

Description of *Candidatus* Azohydromonas advecentia sp. nov.

Candidatus Azohydromonas advecentia (NL. fem. n. *advecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azohydromonas sp012927045*. The type genome for the species is the GenBank assembly RS_GCF_012927045.1. The GC content of the type genome is 69.92 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Azomonas adrenibula sp. nov.

Candidatus Azomonas adrenibula (NL. fem. n. *adrenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azomonas sp002417905*. The type genome for the species is the GenBank assembly GCA_002417905.1. The GC content of the type genome is 61.97 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Azonexus absocimonia sp. nov.

Candidatus Azonexus absocimonia (NL. fem. n. *absocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp002840785*. The type genome for the species is the GenBank assembly GCA_002840785.1. The GC content of the type genome is 61.06 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Azonexus accomitudo sp. nov.

Candidatus Azonexus accomitudo (NL. fem. n. *accomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp003583745*. The type genome for the species is the GenBank assembly GCA_003583745.1. The GC content of the type genome is 60.87 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Azonexus adtilastra sp. nov.

Candidatus Azonexus adtilastra (NL. fem. n. *adtilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp013335535*. The type genome for the species is the GenBank assembly GCA_013335535.1. The GC content of the type genome is 60.02 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Azonexus almitetta sp. nov.

Candidatus Azonexus almitetta (NL. fem. n. *almitetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp002425245*. The type genome for the species is the GenBank assembly GCA_002425245.1. The GC content of the type genome is 62.97 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Azonexus apsegentia sp. nov.

Candidatus Azonexus apsegentia (NL. fem. n. *apsegentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp903922075*. The type genome for the species is the GenBank assembly GCA_903922075.1. The GC content of the type genome is 62.97 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Azonexus bicapedo sp. nov.

Candidatus Azonexus bicapedo (NL. fem. n. *bicapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp903951825*. The type genome for the species is the GenBank assembly GCA_903937605.1. The GC content of the type genome is 58.06 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Azonexus bicodousia sp. nov.

Candidatus Azonexus bicodousia (NL. fem. n. *bicodousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp013693915*. The type genome for the species is the GenBank assembly GCA_013693915.1. The GC content of the type genome is 64.1 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Azonexus celumicula sp. nov.

Candidatus Azonexus celumicula (NL. fem. n. *celumicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp012026885*. The type genome for the species is the GenBank assembly GCA_012026885.1. The GC content of the type genome is 65.7 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Azonexus cerifax sp. nov.

Candidatus Azonexus cerifax (NL. fem. n. *cerifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp008711155*. The type genome for the species is the GenBank assembly RS_GCF_008711155.1. The GC content of the type genome is 61.44 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Azonexus cimelimonia sp. nov.

Candidatus Azonexus cimelimonia (NL. fem. n. *cimelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp002345845*. The type genome for the species is the GenBank assembly GCA_002345845.1. The GC content of the type genome is 63.27 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Azonexus encenivita sp. nov.

Candidatus Azonexus encenivita (NL. fem. n. *encenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Azonexus sp002840765*. The type genome for the species is the GenBank assembly GCA_002840765.1. The GC content of the type genome is 62.87 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Azonexus episcitas sp. nov.

Candidatus Azonexus episcitas (NL. fem. n. *episcitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp012839675*. The type genome for the species is the GenBank assembly GCA_012839675.1. The GC content of the type genome is 60.71 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Azonexus fibicimonia sp. nov.

Candidatus Azonexus fibicimonia (NL. fem. n. *fibicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp002470165*. The type genome for the species is the GenBank assembly GCA_002470165.1. The GC content of the type genome is 63.46 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Azonexus impigilega sp. nov.

Candidatus Azonexus impigilega (NL. fem. n. *impigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp002842345*. The type genome for the species is the GenBank assembly GCA_002842345.1. The GC content of the type genome is 64.12 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Azonexus intacimonas sp. nov.

Candidatus Azonexus intacimonas (NL. fem. n. *intacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp009782025*. The type genome for the species is the GenBank assembly GCA_009782025.1. The GC content of the type genome is 63.88 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Azonexus invinilenta sp. nov.

Candidatus Azonexus invinilenta (NL. fem. n. *invinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp008080565*. The type genome for the species is the GenBank assembly GCA_008080565.1. The GC content of the type genome is 59.62 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Azonexus lapicilega sp. nov.

Candidatus Azonexus lapicilega (NL. fem. n. *lapicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp002440665*. The type genome for the species is the GenBank assembly GCA_002440665.1. The GC content of the type genome is 62.4 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Azonexus locelicula sp. nov.

Candidatus Azonexus locelicula (NL. fem. n. *locelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp009469615*. The type genome for the species is the GenBank assembly RS_GCF_009469615.1. The GC content of the type genome is 64.34 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Azonexus notabitas sp. nov.

Candidatus Azonexus notabitas (NL. fem. n. *notabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp900549295*. The type genome for the species is the GenBank assembly GCA_900549295.1. The GC content of the type genome is 63.08 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Azonexus obtenitas sp. nov.

Candidatus Azonexus obtenitas (NL. fem. n. *obtenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp003441615*. The type genome for the species is the GenBank assembly RS_GCF_003441615.1. The GC content of the type genome is 59.35 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Azonexus octinitura sp. nov.

Candidatus Azonexus octinitura (NL. fem. n. *octinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp012275485*. The type genome for the species is the GenBank assembly RS_GCF_012275485.1. The GC content of the type genome is 61.13 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Azonexus omnivimonia sp. nov.

Candidatus Azonexus omnivimonia (NL. fem. n. *omnivimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp008933675*. The type genome for the species is the GenBank assembly GCA_008933675.1. The GC content of the type genome is 63.03 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Azonexus ontolugo sp. nov.

Candidatus Azonexus ontolugo (NL. fem. n. *ontolugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp002842145*. The type genome for the species is the GenBank assembly GCA_002842145.1. The GC content of the type genome is 59.9 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Azonexus revuledo sp. nov.

Candidatus Azonexus revuledo (NL. fem. n. *revuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Azonexus sp011391255*. The type genome for the species is the GenBank assembly GCA_011391255.1. The GC content of the type genome is 56.57 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Azonexus satacugo sp. nov.

Candidatus Azonexus satacugo (NL. fem. n. *satacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp009779265*. The type genome for the species is the GenBank assembly GCA_009779265.1. The GC content of the type genome is 63.06 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Azonexus scintitia sp. nov.

Candidatus Azonexus scintitia (NL. fem. n. *scintitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp903930395*. The type genome for the species is the GenBank assembly GCA_903930395.1. The GC content of the type genome is 61.08 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Azonexus semunibula sp. nov.

Candidatus Azonexus semunibula (NL. fem. n. *semunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp013363835*. The type genome for the species is the GenBank assembly GCA_013363835.1. The GC content of the type genome is 61.83 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Azonexus tirocilenta sp. nov.

Candidatus Azonexus tirocilenta (NL. fem. n. *tirocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp002396525*. The type genome for the species is the GenBank assembly GCA_002396465.1. The GC content of the type genome is 61.32 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Azonexus tresvousia sp. nov.

Candidatus Azonexus tresvousia (NL. fem. n. *tresvousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp004379165*. The type genome for the species is the GenBank assembly GCA_004379165.1. The GC content of the type genome is 61.55 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Azonexus vacililega sp. nov.

Candidatus Azonexus vacililega (NL. fem. n. *vacililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azonexus sp009469585*. The type genome for the species is the GenBank assembly RS_GCF_009469585.1. The GC content of the type genome is 62.94 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Azospira adlecago sp. nov.

Candidatus Azospira adlecago (NL. fem. n. *adlecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospira sp003112695*. The type genome for the species is the GenBank assembly RS_GCF_003112695.1. The GC content of the type genome is 64.0 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Azospirillum cepulatica sp. nov.

Candidatus Azospirillum cepulatica (NL. fem. n. *cepulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp003119115*. The type genome for the species is the GenBank assembly RS_GCF_003115995.1. The GC content of the type genome is 69.26 % and the genome length is 6.98 Mbp.

Description of *Candidatus* Azospirillum colepax sp. nov.

Candidatus Azospirillum colepax (NL. fem. n. *colepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp003115975*. The type genome for the species is the GenBank assembly RS_GCF_003115975.1. The GC content of the type genome is 67.41 % and the genome length is 7.15 Mbp.

Description of *Candidatus* Azospirillum conaritrix sp. nov.

Candidatus Azospirillum conaritrix (NL. fem. n. *conaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp008364825*. The type genome for the species is the GenBank assembly RS_GCF_008364825.1. The GC content of the type genome is 67.33 % and the genome length is 7.46 Mbp.

Description of *Candidatus* Azospirillum dupunicella sp. nov.

Candidatus Azospirillum dupunicella (NL. fem. n. *dupunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp014192915*. The type genome for the species is the GenBank assembly RS_GCF_014192915.1. The GC content of the type genome is 68.55 % and the genome length is 7.06 Mbp.

Description of *Candidatus* Azospirillum fusifastra sp. nov.

Candidatus Azospirillum fusifastra (NL. fem. n. *fusifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp003116035*. The type genome for the species is the GenBank assembly RS_GCF_003116035.1. The GC content of the type genome is 67.7 % and the genome length is 7.9 Mbp.

Description of *Candidatus* Azospirillum manibitura sp. nov.

Candidatus Azospirillum manibitura (NL. fem. n. *manibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Azospirillum sp003966125*. The type genome for the species is the GenBank assembly RS_GCF_003966125.1. The GC content of the type genome is 66.59 % and the genome length is 5.95 Mbp.

Description of *Candidatus* Azospirillum repagousia sp. nov.

Candidatus Azospirillum repagousia (NL. fem. n. *repagousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp003116095*. The type genome for the species is the GenBank assembly RS_GCF_003116095.1. The GC content of the type genome is 69.34 % and the genome length is 7.35 Mbp.

Description of *Candidatus* Azospirillum turifitrix sp. nov.

Candidatus Azospirillum turifitrix (NL. fem. n. *turifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp003590795*. The type genome for the species is the GenBank assembly RS_GCF_003590795.1. The GC content of the type genome is 65.95 % and the genome length is 6.46 Mbp.

Description of *Candidatus* Azospirillum vinolitrix sp. nov.

Candidatus Azospirillum vinolitrix (NL. fem. n. *vinolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp003116065*. The type genome for the species is the GenBank assembly RS_GCF_004923315.1. The GC content of the type genome is 67.2 % and the genome length is 8.1 Mbp.

Description of *Candidatus* Azospirillum virecitia sp. nov.

Candidatus Azospirillum virecitia (NL. fem. n. *virecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp013423495*. The type genome for the species is the GenBank assembly RS_GCF_013423485.1. The GC content of the type genome is 69.55 % and the genome length is 7.8 Mbp.

Description of *Candidatus* Azospirillum vitifilega sp. nov.

Candidatus Azospirillum vitifilega (NL. fem. n. *vitifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azospirillum sp003116015*. The type genome for the species is the GenBank assembly RS_GCF_003116015.1. The GC content of the type genome is 70.01 % and the genome length is 7.35 Mbp.

Description of *Candidatus* Azovibrio biverastra sp. nov.

Candidatus Azovibrio biverastra (NL. fem. n. *biverastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azovibrio sp009777245*. The type genome for the species is the GenBank assembly GCA_009777245.1. The GC content of the type genome is 54.83 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Azovibrio effinastra sp. nov.

Candidatus Azovibrio effinastra (NL. fem. n. *effinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azovibrio sp002340095*. The type genome for the species is the GenBank assembly GCA_002340095.1. The GC content of the type genome is 64.94 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Azovibrio utillatica sp. nov.

Candidatus Azovibrio utillatica (NL. fem. n. *utillatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Azovibrio sp009777925*. The type genome for the species is the GenBank assembly GCA_009777925.1. The GC content of the type genome is 54.88 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Bacifana denixitudo sp. nov.

Candidatus Bacifana denixitudo (NL. fem. n. *denixitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3206 sp002363705*. The type genome for the species is the GenBank assembly GCA_902801785.1. The GC content of the type genome is 31.53 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Bacifana gen. nov.

Candidatus Bacifana (NL. fem. n. *Bacifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3206*. The type species for the genus is *Candidatus* Bacifana denixitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bacifaria deforousia sp. nov.

Candidatus Bacifaria deforousia (NL. fem. n. *deforousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B143-G9 sp003644275*. The type genome for the species is the GenBank assembly GCA_003644275.1. The GC content of the type genome is 66.41 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Bacifaria gen. nov.

Candidatus Bacifaria (NL. fem. n. *Bacifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B143-G9*. The type species for the genus is *Candidatus* Bacifaria deforousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B143-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bacifariaceae.

Description of *Candidatus* Bacifariaceae fam. nov.

Candidatus Bacifariaceae (NL. fem. n. *Bacifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B143-G9.* The type genus for the taxon is *Candidatus* Bacifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *B143-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bacifariales.

Description of *Candidatus* Bacifariales ord. nov.

Candidatus Bacifariales (NL. fem. n. *Bacifariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B143-G9.* The type genus for the taxon is *Candidatus* Bacifaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *B143-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bacifariae.

Description of *Candidatus* Bacifariae class. nov.

Candidatus Bacifariae (NL. fem. n. *c__Bacifariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B143-G9.* The type genus for the taxon is *Candidatus* Bacifaria .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Bacifella nocenigena sp. nov.

Candidatus Bacifella nocenigena (NL. fem. n. *nocenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-23 sp005879245*. The type genome for the species is the GenBank assembly GCA_005879175.1. The GC content of the type genome is 69.96 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Bacifella gen. nov.

Candidatus Bacifella (NL. fem. n. *Bacifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DP-23*. The type species for the genus is *Candidatus* Bacifella nocenigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DP-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Betacariaceae.

Description of *Candidatus* Bacifia semibiforma sp. nov.

Candidatus Bacifia semibiforma (NL. fem. n. *semibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMB01 sp012840085*. The type genome for the species is the GenBank assembly GCA_012840085.1. The GC content of the type genome is 38.67 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Bacifia gen. nov.

Candidatus Bacifia (NL. fem. n. *Bacifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMB01*. The type species for the genus is *Candidatus* Bacifia semibiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bacifiaceae.

Description of *Candidatus* Bacifiaceae fam. nov.

Candidatus Bacifiaceae (NL. fem. n. *Bacifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMB01*. The type genus for the taxon is *Candidatus* Bacifia .

According to GTDB R06-RS202, this family belongs to the order *Acetivibrionales*.

Description of *Candidatus* Bacifida cadurago sp. nov.

Candidatus Bacifida cadurago (NL. fem. n. *cadurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC1-49-16 sp001029675*. The type genome for the species is the GenBank assembly GCA_003545475.1. The GC content of the type genome is 48.9 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Bacifida gen. nov.

Candidatus Bacifida (NL. fem. n. *Bacifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC1-49-16*. The type species for the genus is *Candidatus* Bacifida cadurago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-47-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuridaceae.

Description of *Candidatus* Bacifosa salubitia sp. nov.

Candidatus Bacifosa salubitia (NL. fem. n. *salubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZGN01 sp903932505*. The type genome for the species is the GenBank assembly GCA_903932505.1. The GC content of the type genome is 57.85 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Bacifosa gen. nov.

Candidatus Bacifosa (NL. fem. n. *Bacifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZGN01*. The type species for the genus is *Candidatus* Bacifosa salubitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIZGN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bacifosaceae.

Description of *Candidatus* Bacifosaceae fam. nov.

Candidatus Bacifosaceae (NL. fem. n. *Bacifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIZGN01.* The type genus for the taxon is *Candidatus* Bacifosa .

According to GTDB R06-RS202, this family belongs to the order *Hydrogenedentiales*.

Description of *Candidatus* Bacifula sicubousia sp. nov.

Candidatus Bacifula sicubousia (NL. fem. n. *sicubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKBP01 sp903825695*. The type genome for the species is the GenBank assembly GCA_903825695.1. The GC content of the type genome is 57.08 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Bacifula gen. nov.

Candidatus Bacifula (NL. fem. n. *Bacifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKBP01*. The type species for the genus is *Candidatus* Bacifula sicubousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipalanaceae.

Description of *Candidatus* Bacillus depetax sp. nov.

Candidatus Bacillus depetax (NL. fem. n. *depetax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus sp010093085*. The type genome for the species is the GenBank assembly RS_GCF_010093085.1. The GC content of the type genome is 43.18 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Bacillus hirunitio sp. nov.

Candidatus Bacillus hirunitio (NL. fem. n. *hirunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bacillus sp013155385*. The type genome for the species is the GenBank assembly RS_GCF_013155385.1. The GC content of the type genome is 38.41 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Bacillus cenodago sp. nov.

Candidatus Bacillus cenodago (NL. fem. n. *cenodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp002975175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002975175.1. The GC content of the type genome is 35.13 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Bacillus defacibula sp. nov.

Candidatus Bacillus defacibula (NL. fem. n. *defacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp900112415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900112415.1. The GC content of the type genome is 35.87 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Bacillus dehinibula sp. nov.

Candidatus Bacillus dehinibula (NL. fem. n. *dehinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp002571225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002571225.1. The GC content of the type genome is 35.05 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Bacillus favonatio sp. nov.

Candidatus Bacillus favonatio (NL. fem. n. *favonatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp006494425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_006494425.1. The GC content of the type genome is 35.23 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Bacillus feculentia sp. nov.

Candidatus Bacillus feculentia (NL. fem. n. *feculentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp000383235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000383235.1. The GC content of the type genome is 36.02 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Bacillus holovicella sp. nov.

Candidatus Bacillus holovicella (NL. fem. n. *holovicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp002551815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002552625.1. The GC content of the type genome is 35.67 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Bacillus munimousia sp. nov.

Candidatus Bacillus munimousia (NL. fem. n. *munimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp900116295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900113855.1. The GC content of the type genome is 35.76 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Bacillus omnivivita sp. nov.

Candidatus Bacillus omnivivita (NL. fem. n. *omnivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp002560985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002560985.1. The GC content of the type genome is 36.34 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Bacillus pepenibula sp. nov.

Candidatus Bacillus pepenibula (NL. fem. n. *pepenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp008923725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007678085.1. The GC content of the type genome is 35.38 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Bacillus tabitentia sp. nov.

Candidatus Bacillus tabitentia (NL. fem. n. *tabitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp013314535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014338615.1. The GC content of the type genome is 35.59 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Bacillus vecorilega sp. nov.

Candidatus Bacillus vecorilega (NL. fem. n. *vecorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_A sp002584985*. Although GTDB has assigned a genus name

with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002561435.1. The GC content of the type genome is 35.42 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Bacillus infunifica sp. nov.

Candidatus Bacillus infunifica (NL. fem. n. *infunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_AO sp002019795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002019795.1. The GC content of the type genome is 37.33 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Bacillus tranvatio sp. nov.

Candidatus Bacillus tranvatio (NL. fem. n. *tranvatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_AR sp002153425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002153425.1. The GC content of the type genome is 37.78 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Bacillus viginivita sp. nov.

Candidatus Bacillus viginivita (NL. fem. n. *viginivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_AS sp003710255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003710255.1. The GC content of the type genome is 45.03 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Bacillus adsulitudo sp. nov.

Candidatus Bacillus adsulitudo (NL. fem. n. *adsulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_BA sp000504165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000504165.1. The GC content of the type genome is 40.93 % and the genome length is 5.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Bacillus delacetta sp. nov.

Candidatus Bacillus delacetta (NL. fem. n. *delacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_BB sp001884825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001884825.1. The GC content of the type genome is 56.49 % and the genome length is 2.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "ZC4 (Zoo Composter number 4) at the Sao Paulo Zoo".

Description of *Candidatus* Bacillus casigitica sp. nov.

Candidatus Bacillus casigitica (NL. fem. n. *casigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_BJ sp002860165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002860165.1. The GC content of the type genome is 42.23 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Bacillus diludisca sp. nov.

Candidatus Bacillus diludisca (NL. fem. n. *diludisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_BM sp003316765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003316765.1. The GC content of the type genome is 42.64 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Bacillus susicatica sp. nov.

Candidatus Bacillus susicatica (NL. fem. n. *susicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_BM sp000181495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000181495.1. The GC content of the type genome is 42.09 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Bacillus immigatica sp. nov.

Candidatus Bacillus immigatica (NL. fem. n. *immigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_BN sp009466385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009466385.1. The GC content of the type genome is 38.05 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Bacillus algifentia sp. nov.

Candidatus Bacillus algifentia (NL. fem. n. *algifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_BS sp008364785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_008364785.1. The GC content of the type genome is 36.55 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Bacillus desulitudo sp. nov.

Candidatus Bacillus desulitudo (NL. fem. n. *desulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_BU sp000242895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000242895.2. The GC content of the type genome is 37.95 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Bacillus gasomitio sp. nov.

Candidatus Bacillus gasomitio (NL. fem. n. *gasomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_BU sp012843265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012843265.1. The GC content of the type genome is 38.8 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Bacillus defacitudo sp. nov.

Candidatus Bacillus defacitudo (NL. fem. n. *defacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_H sp900197585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900197585.1. The GC content of the type genome is 40.33 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Bacillus immigugo sp. nov.

Candidatus Bacillus immigugo (NL. fem. n. *immigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_H sp001310375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001310375.1. The GC content of the type genome is 40.21 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Bacillus nehalax sp. nov.

Candidatus Bacillus nehalax (NL. fem. n. *nehalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_H sp000576325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000576325.1. The GC content of the type genome is 40.98 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Bacillus depubibra sp. nov.

Candidatus Bacillus depubibra (NL. fem. n. *depubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_L sp001310635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001310635.1. The GC content of the type genome is 37.17 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Bacillus denoritura sp. nov.

Candidatus Bacillus denoritura (NL. fem. n. *denoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_P sp002858905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002858905.1. The GC content of the type genome is 39.11 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Bacillus nitelitia sp. nov.

Candidatus Bacillus nitelitia (NL. fem. n. *nitelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacillus_S sp002797325*. Although GTDB has assigned a genus name

with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002797325.1. The GC content of the type genome is 39.79 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Bacteriovorax impigitio sp. nov.

Candidatus Bacteriovorax impigitio (NL. fem. n. *impigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteriovorax sp014376445*. The type genome for the species is the GenBank assembly GCA_014376445.1. The GC content of the type genome is 38.14 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Bacteriovorax inlumivita sp. nov.

Candidatus Bacteriovorax inlumivita (NL. fem. n. *inlumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteriovorax sp014378525*. The type genome for the species is the GenBank assembly GCA_014378525.1. The GC content of the type genome is 38.89 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Bacteriovorax inmitatio sp. nov.

Candidatus Bacteriovorax inmitatio (NL. fem. n. *inmitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteriovorax sp002440825*. The type genome for the species is the GenBank assembly GCA_002440825.1. The GC content of the type genome is 41.39 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Bacteriovorax macilitura sp. nov.

Candidatus Bacteriovorax macilitura (NL. fem. n. *macilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteriovorax sp002428265*. The type genome for the species is the GenBank assembly GCA_002428265.1. The GC content of the type genome is 37.95 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Bacteriovorax oblonicula sp. nov.

Candidatus Bacteriovorax oblonicula (NL. fem. n. *oblonicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteriovorax sp013141065*. The type genome for the species is the GenBank assembly GCA_013141065.1. The GC content of the type genome is 35.46 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Bacteriovorax tibicatio sp. nov.

Candidatus Bacteriovorax tibicatio (NL. fem. n. *tibicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteriovorax sp014377485*. The type genome for the species is the GenBank assembly GCA_014377485.1. The GC content of the type genome is 36.05 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Bacteroides adcuciforma sp. nov.

Candidatus Bacteroides adcuciforma (NL. fem. n. *adcuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900765785*. The type genome for the species is the GenBank assembly GCA_900765785.1. The GC content of the type genome is 42.5 % and the genome length is 6.57 Mbp.

Description of *Candidatus* Bacteroides addivisca sp. nov.

Candidatus Bacteroides addivisca (NL. fem. n. *addivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900755095*. The type genome for the species is the GenBank assembly GCA_900755095.1. The GC content of the type genome is 41.83 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Bacteroides admigifica sp. nov.

Candidatus Bacteroides admigifica (NL. fem. n. *admigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp009929715*. The type genome for the species is the GenBank assembly GCA_009929715.1. The GC content of the type genome is 43.25 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Bacteroides amnigatica sp. nov.

Candidatus Bacteroides amnigatica (NL. fem. n. *amnigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900766195*. The type genome for the species is the GenBank assembly GCA_900766195.1. The GC content of the type genome is 39.57 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Bacteroides asporitudo sp. nov.

Candidatus Bacteroides asporitudo (NL. fem. n. *asporitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp010500965*. The type genome for the species is the GenBank assembly RS_GCF_010500965.1. The GC content of the type genome is 42.77 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Bacteroides bicoritia sp. nov.

Candidatus Bacteroides bicoritia (NL. fem. n. *bicoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900066265*. The type genome for the species is the GenBank assembly GCA_001915495.1. The GC content of the type genome is 42.44 % and the genome length is 2.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Bacteroides butubastra sp. nov.

Candidatus Bacteroides butubastra (NL. fem. n. *butubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900762525*. The type genome for the species is the GenBank assembly GCA_900762525.1. The GC content of the type genome is 40.93 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Bacteroides cacomitudo sp. nov.

Candidatus Bacteroides cacomitudo (NL. fem. n. *cacomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900761785*. The type genome for the species is the GenBank assembly GCA_900761785.1. The GC content of the type genome is 42.49 % and the genome length is 8.3 Mbp.

Description of *Candidatus* Bacteroides catafedo sp. nov.

Candidatus Bacteroides catafedo (NL. fem. n. *catafedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp902362375*. The type genome for the species is the GenBank assembly RS_GCF_902362375.1. The GC content of the type genome is 42.15 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Bacteroides cenacilenta sp. nov.

Candidatus Bacteroides cenacilenta (NL. fem. n. *cenacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp007097645*. The type genome for the species is the GenBank assembly RS_GCF_007097645.1. The GC content of the type genome is 41.48 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Bacteroides depecatio sp. nov.

Candidatus Bacteroides depecatio (NL. fem. n. *depecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900760255*. The type genome for the species is the GenBank assembly GCA_900760255.1. The GC content of the type genome is 41.39 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Bacteroides dimacimonas sp. nov.

Candidatus Bacteroides dimacimonas (NL. fem. n. *dimacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp002471195*. The type genome for the species is the GenBank assembly GCA_002471195.1. The GC content of the type genome is 36.32 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Bacteroides disidastra sp. nov.

Candidatus Bacteroides disidastra (NL. fem. n. *disidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900555635*. The type genome for the species is the GenBank assembly GCA_900555635.1. The GC content of the type genome is 41.44 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Bacteroides excogifica sp. nov.

Candidatus Bacteroides excogifica (NL. fem. n. *excogifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp010500995*. The type genome for the species is the GenBank assembly RS_GCF_010500995.1. The GC content of the type genome is 39.39 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Bacteroides giganetta sp. nov.

Candidatus Bacteroides giganetta (NL. fem. n. *giganetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp007896885*. The type genome for the species is the GenBank assembly RS_GCF_007896885.1. The GC content of the type genome is 39.3 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Bacteroides hiruditica sp. nov.

Candidatus Bacteroides hiruditica (NL. fem. n. *hiruditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp002293435*. The type genome for the species is the GenBank assembly GCA_002293435.1. The GC content of the type genome is 44.09 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Bacteroides infiritica sp. nov.

Candidatus Bacteroides infiritica (NL. fem. n. *infiritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900766005*. The type genome for the species is the GenBank assembly GCA_900766005.1. The GC content of the type genome is 46.43 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Bacteroides inobsax sp. nov.

Candidatus Bacteroides inobsax (NL. fem. n. *inobsax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900557355*. The type genome for the species is the GenBank assembly GCA_900557355.1. The GC content of the type genome is 41.17 % and the genome length is 7.19 Mbp.

Description of *Candidatus* Bacteroides inrevousia sp. nov.

Candidatus Bacteroides inrevousia (NL. fem. n. *inrevousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp012113595*. The type genome for the species is the GenBank assembly RS_GCF_012113595.1. The GC content of the type genome is 42.8 % and the genome length is 6.78 Mbp.

Description of *Candidatus* Bacteroides insibicella sp. nov.

Candidatus Bacteroides insibicella (NL. fem. n. *insibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bacteroides sp900553815*. The type genome for the species is the GenBank assembly GCA_900553815.1. The GC content of the type genome is 49.24 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Bacteroides monimicella sp. nov.

Candidatus Bacteroides monimicella (NL. fem. n. *monimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp010501015*. The type genome for the species is the GenBank assembly RS_GCF_010501015.1. The GC content of the type genome is 41.37 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Bacteroides monopitudo sp. nov.

Candidatus Bacteroides monopitudo (NL. fem. n. *monopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp002160055*. The type genome for the species is the GenBank assembly RS_GCF_002160055.1. The GC content of the type genome is 49.52 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Bacteroides nocumatica sp. nov.

Candidatus Bacteroides nocumatica (NL. fem. n. *nocumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp002471185*. The type genome for the species is the GenBank assembly GCA_002471185.1. The GC content of the type genome is 38.7 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Bacteroides papilousia sp. nov.

Candidatus Bacteroides papilousia (NL. fem. n. *papilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp002491635*. The type genome for the species is the GenBank assembly GCA_013316615.1. The GC content of the type genome is 46.78 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Bacteroides paralago sp. nov.

Candidatus Bacteroides paralago (NL. fem. n. *paralago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp010500955*. The type genome for the species is the GenBank assembly RS_GCF_010500955.1. The GC content of the type genome is 39.34 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Bacteroides refacifica sp. nov.

Candidatus Bacteroides refacifica (NL. fem. n. *refacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900547205*. The type genome for the species is the GenBank assembly GCA_900764305.1. The GC content of the type genome is 43.47 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Bacteroides regififica sp. nov.

Candidatus Bacteroides regififica (NL. fem. n. *regififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp003545565*. The type genome for the species is the GenBank assembly GCA_900539955.1. The GC content of the type genome is 44.12 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Bacteroides renavitura sp. nov.

Candidatus Bacteroides renavitura (NL. fem. n. *renavitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900556625*. The type genome for the species is the GenBank assembly GCA_900556625.1. The GC content of the type genome is 42.24 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Bacteroides repagedo sp. nov.

Candidatus Bacteroides repagedo (NL. fem. n. *repagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp003463205*. The type genome for the species is the GenBank assembly RS_GCF_003458155.1. The GC content of the type genome is 41.76 % and the genome length is 7.06 Mbp.

Description of *Candidatus* Bacteroides repepitudo sp. nov.

Candidatus Bacteroides repepitudo (NL. fem. n. *repepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900556215*. The type genome for the species is the GenBank assembly GCA_900556215.1. The GC content of the type genome is 42.04 % and the genome length is 6.84 Mbp.

Description of *Candidatus* Bacteroides sicunax sp. nov.

Candidatus Bacteroides sicunax (NL. fem. n. *sicunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp002307035*. The type genome for the species is the GenBank assembly GCA_002307035.1. The GC content of the type genome is 39.78 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Bacteroides sifunitio sp. nov.

Candidatus Bacteroides sifunitio (NL. fem. n. *sifunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900552405*. The type genome for the species is the GenBank assembly GCA_900552405.1. The GC content of the type genome is 43.6 % and the genome length is 6.63 Mbp.

Description of *Candidatus* Bacteroides vehemiforma sp. nov.

Candidatus Bacteroides vehemiforma (NL. fem. n. *vehemiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bacteroides sp014385165*. The type genome for the species is the GenBank assembly GCA_014385165.1. The GC content of the type genome is 41.3 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Bacteroides vilipitudo sp. nov.

Candidatus Bacteroides vilipitudo (NL. fem. n. *vilipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp900765805*. The type genome for the species is the GenBank assembly GCA_900765805.1. The GC content of the type genome is 42.5 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Bacteroides viragivita sp. nov.

Candidatus Bacteroides viragivita (NL. fem. n. *viragivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp003865075*. The type genome for the species is the GenBank assembly RS_GCF_003865075.1. The GC content of the type genome is 39.5 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Bacteroides xenodugo sp. nov.

Candidatus Bacteroides xenodugo (NL. fem. n. *xenodugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides sp902388495*. The type genome for the species is the GenBank assembly GCA_902388495.1. The GC content of the type genome is 47.19 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Bacteroides appugivita sp. nov.

Candidatus Bacteroides appugivita (NL. fem. n. *appugivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides_D sp013333835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013333835.2. The GC

content of the type genome is 55.15 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Bacteroides bifarastra sp. nov.

Candidatus Bacteroides bifarastra (NL. fem. n. *bifarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides_D sp002749065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002749065.1. The GC content of the type genome is 63.99 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Bacteroides indifitrix sp. nov.

Candidatus Bacteroides indifitrix (NL. fem. n. *indifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bacteroides_D sp002748015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002748015.1. The GC content of the type genome is 57.1 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Baditana alcalifica sp. nov.

Candidatus Baditana alcalifica (NL. fem. n. *alcalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-64-14 sp002255365*. The type genome for the species is the GenBank assembly GCA_002255365.1. The GC content of the type genome is 64.29 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Baditana gen. nov.

Candidatus Baditana (NL. fem. n. *Baditana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-64-14*. The type species for the genus is *Candidatus* Baditana alcalifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *21-64-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditanaceae.

Description of *Candidatus* Baditanaceae fam. nov.

Candidatus Baditanaceae (NL. fem. n. *Baditanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *21-64-14.* The type genus for the taxon is *Candidatus* Baditana .

According to the original version of GTDB R06-RS202, this family belongs to the order *21-64-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Baditanales.

Description of *Candidatus* Baditanales ord. nov.

Candidatus Baditanales (NL. fem. n. *Baditanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *21-64-14.* The type genus for the taxon is *Candidatus* Baditana .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Baditaria modifedo sp. nov.

Candidatus Baditaria modifedo (NL. fem. n. *modifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6952 sp002450515*. The type genome for the species is the GenBank assembly GCA_009392835.1. The GC content of the type genome is 33.47 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Baditaria gen. nov.

Candidatus Baditaria (NL. fem. n. *Baditaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6952*. The type species for the genus is *Candidatus* Baditaria modifedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6952*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditariaceae.

Description of *Candidatus* Baditariaceae fam. nov.

Candidatus Baditariaceae (NL. fem. n. *Baditariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6952.* The type genus for the taxon is *Candidatus* Baditaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6952*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Baditariales.

Description of *Candidatus* Baditariales ord. nov.

Candidatus Baditariales (NL. fem. n. *Baditariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6952.* The type genus for the taxon is *Candidatus* Baditaria .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Baditaria obfenimonia sp. nov.

Candidatus Baditaria obfenimonia (NL. fem. n. *obfenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6952 sp009392515*. The type genome for the species is the GenBank assembly GCA_009392515.1. The GC content of the type genome is 33.82 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Baditella paropimonia sp. nov.

Candidatus Baditella paropimonia (NL. fem. n. *paropimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5200 sp002412825*. The type genome for the species is the GenBank assembly GCA_002412825.1. The GC content of the type genome is 59.12 %

and the genome length is 3.46 Mbp.

Description of *Candidatus* Baditella gen. nov.

Candidatus Baditella (NL. fem. n. *Baditella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5200*. The type species for the genus is *Candidatus* Baditella paropimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12059*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubicanaceae.

Description of *Candidatus* Baditella sonivimonia sp. nov.

Candidatus Baditella sonivimonia (NL. fem. n. *sonivimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5200 sp004525355*. The type genome for the species is the GenBank assembly GCA_004525355.1. The GC content of the type genome is 58.92 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Baditia refinessa sp. nov.

Candidatus Baditia refinessa (NL. fem. n. *refinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2168 sp002327525*. The type genome for the species is the GenBank assembly GCA_002327525.1. The GC content of the type genome is 60.2 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Baditia gen. nov.

Candidatus Baditia (NL. fem. n. *Baditia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2168*. The type species for the genus is *Candidatus* Baditia refinessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Baditia visibitrix sp. nov.

Candidatus Baditia visibitrix (NL. fem. n. *visibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2168 sp009843635*. The type genome for the species is the GenBank assembly GCA_009842155.1. The GC content of the type genome is 64.12 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Baditida aggenitrix sp. nov.

Candidatus Baditida aggenitrix (NL. fem. n. *aggenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED108 sp002712245*. The type genome for the species is the GenBank assembly GCA_002712245.1. The GC content of the type genome is 34.17 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Baditida gen. nov.

Candidatus Baditida (NL. fem. n. *Baditida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED108*. The type species for the genus is *Candidatus* Baditida aggenitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufidaceae.

Description of *Candidatus* Baditida decacisca sp. nov.

Candidatus Baditida decacisca (NL. fem. n. *decacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED108 sp002717765*. The type genome for the species is the GenBank assembly GCA_002717765.1. The GC content of the type genome is 35.45 %

and the genome length is 1.31 Mbp.

Description of *Candidatus* Baditida diludax sp. nov.

Candidatus Baditida diludax (NL. fem. n. *diludax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED108 sp002702225*. The type genome for the species is the GenBank assembly GCA_002702225.1. The GC content of the type genome is 38.18 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Baditida hirunitas sp. nov.

Candidatus Baditida hirunitas (NL. fem. n. *hirunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED108 sp002724475*. The type genome for the species is the GenBank assembly GCA_002724475.1. The GC content of the type genome is 37.26 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Baditida insemibula sp. nov.

Candidatus Baditida insemibula (NL. fem. n. *insemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED108 sp002724735*. The type genome for the species is the GenBank assembly GCA_002724735.1. The GC content of the type genome is 36.5 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Baditida isoscessa sp. nov.

Candidatus Baditida isoscessa (NL. fem. n. *isoscessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED108 sp002725545*. The type genome for the species is the GenBank assembly GCA_002725545.1. The GC content of the type genome is 36.19 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Baditida tegimitia sp. nov.

Candidatus Baditida tegimitia (NL. fem. n. *tegimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED108 sp002172545*. The type genome for the species is the GenBank assembly GCA_002172545.1. The GC content of the type genome is 34.99 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Baditosa dececentia sp. nov.

Candidatus Baditosa dececentia (NL. fem. n. *dececentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-41-26 sp002773545*. The type genome for the species is the GenBank assembly GCA_002773545.1. The GC content of the type genome is 41.06 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Baditosa gen. nov.

Candidatus Baditosa (NL. fem. n. *Baditosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-41-26*. The type species for the genus is *Candidatus* Baditosa dececentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-41-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditosaceae.

Description of *Candidatus* Baditosaceae fam. nov.

Candidatus Baditosaceae (NL. fem. n. *Baditosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG1-02-41-26.* The type genus for the taxon is *Candidatus* Baditosa .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Baditula adcucedo sp. nov.

Candidatus Baditula adcucedo (NL. fem. n. *adcucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2821 sp902763335*. The type genome for the species is the GenBank assembly GCA_902763335.1. The GC content of the type genome is 37.38 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Baditula gen. nov.

Candidatus Baditula (NL. fem. n. *Baditula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2821*. The type species for the genus is *Candidatus* Baditula adcucedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Baditula benivibula sp. nov.

Candidatus Baditula benivibula (NL. fem. n. *benivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2821 sp902786515*. The type genome for the species is the GenBank assembly GCA_902786515.1. The GC content of the type genome is 36.59 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Baditula regifago sp. nov.

Candidatus Baditula regifago (NL. fem. n. *regifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2821 sp002351535*. The type genome for the species is the GenBank assembly GCA_902773645.1. The GC content of the type genome is 35.79 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Baia insubibra sp. nov.

Candidatus Baia insubibra (NL. fem. n. *insubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Baia sp900107305*. The type genome for the species is the GenBank assembly RS_GCF_900107305.1. The GC content of the type genome is 41.68 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Baia smegmugo sp. nov.

Candidatus Baia smegmugo (NL. fem. n. *smegmugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Baia sp900119485*. The type genome for the species is the GenBank assembly RS_GCF_900119485.1. The GC content of the type genome is 41.48 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Balnearium capuditio sp. nov.

Candidatus Balnearium capuditio (NL. fem. n. *capuditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Balnearium sp003978105*. The type genome for the species is the GenBank assembly GCA_003978105.1. The GC content of the type genome is 41.44 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Balneola advecilenta sp. nov.

Candidatus Balneola advecilenta (NL. fem. n. *advecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Balneola sp006969905*. The type genome for the species is the GenBank assembly GCA_006969905.1. The GC content of the type genome is 40.54 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Balneola venefitoga sp. nov.

Candidatus Balneola venefitoga (NL. fem. n. *venefitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Balneola sp002364085*. The type genome for the species is the GenBank assembly GCA_002325345.1. The GC content of the type genome is 37.49 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Balneola viginitica sp. nov.

Candidatus Balneola viginitica (NL. fem. n. *viginitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Balneola sp001650905*. The type genome for the species is the GenBank assembly RS_GCF_001650905.1. The GC content of the type genome is 38.08 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Bariatricus homunedo sp. nov.

Candidatus Bariatricus homunedo (NL. fem. n. *homunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bariatricus sp900554415*. The type genome for the species is the GenBank assembly RS_GCF_900771795.1. The GC content of the type genome is 40.58 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Bariatricus insemitica sp. nov.

Candidatus Bariatricus insemitica (NL. fem. n. *insemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bariatricus sp004560705*. The type genome for the species is the GenBank assembly GCA_004560705.1. The GC content of the type genome is 43.98 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Barnesiella depasilega sp. nov.

Candidatus Barnesiella depasilega (NL. fem. n. *depasilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Barnesiella sp900538705*. The type genome for the species is the GenBank assembly RS_GCF_900753775.1. The GC content of the type genome is 44.95 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Barnesiella feditessa sp. nov.

Candidatus Barnesiella feditessa (NL. fem. n. *feditessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Barnesiella sp002159975*. The type genome for the species is the GenBank assembly GCA_900540285.1. The GC content of the type genome is 54.4 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Barnesiella lavacifica sp. nov.

Candidatus Barnesiella lavacifica (NL. fem. n. *lavacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Barnesiella sp900538555*. The type genome for the species is the GenBank assembly GCA_900538555.1. The GC content of the type genome is 48.76 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Barnesiella optumatio sp. nov.

Candidatus Barnesiella optumatio (NL. fem. n. *optumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Barnesiella sp002161555*. The type genome for the species is the GenBank assembly RS_GCF_002161555.1. The GC content of the type genome is 51.39 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Barnesiella pinacitia sp. nov.

Candidatus Barnesiella pinacitia (NL. fem. n. *pinacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Barnesiella sp003150885*. The type genome for the species is the GenBank assembly GCA_003150885.1. The GC content of the type genome is 39.92 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Barnesiella tirunibra sp. nov.

Candidatus Barnesiella tirunibra (NL. fem. n. *tirunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Barnesiella sp900542255*. The type genome for the species is the GenBank assembly GCA_900542255.1. The GC content of the type genome is 50.08 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Baropana artolicula sp. nov.

Candidatus Baropana artolicula (NL. fem. n. *artolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN17 sp011380385*. The type genome for the species is the GenBank assembly GCA_011380385.1. The GC content of the type genome is 48.07 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Baropana gen. nov.

Candidatus Baropana (NL. fem. n. *Baropana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN17*. The type species for the genus is *Candidatus* Baropana artolicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baropanaceae.

Description of *Candidatus* Baropanaceae fam. nov.

Candidatus Baropanaceae (NL. fem. n. *Baropanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN17.* The type genus for the taxon is *Candidatus* Baropana .

According to the original version of GTDB R06-RS202, this family belongs to the order *HRBIN17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Baropanales.

Description of *Candidatus* Baropanales ord. nov.

Candidatus Baropanales (NL. fem. n. *Baropanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN17.* The type genus for the taxon is *Candidatus* Baropana .

According to the original version of GTDB R06-RS202, this family belongs to the class *HRBIN17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Baropanae.

Description of *Candidatus* Baropanae class. nov.

Candidatus Baropanae (NL. fem. n. *c__Baropanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN17.* The type genus for the taxon is *Candidatus* Baropana .

According to GTDB R06-RS202, this class belongs to the phylum *Armatimonadota*.

Description of *Candidatus* Baropana bugililenta sp. nov.

Candidatus Baropana bugililenta (NL. fem. n. *bugililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN17 sp011335125*. The type genome for the species is the GenBank assembly GCA_011335125.1. The GC content of the type genome is 51.85 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Baropana fusifivita sp. nov.

Candidatus Baropana fusifivita (NL. fem. n. *fusifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN17 sp011380395*. The type genome for the species is the GenBank assembly GCA_011380395.1. The GC content of the type genome is 50.32 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Baropana manufisca sp. nov.

Candidatus Baropana manufisca (NL. fem. n. *manufisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN17 sp002898575*. The type genome for the species is the GenBank assembly GCA_002898575.1. The GC content of the type genome is 58.62 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Baropana nimiricula sp. nov.

Candidatus Baropana nimiricula (NL. fem. n. *nimiricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN17 sp011055095*. The type genome for the species is the GenBank assembly GCA_011053875.1. The GC content of the type genome is 56.85 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Baroparia labecastra sp. nov.

Candidatus Baroparia labecastra (NL. fem. n. *labecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9978 sp000995065*. The type genome for the species is the GenBank assembly GCA_003500505.1. The GC content of the type genome is 38.93 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Baroparia gen. nov.

Candidatus Baroparia (NL. fem. n. *Baroparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9978*. The type species for the genus is *Candidatus* Baroparia labecastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CPR2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defanosaceae.

Description of *Candidatus* Baropella senacitia sp. nov.

Candidatus Baropella senacitia (NL. fem. n. *senacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-54 sp003599635*. The type genome for the species is the GenBank assembly GCA_003599635.1. The GC content of the type genome is 39.66 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Baropella gen. nov.

Candidatus Baropella (NL. fem. n. *Baropella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-54*. The type species for the genus is *Candidatus* Baropella senacitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-54*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baropellaceae.

Description of *Candidatus* Baropellaceae fam. nov.

Candidatus Baropellaceae (NL. fem. n. *Baropellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-54.* The type genus for the taxon is *Candidatus* Baropella .

According to GTDB R06-RS202, this family belongs to the order *Buchananbacterales*.

Description of *Candidatus* Baropia adfamitrix sp. nov.

Candidatus Baropia adfamitrix (NL. fem. n. *adfamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACFB01 sp013138675*. The type genome for the species is the GenBank assembly GCA_013138675.1. The GC content of the type genome is 56.87 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Baropia gen. nov.

Candidatus Baropia (NL. fem. n. *Baropia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACFB01*. The type species for the genus is *Candidatus* Baropia adfamitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Baropia cunabago sp. nov.

Candidatus Baropia cunabago (NL. fem. n. *cunabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACFB01 sp009937615*. The type genome for the species is the GenBank assembly GCA_009937615.1. The GC content of the type genome is 59.42 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Baropia depelimonia sp. nov.

Candidatus Baropia depelimonia (NL. fem. n. *depelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACFB01 sp011772865*. The type genome for the species is the GenBank assembly GCA_011773825.1. The GC content of the type genome is 59.59 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Baropida malifibra sp. nov.

Candidatus Baropida malifibra (NL. fem. n. *malifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4996 sp012799535*. The type genome for the species is the GenBank assembly GCA_012799535.1. The GC content of the type genome is 44.74 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Baropida gen. nov.

Candidatus Baropida (NL. fem. n. *Baropida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4996*. The type species for the genus is *Candidatus* Baropida malifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Baropida visocisca sp. nov.

Candidatus Baropida visocisca (NL. fem. n. *visocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4996 sp002396805*. The type genome for the species is the GenBank assembly GCA_002396805.1. The GC content of the type genome is 46.33 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Baroposa avuncibra sp. nov.

Candidatus Baroposa avuncibra (NL. fem. n. *avuncibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASP10-02a sp003523085*. The type genome for the species is the GenBank assembly GCA_003523085.1. The GC content of the type genome is 48.89 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Baroposa gen. nov.

Candidatus Baroposa (NL. fem. n. *Baroposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ASP10-02a*. The type species for the genus is *Candidatus* Baroposa avuncibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Baroposa embametta sp. nov.

Candidatus Baroposa embametta (NL. fem. n. *embametta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASP10-02a sp003521845*. The type genome for the species is the GenBank assembly GCA_003521845.1. The GC content of the type genome is 48.38 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Baroposa errabilega sp. nov.

Candidatus Baroposa errabilega (NL. fem. n. *errabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASP10-02a sp003497765*. The type genome for the species is the

GenBank assembly GCA_003497765.1. The GC content of the type genome is 44.41 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Baroposa homagibra sp. nov.

Candidatus Baroposa homagibra (NL. fem. n. *homagibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASP10-02a sp002335115*. The type genome for the species is the GenBank assembly GCA_002335115.1. The GC content of the type genome is 45.31 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Baroposa laculitura sp. nov.

Candidatus Baroposa laculitura (NL. fem. n. *laculitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASP10-02a sp002470565*. The type genome for the species is the GenBank assembly GCA_002470565.1. The GC content of the type genome is 43.83 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Baroposa papavitia sp. nov.

Candidatus Baroposa papavitia (NL. fem. n. *papavitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASP10-02a sp002686055*. The type genome for the species is the GenBank assembly GCA_003522645.1. The GC content of the type genome is 44.54 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Baroposa semilitura sp. nov.

Candidatus Baroposa semilitura (NL. fem. n. *semilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASP10-02a sp002312935*. The type genome for the species is the GenBank assembly GCA_000981725.1. The GC content of the type genome is 44.97 % and the genome length is 2.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Amundsen Sea polynya".

Description of *Candidatus* Baropula admoditio sp. nov.

Candidatus Baropula admoditio (NL. fem. n. *admoditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1258 sp002308235*. The type genome for the species is the GenBank assembly GCA_002308235.1. The GC content of the type genome is 46.78 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Baropula gen. nov.

Candidatus Baropula (NL. fem. n. *Baropula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1258*. The type species for the genus is *Candidatus* Baropula admoditio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Baropula insuritas sp. nov.

Candidatus Baropula insuritas (NL. fem. n. *insuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1258 sp900100895*. The type genome for the species is the GenBank assembly RS_GCF_900100895.1. The GC content of the type genome is 45.07 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Baropula monogicella sp. nov.

Candidatus Baropula monogicella (NL. fem. n. *monogicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1258 sp902772805*. The type genome for the species is the GenBank assembly GCA_902795645.1. The GC content of the type genome is 44.95 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Bartonella bicodigena sp. nov.

Candidatus Bartonella bicodigena (NL. fem. n. *bicodigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bartonella sp002022445*. The type genome for the species is the GenBank assembly RS_GCF_002022445.1. The GC content of the type genome is 35.94 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Bartonella catocimonia sp. nov.

Candidatus Bartonella catocimonia (NL. fem. n. *catocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bartonella sp903679515*. The type genome for the species is the GenBank assembly RS_GCF_903679515.1. The GC content of the type genome is 38.05 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Bartonella desucitio sp. nov.

Candidatus Bartonella desucitio (NL. fem. n. *desucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bartonella sp002022505*. The type genome for the species is the GenBank assembly RS_GCF_002022505.1. The GC content of the type genome is 37.57 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Bartonella intemicella sp. nov.

Candidatus Bartonella intemicella (NL. fem. n. *intemicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bartonella sp002022415*. The type genome for the species is the GenBank assembly RS_GCF_002022415.1. The GC content of the type genome is 37.79 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Bartonella manubastra sp. nov.

Candidatus Bartonella manubastra (NL. fem. n. *manubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bartonella sp000278115*. The type genome for the species is the GenBank assembly RS_GCF_000278115.1. The GC content of the type genome is 38.73 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Bartonella vilipitoga sp. nov.

Candidatus Bartonella vilipitoga (NL. fem. n. *vilipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bartonella sp002022665*. The type genome for the species is the GenBank assembly RS_GCF_002022605.1. The GC content of the type genome is 35.33 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Bdellovibrio brabretta sp. nov.

Candidatus Bdellovibrio brabretta (NL. fem. n. *brabretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bdellovibrio sp006874625*. The type genome for the species is the GenBank assembly RS_GCF_006874625.1. The GC content of the type genome is 44.46 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Bdellovibrio cunabimonas sp. nov.

Candidatus Bdellovibrio cunabimonas (NL. fem. n. *cunabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bdellovibrio sp013360185*. The type genome for the species is the GenBank assembly GCA_013360185.1. The GC content of the type genome is 45.34 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Bdellovibrio debucifica sp. nov.

Candidatus Bdellovibrio debucifica (NL. fem. n. *debucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bdellovibrio sp000786105*. The type genome for the species is the GenBank assembly GCA_000786105.1. The GC content of the type genome is 47.01 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "microbial mats from Manikaran Hot

Springs".

Description of *Candidatus* Bdellovibrio demaditas sp. nov.

Candidatus Bdellovibrio demaditas (NL. fem. n. *demaditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bdellovibrio sp002381805*. The type genome for the species is the GenBank assembly GCA_002381805.1. The GC content of the type genome is 45.3 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Bdellovibrio desepicella sp. nov.

Candidatus Bdellovibrio desepicella (NL. fem. n. *desepicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bdellovibrio sp006874645*. The type genome for the species is the GenBank assembly RS_GCF_006874645.1. The GC content of the type genome is 45.33 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Bdellovibrio infirax sp. nov.

Candidatus Bdellovibrio infirax (NL. fem. n. *infirax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bdellovibrio sp002209355*. The type genome for the species is the GenBank assembly RS_GCF_002209355.1. The GC content of the type genome is 44.78 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Bdellovibrio inmodago sp. nov.

Candidatus Bdellovibrio inmodago (NL. fem. n. *inmodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bdellovibrio sp013752535*. The type genome for the species is the GenBank assembly RS_GCF_013752535.1. The GC content of the type genome is 45.47 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Beduini abrepilega sp. nov.

Candidatus Beduini abrepilega (NL. fem. n. *abrepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Beduini sp900550005*. The type genome for the species is the GenBank assembly GCA_900550005.1. The GC content of the type genome is 30.07 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Beduini inergedo sp. nov.

Candidatus Beduini inergedo (NL. fem. n. *inergedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Beduini sp902363625*. The type genome for the species is the GenBank assembly RS_GCF_902363625.1. The GC content of the type genome is 35.73 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Bellilinea alectitura sp. nov.

Candidatus Bellilinea alectitura (NL. fem. n. *alectitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bellilinea sp003448875*. The type genome for the species is the GenBank assembly GCA_003448875.1. The GC content of the type genome is 51.99 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Bellilinea bacificula sp. nov.

Candidatus Bellilinea bacificula (NL. fem. n. *bacificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bellilinea sp001796355*. The type genome for the species is the GenBank assembly GCA_001796355.1. The GC content of the type genome is 54.44 % and the genome length is 2.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 2 / B; 5m depth; 0.2 filter".

Description of *Candidatus* Bellilinea coticisca sp. nov.

Candidatus Bellilinea coticisca (NL. fem. n. *coticisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bellilinea sp004347695*. The type genome for the species is the GenBank assembly GCA_004347695.1. The GC content of the type genome is 53.7 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Belnapia exsanitica sp. nov.

Candidatus Belnapia exsanitica (NL. fem. n. *exsanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Belnapia sp902805545*. The type genome for the species is the GenBank assembly GCA_902805545.1. The GC content of the type genome is 71.69 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Belnapia inguriforma sp. nov.

Candidatus Belnapia inguriforma (NL. fem. n. *inguriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Belnapia sp000802185*. The type genome for the species is the GenBank assembly RS_GCF_000802185.1. The GC content of the type genome is 69.73 % and the genome length is 5.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Benemana decamitica sp. nov.

Candidatus Benemana decamitica (NL. fem. n. *decamitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU025 sp001513145*. The type genome for the species is the GenBank assembly GCA_002385365.1. The GC content of the type genome is 63.52 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Benemana gen. nov.

Candidatus Benemana (NL. fem. n. *Benemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DTU025*. The type species for the genus is *Candidatus* Benemana decamitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemanaceae.

Description of *Candidatus* Benemanaceae fam. nov.

Candidatus Benemanaceae (NL. fem. n. *Benemanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU025.* The type genus for the taxon is *Candidatus* Benemana .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTUO25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxifariales.

Description of *Candidatus* Benemaria documitas sp. nov.

Candidatus Benemaria documitas (NL. fem. n. *documitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-977 sp900553035*. The type genome for the species is the GenBank assembly GCA_900553035.1. The GC content of the type genome is 53.89 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Benemaria gen. nov.

Candidatus Benemaria (NL. fem. n. *Benemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-977*. The type species for the genus is *Candidatus* Benemaria documitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-977*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemariaceae.

Description of *Candidatus* Benemariaceae fam. nov.

Candidatus Benemariaceae (NL. fem. n. *Benemariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-977.* The type genus for the taxon is *Candidatus* Benemaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *RF32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resaculales.

Description of *Candidatus* Benemaria lucelitica sp. nov.

Candidatus Benemaria lucelitica (NL. fem. n. *lucelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-977 sp000434295*. The type genome for the species is the GenBank assembly GCA_000434295.1. The GC content of the type genome is 47.81 % and the genome length is 1.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Benemaria vicecugo sp. nov.

Candidatus Benemaria vicecugo (NL. fem. n. *vicecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-977 sp900768845*. The type genome for the species is the GenBank assembly RS_GCF_900768845.1. The GC content of the type genome is 50.27 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Benemella adfabitica sp. nov.

Candidatus Benemella adfabitica (NL. fem. n. *adfabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp014190215*. The type genome for the species is the GenBank assembly GCA_014190215.1. The GC content of the type genome is 52.24 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Benemella gen. nov.

Candidatus Benemella (NL. fem. n. *Benemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Casp-actino8*. The type species for the genus is *Candidatus* Benemella adfabitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Benemella benifitudo sp. nov.

Candidatus Benemella benifitudo (NL. fem. n. *benifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp001510455*. The type genome for the species is the GenBank assembly GCA_001510455.1. The GC content of the type genome is 63.02 % and the genome length is 1.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Capian Sea".

Description of *Candidatus* Benemella carunitudo sp. nov.

Candidatus Benemella carunitudo (NL. fem. n. *carunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp005801025*. The type genome for the species is the GenBank assembly GCA_005801025.1. The GC content of the type genome is 52.47 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Benemella cenacousia sp. nov.

Candidatus Benemella cenacousia (NL. fem. n. *cenacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp005787025*. The type genome for the species is the GenBank assembly GCA_005787025.1. The GC content of the type genome is 64.65 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Benemella citocicella sp. nov.

Candidatus Benemella citocicella (NL. fem. n. *citocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Casp-actino8 sp009923785*. The type genome for the species is the GenBank assembly GCA_009923785.1. The GC content of the type genome is 62.37 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Benemella cituvitica sp. nov.

Candidatus Benemella cituvitica (NL. fem. n. *cituvitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp004379135*. The type genome for the species is the GenBank assembly GCA_004379135.1. The GC content of the type genome is 65.42 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Benemella colimago sp. nov.

Candidatus Benemella colimago (NL. fem. n. *colimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp010030605*. The type genome for the species is the GenBank assembly GCA_010025905.1. The GC content of the type genome is 58.28 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Benemella gerunessa sp. nov.

Candidatus Benemella gerunessa (NL. fem. n. *gerunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp005787035*. The type genome for the species is the GenBank assembly GCA_005787035.1. The GC content of the type genome is 64.15 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Benemella haricastra sp. nov.

Candidatus Benemella haricastra (NL. fem. n. *haricastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp903872155*. The type genome for the species is the GenBank assembly GCA_903872155.1. The GC content of the type genome is 52.15 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Benemella inadfax sp. nov.

Candidatus Benemella inadfax (NL. fem. n. *inadfax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp009704425*. The type genome for the species is the GenBank assembly GCA_009704425.1. The GC content of the type genome is 65.64 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Benemella insenitoga sp. nov.

Candidatus Benemella insenitoga (NL. fem. n. *insenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp001510335*. The type genome for the species is the GenBank assembly GCA_001510335.1. The GC content of the type genome is 52.65 % and the genome length is 1.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Capian Sea".

Description of *Candidatus* Benemella lucelimonas sp. nov.

Candidatus Benemella lucelimonas (NL. fem. n. *lucelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp009694465*. The type genome for the species is the GenBank assembly GCA_009694465.1. The GC content of the type genome is 52.48 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Benemella rosacilenta sp. nov.

Candidatus Benemella rosacilenta (NL. fem. n. *rosacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp009700145*. The type genome for the species is the GenBank assembly GCA_009699725.1. The GC content of the type genome is 52.0 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Benemella vilititio sp. nov.

Candidatus Benemella vilititio (NL. fem. n. *vilititio* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino8 sp009705435*. The type genome for the species is the GenBank assembly GCA_009705435.1. The GC content of the type genome is 52.35 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Benemia bifisago sp. nov.

Candidatus Benemia bifisago (NL. fem. n. *bifisago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1758 sp002315595*. The type genome for the species is the GenBank assembly GCA_002315595.1. The GC content of the type genome is 49.83 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Benemia gen. nov.

Candidatus Benemia (NL. fem. n. *Benemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1758*. The type species for the genus is *Candidatus* Benemia bifisago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1758*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemiaceae.

Description of *Candidatus* Benemiaceae fam. nov.

Candidatus Benemiaceae (NL. fem. n. *Benemiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1758.* The type genus for the taxon is *Candidatus* Benemia .

According to GTDB R06-RS202, this family belongs to the order *Oscillospirales*.

Description of *Candidatus* Benemida valefitia sp. nov.

Candidatus Benemida valefitia (NL. fem. n. *valefitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXSY01 sp903922175*. The type genome for the species is the GenBank assembly GCA_903845735.1. The GC content of the type genome is 52.6 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Benemida gen. nov.

Candidatus Benemida (NL. fem. n. *Benemida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXSY01*. The type species for the genus is *Candidatus* Benemida valefitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIXSY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemidaceae.

Description of *Candidatus* Benemidaceae fam. nov.

Candidatus Benemidaceae (NL. fem. n. *Benemidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIXSY01*. The type genus for the taxon is *Candidatus* Benemida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Recuciales.

Description of *Candidatus* Benemosa innasousia sp. nov.

Candidatus Benemosa innasousia (NL. fem. n. *innasousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Phil12 sp002633275*. The type genome for the species is the GenBank assembly GCA_002633275.1. The GC content of the type genome is 37.53 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Benemosa gen. nov.

Candidatus Benemosa (NL. fem. n. *Benemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Phil12*. The type species for the genus is *Candidatus* Benemosa innasousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucosaceae.

Description of *Candidatus* Benemosa levidicella sp. nov.

Candidatus Benemosa levidicella (NL. fem. n. *levidicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Phil12 sp900319595*. The type genome for the species is the GenBank assembly GCA_900319595.1. The GC content of the type genome is 33.38 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Benemosa munimitura sp. nov.

Candidatus Benemosa munimitura (NL. fem. n. *munimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Phil12 sp900315335*. The type genome for the species is the GenBank assembly GCA_900315335.1. The GC content of the type genome is 36.83 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Benemosa refuniforma sp. nov.

Candidatus Benemosa refuniforma (NL. fem. n. *refuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Phil12 sp900314725*. The type genome for the species is the GenBank assembly GCA_902755555.1. The GC content of the type genome is 33.75 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Benemula indidetta sp. nov.

Candidatus Benemula indidetta (NL. fem. n. *indidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COTS27 sp013426755*. The type genome for the species is the GenBank assembly GCA_013426755.1. The GC content of the type genome is 39.6 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Benemula gen. nov.

Candidatus Benemula (NL. fem. n. *Benemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *COTS27*. The type species for the genus is *Candidatus* Benemula indidetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *COTS27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemulaceae.

Description of *Candidatus* Benemulaceae fam. nov.

Candidatus Benemulaceae (NL. fem. n. *Benemulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *COTS27.* The type genus for the taxon is *Candidatus* Benemula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA12135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bulapidales.

Description of *Candidatus* Benepana nicomibra sp. nov.

Candidatus Benepana nicomibra (NL. fem. n. *nicomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753255 sp002753255*. The type genome for the species is the GenBank assembly GCA_002753255.1. The GC content of the type genome is 41.83 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Benepana gen. nov.

Candidatus Benepana (NL. fem. n. *Benepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *GCA-2753255*. The type species for the genus is *Candidatus* Benepana nicomibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2753255*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benepanaceae.

Description of *Candidatus* Benepanaceae fam. nov.

Candidatus Benepanaceae (NL. fem. n. *Benepanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2753255.* The type genus for the taxon is *Candidatus* Benepana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR324*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Necopanales.

Description of *Candidatus* Benepella alceditio sp. nov.

Candidatus Benepella alceditio (NL. fem. n. *alceditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJY01 sp013003285*. The type genome for the species is the GenBank assembly GCA_013003285.1. The GC content of the type genome is 60.04 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Benepella gen. nov.

Candidatus Benepella (NL. fem. n. *Benepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJY01*. The type species for the genus is *Candidatus* Benepella alceditio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifariaceae.

Description of *Candidatus* Benepella conabedo sp. nov.

Candidatus Benepella conabedo (NL. fem. n. *conabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJY01 sp011087645*. The type genome for the species is the GenBank assembly GCA_011087645.1. The GC content of the type genome is 60.38 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Benepia voragetta sp. nov.

Candidatus Benepia voragetta (NL. fem. n. *voragetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-85 sp002011745*. The type genome for the species is the GenBank assembly GCA_002011745.1. The GC content of the type genome is 41.54 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Benepia gen. nov.

Candidatus Benepia (NL. fem. n. *Benepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-85*. The type species for the genus is *Candidatus* Benepia voragetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-85*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benepiaceae.

Description of *Candidatus* Benepiaceae fam. nov.

Candidatus Benepiaceae (NL. fem. n. *Benepiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-85.* The type genus for the taxon is *Candidatus* Benepia .

According to GTDB R06-RS202, this family belongs to the order *Thermodesulfovibrionales*.

Description of *Candidatus* Benepida apsorousia sp. nov.

Candidatus Benepida apsorousia (NL. fem. n. *apsorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OB1-4 sp008124665*. The type genome for the species is the GenBank assembly RS_GCF_008124665.1. The GC content of the type genome is 31.64 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Benepida gen. nov.

Candidatus Benepida (NL. fem. n. *Benepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OB1-4*. The type species for the genus is *Candidatus* Benepida apsorousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Beneposa bicipimonia sp. nov.

Candidatus Beneposa bicipimonia (NL. fem. n. *bicipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin18 sp011523265*. The type genome for the species is the GenBank assembly GCA_011523265.1. The GC content of the type genome is 58.11 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Beneposa gen. nov.

Candidatus Beneposa (NL. fem. n. *Beneposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin18*. The type species for the genus is *Candidatus* Beneposa bicipimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beneposaceae.

Description of *Candidatus* Beneposaceae fam. nov.

Candidatus Beneposaceae (NL. fem. n. *Beneposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *Bin18.* The type genus for the taxon is *Candidatus* Beneposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *Bin18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Beneposales.

Description of *Candidatus* Beneposales ord. nov.

Candidatus Beneposales (NL. fem. n. *Beneposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin18.* The type genus for the taxon is *Candidatus* Beneposa .

According to the GTDB R06-RS202, this order belongs to the class *Binatia*.

Description of *Candidatus* Beneposa muriletta sp. nov.

Candidatus Beneposa muriletta (NL. fem. n. *muriletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin18 sp002238415*. The type genome for the species is the GenBank assembly GCA_002238415.1. The GC content of the type genome is 57.83 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Benepula malifitrix sp. nov.

Candidatus Benepula malifitrix (NL. fem. n. *malifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746185 sp002746185*. The type genome for the species is the GenBank assembly GCA_002746185.1. The GC content of the type genome is 49.96 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Benepula gen. nov.

Candidatus Benepula (NL. fem. n. *Benepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746185*. The type species for the genus is *Candidatus* Benepula malifitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2746185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benepulaceae.

Description of *Candidatus* Benepulaceae fam. nov.

Candidatus Benepulaceae (NL. fem. n. *Benepulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2746185.* The type genus for the taxon is *Candidatus* Benepula .

According to GTDB R06-RS202, this family belongs to the order *Hydrogenedentiales*.

Description of *Candidatus* Benevana rubecimonas sp. nov.

Candidatus Benevana rubecimonas (NL. fem. n. *rubecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-43-12 sp001783065*. The type genome for the species is the GenBank assembly GCA_001783065.1. The GC content of the type genome is 43.23 % and the genome length is 1.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Benevana gen. nov.

Candidatus Benevana (NL. fem. n. *Benevana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-43-12*. The type species for the genus is *Candidatus* Benevana rubecimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Benevaria adrecibula sp. nov.

Candidatus Benevaria adrecibula (NL. fem. n. *adrecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp002412715*. The type genome for the species is the GenBank assembly GCA_002412715.1. The GC content of the type genome is 53.61 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Benevaria gen. nov.

Candidatus Benevaria (NL. fem. n. *Benevaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Delta-02*. The type species for the genus is *Candidatus* Benevaria adrecibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Benevaria argimilenta sp. nov.

Candidatus Benevaria argimilenta (NL. fem. n. *argimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp002305765*. The type genome for the species is the GenBank assembly GCA_002305765.1. The GC content of the type genome is 57.67 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Benevaria cacomitura sp. nov.

Candidatus Benevaria cacomitura (NL. fem. n. *cacomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp002408185*. The type genome for the species is the GenBank assembly GCA_002408185.1. The GC content of the type genome is 51.42 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Benevaria cerebugo sp. nov.

Candidatus Benevaria cerebugo (NL. fem. n. *cerebugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp002067235*. The type genome for the species is the GenBank assembly GCA_002067235.1. The GC content of the type genome is 57.63 %

and the genome length is 3.64 Mbp.

Description of *Candidatus* Benevaria cilotibula sp. nov.

Candidatus Benevaria cilotibula (NL. fem. n. *cilotibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp001603955*. The type genome for the species is the GenBank assembly GCA_001603955.1. The GC content of the type genome is 56.8 % and the genome length is 4.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Benevaria desacatica sp. nov.

Candidatus Benevaria desacatica (NL. fem. n. *desacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp012719415*. The type genome for the species is the GenBank assembly GCA_012719415.1. The GC content of the type genome is 57.81 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Benevaria infenilega sp. nov.

Candidatus Benevaria infenilega (NL. fem. n. *infenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp002067555*. The type genome for the species is the GenBank assembly GCA_002067555.1. The GC content of the type genome is 56.72 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Benevaria omnifibula sp. nov.

Candidatus Benevaria omnifibula (NL. fem. n. *omnifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp003506795*. The type genome for the species is the GenBank assembly GCA_003506795.1. The GC content of the type genome is 53.8 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Benevaria pavimatio sp. nov.

Candidatus Benevaria pavimatio (NL. fem. n. *pavimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp903872255*. The type genome for the species is the GenBank assembly GCA_903872255.1. The GC content of the type genome is 50.94 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Benevaria repurigena sp. nov.

Candidatus Benevaria repurigena (NL. fem. n. *repurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Delta-02 sp002418985*. The type genome for the species is the GenBank assembly GCA_002383625.1. The GC content of the type genome is 53.39 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Benevella linigatio sp. nov.

Candidatus Benevella linigatio (NL. fem. n. *linigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-44-21 sp001777655*. The type genome for the species is the GenBank assembly GCA_001777655.1. The GC content of the type genome is 43.44 % and the genome length is 0.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Benevella gen. nov.

Candidatus Benevella (NL. fem. n. *Benevella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-44-21*. The type species for the genus is *Candidatus* Benevella linigatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-02-FULL-48-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicariaceae.

Description of *Candidatus* Benevia indubigena sp. nov.

Candidatus Benevia indubigena (NL. fem. n. *indubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J009 sp003696765*. The type genome for the species is the GenBank assembly GCA_003696765.1. The GC content of the type genome is 68.65 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Benevia gen. nov.

Candidatus Benevia (NL. fem. n. *Benevia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J009*. The type species for the genus is *Candidatus* Benevia indubigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J009*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beneviaceae.

Description of *Candidatus* Beneviaceae fam. nov.

Candidatus Beneviaceae (NL. fem. n. *Beneviaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J009.* The type genus for the taxon is *Candidatus* Benevia .

According to GTDB R06-RS202, this family belongs to the order *Mariprofundales*.

Description of *Candidatus* Benevida benevibra sp. nov.

Candidatus Benevida benevibra (NL. fem. n. *benevibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002691585 sp902603055*. The type genome for the species is the GenBank assembly RS_GCF_902603055.1. The GC content of the type genome is 35.63 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Benevida gen. nov.

Candidatus Benevida (NL. fem. n. *Benevida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002691585*. The type species for the genus is *Candidatus* Benevida benevibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002691585*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benevidaceae.

Description of *Candidatus* Benevidaceae fam. nov.

Candidatus Benevidaceae (NL. fem. n. *Benevidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002691585.* The type genus for the taxon is *Candidatus* Benevida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7916*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venuniales.

Description of *Candidatus* Benevida periditio sp. nov.

Candidatus Benevida periditio (NL. fem. n. *periditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002691585 sp002691585*. The type genome for the species is the GenBank assembly GCA_002691585.1. The GC content of the type genome is 35.38 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Benevida vilipastra sp. nov.

Candidatus Benevida vilipastra (NL. fem. n. *vilipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002691585 sp002690495*. The type genome for the species is the GenBank assembly GCA_002690495.1. The GC content of the type genome is 36.28 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Benevosa encenitas sp. nov.

Candidatus Benevosa encenitas (NL. fem. n. *encenitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-81 sp002011735*. The type genome for the species is the GenBank assembly GCA_002011735.1. The GC content of the type genome is 48.33 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Benevosa gen. nov.

Candidatus Benevosa (NL. fem. n. *Benevosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-81*. The type species for the genus is *Candidatus* Benevosa encenitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-81*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benevosaceae.

Description of *Candidatus* Benevosaceae fam. nov.

Candidatus Benevosaceae (NL. fem. n. *Benevosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-81*. The type genus for the taxon is *Candidatus* Benevosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monodosales.

Description of *Candidatus* Benevula benepimonas sp. nov.

Candidatus Benevula benepimonas (NL. fem. n. *benepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ETH-SRB1 sp004193555*. The type genome for the species is the GenBank assembly GCA_004193555.1. The GC content of the type genome is 42.25 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Benevula gen. nov.

Candidatus Benevula (NL. fem. n. *Benevula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ETH-SRB1*. The type species for the genus is *Candidatus* Benevula benepimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ETH-SRB1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benevulaceae.

Description of *Candidatus* Benevulaceae fam. nov.

Candidatus Benevulaceae (NL. fem. n. *Benevulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ETH-SRB1.* The type genus for the taxon is *Candidatus* Benevula .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Benifana irrecicella sp. nov.

Candidatus Benifana irrecicella (NL. fem. n. *irrecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGZA01 sp010031785*. The type genome for the species is the GenBank assembly GCA_010031785.1. The GC content of the type genome is 47.92 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Benifana gen. nov.

Candidatus Benifana (NL. fem. n. *Benifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGZA01*. The type species for the genus is *Candidatus* Benifana irrecicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RGZA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benifanaceae.

Description of *Candidatus* Benifanaceae fam. nov.

Candidatus Benifanaceae (NL. fem. n. *Benifanaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RGZA01*. The type genus for the taxon is *Candidatus* Benifana .

According to GTDB R06-RS202, this family belongs to the order *Micavibrionales_A*.

Description of *Candidatus* Benifaria arrabitrix sp. nov.

Candidatus Benifaria arrabitrix (NL. fem. n. *arrabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S20-B6 sp014381945*. The type genome for the species is the GenBank assembly GCA_014381945.1. The GC content of the type genome is 68.46 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Benifaria gen. nov.

Candidatus Benifaria (NL. fem. n. *Benifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *S20-B6*. The type species for the genus is *Candidatus* Benifaria arrabitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MedAcidi-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamidaceae.

Description of *Candidatus* Benifaria domigimonas sp. nov.

Candidatus Benifaria domigimonas (NL. fem. n. *domigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S20-B6 sp002346745*. The type genome for the species is the GenBank assembly GCA_001626165.1. The GC content of the type genome is 71.46 % and the genome length is 2.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 149 - depth 500m".

Description of *Candidatus* Benifaria pedepedo sp. nov.

Candidatus Benifaria pedepedo (NL. fem. n. *pedepedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S20-B6 sp002329075*. The type genome for the species is the GenBank assembly GCA_002364905.1. The GC content of the type genome is 68.68 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Benifaria pudibitica sp. nov.

Candidatus Benifaria pudibitica (NL. fem. n. *pudibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S20-B6 sp002699725*. The type genome for the species is the GenBank assembly GCA_014240155.1. The GC content of the type genome is 68.5 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Benifella affanousia sp. nov.

Candidatus Benifella affanousia (NL. fem. n. *affanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFPC01 sp009926305*. The type genome for the species is the GenBank assembly GCA_009926305.1. The GC content of the type genome is 46.24 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Benifella gen. nov.

Candidatus Benifella (NL. fem. n. *Benifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFPC01*. The type species for the genus is *Candidatus* Benifella affanousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RFPC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benifellaceae.

Description of *Candidatus* Benifellaceae fam. nov.

Candidatus Benifellaceae (NL. fem. n. *Benifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RFPC01.* The type genus for the taxon is *Candidatus* Benifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Recuciales.

Description of *Candidatus* Benifia enigmitudo sp. nov.

Candidatus Benifia enigmitudo (NL. fem. n. *enigmitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PEXW01 sp002774575*. The type genome for the species is the GenBank assembly GCA_002774575.1. The GC content of the type genome is 43.14 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Benifia gen. nov.

Candidatus Benifia (NL. fem. n. *Benifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PEXW01*. The type species for the genus is *Candidatus* Benifia enigmitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PEXW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benifiaceae.

Description of *Candidatus* Benifiaceae fam. nov.

Candidatus Benifiaceae (NL. fem. n. *Benifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PEXW01.* The type genus for the taxon is *Candidatus* Benifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBBC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pinacellales.

Description of *Candidatus* Benifia necubitio sp. nov.

Candidatus Benifia necubitio (NL. fem. n. *necubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PEXW01 sp003597955*. The type genome for the species is the GenBank assembly GCA_003597955.1. The GC content of the type genome is 45.9 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Benifida bacifedo sp. nov.

Candidatus Benifida bacifedo (NL. fem. n. *bacifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1064 sp003162335*. The type genome for the species is the GenBank assembly GCA_003155455.1. The GC content of the type genome is 47.7 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Benifida gen. nov.

Candidatus Benifida (NL. fem. n. *Benifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1064*. The type species for the genus is *Candidatus* Benifida bacifedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1064*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benifidaceae.

Description of *Candidatus* Benifidaceae fam. nov.

Candidatus Benifidaceae (NL. fem. n. *Benifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-1064.* The type genus for the taxon is *Candidatus* Benifida .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Benifida deforugo sp. nov.

Candidatus Benifida deforugo (NL. fem. n. *deforugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1064 sp003153955*. The type genome for the species is the GenBank assembly GCA_003154455.1. The GC content of the type genome is 49.09 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Benifida forinitudo sp. nov.

Candidatus Benifida forinitudo (NL. fem. n. *forinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1064 sp003153075*. The type genome for the species is the GenBank assembly GCA_003153075.1. The GC content of the type genome is 48.37 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Benifida ignomisca sp. nov.

Candidatus Benifida ignomisca (NL. fem. n. *ignomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1064 sp903916765*. The type genome for the species is the GenBank assembly GCA_903916765.1. The GC content of the type genome is 45.7 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Benifosa navifimonas sp. nov.

Candidatus Benifosa navifimonas (NL. fem. n. *navifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-65-11 sp001767495*. The type genome for the species is the GenBank assembly GCA_001767495.1. The GC content of the type genome is 65.09 % and the genome length is 3.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Benifosa gen. nov.

Candidatus Benifosa (NL. fem. n. *Benifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-65-11*. The type species for the genus is *Candidatus*

Benifosa navifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Benifula isoscimonas sp. nov.

Candidatus Benifula isoscimonas (NL. fem. n. *isoscimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1257 sp002308775*. The type genome for the species is the GenBank assembly GCA_002308775.1. The GC content of the type genome is 47.53 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Benifula gen. nov.

Candidatus Benifula (NL. fem. n. *Benifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1257*. The type species for the genus is *Candidatus* Benifula isoscimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benifulaceae.

Description of *Candidatus* Benifulaceae fam. nov.

Candidatus Benifulaceae (NL. fem. n. *Benifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1257.* The type genus for the taxon is *Candidatus* Benifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1212*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fatifosales.

Description of *Candidatus* Benivana cosidago sp. nov.

Candidatus Benivana cosidago (NL. fem. n. *cosidago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUQI01 sp012032345*. The type genome for the species is the GenBank assembly GCA_012031865.1. The GC content of the type genome is 52.03 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Benivana gen. nov.

Candidatus Benivana (NL. fem. n. *Benivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUQI01*. The type species for the genus is *Candidatus* Benivana cosidago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Benivaria notacatio sp. nov.

Candidatus Benivaria notacatio (NL. fem. n. *notacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zrk29 sp013745115*. The type genome for the species is the GenBank assembly GCA_013745115.1. The GC content of the type genome is 30.68 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Benivaria gen. nov.

Candidatus Benivaria (NL. fem. n. *Benivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Zrk29*. The type species for the genus is *Candidatus* Benivaria notacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5603*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divululaceae.

Description of *Candidatus* Benivella catilitudo sp. nov.

Candidatus Benivella catilitudo (NL. fem. n. *catilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900199385 sp900199385*. The type genome for the species is the GenBank assembly RS_GCF_900199385.1. The GC content of the type genome is 53.01 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Benivella gen. nov.

Candidatus Benivella (NL. fem. n. *Benivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-900199385*. The type species for the genus is *Candidatus* Benivella catilitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Benivella coturax sp. nov.

Candidatus Benivella coturax (NL. fem. n. *coturax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900199385 sp900315675*. The type genome for the species is the GenBank assembly GCA_900315675.1. The GC content of the type genome is 54.15 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Benivella inrecousia sp. nov.

Candidatus Benivella inrecousia (NL. fem. n. *inrecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900199385 sp900176495*. The type genome for the species is the GenBank assembly RS_GCF_900176495.1. The GC content of the type genome is 53.51 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Benivella levidivita sp. nov.

Candidatus Benivella levidivita (NL. fem. n. *levidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-900199385 sp900322155*. The type genome for the species is the GenBank assembly GCA_902764195.1. The GC content of the type genome is 54.39 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Benivella nubecitio sp. nov.

Candidatus Benivella nubecitio (NL. fem. n. *nubecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900199385 sp900320755*. The type genome for the species is the GenBank assembly GCA_900320755.1. The GC content of the type genome is 57.03 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Benivella repudugo sp. nov.

Candidatus Benivella repudugo (NL. fem. n. *repudugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900199385 sp900318145*. The type genome for the species is the GenBank assembly GCA_900318145.1. The GC content of the type genome is 55.54 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Benivella sicinicella sp. nov.

Candidatus Benivella sicinicella (NL. fem. n. *sicinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900199385 sp902795555*. The type genome for the species is the GenBank assembly GCA_902795555.1. The GC content of the type genome is 56.43 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Benivella sugilitia sp. nov.

Candidatus Benivella sugilitia (NL. fem. n. *sugilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900199385 sp902764875*. The type genome for the species is the GenBank assembly GCA_902790165.1. The GC content of the type genome is 55.81 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Benivella vocamivita sp. nov.

Candidatus Benivella vocamivita (NL. fem. n. *vocamivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900199385 sp900315315*. The type genome for the species is the GenBank assembly GCA_900315315.1. The GC content of the type genome is 53.35 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Benivia recocitica sp. nov.

Candidatus Benivia recocitica (NL. fem. n. *recocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-44-9 sp001794215*. The type genome for the species is the GenBank assembly GCA_001795655.1. The GC content of the type genome is 43.86 % and the genome length is 0.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Benivia gen. nov.

Candidatus Benivia (NL. fem. n. *Benivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-44-9*. The type species for the genus is *Candidatus* Benivia recocitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Beniviaceae fam. nov.

Candidatus Beniviaceae (NL. fem. n. *Beniviaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-44-9.* The type genus for the taxon is *Candidatus* Benivia .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-40-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repagariales.

Description of *Candidatus* Benivida immemimonia sp. nov.

Candidatus Benivida immemimonia (NL. fem. n. *immemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHWA01 sp009693995*. The type genome for the species is the GenBank assembly GCA_009693995.1. The GC content of the type genome is 69.15 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Benivida gen. nov.

Candidatus Benivida (NL. fem. n. *Benivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHWA01*. The type species for the genus is *Candidatus* Benivida immemimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHWA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benividaceae.

Description of *Candidatus* Benividaceae fam. nov.

Candidatus Benividaceae (NL. fem. n. *Benividaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHWA01.* The type genus for the taxon is *Candidatus* Benivida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHWA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Benividales.

Description of *Candidatus* Benividales ord. nov.

Candidatus Benividales (NL. fem. n. *Benividales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHWA01.* The type genus for the taxon is *Candidatus* Benivida .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Benivosa acrufentia sp. nov.

Candidatus Benivosa acrufentia (NL. fem. n. *acrufentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-38 sp013002645*. The type genome for the species is the GenBank assembly GCA_013002645.1. The GC content of the type genome is 62.85 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Benivosa gen. nov.

Candidatus Benivosa (NL. fem. n. *Benivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG8-38*. The type species for the genus is *Candidatus* Benivosa acrufentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benivosaceae.

Description of *Candidatus* Benivosaceae fam. nov.

Candidatus Benivosaceae (NL. fem. n. *Benivosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SG8-38.* The type genus for the taxon is *Candidatus* Benivosa .

According to GTDB R06-RS202, this family belongs to the order *Polyangiales*.

Description of *Candidatus* Benivosa molecigena sp. nov.

Candidatus Benivosa molecigena (NL. fem. n. *molecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-38 sp003647035*. The type genome for the species is the GenBank assembly GCA_003647035.1. The GC content of the type genome is 63.03 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Benivosa oblocimonas sp. nov.

Candidatus Benivosa oblocimonas (NL. fem. n. *oblocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-38 sp001303415*. The type genome for the species is the GenBank assembly GCA_001303415.1. The GC content of the type genome is 63.45 % and the genome length is 3.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-rich zone estuary sediments 8-12 cm".

Description of *Candidatus* Benivosa telegibula sp. nov.

Candidatus Benivosa telegibula (NL. fem. n. *telegibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-38 sp004283055*. The type genome for the species is the GenBank assembly GCA_004283055.1. The GC content of the type genome is 63.41 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Benivula appecousia sp. nov.

Candidatus Benivula appecousia (NL. fem. n. *appecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6174 sp002422945*. The type genome for the species is the GenBank assembly GCA_002422945.1. The GC content of the type genome is 58.82 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Benivula gen. nov.

Candidatus Benivula (NL. fem. n. *Benivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6174*. The type species for the genus is *Candidatus* Benivula appecousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Benivula maligicula sp. nov.

Candidatus Benivula maligicula (NL. fem. n. *maligicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6174 sp903821605*. The type genome for the species is the GenBank assembly GCA_903821605.1. The GC content of the type genome is 61.35 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Bergeyella retecugo sp. nov.

Candidatus Bergeyella retecugo (NL. fem. n. *retecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bergeyella_A sp002484105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002416265.1. The GC content of the type genome is 42.85 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Berkiella caravitura sp. nov.

Candidatus Berkiella caravitura (NL. fem. n. *caravitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Berkiella sp001898235*. The type genome for the species is the GenBank assembly GCA_001898235.1. The GC content of the type genome is 38.65 % and the genome length is 3.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Berkiella inlapatica sp. nov.

Candidatus Berkiella inlapatica (NL. fem. n. *inlapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Berkiella sp013288185*. The type genome for the species is the GenBank assembly GCA_013288185.1. The GC content of the type genome is 40.86 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Bermanella democitio sp. nov.

Candidatus Bermanella democitio (NL. fem. n. *democitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bermanella sp002162985*. The type genome for the species is the GenBank assembly GCA_002162985.1. The GC content of the type genome is 47.43 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Bermanella denomivita sp. nov.

Candidatus Bermanella denomivita (NL. fem. n. *denomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bermanella sp013373125*. The type genome for the species is the GenBank assembly GCA_013373125.1. The GC content of the type genome is 44.05 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Bermanella recomentia sp. nov.

Candidatus Bermanella recomentia (NL. fem. n. *recomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bermanella sp002683575*. The type genome for the species is the GenBank assembly GCA_002323455.1. The GC content of the type genome is 44.51 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Bernardetia antacousia sp. nov.

Candidatus Bernardetia antacousia (NL. fem. n. *antacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bernardetia sp002784125*. The type genome for the species is the GenBank assembly GCA_002784125.1. The GC content of the type genome is 32.24 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Betacana adpenibula sp. nov.

Candidatus Betacana adpenibula (NL. fem. n. *adpenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMC01 sp007134465*. The type genome for the species is the GenBank assembly GCA_007134465.1. The GC content of the type genome is 62.13 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Betacana gen. nov.

Candidatus Betacana (NL. fem. n. *Betacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLMC01*. The type species for the genus is *Candidatus* Betacana adpenibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLMC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Betacanaceae.

Description of *Candidatus* Betacanaceae fam. nov.

Candidatus Betacanaceae (NL. fem. n. *Betacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLMC01.* The type genus for the taxon is *Candidatus* Betacana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depupellales.

Description of *Candidatus* Betacana insibatio sp. nov.

Candidatus Betacana insibatio (NL. fem. n. *insibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMC01 sp007133745*. The type genome for the species is the GenBank assembly GCA_007133745.1. The GC content of the type genome is 60.05 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Betacaria denunousia sp. nov.

Candidatus Betacaria denunousia (NL. fem. n. *denunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-6 sp005879795*. The type genome for the species is the GenBank assembly GCA_005879795.1. The GC content of the type genome is 71.86 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Betacaria gen. nov.

Candidatus Betacaria (NL. fem. n. *Betacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DP-6*. The type species for the genus is *Candidatus* Betacaria denunousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DP-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Betacariaceae.

Description of *Candidatus* Betacariaceae fam. nov.

Candidatus Betacariaceae (NL. fem. n. *Betacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DP-6.* The type genus for the taxon is *Candidatus* Betacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UTPRO1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetulidales.

Description of *Candidatus* Betacella ceracibra sp. nov.

Candidatus Betacella ceracibra (NL. fem. n. *ceracibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9619 sp002718155*. The type genome for the species is the GenBank assembly GCA_002725185.1. The GC content of the type genome is 56.82 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Betacella gen. nov.

Candidatus Betacella (NL. fem. n. *Betacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9619*. The type species for the genus is *Candidatus* Betacella ceracibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA868*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Bimotanaceae.

Description of *Candidatus* Betacia siligiforma sp. nov.

Candidatus Betacia siligiforma (NL. fem. n. *siligiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQPK01 sp903873705*. The type genome for the species is the GenBank assembly GCA_903895925.1. The GC content of the type genome is 61.61 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Betacia gen. nov.

Candidatus Betacia (NL. fem. n. *Betacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQPK01*. The type species for the genus is *Candidatus* Betacia siligiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Betacida advigilenta sp. nov.

Candidatus Betacida advigilenta (NL. fem. n. *advigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp011620595*. The type genome for the species is the GenBank assembly GCA_011620595.1. The GC content of the type genome is 50.83 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Betacida gen. nov.

Candidatus Betacida (NL. fem. n. *Betacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SR-FBR-E99*. The type species for the genus is *Candidatus* Betacida advigilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VadinHA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categariaceae.

Description of *Candidatus* Betacida ammulibula sp. nov.

Candidatus Betacida ammulibula (NL. fem. n. *ammulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp012513795*. The type genome for the species is the GenBank assembly GCA_012513795.1. The GC content of the type genome is 49.67 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Betacida bicapitura sp. nov.

Candidatus Betacida bicapitura (NL. fem. n. *bicapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp002403305*. The type genome for the species is the GenBank assembly GCA_002403305.1. The GC content of the type genome is 50.53 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Betacida bimotitrix sp. nov.

Candidatus Betacida bimotitrix (NL. fem. n. *bimotitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp009881065*. The type genome for the species is the GenBank assembly GCA_009881065.1. The GC content of the type genome is 49.6 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Betacida dedigimonas sp. nov.

Candidatus Betacida dedigimonas (NL. fem. n. *dedigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp002409145*. The type genome for the species is the GenBank assembly GCA_002409145.1. The GC content of the type genome is 49.38 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Betacida hemititudo sp. nov.

Candidatus Betacida hemititudo (NL. fem. n. *hemititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp002325785*. The type genome for the species is the GenBank assembly GCA_002325785.1. The GC content of the type genome is 49.61 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Betacida ingurigena sp. nov.

Candidatus Betacida ingurigena (NL. fem. n. *ingurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp006227095*. The type genome for the species is the GenBank assembly GCA_006227095.1. The GC content of the type genome is 50.17 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Betacida ludimilenta sp. nov.

Candidatus Betacida ludimilenta (NL. fem. n. *ludimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp012514255*. The type genome for the species is the GenBank assembly GCA_012514255.1. The GC content of the type genome is 50.12 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Betacida metabessa sp. nov.

Candidatus Betacida metabessa (NL. fem. n. *metabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp002383485*. The type genome for the species is the GenBank assembly GCA_002347145.1. The GC content of the type genome is 50.19 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Betacida ossifigena sp. nov.

Candidatus Betacida ossifigena (NL. fem. n. *ossifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SR-FBR-E99 sp002402965*. The type genome for the species is the GenBank assembly GCA_002402965.1. The GC content of the type genome is 50.78 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Betacida sonivitoga sp. nov.

Candidatus Betacida sonivitoga (NL. fem. n. *sonivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp003250475*. The type genome for the species is the GenBank assembly GCA_003250475.1. The GC content of the type genome is 48.91 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Betacida utillentia sp. nov.

Candidatus Betacida utillentia (NL. fem. n. *utillentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SR-FBR-E99 sp003245695*. The type genome for the species is the GenBank assembly GCA_003245695.1. The GC content of the type genome is 42.49 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Betacosa lapicitura sp. nov.

Candidatus Betacosa lapicitura (NL. fem. n. *lapicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-51-10 sp001788965*. The type genome for the species is the GenBank assembly GCA_001787695.1. The GC content of the type genome is 51.23 % and the genome length is 1.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Betacosa gen. nov.

Candidatus Betacosa (NL. fem. n. *Betacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-51-10*. The type species for the genus is *Candidatus* Betacosa lapicitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Betacula armigivita sp. nov.

Candidatus Betacula armigivita (NL. fem. n. *armigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA965 sp903868295*. The type genome for the species is the GenBank assembly GCA_903868295.1. The GC content of the type genome is 56.97 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Betacula gen. nov.

Candidatus Betacula (NL. fem. n. *Betacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA965*. The type species for the genus is *Candidatus* Betacula armigivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Betacula buxifitas sp. nov.

Candidatus Betacula buxifitas (NL. fem. n. *buxifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA965 sp003670675*. The type genome for the species is the GenBank assembly GCA_003670675.1. The GC content of the type genome is 57.7 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Betacula panopigena sp. nov.

Candidatus Betacula panopigena (NL. fem. n. *panopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA965 sp002292925*. The type genome for the species is the GenBank assembly GCA_002292925.1. The GC content of the type genome is 53.56 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Betacula relapitia sp. nov.

Candidatus Betacula relapitia (NL. fem. n. *relapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA965 sp903932805*. The type genome for the species is the GenBank assembly GCA_903940205.1. The GC content of the type genome is 56.72 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Betacula semivilega sp. nov.

Candidatus Betacula semivilega (NL. fem. n. *semivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA965 sp903889425*. The type genome for the species is the GenBank assembly GCA_903862005.1. The GC content of the type genome is 53.61 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Bhargavaea vecorigena sp. nov.

Candidatus Bhargavaea vecorigena (NL. fem. n. *vecorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bhargavaea sp009761675*. The type genome for the species is the GenBank assembly RS_GCF_009761675.1. The GC content of the type genome is 53.61 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Bicalana adcucitudo sp. nov.

Candidatus Bicalana adcucitudo (NL. fem. n. *adcucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DNF00809 sp001552935*. The type genome for the species is the GenBank assembly RS_GCF_001552935.1. The GC content of the type genome is 46.27 % and the genome length is 1.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Bicalana gen. nov.

Candidatus Bicalana (NL. fem. n. *Bicalana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DNF00809*. The type species for the genus is *Candidatus* Bicalana adcucitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicalana inmoditas sp. nov.

Candidatus Bicalana inmoditas (NL. fem. n. *inmoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DNF00809 sp900604965*. The type genome for the species is the GenBank assembly RS_GCF_900604965.1. The GC content of the type genome is 60.87 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Bicalana supelugo sp. nov.

Candidatus Bicalana supelugo (NL. fem. n. *supelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DNF00809 sp000814825*. The type genome for the species is the GenBank assembly RS_GCF_000814825.1. The GC content of the type genome is 63.56 % and the genome length is 1.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "intestinal contents".

Description of *Candidatus* Bicalana venucitrix sp. nov.

Candidatus Bicalana venucitrix (NL. fem. n. *venucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DNF00809 sp013201155*. The type genome for the species is the GenBank assembly RS_GCF_013155505.1. The GC content of the type genome is 66.63 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Bicalaria coticitoga sp. nov.

Candidatus Bicalaria coticitoga (NL. fem. n. *coticitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSCS01 sp011048995*. The type genome for the species is the GenBank assembly GCA_011048995.1. The GC content of the type genome is 46.19 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Bicalaria gen. nov.

Candidatus Bicalaria (NL. fem. n. *Bicalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSCS01*. The type species for the genus is *Candidatus* Bicalaria coticitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSCS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicalariaceae.

Description of *Candidatus* Bicalariaceae fam. nov.

Candidatus Bicalariaceae (NL. fem. n. *Bicalariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSCS01*. The type genus for the taxon is *Candidatus* Bicalaria .

According to GTDB R06-RS202, this family belongs to the order *Mcinerneyibacteriales*.

Description of *Candidatus* Bicalella desepitica sp. nov.

Candidatus Bicalella desepitica (NL. fem. n. *desepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1795 sp900761165*. The type genome for the species is the GenBank assembly RS_GCF_900761165.1. The GC content of the type genome is 50.62 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Bicalella gen. nov.

Candidatus Bicalella (NL. fem. n. *Bicalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1795*. The type species for the genus is *Candidatus* Bicalella

desepitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Bicalella nosocugo sp. nov.

Candidatus Bicalella nosocugo (NL. fem. n. *nosocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1795 sp900553555*. The type genome for the species is the GenBank assembly GCA_900553555.1. The GC content of the type genome is 47.98 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Bicalella vepaledo sp. nov.

Candidatus Bicalella vepaledo (NL. fem. n. *vepaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1795 sp900555125*. The type genome for the species is the GenBank assembly RS_GCF_900767265.1. The GC content of the type genome is 45.88 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Bicalia betacax sp. nov.

Candidatus Bicalia betacax (NL. fem. n. *betacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10511 sp903861195*. The type genome for the species is the GenBank assembly GCA_903861195.1. The GC content of the type genome is 63.54 % and the genome length is 7.23 Mbp.

Description of *Candidatus* Bicalia gen. nov.

Candidatus Bicalia (NL. fem. n. *Bicalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10511*. The type species for the genus is *Candidatus* Bicalia betacax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10511*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicaliaceae.

Description of *Candidatus* Bicaliaceae fam. nov.

Candidatus Bicaliaceae (NL. fem. n. *Bicaliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10511*. The type genus for the taxon is *Candidatus* Bicalia .

According to GTDB R06-RS202, this family belongs to the order *Planctomycetales*.

Description of *Candidatus* Bicalia inlapitoga sp. nov.

Candidatus Bicalia inlapitoga (NL. fem. n. *inlapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10511 sp003508595*. The type genome for the species is the GenBank assembly GCA_003508595.1. The GC content of the type genome is 63.22 % and the genome length is 6.52 Mbp.

Description of *Candidatus* Bicalida admurago sp. nov.

Candidatus Bicalida admurago (NL. fem. n. *admurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED11-154 sp003552525*. The type genome for the species is the GenBank assembly GCA_003552525.1. The GC content of the type genome is 59.25 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Bicalida gen. nov.

Candidatus Bicalida (NL. fem. n. *Bicalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED11-154*. The type species for the genus is *Candidatus* Bicalida admurago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLMV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Revecidaceae.

Description of *Candidatus* Bicalida adnubiforma sp. nov.

Candidatus Bicalida adnubiforma (NL. fem. n. *adnubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED11-154 sp007136565*. The type genome for the species is the GenBank assembly GCA_007136565.1. The GC content of the type genome is 60.52 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Bicalida manubedo sp. nov.

Candidatus Bicalida manubedo (NL. fem. n. *manubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED11-154 sp003563985*. The type genome for the species is the GenBank assembly GCA_003563985.1. The GC content of the type genome is 62.99 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Bicalosa mahemibula sp. nov.

Candidatus Bicalosa mahemibula (NL. fem. n. *mahemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SDRW01 sp007845485*. The type genome for the species is the GenBank assembly RS_GCF_007845485.1. The GC content of the type genome is 39.56 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Bicalosa gen. nov.

Candidatus Bicalosa (NL. fem. n. *Bicalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SDRW01*. The type species for the genus is *Candidatus* Bicalosa mahemibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicalosa nugigicella sp. nov.

Candidatus Bicalosa nugigicella (NL. fem. n. *nugigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SDRW01 sp013333595*. The type genome for the species is the GenBank assembly GCA_013333595.2. The GC content of the type genome is 54.07 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Bicalula cepurago sp. nov.

Candidatus Bicalula cepurago (NL. fem. n. *cepurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1568 sp001784695*. The type genome for the species is the GenBank assembly GCA_001784715.1. The GC content of the type genome is 53.94 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Bicalula gen. nov.

Candidatus Bicalula (NL. fem. n. *Bicalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1568*. The type species for the genus is *Candidatus* Bicalula cepurago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1568*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicalulaceae.

Description of *Candidatus* Bicalulaceae fam. nov.

Candidatus Bicalulaceae (NL. fem. n. *Bicalulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1568.* The type genus for the taxon is *Candidatus* Bicalula .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Bicalula colimastra sp. nov.

Candidatus Bicalula colimastra (NL. fem. n. *colimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1568 sp001786575*. The type genome for the species is the GenBank assembly GCA_001786575.1. The GC content of the type genome is 54.34 % and the genome length is 0.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Bicalula fumifitoga sp. nov.

Candidatus Bicalula fumifitoga (NL. fem. n. *fumifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1568 sp001784735*. The type genome for the species is the GenBank assembly GCA_001784735.1. The GC content of the type genome is 47.83 % and the genome length is 0.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Bicalula gabinibra sp. nov.

Candidatus Bicalula gabinibra (NL. fem. n. *gabinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1568 sp002790675*. The type genome for the species is the GenBank assembly GCA_002790675.1. The GC content of the type genome is 44.71 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Bicalula nubigitica sp. nov.

Candidatus Bicalula nubigitica (NL. fem. n. *nubigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1568 sp002782305*. The type genome for the species is the GenBank assembly GCA_002781465.1. The GC content of the type genome is 40.93 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Bicalula sanabentia sp. nov.

Candidatus Bicalula sanabentia (NL. fem. n. *sanabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1568 sp002307715*. The type genome for the species is the GenBank assembly GCA_002307715.1. The GC content of the type genome is 47.07 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Bicapana bifaressa sp. nov.

Candidatus Bicapana bifaressa (NL. fem. n. *bifaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3855 sp002393815*. The type genome for the species is the GenBank assembly GCA_002393815.1. The GC content of the type genome is 46.19 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Bicapana gen. nov.

Candidatus Bicapana (NL. fem. n. *Bicapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3855*. The type species for the genus is *Candidatus* Bicapana bifaressa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicapana catapax sp. nov.

Candidatus Bicapana catapax (NL. fem. n. *catapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3855 sp002449575*. The type genome for the species is the GenBank assembly GCA_002449575.1. The GC content of the type genome is 42.61 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Bicapana cimelilenta sp. nov.

Candidatus Bicapana cimelilenta (NL. fem. n. *cimelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3855 sp002373165*. The type genome for the species is the GenBank assembly GCA_002373165.1. The GC content of the type genome is 45.69 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Bicapana coturastra sp. nov.

Candidatus Bicapana coturastra (NL. fem. n. *coturastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3855 sp900316885*. The type genome for the species is the GenBank assembly GCA_900316885.1. The GC content of the type genome is 55.26 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Bicapana daducibra sp. nov.

Candidatus Bicapana daducibra (NL. fem. n. *daducibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3855 sp002449585*. The type genome for the species is the GenBank assembly GCA_002449585.1. The GC content of the type genome is 40.44 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Bicapana dimacitio sp. nov.

Candidatus Bicapana dimacitio (NL. fem. n. *dimacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3855 sp900319285*. The type genome for the species is the GenBank assembly GCA_900319285.1. The GC content of the type genome is 62.43 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Bicapana fetificella sp. nov.

Candidatus Bicapana fetificella (NL. fem. n. *fetificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA3855 sp902796255*. The type genome for the species is the GenBank assembly GCA_902796255.1. The GC content of the type genome is 41.31 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Bicapana gabinitura sp. nov.

Candidatus Bicapana gabinitura (NL. fem. n. *gabinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3855 sp902767115*. The type genome for the species is the GenBank assembly GCA_902785335.1. The GC content of the type genome is 54.19 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Bicapana hexagiforma sp. nov.

Candidatus Bicapana hexagiforma (NL. fem. n. *hexagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3855 sp002392545*. The type genome for the species is the GenBank assembly GCA_003454355.1. The GC content of the type genome is 42.71 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Bicapana repuritia sp. nov.

Candidatus Bicapana repuritia (NL. fem. n. *repuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3855 sp902783005*. The type genome for the species is the GenBank assembly GCA_902796615.1. The GC content of the type genome is 55.83 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Bicaparia cisoricella sp. nov.

Candidatus Bicaparia cisoricella (NL. fem. n. *cisoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZLB01 sp903933735*. The type genome for the species is the GenBank assembly GCA_903933735.1. The GC content of the type genome is 33.72 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Bicaparia gen. nov.

Candidatus Bicaparia (NL. fem. n. *Bicaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZLB01*. The type species for the genus is *Candidatus* Bicaparia cisoricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIZLB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicapariaceae.

Description of *Candidatus* Bicapariaceae fam. nov.

Candidatus Bicapariaceae (NL. fem. n. *Bicapariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIZLB01.* The type genus for the taxon is *Candidatus* Bicaparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Bicaparia inpasastra sp. nov.

Candidatus Bicaparia inpasastra (NL. fem. n. *inpasastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZLB01 sp014378965*. The type genome for the species is the GenBank assembly GCA_014378965.1. The GC content of the type genome is 33.48 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Bicapella exsusilega sp. nov.

Candidatus Bicapella exsusilega (NL. fem. n. *exsusilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHCD01 sp003244255*. The type genome for the species is the GenBank assembly GCA_003244255.1. The GC content of the type genome is 70.22 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Bicapella gen. nov.

Candidatus Bicapella (NL. fem. n. *Bicapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHCD01*. The type species for the genus is *Candidatus* Bicapella exsusilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHCD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicapellaceae.

Description of *Candidatus* Bicapellaceae fam. nov.

Candidatus Bicapellaceae (NL. fem. n. *Bicapellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QHCD01.* The type genus for the taxon is *Candidatus* Bicapella .

According to GTDB R06-RS202, this family belongs to the order *Mycobacteriales*.

Description of *Candidatus* Bicapia caravitia sp. nov.

Candidatus Bicapia caravitia (NL. fem. n. *caravitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLF01 sp007134175*. The type genome for the species is the GenBank assembly GCA_007134175.1. The GC content of the type genome is 60.52 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Bicapia gen. nov.

Candidatus Bicapia (NL. fem. n. *Bicapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLLF01*. The type species for the genus is *Candidatus* Bicapia caravitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reveculaceae.

Description of *Candidatus* Bicapia senacisca sp. nov.

Candidatus Bicapia senacisca (NL. fem. n. *senacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLF01 sp003562335*. The type genome for the species is the GenBank assembly GCA_007126115.1. The GC content of the type genome is 58.57 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Bicapida tibicibula sp. nov.

Candidatus Bicapida tibicibula (NL. fem. n. *tibicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9645 sp001818155*. The type genome for the species is the GenBank assembly GCA_001818155.1. The GC content of the type genome is 43.87 % and the genome length is 1.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Bicapida gen. nov.

Candidatus Bicapida (NL. fem. n. *Bicapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9645*. The type species for the genus is *Candidatus* Bicapida tibicibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9629*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilogosaceae.

Description of *Candidatus* Bicaposa catecitica sp. nov.

Candidatus Bicaposa catecitica (NL. fem. n. *catecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWHW01 sp003560095*. The type genome for the species is the GenBank assembly GCA_003560095.1. The GC content of the type genome is 33.96 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Bicaposa gen. nov.

Candidatus Bicaposa (NL. fem. n. *Bicaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWHW01*. The type species for the genus is *Candidatus* Bicaposa catecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWPS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lacinidaceae.

Description of *Candidatus* Bicaposa conibitrix sp. nov.

Candidatus Bicaposa conibitrix (NL. fem. n. *conibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWHW01 sp003560665*. The type genome for the species is the GenBank assembly GCA_003560665.1. The GC content of the type genome is 39.57 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Bicaposa dibapifica sp. nov.

Candidatus Bicaposa dibapifica (NL. fem. n. *dibapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWHW01 sp003561025*. The type genome for the species is the GenBank assembly GCA_003561025.1. The GC content of the type genome is 36.54 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Bicaposa mimogimonas sp. nov.

Candidatus Bicaposa mimogimonas (NL. fem. n. *mimogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWHW01 sp003559635*. The type genome for the species is the GenBank assembly GCA_003559635.1. The GC content of the type genome is 39.89 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Bicaposa refunibra sp. nov.

Candidatus Bicaposa refunibra (NL. fem. n. *refunibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWHW01 sp003551435*. The type genome for the species is the GenBank assembly GCA_003551435.1. The GC content of the type genome is 41.34 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Bicaposa vilitiforma sp. nov.

Candidatus Bicaposa vilitiforma (NL. fem. n. *vilitiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWHW01 sp003555075*. The type genome for the species is the GenBank assembly GCA_003552105.1. The GC content of the type genome is 41.19 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Bicapula facunatica sp. nov.

Candidatus Bicapula facunatica (NL. fem. n. *facunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYNZ01 sp012520595*. The type genome for the species is the GenBank assembly GCA_012520595.1. The GC content of the type genome is 34.0 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Bicapula gen. nov.

Candidatus Bicapula (NL. fem. n. *Bicapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYNZ01*. The type species for the genus is *Candidatus* Bicapula facunatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYNZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicapulaceae.

Description of *Candidatus* Bicapulaceae fam. nov.

Candidatus Bicapulaceae (NL. fem. n. *Bicapulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYNZ01.* The type genus for the taxon is *Candidatus* Bicapula .

According to GTDB R06-RS202, this family belongs to the order *Lachnospirales*.

Description of *Candidatus* Bicapula inornatica sp. nov.

Candidatus Bicapula inornatica (NL. fem. n. *inornatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYNZ01 sp012524135*. The type genome for the species is the GenBank assembly GCA_012524135.1. The GC content of the type genome is 30.95 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Bicinana lanigedo sp. nov.

Candidatus Bicinana lanigedo (NL. fem. n. *lanigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-39-13 sp001824485*. The type genome for the species is the GenBank assembly GCA_001825635.1. The GC content of the type genome is 38.61 % and the genome length is 1.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Bicinana gen. nov.

Candidatus Bicinana (NL. fem. n. *Bicinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-39-13*. The type species for the genus is *Candidatus* Bicinana lanigedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicinaria demaditica sp. nov.

Candidatus Bicinaria demaditica (NL. fem. n. *demaditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-225 sp011053965*. The type genome for the species is the GenBank assembly GCA_011055185.1. The GC content of the type genome is 64.98 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Bicinaria gen. nov.

Candidatus Bicinaria (NL. fem. n. *Bicinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-225*. The type species for the genus is *Candidatus* Bicinaria demaditica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-225*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicinariaceae.

Description of *Candidatus* Bicinariaceae fam. nov.

Candidatus Bicinariaceae (NL. fem. n. *Bicinariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-225.* The type genus for the taxon is *Candidatus* Bicinaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-225*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bicinariales.

Description of *Candidatus* Bicinariales ord. nov.

Candidatus Bicinariales (NL. fem. n. *Bicinariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-225.* The type genus for the taxon is *Candidatus* Bicinaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2235*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Nocumosae.

Description of *Candidatus* Bicinia capabibula sp. nov.

Candidatus Bicinia capabibula (NL. fem. n. *capabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MarineAlpha9-Bin7 sp002937585*. The type genome for the species is the GenBank assembly GCA_012965725.1. The GC content of the type genome is 49.93 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Bicinia gen. nov.

Candidatus Bicinia (NL. fem. n. *Bicinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MarineAlpha9-Bin7*. The type species for the genus is *Candidatus* Bicinia capabibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7887*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulariaceae.

Description of *Candidatus* Bicinia secunastra sp. nov.

Candidatus Bicinia secunastra (NL. fem. n. *secunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MarineAlpha9-Bin7 sp002938115*. The type genome for the species is the GenBank assembly GCA_002938115.1. The GC content of the type genome is 50.02 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Bicinida acertax sp. nov.

Candidatus Bicinida acertax (NL. fem. n. *acertax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902606835*. The type genome for the species is the GenBank assembly GCA_902606835.1. The GC content of the type genome is 29.13 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Bicinida gen. nov.

Candidatus Bicinida (NL. fem. n. *Bicinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *AG-414-E02*. The type species for the genus is *Candidatus* Bicinida acertax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicinida adnumisca sp. nov.

Candidatus Bicinida adnumisca (NL. fem. n. *adnumisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902589795*. The type genome for the species is the GenBank assembly GCA_902589795.1. The GC content of the type genome is 29.58 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Bicinida arcitivita sp. nov.

Candidatus Bicinida arcitivita (NL. fem. n. *arcitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902567945*. The type genome for the species is the GenBank assembly GCA_902567945.1. The GC content of the type genome is 29.47 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Bicinida exindentia sp. nov.

Candidatus Bicinida exindentia (NL. fem. n. *exindentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902590395*. The type genome for the species is the GenBank assembly GCA_902590395.1. The GC content of the type genome is 30.03 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Bicinida exsisibula sp. nov.

Candidatus Bicinida exsisibula (NL. fem. n. *exsisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902588335*. The type genome for the species is the GenBank assembly GCA_902588335.1. The GC content of the type genome is 29.73 %

and the genome length is 0.7 Mbp.

Description of *Candidatus* Bicinida extiniforma sp. nov.

Candidatus Bicinida extiniforma (NL. fem. n. *extiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902561465*. The type genome for the species is the GenBank assembly GCA_902561465.1. The GC content of the type genome is 29.11 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Bicinida holovatio sp. nov.

Candidatus Bicinida holovatio (NL. fem. n. *holovatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902607625*. The type genome for the species is the GenBank assembly GCA_902607625.1. The GC content of the type genome is 30.04 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Bicinida inefficula sp. nov.

Candidatus Bicinida inefficula (NL. fem. n. *inefficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902607735*. The type genome for the species is the GenBank assembly GCA_902607735.1. The GC content of the type genome is 29.5 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Bicinida istinitas sp. nov.

Candidatus Bicinida istinitas (NL. fem. n. *istinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902608065*. The type genome for the species is the GenBank assembly GCA_902608065.1. The GC content of the type genome is 29.76 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Bicinida macilimonia sp. nov.

Candidatus Bicinida macilimonia (NL. fem. n. *macilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902589505*. The type genome for the species is the GenBank assembly GCA_902589505.1. The GC content of the type genome is 29.79 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Bicinida obsecastra sp. nov.

Candidatus Bicinida obsecastra (NL. fem. n. *obsecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902607585*. The type genome for the species is the GenBank assembly GCA_902607585.1. The GC content of the type genome is 30.15 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Bicinida oppugibra sp. nov.

Candidatus Bicinida oppugibra (NL. fem. n. *oppugibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902588625*. The type genome for the species is the GenBank assembly GCA_902588625.1. The GC content of the type genome is 28.97 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Bicinida pecunicula sp. nov.

Candidatus Bicinida pecunicula (NL. fem. n. *pecunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902568465*. The type genome for the species is the GenBank assembly GCA_902568465.1. The GC content of the type genome is 29.76 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Bicinida recomilega sp. nov.

Candidatus Bicinida recomilega (NL. fem. n. *recomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902567785*. The type genome for the species is the GenBank assembly GCA_902567785.1. The GC content of the type genome is 29.18 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Bicinida reforilenta sp. nov.

Candidatus Bicinida reforilenta (NL. fem. n. *reforilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902607525*. The type genome for the species is the GenBank assembly GCA_902607525.1. The GC content of the type genome is 29.54 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Bicinida revecousia sp. nov.

Candidatus Bicinida revecousia (NL. fem. n. *revecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902606665*. The type genome for the species is the GenBank assembly GCA_902606665.1. The GC content of the type genome is 29.72 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Bicinida rosaressa sp. nov.

Candidatus Bicinida rosaressa (NL. fem. n. *rosaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp902519445*. The type genome for the species is the GenBank assembly GCA_902519445.1. The GC content of the type genome is 29.09 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Bicinida sacopugo sp. nov.

Candidatus Bicinida sacopugo (NL. fem. n. *sacopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp004213215*. The type genome for the species is the GenBank assembly GCA_004213215.1. The GC content of the type genome is 29.04 %

and the genome length is 0.98 Mbp.

Description of *Candidatus* Bicinida siminicella sp. nov.

Candidatus Bicinida siminicella (NL. fem. n. *siminicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-414-E02 sp003214615*. The type genome for the species is the GenBank assembly GCA_902567835.1. The GC content of the type genome is 29.99 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Bicinosa conubentia sp. nov.

Candidatus Bicinosa conubentia (NL. fem. n. *conubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-452 sp900770415*. The type genome for the species is the GenBank assembly RS_GCF_900770415.1. The GC content of the type genome is 28.32 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Bicinosa gen. nov.

Candidatus Bicinosa (NL. fem. n. *Bicinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-452*. The type species for the genus is *Candidatus* Bicinosa conubentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Bicinosa dehonibra sp. nov.

Candidatus Bicinosa dehonibra (NL. fem. n. *dehonibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-452 sp000434035*. The type genome for the species is the GenBank assembly GCA_900550655.1. The GC content of the type genome is 28.21 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Bicinosa eviscitudo sp. nov.

Candidatus Bicinosa eviscitudo (NL. fem. n. *eviscitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-452 sp002314935*. The type genome for the species is the GenBank assembly GCA_002314935.1. The GC content of the type genome is 26.09 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Bicipana advicimonia sp. nov.

Candidatus Bicipana advicimonia (NL. fem. n. *advicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA112 sp003225215*. The type genome for the species is the GenBank assembly GCA_003225215.1. The GC content of the type genome is 55.74 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Bicipana gen. nov.

Candidatus Bicipana (NL. fem. n. *Bicipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp1-AA112*. The type species for the genus is *Candidatus* Bicipana advicimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Gp1-AA112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipanaceae.

Description of *Candidatus* Bicipanaceae fam. nov.

Candidatus Bicipanaceae (NL. fem. n. *Bicipanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Gp1-AA112.* The type genus for the taxon is *Candidatus* Bicipana .

According to GTDB R06-RS202, this family belongs to the order *Acidobacteriales*.

Description of *Candidatus* Bicipana cibicifica sp. nov.

Candidatus Bicipana cibicifica (NL. fem. n. *cibicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA112 sp003225175*. The type genome for the species is the GenBank assembly GCA_003225175.1. The GC content of the type genome is 54.35 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Biciparia cerebedo sp. nov.

Candidatus Biciparia cerebedo (NL. fem. n. *cerebedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Poly24 sp007751715*. The type genome for the species is the GenBank assembly RS_GCF_007751715.1. The GC content of the type genome is 58.21 % and the genome length is 7.25 Mbp.

Description of *Candidatus* Biciparia gen. nov.

Candidatus Biciparia (NL. fem. n. *Biciparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Poly24*. The type species for the genus is *Candidatus* Biciparia cerebedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Biciparia inmuticula sp. nov.

Candidatus Biciparia inmuticula (NL. fem. n. *inmuticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Poly24 sp007741475*. The type genome for the species is the GenBank assembly RS_GCF_007741475.1. The GC content of the type genome is 57.89 % and the genome length is 7.48 Mbp.

Description of *Candidatus* Biciparia vavasicella sp. nov.

Candidatus Biciparia vavasicella (NL. fem. n. *vavasicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Poly24 sp007753095*. The type genome for the species is the GenBank assembly RS_GCF_007753095.1. The GC content of the type genome is 57.66 % and the genome length is 7.44 Mbp.

Description of *Candidatus* Bicipella adfanitio sp. nov.

Candidatus Bicipella adfanitio (NL. fem. n. *adfanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3495 sp009392775*. The type genome for the species is the GenBank assembly GCA_009392775.1. The GC content of the type genome is 43.48 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Bicipella gen. nov.

Candidatus Bicipella (NL. fem. n. *Bicipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3495*. The type species for the genus is *Candidatus* Bicipella adfanitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Bicipellaceae fam. nov.

Candidatus Bicipellaceae (NL. fem. n. *Bicipellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3495.* The type genus for the taxon is *Candidatus* Bicipella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bicipellales.

Description of *Candidatus* Bicipellales ord. nov.

Candidatus Bicipellales (NL. fem. n. *Bicipellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3495.* The type genus for the taxon is *Candidatus* Bicipella .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Bicipella lanugetta sp. nov.

Candidatus Bicipella lanugetta (NL. fem. n. *lanugetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3495 sp002724585*. The type genome for the species is the GenBank assembly GCA_002377655.1. The GC content of the type genome is 43.81 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Bicipella vitabibra sp. nov.

Candidatus Bicipella vitabibra (NL. fem. n. *vitabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3495 sp002716645*. The type genome for the species is the GenBank assembly GCA_008373075.1. The GC content of the type genome is 43.79 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Bicipia cosidastra sp. nov.

Candidatus Bicipia cosidastra (NL. fem. n. *cosidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISPN01 sp903869185*. The type genome for the species is the GenBank assembly GCA_903837195.1. The GC content of the type genome is 40.46 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Bicipia gen. nov.

Candidatus Bicipia (NL. fem. n. *Bicipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISPN01*. The type species for the genus is *Candidatus* Bicipia cosidastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family

CAISPN01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipiaceae.

Description of *Candidatus* Bicipiaceae fam. nov.

Candidatus Bicipiaceae (NL. fem. n. *Bicipiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAISPN01*. The type genus for the taxon is *Candidatus* Bicipia .

According to GTDB R06-RS202, this family belongs to the order *Cyanobacteriales*.

Description of *Candidatus* Bicipia navicugo sp. nov.

Candidatus Bicipia navicugo (NL. fem. n. *navicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISPN01 sp903887375*. The type genome for the species is the GenBank assembly GCA_903915915.1. The GC content of the type genome is 39.59 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Bicipida adbelitoga sp. nov.

Candidatus Bicipida adbelitoga (NL. fem. n. *adbelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5420 sp012520355*. The type genome for the species is the GenBank assembly GCA_012520355.1. The GC content of the type genome is 49.28 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Bicipida gen. nov.

Candidatus Bicipida (NL. fem. n. *Bicipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5420*. The type species for the genus is *Candidatus* Bicipida adbelitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Bicipida attelatio sp. nov.

Candidatus Bicipida attelatio (NL. fem. n. *attelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5420 sp002409455*. The type genome for the species is the GenBank assembly GCA_002409455.1. The GC content of the type genome is 47.82 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Bicipida defeniforma sp. nov.

Candidatus Bicipida defeniforma (NL. fem. n. *defeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5420 sp012518325*. The type genome for the species is the GenBank assembly GCA_012518325.1. The GC content of the type genome is 53.32 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Bicipida inremetta sp. nov.

Candidatus Bicipida inremetta (NL. fem. n. *inremetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5420 sp012837925*. The type genome for the species is the GenBank assembly GCA_012837925.1. The GC content of the type genome is 49.94 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Bicipida licenago sp. nov.

Candidatus Bicipida licenago (NL. fem. n. *licenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5420 sp012838305*. The type genome for the species is the GenBank assembly GCA_012838305.1. The GC content of the type genome is 52.45 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Bicipida nimirugo sp. nov.

Candidatus Bicipida nimirugo (NL. fem. n. *nimirugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5420 sp012520315*. The type genome for the species is the GenBank assembly GCA_012520315.1. The GC content of the type genome is 50.48 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Bicipida pimenastra sp. nov.

Candidatus Bicipida pimenastra (NL. fem. n. *pimenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5420 sp012799115*. The type genome for the species is the GenBank assembly GCA_012799115.1. The GC content of the type genome is 49.34 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Bicipida vanitessa sp. nov.

Candidatus Bicipida vanitessa (NL. fem. n. *vanitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5420 sp002424045*. The type genome for the species is the GenBank assembly GCA_002424045.1. The GC content of the type genome is 48.16 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Biciposa hemitatica sp. nov.

Candidatus Biciposa hemitatica (NL. fem. n. *hemitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXH01 sp009784425*. The type genome for the species is the GenBank assembly GCA_009779685.1. The GC content of the type genome is 52.51 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Biciposa gen. nov.

Candidatus Biciposa (NL. fem. n. *Biciposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQXH01*. The type species for the genus is *Candidatus* Biciposa

hemitatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumanaceae.

Description of *Candidatus* Biciposa rudicessa sp. nov.

Candidatus Biciposa rudicessa (NL. fem. n. *rudicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXH01 sp009784945*. The type genome for the species is the GenBank assembly GCA_009784945.1. The GC content of the type genome is 50.05 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Bicipula acratitia sp. nov.

Candidatus Bicipula acratitia (NL. fem. n. *acratitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB100 sp902518965*. The type genome for the species is the GenBank assembly GCA_902518965.1. The GC content of the type genome is 46.02 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Bicipula gen. nov.

Candidatus Bicipula (NL. fem. n. *Bicipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HIMB100*. The type species for the genus is *Candidatus* Bicipula acratitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicipula decacimonia sp. nov.

Candidatus Bicipula decacimonia (NL. fem. n. *decacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB100 sp002722385*. The type genome for the species is the

GenBank assembly GCA_002722385.1. The GC content of the type genome is 53.51 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Bicipula herinicula sp. nov.

Candidatus Bicipula herinicula (NL. fem. n. *herinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB100 sp902523435*. The type genome for the species is the GenBank assembly GCA_902523435.1. The GC content of the type genome is 45.83 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Bicipula peridago sp. nov.

Candidatus Bicipula peridago (NL. fem. n. *peridago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB100 sp002348585*. The type genome for the species is the GenBank assembly GCA_002348585.1. The GC content of the type genome is 46.77 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Bicipula redacax sp. nov.

Candidatus Bicipula redacax (NL. fem. n. *redacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB100 sp002721775*. The type genome for the species is the GenBank assembly GCA_002721775.1. The GC content of the type genome is 46.85 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Bicipula robigigena sp. nov.

Candidatus Bicipula robigigena (NL. fem. n. *robigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB100 sp902520575*. The type genome for the species is the GenBank assembly GCA_902520575.1. The GC content of the type genome is 45.61 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Bicipula tabifitica sp. nov.

Candidatus Bicipula tabifitica (NL. fem. n. *tabifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB100 sp002700485*. The type genome for the species is the GenBank assembly GCA_002700485.1. The GC content of the type genome is 47.06 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Bicipula urbicitrix sp. nov.

Candidatus Bicipula urbicitrix (NL. fem. n. *urbicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB100 sp000238815*. The type genome for the species is the GenBank assembly RS_GCF_000238815.1. The GC content of the type genome is 50.48 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Bicodana celumibra sp. nov.

Candidatus Bicodana celumibra (NL. fem. n. *celumibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1XD42-69 sp014287635*. The type genome for the species is the GenBank assembly RS_GCF_014287635.1. The GC content of the type genome is 40.34 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Bicodana gen. nov.

Candidatus Bicodana (NL. fem. n. *Bicodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1XD42-69*. The type species for the genus is *Candidatus* Bicodana celumibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicodana indiditas sp. nov.

Candidatus Bicodana indiditas (NL. fem. n. *indiditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1XD42-69 sp011959925*. The type genome for the species is the GenBank assembly RS_GCF_011959925.1. The GC content of the type genome is 44.99 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Bicodana milifimonas sp. nov.

Candidatus Bicodana milifimonas (NL. fem. n. *milifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1XD42-69 sp009911505*. The type genome for the species is the GenBank assembly RS_GCF_009911505.1. The GC content of the type genome is 44.83 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Bicodana nosocetta sp. nov.

Candidatus Bicodana nosocetta (NL. fem. n. *nosocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1XD42-69 sp003612565*. The type genome for the species is the GenBank assembly RS_GCF_003612565.1. The GC content of the type genome is 42.63 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Bicodaria sicubastra sp. nov.

Candidatus Bicodaria sicubastra (NL. fem. n. *sicubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1826 sp900555435*. The type genome for the species is the GenBank assembly GCA_900555435.1. The GC content of the type genome is 55.86 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Bicodaria gen. nov.

Candidatus Bicodaria (NL. fem. n. *Bicodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1826*. The type species for the genus is *Candidatus* Bicodaria sicubastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicodella admutitica sp. nov.

Candidatus Bicodella admutitica (NL. fem. n. *admutitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2728135 sp002714015*. The type genome for the species is the GenBank assembly GCA_002714015.1. The GC content of the type genome is 37.48 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Bicodella gen. nov.

Candidatus Bicodella (NL. fem. n. *Bicodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2728135*. The type species for the genus is *Candidatus* Bicodella admutitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA828*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hegumosaceae.

Description of *Candidatus* Bicodella depocentia sp. nov.

Candidatus Bicodella depocentia (NL. fem. n. *depocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2728135 sp002728135*. The type genome for the species is the GenBank assembly GCA_002718635.1. The GC content of the type genome is 37.23 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Bicodia assifessa sp. nov.

Candidatus Bicodia assifessa (NL. fem. n. *assifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR12 sp003220335*. The type genome for the species is the GenBank assembly GCA_003220335.1. The GC content of the type genome is 70.03 % and the

genome length is 5.52 Mbp.

Description of *Candidatus* Bicodia gen. nov.

Candidatus Bicodia (NL. fem. n. *Bicodia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AR12*. The type species for the genus is *Candidatus* Bicodia assifessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Bicodia bicalitas sp. nov.

Candidatus Bicodia bicalitas (NL. fem. n. *bicalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR12 sp003220225*. The type genome for the species is the GenBank assembly GCA_003220415.1. The GC content of the type genome is 70.24 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Bicodia cotenedo sp. nov.

Candidatus Bicodia cotenedo (NL. fem. n. *cotenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR12 sp003220475*. The type genome for the species is the GenBank assembly GCA_003220725.1. The GC content of the type genome is 69.48 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Bicodida fecunessa sp. nov.

Candidatus Bicodida fecunessa (NL. fem. n. *fecunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-58-14 sp001824745*. The type genome for the species is the GenBank assembly GCA_001822855.1. The GC content of the type genome is 58.42 % and the genome length is 0.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2

conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Bicodida gen. nov.

Candidatus Bicodida (NL. fem. n. *Bicodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-58-14*. The type species for the genus is *Candidatus* Bicodida fecunessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-58-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicodidaceae.

Description of *Candidatus* Bicodidaceae fam. nov.

Candidatus Bicodidaceae (NL. fem. n. *Bicodidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-58-14.* The type genus for the taxon is *Candidatus* Bicodida .

According to GTDB R06-RS202, this family belongs to the order *Terrybacterales*.

Description of *Candidatus* Bicodosa adcumibula sp. nov.

Candidatus Bicodosa adcumibula (NL. fem. n. *adcumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp012840975*. The type genome for the species is the GenBank assembly GCA_012840975.1. The GC content of the type genome is 39.45 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Bicodosa gen. nov.

Candidatus Bicodosa (NL. fem. n. *Bicodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG099*. The type species for the genus is *Candidatus* Bicodosa adcumibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicodosa allubivita sp. nov.

Candidatus Bicodosa allubivita (NL. fem. n. *allubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902790885*. The type genome for the species is the GenBank assembly GCA_902790885.1. The GC content of the type genome is 50.62 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Bicodosa altipitio sp. nov.

Candidatus Bicodosa altipitio (NL. fem. n. *altipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902780815*. The type genome for the species is the GenBank assembly GCA_902780815.1. The GC content of the type genome is 48.01 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Bicodosa aneclastra sp. nov.

Candidatus Bicodosa aneclastra (NL. fem. n. *aneclastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902773835*. The type genome for the species is the GenBank assembly GCA_902773835.1. The GC content of the type genome is 45.01 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Bicodosa apoplitas sp. nov.

Candidatus Bicodosa apoplitas (NL. fem. n. *apoplitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902788245*. The type genome for the species is the GenBank assembly GCA_902788245.1. The GC content of the type genome is 47.14 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Bicodosa arcifitudo sp. nov.

Candidatus Bicodosa arcifitudo (NL. fem. n. *arcifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902793875*. The type genome for the species is the GenBank assembly GCA_902793875.1. The GC content of the type genome is 54.11 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Bicodosa cohuratica sp. nov.

Candidatus Bicodosa cohuratica (NL. fem. n. *cohuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902778585*. The type genome for the species is the GenBank assembly GCA_902778585.1. The GC content of the type genome is 51.01 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Bicodosa decucago sp. nov.

Candidatus Bicodosa decucago (NL. fem. n. *decucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902765035*. The type genome for the species is the GenBank assembly GCA_902765035.1. The GC content of the type genome is 50.1 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Bicodosa delebiforma sp. nov.

Candidatus Bicodosa delebiforma (NL. fem. n. *delebiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp900318105*. The type genome for the species is the GenBank assembly GCA_900318105.1. The GC content of the type genome is 49.04 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Bicodosa democousia sp. nov.

Candidatus Bicodosa democousia (NL. fem. n. *democousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RUG099 sp902786355*. The type genome for the species is the GenBank assembly GCA_902786355.1. The GC content of the type genome is 48.33 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Bicodosa depetedo sp. nov.

Candidatus Bicodosa depetedo (NL. fem. n. *depetedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp900315485*. The type genome for the species is the GenBank assembly GCA_002350505.1. The GC content of the type genome is 50.18 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Bicodosa detecugo sp. nov.

Candidatus Bicodosa detecugo (NL. fem. n. *detecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp012510935*. The type genome for the species is the GenBank assembly GCA_012510935.1. The GC content of the type genome is 39.1 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Bicodosa fecunastra sp. nov.

Candidatus Bicodosa fecunastra (NL. fem. n. *fecunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp001513255*. The type genome for the species is the GenBank assembly GCA_012735145.1. The GC content of the type genome is 39.13 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Bicodosa funamifica sp. nov.

Candidatus Bicodosa funamifica (NL. fem. n. *funamifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902786855*. The type genome for the species is the GenBank assembly GCA_902786855.1. The GC content of the type genome is 46.79 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Bicodosa hirudiforma sp. nov.

Candidatus Bicodosa hirudiforma (NL. fem. n. *hirudiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902760855*. The type genome for the species is the GenBank assembly GCA_902760855.1. The GC content of the type genome is 47.51 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Bicodosa homicimonia sp. nov.

Candidatus Bicodosa homicimonia (NL. fem. n. *homicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902790965*. The type genome for the species is the GenBank assembly GCA_902790965.1. The GC content of the type genome is 49.58 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Bicodosa idipsigena sp. nov.

Candidatus Bicodosa idipsigena (NL. fem. n. *idipsigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902775345*. The type genome for the species is the GenBank assembly GCA_902775345.1. The GC content of the type genome is 49.46 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Bicodosa imbelentia sp. nov.

Candidatus Bicodosa imbelentia (NL. fem. n. *imbelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902774265*. The type genome for the species is the GenBank assembly GCA_902774265.1. The GC content of the type genome is 46.79 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Bicodosa inredago sp. nov.

Candidatus Bicodosa inredago (NL. fem. n. *inredago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902776285*. The type genome for the species is the GenBank assembly GCA_902776285.1. The GC content of the type genome is 51.02 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Bicodosa menapitrix sp. nov.

Candidatus Bicodosa menapitrix (NL. fem. n. *menapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp900320285*. The type genome for the species is the GenBank assembly GCA_902789655.1. The GC content of the type genome is 47.34 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Bicodosa nocenetta sp. nov.

Candidatus Bicodosa nocenetta (NL. fem. n. *nocenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902774195*. The type genome for the species is the GenBank assembly GCA_902774195.1. The GC content of the type genome is 52.65 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Bicodosa plascibra sp. nov.

Candidatus Bicodosa plascibra (NL. fem. n. *plascibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902798745*. The type genome for the species is the GenBank assembly GCA_902798745.1. The GC content of the type genome is 47.92 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Bicodosa reduvivita sp. nov.

Candidatus Bicodosa reduvivita (NL. fem. n. *reduvivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RUG099 sp902795265*. The type genome for the species is the GenBank assembly GCA_902795265.1. The GC content of the type genome is 49.78 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Bicodosa saxopilega sp. nov.

Candidatus Bicodosa saxopilega (NL. fem. n. *saxopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902801255*. The type genome for the species is the GenBank assembly GCA_902801255.1. The GC content of the type genome is 47.97 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Bicodosa viburilega sp. nov.

Candidatus Bicodosa viburilega (NL. fem. n. *viburilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp902779185*. The type genome for the species is the GenBank assembly GCA_902779185.1. The GC content of the type genome is 49.15 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Bicodosa vilipibula sp. nov.

Candidatus Bicodosa vilipibula (NL. fem. n. *vilipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG099 sp900317675*. The type genome for the species is the GenBank assembly GCA_900313365.1. The GC content of the type genome is 48.95 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Bicodula retecitudo sp. nov.

Candidatus Bicodula retecitudo (NL. fem. n. *retecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B25-G16 sp003646935*. The type genome for the species is the GenBank assembly GCA_003646935.1. The GC content of the type genome is 50.52 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Bicodula gen. nov.

Candidatus Bicodula (NL. fem. n. *Bicodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B25-G16*. The type species for the genus is *Candidatus* Bicodula retecitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B25-G16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicodulaceae.

Description of *Candidatus* Bicodulaceae fam. nov.

Candidatus Bicodulaceae (NL. fem. n. *Bicodulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B25-G16.* The type genus for the taxon is *Candidatus* Bicodula .

According to GTDB R06-RS202, this family belongs to the order *Desulfatiglandales*.

Description of *Candidatus* Bicorana catafetta sp. nov.

Candidatus Bicorana catafetta (NL. fem. n. *catafetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp903910795*. The type genome for the species is the GenBank assembly GCA_903911955.1. The GC content of the type genome is 52.15 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Bicorana gen. nov.

Candidatus Bicorana (NL. fem. n. *Bicorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5195*. The type species for the genus is *Candidatus* Bicorana catafetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Bicorana cocoditrix sp. nov.

Candidatus Bicorana cocoditrix (NL. fem. n. *cocoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp903854805*. The type genome for the species is the GenBank assembly GCA_903854805.1. The GC content of the type genome is 49.76 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Bicorana dilibilenta sp. nov.

Candidatus Bicorana dilibilenta (NL. fem. n. *dilibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp003130845*. The type genome for the species is the GenBank assembly GCA_003130845.1. The GC content of the type genome is 53.89 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Bicorana estovibra sp. nov.

Candidatus Bicorana estovibra (NL. fem. n. *estovibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp903908605*. The type genome for the species is the GenBank assembly GCA_903908605.1. The GC content of the type genome is 52.26 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Bicorana futatitoga sp. nov.

Candidatus Bicorana futatitoga (NL. fem. n. *futatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp903875215*. The type genome for the species is the GenBank assembly GCA_903854505.1. The GC content of the type genome is 57.87 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Bicorana malivitas sp. nov.

Candidatus Bicorana malivitas (NL. fem. n. *malivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp011047105*. The type genome for the species is the GenBank assembly GCA_011047105.1. The GC content of the type genome is 55.84 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Bicorana melopitica sp. nov.

Candidatus Bicorana melopitica (NL. fem. n. *melopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp005778035*. The type genome for the species is the GenBank assembly GCA_903929785.1. The GC content of the type genome is 50.18 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Bicorana monogentia sp. nov.

Candidatus Bicorana monogentia (NL. fem. n. *monogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp903838415*. The type genome for the species is the GenBank assembly GCA_903870525.1. The GC content of the type genome is 53.97 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Bicorana omnigentia sp. nov.

Candidatus Bicorana omnigentia (NL. fem. n. *omnigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp903882765*. The type genome for the species is the GenBank assembly GCA_903882765.1. The GC content of the type genome is 46.81 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Bicorana rosacimonas sp. nov.

Candidatus Bicorana rosacimonas (NL. fem. n. *rosacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA5195 sp903846015*. The type genome for the species is the GenBank assembly GCA_903846015.1. The GC content of the type genome is 50.74 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Bicorana vaciliforma sp. nov.

Candidatus Bicorana vaciliforma (NL. fem. n. *vaciliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5195 sp002412925*. The type genome for the species is the GenBank assembly GCA_002412925.1. The GC content of the type genome is 54.86 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Bicoraria abverentia sp. nov.

Candidatus Bicoraria abverentia (NL. fem. n. *abverentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902616675*. The type genome for the species is the GenBank assembly GCA_902616675.1. The GC content of the type genome is 29.65 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Bicoraria gen. nov.

Candidatus Bicoraria (NL. fem. n. *Bicoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED727*. The type species for the genus is *Candidatus* Bicoraria abverentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicoraria acrobiforma sp. nov.

Candidatus Bicoraria acrobiforma (NL. fem. n. *acrobiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902573835*. The type genome for the species is the GenBank assembly GCA_902573835.1. The GC content of the type genome is 29.44 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Bicoraria acropitudo sp. nov.

Candidatus Bicoraria acropitudo (NL. fem. n. *acropitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902599495*. The type genome for the species is the GenBank assembly GCA_902599495.1. The GC content of the type genome is 29.43 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Bicoraria adnilastra sp. nov.

Candidatus Bicoraria adnilastra (NL. fem. n. *adnilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902524105*. The type genome for the species is the GenBank assembly GCA_902524105.1. The GC content of the type genome is 29.47 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Bicoraria adrumisca sp. nov.

Candidatus Bicoraria adrumisca (NL. fem. n. *adrumisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902633335*. The type genome for the species is the GenBank assembly GCA_902633335.1. The GC content of the type genome is 29.58 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Bicoraria antomitudo sp. nov.

Candidatus Bicoraria antomitudo (NL. fem. n. *antomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902620525*. The type genome for the species is the GenBank assembly GCA_902620525.1. The GC content of the type genome is 29.5 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Bicoraria ceracimonas sp. nov.

Candidatus Bicoraria ceracimonas (NL. fem. n. *ceracimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902587145*. The type genome for the species is the GenBank assembly GCA_902587145.1. The GC content of the type genome is 29.59 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Bicoraria cerevitica sp. nov.

Candidatus Bicoraria cerevitica (NL. fem. n. *cerevitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902530885*. The type genome for the species is the GenBank assembly GCA_902530885.1. The GC content of the type genome is 29.85 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Bicoraria cuferibula sp. nov.

Candidatus Bicoraria cuferibula (NL. fem. n. *cuferibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902605645*. The type genome for the species is the GenBank assembly GCA_902528125.1. The GC content of the type genome is 29.91 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Bicoraria demaditudo sp. nov.

Candidatus Bicoraria demaditudo (NL. fem. n. *demaditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902580115*. The type genome for the species is the GenBank assembly GCA_902580115.1. The GC content of the type genome is 29.58 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Bicoraria demigastra sp. nov.

Candidatus Bicoraria demigastra (NL. fem. n. *demigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MED727 sp902553555*. The type genome for the species is the GenBank assembly GCA_902553555.1. The GC content of the type genome is 29.66 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Bicoraria esculitudo sp. nov.

Candidatus Bicoraria esculitudo (NL. fem. n. *esculitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902530455*. The type genome for the species is the GenBank assembly GCA_902530455.1. The GC content of the type genome is 30.02 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Bicoraria indipastra sp. nov.

Candidatus Bicoraria indipastra (NL. fem. n. *indipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902574035*. The type genome for the species is the GenBank assembly GCA_902574035.1. The GC content of the type genome is 29.55 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Bicoraria induvifica sp. nov.

Candidatus Bicoraria induvifica (NL. fem. n. *induvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902552185*. The type genome for the species is the GenBank assembly GCA_902552185.1. The GC content of the type genome is 29.88 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Bicoraria luceredo sp. nov.

Candidatus Bicoraria luceredo (NL. fem. n. *luceredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902596745*. The type genome for the species is the GenBank assembly GCA_902596745.1. The GC content of the type genome is 29.53 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Bicoraria mirifitia sp. nov.

Candidatus Bicoraria mirifitia (NL. fem. n. *mirifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp002689245*. The type genome for the species is the GenBank assembly GCA_002689245.1. The GC content of the type genome is 29.38 % and the genome length is 0.5 Mbp.

Description of *Candidatus* Bicoraria obnoxitudo sp. nov.

Candidatus Bicoraria obnoxitudo (NL. fem. n. *obnoxitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902629385*. The type genome for the species is the GenBank assembly GCA_902629385.1. The GC content of the type genome is 29.55 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Bicoraria pabilivita sp. nov.

Candidatus Bicoraria pabilivita (NL. fem. n. *pabilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902604065*. The type genome for the species is the GenBank assembly GCA_902604065.1. The GC content of the type genome is 29.27 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Bicoraria peribimonia sp. nov.

Candidatus Bicoraria peribimonia (NL. fem. n. *peribimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902561155*. The type genome for the species is the GenBank assembly GCA_902539025.1. The GC content of the type genome is 29.53 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Bicoraria repagibula sp. nov.

Candidatus Bicoraria repagibula (NL. fem. n. *repagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902579605*. The type genome for the species is the GenBank assembly GCA_902579605.1. The GC content of the type genome is 29.53 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Bicoraria sanabibula sp. nov.

Candidatus Bicoraria sanabibula (NL. fem. n. *sanabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902634845*. The type genome for the species is the GenBank assembly GCA_902634845.1. The GC content of the type genome is 29.81 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Bicoraria senipitudo sp. nov.

Candidatus Bicoraria senipitudo (NL. fem. n. *senipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED727 sp902582155*. The type genome for the species is the GenBank assembly GCA_902582155.1. The GC content of the type genome is 29.72 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Bicorella arcifedo sp. nov.

Candidatus Bicorella arcifedo (NL. fem. n. *arcifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADDL01 sp013153915*. The type genome for the species is the GenBank assembly GCA_013153915.1. The GC content of the type genome is 36.92 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Bicorella gen. nov.

Candidatus Bicorella (NL. fem. n. *Bicorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADDL01*. The type species for the genus is *Candidatus* Bicorella

arcifedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADDL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicorellaceae.

Description of *Candidatus* Bicorellaceae fam. nov.

Candidatus Bicorellaceae (NL. fem. n. *Bicorellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADDL01.* The type genus for the taxon is *Candidatus* Bicorella .

According to GTDB R06-RS202, this family belongs to the order *Campylobacterales*.

Description of *Candidatus* Bicoria obsecax sp. nov.

Candidatus Bicoria obsecax (NL. fem. n. *obsecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B130-G9 sp003647755*. The type genome for the species is the GenBank assembly GCA_003647755.1. The GC content of the type genome is 56.18 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Bicoria gen. nov.

Candidatus Bicoria (NL. fem. n. *Bicoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B130-G9*. The type species for the genus is *Candidatus* Bicoria obsecax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B130-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicoriaceae.

Description of *Candidatus* Bicoriaceae fam. nov.

Candidatus Bicoriaceae (NL. fem. n. *Bicoriaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B130-G9.* The type genus for the taxon is *Candidatus* Bicoria .

According to the original version of GTDB R06-RS202, this family belongs to the order *B130-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bicoriales.

Description of *Candidatus* Bicoriales ord. nov.

Candidatus Bicoriales (NL. fem. n. *Bicoriales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B130-G9.* The type genus for the taxon is *Candidatus* Bicoria .

According to the original version of GTDB R06-RS202, this family belongs to the class *B130-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bicoriae.

Description of *Candidatus* Bicoriae class. nov.

Candidatus Bicoriae (NL. fem. n. *c__Bicoriae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B130-G9.* The type genus for the taxon is *Candidatus* Bicoria .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *B130-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Bicoriota.

Description of *Candidatus* Bicoriota phyl. nov.

Candidatus Bicoriota (NL. fem. n. *Bicoriota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B130-G9.* The type genus for the taxon is *Candidatus* Bicoria .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Bicorida bonitivita sp. nov.

Candidatus Bicorida bonitivita (NL. fem. n. *bonitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7694 sp002482705*. The type genome for the species is the

GenBank assembly GCA_002083815.1. The GC content of the type genome is 53.29 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Bicorida gen. nov.

Candidatus Bicorida (NL. fem. n. *Bicorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7694*. The type species for the genus is *Candidatus* Bicorida bonitivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7694*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicoridaceae.

Description of *Candidatus* Bicoridaceae fam. nov.

Candidatus Bicoridaceae (NL. fem. n. *Bicoridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7694.* The type genus for the taxon is *Candidatus* Bicorida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7694*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bicoridales.

Description of *Candidatus* Bicoridales ord. nov.

Candidatus Bicoridales (NL. fem. n. *Bicoridales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7694.* The type genus for the taxon is *Candidatus* Bicorida .

According to the GTDB R06-RS202, this order belongs to the class *Sericytochromatia*.

Description of *Candidatus* Bicorosa adlenastra sp. nov.

Candidatus Bicorosa adlenastra (NL. fem. n. *adlenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp902794125*. The type genome for the species is the GenBank assembly GCA_902794125.1. The GC content of the type genome is 44.95 %

and the genome length is 1.43 Mbp.

Description of *Candidatus* Bicorosa gen. nov.

Candidatus Bicorosa (NL. fem. n. *Bicorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1436*. The type species for the genus is *Candidatus* Bicorosa adlenastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicorosa arancatio sp. nov.

Candidatus Bicorosa arancatio (NL. fem. n. *arancatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp002159705*. The type genome for the species is the GenBank assembly RS_GCF_002159705.1. The GC content of the type genome is 51.72 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Bicorosa cadavilenta sp. nov.

Candidatus Bicorosa cadavilenta (NL. fem. n. *cadavilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp900315795*. The type genome for the species is the GenBank assembly GCA_900315795.1. The GC content of the type genome is 46.97 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Bicorosa cohuribula sp. nov.

Candidatus Bicorosa cohuribula (NL. fem. n. *cohuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp902765225*. The type genome for the species is the GenBank assembly GCA_902792925.1. The GC content of the type genome is 48.1 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Bicorosa devecousia sp. nov.

Candidatus Bicorosa devecousia (NL. fem. n. *devecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp900319885*. The type genome for the species is the GenBank assembly GCA_900319885.1. The GC content of the type genome is 47.16 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Bicorosa dicanatica sp. nov.

Candidatus Bicorosa dicanatica (NL. fem. n. *dicanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp002329395*. The type genome for the species is the GenBank assembly GCA_002329395.1. The GC content of the type genome is 54.31 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Bicorosa exsoliforma sp. nov.

Candidatus Bicorosa exsoliforma (NL. fem. n. *exsoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp902794895*. The type genome for the species is the GenBank assembly GCA_902794895.1. The GC content of the type genome is 43.38 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Bicorosa fibicivita sp. nov.

Candidatus Bicorosa fibicivita (NL. fem. n. *fibicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp002309715*. The type genome for the species is the GenBank assembly GCA_002309715.1. The GC content of the type genome is 45.4 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Bicorosa furibousia sp. nov.

Candidatus Bicorosa furibousia (NL. fem. n. *furibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp002432025*. The type genome for the species is the GenBank assembly GCA_002437085.1. The GC content of the type genome is 48.99 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Bicorosa induvatica sp. nov.

Candidatus Bicorosa induvatica (NL. fem. n. *induvatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp902766765*. The type genome for the species is the GenBank assembly GCA_902766765.1. The GC content of the type genome is 46.88 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Bicorosa inlibiforma sp. nov.

Candidatus Bicorosa inlibiforma (NL. fem. n. *inlibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp902761975*. The type genome for the species is the GenBank assembly GCA_902761975.1. The GC content of the type genome is 48.6 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Bicorosa luxuribula sp. nov.

Candidatus Bicorosa luxuribula (NL. fem. n. *luxuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp900541355*. The type genome for the species is the GenBank assembly RS_GCF_900768365.1. The GC content of the type genome is 47.07 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Bicorosa offuletta sp. nov.

Candidatus Bicorosa offuletta (NL. fem. n. *offuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp902767385*. The type genome for the species is the GenBank assembly GCA_902767385.1. The GC content of the type genome is 46.09 %

and the genome length is 1.15 Mbp.

Description of *Candidatus* Bicorosa robigitudo sp. nov.

Candidatus Bicorosa robigitudo (NL. fem. n. *robigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp902798835*. The type genome for the species is the GenBank assembly GCA_902798835.1. The GC content of the type genome is 45.64 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Bicorosa susicimonia sp. nov.

Candidatus Bicorosa susicimonia (NL. fem. n. *susicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp900540405*. The type genome for the species is the GenBank assembly GCA_900540405.1. The GC content of the type genome is 50.58 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Bicorosa vavasentia sp. nov.

Candidatus Bicorosa vavasentia (NL. fem. n. *vavasentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp900319325*. The type genome for the species is the GenBank assembly GCA_900319325.1. The GC content of the type genome is 45.77 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Bicorosa venunatica sp. nov.

Candidatus Bicorosa venunatica (NL. fem. n. *venunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp900315845*. The type genome for the species is the GenBank assembly GCA_902757105.1. The GC content of the type genome is 44.71 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Bicorosa veridilenta sp. nov.

Candidatus Bicorosa veridilenta (NL. fem. n. *veridilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp902781765*. The type genome for the species is the GenBank assembly GCA_902781765.1. The GC content of the type genome is 43.41 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Bicorosa voragastra sp. nov.

Candidatus Bicorosa voragastra (NL. fem. n. *voragastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1436 sp902772695*. The type genome for the species is the GenBank assembly GCA_902772695.1. The GC content of the type genome is 43.49 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Bicorula xenopax sp. nov.

Candidatus Bicorula xenopax (NL. fem. n. *xenopax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-96 sp005889515*. The type genome for the species is the GenBank assembly GCA_005889515.1. The GC content of the type genome is 73.17 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Bicorula gen. nov.

Candidatus Bicorula (NL. fem. n. *Bicorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-96*. The type species for the genus is *Candidatus* Bicorula xenopax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibiaceae.

Description of *Candidatus* Bicubana adtiletta sp. nov.

Candidatus Bicubana adtiletta (NL. fem. n. *adtiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2589 sp013002885*. The type genome for the species is the GenBank assembly GCA_013002885.1. The GC content of the type genome is 65.88 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Bicubana gen. nov.

Candidatus Bicubana (NL. fem. n. *Bicubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2589*. The type species for the genus is *Candidatus* Bicubana adtiletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Bicubana antipivita sp. nov.

Candidatus Bicubana antipivita (NL. fem. n. *antipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2589 sp002390225*. The type genome for the species is the GenBank assembly GCA_002390225.1. The GC content of the type genome is 62.83 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Bicubana depopatio sp. nov.

Candidatus Bicubana depopatio (NL. fem. n. *depopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2589 sp002500925*. The type genome for the species is the GenBank assembly GCA_003539895.1. The GC content of the type genome is 54.96 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Bicubana fiducibra sp. nov.

Candidatus Bicubana fiducibra (NL. fem. n. *fiducibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2589 sp002348465*. The type genome for the species is the GenBank assembly GCA_003486145.1. The GC content of the type genome is 54.6 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Bicubana lapilastra sp. nov.

Candidatus Bicubana lapilastra (NL. fem. n. *lapilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2589 sp002348265*. The type genome for the species is the GenBank assembly GCA_002295625.1. The GC content of the type genome is 54.3 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Bicubella tubicitudo sp. nov.

Candidatus Bicubella tubicitudo (NL. fem. n. *tubicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG024 sp900314765*. The type genome for the species is the GenBank assembly GCA_902760165.1. The GC content of the type genome is 53.5 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Bicubella gen. nov.

Candidatus Bicubella (NL. fem. n. *Bicubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG024*. The type species for the genus is *Candidatus* Bicubella tubicitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicubia dibapatica sp. nov.

Candidatus Bicubia dibapatica (NL. fem. n. *dibapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-36-15b sp001782035*. The type genome for the species is the

GenBank assembly GCA_001782035.1. The GC content of the type genome is 36.79 % and the genome length is 0.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Bicubia gen. nov.

Candidatus Bicubia (NL. fem. n. *Bicubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-36-15b*. The type species for the genus is *Candidatus* Bicubia dibapatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Bicubia rubecessa sp. nov.

Candidatus Bicubia rubecessa (NL. fem. n. *rubecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-36-15b sp001782045*. The type genome for the species is the GenBank assembly GCA_001782045.1. The GC content of the type genome is 35.2 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Bicubida enunticula sp. nov.

Candidatus Bicubida enunticula (NL. fem. n. *enunticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPFW01 sp903864455*. The type genome for the species is the GenBank assembly GCA_903864455.1. The GC content of the type genome is 31.05 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Bicubida gen. nov.

Candidatus Bicubida (NL. fem. n. *Bicubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPFW01*. The type species for the genus is *Candidatus* Bicubida enunticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIPFW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicubidaceae.

Description of *Candidatus* Bicubidaceae fam. nov.

Candidatus Bicubidaceae (NL. fem. n. *Bicubidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIPFW01.* The type genus for the taxon is *Candidatus* Bicubida .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Bicubosa impirax sp. nov.

Candidatus Bicubosa impirax (NL. fem. n. *impirax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-276 sp002254335*. The type genome for the species is the GenBank assembly GCA_002254335.1. The GC content of the type genome is 40.89 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Bicubosa gen. nov.

Candidatus Bicubosa (NL. fem. n. *Bicubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-276*. The type species for the genus is *Candidatus* Bicubosa impirax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-276*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicubosaceae.

Description of *Candidatus* Bicubosaceae fam. nov.

Candidatus Bicubosaceae (NL. fem. n. *Bicubosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-276.* The type genus for the taxon is *Candidatus* Bicubosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Bicubosa insalimonas sp. nov.

Candidatus Bicubosa insalimonas (NL. fem. n. *insalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-276 sp002085215*. The type genome for the species is the GenBank assembly GCA_002085215.1. The GC content of the type genome is 39.9 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Bicubula benemitia sp. nov.

Candidatus Bicubula benemitia (NL. fem. n. *benemitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNZC01 sp003978565*. The type genome for the species is the GenBank assembly GCA_003978565.1. The GC content of the type genome is 30.07 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Bicubula gen. nov.

Candidatus Bicubula (NL. fem. n. *Bicubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNZC01*. The type species for the genus is *Candidatus* Bicubula benemitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bicubula repudetta sp. nov.

Candidatus Bicubula repudetta (NL. fem. n. *repudetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNZC01 sp003978485*. The type genome for the species is the GenBank assembly GCA_003978485.1. The GC content of the type genome is 29.93 %

and the genome length is 1.16 Mbp.

Description of *Candidatus* Bifarana apraressa sp. nov.

Candidatus Bifarana apraressa (NL. fem. n. *apraressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUVY01 sp012840805*. The type genome for the species is the GenBank assembly GCA_012840805.1. The GC content of the type genome is 39.7 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Bifarana gen. nov.

Candidatus Bifarana (NL. fem. n. *Bifarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUVY01*. The type species for the genus is *Candidatus* Bifarana apraressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUVY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bifaranaceae.

Description of *Candidatus* Bifaranaceae fam. nov.

Candidatus Bifaranaceae (NL. fem. n. *Bifaranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUVY01*. The type genus for the taxon is *Candidatus* Bifarana .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Bifarana cibaratio sp. nov.

Candidatus Bifarana cibaratio (NL. fem. n. *cibaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUVY01 sp012512255*. The type genome for the species is the GenBank assembly GCA_012512255.1. The GC content of the type genome is 40.87 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Bifararia nivomicella sp. nov.

Candidatus Bifararia nivomicella (NL. fem. n. *nivomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-217 sp000436335*. The type genome for the species is the GenBank assembly GCA_000436335.1. The GC content of the type genome is 53.58 % and the genome length is 1.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Bifararia gen. nov.

Candidatus Bifararia (NL. fem. n. *Bifararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-217*. The type species for the genus is *Candidatus* Bifararia nivomicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bifararia viginisca sp. nov.

Candidatus Bifararia viginisca (NL. fem. n. *viginisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-217 sp900547275*. The type genome for the species is the GenBank assembly GCA_900547275.1. The GC content of the type genome is 43.58 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Bifarella peracessa sp. nov.

Candidatus Bifarella peracessa (NL. fem. n. *peracessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1977 sp002313355*. The type genome for the species is the GenBank assembly GCA_002313355.1. The GC content of the type genome is 46.81 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Bifarella gen. nov.

Candidatus Bifarella (NL. fem. n. *Bifarella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1977*. The type species for the genus is *Candidatus* Bifarella peracessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1977*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bifarellaceae.

Description of *Candidatus* Bifarellaceae fam. nov.

Candidatus Bifarellaceae (NL. fem. n. *Bifarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1977.* The type genus for the taxon is *Candidatus* Bifarella .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Bifarida codifessa sp. nov.

Candidatus Bifarida codifessa (NL. fem. n. *codifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJGV01 sp014190895*. The type genome for the species is the GenBank assembly GCA_014190895.1. The GC content of the type genome is 40.56 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Bifarida gen. nov.

Candidatus Bifarida (NL. fem. n. *Bifarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJGV01*. The type species for the genus is *Candidatus* Bifarida codifessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bifarosa binocilenta sp. nov.

Candidatus Bifarosa binocilenta (NL. fem. n. *binocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCU01 sp009783805*. The type genome for the species is the GenBank assembly GCA_009783805.1. The GC content of the type genome is 64.31 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Bifarosa gen. nov.

Candidatus Bifarosa (NL. fem. n. *Bifarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRCU01*. The type species for the genus is *Candidatus* Bifarosa binocilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRCU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bifarosaceae.

Description of *Candidatus* Bifarosaceae fam. nov.

Candidatus Bifarosaceae (NL. fem. n. *Bifarosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRCU01.* The type genus for the taxon is *Candidatus* Bifarosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *WRCU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bifarosales.

Description of *Candidatus* Bifarosales ord. nov.

Candidatus Bifarosales (NL. fem. n. *Bifarosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRCU01.* The type genus for the taxon is *Candidatus* Bifarosa .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Bifarula catabugo sp. nov.

Candidatus Bifarula catabugo (NL. fem. n. *catabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs016 sp009691925*. The type genome for the species is the GenBank assembly GCA_009691925.1. The GC content of the type genome is 67.73 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Bifarula gen. nov.

Candidatus Bifarula (NL. fem. n. *Bifarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-20-MAGs016*. The type species for the genus is *Candidatus* Bifarula catabugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subinellaceae.

Description of *Candidatus* Bifarula coturivita sp. nov.

Candidatus Bifarula coturivita (NL. fem. n. *coturivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs016 sp903951635*. The type genome for the species is the GenBank assembly GCA_903951635.1. The GC content of the type genome is 67.96 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Bifarula humecibra sp. nov.

Candidatus Bifarula humecibra (NL. fem. n. *humecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs016 sp903885855*. The type genome for the species is the GenBank assembly GCA_903885855.1. The GC content of the type genome is 73.7 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Bifarula idipsetta sp. nov.

Candidatus Bifarula idipsetta (NL. fem. n. *idipsetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *F1-20-MAGs016 sp009924545*. The type genome for the species is the GenBank assembly GCA_009924545.1. The GC content of the type genome is 70.7 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Bifarula inmodifica sp. nov.

Candidatus Bifarula inmodifica (NL. fem. n. *inmodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs016 sp003669605*. The type genome for the species is the GenBank assembly GCA_003669605.1. The GC content of the type genome is 65.43 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Bifarula obvoliforma sp. nov.

Candidatus Bifarula obvoliforma (NL. fem. n. *obvoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs016 sp005791575*. The type genome for the species is the GenBank assembly GCA_005791575.1. The GC content of the type genome is 70.73 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Bifarula senacicula sp. nov.

Candidatus Bifarula senacicula (NL. fem. n. *senacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs016 sp903949225*. The type genome for the species is the GenBank assembly GCA_903949225.1. The GC content of the type genome is 67.61 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Bifarula susicibula sp. nov.

Candidatus Bifarula susicibula (NL. fem. n. *susicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs016 sp903885565*. The type genome for the species is the GenBank assembly GCA_903885565.1. The GC content of the type genome is 64.24 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Bifidobacterium alembitrix sp. nov.

Candidatus Bifidobacterium alembitrix (NL. fem. n. *alembitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp010667615*. The type genome for the species is the GenBank assembly RS_GCF_010667615.1. The GC content of the type genome is 65.01 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Bifidobacterium allubilega sp. nov.

Candidatus Bifidobacterium allubilega (NL. fem. n. *allubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp009193355*. The type genome for the species is the GenBank assembly RS_GCF_009193355.1. The GC content of the type genome is 64.68 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Bifidobacterium angipicula sp. nov.

Candidatus Bifidobacterium angipicula (NL. fem. n. *angipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp012932445*. The type genome for the species is the GenBank assembly RS_GCF_012932445.1. The GC content of the type genome is 59.95 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Bifidobacterium aprucimonia sp. nov.

Candidatus Bifidobacterium aprucimonia (NL. fem. n. *aprucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp009193305*. The type genome for the species is the GenBank assembly RS_GCF_009193305.1. The GC content of the type genome is 58.13 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Bifidobacterium cerimitrix sp. nov.

Candidatus Bifidobacterium cerimitrix (NL. fem. n. *cerimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp002451435*. The type genome for the species is the GenBank assembly GCA_002479115.1. The GC content of the type genome is 61.26 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Bifidobacterium cululivita sp. nov.

Candidatus Bifidobacterium cululivita (NL. fem. n. *cululivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp012932675*. The type genome for the species is the GenBank assembly RS_GCF_012932675.1. The GC content of the type genome is 61.22 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Bifidobacterium facunago sp. nov.

Candidatus Bifidobacterium facunago (NL. fem. n. *facunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp000499185*. The type genome for the species is the GenBank assembly RS_GCF_003688305.1. The GC content of the type genome is 60.27 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Bifidobacterium figilastra sp. nov.

Candidatus Bifidobacterium figilastra (NL. fem. n. *figilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp003585735*. The type genome for the species is the GenBank assembly RS_GCF_003585735.1. The GC content of the type genome is 43.62 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Bifidobacterium funebitrix sp. nov.

Candidatus Bifidobacterium funebitrix (NL. fem. n. *funebitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bifidobacterium sp012932375*. The type genome for the species is the GenBank assembly RS_GCF_012932375.1. The GC content of the type genome is 58.94 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Bifidobacterium inardastra sp. nov.

Candidatus Bifidobacterium inardastra (NL. fem. n. *inardastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp012932365*. The type genome for the species is the GenBank assembly RS_GCF_012932365.1. The GC content of the type genome is 67.49 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Bifidobacterium inhonicella sp. nov.

Candidatus Bifidobacterium inhonicella (NL. fem. n. *inhonicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp000499285*. The type genome for the species is the GenBank assembly RS_GCF_000499285.1. The GC content of the type genome is 60.1 % and the genome length is 2.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "honeybee gut".

Description of *Candidatus* Bifidobacterium insomousia sp. nov.

Candidatus Bifidobacterium insomousia (NL. fem. n. *insomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp012932425*. The type genome for the species is the GenBank assembly RS_GCF_012932425.1. The GC content of the type genome is 57.74 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Bifidobacterium molecitrix sp. nov.

Candidatus Bifidobacterium molecitrix (NL. fem. n. *molecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp002298605*. The type genome for the species is the GenBank assembly GCA_002298605.1. The GC content of the type genome is 62.42 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Bifidobacterium nugigitia sp. nov.

Candidatus Bifidobacterium nugigitia (NL. fem. n. *nugigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp002742445*. The type genome for the species is the GenBank assembly RS_GCF_002742445.1. The GC content of the type genome is 56.05 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Bifidobacterium obtoretta sp. nov.

Candidatus Bifidobacterium obtoretta (NL. fem. n. *obtoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp010667645*. The type genome for the species is the GenBank assembly RS_GCF_010667645.1. The GC content of the type genome is 66.38 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Bifidobacterium pepenilega sp. nov.

Candidatus Bifidobacterium pepenilega (NL. fem. n. *pepenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp900551485*. The type genome for the species is the GenBank assembly RS_GCF_009727065.1. The GC content of the type genome is 57.5 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Bifidobacterium sicinessa sp. nov.

Candidatus Bifidobacterium sicinessa (NL. fem. n. *sicinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp003585845*. The type genome for the species is the GenBank assembly RS_GCF_003585845.1. The GC content of the type genome is 42.18 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Bifidobacterium turiligena sp. nov.

Candidatus Bifidobacterium turiligena (NL. fem. n. *turiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bifidobacterium sp002884815*. The type genome for the species is the GenBank assembly RS_GCF_003397615.1. The GC content of the type genome is 42.47 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Bifisana benepifica sp. nov.

Candidatus Bifisana benepifica (NL. fem. n. *benepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA644 sp002299265*. The type genome for the species is the GenBank assembly GCA_902373415.1. The GC content of the type genome is 49.32 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Bifisana gen. nov.

Candidatus Bifisana (NL. fem. n. *Bifisana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA644*. The type species for the genus is *Candidatus* Bifisana benepifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA644*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bifisanaceae.

Description of *Candidatus* Bifisanaceae fam. nov.

Candidatus Bifisanaceae (NL. fem. n. *Bifisanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA644.* The type genus for the taxon is *Candidatus* Bifisana .

According to GTDB R06-RS202, this family belongs to the order *Oscillospirales*.

Description of *Candidatus* Bifisana monacago sp. nov.

Candidatus Bifisana monacago (NL. fem. n. *monacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA644 sp900547165*. The type genome for the species is the GenBank assembly RS_GCF_900763085.1. The GC content of the type genome is 47.63 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Bifisaria lugubitrix sp. nov.

Candidatus Bifisaria lugubitrix (NL. fem. n. *lugubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *H1 sp001653155*. The type genome for the species is the GenBank assembly RS_GCF_001653175.1. The GC content of the type genome is 45.68 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Bifisaria gen. nov.

Candidatus Bifisaria (NL. fem. n. *Bifisaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *H1*. The type species for the genus is *Candidatus* Bifisaria lugubitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bifisella detesitica sp. nov.

Candidatus Bifisella detesitica (NL. fem. n. *detesitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737665 sp903873905*. The type genome for the species is the GenBank assembly GCA_903873905.1. The GC content of the type genome is 38.29 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Bifisella gen. nov.

Candidatus Bifisella (NL. fem. n. *Bifisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2737665*. The type species for the genus is *Candidatus* Bifisella detesitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

Palsa-965. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponanaceae.

Description of *Candidatus* Bifisella fefelitia sp. nov.

Candidatus Bifisella fefelitia (NL. fem. n. *fefelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737665 sp013298545*. The type genome for the species is the GenBank assembly GCA_013298545.1. The GC content of the type genome is 42.83 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Bifisella humecitudo sp. nov.

Candidatus Bifisella humecitudo (NL. fem. n. *humecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737665 sp002737665*. The type genome for the species is the GenBank assembly GCA_009693585.1. The GC content of the type genome is 35.74 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Bifisia denomugo sp. nov.

Candidatus Bifisia denomugo (NL. fem. n. *denomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-001730085 sp001730085*. The type genome for the species is the GenBank assembly GCA_001730085.1. The GC content of the type genome is 34.69 % and the genome length is 1.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ovicells".

Description of *Candidatus* Bifisia gen. nov.

Candidatus Bifisia (NL. fem. n. *Bifisia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-001730085*. The type species for the genus is *Candidatus* Bifisia denomugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GCA-001730085. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bifisiaceae.

Description of *Candidatus* Bifisiaceae fam. nov.

Candidatus Bifisiaceae (NL. fem. n. *Bifisiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-001730085.* The type genus for the taxon is *Candidatus* Bifisia .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-001730085*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bifisiales.

Description of *Candidatus* Bifisiales ord. nov.

Candidatus Bifisiales (NL. fem. n. *Bifisiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-001730085.* The type genus for the taxon is *Candidatus* Bifisia .

According to the original version of GTDB R06-RS202, this family belongs to the class *GCA-001730085*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bifisiae.

Description of *Candidatus* Bifisiae class. nov.

Candidatus Bifisiae (NL. fem. n. *c__Bifisiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-001730085.* The type genus for the taxon is *Candidatus* Bifisia .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *GCA-001730085*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Bifisiota.

Description of *Candidatus* Bifisiota phyl. nov.

Candidatus Bifisiota (NL. fem. n. *Bifisiota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-001730085.* The type genus for the taxon is *Candidatus* Bifisia .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Bifisida anancisca sp. nov.

Candidatus Bifisida anancisca (NL. fem. n. *anancisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBBB01 sp005239895*. The type genome for the species is the GenBank assembly GCA_005239895.1. The GC content of the type genome is 33.48 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Bifisida gen. nov.

Candidatus Bifisida (NL. fem. n. *Bifisida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBBB01*. The type species for the genus is *Candidatus* Bifisida anancisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBBB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bifisidaceae.

Description of *Candidatus* Bifisidaceae fam. nov.

Candidatus Bifisidaceae (NL. fem. n. *Bifisidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBB01.* The type genus for the taxon is *Candidatus* Bifisida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBBB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bifisidales.

Description of *Candidatus* Bifisidales ord. nov.

Candidatus Bifisidales (NL. fem. n. *Bifisidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBB01.* The type genus for the taxon is *Candidatus* Bifisida .

According to the original version of GTDB R06-RS202, this family belongs to the class

ABY1. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Bifisosa dilicatio sp. nov.

Candidatus Bifisosa dilicatio (NL. fem. n. *dilicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1372 sp002306295*. The type genome for the species is the GenBank assembly GCA_002306295.1. The GC content of the type genome is 36.19 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Bifisosa gen. nov.

Candidatus Bifisosa (NL. fem. n. *Bifisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1372*. The type species for the genus is *Candidatus* Bifisosa dilicatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Bifisula crastedo sp. nov.

Candidatus Bifisula crastedo (NL. fem. n. *crastedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CR-1 sp900659855*. The type genome for the species is the GenBank assembly GCA_900659855.1. The GC content of the type genome is 54.02 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Bifisula gen. nov.

Candidatus Bifisula (NL. fem. n. *Bifisula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CR-1*. The type species for the genus is *Candidatus* Bifisula crastedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

CR-1. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bifisulaceae.

Description of *Candidatus* Bifisulaceae fam. nov.

Candidatus Bifisulaceae (NL. fem. n. *Bifisulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CR-1.* The type genus for the taxon is *Candidatus* Bifisula .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Bigarana catafentia sp. nov.

Candidatus Bigarana catafentia (NL. fem. n. *catafentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11373 sp003486285*. The type genome for the species is the GenBank assembly GCA_003486285.1. The GC content of the type genome is 68.64 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Bigarana gen. nov.

Candidatus Bigarana (NL. fem. n. *Bigarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11373*. The type species for the genus is *Candidatus* Bigarana catafentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11373*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigaranaceae.

Description of *Candidatus* Bigaranaceae fam. nov.

Candidatus Bigaranaceae (NL. fem. n. *Bigaranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11373.* The type genus for the taxon is *Candidatus* Bigarana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Rudicellales.

Description of *Candidatus* Bigararia detecitudo sp. nov.

Candidatus Bigararia detecitudo (NL. fem. n. *detecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4179 sp012798745*. The type genome for the species is the GenBank assembly GCA_012798745.1. The GC content of the type genome is 40.12 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Bigararia gen. nov.

Candidatus Bigararia (NL. fem. n. *Bigararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4179*. The type species for the genus is *Candidatus* Bigararia detecitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bigararia emortugo sp. nov.

Candidatus Bigararia emortugo (NL. fem. n. *emortugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4179 sp002305015*. The type genome for the species is the GenBank assembly GCA_002305015.1. The GC content of the type genome is 41.02 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Bigararia herinousia sp. nov.

Candidatus Bigararia herinousia (NL. fem. n. *herinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4179 sp002381125*. The type genome for the species is the GenBank assembly GCA_001896575.1. The GC content of the type genome is 41.31 % and the genome length is 2.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sludge from a mesophilic anaerobic

wastewater digester enriched on phosphite and carbon dioxide".

Description of *Candidatus* Bigararia robigatica sp. nov.

Candidatus Bigararia robigatica (NL. fem. n. *robigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4179 sp002849245*. The type genome for the species is the GenBank assembly RS_GCF_002849245.1. The GC content of the type genome is 41.61 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Bigarella accogax sp. nov.

Candidatus Bigarella accogax (NL. fem. n. *accogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5336 sp009909065*. The type genome for the species is the GenBank assembly GCA_009909065.1. The GC content of the type genome is 64.52 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Bigarella gen. nov.

Candidatus Bigarella (NL. fem. n. *Bigarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5336*. The type species for the genus is *Candidatus* Bigarella accogax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bigarella rinociforma sp. nov.

Candidatus Bigarella rinociforma (NL. fem. n. *rinociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5336 sp002408125*. The type genome for the species is the GenBank assembly GCA_002483825.1. The GC content of the type genome is 63.15 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Bigaria denicivita sp. nov.

Candidatus Bigaria denicivita (NL. fem. n. *denicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SORT01 sp004402895*. The type genome for the species is the GenBank assembly GCA_004402895.1. The GC content of the type genome is 42.11 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Bigaria gen. nov.

Candidatus Bigaria (NL. fem. n. *Bigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SORT01*. The type species for the genus is *Candidatus* Bigaria denicivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SORT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigariaceae.

Description of *Candidatus* Bigariaceae fam. nov.

Candidatus Bigariaceae (NL. fem. n. *Bigariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SORT01.* The type genus for the taxon is *Candidatus* Bigaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SORT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bigariales.

Description of *Candidatus* Bigariales ord. nov.

Candidatus Bigariales (NL. fem. n. *Bigariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SORT01.* The type genus for the taxon is *Candidatus* Bigaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *SORT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bigariae.

Description of *Candidatus* Bigariae class. nov.

Candidatus Bigariae (NL. fem. n. *c__Bigariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SORT01*. The type genus for the taxon is *Candidatus* Bigaria .

According to GTDB R06-RS202, this class belongs to the phylum *Marinisomatota*.

Description of *Candidatus* Bigaria perabigena sp. nov.

Candidatus Bigaria perabigena (NL. fem. n. *perabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SORT01 sp004402915*. The type genome for the species is the GenBank assembly GCA_004402915.1. The GC content of the type genome is 42.03 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Bigarida caselifica sp. nov.

Candidatus Bigarida caselifica (NL. fem. n. *caselifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *12-FULL-43-12b sp001823875*. The type genome for the species is the GenBank assembly GCA_001825135.1. The GC content of the type genome is 42.98 % and the genome length is 0.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Bigarida gen. nov.

Candidatus Bigarida (NL. fem. n. *Bigarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *12-FULL-43-12b*. The type species for the genus is *Candidatus* Bigarida caselifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bigarosa abagmicella sp. nov.

Candidatus Bigarosa abagmicella (NL. fem. n. *abagmicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002395775*. The type genome for the species is the GenBank assembly GCA_002395775.1. The GC content of the type genome is 53.25 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Bigarosa gen. nov.

Candidatus Bigarosa (NL. fem. n. *Bigarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4372*. The type species for the genus is *Candidatus* Bigarosa abagmicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bigarosa abveratio sp. nov.

Candidatus Bigarosa abveratio (NL. fem. n. *abveratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902771725*. The type genome for the species is the GenBank assembly GCA_902771725.1. The GC content of the type genome is 55.28 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Bigarosa acricitica sp. nov.

Candidatus Bigarosa acricitica (NL. fem. n. *acricitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902783885*. The type genome for the species is the GenBank assembly GCA_902783885.1. The GC content of the type genome is 52.63 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Bigarosa adselax sp. nov.

Candidatus Bigarosa adselax (NL. fem. n. *adselax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002314945*. The type genome for the species is the GenBank assembly GCA_002314945.1. The GC content of the type genome is 47.29 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Bigarosa carucax sp. nov.

Candidatus Bigarosa carucax (NL. fem. n. *carucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902763865*. The type genome for the species is the GenBank assembly GCA_902763865.1. The GC content of the type genome is 55.34 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Bigarosa catobatio sp. nov.

Candidatus Bigarosa catobatio (NL. fem. n. *catobatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902779845*. The type genome for the species is the GenBank assembly GCA_902773555.1. The GC content of the type genome is 54.33 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Bigarosa cemenilega sp. nov.

Candidatus Bigarosa cemenilega (NL. fem. n. *cemenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002373535*. The type genome for the species is the GenBank assembly GCA_002373535.1. The GC content of the type genome is 51.42 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Bigarosa cohorifica sp. nov.

Candidatus Bigarosa cohorifica (NL. fem. n. *cohorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900316355*. The type genome for the species is the GenBank assembly GCA_902788875.1. The GC content of the type genome is 54.41 %

and the genome length is 2.94 Mbp.

Description of *Candidatus* Bigarosa conipitas sp. nov.

Candidatus Bigarosa conipitas (NL. fem. n. *conipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902801325*. The type genome for the species is the GenBank assembly GCA_902801325.1. The GC content of the type genome is 48.91 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Bigarosa decinibula sp. nov.

Candidatus Bigarosa decinibula (NL. fem. n. *decinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902799985*. The type genome for the species is the GenBank assembly GCA_902799985.1. The GC content of the type genome is 54.66 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Bigarosa dedigiforma sp. nov.

Candidatus Bigarosa dedigiforma (NL. fem. n. *dedigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902778625*. The type genome for the species is the GenBank assembly GCA_902778625.1. The GC content of the type genome is 51.02 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Bigarosa denupentia sp. nov.

Candidatus Bigarosa denupentia (NL. fem. n. *denupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002297545*. The type genome for the species is the GenBank assembly GCA_002298065.1. The GC content of the type genome is 54.07 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Bigarosa divoligena sp. nov.

Candidatus Bigarosa divoligena (NL. fem. n. *divoligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902802815*. The type genome for the species is the GenBank assembly GCA_902802815.1. The GC content of the type genome is 50.98 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Bigarosa divulitia sp. nov.

Candidatus Bigarosa divulitia (NL. fem. n. *divulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900770805*. The type genome for the species is the GenBank assembly GCA_900770805.1. The GC content of the type genome is 47.89 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Bigarosa edissousia sp. nov.

Candidatus Bigarosa edissousia (NL. fem. n. *edissousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002317475*. The type genome for the species is the GenBank assembly GCA_002317475.1. The GC content of the type genome is 48.0 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Bigarosa entomivita sp. nov.

Candidatus Bigarosa entomivita (NL. fem. n. *entomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900766785*. The type genome for the species is the GenBank assembly GCA_900766785.1. The GC content of the type genome is 50.51 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Bigarosa excarisca sp. nov.

Candidatus Bigarosa excarisca (NL. fem. n. *excarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902803195*. The type genome for the species is the GenBank assembly GCA_902803195.1. The GC content of the type genome is 54.15 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Bigarosa femelitia sp. nov.

Candidatus Bigarosa femelitia (NL. fem. n. *femelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902801485*. The type genome for the species is the GenBank assembly GCA_902801485.1. The GC content of the type genome is 45.88 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Bigarosa ficulatio sp. nov.

Candidatus Bigarosa ficulatio (NL. fem. n. *ficulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902776455*. The type genome for the species is the GenBank assembly GCA_902798265.1. The GC content of the type genome is 53.22 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Bigarosa levidilenta sp. nov.

Candidatus Bigarosa levidilenta (NL. fem. n. *levidilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002394305*. The type genome for the species is the GenBank assembly GCA_902765045.1. The GC content of the type genome is 56.39 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Bigarosa loripax sp. nov.

Candidatus Bigarosa loripax (NL. fem. n. *loripax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900320435*. The type genome for the species is the GenBank assembly GCA_902786555.1. The GC content of the type genome is 57.04 %

and the genome length is 1.92 Mbp.

Description of *Candidatus* Bigarosa manomatio sp. nov.

Candidatus Bigarosa manomatio (NL. fem. n. *manomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900313705*. The type genome for the species is the GenBank assembly GCA_902765345.1. The GC content of the type genome is 52.63 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Bigarosa manupentia sp. nov.

Candidatus Bigarosa manupentia (NL. fem. n. *manupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900543815*. The type genome for the species is the GenBank assembly GCA_900543815.1. The GC content of the type genome is 54.61 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Bigarosa meridago sp. nov.

Candidatus Bigarosa meridago (NL. fem. n. *meridago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002316015*. The type genome for the species is the GenBank assembly GCA_002405055.1. The GC content of the type genome is 59.19 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Bigarosa monimigena sp. nov.

Candidatus Bigarosa monimigena (NL. fem. n. *monimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902791295*. The type genome for the species is the GenBank assembly GCA_902791295.1. The GC content of the type genome is 56.33 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Bigarosa nicotibra sp. nov.

Candidatus Bigarosa nicotibra (NL. fem. n. *nicotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900318115*. The type genome for the species is the GenBank assembly GCA_900318115.1. The GC content of the type genome is 55.95 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Bigarosa nutamentia sp. nov.

Candidatus Bigarosa nutamentia (NL. fem. n. *nutamentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002450165*. The type genome for the species is the GenBank assembly GCA_902770215.1. The GC content of the type genome is 47.63 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Bigarosa ontoletta sp. nov.

Candidatus Bigarosa ontoletta (NL. fem. n. *ontoletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902784475*. The type genome for the species is the GenBank assembly GCA_902784475.1. The GC content of the type genome is 56.23 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Bigarosa practivita sp. nov.

Candidatus Bigarosa practivita (NL. fem. n. *practivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp004559785*. The type genome for the species is the GenBank assembly GCA_004559785.1. The GC content of the type genome is 53.8 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Bigarosa resurentia sp. nov.

Candidatus Bigarosa resurentia (NL. fem. n. *resurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900320565*. The type genome for the species is the GenBank assembly GCA_900320565.1. The GC content of the type genome is 50.77 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Bigarosa ridibicula sp. nov.

Candidatus Bigarosa ridibicula (NL. fem. n. *ridibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902779315*. The type genome for the species is the GenBank assembly GCA_902779315.1. The GC content of the type genome is 49.64 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Bigarosa serotigena sp. nov.

Candidatus Bigarosa serotigena (NL. fem. n. *serotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902779165*. The type genome for the species is the GenBank assembly GCA_902789905.1. The GC content of the type genome is 52.54 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Bigarosa sicarilega sp. nov.

Candidatus Bigarosa sicarilega (NL. fem. n. *sicarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900313335*. The type genome for the species is the GenBank assembly GCA_900313335.1. The GC content of the type genome is 49.57 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Bigarosa sonabiforma sp. nov.

Candidatus Bigarosa sonabiforma (NL. fem. n. *sonabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902775385*. The type genome for the species is the GenBank assembly GCA_902775385.1. The GC content of the type genome is 50.86 %

and the genome length is 2.49 Mbp.

Description of *Candidatus* Bigarosa susicicella sp. nov.

Candidatus Bigarosa susicicella (NL. fem. n. *susicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902783655*. The type genome for the species is the GenBank assembly GCA_902783655.1. The GC content of the type genome is 53.37 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Bigarosa tametilenta sp. nov.

Candidatus Bigarosa tametilenta (NL. fem. n. *tametilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002391275*. The type genome for the species is the GenBank assembly GCA_002391275.1. The GC content of the type genome is 50.38 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Bigarosa vagabastra sp. nov.

Candidatus Bigarosa vagabastra (NL. fem. n. *vagabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902788315*. The type genome for the species is the GenBank assembly GCA_902787795.1. The GC content of the type genome is 56.38 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Bigarosa videledo sp. nov.

Candidatus Bigarosa videledo (NL. fem. n. *videledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902781515*. The type genome for the species is the GenBank assembly GCA_902788515.1. The GC content of the type genome is 48.1 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Bigarosa videliforma sp. nov.

Candidatus Bigarosa videliforma (NL. fem. n. *videliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902791675*. The type genome for the species is the GenBank assembly GCA_902791675.1. The GC content of the type genome is 46.18 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Bigarosa viginessa sp. nov.

Candidatus Bigarosa viginessa (NL. fem. n. *viginessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp900320715*. The type genome for the species is the GenBank assembly GCA_902775505.1. The GC content of the type genome is 55.37 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Bigarosa vitabax sp. nov.

Candidatus Bigarosa vitabax (NL. fem. n. *vitabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902768605*. The type genome for the species is the GenBank assembly GCA_902768605.1. The GC content of the type genome is 53.93 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Bigarosa volubitudo sp. nov.

Candidatus Bigarosa volubitudo (NL. fem. n. *volubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp002494215*. The type genome for the species is the GenBank assembly GCA_002494215.1. The GC content of the type genome is 47.53 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Bigarosa volunicella sp. nov.

Candidatus Bigarosa volunicella (NL. fem. n. *volunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4372 sp902770725*. The type genome for the species is the GenBank assembly GCA_902770725.1. The GC content of the type genome is 50.51 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Bigarula capudifica sp. nov.

Candidatus Bigarula capudifica (NL. fem. n. *capudifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Chth-196 sp903916085*. The type genome for the species is the GenBank assembly GCA_903853475.1. The GC content of the type genome is 56.33 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Bigarula gen. nov.

Candidatus Bigarula (NL. fem. n. *Bigarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Chth-196*. The type species for the genus is *Candidatus* Bigarula capudifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bigarula vavasisca sp. nov.

Candidatus Bigarula vavasisca (NL. fem. n. *vavasisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Chth-196 sp003402745*. The type genome for the species is the GenBank assembly GCA_003402745.1. The GC content of the type genome is 58.27 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Bigarula viragitoga sp. nov.

Candidatus Bigarula viragitoga (NL. fem. n. *viragitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Chth-196 sp903919125*. The type genome for the species is the

GenBank assembly GCA_903871035.1. The GC content of the type genome is 55.25 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Bigemana bimotugo sp. nov.

Candidatus Bigemana bimotugo (NL. fem. n. *bimotugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-37 sp005885165*. The type genome for the species is the GenBank assembly GCA_005885525.1. The GC content of the type genome is 70.67 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Bigemana gen. nov.

Candidatus Bigemana (NL. fem. n. *Bigemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-37*. The type species for the genus is *Candidatus* Bigemana bimotugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bigemana prograstra sp. nov.

Candidatus Bigemana prograstra (NL. fem. n. *prograstra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-37 sp005883295*. The type genome for the species is the GenBank assembly GCA_005883295.1. The GC content of the type genome is 71.08 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Bigemaria meridentia sp. nov.

Candidatus Bigemaria meridentia (NL. fem. n. *meridentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINDZ01 sp903847545*. The type genome for the species is the GenBank assembly GCA_903847545.1. The GC content of the type genome is 70.95 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Bigemaria gen. nov.

Candidatus Bigemaria (NL. fem. n. *Bigemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINDZ01*. The type species for the genus is *Candidatus* Bigemaria meridentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LZORAL124-64-63*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolellaceae.

Description of *Candidatus* Bigemaria tenebitia sp. nov.

Candidatus Bigemaria tenebitia (NL. fem. n. *tenebitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINDZ01 sp903912525*. The type genome for the species is the GenBank assembly GCA_903912525.1. The GC content of the type genome is 68.71 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Bigemaria turicifica sp. nov.

Candidatus Bigemaria turicifica (NL. fem. n. *turicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINDZ01 sp903859215*. The type genome for the species is the GenBank assembly GCA_903834005.1. The GC content of the type genome is 69.31 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Bigemia refinigena sp. nov.

Candidatus Bigemia refinigena (NL. fem. n. *refinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6126 sp002428295*. The type genome for the species is the GenBank assembly GCA_002428295.1. The GC content of the type genome is 40.67 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Bigemia gen. nov.

Candidatus Bigemia (NL. fem. n. *Bigemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6126*. The type species for the genus is *Candidatus* Bigemia refinigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6126*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigemiaceae.

Description of *Candidatus* Bigemiaceae fam. nov.

Candidatus Bigemiaceae (NL. fem. n. *Bigemiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6126.* The type genus for the taxon is *Candidatus* Bigemia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6126*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bigemiales.

Description of *Candidatus* Bigemiales ord. nov.

Candidatus Bigemiales (NL. fem. n. *Bigemiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6126.* The type genus for the taxon is *Candidatus* Bigemia .

According to the GTDB R06-RS202, this order belongs to the class *Caldisericia*.

Description of *Candidatus* Bigemida appugimonia sp. nov.

Candidatus Bigemida appugimonia (NL. fem. n. *appugimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUZN01 sp013349535*. The type genome for the species is the GenBank assembly GCA_013349535.1. The GC content of the type genome is 60.43 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Bigemida gen. nov.

Candidatus Bigemida (NL. fem. n. *Bigemida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUZN01*. The type species for the genus is *Candidatus* Bigemida appugimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUZN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigemidaceae.

Description of *Candidatus* Bigemidaceae fam. nov.

Candidatus Bigemidaceae (NL. fem. n. *Bigemidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUZN01*. The type genus for the taxon is *Candidatus* Bigemida .

According to GTDB R06-RS202, this family belongs to the order *Hydrogenedentiales*.

Description of *Candidatus* Bigemida robigatio sp. nov.

Candidatus Bigemida robigatio (NL. fem. n. *robigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUZN01 sp013349485*. The type genome for the species is the GenBank assembly GCA_013349485.1. The GC content of the type genome is 60.18 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Bigemosa nefanax sp. nov.

Candidatus Bigemosa nefanax (NL. fem. n. *nefanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILAD01 sp903832035*. The type genome for the species is the GenBank assembly GCA_903834555.1. The GC content of the type genome is 40.26 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Bigemosa gen. nov.

Candidatus Bigemosa (NL. fem. n. *Bigemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILAD01*. The type species for the genus is *Candidatus* Bigemosa nefanax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAILAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigemosaceae.

Description of *Candidatus* Bigemosaceae fam. nov.

Candidatus Bigemosaceae (NL. fem. n. *Bigemosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAILAD01.* The type genus for the taxon is *Candidatus* Bigemosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAILAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bigemosales.

Description of *Candidatus* Bigemosales ord. nov.

Candidatus Bigemosales (NL. fem. n. *Bigemosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAILAD01.* The type genus for the taxon is *Candidatus* Bigemosa .

According to the GTDB R06-RS202, this order belongs to the class *Saccharimonadia*.

Description of *Candidatus* Bigemula abrumastra sp. nov.

Candidatus Bigemula abrumastra (NL. fem. n. *abrumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRDP01 sp903824935*. The type genome for the species is the GenBank assembly GCA_903824935.1. The GC content of the type genome is 46.66 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Bigemula gen. nov.

Candidatus Bigemula (NL. fem. n. *Bigemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRDP01*. The type species for the genus is *Candidatus* Bigemula abrumastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedepariaceae.

Description of *Candidatus* Bigemula obtorugo sp. nov.

Candidatus Bigemula obtorugo (NL. fem. n. *obtorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRDP01 sp903837605*. The type genome for the species is the GenBank assembly GCA_903837605.1. The GC content of the type genome is 46.04 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Bigemula turicentia sp. nov.

Candidatus Bigemula turicentia (NL. fem. n. *turicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRDP01 sp903916595*. The type genome for the species is the GenBank assembly GCA_903826745.1. The GC content of the type genome is 45.23 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Bigemula vanidessa sp. nov.

Candidatus Bigemula vanidessa (NL. fem. n. *vanidessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRDP01 sp903877385*. The type genome for the species is the GenBank assembly GCA_903836025.1. The GC content of the type genome is 45.9 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Bigemula vicecessa sp. nov.

Candidatus Bigemula vicecessa (NL. fem. n. *vicecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRDP01 sp903887775*. The type genome for the species is the GenBank assembly GCA_903819705.1. The GC content of the type genome is 44.76 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Bilophila ficeditas sp. nov.

Candidatus Bilophila ficeditas (NL. fem. n. *ficeditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bilophila sp900553145*. The type genome for the species is the GenBank assembly GCA_900553145.1. The GC content of the type genome is 60.84 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Bilophila linigimonia sp. nov.

Candidatus Bilophila linigimonia (NL. fem. n. *linigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bilophila sp900550745*. The type genome for the species is the GenBank assembly GCA_900550745.1. The GC content of the type genome is 61.53 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Bilophila nubifessa sp. nov.

Candidatus Bilophila nubifessa (NL. fem. n. *nubifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bilophila sp902373525*. The type genome for the species is the GenBank assembly GCA_902373525.1. The GC content of the type genome is 62.48 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Bimetana aclasitudo sp. nov.

Candidatus Bimetana aclasitudo (NL. fem. n. *aclasitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JGIOTU-2 sp014382685*. The type genome for the species is the GenBank assembly GCA_014382685.1. The GC content of the type genome is 38.6 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Bimetana gen. nov.

Candidatus Bimetana (NL. fem. n. *Bimetana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JGIOTU-2*. The type species for the genus is *Candidatus* Bimetana aclasitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JGIOTU-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimetanaceae.

Description of *Candidatus* Bimetanaceae fam. nov.

Candidatus Bimetanaceae (NL. fem. n. *Bimetanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JGIOTU-2.* The type genus for the taxon is *Candidatus* Bimetana .

According to the original version of GTDB R06-RS202, this family belongs to the order *JGIOTU-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bimetanales.

Description of *Candidatus* Bimetanales ord. nov.

Candidatus Bimetanales (NL. fem. n. *Bimetanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JGIOTU-2.* The type genus for the taxon is *Candidatus* Bimetana .

According to the GTDB R06-RS202, this order belongs to the class *Cloacimonadia*.

Description of *Candidatus* Bimetana bifaratica sp. nov.

Candidatus Bimetana bifaratica (NL. fem. n. *bifaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JGIOTU-2 sp011043895*. The type genome for the species is the GenBank assembly GCA_011043895.1. The GC content of the type genome is 38.53 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Bimetana dehisibra sp. nov.

Candidatus Bimetana dehisibra (NL. fem. n. *dehisibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JGIOTU-2 sp000404785*. The type genome for the species is the GenBank assembly GCA_000404825.1. The GC content of the type genome is 36.75 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Bimetana inexsimonia sp. nov.

Candidatus Bimetana inexsimonia (NL. fem. n. *inexsimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JGIOTU-2 sp002049945*. The type genome for the species is the GenBank assembly GCA_002049945.1. The GC content of the type genome is 38.49 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Bimetaria antecax sp. nov.

Candidatus Bimetaria antecax (NL. fem. n. *antecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG666 sp902788085*. The type genome for the species is the GenBank assembly GCA_902788085.1. The GC content of the type genome is 33.72 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Bimetaria gen. nov.

Candidatus Bimetaria (NL. fem. n. *Bimetaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG666*. The type species for the genus is *Candidatus* Bimetaria antecax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Bimetaria navicitio sp. nov.

Candidatus Bimetaria navicitio (NL. fem. n. *navicitio* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG666 sp900321185*. The type genome for the species is the GenBank assembly GCA_900321185.1. The GC content of the type genome is 36.72 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Bimetella verificella sp. nov.

Candidatus Bimetella verificella (NL. fem. n. *verificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11514 sp900757255*. The type genome for the species is the GenBank assembly RS_GCF_900757255.1. The GC content of the type genome is 44.82 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Bimetella gen. nov.

Candidatus Bimetella (NL. fem. n. *Bimetella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11514*. The type species for the genus is *Candidatus* Bimetella verificella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGM11514*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimetellaceae.

Description of *Candidatus* Bimetellaceae fam. nov.

Candidatus Bimetellaceae (NL. fem. n. *Bimetellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HGM11514.* The type genus for the taxon is *Candidatus* Bimetella .

According to the original version of GTDB R06-RS202, this family belongs to the order *HGM11514*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bimetellales.

Description of *Candidatus* Bimetellales ord. nov.

Candidatus Bimetellales (NL. fem. n. *Bimetellales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HGM11514.* The type genus for the taxon is *Candidatus* Bimetella .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Bimetia catabitica sp. nov.

Candidatus Bimetia catabitica (NL. fem. n. *catabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp003151815*. The type genome for the species is the GenBank assembly GCA_003151815.1. The GC content of the type genome is 34.58 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Bimetia gen. nov.

Candidatus Bimetia (NL. fem. n. *Bimetia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-35-15*. The type species for the genus is *Candidatus* Bimetia catabitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-35-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimetiaceae.

Description of *Candidatus* Bimetiaceae fam. nov.

Candidatus Bimetiaceae (NL. fem. n. *Bimetiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-35-15.* The type genus for the taxon is *Candidatus* Bimetia .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacosales.

Description of *Candidatus* Bimetia ceroficella sp. nov.

Candidatus Bimetia ceroficella (NL. fem. n. *ceroficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp001769385*. The type genome for the species is the GenBank assembly GCA_001769385.1. The GC content of the type genome is 34.57 % and the genome length is 5.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Bimetia cobalicella sp. nov.

Candidatus Bimetia cobalicella (NL. fem. n. *cobalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp903926385*. The type genome for the species is the GenBank assembly GCA_903917455.1. The GC content of the type genome is 37.52 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Bimetia colubitrix sp. nov.

Candidatus Bimetia colubitrix (NL. fem. n. *colubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp903833025*. The type genome for the species is the GenBank assembly GCA_903833025.1. The GC content of the type genome is 35.92 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Bimetia hirudatio sp. nov.

Candidatus Bimetia hirudatio (NL. fem. n. *hirudatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp903847205*. The type genome for the species is the GenBank assembly GCA_903850245.1. The GC content of the type genome is 37.26 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Bimetia malagitura sp. nov.

Candidatus Bimetia malagitura (NL. fem. n. *malagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp005772895*. The type genome for the species is the GenBank assembly GCA_005792295.1. The GC content of the type genome is 34.35 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Bimetia nefaritrix sp. nov.

Candidatus Bimetia nefaritrix (NL. fem. n. *nefaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp903911435*. The type genome for the species is the GenBank assembly GCA_903882855.1. The GC content of the type genome is 37.46 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Bimetia ratifax sp. nov.

Candidatus Bimetia ratifax (NL. fem. n. *ratifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp903881065*. The type genome for the species is the GenBank assembly GCA_903881065.1. The GC content of the type genome is 35.02 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Bimetia rudicastra sp. nov.

Candidatus Bimetia rudicastra (NL. fem. n. *rudicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp903870175*. The type genome for the species is the GenBank assembly GCA_903916915.1. The GC content of the type genome is 35.08 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Bimetia turicilega sp. nov.

Candidatus Bimetia turicilega (NL. fem. n. *turicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-15 sp903919535*. The type genome for the species is the GenBank assembly GCA_903883015.1. The GC content of the type genome is 33.57 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Bimetida monimitas sp. nov.

Candidatus Bimetida monimitas (NL. fem. n. *monimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-FULL-47-45 sp001776775*. The type genome for the species is the GenBank assembly GCA_001777395.1. The GC content of the type genome is 42.32 % and the genome length is 1.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Bimetida gen. nov.

Candidatus Bimetida (NL. fem. n. *Bimetida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-FULL-47-45*. The type species for the genus is *Candidatus* Bimetida monimitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Bimetosa vavasimonia sp. nov.

Candidatus Bimetosa vavasimonia (NL. fem. n. *vavasimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6601 sp002433485*. The type genome for the species is the GenBank assembly GCA_002720175.1. The GC content of the type genome is 60.56 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Bimetosa gen. nov.

Candidatus Bimetosa (NL. fem. n. *Bimetosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6601*. The type species for the genus is *Candidatus* Bimetosa vavasimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Semifiaceae.

Description of *Candidatus* Bimetula cerifimonas sp. nov.

Candidatus Bimetula cerifimonas (NL. fem. n. *cerifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTNQ01 sp011358515*. The type genome for the species is the GenBank assembly GCA_011358515.1. The GC content of the type genome is 47.57 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Bimetula gen. nov.

Candidatus Bimetula (NL. fem. n. *Bimetula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTNQ01*. The type species for the genus is *Candidatus* Bimetula cerifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTNQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimetulaceae.

Description of *Candidatus* Bimetulaceae fam. nov.

Candidatus Bimetulaceae (NL. fem. n. *Bimetulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTNQ01*. The type genus for the taxon is *Candidatus* Bimetula .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Bimotana accoratio sp. nov.

Candidatus Bimotana accoratio (NL. fem. n. *accoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp002713825*. The type genome for the species is the GenBank assembly GCA_002713825.1. The GC content of the type genome is 54.52 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Bimotana gen. nov.

Candidatus Bimotana (NL. fem. n. *Bimotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA868*. The type species for the genus is *Candidatus* Bimotana accoratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA868*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotanaceae.

Description of *Candidatus* Bimotanaceae fam. nov.

Candidatus Bimotanaceae (NL. fem. n. *Bimotanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA868.* The type genus for the taxon is *Candidatus* Bimotana .

According to GTDB R06-RS202, this family belongs to the order *Arenicellales*.

Description of *Candidatus* Bimotana cilibitica sp. nov.

Candidatus Bimotana cilibitica (NL. fem. n. *cilibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp002171735*. The type genome for the species is the GenBank assembly GCA_002171735.1. The GC content of the type genome is 53.24 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Bimotana cululago sp. nov.

Candidatus Bimotana cululago (NL. fem. n. *cululago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp002477475*. The type genome for the species is the GenBank assembly GCA_002308855.1. The GC content of the type genome is 54.96 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Bimotana defalessa sp. nov.

Candidatus Bimotana defalessa (NL. fem. n. *defalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp002346525*. The type genome for the species is the GenBank assembly GCA_002346525.1. The GC content of the type genome is 55.5 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Bimotana dibapago sp. nov.

Candidatus Bimotana dibapago (NL. fem. n. *dibapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp003529705*. The type genome for the species is the GenBank assembly GCA_003529705.1. The GC content of the type genome is 54.4 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Bimotana expopifica sp. nov.

Candidatus Bimotana expopifica (NL. fem. n. *expopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp011523045*. The type genome for the species is the GenBank assembly GCA_011523045.1. The GC content of the type genome is 55.63 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Bimotana herinessa sp. nov.

Candidatus Bimotana herinessa (NL. fem. n. *herinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp002694065*. The type genome for the species is the GenBank assembly GCA_003447195.1. The GC content of the type genome is 56.01 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Bimotana lavacastra sp. nov.

Candidatus Bimotana lavacastra (NL. fem. n. *lavacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp002295285*. The type genome for the species is the GenBank assembly GCA_002295285.1. The GC content of the type genome is 49.05 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Bimotana loraretta sp. nov.

Candidatus Bimotana loraretta (NL. fem. n. *loraretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp010025385*. The type genome for the species is the GenBank assembly GCA_010025385.1. The GC content of the type genome is 55.72 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Bimotana rorulilenta sp. nov.

Candidatus Bimotana rorulilenta (NL. fem. n. *rorulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA868 sp002327725*. The type genome for the species is the GenBank assembly GCA_003539835.1. The GC content of the type genome is 57.9 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Bimotaria colepimonia sp. nov.

Candidatus Bimotaria colepimonia (NL. fem. n. *colepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQE01 sp013203415*. The type genome for the species is the GenBank assembly GCA_013203415.1. The GC content of the type genome is 40.52 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Bimotaria gen. nov.

Candidatus Bimotaria (NL. fem. n. *Bimotaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQE01*. The type species for the genus is *Candidatus* Bimotaria colepimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMQE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotariaceae.

Description of *Candidatus* Bimotariaceae fam. nov.

Candidatus Bimotariaceae (NL. fem. n. *Bimotariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQE01.* The type genus for the taxon is *Candidatus* Bimotaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMQE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bimotariales.

Description of *Candidatus* Bimotariales ord. nov.

Candidatus Bimotariales (NL. fem. n. *Bimotariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQE01.* The type genus for the taxon is *Candidatus* Bimotaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Bimotella agravatio sp. nov.

Candidatus Bimotella agravatio (NL. fem. n. *agravatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-521 sp900553105*. The type genome for the species is the GenBank assembly GCA_900553105.1. The GC content of the type genome is 48.49 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Bimotella gen. nov.

Candidatus Bimotella (NL. fem. n. *Bimotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-521*. The type species for the genus is *Candidatus* Bimotella

agravatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bimotella apogrousia sp. nov.

Candidatus Bimotella apogrousia (NL. fem. n. *apogrousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-521 sp003543795*. The type genome for the species is the GenBank assembly GCA_003543795.1. The GC content of the type genome is 51.62 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Bimotella fetulifica sp. nov.

Candidatus Bimotella fetulifica (NL. fem. n. *fetulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-521 sp900545335*. The type genome for the species is the GenBank assembly GCA_900545335.1. The GC content of the type genome is 47.67 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Bimotella forabivita sp. nov.

Candidatus Bimotella forabivita (NL. fem. n. *forabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-521 sp000437635*. The type genome for the species is the GenBank assembly GCA_000437635.1. The GC content of the type genome is 46.94 % and the genome length is 1.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Bimotella loripitica sp. nov.

Candidatus Bimotella loripitica (NL. fem. n. *loripitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-521 sp900546995*. The type genome for the species is the GenBank assembly GCA_900546995.1. The GC content of the type genome is 48.19 %

and the genome length is 1.71 Mbp.

Description of *Candidatus* Bimotella monogivita sp. nov.

Candidatus Bimotella monogivita (NL. fem. n. *monogivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-521 sp900554675*. The type genome for the species is the GenBank assembly GCA_900554675.1. The GC content of the type genome is 47.61 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Bimotella repecitrix sp. nov.

Candidatus Bimotella repecitrix (NL. fem. n. *repecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-521 sp902388655*. The type genome for the species is the GenBank assembly GCA_900765595.1. The GC content of the type genome is 48.51 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Bimotella semidago sp. nov.

Candidatus Bimotella semidago (NL. fem. n. *semidago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-521 sp900544345*. The type genome for the species is the GenBank assembly GCA_900544345.1. The GC content of the type genome is 45.74 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Bimotella vehemugo sp. nov.

Candidatus Bimotella vehemugo (NL. fem. n. *vehemugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-521 sp002329575*. The type genome for the species is the GenBank assembly GCA_002329575.1. The GC content of the type genome is 48.47 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Bimotida conopiforma sp. nov.

Candidatus Bimotida conopiforma (NL. fem. n. *conopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7326 sp003284265*. The type genome for the species is the GenBank assembly GCA_003284265.1. The GC content of the type genome is 41.76 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Bimotida gen. nov.

Candidatus Bimotida (NL. fem. n. *Bimotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7326*. The type species for the genus is *Candidatus* Bimotida conopiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bimotida dicabago sp. nov.

Candidatus Bimotida dicabago (NL. fem. n. *dicabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7326 sp002709155*. The type genome for the species is the GenBank assembly GCA_002709155.1. The GC content of the type genome is 41.51 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Bimotida penicimonas sp. nov.

Candidatus Bimotida penicimonas (NL. fem. n. *penicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7326 sp003212315*. The type genome for the species is the GenBank assembly GCA_002692375.1. The GC content of the type genome is 41.8 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Bimotida semifitoga sp. nov.

Candidatus Bimotida semifitoga (NL. fem. n. *semifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7326 sp002708305*. The type genome for the species is the GenBank assembly GCA_002708305.1. The GC content of the type genome is 41.13 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Bimotosa rumifitas sp. nov.

Candidatus Bimotosa rumifitas (NL. fem. n. *rumifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002787255 sp002787255*. The type genome for the species is the GenBank assembly GCA_002774495.1. The GC content of the type genome is 38.29 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Bimotosa gen. nov.

Candidatus Bimotosa (NL. fem. n. *Bimotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002787255*. The type species for the genus is *Candidatus* Bimotosa rumifitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002787255*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotosaceae.

Description of *Candidatus* Bimotosaceae fam. nov.

Candidatus Bimotosaceae (NL. fem. n. *Bimotosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002787255.* The type genus for the taxon is *Candidatus* Bimotosa .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Bimotula absuritura sp. nov.

Candidatus Bimotula absuritura (NL. fem. n. *absuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RZZR01 sp009929795*. The type genome for the species is the GenBank assembly GCA_009929795.1. The GC content of the type genome is 59.67 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Bimotula gen. nov.

Candidatus Bimotula (NL. fem. n. *Bimotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RZZR01*. The type species for the genus is *Candidatus* Bimotula absuritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RZZR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotulaceae.

Description of *Candidatus* Bimotulaceae fam. nov.

Candidatus Bimotulaceae (NL. fem. n. *Bimotulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RZZR01.* The type genus for the taxon is *Candidatus* Bimotula .

According to GTDB R06-RS202, this family belongs to the order *Desulfovibrionales*.

Description of *Candidatus* Binatus dilogatio sp. nov.

Candidatus Binatus dilogatio (NL. fem. n. *dilogatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Binatus sp003135855*. The type genome for the species is the GenBank assembly GCA_003135855.1. The GC content of the type genome is 60.19 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Binatus fumacifica sp. nov.

Candidatus Binatus fumacifica (NL. fem. n. *fumacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Binatus sp003161515*. The type genome for the species is the GenBank assembly GCA_003161515.1. The GC content of the type genome is 60.38 % and the

genome length is 4.05 Mbp.

Description of *Candidatus* Binatus terebatio sp. nov.

Candidatus Binatus terebatio (NL. fem. n. *terebatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Binatus sp003135135*. The type genome for the species is the GenBank assembly GCA_003153535.1. The GC content of the type genome is 61.4 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Binocana bicodedo sp. nov.

Candidatus Binocana bicodedo (NL. fem. n. *bicodedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKKK01 sp007121535*. The type genome for the species is the GenBank assembly GCA_007135525.1. The GC content of the type genome is 60.16 % and the genome length is 9.08 Mbp.

Description of *Candidatus* Binocana gen. nov.

Candidatus Binocana (NL. fem. n. *Binocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKKK01*. The type species for the genus is *Candidatus* Binocana bicodedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Binocaria biveressa sp. nov.

Candidatus Binocaria biveressa (NL. fem. n. *biveressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHV01 sp012270695*. The type genome for the species is the GenBank assembly GCA_012270695.1. The GC content of the type genome is 54.09 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Binocaria gen. nov.

Candidatus Binocaria (NL. fem. n. *Binocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXHV01*. The type species for the genus is *Candidatus* Binocaria biveressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Binocaria desuritoga sp. nov.

Candidatus Binocaria desuritoga (NL. fem. n. *desuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHV01 sp009843675*. The type genome for the species is the GenBank assembly GCA_009843675.1. The GC content of the type genome is 58.03 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Binocella expalitrix sp. nov.

Candidatus Binocella expalitrix (NL. fem. n. *expalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOSU01 sp903861055*. The type genome for the species is the GenBank assembly GCA_903861055.1. The GC content of the type genome is 44.66 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Binocella gen. nov.

Candidatus Binocella (NL. fem. n. *Binocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOSU01*. The type species for the genus is *Candidatus* Binocella expalitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIOSU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Binocellaceae.

Description of *Candidatus* Binocellaceae fam. nov.

Candidatus Binocellaceae (NL. fem. n. *Binocellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIOSU01.* The type genus for the taxon is *Candidatus* Binocella .

According to GTDB R06-RS202, this family belongs to the order *Chitinophagales*.

Description of *Candidatus* Binocia vitupifica sp. nov.

Candidatus Binocia vitupifica (NL. fem. n. *vitupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3531 sp002376885*. The type genome for the species is the GenBank assembly GCA_002708165.1. The GC content of the type genome is 42.0 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Binocia gen. nov.

Candidatus Binocia (NL. fem. n. *Binocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3531*. The type species for the genus is *Candidatus* Binocia vitupifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3531*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Binociaceae.

Description of *Candidatus* Binociaceae fam. nov.

Candidatus Binociaceae (NL. fem. n. *Binociaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3531.* The type genus for the taxon is *Candidatus* Binocia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Binocida gemebitas sp. nov.

Candidatus Binocida gemebitas (NL. fem. n. *gemebitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin32 sp004376895*. The type genome for the species is the GenBank assembly GCA_004376895.1. The GC content of the type genome is 52.46 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Binocida gen. nov.

Candidatus Binocida (NL. fem. n. *Binocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin32*. The type species for the genus is *Candidatus* Binocida gemebitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Binocidaceae.

Description of *Candidatus* Binocidaceae fam. nov.

Candidatus Binocidaceae (NL. fem. n. *Binocidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin32.* The type genus for the taxon is *Candidatus* Binocida .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Binocida inheribra sp. nov.

Candidatus Binocida inheribra (NL. fem. n. *inheribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin32 sp004376465*. The type genome for the species is the GenBank assembly GCA_004376465.1. The GC content of the type genome is 52.37 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Binocosa divulentia sp. nov.

Candidatus Binocosa divulentia (NL. fem. n. *divulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVND01 sp903845085*. The type genome for the species is the GenBank assembly GCA_903925305.1. The GC content of the type genome is 60.19 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Binocosa gen. nov.

Candidatus Binocosa (NL. fem. n. *Binocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVND01*. The type species for the genus is *Candidatus* Binocosa divulentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bog-793*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semibidaceae.

Description of *Candidatus* Binocosa forinilega sp. nov.

Candidatus Binocosa forinilega (NL. fem. n. *forinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVND01 sp903907185*. The type genome for the species is the GenBank assembly GCA_903859015.1. The GC content of the type genome is 56.31 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Binocula tubicibra sp. nov.

Candidatus Binocula tubicibra (NL. fem. n. *tubicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB-PLM-2 sp003389215*. The type genome for the species is the GenBank assembly GCA_003388515.1. The GC content of the type genome is 62.6 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Binocula gen. nov.

Candidatus Binocula (NL. fem. n. *Binocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MB-PLM-2*. The type species for the genus is *Candidatus* Binocula tubicibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7805*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ficulariaceae.

Description of *Candidatus* Biomaibacter caselatio sp. nov.

Candidatus Biomaibacter caselatio (NL. fem. n. *caselatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Biomaibacter sp012840135*. The type genome for the species is the GenBank assembly GCA_012840135.1. The GC content of the type genome is 43.43 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Bipalana defunitica sp. nov.

Candidatus Bipalana defunitica (NL. fem. n. *defunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1439 sp003164675*. The type genome for the species is the GenBank assembly GCA_003164675.1. The GC content of the type genome is 59.09 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Bipalana gen. nov.

Candidatus Bipalana (NL. fem. n. *Bipalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1439*. The type species for the genus is *Candidatus* Bipalana defunitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipalanaceae.

Description of *Candidatus* Bipalanaceae fam. nov.

Candidatus Bipalanaceae (NL. fem. n. *Bipalanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1439.* The type genus for the taxon is *Candidatus* Bipalana .

According to the original version of GTDB R06-RS202, this family belongs to the order *Palsa-1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipalanales.

Description of *Candidatus* Bipalanales ord. nov.

Candidatus Bipalanales (NL. fem. n. *Bipalanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1439.* The type genus for the taxon is *Candidatus* Bipalana .

According to the GTDB R06-RS202, this order belongs to the class *Verrucomicrobiae*.

Description of *Candidatus* Bipalana loripitia sp. nov.

Candidatus Bipalana loripitia (NL. fem. n. *loripitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1439 sp003152315*. The type genome for the species is the GenBank assembly GCA_003152315.1. The GC content of the type genome is 57.98 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Bipalaria detotibra sp. nov.

Candidatus Bipalaria detotibra (NL. fem. n. *detotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HOT-345 sp013333605*. The type genome for the species is the GenBank assembly GCA_013333605.2. The GC content of the type genome is 35.8 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Bipalaria gen. nov.

Candidatus Bipalaria (NL. fem. n. *Bipalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HOT-345*. The type species for the genus is *Candidatus* Bipalaria

detotibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *X112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Bipalaria infatitudo sp. nov.

Candidatus Bipalaria infatitudo (NL. fem. n. *infatitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HOT-345 sp013333295*. The type genome for the species is the GenBank assembly GCA_013333295.2. The GC content of the type genome is 35.35 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Bipalaria taraxibra sp. nov.

Candidatus Bipalaria taraxibra (NL. fem. n. *taraxibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HOT-345 sp003260355*. The type genome for the species is the GenBank assembly GCA_003260355.1. The GC content of the type genome is 38.21 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Bipalella vecoritas sp. nov.

Candidatus Bipalella vecoritas (NL. fem. n. *vecoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTSZ01 sp012965045*. The type genome for the species is the GenBank assembly GCA_012965045.1. The GC content of the type genome is 43.27 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Bipalella gen. nov.

Candidatus Bipalella (NL. fem. n. *Bipalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTSZ01*. The type species for the genus is *Candidatus* Bipalella vecoritas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTSZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipalellaceae.

Description of *Candidatus* Bipalellaceae fam. nov.

Candidatus Bipalellaceae (NL. fem. n. *Bipalellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTSZ01.* The type genus for the taxon is *Candidatus* Bipalella .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Bipalia lucubiforma sp. nov.

Candidatus Bipalia lucubiforma (NL. fem. n. *lucubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7748 sp003862175*. The type genome for the species is the GenBank assembly GCA_003862175.1. The GC content of the type genome is 55.46 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Bipalia gen. nov.

Candidatus Bipalia (NL. fem. n. *Bipalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7748*. The type species for the genus is *Candidatus* Bipalia lucubiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bipalia timefetta sp. nov.

Candidatus Bipalia timefetta (NL. fem. n. *timefetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7748 sp900314535*. The type genome for the species is the GenBank assembly GCA_003862165.1. The GC content of the type genome is 59.0 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Bipalia tirunax sp. nov.

Candidatus Bipalia tirunax (NL. fem. n. *tirunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7748 sp900313905*. The type genome for the species is the GenBank assembly GCA_002481785.1. The GC content of the type genome is 60.88 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Bipalida ceraritrix sp. nov.

Candidatus Bipalida ceraritrix (NL. fem. n. *ceraritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MarineAlpha9-Bin2 sp002937675*. The type genome for the species is the GenBank assembly GCA_002937695.1. The GC content of the type genome is 32.08 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Bipalida gen. nov.

Candidatus Bipalida (NL. fem. n. *Bipalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MarineAlpha9-Bin2*. The type species for the genus is *Candidatus* Bipalida ceraritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifariaceae.

Description of *Candidatus* Bipalosa feculisca sp. nov.

Candidatus Bipalosa feculisca (NL. fem. n. *feculisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9910 sp003444085*. The type genome for the species is the GenBank assembly GCA_003444085.1. The GC content of the type genome is 46.17 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Bipalosa gen. nov.

Candidatus Bipalosa (NL. fem. n. *Bipalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9910*. The type species for the genus is *Candidatus* Bipalosa feculisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bipalosa funivibula sp. nov.

Candidatus Bipalosa funivibula (NL. fem. n. *funivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9910 sp003561215*. The type genome for the species is the GenBank assembly GCA_003561215.1. The GC content of the type genome is 48.13 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Bipalula nicotitrix sp. nov.

Candidatus Bipalula nicotitrix (NL. fem. n. *nicotitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S0819 sp009295635*. The type genome for the species is the GenBank assembly RS_GCF_009184365.1. The GC content of the type genome is 66.84 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Bipalula gen. nov.

Candidatus Bipalula (NL. fem. n. *Bipalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *S0819*. The type species for the genus is *Candidatus* Bipalula nicotitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AK92*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifidaceae.

Description of *Candidatus* Biparana pecunifica sp. nov.

Candidatus Biparana pecunifica (NL. fem. n. *pecunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYA2-FULL-47-19 sp001780275*. The type genome for the species is the GenBank assembly GCA_001780275.1. The GC content of the type genome is 46.38 % and the genome length is 1.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Biparana gen. nov.

Candidatus Biparana (NL. fem. n. *Biparana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYA2-FULL-47-19*. The type species for the genus is *Candidatus* Biparana pecunifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12075*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenociaceae.

Description of *Candidatus* Bipararia fibicago sp. nov.

Candidatus Bipararia fibicago (NL. fem. n. *fibicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1994 sp002335865*. The type genome for the species is the GenBank assembly GCA_003484625.1. The GC content of the type genome is 36.4 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Bipararia gen. nov.

Candidatus Bipararia (NL. fem. n. *Bipararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1994*. The type species for the genus is *Candidatus* Bipararia fibicago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Biparella deculitrix sp. nov.

Candidatus Biparella deculitrix (NL. fem. n. *deculitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VAZQ01 sp009377695*. The type genome for the species is the GenBank assembly GCA_009377695.1. The GC content of the type genome is 63.41 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Biparella gen. nov.

Candidatus Biparella (NL. fem. n. *Biparella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VAZQ01*. The type species for the genus is *Candidatus* Biparella deculitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Biparella tomogitio sp. nov.

Candidatus Biparella tomogitio (NL. fem. n. *tomogitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VAZQ01 sp005883115*. The type genome for the species is the GenBank assembly GCA_005882395.1. The GC content of the type genome is 62.81 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Biparida binocitica sp. nov.

Candidatus Biparida binocitica (NL. fem. n. *binocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMRJ01 sp013202745*. The type genome for the species is the GenBank assembly GCA_013202745.1. The GC content of the type genome is 44.35 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Biparida gen. nov.

Candidatus Biparida (NL. fem. n. *Biparida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JABMRJ01*. The type species for the genus is *Candidatus* Biparida binocitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMRJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Biparidaceae.

Description of *Candidatus* Biparidaceae fam. nov.

Candidatus Biparidaceae (NL. fem. n. *Biparidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMRJ01.* The type genus for the taxon is *Candidatus* Biparida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMRJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Biparidales.

Description of *Candidatus* Biparidales ord. nov.

Candidatus Biparidales (NL. fem. n. *Biparidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMRJ01.* The type genus for the taxon is *Candidatus* Biparida .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Biparosa celamugo sp. nov.

Candidatus Biparosa celamugo (NL. fem. n. *celamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMZW01 sp903846075*. The type genome for the species is the GenBank assembly GCA_903846075.1. The GC content of the type genome is 48.49 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Biparosa gen. nov.

Candidatus Biparosa (NL. fem. n. *Biparosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMZW01*. The type species for the genus is *Candidatus* Biparosa celamugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Biparosa defenitas sp. nov.

Candidatus Biparosa defenitas (NL. fem. n. *defenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMZW01 sp903873185*. The type genome for the species is the GenBank assembly GCA_903873185.1. The GC content of the type genome is 49.57 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Biparosa desulastra sp. nov.

Candidatus Biparosa desulastra (NL. fem. n. *desulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMZW01 sp903850565*. The type genome for the species is the GenBank assembly GCA_903889625.1. The GC content of the type genome is 48.04 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Biparula codifibra sp. nov.

Candidatus Biparula codifibra (NL. fem. n. *codifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs119 sp009919275*. The type genome for the species is the GenBank assembly GCA_009918205.1. The GC content of the type genome is 62.08 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Biparula gen. nov.

Candidatus Biparula (NL. fem. n. *Biparula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-20-MAGs119*. The type species for the genus is *Candidatus* Biparula codifibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Biparula figilitica sp. nov.

Candidatus Biparula figilitica (NL. fem. n. *figilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs119 sp005787785*. The type genome for the species is the GenBank assembly GCA_005787785.1. The GC content of the type genome is 63.11 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Biparula fusifentia sp. nov.

Candidatus Biparula fusifentia (NL. fem. n. *fusifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs119 sp009711295*. The type genome for the species is the GenBank assembly GCA_903920665.1. The GC content of the type genome is 52.17 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Biparula insomax sp. nov.

Candidatus Biparula insomax (NL. fem. n. *insomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs119 sp903858075*. The type genome for the species is the GenBank assembly GCA_903858075.1. The GC content of the type genome is 51.79 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Biparula telefitio sp. nov.

Candidatus Biparula telefitio (NL. fem. n. *telefitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs119 sp013205145*. The type genome for the species is the GenBank assembly GCA_013205145.1. The GC content of the type genome is 51.48 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Bipatana linigicella sp. nov.

Candidatus Bipatana linigicella (NL. fem. n. *linigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-47-10b sp001821795*. The type genome for the species is the GenBank assembly GCA_001819905.1. The GC content of the type genome is 47.25 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Bipatana gen. nov.

Candidatus Bipatana (NL. fem. n. *Bipatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-47-10b*. The type species for the genus is *Candidatus* Bipatana linigicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-47-10b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipatanaceae.

Description of *Candidatus* Bipatanaceae fam. nov.

Candidatus Bipatanaceae (NL. fem. n. *Bipatanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-47-10b.* The type genus for the taxon is *Candidatus* Bipatana .

According to GTDB R06-RS202, this family belongs to the order *Ryanbacterales*.

Description of *Candidatus* Bipataria cimelibula sp. nov.

Candidatus Bipataria cimelibula (NL. fem. n. *cimelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLF01 sp011371585*. The type genome for the species is the GenBank assembly GCA_011371585.1. The GC content of the type genome is 45.98 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Bipataria gen. nov.

Candidatus Bipataria (NL. fem. n. *Bipataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLF01*. The type species for the genus is *Candidatus* Bipataria cimelibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTLF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipatariaceae.

Description of *Candidatus* Bipatariaceae fam. nov.

Candidatus Bipatariaceae (NL. fem. n. *Bipatariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLF01*. The type genus for the taxon is *Candidatus* Bipataria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTLF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipatariales.

Description of *Candidatus* Bipatariales ord. nov.

Candidatus Bipatariales (NL. fem. n. *Bipatariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLF01*. The type genus for the taxon is *Candidatus* Bipataria .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTLF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bipatariae.

Description of *Candidatus* Bipatariae class. nov.

Candidatus Bipatariae (NL. fem. n. *c__Bipatariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLF01*. The type genus for the taxon is *Candidatus* Bipataria .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Bipatella vilititoga sp. nov.

Candidatus Bipatella vilititoga (NL. fem. n. *vilititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUOP01 sp012034805*. The type genome for the species is the GenBank assembly GCA_012032025.1. The GC content of the type genome is 55.06 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Bipatella gen. nov.

Candidatus Bipatella (NL. fem. n. *Bipatella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUOP01*. The type species for the genus is *Candidatus* Bipatella vilititoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bipatia telegedo sp. nov.

Candidatus Bipatia telegedo (NL. fem. n. *telegedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-45-26 sp002787155*. The type genome for the species is the GenBank assembly GCA_002787155.1. The GC content of the type genome is 45.25 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Bipatia gen. nov.

Candidatus Bipatia (NL. fem. n. *Bipatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-45-26*. The type species for the genus is *Candidatus* Bipatia telegedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-20-45-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipatiaceae.

Description of *Candidatus* Bipatiaceae fam. nov.

Candidatus Bipatiaceae (NL. fem. n. *Bipatiaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-20-45-26.* The type genus for the taxon is *Candidatus* Bipatia .

According to GTDB R06-RS202, this family belongs to the order *Omnitrophales*.

Description of *Candidatus* Bipatida dehinicella sp. nov.

Candidatus Bipatida dehinicella (NL. fem. n. *dehinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5776 sp011620275*. The type genome for the species is the GenBank assembly GCA_011620275.1. The GC content of the type genome is 52.43 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Bipatida gen. nov.

Candidatus Bipatida (NL. fem. n. *Bipatida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5776*. The type species for the genus is *Candidatus* Bipatida dehinicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Bipatida nucifago sp. nov.

Candidatus Bipatida nucifago (NL. fem. n. *nucifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5776 sp002418595*. The type genome for the species is the GenBank assembly GCA_002452395.1. The GC content of the type genome is 52.24 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Bipatosa ceracitura sp. nov.

Candidatus Bipatosa ceracitura (NL. fem. n. *ceracitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-35 sp003231975*. The type genome for the species is the GenBank assembly GCA_003231975.1. The GC content of the type genome is 60.37 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Bipatosa gen. nov.

Candidatus Bipatosa (NL. fem. n. *Bipatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-35*. The type species for the genus is *Candidatus* Bipatosa ceracitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipatosaceae.

Description of *Candidatus* Bipatosaceae fam. nov.

Candidatus Bipatosaceae (NL. fem. n. *Bipatosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-35.* The type genus for the taxon is *Candidatus* Bipatosa .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Bipatula exsolitio sp. nov.

Candidatus Bipatula exsolitio (NL. fem. n. *exsolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-54-5 sp002772545*. The type genome for the species is the GenBank assembly GCA_002772545.1. The GC content of the type genome is 49.16 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Bipatula gen. nov.

Candidatus Bipatula (NL. fem. n. *Bipatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-54-5*. The type species for the genus is *Candidatus* Bipatula

exsolitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bipatula pimenousia sp. nov.

Candidatus Bipatula pimenousia (NL. fem. n. *pimenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-54-5 sp002787035*. The type genome for the species is the GenBank assembly GCA_002790955.1. The GC content of the type genome is 49.21 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Bipatula taxiledo sp. nov.

Candidatus Bipatula taxiledo (NL. fem. n. *taxiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-54-5 sp001787755*. The type genome for the species is the GenBank assembly GCA_001789125.1. The GC content of the type genome is 54.49 % and the genome length is 1.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Bipenana corocisca sp. nov.

Candidatus Bipenana corocisca (NL. fem. n. *corocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-878 sp000432255*. The type genome for the species is the GenBank assembly GCA_000432255.1. The GC content of the type genome is 25.88 % and the genome length is 1.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Bipenana gen. nov.

Candidatus Bipenana (NL. fem. n. *Bipenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-878*. The type species for the genus is *Candidatus* Bipenana

corocisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Bipenaria procletta sp. nov.

Candidatus Bipenaria procletta (NL. fem. n. *procletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYMT01 sp005805375*. The type genome for the species is the GenBank assembly GCA_005805375.1. The GC content of the type genome is 66.54 % and the genome length is 7.46 Mbp.

Description of *Candidatus* Bipenaria gen. nov.

Candidatus Bipenaria (NL. fem. n. *Bipenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYMT01*. The type species for the genus is *Candidatus* Bipenaria procletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SYMT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenariaceae.

Description of *Candidatus* Bipenariaceae fam. nov.

Candidatus Bipenariaceae (NL. fem. n. *Bipenariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SYMT01*. The type genus for the taxon is *Candidatus* Bipenaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SYMT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipenariales.

Description of *Candidatus* Bipenariales ord. nov.

Candidatus Bipenariales (NL. fem. n. *Bipenariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SYMT01*. The type genus for the taxon is *Candidatus* Bipenaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *SYMT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bipenariae.

Description of *Candidatus* Bipenariae class. nov.

Candidatus Bipenariae (NL. fem. n. *c__Bipenariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SYMT01*. The type genus for the taxon is *Candidatus* Bipenaria .

According to GTDB R06-RS202, this class belongs to the phylum *Armatimonadota*.

Description of *Candidatus* Bipenia delebitrix sp. nov.

Candidatus Bipenia delebitrix (NL. fem. n. *delebitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *64-32 sp001508155*. The type genome for the species is the GenBank assembly GCA_001508155.1. The GC content of the type genome is 64.27 % and the genome length is 1.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample K3".

Description of *Candidatus* Bipenia gen. nov.

Candidatus Bipenia (NL. fem. n. *Bipenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *64-32*. The type species for the genus is *Candidatus* Bipenia delebitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bipenida coticivita sp. nov.

Candidatus Bipenida coticivita (NL. fem. n. *coticivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVCY01 sp002049985*. The type genome for the species is the

GenBank assembly GCA_003645905.1. The GC content of the type genome is 48.87 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Bipenida gen. nov.

Candidatus Bipenida (NL. fem. n. *Bipenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MVCY01*. The type species for the genus is *Candidatus* Bipenida coticivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MVCY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenidaceae.

Description of *Candidatus* Bipenidaceae fam. nov.

Candidatus Bipenidaceae (NL. fem. n. *Bipenidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MVCY01*. The type genus for the taxon is *Candidatus* Bipenida .

According to the original version of GTDB R06-RS202, this family belongs to the order *MVCY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipenidales.

Description of *Candidatus* Bipenidales ord. nov.

Candidatus Bipenidales (NL. fem. n. *Bipenidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MVCY01*. The type genus for the taxon is *Candidatus* Bipenida .

According to the original version of GTDB R06-RS202, this family belongs to the class *MVCY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bipenidae.

Description of *Candidatus* Bipenidae class. nov.

Candidatus Bipenidae (NL. fem. n. *c__Bipenidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MVCY01*. The type genus for the taxon is *Candidatus* Bipenida .

According to GTDB R06-RS202, this class belongs to the phylum *Latescibacterota*.

Description of *Candidatus* Bipenosa ammatilega sp. nov.

Candidatus Bipenosa ammatilega (NL. fem. n. *ammatilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp902537815*. The type genome for the species is the GenBank assembly GCA_902537815.1. The GC content of the type genome is 52.97 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Bipenosa gen. nov.

Candidatus Bipenosa (NL. fem. n. *Bipenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9145*. The type species for the genus is *Candidatus* Bipenosa ammatilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bipenosa ammixiforma sp. nov.

Candidatus Bipenosa ammixiforma (NL. fem. n. *ammixiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp013204155*. The type genome for the species is the GenBank assembly GCA_013204155.1. The GC content of the type genome is 49.19 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Bipenosa anactilega sp. nov.

Candidatus Bipenosa anactilega (NL. fem. n. *anactilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002723195*. The type genome for the species is the GenBank assembly GCA_002723195.1. The GC content of the type genome is 43.77 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Bipenosa astapimonas sp. nov.

Candidatus Bipenosa astapimonas (NL. fem. n. *astapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002401885*. The type genome for the species is the GenBank assembly GCA_002401885.1. The GC content of the type genome is 49.38 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Bipenosa attoriforma sp. nov.

Candidatus Bipenosa attoriforma (NL. fem. n. *attoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp012960305*. The type genome for the species is the GenBank assembly GCA_012960305.1. The GC content of the type genome is 44.41 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Bipenosa bimotifica sp. nov.

Candidatus Bipenosa bimotifica (NL. fem. n. *bimotifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002477465*. The type genome for the species is the GenBank assembly GCA_002470225.1. The GC content of the type genome is 52.59 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Bipenosa cepulicula sp. nov.

Candidatus Bipenosa cepulicula (NL. fem. n. *cepulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002715615*. The type genome for the species is the GenBank assembly GCA_002715615.1. The GC content of the type genome is 48.54 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Bipenosa cerifastra sp. nov.

Candidatus Bipenosa cerifastra (NL. fem. n. *cerifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002457215*. The type genome for the species is the GenBank assembly GCA_002705145.1. The GC content of the type genome is 43.94 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Bipenosa cinipicella sp. nov.

Candidatus Bipenosa cinipicella (NL. fem. n. *cinipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002731775*. The type genome for the species is the GenBank assembly GCA_002731775.1. The GC content of the type genome is 52.4 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Bipenosa colapiforma sp. nov.

Candidatus Bipenosa colapiforma (NL. fem. n. *colapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp003483155*. The type genome for the species is the GenBank assembly GCA_003483155.1. The GC content of the type genome is 50.66 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Bipenosa dicabitia sp. nov.

Candidatus Bipenosa dicabitia (NL. fem. n. *dicabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp008081045*. The type genome for the species is the GenBank assembly GCA_009920395.1. The GC content of the type genome is 54.8 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Bipenosa exorcigena sp. nov.

Candidatus Bipenosa exorcigena (NL. fem. n. *exorcigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA9145 sp002726595*. The type genome for the species is the GenBank assembly GCA_002726595.1. The GC content of the type genome is 49.55 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Bipenosa hiruditura sp. nov.

Candidatus Bipenosa hiruditura (NL. fem. n. *hiruditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp009692305*. The type genome for the species is the GenBank assembly GCA_009692305.1. The GC content of the type genome is 52.69 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Bipenosa indivigena sp. nov.

Candidatus Bipenosa indivigena (NL. fem. n. *indivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002729315*. The type genome for the species is the GenBank assembly GCA_002729315.1. The GC content of the type genome is 51.71 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Bipenosa inlepugo sp. nov.

Candidatus Bipenosa inlepugo (NL. fem. n. *inlepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp902591495*. The type genome for the species is the GenBank assembly GCA_902591495.1. The GC content of the type genome is 42.7 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Bipenosa inmemitas sp. nov.

Candidatus Bipenosa inmemitas (NL. fem. n. *inmemitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp902531515*. The type genome for the species is the GenBank assembly GCA_902531515.1. The GC content of the type genome is 43.12 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Bipenosa inpenisca sp. nov.

Candidatus Bipenosa inpenisca (NL. fem. n. *inpenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002719575*. The type genome for the species is the GenBank assembly GCA_002719575.1. The GC content of the type genome is 49.7 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Bipenosa licenisca sp. nov.

Candidatus Bipenosa licenisca (NL. fem. n. *licenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002402175*. The type genome for the species is the GenBank assembly GCA_002402175.1. The GC content of the type genome is 45.31 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Bipenosa meridessa sp. nov.

Candidatus Bipenosa meridessa (NL. fem. n. *meridessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002377605*. The type genome for the species is the GenBank assembly GCA_002377605.1. The GC content of the type genome is 44.18 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Bipenosa morigitia sp. nov.

Candidatus Bipenosa morigitia (NL. fem. n. *morigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp003451715*. The type genome for the species is the GenBank assembly GCA_003451715.1. The GC content of the type genome is 51.27 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Bipenosa musulastra sp. nov.

Candidatus Bipenosa musulastra (NL. fem. n. *musulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp012103535*. The type genome for the species is the GenBank assembly GCA_012103535.1. The GC content of the type genome is 45.78 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Bipenosa nimirifica sp. nov.

Candidatus Bipenosa nimirifica (NL. fem. n. *nimirifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp003514305*. The type genome for the species is the GenBank assembly GCA_003514305.1. The GC content of the type genome is 49.92 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Bipenosa pecunousia sp. nov.

Candidatus Bipenosa pecunousia (NL. fem. n. *pecunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002172295*. The type genome for the species is the GenBank assembly GCA_002704105.1. The GC content of the type genome is 44.02 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Bipenosa penuretta sp. nov.

Candidatus Bipenosa penuretta (NL. fem. n. *penuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002714195*. The type genome for the species is the GenBank assembly GCA_002714195.1. The GC content of the type genome is 42.64 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Bipenosa peripatica sp. nov.

Candidatus Bipenosa peripatica (NL. fem. n. *peripatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA9145 sp002694855*. The type genome for the species is the GenBank assembly GCA_002699285.1. The GC content of the type genome is 46.62 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Bipenosa refinitoga sp. nov.

Candidatus Bipenosa refinitoga (NL. fem. n. *refinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002691885*. The type genome for the species is the GenBank assembly GCA_002172865.1. The GC content of the type genome is 52.5 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Bipenosa resacilenta sp. nov.

Candidatus Bipenosa resacilenta (NL. fem. n. *resacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002727755*. The type genome for the species is the GenBank assembly GCA_002697565.1. The GC content of the type genome is 43.0 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Bipenosa sanabibra sp. nov.

Candidatus Bipenosa sanabibra (NL. fem. n. *sanabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp902597095*. The type genome for the species is the GenBank assembly GCA_902597095.1. The GC content of the type genome is 52.75 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Bipenosa semifimonia sp. nov.

Candidatus Bipenosa semifimonia (NL. fem. n. *semifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002712055*. The type genome for the species is the GenBank assembly GCA_002360675.1. The GC content of the type genome is 46.0 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Bipenosa semivimonas sp. nov.

Candidatus Bipenosa semivimonas (NL. fem. n. *semivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002684935*. The type genome for the species is the GenBank assembly GCA_002323805.1. The GC content of the type genome is 52.17 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Bipenosa tolutilega sp. nov.

Candidatus Bipenosa tolutilega (NL. fem. n. *tolutilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9145 sp002730035*. The type genome for the species is the GenBank assembly GCA_002501115.1. The GC content of the type genome is 51.61 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Bipinana acrimitoga sp. nov.

Candidatus Bipinana acrimitoga (NL. fem. n. *acrimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED-70 sp002719425*. The type genome for the species is the GenBank assembly GCA_002719425.1. The GC content of the type genome is 31.33 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Bipinana gen. nov.

Candidatus Bipinana (NL. fem. n. *Bipinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED-70*. The type species for the genus is *Candidatus* Bipinana acrimitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED-70*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipinanaceae.

Description of *Candidatus* Bipinanaceae fam. nov.

Candidatus Bipinanaceae (NL. fem. n. *Bipinanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED-70.* The type genus for the taxon is *Candidatus* Bipinana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Carucellales.

Description of *Candidatus* Bipinana bicipitica sp. nov.

Candidatus Bipinana bicipitica (NL. fem. n. *bicipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED-70 sp002703265*. The type genome for the species is the GenBank assembly GCA_009391545.1. The GC content of the type genome is 31.07 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Bipinana bulapicella sp. nov.

Candidatus Bipinana bulapicella (NL. fem. n. *bulapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED-70 sp002171675*. The type genome for the species is the GenBank assembly GCA_009391625.1. The GC content of the type genome is 30.72 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Bipinana dilicedo sp. nov.

Candidatus Bipinana dilicedo (NL. fem. n. *dilicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED-70 sp002711965*. The type genome for the species is the GenBank assembly GCA_002711965.1. The GC content of the type genome is 30.62 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Bipinana intemousia sp. nov.

Candidatus Bipinana intemousia (NL. fem. n. *intemousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED-70 sp002721875*. The type genome for the species is the GenBank assembly GCA_002721875.1. The GC content of the type genome is 31.77 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Bipinana melilicula sp. nov.

Candidatus Bipinana melilicula (NL. fem. n. *melilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED-70 sp002699165*. The type genome for the species is the GenBank assembly GCA_002699165.1. The GC content of the type genome is 30.59 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Bipinana peribugo sp. nov.

Candidatus Bipinana peribugo (NL. fem. n. *peribugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED-70 sp009937255*. The type genome for the species is the GenBank assembly GCA_014240175.1. The GC content of the type genome is 28.87 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Bipinana pinifisca sp. nov.

Candidatus Bipinana pinifisca (NL. fem. n. *pinifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED-70 sp008373205*. The type genome for the species is the GenBank assembly GCA_008373205.1. The GC content of the type genome is 30.94 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Bipinana sceptimonas sp. nov.

Candidatus Bipinana sceptimonas (NL. fem. n. *sceptimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *TMED-70 sp002710135*. The type genome for the species is the GenBank assembly GCA_002710135.1. The GC content of the type genome is 30.87 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Bipinaria vavasessa sp. nov.

Candidatus Bipinaria vavasessa (NL. fem. n. *vavasessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-365 sp003246455*. The type genome for the species is the GenBank assembly GCA_003246455.1. The GC content of the type genome is 60.17 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Bipinaria gen. nov.

Candidatus Bipinaria (NL. fem. n. *Bipinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-365*. The type species for the genus is *Candidatus* Bipinaria vavasessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-365*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipinariaceae.

Description of *Candidatus* Bipinariaceae fam. nov.

Candidatus Bipinariaceae (NL. fem. n. *Bipinariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-365.* The type genus for the taxon is *Candidatus* Bipinaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-365*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipinariales.

Description of *Candidatus* Bipinariales ord. nov.

Candidatus Bipinariales (NL. fem. n. *Bipinariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-365.* The type genus for the taxon is *Candidatus* Bipinaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *SZUA-365*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bipinariae.

Description of *Candidatus* Bipinariae class. nov.

Candidatus Bipinariae (NL. fem. n. *c__Bipinariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-365.* The type genus for the taxon is *Candidatus* Bipinaria .

According to GTDB R06-RS202, this class belongs to the phylum *Bacteroidota*.

Description of *Candidatus* Bipinella cobalitoga sp. nov.

Candidatus Bipinella cobalitoga (NL. fem. n. *cobalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-88 sp002011795*. The type genome for the species is the GenBank assembly GCA_002376155.1. The GC content of the type genome is 62.98 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Bipinella gen. nov.

Candidatus Bipinella (NL. fem. n. *Bipinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-88*. The type species for the genus is *Candidatus* Bipinella cobalitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-88*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipinellaceae.

Description of *Candidatus* Bipinellaceae fam. nov.

Candidatus Bipinellaceae (NL. fem. n. *Bipinellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-88.* The type genus for the taxon is *Candidatus* Bipinella .

According to GTDB R06-RS202, this family belongs to the order

Thermodesulfovibrionales.

Description of *Candidatus* Bipinia celamitia sp. nov.

Candidatus Bipinia celamitia (NL. fem. n. *celamitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BX7 sp014384765*. The type genome for the species is the GenBank assembly GCA_014384765.1. The GC content of the type genome is 58.85 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Bipinia gen. nov.

Candidatus Bipinia (NL. fem. n. *Bipinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BX7*. The type species for the genus is *Candidatus* Bipinia celamitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BX7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipiniaceae.

Description of *Candidatus* Bipiniaceae fam. nov.

Candidatus Bipiniaceae (NL. fem. n. *Bipiniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BX7*. The type genus for the taxon is *Candidatus* Bipinia .

According to GTDB R06-RS202, this family belongs to the order *Oscillospirales*.

Description of *Candidatus* Bipinida anaplisca sp. nov.

Candidatus Bipinida anaplisca (NL. fem. n. *anaplisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp007280125*. The type genome for the species is the GenBank assembly GCA_007280125.1. The GC content of the type genome is 46.72 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Bipinida gen. nov.

Candidatus Bipinida (NL. fem. n. *Bipinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QYPT01*. The type species for the genus is *Candidatus* Bipinida anaplisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bipinida cocolitas sp. nov.

Candidatus Bipinida cocolitas (NL. fem. n. *cocolitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp903928745*. The type genome for the species is the GenBank assembly GCA_903928745.1. The GC content of the type genome is 48.05 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Bipinida fiducitio sp. nov.

Candidatus Bipinida fiducitio (NL. fem. n. *fiducitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp009700405*. The type genome for the species is the GenBank assembly GCA_009705495.1. The GC content of the type genome is 47.22 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Bipinida fusifatica sp. nov.

Candidatus Bipinida fusifatica (NL. fem. n. *fusifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp903822425*. The type genome for the species is the GenBank assembly GCA_903822425.1. The GC content of the type genome is 47.11 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Bipinida lametibula sp. nov.

Candidatus Bipinida lametibula (NL. fem. n. *lametibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp014377015*. The type genome for the species is the GenBank assembly GCA_014377015.1. The GC content of the type genome is 50.24 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Bipinida laxitimonia sp. nov.

Candidatus Bipinida laxitimonia (NL. fem. n. *laxitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp009699375*. The type genome for the species is the GenBank assembly GCA_009699375.1. The GC content of the type genome is 45.65 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Bipinida nivomisca sp. nov.

Candidatus Bipinida nivomisca (NL. fem. n. *nivomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp009698615*. The type genome for the species is the GenBank assembly GCA_009701225.1. The GC content of the type genome is 47.8 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Bipinida recucitrix sp. nov.

Candidatus Bipinida recucitrix (NL. fem. n. *recucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp903834145*. The type genome for the species is the GenBank assembly GCA_903826505.1. The GC content of the type genome is 48.84 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Bipinida vanitifica sp. nov.

Candidatus Bipinida vanitifica (NL. fem. n. *vanitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *QYPT01 sp903834705*. The type genome for the species is the GenBank assembly GCA_903834705.1. The GC content of the type genome is 46.04 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Bipinida venunibra sp. nov.

Candidatus Bipinida venunibra (NL. fem. n. *venunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp009699205*. The type genome for the species is the GenBank assembly GCA_009701685.1. The GC content of the type genome is 47.78 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Bipinida vinacigena sp. nov.

Candidatus Bipinida vinacigena (NL. fem. n. *vinacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPT01 sp903924485*. The type genome for the species is the GenBank assembly GCA_903888385.1. The GC content of the type genome is 48.66 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Bipinosa adnarousia sp. nov.

Candidatus Bipinosa adnarousia (NL. fem. n. *adnarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RSA5 sp002919235*. The type genome for the species is the GenBank assembly GCA_002919235.1. The GC content of the type genome is 67.75 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Bipinosa gen. nov.

Candidatus Bipinosa (NL. fem. n. *Bipinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RSA5*. The type species for the genus is *Candidatus* Bipinosa adnarousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RSA5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the

family *Candidatus* Bipinosaceae.

Description of *Candidatus* Bipinosaceae fam. nov.

Candidatus Bipinosaceae (NL. fem. n. *Bipinosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RSA5.* The type genus for the taxon is *Candidatus* Bipinosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU080*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defosellales.

Description of *Candidatus* Bipinula diluvisca sp. nov.

Candidatus Bipinula diluvisca (NL. fem. n. *diluvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1467 sp003157575*. The type genome for the species is the GenBank assembly GCA_003157575.1. The GC content of the type genome is 63.34 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Bipinula gen. nov.

Candidatus Bipinula (NL. fem. n. *Bipinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1467*. The type species for the genus is *Candidatus* Bipinula diluvisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bipinula nubigax sp. nov.

Candidatus Bipinula nubigax (NL. fem. n. *nubigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1467 sp003142615*. The type genome for the species is the GenBank assembly GCA_003142615.1. The GC content of the type genome is 64.26 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Bipinula repudessa sp. nov.

Candidatus Bipinula repudessa (NL. fem. n. *repudessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1467 sp003153035*. The type genome for the species is the GenBank assembly GCA_003157495.1. The GC content of the type genome is 64.27 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Bipinula solipitio sp. nov.

Candidatus Bipinula solipitio (NL. fem. n. *solipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1467 sp003142955*. The type genome for the species is the GenBank assembly GCA_003154875.1. The GC content of the type genome is 62.37 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Bipinula tetenitio sp. nov.

Candidatus Bipinula tetenitio (NL. fem. n. *tetenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1467 sp903940425*. The type genome for the species is the GenBank assembly GCA_903866235.1. The GC content of the type genome is 64.74 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Bipolaricaulis habacilenta sp. nov.

Candidatus Bipolaricaulis habacilenta (NL. fem. n. *habacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bipolaricaulis sp014361015*. The type genome for the species is the GenBank assembly GCA_014361015.1. The GC content of the type genome is 68.85 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Bipolaricaulis infunugo sp. nov.

Candidatus Bipolaricaulis infunugo (NL. fem. n. *infunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bipolaricaulis sp014360985*. The type genome for the species is the GenBank assembly GCA_014360985.1. The GC content of the type genome is 67.57 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Bipolaricaulis pudibimonia sp. nov.

Candidatus Bipolaricaulis pudibimonia (NL. fem. n. *pudibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bipolaricaulis sp002479455*. The type genome for the species is the GenBank assembly GCA_002402715.1. The GC content of the type genome is 65.79 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Bipolaricaulis solifitudo sp. nov.

Candidatus Bipolaricaulis solifitudo (NL. fem. n. *solifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bipolaricaulis sp011057175*. The type genome for the species is the GenBank assembly GCA_011057175.1. The GC content of the type genome is 68.3 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Bisacana adpinentia sp. nov.

Candidatus Bisacana adpinentia (NL. fem. n. *adpinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJC01 sp009783265*. The type genome for the species is the GenBank assembly GCA_009783265.1. The GC content of the type genome is 38.64 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Bisacana gen. nov.

Candidatus Bisacana (NL. fem. n. *Bisacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRJC01*. The type species for the genus is *Candidatus* Bisacana

adpinentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRJC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacanaceae.

Description of *Candidatus* Bisacanaceae fam. nov.

Candidatus Bisacanaceae (NL. fem. n. *Bisacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRJC01.* The type genus for the taxon is *Candidatus* Bisacana .

According to GTDB R06-RS202, this family belongs to the order *Oscillospirales*.

Description of *Candidatus* Bisacana aphoritoga sp. nov.

Candidatus Bisacana aphoritoga (NL. fem. n. *aphoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJC01 sp009785015*. The type genome for the species is the GenBank assembly GCA_009785015.1. The GC content of the type genome is 48.33 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Bisacana innulago sp. nov.

Candidatus Bisacana innulago (NL. fem. n. *innulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJC01 sp009782405*. The type genome for the species is the GenBank assembly GCA_009782405.1. The GC content of the type genome is 48.35 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Bisacana monacilenta sp. nov.

Candidatus Bisacana monacilenta (NL. fem. n. *monacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJC01 sp009777355*. The type genome for the species is the GenBank assembly GCA_009777355.1. The GC content of the type genome is 44.47 %

and the genome length is 2.01 Mbp.

Description of *Candidatus* Bisacana paracitio sp. nov.

Candidatus Bisacana paracitio (NL. fem. n. *paracitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJC01 sp009780985*. The type genome for the species is the GenBank assembly GCA_009780985.1. The GC content of the type genome is 40.5 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Bisacaria effiniforma sp. nov.

Candidatus Bisacaria effiniforma (NL. fem. n. *effiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J137 sp003694175*. The type genome for the species is the GenBank assembly GCA_003694175.1. The GC content of the type genome is 33.88 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Bisacaria gen. nov.

Candidatus Bisacaria (NL. fem. n. *Bisacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J137*. The type species for the genus is *Candidatus* Bisacaria effiniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J137*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacariaceae.

Description of *Candidatus* Bisacariaceae fam. nov.

Candidatus Bisacariaceae (NL. fem. n. *Bisacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J137.* The type genus for the taxon is *Candidatus* Bisacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *B142*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lapilulales.

Description of *Candidatus* Bisacella redunastra sp. nov.

Candidatus Bisacella redunastra (NL. fem. n. *redunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2185 sp003508565*. The type genome for the species is the GenBank assembly GCA_003508565.1. The GC content of the type genome is 45.94 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Bisacella gen. nov.

Candidatus Bisacella (NL. fem. n. *Bisacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2185*. The type species for the genus is *Candidatus* Bisacella redunastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacellaceae.

Description of *Candidatus* Bisacellaceae fam. nov.

Candidatus Bisacellaceae (NL. fem. n. *Bisacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2185.* The type genus for the taxon is *Candidatus* Bisacella .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Bisacia defunicella sp. nov.

Candidatus Bisacia defunicella (NL. fem. n. *defunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WYBJ01 sp009377585*. The type genome for the species is the GenBank assembly GCA_009377585.1. The GC content of the type genome is 65.1 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Bisacia gen. nov.

Candidatus Bisacia (NL. fem. n. *Bisacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WYBJ01*. The type species for the genus is *Candidatus* Bisacia defunicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WYBJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisaciaceae.

Description of *Candidatus* Bisaciaceae fam. nov.

Candidatus Bisaciaceae (NL. fem. n. *Bisaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WYBJ01*. The type genus for the taxon is *Candidatus* Bisacia .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Bisacia pedepicella sp. nov.

Candidatus Bisacia pedepicella (NL. fem. n. *pedepicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WYBJ01 sp011525945*. The type genome for the species is the GenBank assembly GCA_011525945.1. The GC content of the type genome is 65.59 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Bisacida taxilentia sp. nov.

Candidatus Bisacida taxilentia (NL. fem. n. *taxilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA122 sp003225055*. The type genome for the species is the GenBank assembly GCA_003225635.1. The GC content of the type genome is 57.56 % and the genome length is 7.26 Mbp.

Description of *Candidatus* Bisacida gen. nov.

Candidatus Bisacida (NL. fem. n. *Bisacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp1-AA122*. The type species for the genus is *Candidatus* Bisacida taxilentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bisacosa colubibula sp. nov.

Candidatus Bisacosa colubibula (NL. fem. n. *colubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4738 sp002413305*. The type genome for the species is the GenBank assembly GCA_002413305.1. The GC content of the type genome is 69.16 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Bisacosa gen. nov.

Candidatus Bisacosa (NL. fem. n. *Bisacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4738*. The type species for the genus is *Candidatus* Bisacosa colubibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacosaceae.

Description of *Candidatus* Bisacosaceae fam. nov.

Candidatus Bisacosaceae (NL. fem. n. *Bisacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4738.* The type genus for the taxon is *Candidatus* Bisacosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bisacosales.

Description of *Candidatus* Bisacosales ord. nov.

Candidatus Bisacosales (NL. fem. n. *Bisacosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4738.* The type genus for the taxon is *Candidatus* Bisacosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bisacosae.

Description of *Candidatus* Bisacosae class. nov.

Candidatus Bisacosae (NL. fem. n. *c__Bisacosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4738.* The type genus for the taxon is *Candidatus* Bisacosa .

According to GTDB R06-RS202, this class belongs to the phylum *Actinobacteriota*.

Description of *Candidatus* Bisacula adnunedo sp. nov.

Candidatus Bisacula adnunedo (NL. fem. n. *adnunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737595 sp903844855*. The type genome for the species is the GenBank assembly GCA_903844855.1. The GC content of the type genome is 52.67 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Bisacula gen. nov.

Candidatus Bisacula (NL. fem. n. *Bisacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2737595*. The type species for the genus is *Candidatus* Bisacula adnunedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bisacula calipessa sp. nov.

Candidatus Bisacula calipessa (NL. fem. n. *calipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2737595 sp009702245*. The type genome for the species is the GenBank assembly GCA_009705875.1. The GC content of the type genome is 52.59 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Bisacula herinedo sp. nov.

Candidatus Bisacula herinedo (NL. fem. n. *herinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737595 sp002737595*. The type genome for the species is the GenBank assembly GCA_002737595.1. The GC content of the type genome is 52.48 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Bisacula lapilatica sp. nov.

Candidatus Bisacula lapilatica (NL. fem. n. *lapilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737595 sp009917815*. The type genome for the species is the GenBank assembly GCA_009919715.1. The GC content of the type genome is 53.19 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Bisacula monodilega sp. nov.

Candidatus Bisacula monodilega (NL. fem. n. *monodilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737595 sp903863015*. The type genome for the species is the GenBank assembly GCA_903900125.1. The GC content of the type genome is 53.57 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Bisulana bacifitura sp. nov.

Candidatus Bisulana bacifitura (NL. fem. n. *bacifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs149 sp005798855*. The type genome for the species is the GenBank assembly GCA_005773085.1. The GC content of the type genome is 63.44 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Bisulana gen. nov.

Candidatus Bisulana (NL. fem. n. *Bisulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-60-MAGs149*. The type species for the genus is *Candidatus* Bisulana bacifitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F1-60-MAGs149*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulanaceae.

Description of *Candidatus* Bisulanaceae fam. nov.

Candidatus Bisulanaceae (NL. fem. n. *Bisulanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *F1-60-MAGs149.* The type genus for the taxon is *Candidatus* Bisulana .

According to GTDB R06-RS202, this family belongs to the order *Gaiellales*.

Description of *Candidatus* Bisulana dinupax sp. nov.

Candidatus Bisulana dinupax (NL. fem. n. *dinupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs149 sp903873565*. The type genome for the species is the GenBank assembly GCA_903920915.1. The GC content of the type genome is 73.99 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Bisulana galacugo sp. nov.

Candidatus Bisulana galacugo (NL. fem. n. *galacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs149 sp903960645*. The type genome for the species is the GenBank assembly GCA_903933885.1. The GC content of the type genome is 69.72 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Bisulana giganimonas sp. nov.

Candidatus Bisulana giganimonas (NL. fem. n. *giganimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs149 sp903847495*. The type genome for the species is the GenBank assembly GCA_903847495.1. The GC content of the type genome is 68.86 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Bisulana spastitia sp. nov.

Candidatus Bisulana spastitia (NL. fem. n. *spastitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs149 sp009694475*. The type genome for the species is the GenBank assembly GCA_009694475.1. The GC content of the type genome is 63.73 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Bisularia categitia sp. nov.

Candidatus Bisularia categitia (NL. fem. n. *categitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADAWZ01 sp902791745*. The type genome for the species is the GenBank assembly GCA_902782685.1. The GC content of the type genome is 29.6 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Bisularia gen. nov.

Candidatus Bisularia (NL. fem. n. *Bisularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADAWZ01*. The type species for the genus is *Candidatus* Bisularia categitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADAWZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulariaceae.

Description of *Candidatus* Bisulariaceae fam. nov.

Candidatus Bisulariaceae (NL. fem. n. *Bisulariaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADAWZ01.* The type genus for the taxon is *Candidatus* Bisularia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CADAWZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bisulariales.

Description of *Candidatus* Bisulariales ord. nov.

Candidatus Bisulariales (NL. fem. n. *Bisulariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADAWZ01.* The type genus for the taxon is *Candidatus* Bisularia .

According to the GTDB R06-RS202, this order belongs to the class *Xenobia*.

Description of *Candidatus* Bisularia semapetta sp. nov.

Candidatus Bisularia semapetta (NL. fem. n. *semapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADAWZ01 sp902790465*. The type genome for the species is the GenBank assembly GCA_902794495.1. The GC content of the type genome is 30.69 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Bisulella problivita sp. nov.

Candidatus Bisulella problivita (NL. fem. n. *problivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYKL01 sp012522445*. The type genome for the species is the GenBank assembly GCA_012522445.1. The GC content of the type genome is 62.29 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Bisulella gen. nov.

Candidatus Bisulella (NL. fem. n. *Bisulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYKL01*. The type species for the genus is *Candidatus* Bisulella problivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYKL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulellaceae.

Description of *Candidatus* Bisulellaceae fam. nov.

Candidatus Bisulellaceae (NL. fem. n. *Bisulellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYKL01*. The type genus for the taxon is *Candidatus* Bisulella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYKL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bisulellales.

Description of *Candidatus* Bisulellales ord. nov.

Candidatus Bisulellales (NL. fem. n. *Bisulellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYKL01*. The type genus for the taxon is *Candidatus* Bisulella .

According to the GTDB R06-RS202, this order belongs to the class *Polyangia*.

Description of *Candidatus* Bisulia lucelentia sp. nov.

Candidatus Bisulia lucelentia (NL. fem. n. *lucelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5109 sp002414385*. The type genome for the species is the GenBank assembly GCA_002366475.1. The GC content of the type genome is 49.38 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Bisulia gen. nov.

Candidatus Bisulia (NL. fem. n. *Bisulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA5109*. The type species for the genus is *Candidatus* Bisulia lucelentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bisulia tolutitura sp. nov.

Candidatus Bisulia tolutitura (NL. fem. n. *tolutitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5109 sp002746215*. The type genome for the species is the GenBank assembly GCA_002746215.1. The GC content of the type genome is 42.36 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Bisulida alismugo sp. nov.

Candidatus Bisulida alismugo (NL. fem. n. *alismugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8437 sp003445035*. The type genome for the species is the GenBank assembly GCA_003445035.1. The GC content of the type genome is 63.02 % and the genome length is 5.96 Mbp.

Description of *Candidatus* Bisulida gen. nov.

Candidatus Bisulida (NL. fem. n. *Bisulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8437*. The type species for the genus is *Candidatus* Bisulida alismugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bisulida exhoritia sp. nov.

Candidatus Bisulida exhoritia (NL. fem. n. *exhoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8437 sp002724415*. The type genome for the species is the GenBank assembly GCA_002724415.1. The GC content of the type genome is 60.79 %

and the genome length is 6.26 Mbp.

Description of *Candidatus* Bisulida rosaricula sp. nov.

Candidatus Bisulida rosaricula (NL. fem. n. *rosaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8437 sp002724315*. The type genome for the species is the GenBank assembly GCA_003444135.1. The GC content of the type genome is 62.28 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Bisulosa adfabicula sp. nov.

Candidatus Bisulosa adfabicula (NL. fem. n. *adfabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902515775*. The type genome for the species is the GenBank assembly GCA_902515775.1. The GC content of the type genome is 34.76 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Bisulosa gen. nov.

Candidatus Bisulosa (NL. fem. n. *Bisulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *D2472*. The type species for the genus is *Candidatus* Bisulosa adfabicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Bisulosaceae fam. nov.

Candidatus Bisulosaceae (NL. fem. n. *Bisulosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *D2472.* The type genus for the taxon is *Candidatus* Bisulosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR86*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ludimulales.

Description of *Candidatus* Bisulosa aggesugo sp. nov.

Candidatus Bisulosa aggesugo (NL. fem. n. *aggesugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902511425*. The type genome for the species is the GenBank assembly GCA_902511425.1. The GC content of the type genome is 36.24 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Bisulosa agravicella sp. nov.

Candidatus Bisulosa agravicella (NL. fem. n. *agravicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902608115*. The type genome for the species is the GenBank assembly GCA_902608115.1. The GC content of the type genome is 34.13 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Bisulosa almucousia sp. nov.

Candidatus Bisulosa almucousia (NL. fem. n. *almucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902513515*. The type genome for the species is the GenBank assembly GCA_902513515.1. The GC content of the type genome is 35.84 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Bisulosa ammoditudo sp. nov.

Candidatus Bisulosa ammoditudo (NL. fem. n. *ammoditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902627055*. The type genome for the species is the GenBank assembly GCA_902627055.1. The GC content of the type genome is 34.76 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Bisulosa arcelousia sp. nov.

Candidatus Bisulosa arcelousia (NL. fem. n. *arcelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp000307935*. The type genome for the species is the GenBank assembly GCA_000307935.1. The GC content of the type genome is 36.17 % and the genome length is 1.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "single cell isolated from 0.8 micron filter from seawater collected from 1m depth in the Scripps Institution of Oceanography Pier".

Description of *Candidatus* Bisulosa arnogitrix sp. nov.

Candidatus Bisulosa arnogitrix (NL. fem. n. *arnogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902541245*. The type genome for the species is the GenBank assembly GCA_902541245.1. The GC content of the type genome is 34.67 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Bisulosa delebatica sp. nov.

Candidatus Bisulosa delebatica (NL. fem. n. *delebatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp002358345*. The type genome for the species is the GenBank assembly GCA_001438545.1. The GC content of the type genome is 40.2 % and the genome length is 1.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water; brackish water collected from the surface of the Baltic Sea".

Description of *Candidatus* Bisulosa depasitrix sp. nov.

Candidatus Bisulosa depasitrix (NL. fem. n. *depasitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp002469975*. The type genome for the species is the GenBank assembly GCA_002469975.1. The GC content of the type genome is 39.54 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Bisulosa dimacatica sp. nov.

Candidatus Bisulosa dimacatica (NL. fem. n. *dimacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp003283765*. The type genome for the species is the GenBank assembly GCA_003283765.1. The GC content of the type genome is 36.29 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Bisulosa exsupedo sp. nov.

Candidatus Bisulosa exsupedo (NL. fem. n. *exsupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902528215*. The type genome for the species is the GenBank assembly GCA_902528215.1. The GC content of the type genome is 34.6 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Bisulosa fatififica sp. nov.

Candidatus Bisulosa fatififica (NL. fem. n. *fatififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902593675*. The type genome for the species is the GenBank assembly GCA_902593675.1. The GC content of the type genome is 36.0 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Bisulosa halucibra sp. nov.

Candidatus Bisulosa halucibra (NL. fem. n. *halucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902623685*. The type genome for the species is the GenBank assembly GCA_902623685.1. The GC content of the type genome is 34.69 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Bisulosa homicitura sp. nov.

Candidatus Bisulosa homicitura (NL. fem. n. *homicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *D2472 sp902602595*. The type genome for the species is the GenBank assembly GCA_902602595.1. The GC content of the type genome is 35.5 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Bisulosa immobicula sp. nov.

Candidatus Bisulosa immobicula (NL. fem. n. *immobicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902596165*. The type genome for the species is the GenBank assembly GCA_902596165.1. The GC content of the type genome is 35.95 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Bisulosa insopitica sp. nov.

Candidatus Bisulosa insopitica (NL. fem. n. *insopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902511575*. The type genome for the species is the GenBank assembly GCA_902511575.1. The GC content of the type genome is 36.35 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Bisulosa latibitica sp. nov.

Candidatus Bisulosa latibitica (NL. fem. n. *latibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902509555*. The type genome for the species is the GenBank assembly GCA_902509555.1. The GC content of the type genome is 36.19 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Bisulosa lucifax sp. nov.

Candidatus Bisulosa lucifax (NL. fem. n. *lucifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902512655*. The type genome for the species is the GenBank assembly GCA_902512655.1. The GC content of the type genome is 35.94 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Bisulosa musulilega sp. nov.

Candidatus Bisulosa musulilega (NL. fem. n. *musulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902599315*. The type genome for the species is the GenBank assembly GCA_902575215.1. The GC content of the type genome is 34.63 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Bisulosa nucifibula sp. nov.

Candidatus Bisulosa nucifibula (NL. fem. n. *nucifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902515455*. The type genome for the species is the GenBank assembly GCA_902515455.1. The GC content of the type genome is 34.75 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Bisulosa siligisca sp. nov.

Candidatus Bisulosa siligisca (NL. fem. n. *siligisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp902595065*. The type genome for the species is the GenBank assembly GCA_902557815.1. The GC content of the type genome is 35.86 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Bisulosa turifax sp. nov.

Candidatus Bisulosa turifax (NL. fem. n. *turifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp003331545*. The type genome for the species is the GenBank assembly GCA_003331545.1. The GC content of the type genome is 35.63 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Bisulosa vehicatio sp. nov.

Candidatus Bisulosa vehicatio (NL. fem. n. *vehicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2472 sp003284215*. The type genome for the species is the GenBank assembly GCA_902510005.1. The GC content of the type genome is 36.06 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Bisulula hecatax sp. nov.

Candidatus Bisulula hecatax (NL. fem. n. *hecatax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6794 sp002452835*. The type genome for the species is the GenBank assembly GCA_002452835.1. The GC content of the type genome is 35.31 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Bisulula gen. nov.

Candidatus Bisulula (NL. fem. n. *Bisulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6794*. The type species for the genus is *Candidatus* Bisulula hecatax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisululaceae.

Description of *Candidatus* Bisululaceae fam. nov.

Candidatus Bisululaceae (NL. fem. n. *Bisululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6794.* The type genus for the taxon is *Candidatus* Bisulula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SB-45*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nidifidales.

Description of *Candidatus* Bisulula inmacago sp. nov.

Candidatus Bisulula inmacago (NL. fem. n. *inmacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6794 sp012520575*. The type genome for the species is the GenBank assembly GCA_012520575.1. The GC content of the type genome is 37.74 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Biverana cacomimonas sp. nov.

Candidatus Biverana cacomimonas (NL. fem. n. *cacomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-183 sp003152095*. The type genome for the species is the GenBank assembly GCA_003152095.1. The GC content of the type genome is 67.67 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Biverana gen. nov.

Candidatus Biverana (NL. fem. n. *Biverana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-183*. The type species for the genus is *Candidatus* Biverana cacomimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenebosaceae.

Description of *Candidatus* Biveraria celamago sp. nov.

Candidatus Biveraria celamago (NL. fem. n. *celamago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXQ01 sp902624455*. The type genome for the species is the GenBank assembly GCA_902624455.1. The GC content of the type genome is 32.93 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Biveraria gen. nov.

Candidatus Biveraria (NL. fem. n. *Biveraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACNXQ01*. The type species for the genus is *Candidatus* Biveraria celamago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AG-422-B15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirifosaceae.

Description of *Candidatus* Biveraria offulibula sp. nov.

Candidatus Biveraria offulibula (NL. fem. n. *offulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXQ01 sp902527075*. The type genome for the species is the GenBank assembly GCA_902527075.1. The GC content of the type genome is 32.41 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Biverella bugilago sp. nov.

Candidatus Biverella bugilago (NL. fem. n. *bugilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-39-28 sp001822095*. The type genome for the species is the GenBank assembly GCA_001822095.1. The GC content of the type genome is 38.76 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point C".

Description of *Candidatus* Biverella gen. nov.

Candidatus Biverella (NL. fem. n. *Biverella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD1-FULL-39-28*. The type species for the genus is *Candidatus* Biverella bugilago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Biverella dececilenta sp. nov.

Candidatus Biverella dececilenta (NL. fem. n. *dececilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-39-28 sp903835075*. The type genome for the species is the GenBank assembly GCA_903835075.1. The GC content of the type genome is 35.47 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Biverella depacibula sp. nov.

Candidatus Biverella depacibula (NL. fem. n. *depacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-39-28 sp903839895*. The type genome for the species is the GenBank assembly GCA_903839895.1. The GC content of the type genome is 40.35 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Biverella depicitura sp. nov.

Candidatus Biverella depicitura (NL. fem. n. *depicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-39-28 sp903923535*. The type genome for the species is the GenBank assembly GCA_903923535.1. The GC content of the type genome is 35.87 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Biverella innecilenta sp. nov.

Candidatus Biverella innecilenta (NL. fem. n. *innecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-39-28 sp903928565*. The type genome for the species is the GenBank assembly GCA_903928565.1. The GC content of the type genome is 37.28 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Biverella luculitura sp. nov.

Candidatus Biverella luculitura (NL. fem. n. *luculitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *XYD1-FULL-39-28 sp903831095*. The type genome for the species is the GenBank assembly GCA_903831095.1. The GC content of the type genome is 35.32 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Biverella mavoratica sp. nov.

Candidatus Biverella mavoratica (NL. fem. n. *mavoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-39-28 sp011330845*. The type genome for the species is the GenBank assembly GCA_011330845.1. The GC content of the type genome is 29.85 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Biverella pinigugo sp. nov.

Candidatus Biverella pinigugo (NL. fem. n. *pinigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-39-28 sp903885445*. The type genome for the species is the GenBank assembly GCA_903885445.1. The GC content of the type genome is 40.42 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Biverella pudibastra sp. nov.

Candidatus Biverella pudibastra (NL. fem. n. *pudibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-39-28 sp001822065*. The type genome for the species is the GenBank assembly GCA_001820515.1. The GC content of the type genome is 37.03 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Biverella terebitrix sp. nov.

Candidatus Biverella terebitrix (NL. fem. n. *terebitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-39-28 sp903845295*. The type genome for the species is the GenBank assembly GCA_903845295.1. The GC content of the type genome is 40.03

% and the genome length is 0.78 Mbp.

Description of *Candidatus* Biveria voragatio sp. nov.

Candidatus Biveria voragatio (NL. fem. n. *voragatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGZZ01 sp010028905*. The type genome for the species is the GenBank assembly GCA_010028905.1. The GC content of the type genome is 66.57 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Biveria gen. nov.

Candidatus Biveria (NL. fem. n. *Biveria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGZZ01*. The type species for the genus is *Candidatus* Biveria voragatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RGZZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Biveriaceae.

Description of *Candidatus* Biveriaceae fam. nov.

Candidatus Biveriaceae (NL. fem. n. *Biveriaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RGZZ01*. The type genus for the taxon is *Candidatus* Biveria .

According to the original version of GTDB R06-RS202, this family belongs to the order *RGZZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Biveriales.

Description of *Candidatus* Biveriales ord. nov.

Candidatus Biveriales (NL. fem. n. *Biveriales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RGZZ01*. The type genus for the taxon is *Candidatus* Biveria .

According to the GTDB R06-RS202, this order belongs to the class *Xenobia*.

Description of *Candidatus* Biverida citipimonia sp. nov.

Candidatus Biverida citipimonia (NL. fem. n. *citipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-42-6 sp000997475*. The type genome for the species is the GenBank assembly GCA_000997475.1. The GC content of the type genome is 42.54 % and the genome length is 0.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Biverida gen. nov.

Candidatus Biverida (NL. fem. n. *Biverida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-42-6*. The type species for the genus is *Candidatus* Biverida citipimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-42-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Biveridaceae.

Description of *Candidatus* Biveridaceae fam. nov.

Candidatus Biveridaceae (NL. fem. n. *Biveridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWB1-42-6.* The type genus for the taxon is *Candidatus* Biverida .

According to GTDB R06-RS202, this family belongs to the order *Portnoybacterales*.

Description of *Candidatus* Biverosa tresvilenta sp. nov.

Candidatus Biverosa tresvilenta (NL. fem. n. *tresvilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4778 sp002403175*. The type genome for the species is the GenBank assembly GCA_002403175.1. The GC content of the type genome is 46.45 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Biverosa gen. nov.

Candidatus Biverosa (NL. fem. n. *Biverosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4778*. The type species for the genus is *Candidatus* Biverosa tresvilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4778*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Biverosaceae.

Description of *Candidatus* Biverosaceae fam. nov.

Candidatus Biverosaceae (NL. fem. n. *Biverosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4778.* The type genus for the taxon is *Candidatus* Biverosa .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Biverula accerastra sp. nov.

Candidatus Biverula accerastra (NL. fem. n. *accerastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-877 sp900768815*. The type genome for the species is the GenBank assembly RS_GCF_900768815.1. The GC content of the type genome is 28.59 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Biverula gen. nov.

Candidatus Biverula (NL. fem. n. *Biverula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-877*. The type species for the genus is *Candidatus* Biverula accerastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Biverula bicalatio sp. nov.

Candidatus Biverula bicalatio (NL. fem. n. *bicalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-877 sp900554315*. The type genome for the species is the GenBank assembly GCA_900554315.1. The GC content of the type genome is 29.65 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Biverula duponax sp. nov.

Candidatus Biverula duponax (NL. fem. n. *duponax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-877 sp900548695*. The type genome for the species is the GenBank assembly GCA_900548695.1. The GC content of the type genome is 28.99 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Biverula linigiforma sp. nov.

Candidatus Biverula linigiforma (NL. fem. n. *linigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-877 sp900552495*. The type genome for the species is the GenBank assembly GCA_900552495.1. The GC content of the type genome is 29.91 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Biverula obsoritas sp. nov.

Candidatus Biverula obsoritas (NL. fem. n. *obsoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-877 sp900753325*. The type genome for the species is the GenBank assembly RS_GCF_900753325.1. The GC content of the type genome is 28.38 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Biverula refocitura sp. nov.

Candidatus Biverula refocitura (NL. fem. n. *refocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-877 sp000433455*. The type genome for the species is the GenBank assembly GCA_000433455.1. The GC content of the type genome is 28.41 % and the genome length is 1.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Biverula tenebicella sp. nov.

Candidatus Biverula tenebicella (NL. fem. n. *tenebicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-877 sp900554305*. The type genome for the species is the GenBank assembly RS_GCF_900758765.1. The GC content of the type genome is 29.54 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Blactella latibimonia sp. nov.

Candidatus Blactella latibimonia (NL. fem. n. *latibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707085 sp002707085*. The type genome for the species is the GenBank assembly GCA_002707085.1. The GC content of the type genome is 52.98 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Blactella gen. nov.

Candidatus Blactella (NL. fem. n. *Blactella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2707085*. The type species for the genus is *Candidatus* Blactella latibimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilanaceae.

Description of *Candidatus* Blactia sugilastra sp. nov.

Candidatus Blactia sugilastra (NL. fem. n. *sugilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXG01 sp013697225*. The type genome for the species is the GenBank assembly GCA_013697225.1. The GC content of the type genome is 66.61 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Blactia gen. nov.

Candidatus Blactia (NL. fem. n. *Blactia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXG01*. The type species for the genus is *Candidatus* Blactia sugilastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-66-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunidaceae.

Description of *Candidatus* Blactosa pabilitas sp. nov.

Candidatus Blactosa pabilitas (NL. fem. n. *pabilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1494 sp900552305*. The type genome for the species is the GenBank assembly GCA_900552305.1. The GC content of the type genome is 48.16 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Blactosa gen. nov.

Candidatus Blactosa (NL. fem. n. *Blactosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1494*. The type species for the genus is *Candidatus* Blactosa pabilitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Blastococcus anastigena sp. nov.

Candidatus Blastococcus anastigena (NL. fem. n. *anastigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp004570875*. The type genome for the species is the GenBank assembly RS_GCF_004570875.1. The GC content of the type genome is 72.44 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Blastococcus apsurisca sp. nov.

Candidatus Blastococcus apsurisca (NL. fem. n. *apsurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp004570425*. The type genome for the species is the GenBank assembly RS_GCF_004570425.1. The GC content of the type genome is 73.69 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Blastococcus aspilitrix sp. nov.

Candidatus Blastococcus aspilitrix (NL. fem. n. *aspilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp900109665*. The type genome for the species is the GenBank assembly RS_GCF_900109665.1. The GC content of the type genome is 74.22 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Blastococcus atropicula sp. nov.

Candidatus Blastococcus atropicula (NL. fem. n. *atropicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp005222955*. The type genome for the species is the GenBank assembly RS_GCF_005222955.1. The GC content of the type genome is 73.19 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Blastococcus bigemitia sp. nov.

Candidatus Blastococcus bigemitia (NL. fem. n. *bigemitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp900230285*. The type genome for the species is the GenBank assembly RS_GCF_900230285.1. The GC content of the type genome is 73.29 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Blastococcus deculedo sp. nov.

Candidatus Blastococcus deculedo (NL. fem. n. *deculedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp900102425*. The type genome for the species is the GenBank assembly RS_GCF_900102425.1. The GC content of the type genome is 73.57 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Blastococcus ensigitoga sp. nov.

Candidatus Blastococcus ensigitoga (NL. fem. n. *ensigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp003319185*. The type genome for the species is the GenBank assembly RS_GCF_003319185.1. The GC content of the type genome is 74.25 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Blastococcus exhorisca sp. nov.

Candidatus Blastococcus exhorisca (NL. fem. n. *exhorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp900112815*. The type genome for the species is the GenBank assembly RS_GCF_900112815.1. The GC content of the type genome is 73.64 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Blastococcus habacisca sp. nov.

Candidatus Blastococcus habacisca (NL. fem. n. *habacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp003319105*. The type genome for the species is the GenBank assembly RS_GCF_003319105.1. The GC content of the type genome is 73.72 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Blastococcus impavedo sp. nov.

Candidatus Blastococcus impavedo (NL. fem. n. *impavedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp902805535*. The type genome for the species is the GenBank assembly GCA_902805535.1. The GC content of the type genome is 73.44 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Blastococcus incesicula sp. nov.

Candidatus Blastococcus incesicula (NL. fem. n. *incesicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp000702465*. The type genome for the species is the GenBank assembly RS_GCF_000702465.1. The GC content of the type genome is 72.35 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Blastococcus incucetta sp. nov.

Candidatus Blastococcus incucetta (NL. fem. n. *incucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp004570385*. The type genome for the species is the GenBank assembly RS_GCF_004570385.1. The GC content of the type genome is 72.99 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Blastococcus induventia sp. nov.

Candidatus Blastococcus induventia (NL. fem. n. *induventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp004570345*. The type genome for the species is the GenBank assembly RS_GCF_004570345.1. The GC content of the type genome is 72.73 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Blastococcus innupicella sp. nov.

Candidatus Blastococcus innupicella (NL. fem. n. *innupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Blastococcus sp900102115*. The type genome for the species is the GenBank assembly GCA_900102115.1. The GC content of the type genome is 73.39 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Blastococcus insubitio sp. nov.

Candidatus Blastococcus insubitio (NL. fem. n. *insubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp003319175*. The type genome for the species is the GenBank assembly RS_GCF_003319175.1. The GC content of the type genome is 73.18 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Blastococcus intolitia sp. nov.

Candidatus Blastococcus intolitia (NL. fem. n. *intolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp003319095*. The type genome for the species is the GenBank assembly RS_GCF_003319095.1. The GC content of the type genome is 73.82 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Blastococcus lenunax sp. nov.

Candidatus Blastococcus lenunax (NL. fem. n. *lenunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp004571075*. The type genome for the species is the GenBank assembly RS_GCF_004571075.1. The GC content of the type genome is 74.06 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Blastococcus nocenessa sp. nov.

Candidatus Blastococcus nocenessa (NL. fem. n. *nocenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp013410015*. The type genome for the species is the GenBank assembly RS_GCF_013410015.1. The GC content of the type genome is 73.49 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Blastococcus obambitoga sp. nov.

Candidatus Blastococcus obambitoga (NL. fem. n. *obambitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp000620185*. The type genome for the species is the GenBank assembly RS_GCF_000620185.1. The GC content of the type genome is 72.6 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Blastococcus semifatica sp. nov.

Candidatus Blastococcus semifatica (NL. fem. n. *semifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastococcus sp900188025*. The type genome for the species is the GenBank assembly RS_GCF_900188025.1. The GC content of the type genome is 72.52 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Blastomonas avuncitica sp. nov.

Candidatus Blastomonas avuncitica (NL. fem. n. *avuncitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastomonas sp000786215*. The type genome for the species is the GenBank assembly RS_GCF_000786215.1. The GC content of the type genome is 64.02 % and the genome length is 4.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "lake".

Description of *Candidatus* Blastomonas inhumibula sp. nov.

Candidatus Blastomonas inhumibula (NL. fem. n. *inhumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastomonas sp000331245*. The type genome for the species is the GenBank assembly RS_GCF_000331245.1. The GC content of the type genome is 63.6 % and the genome length is 3.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water from a freshwater lake in the southern Gobi Desert in Inner Mongolia".

Description of *Candidatus* Blastomonas nivomago sp. nov.

Candidatus Blastomonas nivomago (NL. fem. n. *nivomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blastomonas sp000503195*. The type genome for the species is the GenBank assembly RS_GCF_003426715.1. The GC content of the type genome is 64.78 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Blattabacterium absoritas sp. nov.

Candidatus Blattabacterium absoritas (NL. fem. n. *absoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blattabacterium sp000233435*. The type genome for the species is the GenBank assembly RS_GCF_000233435.1. The GC content of the type genome is 27.5 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Blattabacterium adrenitio sp. nov.

Candidatus Blattabacterium adrenitio (NL. fem. n. *adrenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blattabacterium sp011290385*. The type genome for the species is the GenBank assembly RS_GCF_011290385.1. The GC content of the type genome is 25.35 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Blattabacterium cinefimonas sp. nov.

Candidatus Blattabacterium cinefimonas (NL. fem. n. *cinefimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blattabacterium sp000334405*. The type genome for the species is the GenBank assembly RS_GCF_014251295.1. The GC content of the type genome is 27.94 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Blattabacterium dehonivita sp. nov.

Candidatus Blattabacterium dehonivita (NL. fem. n. *dehonivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blattabacterium sp000262715*. The type genome for the species is the GenBank assembly RS_GCF_000262715.1. The GC content of the type genome is 25.7 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Blattabacterium edissessa sp. nov.

Candidatus Blattabacterium edissessa (NL. fem. n. *edissessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blattabacterium sp000022605*. The type genome for the species is the GenBank assembly RS_GCF_000022605.2. The GC content of the type genome is 27.16 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Blattabacterium excomitio sp. nov.

Candidatus Blattabacterium excomitio (NL. fem. n. *excomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blattabacterium sp003226855*. The type genome for the species is the GenBank assembly RS_GCF_003226855.1. The GC content of the type genome is 25.74 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Blattabacterium novilibra sp. nov.

Candidatus Blattabacterium novilibra (NL. fem. n. *novilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blattabacterium sp000471965*. The type genome for the species is the GenBank assembly RS_GCF_000471965.1. The GC content of the type genome is 26.05 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Blautia ambusimonia sp. nov.

Candidatus Blautia ambusimonia (NL. fem. n. *ambusimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp900765525*. The type genome for the species is the GenBank assembly GCA_900765525.1. The GC content of the type genome is 44.98 % and the

genome length is 3.39 Mbp.

Description of *Candidatus* Blautia celumousia sp. nov.

Candidatus Blautia celumousia (NL. fem. n. *celumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp900541955*. The type genome for the species is the GenBank assembly RS_GCF_013304445.1. The GC content of the type genome is 43.58 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Blautia fuligilega sp. nov.

Candidatus Blautia fuligilega (NL. fem. n. *fuligilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp900120295*. The type genome for the species is the GenBank assembly RS_GCF_900120295.1. The GC content of the type genome is 38.03 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Blautia funamousia sp. nov.

Candidatus Blautia funamousia (NL. fem. n. *funamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp900556555*. The type genome for the species is the GenBank assembly GCA_900556555.1. The GC content of the type genome is 40.78 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Blautia halucatica sp. nov.

Candidatus Blautia halucatica (NL. fem. n. *halucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp900539145*. The type genome for the species is the GenBank assembly GCA_900755775.1. The GC content of the type genome is 38.67 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Blautia insenilenta sp. nov.

Candidatus Blautia insenilenta (NL. fem. n. *insenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp900547685*. The type genome for the species is the GenBank assembly GCA_900547685.1. The GC content of the type genome is 37.2 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Blautia meridatica sp. nov.

Candidatus Blautia meridatica (NL. fem. n. *meridatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp000432195*. The type genome for the species is the GenBank assembly RS_GCF_013302185.1. The GC content of the type genome is 40.9 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Blautia mirabimonas sp. nov.

Candidatus Blautia mirabimonas (NL. fem. n. *mirabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp001304935*. The type genome for the species is the GenBank assembly RS_GCF_000765245.1. The GC content of the type genome is 46.7 % and the genome length is 6.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "fecal sample".

Description of *Candidatus* Blautia petuletta sp. nov.

Candidatus Blautia petuletta (NL. fem. n. *petuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp900555025*. The type genome for the species is the GenBank assembly GCA_900555025.1. The GC content of the type genome is 37.06 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Blautia refinentia sp. nov.

Candidatus Blautia refinentia (NL. fem. n. *refinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp900753905*. The type genome for the species is the GenBank assembly GCA_900753905.1. The GC content of the type genome is 39.38 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Blautia secunifica sp. nov.

Candidatus Blautia secunifica (NL. fem. n. *secunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp003287895*. The type genome for the species is the GenBank assembly GCA_900550995.1. The GC content of the type genome is 43.12 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Blautia semoditica sp. nov.

Candidatus Blautia semoditica (NL. fem. n. *semoditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp900543715*. The type genome for the species is the GenBank assembly GCA_900543715.1. The GC content of the type genome is 45.06 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Blautia solifibra sp. nov.

Candidatus Blautia solifibra (NL. fem. n. *solifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia sp002161285*. The type genome for the species is the GenBank assembly RS_GCF_002161645.1. The GC content of the type genome is 44.6 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Blautia buxanitoga sp. nov.

Candidatus Blautia buxanitoga (NL. fem. n. *buxanitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900541345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900541345.1. The GC content of the type genome is 41.26 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Blautia celamitas sp. nov.

Candidatus Blautia celamitas (NL. fem. n. *celamitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900120195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902363925.1. The GC content of the type genome is 42.4 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Blautia ceracentia sp. nov.

Candidatus Blautia ceracentia (NL. fem. n. *ceracentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900756405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900756405.1. The GC content of the type genome is 43.65 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Blautia cocoditas sp. nov.

Candidatus Blautia cocoditas (NL. fem. n. *cocoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900541985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900755575.1. The GC content of the type genome is 44.07 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Blautia colapatica sp. nov.

Candidatus Blautia colapatica (NL. fem. n. *colapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900066355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900066355.1. The GC content of the type genome is 42.51 % and the genome length is 3.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Blautia cucuriforma sp. nov.

Candidatus Blautia cucuriforma (NL. fem. n. *cucuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp003474435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902364455.1. The GC content of the type genome is 42.99 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Blautia curacago sp. nov.

Candidatus Blautia curacago (NL. fem. n. *curacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900066335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003461885.1. The GC content of the type genome is 43.9 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Blautia defetitrix sp. nov.

Candidatus Blautia defetitrix (NL. fem. n. *defetitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900066205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902362565.1. The GC content of the type genome is 43.93 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Blautia defunessa sp. nov.

Candidatus Blautia defunessa (NL. fem. n. *defunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900751995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900751995.1. The GC content of the type genome is 45.21 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Blautia dimacedo sp. nov.

Candidatus Blautia dimacedo (NL. fem. n. *dimacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp003480185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013301725.1. The GC content of the type genome is 41.21 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Blautia diminousia sp. nov.

Candidatus Blautia diminousia (NL. fem. n. *diminousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp003477525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902366905.1. The GC content of the type genome is 42.2 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Blautia epigrago sp. nov.

Candidatus Blautia epigrago (NL. fem. n. *epigrago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900763175*. Although GTDB has assigned a genus name

with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900763175.1. The GC content of the type genome is 44.51 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Blautia fefelax sp. nov.

Candidatus Blautia fefelax (NL. fem. n. *fefelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900549015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900549015.1. The GC content of the type genome is 42.46 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Blautia fragligena sp. nov.

Candidatus Blautia fragligena (NL. fem. n. *fragligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900551075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900551075.1. The GC content of the type genome is 44.52 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Blautia fusifilenta sp. nov.

Candidatus Blautia fusifilenta (NL. fem. n. *fusifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900548245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900548245.1. The GC content of the type genome is 43.44 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Blautia gemebigena sp. nov.

Candidatus Blautia gemebigena (NL. fem. n. *gemebigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp902782975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902782975.1. The GC content of the type genome is 48.33 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Blautia humecatio sp. nov.

Candidatus Blautia humecatio (NL. fem. n. *humecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900764225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900764225.1. The GC content of the type genome is 44.89 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Blautia inambicula sp. nov.

Candidatus Blautia inambicula (NL. fem. n. *inambicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900540785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900540785.1. The GC content of the type genome is 42.04 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Blautia innabitica sp. nov.

Candidatus Blautia innabitica (NL. fem. n. *innabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900553515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900553515.1. The GC content of the type genome is 43.48 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Blautia intecibula sp. nov.

Candidatus Blautia intecibula (NL. fem. n. *intecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp902803215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902803215.1. The GC content of the type genome is 49.48 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Blautia invetivita sp. nov.

Candidatus Blautia invetivita (NL. fem. n. *invetivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900542045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900542045.1. The GC content of the type genome is 47.94 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Blautia licenatica sp. nov.

Candidatus Blautia licenatica (NL. fem. n. *licenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp000436615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013302245.1. The GC content of the type genome is 44.05 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Blautia momoritoga sp. nov.

Candidatus Blautia momoritoga (NL. fem. n. *momoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900551465*. Although GTDB has assigned a genus name

with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900551465.1. The GC content of the type genome is 43.05 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Blautia monimimonas sp. nov.

Candidatus Blautia monimimonas (NL. fem. n. *monimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900066145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013305115.1. The GC content of the type genome is 44.56 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Blautia monodigena sp. nov.

Candidatus Blautia monodigena (NL. fem. n. *monodigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900316115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900316115.1. The GC content of the type genome is 44.22 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Blautia morigiforma sp. nov.

Candidatus Blautia morigiforma (NL. fem. n. *morigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp902783305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902783305.1. The GC content of the type genome is 50.28 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Blautia octacimonas sp. nov.

Candidatus Blautia octacimonas (NL. fem. n. *octacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900551715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900551715.1. The GC content of the type genome is 42.0 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Blautia pudibessa sp. nov.

Candidatus Blautia pudibessa (NL. fem. n. *pudibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900547615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900756315.1. The GC content of the type genome is 42.86 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Blautia repepentia sp. nov.

Candidatus Blautia repepentia (NL. fem. n. *repepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp003471165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003471165.1. The GC content of the type genome is 41.02 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Blautia semimessa sp. nov.

Candidatus Blautia semimessa (NL. fem. n. *semimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp002159835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002159835.1. The GC content of the type genome is 45.03 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Blautia senipibra sp. nov.

Candidatus Blautia senipibra (NL. fem. n. *senipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp000285855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000285855.2. The GC content of the type genome is 39.18 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Blautia taxiliforma sp. nov.

Candidatus Blautia taxiliforma (NL. fem. n. *taxiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blautia_A sp900066505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900066505.1. The GC content of the type genome is 43.13 % and the genome length is 3.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Blochmannia algebitrix sp. nov.

Candidatus Blochmannia algebitrix (NL. fem. n. *algebitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blochmannia sp000973545*. The type genome for the species is the GenBank assembly RS_GCF_000973545.1. The GC content of the type genome is 27.36 % and the genome length is 0.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "ant colony in branch".

Description of *Candidatus* Blochmannia indepitura sp. nov.

Candidatus Blochmannia indepitura (NL. fem. n. *indepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blochmannia sp000973505*. The type genome for the species is the

GenBank assembly RS_GCF_000973505.1. The GC content of the type genome is 29.08 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "ant nest on rock".

Description of *Candidatus* Blochmannia inorditas sp. nov.

Candidatus Blochmannia inorditas (NL. fem. n. *inorditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Blochmannia sp009827135*. The type genome for the species is the GenBank assembly RS_GCF_009827135.1. The GC content of the type genome is 29.0 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Bombella ambifitio sp. nov.

Candidatus Bombella ambifitio (NL. fem. n. *ambifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bombella sp014048475*. The type genome for the species is the GenBank assembly RS_GCF_014048475.1. The GC content of the type genome is 55.33 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Bombella capabitia sp. nov.

Candidatus Bombella capabitia (NL. fem. n. *capabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bombella sp014048465*. The type genome for the species is the GenBank assembly RS_GCF_014048465.1. The GC content of the type genome is 60.43 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Bombella papilitura sp. nov.

Candidatus Bombella papilitura (NL. fem. n. *papilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bombella sp009725755*. The type genome for the species is the GenBank assembly RS_GCF_009725755.1. The GC content of the type genome is 52.91 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Bombilactobacillus exsanago sp. nov.

Candidatus Bombilactobacillus exsanago (NL. fem. n. *exsanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bombilactobacillus sp013385145*. The type genome for the species is the GenBank assembly RS_GCF_013385145.1. The GC content of the type genome is 39.98 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Bonifana appagiforma sp. nov.

Candidatus Bonifana appagiforma (NL. fem. n. *appagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1709 sp002317215*. The type genome for the species is the GenBank assembly GCA_002317215.1. The GC content of the type genome is 28.34 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Bonifana gen. nov.

Candidatus Bonifana (NL. fem. n. *Bonifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1709*. The type species for the genus is *Candidatus* Bonifana appagiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1709*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bonifanaceae.

Description of *Candidatus* Bonifanaceae fam. nov.

Candidatus Bonifanaceae (NL. fem. n. *Bonifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1709.* The type genus for the taxon is *Candidatus* Bonifana .

According to the original version of GTDB R06-RS202, this family belongs to the order *RFN20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cerofellales.

Description of *Candidatus* Bonifaria demogitas sp. nov.

Candidatus Bonifaria demogitas (NL. fem. n. *demogitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-43-11 sp001820955*. The type genome for the species is the GenBank assembly GCA_001822505.1. The GC content of the type genome is 43.12 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Bonifaria gen. nov.

Candidatus Bonifaria (NL. fem. n. *Bonifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-43-11*. The type species for the genus is *Candidatus* Bonifaria demogitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Bonifella bicubitrix sp. nov.

Candidatus Bonifella bicubitrix (NL. fem. n. *bicubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXKJ01 sp003669125*. The type genome for the species is the GenBank assembly GCA_009886015.1. The GC content of the type genome is 60.04 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Bonifella gen. nov.

Candidatus Bonifella (NL. fem. n. *Bonifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXKJ01*. The type species for the genus is *Candidatus* Bonifella bicubitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bonifella defasessa sp. nov.

Candidatus Bonifella defasessa (NL. fem. n. *defasessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXKJ01 sp005778115*. The type genome for the species is the GenBank assembly GCA_005798485.1. The GC content of the type genome is 59.48 % and the genome length is 7.52 Mbp.

Description of *Candidatus* Bonifella nutabigena sp. nov.

Candidatus Bonifella nutabigena (NL. fem. n. *nutabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXKJ01 sp005798445*. The type genome for the species is the GenBank assembly GCA_005779075.1. The GC content of the type genome is 59.43 % and the genome length is 7.87 Mbp.

Description of *Candidatus* Bonifida lucubax sp. nov.

Candidatus Bonifida lucubax (NL. fem. n. *lucubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIWP01 sp014360855*. The type genome for the species is the GenBank assembly GCA_014360855.1. The GC content of the type genome is 64.67 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Bonifida gen. nov.

Candidatus Bonifida (NL. fem. n. *Bonifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIWP01*. The type species for the genus is *Candidatus* Bonifida lucubax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACIWP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bonifidaceae.

Description of *Candidatus* Bonifidaceae fam. nov.

Candidatus Bonifidaceae (NL. fem. n. *Bonifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIWP01.* The type genus for the taxon is *Candidatus* Bonifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTPP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogosales.

Description of *Candidatus* Bonifosa conamimonia sp. nov.

Candidatus Bonifosa conamimonia (NL. fem. n. *conamimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMO01 sp007123465*. The type genome for the species is the GenBank assembly GCA_007123465.1. The GC content of the type genome is 60.06 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Bonifosa gen. nov.

Candidatus Bonifosa (NL. fem. n. *Bonifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWMO01*. The type species for the genus is *Candidatus* Bonifosa conamimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWMO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bonifosaceae.

Description of *Candidatus* Bonifosaceae fam. nov.

Candidatus Bonifosaceae (NL. fem. n. *Bonifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWMO01.* The type genus for the taxon is *Candidatus* Bonifosa .

According to GTDB R06-RS202, this family belongs to the order *Spirochaetales_C*.

Description of *Candidatus* Bonifosa eclecugo sp. nov.

Candidatus Bonifosa eclecugo (NL. fem. n. *eclecugo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMO01 sp007693945*. The type genome for the species is the GenBank assembly GCA_007693945.1. The GC content of the type genome is 61.17 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Bonifosa excamago sp. nov.

Candidatus Bonifosa excamago (NL. fem. n. *excamago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMO01 sp007693485*. The type genome for the species is the GenBank assembly GCA_007693485.1. The GC content of the type genome is 61.31 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Bonifosa ossuciforma sp. nov.

Candidatus Bonifosa ossuciforma (NL. fem. n. *ossuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMO01 sp003558175*. The type genome for the species is the GenBank assembly GCA_003558175.1. The GC content of the type genome is 61.16 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Bonifosa subadilega sp. nov.

Candidatus Bonifosa subadilega (NL. fem. n. *subadilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMO01 sp007130025*. The type genome for the species is the GenBank assembly GCA_007130025.1. The GC content of the type genome is 61.47 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Bonifosa tresvibula sp. nov.

Candidatus Bonifosa tresvibula (NL. fem. n. *tresvibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMO01 sp007693325*. The type genome for the species is the GenBank assembly GCA_007693325.1. The GC content of the type genome is 60.05 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Bonifula relapigena sp. nov.

Candidatus Bonifula relapigena (NL. fem. n. *relapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZV01 sp007127165*. The type genome for the species is the GenBank assembly GCA_007132125.1. The GC content of the type genome is 64.46 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Bonifula gen. nov.

Candidatus Bonifula (NL. fem. n. *Bonifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKZV01*. The type species for the genus is *Candidatus* Bonifula relapigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bonitana inmodilega sp. nov.

Candidatus Bonitana inmodilega (NL. fem. n. *inmodilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-G13 sp003641555*. The type genome for the species is the GenBank assembly GCA_003641555.1. The GC content of the type genome is 39.14 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Bonitana gen. nov.

Candidatus Bonitana (NL. fem. n. *Bonitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B3-G13*. The type species for the genus is *Candidatus* Bonitana inmodilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family

B3-G13. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bonitanaceae.

Description of *Candidatus* Bonitanaceae fam. nov.

Candidatus Bonitanaceae (NL. fem. n. *Bonitanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-G13.* The type genus for the taxon is *Candidatus* Bonitana .

According to the original version of GTDB R06-RS202, this family belongs to the order *B3-G13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bonitanales.

Description of *Candidatus* Bonitanales ord. nov.

Candidatus Bonitanales (NL. fem. n. *Bonitanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-G13.* The type genus for the taxon is *Candidatus* Bonitana .

According to the GTDB R06-RS202, this order belongs to the class *Thermotogae*.

Description of *Candidatus* Bonitaria admuritas sp. nov.

Candidatus Bonitaria admuritas (NL. fem. n. *admuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900766975*. The type genome for the species is the GenBank assembly RS_GCF_900766975.1. The GC content of the type genome is 49.72 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Bonitaria gen. nov.

Candidatus Bonitaria (NL. fem. n. *Bonitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-485*. The type species for the genus is *Candidatus* Bonitaria admuritas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bonitaria adsusago sp. nov.

Candidatus Bonitaria adsusago (NL. fem. n. *adsusago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp004552395*. The type genome for the species is the GenBank assembly GCA_004552395.1. The GC content of the type genome is 56.59 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Bonitaria aggesentia sp. nov.

Candidatus Bonitaria aggesentia (NL. fem. n. *aggesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900760815*. The type genome for the species is the GenBank assembly RS_GCF_900760815.1. The GC content of the type genome is 53.68 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Bonitaria algifitudo sp. nov.

Candidatus Bonitaria algifitudo (NL. fem. n. *algifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900556595*. The type genome for the species is the GenBank assembly GCA_900556595.1. The GC content of the type genome is 53.54 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Bonitaria alismibra sp. nov.

Candidatus Bonitaria alismibra (NL. fem. n. *alismibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900767075*. The type genome for the species is the GenBank assembly RS_GCF_900767075.1. The GC content of the type genome is 49.67 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Bonitaria arcifugo sp. nov.

Candidatus Bonitaria arcifugo (NL. fem. n. *arcifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900552315*. The type genome for the species is the GenBank assembly GCA_900552315.1. The GC content of the type genome is 56.73 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Bonitaria atricessa sp. nov.

Candidatus Bonitaria atricessa (NL. fem. n. *atricessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp009775375*. The type genome for the species is the GenBank assembly GCA_009775375.1. The GC content of the type genome is 48.82 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Bonitaria attubitura sp. nov.

Candidatus Bonitaria attubitura (NL. fem. n. *attubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp009177205*. The type genome for the species is the GenBank assembly GCA_009177205.1. The GC content of the type genome is 41.33 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Bonitaria binocigena sp. nov.

Candidatus Bonitaria binocigena (NL. fem. n. *binocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900554345*. The type genome for the species is the GenBank assembly RS_GCF_900755195.1. The GC content of the type genome is 56.88 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Bonitaria bonifousia sp. nov.

Candidatus Bonitaria bonifousia (NL. fem. n. *bonifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-485 sp900549375*. The type genome for the species is the GenBank assembly GCA_900549375.1. The GC content of the type genome is 50.85 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Bonitaria caduricella sp. nov.

Candidatus Bonitaria caduricella (NL. fem. n. *caduricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900547755*. The type genome for the species is the GenBank assembly GCA_900547755.1. The GC content of the type genome is 53.13 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Bonitaria camiledo sp. nov.

Candidatus Bonitaria camiledo (NL. fem. n. *camiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900541835*. The type genome for the species is the GenBank assembly GCA_900541835.1. The GC content of the type genome is 60.54 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Bonitaria catecilega sp. nov.

Candidatus Bonitaria catecilega (NL. fem. n. *catecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900555915*. The type genome for the species is the GenBank assembly GCA_900555915.1. The GC content of the type genome is 53.54 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Bonitaria catocax sp. nov.

Candidatus Bonitaria catocax (NL. fem. n. *catocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900550645*. The type genome for the species is the GenBank assembly GCA_900550645.1. The GC content of the type genome is 54.57 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Bonitaria cerucitura sp. nov.

Candidatus Bonitaria cerucitura (NL. fem. n. *cerucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900542185*. The type genome for the species is the GenBank assembly GCA_900542185.1. The GC content of the type genome is 52.65 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Bonitaria conigastra sp. nov.

Candidatus Bonitaria conigastra (NL. fem. n. *conigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp002491165*. The type genome for the species is the GenBank assembly GCA_002491165.1. The GC content of the type genome is 55.63 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Bonitaria decapentia sp. nov.

Candidatus Bonitaria decapentia (NL. fem. n. *decapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900761855*. The type genome for the species is the GenBank assembly RS_GCF_900761855.1. The GC content of the type genome is 50.45 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Bonitaria decucivita sp. nov.

Candidatus Bonitaria decucivita (NL. fem. n. *decucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900760735*. The type genome for the species is the GenBank assembly RS_GCF_900752175.1. The GC content of the type genome is 53.15 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Bonitaria dicimessa sp. nov.

Candidatus Bonitaria dicimessa (NL. fem. n. *dicimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900321585*. The type genome for the species is the GenBank assembly GCA_004556305.1. The GC content of the type genome is 55.75 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Bonitaria duricentia sp. nov.

Candidatus Bonitaria duricentia (NL. fem. n. *duricentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp003979075*. The type genome for the species is the GenBank assembly GCA_003979075.1. The GC content of the type genome is 50.71 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Bonitaria feculitio sp. nov.

Candidatus Bonitaria feculitio (NL. fem. n. *feculitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp002361155*. The type genome for the species is the GenBank assembly GCA_002491555.1. The GC content of the type genome is 53.19 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Bonitaria funamentia sp. nov.

Candidatus Bonitaria funamentia (NL. fem. n. *funamentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900554845*. The type genome for the species is the GenBank assembly GCA_900554845.1. The GC content of the type genome is 49.5 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Bonitaria habacibra sp. nov.

Candidatus Bonitaria habacibra (NL. fem. n. *habacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-485 sp900759795*. The type genome for the species is the GenBank assembly RS_GCF_900759795.1. The GC content of the type genome is 54.4 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Bonitaria inmenessa sp. nov.

Candidatus Bonitaria inmenessa (NL. fem. n. *inmenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp009775355*. The type genome for the species is the GenBank assembly GCA_009775355.1. The GC content of the type genome is 52.31 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Bonitaria licenivita sp. nov.

Candidatus Bonitaria licenivita (NL. fem. n. *licenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp002362485*. The type genome for the species is the GenBank assembly GCA_002493475.1. The GC content of the type genome is 48.06 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Bonitaria locelentia sp. nov.

Candidatus Bonitaria locelentia (NL. fem. n. *locelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp001701105*. The type genome for the species is the GenBank assembly GCA_002477225.1. The GC content of the type genome is 47.23 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Bonitaria locupibula sp. nov.

Candidatus Bonitaria locupibula (NL. fem. n. *locupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp001701075*. The type genome for the species is the GenBank assembly GCA_002478515.1. The GC content of the type genome is 44.56 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Bonitaria nosocitudo sp. nov.

Candidatus Bonitaria nosocitudo (NL. fem. n. *nosocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp009775365*. The type genome for the species is the GenBank assembly GCA_009775365.1. The GC content of the type genome is 47.11 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Bonitaria resuratica sp. nov.

Candidatus Bonitaria resuratica (NL. fem. n. *resuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp004553095*. The type genome for the species is the GenBank assembly GCA_004553095.1. The GC content of the type genome is 50.61 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Bonitaria resurisca sp. nov.

Candidatus Bonitaria resurisca (NL. fem. n. *resurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp900760885*. The type genome for the species is the GenBank assembly RS_GCF_900760885.1. The GC content of the type genome is 56.54 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Bonitaria rorulago sp. nov.

Candidatus Bonitaria rorulago (NL. fem. n. *rorulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp002491945*. The type genome for the species is the GenBank assembly GCA_002494005.1. The GC content of the type genome is 52.93 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Bonitaria rosacitoga sp. nov.

Candidatus Bonitaria rosacitoga (NL. fem. n. *rosacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp002404675*. The type genome for the species is the GenBank assembly GCA_002432365.1. The GC content of the type genome is 55.93 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Bonitaria secunedo sp. nov.

Candidatus Bonitaria secunedo (NL. fem. n. *secunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp001701295*. The type genome for the species is the GenBank assembly GCA_001701295.1. The GC content of the type genome is 48.25 % and the genome length is 2.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Feces".

Description of *Candidatus* Bonitaria subabitia sp. nov.

Candidatus Bonitaria subabitia (NL. fem. n. *subabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp002493045*. The type genome for the species is the GenBank assembly GCA_002361835.1. The GC content of the type genome is 46.76 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Bonitaria suboficula sp. nov.

Candidatus Bonitaria suboficula (NL. fem. n. *suboficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp002361235*. The type genome for the species is the GenBank assembly GCA_002362615.1. The GC content of the type genome is 55.31 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Bonitaria vecorentia sp. nov.

Candidatus Bonitaria vecorentia (NL. fem. n. *vecorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp002361215*. The type genome for the species is the GenBank assembly GCA_002361215.1. The GC content of the type genome is 52.05 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Bonitaria verecousia sp. nov.

Candidatus Bonitaria verecousia (NL. fem. n. *verecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp000437495*. The type genome for the species is the GenBank assembly GCA_900539245.1. The GC content of the type genome is 53.0 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Bonitaria viripivita sp. nov.

Candidatus Bonitaria viripivita (NL. fem. n. *viripivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-485 sp002493515*. The type genome for the species is the GenBank assembly GCA_002493515.1. The GC content of the type genome is 53.79 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Bonitella cuferessa sp. nov.

Candidatus Bonitella cuferessa (NL. fem. n. *cuferessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4207 sp002716825*. The type genome for the species is the GenBank assembly GCA_002379495.1. The GC content of the type genome is 42.23 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Bonitella gen. nov.

Candidatus Bonitella (NL. fem. n. *Bonitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4207*. The type species for the genus is *Candidatus* Bonitella cuferessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bonitella vacilago sp. nov.

Candidatus Bonitella vacilago (NL. fem. n. *vacilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4207 sp002787775*. The type genome for the species is the GenBank assembly GCA_002787775.1. The GC content of the type genome is 37.89 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Bonitia arbavimonas sp. nov.

Candidatus Bonitia arbavimonas (NL. fem. n. *arbavimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJM01 sp013298895*. The type genome for the species is the GenBank assembly GCA_013298895.1. The GC content of the type genome is 31.86 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Bonitia gen. nov.

Candidatus Bonitia (NL. fem. n. *Bonitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFJM01*. The type species for the genus is *Candidatus* Bonitia arbavimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefananaceae.

Description of *Candidatus* Bonitia didacatica sp. nov.

Candidatus Bonitia didacatica (NL. fem. n. *didacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJM01 sp903901345*. The type genome for the species is the GenBank assembly GCA_903873465.1. The GC content of the type genome is 31.22 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Bonitia minagimonia sp. nov.

Candidatus Bonitia minagimonia (NL. fem. n. *minagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJM01 sp903888395*. The type genome for the species is the GenBank assembly GCA_903888395.1. The GC content of the type genome is 31.29 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Bonitida recocatica sp. nov.

Candidatus Bonitida recocatica (NL. fem. n. *recocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1494 sp002706365*. The type genome for the species is the GenBank assembly GCA_002325045.1. The GC content of the type genome is 40.57 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Bonitida gen. nov.

Candidatus Bonitida (NL. fem. n. *Bonitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1494*. The type species for the genus is *Candidatus* Bonitida recocatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bonitosa adbelago sp. nov.

Candidatus Bonitosa adbelago (NL. fem. n. *adbelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2913 sp900770895*. The type genome for the species is the GenBank assembly GCA_900770895.1. The GC content of the type genome is 56.74 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Bonitosa gen. nov.

Candidatus Bonitosa (NL. fem. n. *Bonitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2913*. The type species for the genus is *Candidatus* Bonitosa adbelago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bonitosa cohuricula sp. nov.

Candidatus Bonitosa cohuricula (NL. fem. n. *cohuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2913 sp002349925*. The type genome for the species is the GenBank assembly GCA_902777195.1. The GC content of the type genome is 56.54 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Bonitula hirunatica sp. nov.

Candidatus Bonitula hirunatica (NL. fem. n. *hirunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1502 sp900552365*. The type genome for the species is the GenBank assembly GCA_900552365.1. The GC content of the type genome is 57.92 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Bonitula gen. nov.

Candidatus Bonitula (NL. fem. n. *Bonitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1502*. The type species for the genus is *Candidatus* Bonitula hirunatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bordetella direcitrix sp. nov.

Candidatus Bordetella direcitrix (NL. fem. n. *direcitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella sp002261475*. The type genome for the species is the

GenBank assembly RS_GCF_002261475.1. The GC content of the type genome is 67.22 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Bordetella ephipitica sp. nov.

Candidatus Bordetella ephipitica (NL. fem. n. *ephipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella sp002261355*. The type genome for the species is the GenBank assembly RS_GCF_002261355.1. The GC content of the type genome is 64.7 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Bordetella relenicula sp. nov.

Candidatus Bordetella relenicula (NL. fem. n. *relenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella sp002261335*. The type genome for the species is the GenBank assembly RS_GCF_002261335.1. The GC content of the type genome is 68.66 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Bordetella faticessa sp. nov.

Candidatus Bordetella faticessa (NL. fem. n. *faticessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_A sp002261185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002261295.1. The GC content of the type genome is 59.63 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Bordetella luxurentia sp. nov.

Candidatus Bordetella luxurentia (NL. fem. n. *luxurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_A sp002261345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_000518965.1. The GC content of the type genome is 68.49 % and the genome length is 5.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Bordetella peridilenta sp. nov.

Candidatus Bordetella peridilenta (NL. fem. n. *peridilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_A sp009763255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009763235.1. The GC content of the type genome is 60.49 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Bordetella rarefatio sp. nov.

Candidatus Bordetella rarefatio (NL. fem. n. *rarefatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_A sp002261265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002261415.1. The GC content of the type genome is 65.45 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Bordetella adambilenta sp. nov.

Candidatus Bordetella adambilenta (NL. fem. n. *adambilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_B sp002119665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002119665.1. The GC content of the type genome is 67.54 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Bordetella dilicifica sp. nov.

Candidatus Bordetella dilicifica (NL. fem. n. *dilicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_B sp007679965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007679965.1. The GC content of the type genome is 68.5 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Bordetella obfiritio sp. nov.

Candidatus Bordetella obfiritio (NL. fem. n. *obfiritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_B sp000382185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000382185.1. The GC content of the type genome is 63.46 % and the genome length is 4.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sediment".

Description of *Candidatus* Bordetella antimastra sp. nov.

Candidatus Bordetella antimastra (NL. fem. n. *antimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_C sp002261425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002261425.1. The GC content of the type genome is 66.62 % and the genome length is 6.16 Mbp.

Description of *Candidatus* Bordetella armigetta sp. nov.

Candidatus Bordetella armigetta (NL. fem. n. *armigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_C sp001433395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_001433395.1. The GC content of the type genome is 64.81 % and the genome length is 6.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Bordetella bifarilega sp. nov.

Candidatus Bordetella bifarilega (NL. fem. n. *bifarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_C sp002261225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002261225.1. The GC content of the type genome is 67.24 % and the genome length is 7.15 Mbp.

Description of *Candidatus* Bordetella cicilibra sp. nov.

Candidatus Bordetella cicilibra (NL. fem. n. *cicilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_C sp002119725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002119725.1. The GC content of the type genome is 66.01 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Bordetella depetimonas sp. nov.

Candidatus Bordetella depetimonas (NL. fem. n. *depetimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_C sp001704295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001704295.1. The GC content of the type genome is 66.12 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Bordetella inmutedo sp. nov.

Candidatus Bordetella inmutedo (NL. fem. n. *inmutedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_C sp002261215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002261215.1. The GC content of the type genome is 65.73 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Bordetella malivitia sp. nov.

Candidatus Bordetella malivitia (NL. fem. n. *malivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_C sp002209485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002209495.1. The GC content of the type genome is 64.84 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Bordetella melopibula sp. nov.

Candidatus Bordetella melopibula (NL. fem. n. *melopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bordetella_C sp002119685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002119685.1. The GC content of the type genome is 66.24 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Borkfalkia inardiforma sp. nov.

Candidatus Borkfalkia inardiforma (NL. fem. n. *inardiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Borkfalkia sp900557285*. The type genome for the species is the GenBank assembly GCA_900557285.1. The GC content of the type genome is 50.14 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Borkfalkia manupedo sp. nov.

Candidatus Borkfalkia manupedo (NL. fem. n. *manupedo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Borkfalkia sp900761675*. The type genome for the species is the GenBank assembly RS_GCF_900761675.1. The GC content of the type genome is 53.89 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Borkfalkia subacago sp. nov.

Candidatus Borkfalkia subacago (NL. fem. n. *subacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Borkfalkia sp003343765*. The type genome for the species is the GenBank assembly RS_GCF_900761695.1. The GC content of the type genome is 47.67 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Borkfalkia vicatitio sp. nov.

Candidatus Borkfalkia vicatitio (NL. fem. n. *vicatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Borkfalkia sp900761665*. The type genome for the species is the GenBank assembly RS_GCF_900761665.1. The GC content of the type genome is 58.86 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Borrelia adrenitica sp. nov.

Candidatus Borrelia adrenitica (NL. fem. n. *adrenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Borrelia sp014084025*. The type genome for the species is the GenBank assembly RS_GCF_014084025.1. The GC content of the type genome is 27.86 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Bosea abhinigena sp. nov.

Candidatus Bosea abhinigena (NL. fem. n. *abhinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001429505*. The type genome for the species is the GenBank assembly RS_GCF_001429505.1. The GC content of the type genome is 66.41 % and the genome length is 6.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Bosea adambifica sp. nov.

Candidatus Bosea adambifica (NL. fem. n. *adambifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp900473415*. The type genome for the species is the GenBank assembly RS_GCF_900473415.1. The GC content of the type genome is 66.08 % and the genome length is 6.02 Mbp.

Description of *Candidatus* Bosea adpanastra sp. nov.

Candidatus Bosea adpanastra (NL. fem. n. *adpanastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001429395*. The type genome for the species is the GenBank assembly RS_GCF_001429395.1. The GC content of the type genome is 66.74 % and the genome length is 5.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Bosea attelentia sp. nov.

Candidatus Bosea attelentia (NL. fem. n. *attelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp003241815*. The type genome for the species is the GenBank assembly GCA_003241815.1. The GC content of the type genome is 65.71 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Bosea bifisivita sp. nov.

Candidatus Bosea bifisivita (NL. fem. n. *bifisivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001556125*. The type genome for the species is the GenBank

assembly RS_GCF_001556125.1. The GC content of the type genome is 67.65 % and the genome length is 5.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Bosea biverisca sp. nov.

Candidatus Bosea biverisca (NL. fem. n. *biverisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp004123845*. The type genome for the species is the GenBank assembly RS_GCF_004123845.1. The GC content of the type genome is 66.06 % and the genome length is 6.05 Mbp.

Description of *Candidatus* Bosea bucolicella sp. nov.

Candidatus Bosea bucolicella (NL. fem. n. *bucolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001426225*. The type genome for the species is the GenBank assembly RS_GCF_001426225.1. The GC content of the type genome is 68.18 % and the genome length is 4.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Bosea catagitrix sp. nov.

Candidatus Bosea catagitrix (NL. fem. n. *catagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp003208615*. The type genome for the species is the GenBank assembly RS_GCF_003208615.1. The GC content of the type genome is 66.3 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Bosea categatica sp. nov.

Candidatus Bosea categatica (NL. fem. n. *categatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp900113835*. The type genome for the species is the GenBank assembly RS_GCF_900113835.1. The GC content of the type genome is 65.33 % and the genome length is 6.64 Mbp.

Description of *Candidatus* Bosea conubitudo sp. nov.

Candidatus Bosea conubitudo (NL. fem. n. *conubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp002917105*. The type genome for the species is the GenBank assembly RS_GCF_002917105.1. The GC content of the type genome is 65.84 % and the genome length is 6.39 Mbp.

Description of *Candidatus* Bosea cosigicella sp. nov.

Candidatus Bosea cosigicella (NL. fem. n. *cosigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp003952665*. The type genome for the species is the GenBank assembly RS_GCF_004123895.1. The GC content of the type genome is 65.96 % and the genome length is 6.44 Mbp.

Description of *Candidatus* Bosea defanousia sp. nov.

Candidatus Bosea defanousia (NL. fem. n. *defanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp900112185*. The type genome for the species is the GenBank assembly RS_GCF_900112185.1. The GC content of the type genome is 66.62 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Bosea dehisago sp. nov.

Candidatus Bosea dehisago (NL. fem. n. *dehisago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp000735605*. The type genome for the species is the GenBank assembly RS_GCF_000735605.1. The GC content of the type genome is 64.95 % and the genome length is 6.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cave surface layer".

Description of *Candidatus* Bosea denunatica sp. nov.

Candidatus Bosea denunatica (NL. fem. n. *denunatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp008253865*. The type genome for the species is the GenBank assembly RS_GCF_008253865.1. The GC content of the type genome is 65.42 % and the genome length is 7.04 Mbp.

Description of *Candidatus* Bosea ducilicula sp. nov.

Candidatus Bosea ducilicula (NL. fem. n. *ducilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp900156025*. The type genome for the species is the GenBank assembly GCA_004297045.1. The GC content of the type genome is 66.39 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Bosea effinibula sp. nov.

Candidatus Bosea effinibula (NL. fem. n. *effinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp002220095*. The type genome for the species is the GenBank assembly RS_GCF_002220095.1. The GC content of the type genome is 65.79 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Bosea feculedo sp. nov.

Candidatus Bosea feculedo (NL. fem. n. *feculedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001713455*. The type genome for the species is the GenBank assembly GCA_013823585.1. The GC content of the type genome is 68.96 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Bosea fumifessa sp. nov.

Candidatus Bosea fumifessa (NL. fem. n. *fumifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001562255*. The type genome for the species is the GenBank assembly RS_GCF_001562255.1. The GC content of the type genome is 65.16 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Bosea futatatica sp. nov.

Candidatus Bosea futatatica (NL. fem. n. *futatatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp003046175*. The type genome for the species is the GenBank assembly RS_GCF_003046175.1. The GC content of the type genome is 66.58 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Bosea inexpitio sp. nov.

Candidatus Bosea inexpitio (NL. fem. n. *inexpitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001295925*. The type genome for the species is the GenBank assembly RS_GCF_001295925.1. The GC content of the type genome is 66.09 % and the genome length is 4.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Bosea inmorousia sp. nov.

Candidatus Bosea inmorousia (NL. fem. n. *inmorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp900470775*. The type genome for the species is the GenBank assembly GCA_900470775.1. The GC content of the type genome is 65.94 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Bosea inrepago sp. nov.

Candidatus Bosea inrepago (NL. fem. n. *inrepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001556025*. The type genome for the species is the GenBank assembly RS_GCF_001556025.1. The GC content of the type genome is 66.51 % and the

genome length is 5.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Bosea intoritura sp. nov.

Candidatus Bosea intoritura (NL. fem. n. *intoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp900185715*. The type genome for the species is the GenBank assembly RS_GCF_900185715.1. The GC content of the type genome is 68.8 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Bosea molecibula sp. nov.

Candidatus Bosea molecibula (NL. fem. n. *molecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp902506165*. The type genome for the species is the GenBank assembly RS_GCF_902506165.1. The GC content of the type genome is 66.6 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Bosea molecugo sp. nov.

Candidatus Bosea molecugo (NL. fem. n. *molecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp900470095*. The type genome for the species is the GenBank assembly RS_GCF_900470095.1. The GC content of the type genome is 64.8 % and the genome length is 7.18 Mbp.

Description of *Candidatus* Bosea murelax sp. nov.

Candidatus Bosea murelax (NL. fem. n. *murelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp900466745*. The type genome for the species is the GenBank assembly GCA_900471415.1. The GC content of the type genome is 68.64 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Bosea negotax sp. nov.

Candidatus Bosea negotax (NL. fem. n. *negotax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp002279705*. The type genome for the species is the GenBank assembly GCA_002280235.1. The GC content of the type genome is 68.13 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Bosea negotessa sp. nov.

Candidatus Bosea negotessa (NL. fem. n. *negotessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp005502805*. The type genome for the species is the GenBank assembly RS_GCF_005502805.1. The GC content of the type genome is 66.51 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Bosea paracatica sp. nov.

Candidatus Bosea paracatica (NL. fem. n. *paracatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp004144595*. The type genome for the species is the GenBank assembly GCA_004144595.1. The GC content of the type genome is 66.42 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Bosea rarefessa sp. nov.

Candidatus Bosea rarefessa (NL. fem. n. *rarefessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp003248805*. The type genome for the species is the GenBank assembly GCA_003248805.1. The GC content of the type genome is 68.39 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Bosea relenago sp. nov.

Candidatus Bosea relenago (NL. fem. n. *relenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001748145*. The type genome for the species is the GenBank assembly RS_GCF_001748145.1. The GC content of the type genome is 64.77 % and the genome length is 7.33 Mbp.

Description of *Candidatus* Bosea resuratio sp. nov.

Candidatus Bosea resuratio (NL. fem. n. *resuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001509835*. The type genome for the species is the GenBank assembly RS_GCF_001509835.1. The GC content of the type genome is 66.84 % and the genome length is 6.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rock".

Description of *Candidatus* Bosea rutabatica sp. nov.

Candidatus Bosea rutabatica (NL. fem. n. *rutabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp001898115*. The type genome for the species is the GenBank assembly GCA_001898115.1. The GC content of the type genome is 67.19 % and the genome length is 4.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Bosea scellibra sp. nov.

Candidatus Bosea scellibra (NL. fem. n. *scellibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp013823325*. The type genome for the species is the GenBank assembly GCA_013823325.1. The GC content of the type genome is 66.98 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Bosea senacago sp. nov.

Candidatus Bosea senacago (NL. fem. n. *senacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bosea sp011764485*. The type genome for the species is the GenBank assembly RS_GCF_011764485.1. The GC content of the type genome is 66.22 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Bosea susicibra sp. nov.

Candidatus Bosea susicibra (NL. fem. n. *susicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bosea sp004341515*. The type genome for the species is the GenBank assembly RS_GCF_004341515.1. The GC content of the type genome is 66.15 % and the genome length is 7.63 Mbp.

Description of *Candidatus* Boseongicola colimicula sp. nov.

Candidatus Boseongicola colimicula (NL. fem. n. *colimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Boseongicola sp013042895*. The type genome for the species is the GenBank assembly GCA_013042895.1. The GC content of the type genome is 56.34 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Boseongicola encomentia sp. nov.

Candidatus Boseongicola encomentia (NL. fem. n. *encomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Boseongicola sp013042105*. The type genome for the species is the GenBank assembly GCA_013042105.1. The GC content of the type genome is 58.07 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Boseongicola luxuriforma sp. nov.

Candidatus Boseongicola luxuriforma (NL. fem. n. *luxuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Boseongicola sp014075275*. The type genome for the species is the GenBank assembly GCA_011087975.1. The GC content of the type genome is 55.27 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Botryobacter pedepitica sp. nov.

Candidatus Botryobacter pedepitica (NL. fem. n. *pedepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Botryobacter sp008017455*. The type genome for the species is the GenBank assembly RS_GCF_008017455.1. The GC content of the type genome is 47.08 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Bovicana acricago sp. nov.

Candidatus Bovicana acricago (NL. fem. n. *acricago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED62 sp902571315*. The type genome for the species is the GenBank assembly RS_GCF_902571315.1. The GC content of the type genome is 28.77 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Bovicana gen. nov.

Candidatus Bovicana (NL. fem. n. *Bovicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED62*. The type species for the genus is *Candidatus* Bovicana acricago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citoculaceae.

Description of *Candidatus* Bovicana bacifigena sp. nov.

Candidatus Bovicana bacifigena (NL. fem. n. *bacifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED62 sp902615805*. The type genome for the species is the GenBank assembly RS_GCF_902615805.1. The GC content of the type genome is 28.65 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Bovicana desulatica sp. nov.

Candidatus Bovicana desulatica (NL. fem. n. *desulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED62 sp002170595*. The type genome for the species is the GenBank assembly GCA_002170595.1. The GC content of the type genome is 28.09 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Bovicana obtecitura sp. nov.

Candidatus Bovicana obtecitura (NL. fem. n. *obtecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED62 sp902614225*. The type genome for the species is the GenBank assembly RS_GCF_902614225.1. The GC content of the type genome is 28.49 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Bovicana ossaredo sp. nov.

Candidatus Bovicana ossaredo (NL. fem. n. *ossaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED62 sp902527765*. The type genome for the species is the GenBank assembly RS_GCF_902527765.1. The GC content of the type genome is 28.74 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Bovicana sacomessa sp. nov.

Candidatus Bovicana sacomessa (NL. fem. n. *sacomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED62 sp902547175*. The type genome for the species is the GenBank assembly RS_GCF_902547175.1. The GC content of the type genome is 28.41 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Bovicaria monumitura sp. nov.

Candidatus Bovicaria monumitura (NL. fem. n. *monumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG521 sp900319675*. The type genome for the species is the GenBank assembly GCA_902787495.1. The GC content of the type genome is 45.97 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Bovicaria gen. nov.

Candidatus Bovicaria (NL. fem. n. *Bovicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG521*. The type species for the genus is *Candidatus* Bovicaria monumitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bovicaria scaccicula sp. nov.

Candidatus Bovicaria scaccicula (NL. fem. n. *scaccicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG521 sp902795525*. The type genome for the species is the GenBank assembly GCA_902795525.1. The GC content of the type genome is 34.56 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Bovicella ecnepimonia sp. nov.

Candidatus Bovicella ecnepimonia (NL. fem. n. *ecnepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYL01 sp009692825*. The type genome for the species is the GenBank assembly GCA_009692825.1. The GC content of the type genome is 50.76 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Bovicella gen. nov.

Candidatus Bovicella (NL. fem. n. *Bovicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYL01*. The type species for the genus is *Candidatus* Bovicella ecnepimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bovicellaceae.

Description of *Candidatus* Bovicellaceae fam. nov.

Candidatus Bovicellaceae (NL. fem. n. *Bovicellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYL01.* The type genus for the taxon is *Candidatus* Bovicella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHYB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucelosales.

Description of *Candidatus* Bovicia cilibatica sp. nov.

Candidatus Bovicia cilibatica (NL. fem. n. *cilibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2810 sp002351705*. The type genome for the species is the GenBank assembly GCA_902760495.1. The GC content of the type genome is 56.87 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Bovicia gen. nov.

Candidatus Bovicia (NL. fem. n. *Bovicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2810*. The type species for the genus is *Candidatus* Bovicia cilibatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bovicia vavasitrix sp. nov.

Candidatus Bovicia vavasitrix (NL. fem. n. *vavasitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2810 sp900317945*. The type genome for the species is the

GenBank assembly GCA_002349785.1. The GC content of the type genome is 55.83 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Bovicida rumifica sp. nov.

Candidatus Bovicida rumifica (NL. fem. n. *rumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-78 sp002084875*. The type genome for the species is the GenBank assembly GCA_002084875.1. The GC content of the type genome is 39.74 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Bovicida gen. nov.

Candidatus Bovicida (NL. fem. n. *Bovicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4572-78*. The type species for the genus is *Candidatus* Bovicida rumifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4572-78*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bovicidaceae.

Description of *Candidatus* Bovicidaceae fam. nov.

Candidatus Bovicidaceae (NL. fem. n. *Bovicidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4572-78.* The type genus for the taxon is *Candidatus* Bovicida .

According to the original version of GTDB R06-RS202, this family belongs to the order *4572-78*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bovicidales.

Description of *Candidatus* Bovicidales ord. nov.

Candidatus Bovicidales (NL. fem. n. *Bovicidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4572-78.* The type genus for the taxon is *Candidatus* Bovicida .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Bovicosa telefimonia sp. nov.

Candidatus Bovicosa telefimonia (NL. fem. n. *telefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXIK01 sp005772855*. The type genome for the species is the GenBank assembly GCA_005772855.1. The GC content of the type genome is 61.24 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Bovicosa gen. nov.

Candidatus Bovicosa (NL. fem. n. *Bovicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXIK01*. The type species for the genus is *Candidatus* Bovicosa telefimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXIK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bovicosaceae.

Description of *Candidatus* Bovicosaceae fam. nov.

Candidatus Bovicosaceae (NL. fem. n. *Bovicosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SXIK01.* The type genus for the taxon is *Candidatus* Bovicosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8108*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decomariales.

Description of *Candidatus* Bovicula paraletta sp. nov.

Candidatus Bovicula paraletta (NL. fem. n. *paraletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUSQ01 sp012033195*. The type genome for the species is the

GenBank assembly GCA_012031155.1. The GC content of the type genome is 58.17 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Bovicula gen. nov.

Candidatus Bovicula (NL. fem. n. *Bovicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUSQ01*. The type species for the genus is *Candidatus* Bovicula paraletta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Brabrana acontivita sp. nov.

Candidatus Brabrana acontivita (NL. fem. n. *acontivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-178 sp003229755*. The type genome for the species is the GenBank assembly GCA_003229755.1. The GC content of the type genome is 51.36 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Brabrana gen. nov.

Candidatus Brabrana (NL. fem. n. *Brabrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-178*. The type species for the genus is *Candidatus* Brabrana acontivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3Abin14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapellaceae.

Description of *Candidatus* Brabria cerevifica sp. nov.

Candidatus Brabria cerevifica (NL. fem. n. *cerevifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWB01 sp011373805*. The type genome for the species is the GenBank assembly GCA_011373805.1. The GC content of the type genome is 37.58 %

and the genome length is 0.5 Mbp.

Description of *Candidatus* Brabria gen. nov.

Candidatus Brabria (NL. fem. n. *Brabria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWB01*. The type species for the genus is *Candidatus* Brabria cerevifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9983*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifosaceae.

Description of *Candidatus* Brabrida adhositura sp. nov.

Candidatus Brabrida adhositura (NL. fem. n. *adhositura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJI01 sp009782825*. The type genome for the species is the GenBank assembly GCA_009782825.1. The GC content of the type genome is 48.19 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Brabrida gen. nov.

Candidatus Brabrida (NL. fem. n. *Brabrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRJI01*. The type species for the genus is *Candidatus* Brabrida adhositura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Brabrida antacago sp. nov.

Candidatus Brabrida antacago (NL. fem. n. *antacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJI01 sp009778595*. The type genome for the species is the GenBank assembly GCA_009778595.1. The GC content of the type genome is 49.22 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Brabrida tegimivita sp. nov.

Candidatus Brabrida tegimivita (NL. fem. n. *tegimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJI01 sp009783315*. The type genome for the species is the GenBank assembly GCA_009783315.1. The GC content of the type genome is 50.45 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Brabrosa asbesigena sp. nov.

Candidatus Brabrosa asbesigena (NL. fem. n. *asbesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGT01 sp009787025*. The type genome for the species is the GenBank assembly GCA_009787025.1. The GC content of the type genome is 35.41 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Brabrosa gen. nov.

Candidatus Brabrosa (NL. fem. n. *Brabrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGT01*. The type species for the genus is *Candidatus* Brabrosa asbesigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5550*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velivanaceae.

Description of *Candidatus* Brabrosa habacilega sp. nov.

Candidatus Brabrosa habacilega (NL. fem. n. *habacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGT01 sp002839285*. The type genome for the species is the GenBank assembly GCA_002839285.1. The GC content of the type genome is 39.18 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Brabrula adpugetta sp. nov.

Candidatus Brabrula adpugetta (NL. fem. n. *adpugetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-32 sp003597935*. The type genome for the species is the GenBank assembly GCA_003597935.1. The GC content of the type genome is 67.26 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Brabrula gen. nov.

Candidatus Brabrula (NL. fem. n. *Brabrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-32*. The type species for the genus is *Candidatus* Brabrula adpugetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomariaceae.

Description of *Candidatus* Brachybacterium adinvetta sp. nov.

Candidatus Brachybacterium adinvetta (NL. fem. n. *adinvetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachybacterium sp002871795*. The type genome for the species is the GenBank assembly RS_GCF_002871795.1. The GC content of the type genome is 69.62 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Brachybacterium apporago sp. nov.

Candidatus Brachybacterium apporago (NL. fem. n. *apporago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachybacterium sp003711805*. The type genome for the species is the GenBank assembly RS_GCF_003711805.1. The GC content of the type genome is 72.22 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Brachybacterium butubago sp. nov.

Candidatus Brachybacterium butubago (NL. fem. n. *butubago* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachybacterium sp900163615*. The type genome for the species is the GenBank assembly GCA_900163615.1. The GC content of the type genome is 69.92 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Brachybacterium conamicula sp. nov.

Candidatus Brachybacterium conamicula (NL. fem. n. *conamicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachybacterium sp001969445*. The type genome for the species is the GenBank assembly RS_GCF_001969445.1. The GC content of the type genome is 70.93 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Brachybacterium emortiforma sp. nov.

Candidatus Brachybacterium emortiforma (NL. fem. n. *emortiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachybacterium sp003347015*. The type genome for the species is the GenBank assembly RS_GCF_003347015.1. The GC content of the type genome is 72.28 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Brachybacterium linigivita sp. nov.

Candidatus Brachybacterium linigivita (NL. fem. n. *linigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachybacterium sp005490785*. The type genome for the species is the GenBank assembly RS_GCF_005490785.1. The GC content of the type genome is 73.04 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Brachybacterium obtoritas sp. nov.

Candidatus Brachybacterium obtoritas (NL. fem. n. *obtoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachybacterium sp014400405*. The type genome for the species is the GenBank assembly GCA_014400405.1. The GC content of the type genome is 70.02 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Brachybacterium relecitura sp. nov.

Candidatus Brachybacterium relecitura (NL. fem. n. *relecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachybacterium sp012799425*. The type genome for the species is the GenBank assembly GCA_012799425.1. The GC content of the type genome is 70.71 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Brachybacterium vitificula sp. nov.

Candidatus Brachybacterium vitificula (NL. fem. n. *vitificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachybacterium sp009299795*. The type genome for the species is the GenBank assembly RS_GCF_009299795.1. The GC content of the type genome is 71.84 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Brachymonas turicimonia sp. nov.

Candidatus Brachymonas turicimonia (NL. fem. n. *turicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachymonas sp012729605*. The type genome for the species is the GenBank assembly GCA_012729605.1. The GC content of the type genome is 64.18 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Brachyspira bivericella sp. nov.

Candidatus Brachyspira bivericella (NL. fem. n. *bivericella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachyspira sp002379365*. The type genome for the species is the GenBank assembly RS_GCF_002379365.1. The GC content of the type genome is 27.86 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Brachyspira catecousia sp. nov.

Candidatus Brachyspira catecousia (NL. fem. n. *catecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brachyspira sp009755885*. The type genome for the species is the GenBank assembly RS_GCF_009755885.1. The GC content of the type genome is 27.78 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Bradyrhizobium adpecitia sp. nov.

Candidatus Bradyrhizobium adpecitia (NL. fem. n. *adpecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp005884465*. The type genome for the species is the GenBank assembly GCA_005884465.1. The GC content of the type genome is 61.85 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Bradyrhizobium adtagago sp. nov.

Candidatus Bradyrhizobium adtagago (NL. fem. n. *adtagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp003020115*. The type genome for the species is the GenBank assembly RS_GCF_003020115.1. The GC content of the type genome is 63.59 % and the genome length is 7.58 Mbp.

Description of *Candidatus* Bradyrhizobium aneclitoga sp. nov.

Candidatus Bradyrhizobium aneclitoga (NL. fem. n. *aneclitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp009930815*. The type genome for the species is the GenBank assembly RS_GCF_009930815.1. The GC content of the type genome is 61.99 % and the genome length is 9.1 Mbp.

Description of *Candidatus* Bradyrhizobium annicatio sp. nov.

Candidatus Bradyrhizobium annicatio (NL. fem. n. *annicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp004216735*. The type genome for the species is the GenBank assembly RS_GCF_004216735.1. The GC content of the type genome is 64.57 % and the genome length is 8.01 Mbp.

Description of *Candidatus* Bradyrhizobium antimibra sp. nov.

Candidatus Bradyrhizobium antimibra (NL. fem. n. *antimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000026145*. The type genome for the species is the GenBank assembly RS_GCF_000026145.1. The GC content of the type genome is 65.51 % and the genome length is 7.46 Mbp.

Description of *Candidatus* Bradyrhizobium assicousia sp. nov.

Candidatus Bradyrhizobium assicousia (NL. fem. n. *assicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp004799445*. The type genome for the species is the GenBank assembly GCA_004799445.1. The GC content of the type genome is 62.3 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Bradyrhizobium assubisca sp. nov.

Candidatus Bradyrhizobium assubisca (NL. fem. n. *assubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp011602485*. The type genome for the species is the GenBank assembly RS_GCF_011602485.1. The GC content of the type genome is 64.17 % and the genome length is 7.86 Mbp.

Description of *Candidatus* Bradyrhizobium bicinitio sp. nov.

Candidatus Bradyrhizobium bicinitio (NL. fem. n. *bicinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bradyrhizobium sp900114915*. The type genome for the species is the GenBank assembly RS_GCF_014198205.1. The GC content of the type genome is 63.59 % and the genome length is 8.69 Mbp.

Description of *Candidatus* Bradyrhizobium bisulessa sp. nov.

Candidatus Bradyrhizobium bisulessa (NL. fem. n. *bisulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp001590795*. The type genome for the species is the GenBank assembly RS_GCF_001590795.1. The GC content of the type genome is 64.56 % and the genome length is 7.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Bradyrhizobium bisulibula sp. nov.

Candidatus Bradyrhizobium bisulibula (NL. fem. n. *bisulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp003957705*. The type genome for the species is the GenBank assembly RS_GCF_004571045.1. The GC content of the type genome is 63.93 % and the genome length is 8.33 Mbp.

Description of *Candidatus* Bradyrhizobium capilisca sp. nov.

Candidatus Bradyrhizobium capilisca (NL. fem. n. *capilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000239815*. The type genome for the species is the GenBank assembly RS_GCF_000239815.1. The GC content of the type genome is 63.6 % and the genome length is 8.43 Mbp.

Description of *Candidatus* Bradyrhizobium catocitica sp. nov.

Candidatus Bradyrhizobium catocitica (NL. fem. n. *catocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000239775*. The type genome for the species is the GenBank assembly RS_GCF_000239775.1. The GC content of the type genome is 65.49 % and the genome length is 7.86 Mbp.

Description of *Candidatus* Bradyrhizobium cinipitrix sp. nov.

Candidatus Bradyrhizobium cinipitrix (NL. fem. n. *cinipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp013114835*. The type genome for the species is the GenBank assembly RS_GCF_013114835.1. The GC content of the type genome is 62.26 % and the genome length is 7.02 Mbp.

Description of *Candidatus* Bradyrhizobium citivatica sp. nov.

Candidatus Bradyrhizobium citivatica (NL. fem. n. *citivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp002531575*. The type genome for the species is the GenBank assembly RS_GCF_002531575.1. The GC content of the type genome is 64.98 % and the genome length is 7.33 Mbp.

Description of *Candidatus* Bradyrhizobium cobalax sp. nov.

Candidatus Bradyrhizobium cobalax (NL. fem. n. *cobalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000261685*. The type genome for the species is the GenBank assembly RS_GCF_000261685.1. The GC content of the type genome is 63.88 % and the genome length is 7.92 Mbp.

Description of *Candidatus* Bradyrhizobium cohurentia sp. nov.

Candidatus Bradyrhizobium cohurentia (NL. fem. n. *cohurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp008123965*. The type genome for the species is the GenBank assembly RS_GCF_008123965.1. The GC content of the type genome is 62.86 % and the genome length is 8.83 Mbp.

Description of *Candidatus* Bradyrhizobium conabimonas sp. nov.

Candidatus Bradyrhizobium conabimonas (NL. fem. n. *conabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp900109945*. The type genome for the species is the GenBank assembly RS_GCF_900109945.1. The GC content of the type genome is 63.89 % and the genome length is 7.85 Mbp.

Description of *Candidatus* Bradyrhizobium curotiforma sp. nov.

Candidatus Bradyrhizobium curotiforma (NL. fem. n. *curotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp014530645*. The type genome for the species is the GenBank assembly RS_GCF_014530645.1. The GC content of the type genome is 63.71 % and the genome length is 8.87 Mbp.

Description of *Candidatus* Bradyrhizobium defesitura sp. nov.

Candidatus Bradyrhizobium defesitura (NL. fem. n. *defesitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp004212635*. The type genome for the species is the GenBank assembly RS_GCF_900099855.1. The GC content of the type genome is 62.83 % and the genome length is 9.58 Mbp.

Description of *Candidatus* Bradyrhizobium delebedo sp. nov.

Candidatus Bradyrhizobium delebedo (NL. fem. n. *delebedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp014198245*. The type genome for the species is the GenBank assembly RS_GCF_014198245.1. The GC content of the type genome is 63.81 % and the genome length is 8.65 Mbp.

Description of *Candidatus* Bradyrhizobium depacimonas sp. nov.

Candidatus Bradyrhizobium depacimonas (NL. fem. n. *depacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bradyrhizobium sp900103365*. The type genome for the species is the GenBank assembly RS_GCF_900103365.1. The GC content of the type genome is 62.64 % and the genome length is 7.58 Mbp.

Description of *Candidatus* Bradyrhizobium dilemicella sp. nov.

Candidatus Bradyrhizobium dilemicella (NL. fem. n. *dilemicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp900176205*. The type genome for the species is the GenBank assembly RS_GCF_000239755.1. The GC content of the type genome is 65.23 % and the genome length is 7.6 Mbp.

Description of *Candidatus* Bradyrhizobium duponicella sp. nov.

Candidatus Bradyrhizobium duponicella (NL. fem. n. *duponicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp003001755*. The type genome for the species is the GenBank assembly RS_GCF_003001755.1. The GC content of the type genome is 64.55 % and the genome length is 7.53 Mbp.

Description of *Candidatus* Bradyrhizobium eclecigena sp. nov.

Candidatus Bradyrhizobium eclecigena (NL. fem. n. *eclecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp003837805*. The type genome for the species is the GenBank assembly RS_GCF_003837805.1. The GC content of the type genome is 63.76 % and the genome length is 7.71 Mbp.

Description of *Candidatus* Bradyrhizobium ensicetta sp. nov.

Candidatus Bradyrhizobium ensicetta (NL. fem. n. *ensicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp005884765*. The type genome for the species is the GenBank assembly GCA_005884765.1. The GC content of the type genome is 61.79 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Bradyrhizobium esculimonia sp. nov.

Candidatus Bradyrhizobium esculimonia (NL. fem. n. *esculimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp009766005*. The type genome for the species is the GenBank assembly RS_GCF_009766005.1. The GC content of the type genome is 62.2 % and the genome length is 7.5 Mbp.

Description of *Candidatus* Bradyrhizobium favonatica sp. nov.

Candidatus Bradyrhizobium favonatica (NL. fem. n. *favonatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000938305*. The type genome for the species is the GenBank assembly RS_GCF_000938235.1. The GC content of the type genome is 62.82 % and the genome length is 9.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "forest soil".

Description of *Candidatus* Bradyrhizobium forinitrix sp. nov.

Candidatus Bradyrhizobium forinitrix (NL. fem. n. *forinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp005937885*. The type genome for the species is the GenBank assembly RS_GCF_005937885.2. The GC content of the type genome is 62.65 % and the genome length is 7.31 Mbp.

Description of *Candidatus* Bradyrhizobium furibentia sp. nov.

Candidatus Bradyrhizobium furibentia (NL. fem. n. *furibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000244915*. The type genome for the species is the GenBank assembly RS_GCF_900011245.1. The GC content of the type genome is 63.77 % and the genome length is 7.55 Mbp.

Description of *Candidatus* Bradyrhizobium gasomibra sp. nov.

Candidatus Bradyrhizobium gasomibra (NL. fem. n. *gasomibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp004799405*. The type genome for the species is the GenBank assembly GCA_004799405.1. The GC content of the type genome is 62.03 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Bradyrhizobium gemebibra sp. nov.

Candidatus Bradyrhizobium gemebibra (NL. fem. n. *gemebibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp002831585*. The type genome for the species is the GenBank assembly RS_GCF_000497675.1. The GC content of the type genome is 64.71 % and the genome length is 7.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "blood".

Description of *Candidatus* Bradyrhizobium genociforma sp. nov.

Candidatus Bradyrhizobium genociforma (NL. fem. n. *genociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000015165*. The type genome for the species is the GenBank assembly RS_GCF_013179005.1. The GC content of the type genome is 64.75 % and the genome length is 8.33 Mbp.

Description of *Candidatus* Bradyrhizobium hemitilenta sp. nov.

Candidatus Bradyrhizobium hemitilenta (NL. fem. n. *hemitilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000473065*. The type genome for the species is the GenBank assembly RS_GCF_000473065.1. The GC content of the type genome is 63.38 % and the genome length is 8.34 Mbp.

Description of *Candidatus* Bradyrhizobium horomibula sp. nov.

Candidatus Bradyrhizobium horomibula (NL. fem. n. *horomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000472925*. The type genome for the species is the GenBank assembly RS_GCF_000472925.1. The GC content of the type genome is 62.64 % and the genome length is 10.03 Mbp.

Description of *Candidatus* Bradyrhizobium impolitrix sp. nov.

Candidatus Bradyrhizobium impolitrix (NL. fem. n. *impolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp001693485*. The type genome for the species is the GenBank assembly RS_GCF_001693485.1. The GC content of the type genome is 62.27 % and the genome length is 7.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root nodule".

Description of *Candidatus* Bradyrhizobium indirisca sp. nov.

Candidatus Bradyrhizobium indirisca (NL. fem. n. *indirisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000472425*. The type genome for the species is the GenBank assembly RS_GCF_000472425.1. The GC content of the type genome is 62.2 % and the genome length is 8.5 Mbp.

Description of *Candidatus* Bradyrhizobium ineffitio sp. nov.

Candidatus Bradyrhizobium ineffitio (NL. fem. n. *ineffitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp005884855*. The type genome for the species is the GenBank assembly GCA_005884855.1. The GC content of the type genome is 60.35 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Bradyrhizobium inhositica sp. nov.

Candidatus Bradyrhizobium inhositica (NL. fem. n. *inhositica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp001556045*. The type genome for the species is the

GenBank assembly RS_GCF_001556045.1. The GC content of the type genome is 64.12 % and the genome length is 8.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Bradyrhizobium insepugo sp. nov.

Candidatus Bradyrhizobium insepugo (NL. fem. n. *insepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp001908185*. The type genome for the species is the GenBank assembly RS_GCF_001908185.1. The GC content of the type genome is 63.15 % and the genome length is 8.71 Mbp.

Description of *Candidatus* Bradyrhizobium laculitia sp. nov.

Candidatus Bradyrhizobium laculitia (NL. fem. n. *laculitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000426105*. The type genome for the species is the GenBank assembly RS_GCF_000426105.1. The GC content of the type genome is 62.2 % and the genome length is 6.97 Mbp.

Description of *Candidatus* Bradyrhizobium lanifigena sp. nov.

Candidatus Bradyrhizobium lanifigena (NL. fem. n. *lanifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp011516635*. The type genome for the species is the GenBank assembly RS_GCF_004634465.1. The GC content of the type genome is 63.61 % and the genome length is 9.05 Mbp.

Description of *Candidatus* Bradyrhizobium lucerilenta sp. nov.

Candidatus Bradyrhizobium lucerilenta (NL. fem. n. *lucerilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp009781045*. The type genome for the species is the GenBank assembly GCA_009781045.1. The GC content of the type genome is 62.15 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Bradyrhizobium ludimatio sp. nov.

Candidatus Bradyrhizobium ludimatio (NL. fem. n. *ludimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp003020125*. The type genome for the species is the GenBank assembly RS_GCF_003020125.1. The GC content of the type genome is 64.16 % and the genome length is 7.26 Mbp.

Description of *Candidatus* Bradyrhizobium maxilitrix sp. nov.

Candidatus Bradyrhizobium maxilitrix (NL. fem. n. *maxilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000472385*. The type genome for the species is the GenBank assembly RS_GCF_000472385.1. The GC content of the type genome is 62.01 % and the genome length is 8.61 Mbp.

Description of *Candidatus* Bradyrhizobium metabousia sp. nov.

Candidatus Bradyrhizobium metabousia (NL. fem. n. *metabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp001464035*. The type genome for the species is the GenBank assembly GCA_001464035.1. The GC content of the type genome is 63.67 % and the genome length is 4.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Bradyrhizobium mirifetta sp. nov.

Candidatus Bradyrhizobium mirifetta (NL. fem. n. *mirifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp001908235*. The type genome for the species is the GenBank assembly RS_GCF_001908235.1. The GC content of the type genome is 63.79 % and the genome length is 8.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root nodule".

Description of *Candidatus* Bradyrhizobium monogax sp. nov.

Candidatus Bradyrhizobium monogax (NL. fem. n. *monogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000617845*. The type genome for the species is the GenBank assembly RS_GCF_000617845.2. The GC content of the type genome is 64.49 % and the genome length is 7.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Bradyrhizobium offirentia sp. nov.

Candidatus Bradyrhizobium offirentia (NL. fem. n. *offirentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000473045*. The type genome for the species is the GenBank assembly RS_GCF_000473045.1. The GC content of the type genome is 62.97 % and the genome length is 8.79 Mbp.

Description of *Candidatus* Bradyrhizobium pocilitia sp. nov.

Candidatus Bradyrhizobium pocilitia (NL. fem. n. *pocilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000296215*. The type genome for the species is the GenBank assembly RS_GCF_001593325.1. The GC content of the type genome is 63.81 % and the genome length is 7.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rhizosphere soil".

Description of *Candidatus* Bradyrhizobium proscitrix sp. nov.

Candidatus Bradyrhizobium proscitrix (NL. fem. n. *proscitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000701345*. The type genome for the species is the GenBank assembly RS_GCF_000701345.1. The GC content of the type genome is 60.68 % and the genome length is 6.79 Mbp.

Description of *Candidatus* Bradyrhizobium pudibibula sp. nov.

Candidatus Bradyrhizobium pudibibula (NL. fem. n. *pudibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000515415*. The type genome for the species is the GenBank assembly RS_GCF_000515415.1. The GC content of the type genome is 63.17 % and the genome length is 8.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Bradyrhizobium repepastra sp. nov.

Candidatus Bradyrhizobium repepastra (NL. fem. n. *repepastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp900113735*. The type genome for the species is the GenBank assembly RS_GCF_900113735.1. The GC content of the type genome is 62.87 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Bradyrhizobium retecastra sp. nov.

Candidatus Bradyrhizobium retecastra (NL. fem. n. *retecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp003963435*. The type genome for the species is the GenBank assembly GCA_003963435.1. The GC content of the type genome is 64.31 % and the genome length is 7.31 Mbp.

Description of *Candidatus* Bradyrhizobium rorulicella sp. nov.

Candidatus Bradyrhizobium rorulicella (NL. fem. n. *rorulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp002532045*. The type genome for the species is the GenBank assembly RS_GCF_002532045.1. The GC content of the type genome is 64.14 % and the genome length is 8.43 Mbp.

Description of *Candidatus* Bradyrhizobium rosarilenta sp. nov.

Candidatus Bradyrhizobium rosarilenta (NL. fem. n. *rosarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp005885285*. The type genome for the species is the GenBank assembly GCA_005884545.1. The GC content of the type genome is 62.51 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Bradyrhizobium ruricitudo sp. nov.

Candidatus Bradyrhizobium ruricitudo (NL. fem. n. *ruricitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp003020075*. The type genome for the species is the GenBank assembly GCA_003476985.1. The GC content of the type genome is 64.54 % and the genome length is 7.5 Mbp.

Description of *Candidatus* Bradyrhizobium semodibra sp. nov.

Candidatus Bradyrhizobium semodibra (NL. fem. n. *semodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp013178945*. The type genome for the species is the GenBank assembly RS_GCF_013178925.1. The GC content of the type genome is 65.54 % and the genome length is 7.5 Mbp.

Description of *Candidatus* Bradyrhizobium seposimonia sp. nov.

Candidatus Bradyrhizobium seposimonia (NL. fem. n. *seposimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000426785*. The type genome for the species is the GenBank assembly RS_GCF_011058295.1. The GC content of the type genome is 63.29 % and the genome length is 10.01 Mbp.

Description of *Candidatus* Bradyrhizobium sifunitoga sp. nov.

Candidatus Bradyrhizobium sifunitoga (NL. fem. n. *sifunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000938255*. The type genome for the species is the GenBank assembly RS_GCF_000938255.1. The GC content of the type genome is 63.24

% and the genome length is 8.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "forest soil".

Description of *Candidatus* Bradyrhizobium siminitrix sp. nov.

Candidatus Bradyrhizobium siminitrix (NL. fem. n. *siminitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp011516665*. The type genome for the species is the GenBank assembly RS_GCF_011516665.2. The GC content of the type genome is 63.72 % and the genome length is 8.64 Mbp.

Description of *Candidatus* Bradyrhizobium subabibra sp. nov.

Candidatus Bradyrhizobium subabibra (NL. fem. n. *subabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000244935*. The type genome for the species is the GenBank assembly RS_GCF_000244935.1. The GC content of the type genome is 63.14 % and the genome length is 8.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Bradyrhizobium televifica sp. nov.

Candidatus Bradyrhizobium televifica (NL. fem. n. *televifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp900115265*. The type genome for the species is the GenBank assembly RS_GCF_900115265.1. The GC content of the type genome is 63.03 % and the genome length is 7.93 Mbp.

Description of *Candidatus* Bradyrhizobium triclousia sp. nov.

Candidatus Bradyrhizobium triclousia (NL. fem. n. *triclousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp001908205*. The type genome for the species is the GenBank assembly RS_GCF_001908205.1. The GC content of the type genome is 63.06 % and the genome length is 9.24 Mbp.

Description of *Candidatus* Bradyrhizobium triscitas sp. nov.

Candidatus Bradyrhizobium triscitas (NL. fem. n. *triscitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000426245*. The type genome for the species is the GenBank assembly RS_GCF_000426245.1. The GC content of the type genome is 62.58 % and the genome length is 9.03 Mbp.

Description of *Candidatus* Bradyrhizobium uberritia sp. nov.

Candidatus Bradyrhizobium uberritia (NL. fem. n. *uberritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000282615*. The type genome for the species is the GenBank assembly RS_GCF_000282615.1. The GC content of the type genome is 64.72 % and the genome length is 7.83 Mbp.

Description of *Candidatus* Bradyrhizobium vatilugo sp. nov.

Candidatus Bradyrhizobium vatilugo (NL. fem. n. *vatilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp000239795*. The type genome for the species is the GenBank assembly RS_GCF_000239795.1. The GC content of the type genome is 66.18 % and the genome length is 7.31 Mbp.

Description of *Candidatus* Bradyrhizobium veridax sp. nov.

Candidatus Bradyrhizobium veridax (NL. fem. n. *veridax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp013114825*. The type genome for the species is the GenBank assembly RS_GCF_013114825.1. The GC content of the type genome is 61.88 % and the genome length is 7.44 Mbp.

Description of *Candidatus* Bradyrhizobium virecivita sp. nov.

Candidatus Bradyrhizobium virecivita (NL. fem. n. *virecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp013240495*. The type genome for the species is the GenBank assembly RS_GCF_013240495.1. The GC content of the type genome is 63.87 % and the genome length is 8.29 Mbp.

Description of *Candidatus* Bradyrhizobium xenodicula sp. nov.

Candidatus Bradyrhizobium xenodicula (NL. fem. n. *xenodicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bradyrhizobium sp900113725*. The type genome for the species is the GenBank assembly RS_GCF_004571025.1. The GC content of the type genome is 63.53 % and the genome length is 9.79 Mbp.

Description of *Candidatus* Branchiibius depacilenta sp. nov.

Candidatus Branchiibius depacilenta (NL. fem. n. *depacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Branchiibius sp001594145*. The type genome for the species is the GenBank assembly GCA_001594145.1. The GC content of the type genome is 67.08 % and the genome length is 3.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mixed culture 16-3462 from Mycobacteria Growth Indicator Tube inoculated with human sputum sample containing Mycobacterium tuberculosis and Branchiibius sp. NY16-3462-2".

Description of *Candidatus* Brasilonema carucilega sp. nov.

Candidatus Brasilonema carucilega (NL. fem. n. *carucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brasilonema sp012031965*. The type genome for the species is the GenBank assembly GCA_012031965.1. The GC content of the type genome is 42.52 % and the genome length is 7.33 Mbp.

Description of *Candidatus* Brasilonema indevatio sp. nov.

Candidatus Brasilonema indevatio (NL. fem. n. *indevatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brasilonema sp012912105*. The type genome for the species is the GenBank assembly RS_GCF_012912105.1. The GC content of the type genome is 41.97 % and the genome length is 8.31 Mbp.

Description of *Candidatus* Brasmana adlocilega sp. nov.

Candidatus Brasmana adlocilega (NL. fem. n. *adlocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS599 sp900543705*. The type genome for the species is the GenBank assembly GCA_900543705.1. The GC content of the type genome is 49.78 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Brasmana gen. nov.

Candidatus Brasmana (NL. fem. n. *Brasmana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS599*. The type species for the genus is *Candidatus* Brasmana adlocilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Brasmaria abhinousia sp. nov.

Candidatus Brasmaria abhinousia (NL. fem. n. *abhinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4717 sp002404395*. The type genome for the species is the GenBank assembly GCA_002404395.1. The GC content of the type genome is 49.05 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Brasmaria gen. nov.

Candidatus Brasmaria (NL. fem. n. *Brasmaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4717*. The type species for the genus is *Candidatus* Brasmaria abhinousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Brasmella demulifica sp. nov.

Candidatus Brasmella demulifica (NL. fem. n. *demulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYI01 sp013696535*. The type genome for the species is the GenBank assembly GCA_013696535.1. The GC content of the type genome is 69.3 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Brasmella gen. nov.

Candidatus Brasmella (NL. fem. n. *Brasmella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCYI01*. The type species for the genus is *Candidatus* Brasmella demulifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Brasmida homolitica sp. nov.

Candidatus Brasmida homolitica (NL. fem. n. *homolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B17-G16 sp003646975*. The type genome for the species is the GenBank assembly GCA_003646975.1. The GC content of the type genome is 58.82 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Brasmida gen. nov.

Candidatus Brasmida (NL. fem. n. *Brasmida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B17-G16*. The type species for the genus is *Candidatus* Brasmida homolitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bremerella troclitoga sp. nov.

Candidatus Bremerella troclitoga (NL. fem. n. *troclitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bremerella sp013618625*. The type genome for the species is the GenBank assembly GCA_013618625.1. The GC content of the type genome is 54.22 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Brenneria morigatica sp. nov.

Candidatus Brenneria morigatica (NL. fem. n. *morigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brenneria sp013155275*. The type genome for the species is the GenBank assembly RS_GCF_013155275.1. The GC content of the type genome is 53.48 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Breoghania invesastra sp. nov.

Candidatus Breoghania invesastra (NL. fem. n. *invesastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Breoghania sp003432385*. The type genome for the species is the GenBank assembly RS_GCF_003432385.1. The GC content of the type genome is 64.53 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Brevefilum adhinifica sp. nov.

Candidatus Brevefilum adhinifica (NL. fem. n. *adhinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevefilum sp003542325*. The type genome for the species is the GenBank assembly GCA_003542325.1. The GC content of the type genome is 51.1 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Brevefilum admoditica sp. nov.

Candidatus Brevefilum admoditica (NL. fem. n. *admoditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevefilum sp007119455*. The type genome for the species is the GenBank assembly GCA_007119455.1. The GC content of the type genome is 49.46 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Brevefilum avoncetta sp. nov.

Candidatus Brevefilum avoncetta (NL. fem. n. *avoncetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevefilum sp007135845*. The type genome for the species is the GenBank assembly GCA_007135845.1. The GC content of the type genome is 49.24 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Brevefilum direpitica sp. nov.

Candidatus Brevefilum direpitica (NL. fem. n. *direpitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevefilum sp001508595*. The type genome for the species is the GenBank assembly GCA_003445515.1. The GC content of the type genome is 46.59 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Brevefilum domicibula sp. nov.

Candidatus Brevefilum domicibula (NL. fem. n. *domicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevefilum sp002436005*. The type genome for the species is the GenBank assembly GCA_002403055.1. The GC content of the type genome is 49.32 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Brevefilum impolicella sp. nov.

Candidatus Brevefilum impolicella (NL. fem. n. *impolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Brevefilum sp012522475*. The type genome for the species is the GenBank assembly GCA_012522475.1. The GC content of the type genome is 48.85 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Brevefilum insurifica sp. nov.

Candidatus Brevefilum insurifica (NL. fem. n. *insurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevefilum sp011620555*. The type genome for the species is the GenBank assembly GCA_011620555.1. The GC content of the type genome is 56.59 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Brevefilum pulegigena sp. nov.

Candidatus Brevefilum pulegigena (NL. fem. n. *pulegigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevefilum sp002403205*. The type genome for the species is the GenBank assembly GCA_002403205.1. The GC content of the type genome is 54.72 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Brevefilum rudecivita sp. nov.

Candidatus Brevefilum rudecivita (NL. fem. n. *rudecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevefilum sp002452315*. The type genome for the species is the GenBank assembly GCA_002452315.1. The GC content of the type genome is 54.11 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Brevefilum sotulentia sp. nov.

Candidatus Brevefilum sotulentia (NL. fem. n. *sotulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevefilum sp003563055*. The type genome for the species is the GenBank assembly GCA_003567435.1. The GC content of the type genome is 48.94 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Brevibacillus cohurastra sp. nov.

Candidatus Brevibacillus cohurastra (NL. fem. n. *cohurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacillus sp000282075*. The type genome for the species is the GenBank assembly RS_GCF_013284245.1. The GC content of the type genome is 47.3 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Brevibacillus selecitio sp. nov.

Candidatus Brevibacillus selecitio (NL. fem. n. *selecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacillus sp013284355*. The type genome for the species is the GenBank assembly RS_GCF_013284355.1. The GC content of the type genome is 47.29 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Brevibacillus vigenimonas sp. nov.

Candidatus Brevibacillus vigenimonas (NL. fem. n. *vigenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacillus sp003388715*. The type genome for the species is the GenBank assembly RS_GCF_013096935.1. The GC content of the type genome is 56.0 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Brevibacillus algifatica sp. nov.

Candidatus Brevibacillus algifatica (NL. fem. n. *algifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacillus_B sp006170445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_006170445.1. The GC content of the type genome is 50.56 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Brevibacterium accoritas sp. nov.

Candidatus Brevibacterium accoritas (NL. fem. n. *accoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp012844365*. The type genome for the species is the GenBank assembly RS_GCF_012844365.1. The GC content of the type genome is 64.92 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Brevibacterium ambiditica sp. nov.

Candidatus Brevibacterium ambiditica (NL. fem. n. *ambiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp004745485*. The type genome for the species is the GenBank assembly RS_GCF_004745485.1. The GC content of the type genome is 64.17 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Brevibacterium dehisifica sp. nov.

Candidatus Brevibacterium dehisifica (NL. fem. n. *dehisifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp006489205*. The type genome for the species is the GenBank assembly RS_GCF_006489205.1. The GC content of the type genome is 68.02 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Brevibacterium encolousia sp. nov.

Candidatus Brevibacterium encolousia (NL. fem. n. *encolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp004745075*. The type genome for the species is the GenBank assembly RS_GCF_004745075.1. The GC content of the type genome is 65.02 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Brevibacterium fibicentia sp. nov.

Candidatus Brevibacterium fibicentia (NL. fem. n. *fibicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp001815905*. The type genome for the species is the GenBank assembly RS_GCF_902500275.1. The GC content of the type genome is 62.23 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Brevibacterium ficedicella sp. nov.

Candidatus Brevibacterium ficedicella (NL. fem. n. *ficedicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp011617465*. The type genome for the species is the GenBank assembly RS_GCF_011617465.1. The GC content of the type genome is 64.65 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Brevibacterium incesitio sp. nov.

Candidatus Brevibacterium incesitio (NL. fem. n. *incesitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp900169365*. The type genome for the species is the GenBank assembly RS_GCF_900169365.1. The GC content of the type genome is 62.07 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Brevibacterium intorimonas sp. nov.

Candidatus Brevibacterium intorimonas (NL. fem. n. *intorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp005280295*. The type genome for the species is the GenBank assembly RS_GCF_005280295.1. The GC content of the type genome is 70.51 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Brevibacterium plostitia sp. nov.

Candidatus Brevibacterium plostitia (NL. fem. n. *plostitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp009857845*. The type genome for the species is the GenBank assembly RS_GCF_009857845.1. The GC content of the type genome is 72.37

% and the genome length is 3.12 Mbp.

Description of *Candidatus* Brevibacterium repepitica sp. nov.

Candidatus Brevibacterium repepitica (NL. fem. n. *repepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp011617705*. The type genome for the species is the GenBank assembly RS_GCF_009299785.1. The GC content of the type genome is 64.9 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Brevibacterium rudicentia sp. nov.

Candidatus Brevibacterium rudicentia (NL. fem. n. *rudicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevibacterium sp011617245*. The type genome for the species is the GenBank assembly RS_GCF_011617245.1. The GC content of the type genome is 65.42 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Brevilactibacter chernilega sp. nov.

Candidatus Brevilactibacter chernilega (NL. fem. n. *chernilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevilactibacter sp012838755*. The type genome for the species is the GenBank assembly GCA_012838755.1. The GC content of the type genome is 71.21 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Brevilactibacter excorastra sp. nov.

Candidatus Brevilactibacter excorastra (NL. fem. n. *excorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevilactibacter sp011393335*. The type genome for the species is the GenBank assembly RS_GCF_011393335.1. The GC content of the type genome is 72.1 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Brevilactibacter recomimonas sp. nov.

Candidatus Brevilactibacter recomimonas (NL. fem. n. *recomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevilactibacter sp014164685*. The type genome for the species is the GenBank assembly RS_GCF_014164685.1. The GC content of the type genome is 71.05 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Brevundimonas aclasax sp. nov.

Candidatus Brevundimonas aclasax (NL. fem. n. *aclasax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp013760785*. The type genome for the species is the GenBank assembly RS_GCF_013760785.1. The GC content of the type genome is 60.48 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Brevundimonas adnarastra sp. nov.

Candidatus Brevundimonas adnarastra (NL. fem. n. *adnarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp003248965*. The type genome for the species is the GenBank assembly GCA_003248965.1. The GC content of the type genome is 67.33 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Brevundimonas adnililega sp. nov.

Candidatus Brevundimonas adnililega (NL. fem. n. *adnililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp003938605*. The type genome for the species is the GenBank assembly RS_GCF_003938605.1. The GC content of the type genome is 66.88 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Brevundimonas adtoredo sp. nov.

Candidatus Brevundimonas adtoredo (NL. fem. n. *adtoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002387245*. The type genome for the species is the GenBank assembly GCA_002387245.1. The GC content of the type genome is 67.0 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Brevundimonas altipedo sp. nov.

Candidatus Brevundimonas altipedo (NL. fem. n. *altipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002157625*. The type genome for the species is the GenBank assembly RS_GCF_002157625.1. The GC content of the type genome is 67.58 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Brevundimonas ambidicula sp. nov.

Candidatus Brevundimonas ambidicula (NL. fem. n. *ambidicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp001796045*. The type genome for the species is the GenBank assembly GCA_001796045.1. The GC content of the type genome is 67.57 % and the genome length is 2.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Brevundimonas antipentia sp. nov.

Candidatus Brevundimonas antipentia (NL. fem. n. *antipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp003248455*. The type genome for the species is the GenBank assembly GCA_003248455.1. The GC content of the type genome is 67.66 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Brevundimonas arcitatio sp. nov.

Candidatus Brevundimonas arcitatio (NL. fem. n. *arcitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Brevundimonas sp006547065*. The type genome for the species is the GenBank assembly RS_GCF_006547065.1. The GC content of the type genome is 67.56 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Brevundimonas artilousia sp. nov.

Candidatus Brevundimonas artilousia (NL. fem. n. *artilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp001295975*. The type genome for the species is the GenBank assembly RS_GCF_001295975.1. The GC content of the type genome is 67.73 % and the genome length is 2.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Brevundimonas assuditura sp. nov.

Candidatus Brevundimonas assuditura (NL. fem. n. *assuditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp001424025*. The type genome for the species is the GenBank assembly RS_GCF_001424025.1. The GC content of the type genome is 68.55 % and the genome length is 3.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Brevundimonas baropago sp. nov.

Candidatus Brevundimonas baropago (NL. fem. n. *baropago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002292165*. The type genome for the species is the GenBank assembly GCA_002292165.1. The GC content of the type genome is 68.08 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Brevundimonas cerofousia sp. nov.

Candidatus Brevundimonas cerofousia (NL. fem. n. *cerofousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002483305*. The type genome for the species is the GenBank assembly GCA_002483305.1. The GC content of the type genome is 68.65 %

and the genome length is 2.92 Mbp.

Description of *Candidatus* Brevundimonas colapugo sp. nov.

Candidatus Brevundimonas colapugo (NL. fem. n. *colapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp001427825*. The type genome for the species is the GenBank assembly RS_GCF_001427825.1. The GC content of the type genome is 68.97 % and the genome length is 2.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Brevundimonas colimugo sp. nov.

Candidatus Brevundimonas colimugo (NL. fem. n. *colimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002426005*. The type genome for the species is the GenBank assembly GCA_013693835.1. The GC content of the type genome is 64.41 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Brevundimonas cuticiforma sp. nov.

Candidatus Brevundimonas cuticiforma (NL. fem. n. *cuticiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp005484585*. The type genome for the species is the GenBank assembly RS_GCF_005484585.1. The GC content of the type genome is 66.23 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Brevundimonas defesibula sp. nov.

Candidatus Brevundimonas defesibula (NL. fem. n. *defesibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp902506205*. The type genome for the species is the GenBank assembly RS_GCF_902506205.1. The GC content of the type genome is 66.38 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Brevundimonas dehinitudo sp. nov.

Candidatus Brevundimonas dehinitudo (NL. fem. n. *dehinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp013912005*. The type genome for the species is the GenBank assembly GCA_013912005.1. The GC content of the type genome is 71.59 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Brevundimonas desucax sp. nov.

Candidatus Brevundimonas desucax (NL. fem. n. *desucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp004210735*. The type genome for the species is the GenBank assembly GCA_004210735.1. The GC content of the type genome is 67.7 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Brevundimonas exoscetta sp. nov.

Candidatus Brevundimonas exoscetta (NL. fem. n. *exoscetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp001794825*. The type genome for the species is the GenBank assembly GCA_001794825.1. The GC content of the type genome is 70.81 % and the genome length is 2.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Brevundimonas facunimonas sp. nov.

Candidatus Brevundimonas facunimonas (NL. fem. n. *facunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp003241825*. The type genome for the species is the GenBank assembly GCA_003241995.1. The GC content of the type genome is 64.46 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Brevundimonas fetutedo sp. nov.

Candidatus Brevundimonas fetutedo (NL. fem. n. *fetutedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp004296955*. The type genome for the species is the GenBank assembly GCA_013791825.1. The GC content of the type genome is 69.49 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Brevundimonas fetutisca sp. nov.

Candidatus Brevundimonas fetutisca (NL. fem. n. *fetutisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002434505*. The type genome for the species is the GenBank assembly GCA_002294365.1. The GC content of the type genome is 67.48 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Brevundimonas fumacimonas sp. nov.

Candidatus Brevundimonas fumacimonas (NL. fem. n. *fumacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp003248925*. The type genome for the species is the GenBank assembly GCA_003248925.1. The GC content of the type genome is 69.74 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Brevundimonas gemebifica sp. nov.

Candidatus Brevundimonas gemebifica (NL. fem. n. *gemebifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp012270135*. The type genome for the species is the GenBank assembly GCA_012270135.1. The GC content of the type genome is 69.46 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Brevundimonas labecatica sp. nov.

Candidatus Brevundimonas labecatica (NL. fem. n. *labecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Brevundimonas sp013912065*. The type genome for the species is the GenBank assembly GCA_013912065.1. The GC content of the type genome is 67.1 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Brevundimonas lupanibra sp. nov.

Candidatus Brevundimonas lupanibra (NL. fem. n. *lupanibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp000335735*. The type genome for the species is the GenBank assembly RS_GCF_000335735.1. The GC content of the type genome is 66.4 % and the genome length is 3.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Little Long Lake".

Description of *Candidatus* Brevundimonas metucitas sp. nov.

Candidatus Brevundimonas metucitas (NL. fem. n. *metucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp013823285*. The type genome for the species is the GenBank assembly GCA_013823285.1. The GC content of the type genome is 68.37 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Brevundimonas milifatica sp. nov.

Candidatus Brevundimonas milifatica (NL. fem. n. *milifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp003704105*. The type genome for the species is the GenBank assembly RS_GCF_003704105.1. The GC content of the type genome is 68.44 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Brevundimonas mirifibula sp. nov.

Candidatus Brevundimonas mirifibula (NL. fem. n. *mirifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002479325*. The type genome for the species is the GenBank assembly GCA_002479325.1. The GC content of the type genome is 68.61 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Brevundimonas murelessa sp. nov.

Candidatus Brevundimonas murelessa (NL. fem. n. *murelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002343425*. The type genome for the species is the GenBank assembly GCA_002343105.1. The GC content of the type genome is 68.05 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Brevundimonas negotugo sp. nov.

Candidatus Brevundimonas negotugo (NL. fem. n. *negotugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002419815*. The type genome for the species is the GenBank assembly GCA_002419815.1. The GC content of the type genome is 62.18 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Brevundimonas nidifibra sp. nov.

Candidatus Brevundimonas nidifibra (NL. fem. n. *nidifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002002865*. The type genome for the species is the GenBank assembly RS_GCF_002002865.1. The GC content of the type genome is 68.37 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Brevundimonas nugigimonas sp. nov.

Candidatus Brevundimonas nugigimonas (NL. fem. n. *nugigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002979535*. The type genome for the species is the GenBank assembly RS_GCF_002979535.1. The GC content of the type genome is 67.08 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Brevundimonas ossucentia sp. nov.

Candidatus Brevundimonas ossucentia (NL. fem. n. *ossucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002483865*. The type genome for the species is the GenBank assembly GCA_002483865.1. The GC content of the type genome is 63.56 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Brevundimonas peracitura sp. nov.

Candidatus Brevundimonas peracitura (NL. fem. n. *peracitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002432125*. The type genome for the species is the GenBank assembly GCA_002432125.1. The GC content of the type genome is 62.25 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Brevundimonas recorago sp. nov.

Candidatus Brevundimonas recorago (NL. fem. n. *recorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp004683885*. The type genome for the species is the GenBank assembly RS_GCF_004683885.1. The GC content of the type genome is 67.76 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Brevundimonas saxifetta sp. nov.

Candidatus Brevundimonas saxifetta (NL. fem. n. *saxifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp001425945*. The type genome for the species is the GenBank assembly RS_GCF_001425945.1. The GC content of the type genome is 69.03 % and the genome length is 3.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Brevundimonas semunitura sp. nov.

Candidatus Brevundimonas semunitura (NL. fem. n. *semunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002430835*. The type genome for the species is the GenBank assembly GCA_002430835.1. The GC content of the type genome is 67.36 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Brevundimonas taraxivita sp. nov.

Candidatus Brevundimonas taraxivita (NL. fem. n. *taraxivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp006515835*. The type genome for the species is the GenBank assembly GCA_006515835.1. The GC content of the type genome is 67.53 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Brevundimonas vecoretta sp. nov.

Candidatus Brevundimonas vecoretta (NL. fem. n. *vecoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002484265*. The type genome for the species is the GenBank assembly GCA_002484265.1. The GC content of the type genome is 66.65 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Brevundimonas videlifica sp. nov.

Candidatus Brevundimonas videlifica (NL. fem. n. *videlifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002479495*. The type genome for the species is the GenBank assembly GCA_002479495.1. The GC content of the type genome is 67.46 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Brevundimonas vitigitia sp. nov.

Candidatus Brevundimonas vitigitia (NL. fem. n. *vitigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brevundimonas sp002386585*. The type genome for the species is the GenBank assembly GCA_003446915.1. The GC content of the type genome is 66.95 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Breznakia proscigena sp. nov.

Candidatus Breznakia proscigena (NL. fem. n. *proscigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Breznakia sp001695645*. The type genome for the species is the GenBank assembly RS_GCF_001695645.1. The GC content of the type genome is 37.22 % and the genome length is 2.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "swine manure storage pit".

Description of *Candidatus* Brocadia advoretta sp. nov.

Candidatus Brocadia advoretta (NL. fem. n. *advoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brocadia sp011525665*. The type genome for the species is the GenBank assembly GCA_011525665.1. The GC content of the type genome is 44.13 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Brocadia ducilitia sp. nov.

Candidatus Brocadia ducilitia (NL. fem. n. *ducilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brocadia sp007618135*. The type genome for the species is the GenBank assembly GCA_007618135.1. The GC content of the type genome is 43.18 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Brocadia semilisca sp. nov.

Candidatus Brocadia semilisca (NL. fem. n. *semilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brocadia sp013360945*. The type genome for the species is the GenBank assembly GCA_013360945.1. The GC content of the type genome is 42.35 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Brooklawnia exforatio sp. nov.

Candidatus Brooklawnia exforatio (NL. fem. n. *exforatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brooklawnia sp012517405*. The type genome for the species is the GenBank assembly GCA_012517405.1. The GC content of the type genome is 65.55 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Brooklawnia manupifica sp. nov.

Candidatus Brooklawnia manupifica (NL. fem. n. *manupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brooklawnia sp000413315*. The type genome for the species is the GenBank assembly RS_GCF_000413315.1. The GC content of the type genome is 61.37 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Brooklawnia sonivitudo sp. nov.

Candidatus Brooklawnia sonivitudo (NL. fem. n. *sonivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brooklawnia sp012517115*. The type genome for the species is the GenBank assembly GCA_012517115.1. The GC content of the type genome is 65.1 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Brumimicrobium expugitudo sp. nov.

Candidatus Brumimicrobium expugitudo (NL. fem. n. *expugitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brumimicrobium sp002734085*. The type genome for the species is the GenBank assembly GCA_002734085.1. The GC content of the type genome is 35.03 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Brumimicrobium peradiforma sp. nov.

Candidatus Brumimicrobium peradiforma (NL. fem. n. *peradiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brumimicrobium sp003143775*. The type genome for the species is the GenBank assembly RS_GCF_003143775.1. The GC content of the type genome is 35.49 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Brumimicrobium perexitura sp. nov.

Candidatus Brumimicrobium perexitura (NL. fem. n. *perexitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Brumimicrobium sp002331485*. The type genome for the species is the GenBank assembly GCA_002331485.1. The GC content of the type genome is 37.63 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Bruticola casigisca sp. nov.

Candidatus Bruticola casigisca (NL. fem. n. *casigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bruticola sp004554425*. The type genome for the species is the GenBank assembly GCA_004554425.1. The GC content of the type genome is 43.87 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Bruticola fumacitas sp. nov.

Candidatus Bruticola fumacitas (NL. fem. n. *fumacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bruticola sp900772775*. The type genome for the species is the GenBank assembly RS_GCF_900772775.1. The GC content of the type genome is 44.25 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Bruticola vitigatica sp. nov.

Candidatus Bruticola vitigatica (NL. fem. n. *vitigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bruticola sp900313515*. The type genome for the species is the GenBank assembly GCA_902764865.1. The GC content of the type genome is 49.28 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Bucelana dehonax sp. nov.

Candidatus Bucelana dehonax (NL. fem. n. *dehonax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-65-14 sp001797615*. The type genome for the species is the GenBank assembly GCA_003524035.1. The GC content of the type genome is 65.98 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Bucelana gen. nov.

Candidatus Bucelana (NL. fem. n. *Bucelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-65-14*. The type species for the genus is *Candidatus* Bucelana dehonax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MBNT15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenulaceae.

Description of *Candidatus* Bucelaria lapilitica sp. nov.

Candidatus Bucelaria lapilitica (NL. fem. n. *lapilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFUC01 sp001785575*. The type genome for the species is the GenBank assembly GCA_001785575.1. The GC content of the type genome is 37.81 % and the genome length is 0.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Bucelaria gen. nov.

Candidatus Bucelaria (NL. fem. n. *Bucelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFUC01*. The type species for the genus is *Candidatus* Bucelaria lapilitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Relaposaceae.

Description of *Candidatus* Bucelaria manomitura sp. nov.

Candidatus Bucelaria manomitura (NL. fem. n. *manomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFUC01 sp903869875*. The type genome for the species is the GenBank assembly GCA_903832115.1. The GC content of the type genome is 38.03 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Bucelella irredago sp. nov.

Candidatus Bucelella irredago (NL. fem. n. *irredago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-58-10 sp001780825*. The type genome for the species is the GenBank assembly GCA_001780825.1. The GC content of the type genome is 58.07 % and the genome length is 4.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Bucelella gen. nov.

Candidatus Bucelella (NL. fem. n. *Bucelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-58-10*. The type species for the genus is *Candidatus* Bucelella irredago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-58-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucelellaceae.

Description of *Candidatus* Bucelellaceae fam. nov.

Candidatus Bucelellaceae (NL. fem. n. *Bucelellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-58-10.* The type genus for the taxon is *Candidatus* Bucelella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-58-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucelellales.

Description of *Candidatus* Bucelellales ord. nov.

Candidatus Bucelellales (NL. fem. n. *Bucelellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-58-10.* The type genus for the taxon is *Candidatus* Bucelella .

According to the GTDB R06-RS202, this order belongs to the class *Glassbacteria*.

Description of *Candidatus* Bucelia depopago sp. nov.

Candidatus Bucelia depopago (NL. fem. n. *depopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHH01 sp013151955*. The type genome for the species is the GenBank assembly GCA_013151955.1. The GC content of the type genome is 58.75 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Bucelia gen. nov.

Candidatus Bucelia (NL. fem. n. *Bucelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHH01*. The type species for the genus is *Candidatus* Bucelia depopago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADHH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buceliaceae.

Description of *Candidatus* Buceliaceae fam. nov.

Candidatus Buceliaceae (NL. fem. n. *Buceliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADHH01.* The type genus for the taxon is *Candidatus* Bucelia .

According to GTDB R06-RS202, this family belongs to the order *Ardenticatenales*.

Description of *Candidatus* Bucelosa vitigibra sp. nov.

Candidatus Bucelosa vitigibra (NL. fem. n. *vitigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYB01 sp009693015*. The type genome for the species is the GenBank assembly GCA_009693015.1. The GC content of the type genome is 65.83 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Bucelosa gen. nov.

Candidatus Bucelosa (NL. fem. n. *Bucelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYB01*. The type species for the genus is *Candidatus* Bucelosa vitigibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucelosaceae.

Description of *Candidatus* Bucelosaceae fam. nov.

Candidatus Bucelosaceae (NL. fem. n. *Bucelosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYB01.* The type genus for the taxon is *Candidatus* Bucelosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHYB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucelosales.

Description of *Candidatus* Bucelosales ord. nov.

Candidatus Bucelosales (NL. fem. n. *Bucelosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYB01.* The type genus for the taxon is *Candidatus* Bucelosa .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Bucelula chancatica sp. nov.

Candidatus Bucelula chancatica (NL. fem. n. *chancatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJE01 sp011389165*. The type genome for the species is the GenBank assembly GCA_011389165.1. The GC content of the type genome is 49.58 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Bucelula gen. nov.

Candidatus Bucelula (NL. fem. n. *Bucelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJE01*. The type species for the genus is *Candidatus* Bucelula chancatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTJE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucelulaceae.

Description of *Candidatus* Bucelulaceae fam. nov.

Candidatus Bucelulaceae (NL. fem. n. *Bucelulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTJE01.* The type genus for the taxon is *Candidatus* Bucelula .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTJE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucelulales.

Description of *Candidatus* Bucelulales ord. nov.

Candidatus Bucelulales (NL. fem. n. *Bucelulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTJE01.* The type genus for the taxon is *Candidatus* Bucelula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubigariae.

Description of *Candidatus* Bucolana defetigena sp. nov.

Candidatus Bucolana defetigena (NL. fem. n. *defetigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUMP01 sp903900335*. The type genome for the species is the GenBank assembly GCA_903837265.1. The GC content of the type genome is 53.22 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Bucolana gen. nov.

Candidatus Bucolana (NL. fem. n. *Bucolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUMP01*. The type species for the genus is *Candidatus* Bucolana defetigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1295*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Antegiaceae.

Description of *Candidatus* Bucolaria giganitia sp. nov.

Candidatus Bucolaria giganitia (NL. fem. n. *giganitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5435 sp002426645*. The type genome for the species is the GenBank assembly GCA_002426645.1. The GC content of the type genome is 39.46 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Bucolaria gen. nov.

Candidatus Bucolaria (NL. fem. n. *Bucolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5435*. The type species for the genus is *Candidatus* Bucolaria giganitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5435*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucolariaceae.

Description of *Candidatus* Bucolariaceae fam. nov.

Candidatus Bucolariaceae (NL. fem. n. *Bucolariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5435.* The type genus for the taxon is *Candidatus* Bucolaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5435*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolariales.

Description of *Candidatus* Bucolariales ord. nov.

Candidatus Bucolariales (NL. fem. n. *Bucolariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5435.* The type genus for the taxon is *Candidatus* Bucolaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA5435*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bucolariae.

Description of *Candidatus* Bucolariae class. nov.

Candidatus Bucolariae (NL. fem. n. *c__Bucolariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5435.* The type genus for the taxon is *Candidatus* Bucolaria .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_G*.

Description of *Candidatus* Bucolella optumitas sp. nov.

Candidatus Bucolella optumitas (NL. fem. n. *optumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12545 sp013167955*. The type genome for the species is the GenBank assembly RS_GCF_013167955.1. The GC content of the type genome is 57.15 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Bucolella gen. nov.

Candidatus Bucolella (NL. fem. n. *Bucolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12545*. The type species for the genus is *Candidatus* Bucolella optumitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bucolella satacago sp. nov.

Candidatus Bucolella satacago (NL. fem. n. *satacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12545 sp003509545*. The type genome for the species is the GenBank assembly GCA_001508035.1. The GC content of the type genome is 59.52 % and the genome length is 1.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample K2".

Description of *Candidatus* Bucolia desuriforma sp. nov.

Candidatus Bucolia desuriforma (NL. fem. n. *desuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMWE01 sp903845115*. The type genome for the species is the GenBank assembly GCA_903877375.1. The GC content of the type genome is 69.88 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Bucolia gen. nov.

Candidatus Bucolia (NL. fem. n. *Bucolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMWE01*. The type species for the genus is *Candidatus* Bucolia desuriforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenebosaceae.

Description of *Candidatus* Bucolida codifax sp. nov.

Candidatus Bucolida codifax (NL. fem. n. *codifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1006 sp003151655*. The type genome for the species is the GenBank assembly GCA_003151655.1. The GC content of the type genome is 50.86 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Bucolida gen. nov.

Candidatus Bucolida (NL. fem. n. *Bucolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1006*. The type species for the genus is *Candidatus* Bucolida codifax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bucolida crabricula sp. nov.

Candidatus Bucolida crabricula (NL. fem. n. *crabricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1006 sp009773615*. The type genome for the species is the GenBank assembly GCA_009773615.1. The GC content of the type genome is 54.85 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Bucolida holovugo sp. nov.

Candidatus Bucolida holovugo (NL. fem. n. *holovugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1006 sp903876625*. The type genome for the species is the GenBank assembly GCA_903958425.1. The GC content of the type genome is 46.67 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Bucolida intoratio sp. nov.

Candidatus Bucolida intoratio (NL. fem. n. *intoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1006 sp004297065*. The type genome for the species is the GenBank assembly GCA_004297065.1. The GC content of the type genome is 56.95 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Bucolida malivimonas sp. nov.

Candidatus Bucolida malivimonas (NL. fem. n. *malivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1006 sp903913145*. The type genome for the species is the GenBank assembly GCA_903944825.1. The GC content of the type genome is 46.59 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Bucolosa ascenivita sp. nov.

Candidatus Bucolosa ascenivita (NL. fem. n. *ascenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM507 sp002869265*. The type genome for the species is the GenBank assembly GCA_002869265.1. The GC content of the type genome is 35.47 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Bucolosa gen. nov.

Candidatus Bucolosa (NL. fem. n. *Bucolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM507*. The type species for the genus is *Candidatus* Bucolosa ascenivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucolosaceae.

Description of *Candidatus* Bucolosaceae fam. nov.

Candidatus Bucolosaceae (NL. fem. n. *Bucolosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *BM507*. The type genus for the taxon is *Candidatus* Bucolosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Bucolosales ord. nov.

Candidatus Bucolosales (NL. fem. n. *Bucolosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM507*. The type genus for the taxon is *Candidatus* Bucolosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Bucolula lanigicella sp. nov.

Candidatus Bucolula lanigicella (NL. fem. n. *lanigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1400 sp002305125*. The type genome for the species is the GenBank assembly GCA_002305125.1. The GC content of the type genome is 36.8 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Bucolula gen. nov.

Candidatus Bucolula (NL. fem. n. *Bucolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1400*. The type species for the genus is *Candidatus* Bucolula lanigicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucolulaceae.

Description of *Candidatus* Bucolulaceae fam. nov.

Candidatus Bucolulaceae (NL. fem. n. *Bucolulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1400.* The type genus for the taxon is *Candidatus* Bucolula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Bucolulales ord. nov.

Candidatus Bucolulales (NL. fem. n. *Bucolulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1400.* The type genus for the taxon is *Candidatus* Bucolula .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Bugilana resacatica sp. nov.

Candidatus Bugilana resacatica (NL. fem. n. *resacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VUNA01 sp002299625*. The type genome for the species is the GenBank assembly GCA_002299625.1. The GC content of the type genome is 50.85 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Bugilana gen. nov.

Candidatus Bugilana (NL. fem. n. *Bugilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VUNA01*. The type species for the genus is *Candidatus* Bugilana resacatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bugilaria nugivitrix sp. nov.

Candidatus Bugilaria nugivitrix (NL. fem. n. *nugivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-47-17b sp001793865*. The type genome for the species is the

GenBank assembly GCA_001793815.1. The GC content of the type genome is 47.43 % and the genome length is 0.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Bugilaria gen. nov.

Candidatus Bugilaria (NL. fem. n. *Bugilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-47-17b*. The type species for the genus is *Candidatus* Bugilaria nugivitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9933*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capilanaceae.

Description of *Candidatus* Bugilella bipalicella sp. nov.

Candidatus Bugilella bipalicella (NL. fem. n. *bipalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3567 sp002376045*. The type genome for the species is the GenBank assembly GCA_002376045.1. The GC content of the type genome is 39.47 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Bugilella gen. nov.

Candidatus Bugilella (NL. fem. n. *Bugilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3567*. The type species for the genus is *Candidatus* Bugilella bipalicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3567*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bugilellaceae.

Description of *Candidatus* Bugilellaceae fam. nov.

Candidatus Bugilellaceae (NL. fem. n. *Bugilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3567*. The type genus for the taxon is *Candidatus* Bugilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3567*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bugilellales.

Description of *Candidatus* Bugilellales ord. nov.

Candidatus Bugilellales (NL. fem. n. *Bugilellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3567*. The type genus for the taxon is *Candidatus* Bugilella .

According to the GTDB R06-RS202, this order belongs to the class *Thermosediminibacteria*.

Description of *Candidatus* Bugilia dececitia sp. nov.

Candidatus Bugilia dececitia (NL. fem. n. *dececitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Syner-03 sp002316795*. The type genome for the species is the GenBank assembly GCA_002397955.1. The GC content of the type genome is 50.39 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Bugilia gen. nov.

Candidatus Bugilia (NL. fem. n. *Bugilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Syner-03*. The type species for the genus is *Candidatus* Bugilia dececitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bugilia decucentia sp. nov.

Candidatus Bugilia decucentia (NL. fem. n. *decucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Syner-03 sp002839185*. The type genome for the species is the GenBank assembly GCA_002839185.1. The GC content of the type genome is 46.53 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Bugilia dehisilenta sp. nov.

Candidatus Bugilia dehisilenta (NL. fem. n. *dehisilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Syner-03 sp012728505*. The type genome for the species is the GenBank assembly GCA_012728505.1. The GC content of the type genome is 43.84 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Bugilia denavilega sp. nov.

Candidatus Bugilia denavilega (NL. fem. n. *denavilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Syner-03 sp002428495*. The type genome for the species is the GenBank assembly GCA_003452235.1. The GC content of the type genome is 47.99 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Bugilia intabago sp. nov.

Candidatus Bugilia intabago (NL. fem. n. *intabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Syner-03 sp012513245*. The type genome for the species is the GenBank assembly GCA_012513245.1. The GC content of the type genome is 45.77 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Bugilia intacedo sp. nov.

Candidatus Bugilia intacedo (NL. fem. n. *intacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Syner-03 sp012727545*. The type genome for the species is the GenBank assembly GCA_012727545.1. The GC content of the type genome is 47.47 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Bugilia solivivita sp. nov.

Candidatus Bugilia solivivita (NL. fem. n. *solivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Syner-03 sp002306075*. The type genome for the species is the GenBank assembly GCA_012520335.1. The GC content of the type genome is 52.23 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Bugilida rudicimonia sp. nov.

Candidatus Bugilida rudicimonia (NL. fem. n. *rudicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-46-15 sp002772575*. The type genome for the species is the GenBank assembly GCA_002772575.1. The GC content of the type genome is 35.31 % and the genome length is 0.37 Mbp.

Description of *Candidatus* Bugilida gen. nov.

Candidatus Bugilida (NL. fem. n. *Bugilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-46-15*. The type species for the genus is *Candidatus* Bugilida rudicimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-46-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bugilidaceae.

Description of *Candidatus* Bugilidaceae fam. nov.

Candidatus Bugilidaceae (NL. fem. n. *Bugilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-46-15.* The type genus for the taxon is *Candidatus* Bugilida .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Bugilida siligousia sp. nov.

Candidatus Bugilida siligousia (NL. fem. n. *siligousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-46-15 sp001823105*. The type genome for the species is the GenBank assembly GCA_001823105.1. The GC content of the type genome is 46.48 % and the genome length is 0.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Bugilosa admutivita sp. nov.

Candidatus Bugilosa admutivita (NL. fem. n. *admutivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1712 sp902778165*. The type genome for the species is the GenBank assembly GCA_902778165.1. The GC content of the type genome is 42.49 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Bugilosa gen. nov.

Candidatus Bugilosa (NL. fem. n. *Bugilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1712*. The type species for the genus is *Candidatus* Bugilosa admutivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bugilosa amfititica sp. nov.

Candidatus Bugilosa amfititica (NL. fem. n. *amfititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1712 sp002317175*. The type genome for the species is the GenBank assembly GCA_002317175.1. The GC content of the type genome is 38.24 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Bugilosa appugilega sp. nov.

Candidatus Bugilosa appugilega (NL. fem. n. *appugilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1712 sp902783735*. The type genome for the species is the GenBank assembly GCA_902783735.1. The GC content of the type genome is 41.86 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Bugilosa bipenifica sp. nov.

Candidatus Bugilosa bipenifica (NL. fem. n. *bipenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1712 sp002393095*. The type genome for the species is the GenBank assembly GCA_002393095.1. The GC content of the type genome is 45.48 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Bugilosa depupigena sp. nov.

Candidatus Bugilosa depupigena (NL. fem. n. *depupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1712 sp002317245*. The type genome for the species is the GenBank assembly GCA_002317245.1. The GC content of the type genome is 42.07 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Bugilosa devecimonas sp. nov.

Candidatus Bugilosa devecimonas (NL. fem. n. *devecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1712 sp902789785*. The type genome for the species is the GenBank assembly GCA_902789785.1. The GC content of the type genome is 41.68 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Bugilosa homicigena sp. nov.

Candidatus Bugilosa homicigena (NL. fem. n. *homicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1712 sp900766815*. The type genome for the species is the GenBank assembly RS_GCF_900766815.1. The GC content of the type genome is 44.18 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Bugilosa lucubitrix sp. nov.

Candidatus Bugilosa lucubitrix (NL. fem. n. *lucubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1712 sp902779505*. The type genome for the species is the GenBank assembly GCA_902779505.1. The GC content of the type genome is 42.45 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Bugilula duponiforma sp. nov.

Candidatus Bugilula duponiforma (NL. fem. n. *duponiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-492 sp000434015*. The type genome for the species is the GenBank assembly GCA_000434015.1. The GC content of the type genome is 25.87 % and the genome length is 1.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Bugilula gen. nov.

Candidatus Bugilula (NL. fem. n. *Bugilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-492*. The type species for the genus is *Candidatus* Bugilula duponiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Bugilula forinicella sp. nov.

Candidatus Bugilula forinicella (NL. fem. n. *forinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-492 sp900557195*. The type genome for the species is the GenBank assembly GCA_900557195.1. The GC content of the type genome is 26.26 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Bugilula ingigibra sp. nov.

Candidatus Bugilula ingigibra (NL. fem. n. *ingigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-492 sp900557045*. The type genome for the species is the GenBank assembly GCA_900557045.1. The GC content of the type genome is 26.9 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Bugilula mavorastra sp. nov.

Candidatus Bugilula mavorastra (NL. fem. n. *mavorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-492 sp000434335*. The type genome for the species is the GenBank assembly GCA_900551575.1. The GC content of the type genome is 27.2 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Bugilula pimenitura sp. nov.

Candidatus Bugilula pimenitura (NL. fem. n. *pimenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-492 sp002633185*. The type genome for the species is the GenBank assembly GCA_002633185.1. The GC content of the type genome is 28.87 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Bugilula selecifica sp. nov.

Candidatus Bugilula selecifica (NL. fem. n. *selecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-492 sp900553225*. The type genome for the species is the GenBank assembly GCA_900553225.1. The GC content of the type genome is 27.28 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Bulaparia adtacitrix sp. nov.

Candidatus Bulaparia adtacitrix (NL. fem. n. *adtacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1723 sp002317115*. The type genome for the species is the GenBank assembly GCA_002317115.1. The GC content of the type genome is 41.42 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Bulaparia gen. nov.

Candidatus Bulaparia (NL. fem. n. *Bulaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1723*. The type species for the genus is *Candidatus* Bulaparia adtacitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bulaparia colutax sp. nov.

Candidatus Bulaparia colutax (NL. fem. n. *colutax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1723 sp002371265*. The type genome for the species is the GenBank assembly GCA_002371265.1. The GC content of the type genome is 40.79 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Bulaparia infunilenta sp. nov.

Candidatus Bulaparia infunilenta (NL. fem. n. *infunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1723 sp902782665*. The type genome for the species is the GenBank assembly GCA_902782665.1. The GC content of the type genome is 40.49 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Bulaparia rumifatio sp. nov.

Candidatus Bulaparia rumifatio (NL. fem. n. *rumifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1723 sp002392915*. The type genome for the species is the GenBank assembly GCA_002449735.1. The GC content of the type genome is 40.92 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Bulapella paralifica sp. nov.

Candidatus Bulapella paralifica (NL. fem. n. *paralifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG334 sp900317935*. The type genome for the species is the GenBank assembly GCA_902787505.1. The GC content of the type genome is 35.03 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Bulapella gen. nov.

Candidatus Bulapella (NL. fem. n. *Bulapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG334*. The type species for the genus is *Candidatus* Bulapella paralifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Bulapia paraciforma sp. nov.

Candidatus Bulapia paraciforma (NL. fem. n. *paraciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-147 sp003152355*. The type genome for the species is the GenBank assembly GCA_003152355.1. The GC content of the type genome is 57.5 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Bulapia gen. nov.

Candidatus Bulapia (NL. fem. n. *Bulapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-147*. The type species for the genus is *Candidatus* Bulapia

paraciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Bulapia siticastra sp. nov.

Candidatus Bulapia siticastra (NL. fem. n. *siticastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-147 sp013286465*. The type genome for the species is the GenBank assembly GCA_013286465.1. The GC content of the type genome is 57.57 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Bulapida medimifica sp. nov.

Candidatus Bulapida medimifica (NL. fem. n. *medimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12135 sp003497555*. The type genome for the species is the GenBank assembly GCA_003497555.1. The GC content of the type genome is 41.53 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Bulapida gen. nov.

Candidatus Bulapida (NL. fem. n. *Bulapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12135*. The type species for the genus is *Candidatus* Bulapida medimifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bulapidaceae.

Description of *Candidatus* Bulapidaceae fam. nov.

Candidatus Bulapidaceae (NL. fem. n. *Bulapidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA12135.* The type genus for the taxon is *Candidatus* Bulapida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA12135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bulapidales.

Description of *Candidatus* Bulapidales ord. nov.

Candidatus Bulapidales (NL. fem. n. *Bulapidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12135.* The type genus for the taxon is *Candidatus* Bulapida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA12135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bulapidae.

Description of *Candidatus* Bulapidae class. nov.

Candidatus Bulapidae (NL. fem. n. *c__Bulapidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12135.* The type genus for the taxon is *Candidatus* Bulapida .

According to GTDB R06-RS202, this class belongs to the phylum *Spirochaetota*.

Description of *Candidatus* Bulaposa sonabimonia sp. nov.

Candidatus Bulaposa sonabimonia (NL. fem. n. *sonabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVXK01 sp011773515*. The type genome for the species is the GenBank assembly GCA_011773515.1. The GC content of the type genome is 55.31 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Bulaposa gen. nov.

Candidatus Bulaposa (NL. fem. n. *Bulaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVXK01*. The type species for the genus is *Candidatus* Bulaposa sonabimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J040*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detorariaceae.

Description of *Candidatus* Bulapula cacomastra sp. nov.

Candidatus Bulapula cacomastra (NL. fem. n. *cacomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYLI01 sp009695465*. The type genome for the species is the GenBank assembly GCA_009695365.1. The GC content of the type genome is 62.08 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Bulapula gen. nov.

Candidatus Bulapula (NL. fem. n. *Bulapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYLI01*. The type species for the genus is *Candidatus* Bulapula cacomastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1100*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turilanaceae.

Description of *Candidatus* Bulapula decunitia sp. nov.

Candidatus Bulapula decunitia (NL. fem. n. *decunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYLI01 sp005809105*. The type genome for the species is the GenBank assembly GCA_005777705.1. The GC content of the type genome is 64.67 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Bulleidia annicifica sp. nov.

Candidatus Bulleidia annicifica (NL. fem. n. *annicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bulleidia sp902761625*. The type genome for the species is the GenBank assembly GCA_902761625.1. The GC content of the type genome is 48.44 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Bulleidia benematica sp. nov.

Candidatus Bulleidia benematica (NL. fem. n. *benematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp009929095*. The type genome for the species is the GenBank assembly GCA_009929095.1. The GC content of the type genome is 44.58 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Bulleidia carunetta sp. nov.

Candidatus Bulleidia carunetta (NL. fem. n. *carunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp003446295*. The type genome for the species is the GenBank assembly GCA_902766025.1. The GC content of the type genome is 47.77 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Bulleidia catafivita sp. nov.

Candidatus Bulleidia catafivita (NL. fem. n. *catafivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp900319505*. The type genome for the species is the GenBank assembly GCA_900314075.1. The GC content of the type genome is 46.95 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Bulleidia cemenitoga sp. nov.

Candidatus Bulleidia cemenitoga (NL. fem. n. *cemenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902782955*. The type genome for the species is the GenBank assembly GCA_902782955.1. The GC content of the type genome is 48.93 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Bulleidia cimitivita sp. nov.

Candidatus Bulleidia cimitivita (NL. fem. n. *cimitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp900320455*. The type genome for the species is the GenBank assembly GCA_902760085.1. The GC content of the type genome is 49.13 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Bulleidia detunatio sp. nov.

Candidatus Bulleidia detunatio (NL. fem. n. *detunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp900314345*. The type genome for the species is the GenBank assembly GCA_900314345.1. The GC content of the type genome is 49.96 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Bulleidia disidisca sp. nov.

Candidatus Bulleidia disidisca (NL. fem. n. *disidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902775735*. The type genome for the species is the GenBank assembly GCA_902773855.1. The GC content of the type genome is 50.27 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Bulleidia ecastilenta sp. nov.

Candidatus Bulleidia ecastilenta (NL. fem. n. *ecastilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902795905*. The type genome for the species is the GenBank assembly GCA_902795905.1. The GC content of the type genome is 49.63 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Bulleidia ensicigena sp. nov.

Candidatus Bulleidia ensicigena (NL. fem. n. *ensicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902766005*. The type genome for the species is the GenBank assembly GCA_902766005.1. The GC content of the type genome is 40.7 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Bulleidia episcetta sp. nov.

Candidatus Bulleidia episcetta (NL. fem. n. *episcetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902778375*. The type genome for the species is the GenBank assembly GCA_902778375.1. The GC content of the type genome is 50.44 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Bulleidia ermelimonas sp. nov.

Candidatus Bulleidia ermelimonas (NL. fem. n. *ermelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902797775*. The type genome for the species is the GenBank assembly GCA_902797775.1. The GC content of the type genome is 34.18 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Bulleidia eviscisca sp. nov.

Candidatus Bulleidia eviscisca (NL. fem. n. *eviscisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902766435*. The type genome for the species is the GenBank assembly GCA_902766435.1. The GC content of the type genome is 47.63 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Bulleidia halucibula sp. nov.

Candidatus Bulleidia halucibula (NL. fem. n. *halucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bulleidia sp900539965*. The type genome for the species is the GenBank assembly RS_GCF_900759745.1. The GC content of the type genome is 35.71 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Bulleidia hibisessa sp. nov.

Candidatus Bulleidia hibisessa (NL. fem. n. *hibisessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp000701725*. The type genome for the species is the GenBank assembly GCA_902785015.1. The GC content of the type genome is 49.21 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Bulleidia immusetta sp. nov.

Candidatus Bulleidia immusetta (NL. fem. n. *immusetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902796465*. The type genome for the species is the GenBank assembly GCA_902796465.1. The GC content of the type genome is 48.43 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Bulleidia inexpitica sp. nov.

Candidatus Bulleidia inexpitica (NL. fem. n. *inexpitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902766675*. The type genome for the species is the GenBank assembly GCA_902766675.1. The GC content of the type genome is 33.54 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Bulleidia inpuditoga sp. nov.

Candidatus Bulleidia inpuditoga (NL. fem. n. *inpuditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp012516665*. The type genome for the species is the GenBank assembly GCA_012516665.1. The GC content of the type genome is 44.65 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Bulleidia latibilega sp. nov.

Candidatus Bulleidia latibilega (NL. fem. n. *latibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp903789495*. The type genome for the species is the GenBank assembly GCA_903789515.1. The GC content of the type genome is 56.92 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Bulleidia lucubibra sp. nov.

Candidatus Bulleidia lucubibra (NL. fem. n. *lucubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp900314905*. The type genome for the species is the GenBank assembly GCA_900314905.1. The GC content of the type genome is 50.59 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Bulleidia ornititrix sp. nov.

Candidatus Bulleidia ornititrix (NL. fem. n. *ornititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp900554555*. The type genome for the species is the GenBank assembly GCA_900554555.1. The GC content of the type genome is 37.35 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Bulleidia pedepentia sp. nov.

Candidatus Bulleidia pedepentia (NL. fem. n. *pedepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp900315225*. The type genome for the species is the GenBank assembly GCA_902772595.1. The GC content of the type genome is 46.15 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Bulleidia refinago sp. nov.

Candidatus Bulleidia refinago (NL. fem. n. *refinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp900770275*. The type genome for the species is the GenBank assembly RS_GCF_900770275.1. The GC content of the type genome is 51.05 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Bulleidia regigugo sp. nov.

Candidatus Bulleidia regigugo (NL. fem. n. *regigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp002372175*. The type genome for the species is the GenBank assembly GCA_002372175.1. The GC content of the type genome is 49.19 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Bulleidia rubefastra sp. nov.

Candidatus Bulleidia rubefastra (NL. fem. n. *rubefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp900315065*. The type genome for the species is the GenBank assembly GCA_902794845.1. The GC content of the type genome is 44.54 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Bulleidia semiligena sp. nov.

Candidatus Bulleidia semiligena (NL. fem. n. *semiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902784015*. The type genome for the species is the GenBank assembly GCA_902784015.1. The GC content of the type genome is 30.26 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Bulleidia senipitia sp. nov.

Candidatus Bulleidia senipitia (NL. fem. n. *senipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Bulleidia sp902793635*. The type genome for the species is the GenBank assembly GCA_902793635.1. The GC content of the type genome is 50.23 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Bulleidia tabifitas sp. nov.

Candidatus Bulleidia tabifitas (NL. fem. n. *tabifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bulleidia sp902786245*. The type genome for the species is the GenBank assembly GCA_902786245.1. The GC content of the type genome is 49.9 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Burkholderia butubitas sp. nov.

Candidatus Burkholderia butubitas (NL. fem. n. *butubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp004343775*. The type genome for the species is the GenBank assembly RS_GCF_004343775.1. The GC content of the type genome is 67.15 % and the genome length is 8.59 Mbp.

Description of *Candidatus* Burkholderia cementas sp. nov.

Candidatus Burkholderia cementas (NL. fem. n. *cementas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp003853705*. The type genome for the species is the GenBank assembly RS_GCF_003853705.1. The GC content of the type genome is 66.63 % and the genome length is 8.09 Mbp.

Description of *Candidatus* Burkholderia colipedo sp. nov.

Candidatus Burkholderia colipedo (NL. fem. n. *colipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp003853415*. The type genome for the species is the GenBank assembly RS_GCF_003853425.1. The GC content of the type genome is 66.68 % and the genome length is 7.89 Mbp.

Description of *Candidatus* Burkholderia delacatica sp. nov.

Candidatus Burkholderia delacatica (NL. fem. n. *delacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp003854275*. The type genome for the species is the GenBank assembly RS_GCF_003854275.1. The GC content of the type genome is 65.74 % and the genome length is 8.16 Mbp.

Description of *Candidatus* Burkholderia denigax sp. nov.

Candidatus Burkholderia denigax (NL. fem. n. *denigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp000949135*. The type genome for the species is the GenBank assembly RS_GCF_000949135.2. The GC content of the type genome is 66.88 % and the genome length is 7.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root nodule from Rubber Plantation".

Description of *Candidatus* Burkholderia deparibula sp. nov.

Candidatus Burkholderia deparibula (NL. fem. n. *deparibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp902833145*. The type genome for the species is the GenBank assembly RS_GCF_902833175.1. The GC content of the type genome is 67.05 % and the genome length is 7.5 Mbp.

Description of *Candidatus* Burkholderia disidetta sp. nov.

Candidatus Burkholderia disidetta (NL. fem. n. *disidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp902833225*. The type genome for the species is the GenBank assembly RS_GCF_902833225.1. The GC content of the type genome is 66.7 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Burkholderia hibisimonia sp. nov.

Candidatus Burkholderia hibisimonia (NL. fem. n. *hibisimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp013403875*. The type genome for the species is the GenBank assembly RS_GCF_013403875.1. The GC content of the type genome is 66.59 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Burkholderia intenitia sp. nov.

Candidatus Burkholderia intenitia (NL. fem. n. *intenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp003635165*. The type genome for the species is the GenBank assembly RS_GCF_003635165.1. The GC content of the type genome is 66.23 % and the genome length is 7.79 Mbp.

Description of *Candidatus* Burkholderia invigiforma sp. nov.

Candidatus Burkholderia invigiforma (NL. fem. n. *invigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp001522865*. The type genome for the species is the GenBank assembly RS_GCF_001522865.1. The GC content of the type genome is 63.8 % and the genome length is 5.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Burkholderia lugubugo sp. nov.

Candidatus Burkholderia lugubugo (NL. fem. n. *lugubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp001524625*. The type genome for the species is the GenBank assembly RS_GCF_001524585.1. The GC content of the type genome is 67.14 % and the genome length is 7.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Burkholderia minuritica sp. nov.

Candidatus Burkholderia minuritica (NL. fem. n. *minuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp000687455*. The type genome for the species is the GenBank assembly RS_GCF_000687455.2. The GC content of the type genome is 66.52 % and the genome length is 5.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "wet tropical forest soil".

Description of *Candidatus* Burkholderia nosocibula sp. nov.

Candidatus Burkholderia nosocibula (NL. fem. n. *nosocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp002223185*. The type genome for the species is the GenBank assembly RS_GCF_001541445.1. The GC content of the type genome is 65.68 % and the genome length is 8.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "agricultural soil".

Description of *Candidatus* Burkholderia octipilega sp. nov.

Candidatus Burkholderia octipilega (NL. fem. n. *octipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp011605345*. The type genome for the species is the GenBank assembly RS_GCF_011605345.1. The GC content of the type genome is 66.36 % and the genome length is 8.7 Mbp.

Description of *Candidatus* Burkholderia perabax sp. nov.

Candidatus Burkholderia perabax (NL. fem. n. *perabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp902833045*. The type genome for the species is the GenBank assembly RS_GCF_902833045.1. The GC content of the type genome is 66.26 % and the genome length is 7.75 Mbp.

Description of *Candidatus* Burkholderia pinacimonia sp. nov.

Candidatus Burkholderia pinacimonia (NL. fem. n. *pinacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Burkholderia sp001522585*. The type genome for the species is the GenBank assembly RS_GCF_000504665.1. The GC content of the type genome is 66.89 % and the genome length is 7.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Burkholderia vavasatica sp. nov.

Candidatus Burkholderia vavasatica (NL. fem. n. *vavasatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Burkholderia sp003853645*. The type genome for the species is the GenBank assembly RS_GCF_003853645.1. The GC content of the type genome is 65.88 % and the genome length is 8.38 Mbp.

Description of *Candidatus* Buttiauxella admulousia sp. nov.

Candidatus Buttiauxella admulousia (NL. fem. n. *admulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Buttiauxella sp006376615*. The type genome for the species is the GenBank assembly RS_GCF_006376615.1. The GC content of the type genome is 49.12 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Buttiauxella apporedo sp. nov.

Candidatus Buttiauxella apporedo (NL. fem. n. *apporedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Buttiauxella sp014189855*. The type genome for the species is the GenBank assembly RS_GCF_014189855.1. The GC content of the type genome is 50.31 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Buttiauxella direpitura sp. nov.

Candidatus Buttiauxella direpitura (NL. fem. n. *direpitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Buttiauxella sp002321695*. The type genome for the species is the GenBank assembly RS_GCF_003628475.1. The GC content of the type genome is 54.91

% and the genome length is 4.13 Mbp.

Description of *Candidatus* Butubana catobimonia sp. nov.

Candidatus Butubana catobimonia (NL. fem. n. *catobimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902563105*. The type genome for the species is the GenBank assembly GCA_902515955.1. The GC content of the type genome is 34.41 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Butubana gen. nov.

Candidatus Butubana (NL. fem. n. *Butubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MEDG-81*. The type species for the genus is *Candidatus* Butubana catobimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AG-339-G14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Seposariaceae.

Description of *Candidatus* Butubana cicilibula sp. nov.

Candidatus Butubana cicilibula (NL. fem. n. *cicilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp003279605*. The type genome for the species is the GenBank assembly GCA_902559765.1. The GC content of the type genome is 34.16 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Butubana conamastra sp. nov.

Candidatus Butubana conamastra (NL. fem. n. *conamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902561325*. The type genome for the species is the GenBank assembly GCA_902561325.1. The GC content of the type genome is 34.07 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Butubana conopitas sp. nov.

Candidatus Butubana conopitas (NL. fem. n. *conopitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902625415*. The type genome for the species is the GenBank assembly GCA_902625415.1. The GC content of the type genome is 34.83 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Butubana cosigiforma sp. nov.

Candidatus Butubana cosigiforma (NL. fem. n. *cosigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902632605*. The type genome for the species is the GenBank assembly GCA_902632605.1. The GC content of the type genome is 34.41 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Butubana defetitudo sp. nov.

Candidatus Butubana defetitudo (NL. fem. n. *defetitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902514765*. The type genome for the species is the GenBank assembly GCA_902514765.1. The GC content of the type genome is 34.66 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Butubana denupimonia sp. nov.

Candidatus Butubana denupimonia (NL. fem. n. *denupimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp003213595*. The type genome for the species is the GenBank assembly GCA_902574945.1. The GC content of the type genome is 34.8 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Butubana divolibula sp. nov.

Candidatus Butubana divolibula (NL. fem. n. *divolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902540995*. The type genome for the species is the GenBank assembly GCA_902613685.1. The GC content of the type genome is 34.93 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Butubana hirudatica sp. nov.

Candidatus Butubana hirudatica (NL. fem. n. *hirudatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp003331625*. The type genome for the species is the GenBank assembly GCA_902514675.1. The GC content of the type genome is 33.82 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Butubana indepivita sp. nov.

Candidatus Butubana indepivita (NL. fem. n. *indepivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902595715*. The type genome for the species is the GenBank assembly GCA_902595715.1. The GC content of the type genome is 34.53 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Butubana inremitio sp. nov.

Candidatus Butubana inremitio (NL. fem. n. *inremitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902629465*. The type genome for the species is the GenBank assembly GCA_902629465.1. The GC content of the type genome is 34.79 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Butubana maligisca sp. nov.

Candidatus Butubana maligisca (NL. fem. n. *maligisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MEDG-81 sp902587545*. The type genome for the species is the GenBank assembly GCA_902587545.1. The GC content of the type genome is 34.96 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Butubana prognicella sp. nov.

Candidatus Butubana prognicella (NL. fem. n. *prognicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp002689405*. The type genome for the species is the GenBank assembly GCA_002689405.1. The GC content of the type genome is 34.71 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Butubana senacugo sp. nov.

Candidatus Butubana senacugo (NL. fem. n. *senacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902514645*. The type genome for the species is the GenBank assembly GCA_902514645.1. The GC content of the type genome is 34.48 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Butubana sonipicella sp. nov.

Candidatus Butubana sonipicella (NL. fem. n. *sonipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEDG-81 sp902627595*. The type genome for the species is the GenBank assembly GCA_902593265.1. The GC content of the type genome is 34.17 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Butubaria cacopilenta sp. nov.

Candidatus Butubaria cacopilenta (NL. fem. n. *cacopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1255 sp902782885*. The type genome for the species is the GenBank assembly GCA_902803045.1. The GC content of the type genome is 57.66 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Butubaria gen. nov.

Candidatus Butubaria (NL. fem. n. *Butubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1255*. The type species for the genus is *Candidatus* Butubaria cacopilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1255*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Butubariaceae.

Description of *Candidatus* Butubariaceae fam. nov.

Candidatus Butubariaceae (NL. fem. n. *Butubariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1255.* The type genus for the taxon is *Candidatus* Butubaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1212*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fatifosales.

Description of *Candidatus* Butubaria irrevifica sp. nov.

Candidatus Butubaria irrevifica (NL. fem. n. *irrevifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1255 sp002308795*. The type genome for the species is the GenBank assembly GCA_002308795.1. The GC content of the type genome is 50.83 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Butubaria orgetibula sp. nov.

Candidatus Butubaria orgetibula (NL. fem. n. *orgetibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1255 sp902796205*. The type genome for the species is the GenBank assembly GCA_902796205.1. The GC content of the type genome is 55.17 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Butubella cilotousia sp. nov.

Candidatus Butubella cilotousia (NL. fem. n. *cilotousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSAR01 sp011046405*. The type genome for the species is the GenBank assembly GCA_011046405.1. The GC content of the type genome is 59.88 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Butubella gen. nov.

Candidatus Butubella (NL. fem. n. *Butubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSAR01*. The type species for the genus is *Candidatus* Butubella cilotousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B4-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubulaceae.

Description of *Candidatus* Butubia adtumitrix sp. nov.

Candidatus Butubia adtumitrix (NL. fem. n. *adtumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILAF01 sp903841915*. The type genome for the species is the GenBank assembly GCA_903841915.1. The GC content of the type genome is 37.95 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Butubia gen. nov.

Candidatus Butubia (NL. fem. n. *Butubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILAF01*. The type species for the genus is *Candidatus* Butubia adtumitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Butubia dibucousia sp. nov.

Candidatus Butubia dibucousia (NL. fem. n. *dibucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILAF01 sp903881425*. The type genome for the species is the GenBank assembly GCA_903881425.1. The GC content of the type genome is 34.38 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Butubia legifica sp. nov.

Candidatus Butubia legifica (NL. fem. n. *legifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILAF01 sp903870685*. The type genome for the species is the GenBank assembly GCA_903870685.1. The GC content of the type genome is 33.5 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Butubia milipigena sp. nov.

Candidatus Butubia milipigena (NL. fem. n. *milipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILAF01 sp903884185*. The type genome for the species is the GenBank assembly GCA_903884185.1. The GC content of the type genome is 41.22 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Butubia semibitoga sp. nov.

Candidatus Butubia semibitoga (NL. fem. n. *semibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILAF01 sp903830285*. The type genome for the species is the GenBank assembly GCA_903830285.1. The GC content of the type genome is 37.61 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Butubia semunax sp. nov.

Candidatus Butubia semunax (NL. fem. n. *semunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILAF01 sp903832075*. The type genome for the species is the GenBank assembly GCA_903832075.1. The GC content of the type genome is 32.2 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Butubia telefedo sp. nov.

Candidatus Butubia telefedo (NL. fem. n. *telefedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILAF01 sp903904335*. The type genome for the species is the GenBank assembly GCA_903904335.1. The GC content of the type genome is 36.7 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Butubida agnomicella sp. nov.

Candidatus Butubida agnomicella (NL. fem. n. *agnomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9410 sp012961035*. The type genome for the species is the GenBank assembly GCA_012961035.1. The GC content of the type genome is 68.6 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Butubida gen. nov.

Candidatus Butubida (NL. fem. n. *Butubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9410*. The type species for the genus is *Candidatus* Butubida agnomicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MedAcidi-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamidaceae.

Description of *Candidatus* Butubida antomessa sp. nov.

Candidatus Butubida antomessa (NL. fem. n. *antomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9410 sp002714485*. The type genome for the species is the GenBank assembly GCA_002714485.1. The GC content of the type genome is 64.65 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Butubida cruppugo sp. nov.

Candidatus Butubida cruppugo (NL. fem. n. *cruppugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9410 sp014239855*. The type genome for the species is the GenBank assembly GCA_014239855.1. The GC content of the type genome is 69.39 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Butubida dilicilenta sp. nov.

Candidatus Butubida dilicilenta (NL. fem. n. *dilicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9410 sp002727895*. The type genome for the species is the GenBank assembly GCA_002720045.1. The GC content of the type genome is 68.32 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Butubida lapilitura sp. nov.

Candidatus Butubida lapilitura (NL. fem. n. *lapilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9410 sp014240365*. The type genome for the species is the GenBank assembly GCA_014240365.1. The GC content of the type genome is 67.38 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Butubida manupatio sp. nov.

Candidatus Butubida manupatio (NL. fem. n. *manupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9410 sp003541675*. The type genome for the species is the GenBank assembly GCA_003541675.1. The GC content of the type genome is 66.16 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Butubida nucifica sp. nov.

Candidatus Butubida nucifica (NL. fem. n. *nucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9410 sp002348705*. The type genome for the species is the GenBank assembly GCA_002448675.1. The GC content of the type genome is 60.52 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Butubida panifetta sp. nov.

Candidatus Butubida panifetta (NL. fem. n. *panifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9410 sp002717365*. The type genome for the species is the GenBank assembly GCA_002717365.1. The GC content of the type genome is 64.3 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Butubida tirocicula sp. nov.

Candidatus Butubida tirocicula (NL. fem. n. *tirocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9410 sp014237715*. The type genome for the species is the GenBank assembly GCA_014237715.1. The GC content of the type genome is 66.4 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Butubosa cerofedo sp. nov.

Candidatus Butubosa cerofedo (NL. fem. n. *cerofedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp012837965*. The type genome for the species is the GenBank assembly GCA_012837965.1. The GC content of the type genome is 47.78 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Butubosa gen. nov.

Candidatus Butubosa (NL. fem. n. *Butubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU024*. The type species for the genus is *Candidatus* Butubosa cerofedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Butubosa cilotilega sp. nov.

Candidatus Butubosa cilotilega (NL. fem. n. *cilotilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp012837525*. The type genome for the species is the GenBank assembly GCA_012837525.1. The GC content of the type genome is 57.81 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Butubosa denupisca sp. nov.

Candidatus Butubosa denupisca (NL. fem. n. *denupisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp012728815*. The type genome for the species is the GenBank assembly GCA_012728815.1. The GC content of the type genome is 64.34 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Butubosa desorousia sp. nov.

Candidatus Butubosa desorousia (NL. fem. n. *desorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp002411105*. The type genome for the species is the GenBank assembly GCA_002316605.1. The GC content of the type genome is 59.54 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Butubosa ermelilenta sp. nov.

Candidatus Butubosa ermelilenta (NL. fem. n. *ermelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp012728435*. The type genome for the species is the GenBank assembly GCA_012728435.1. The GC content of the type genome is 55.87 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Butubosa infirastra sp. nov.

Candidatus Butubosa infirastra (NL. fem. n. *infirastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp002428405*. The type genome for the species is the GenBank assembly GCA_002428405.1. The GC content of the type genome is 56.98 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Butubosa minuribra sp. nov.

Candidatus Butubosa minuribra (NL. fem. n. *minuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp012522875*. The type genome for the species is the GenBank assembly GCA_012522875.1. The GC content of the type genome is 57.55 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Butubosa pabilugo sp. nov.

Candidatus Butubosa pabilugo (NL. fem. n. *pabilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp012837835*. The type genome for the species is the GenBank assembly GCA_012837835.1. The GC content of the type genome is 42.08 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Butubosa tenebedo sp. nov.

Candidatus Butubosa tenebedo (NL. fem. n. *tenebedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp001513425*. The type genome for the species is the GenBank assembly GCA_001513425.1. The GC content of the type genome is 54.29 %

and the genome length is 2.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Butubosa tenebibula sp. nov.

Candidatus Butubosa tenebibula (NL. fem. n. *tenebibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp012521895*. The type genome for the species is the GenBank assembly GCA_012521895.1. The GC content of the type genome is 59.33 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Butubosa volucitrix sp. nov.

Candidatus Butubosa volucitrix (NL. fem. n. *volucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp012518615*. The type genome for the species is the GenBank assembly GCA_012518615.1. The GC content of the type genome is 42.59 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Butubosa xeramitio sp. nov.

Candidatus Butubosa xeramitio (NL. fem. n. *xeramitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU024 sp012514225*. The type genome for the species is the GenBank assembly GCA_012514225.1. The GC content of the type genome is 65.8 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Butubula camilivita sp. nov.

Candidatus Butubula camilivita (NL. fem. n. *camilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-41 sp900066215*. The type genome for the species is the GenBank assembly GCA_003520845.1. The GC content of the type genome is 38.53 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Butubula gen. nov.

Candidatus Butubula (NL. fem. n. *Butubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-41*. The type species for the genus is *Candidatus* Butubula camilivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilosaceae.

Description of *Candidatus* Butubula locelastra sp. nov.

Candidatus Butubula locelastra (NL. fem. n. *locelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-41 sp001941225*. The type genome for the species is the GenBank assembly GCA_001941225.1. The GC content of the type genome is 45.8 % and the genome length is 1.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Zagget the koala".

Description of *Candidatus* Butubula videlatio sp. nov.

Candidatus Butubula videlatio (NL. fem. n. *videlatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-41 sp010206265*. The type genome for the species is the GenBank assembly RS_GCF_010206265.1. The GC content of the type genome is 39.5 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Butyricicoccus exculetta sp. nov.

Candidatus Butyricicoccus exculetta (NL. fem. n. *exculetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricicoccus sp900547195*. The type genome for the species is the GenBank assembly GCA_900547195.1. The GC content of the type genome is 56.1 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Butyricicoccus exsorilenta sp. nov.

Candidatus Butyricicoccus exsorilenta (NL. fem. n. *exsorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricicoccus sp900604335*. The type genome for the species is the GenBank assembly RS_GCF_900604335.1. The GC content of the type genome is 53.47 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Butyricicoccus solacatica sp. nov.

Candidatus Butyricicoccus solacatica (NL. fem. n. *solacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricicoccus sp004552245*. The type genome for the species is the GenBank assembly GCA_004552245.1. The GC content of the type genome is 62.41 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Butyricicoccus celamisca sp. nov.

Candidatus Butyricicoccus celamisca (NL. fem. n. *celamisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricicoccus_A sp002449635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002361555.1. The GC content of the type genome is 56.18 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Butyricicoccus hexamitica sp. nov.

Candidatus Butyricicoccus hexamitica (NL. fem. n. *hexamitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricicoccus_A sp004555915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004555915.1. The GC content of the type genome is 51.58 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Butyricicoccus lenocitura sp. nov.

Candidatus Butyricicoccus lenocitura (NL. fem. n. *lenocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricicoccus_A sp002395695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900550715.1. The GC content of the type genome is 51.65 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Butyricimonas benemibula sp. nov.

Candidatus Butyricimonas benemibula (NL. fem. n. *benemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricimonas sp900184685*. The type genome for the species is the GenBank assembly GCA_900556065.1. The GC content of the type genome is 44.5 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Butyricimonas minagibula sp. nov.

Candidatus Butyricimonas minagibula (NL. fem. n. *minagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricimonas sp003479425*. The type genome for the species is the GenBank assembly GCA_900547335.1. The GC content of the type genome is 43.75 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Butyricimonas nugivitura sp. nov.

Candidatus Butyricimonas nugivitura (NL. fem. n. *nugivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricimonas sp900761485*. The type genome for the species is the GenBank assembly GCA_900761485.1. The GC content of the type genome is 40.92 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Butyricimonas octopedo sp. nov.

Candidatus Butyricimonas octopedo (NL. fem. n. *octopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyricimonas sp900759925*. The type genome for the species is the GenBank assembly GCA_900759925.1. The GC content of the type genome is 44.5 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Butyrivibrio acrimivita sp. nov.

Candidatus Butyrivibrio acrimivita (NL. fem. n. *acrimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp900108105*. The type genome for the species is the GenBank assembly RS_GCF_900108105.1. The GC content of the type genome is 39.92 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Butyrivibrio adlacigena sp. nov.

Candidatus Butyrivibrio adlacigena (NL. fem. n. *adlacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000423925*. The type genome for the species is the GenBank assembly RS_GCF_000423925.1. The GC content of the type genome is 41.19 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Butyrivibrio alectousia sp. nov.

Candidatus Butyrivibrio alectousia (NL. fem. n. *alectousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000702265*. The type genome for the species is the GenBank assembly RS_GCF_000702265.1. The GC content of the type genome is 40.2 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Butyrivibrio allobastra sp. nov.

Candidatus Butyrivibrio allobastra (NL. fem. n. *allobastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000621605*. The type genome for the species is the GenBank assembly RS_GCF_000621605.1. The GC content of the type genome is 44.41 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Butyrivibrio assucitura sp. nov.

Candidatus Butyrivibrio assucitura (NL. fem. n. *assucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp900116865*. The type genome for the species is the GenBank assembly RS_GCF_900116865.1. The GC content of the type genome is 40.75 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Butyrivibrio citocago sp. nov.

Candidatus Butyrivibrio citocago (NL. fem. n. *citocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp900116875*. The type genome for the species is the GenBank assembly RS_GCF_003625505.1. The GC content of the type genome is 42.42 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Butyrivibrio conamisca sp. nov.

Candidatus Butyrivibrio conamisca (NL. fem. n. *conamisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000424585*. The type genome for the species is the GenBank assembly RS_GCF_000424585.1. The GC content of the type genome is 44.01 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Butyrivibrio conifimonia sp. nov.

Candidatus Butyrivibrio conifimonia (NL. fem. n. *conifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp900103635*. The type genome for the species is the GenBank assembly RS_GCF_900103635.1. The GC content of the type genome is 40.13

% and the genome length is 3.25 Mbp.

Description of *Candidatus* Butyrivibrio demulilenta sp. nov.

Candidatus Butyrivibrio demulilenta (NL. fem. n. *demulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000420945*. The type genome for the species is the GenBank assembly RS_GCF_000420945.1. The GC content of the type genome is 41.09 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Butyrivibrio denavugo sp. nov.

Candidatus Butyrivibrio denavugo (NL. fem. n. *denavugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000526935*. The type genome for the species is the GenBank assembly RS_GCF_000526935.1. The GC content of the type genome is 45.85 % and the genome length is 4.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Butyrivibrio depopentia sp. nov.

Candidatus Butyrivibrio depopentia (NL. fem. n. *depopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000424545*. The type genome for the species is the GenBank assembly GCA_902803175.1. The GC content of the type genome is 35.38 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Butyrivibrio disidatio sp. nov.

Candidatus Butyrivibrio disidatio (NL. fem. n. *disidatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp900112195*. The type genome for the species is the GenBank assembly RS_GCF_900112195.1. The GC content of the type genome is 38.65 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Butyrivibrio domigicula sp. nov.

Candidatus Butyrivibrio domigicula (NL. fem. n. *domigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp003625475*. The type genome for the species is the GenBank assembly RS_GCF_003625475.1. The GC content of the type genome is 42.21 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Butyrivibrio epitratio sp. nov.

Candidatus Butyrivibrio epitratio (NL. fem. n. *epitratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000420845*. The type genome for the species is the GenBank assembly RS_GCF_000420845.1. The GC content of the type genome is 44.43 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Butyrivibrio genufago sp. nov.

Candidatus Butyrivibrio genufago (NL. fem. n. *genufago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000424385*. The type genome for the species is the GenBank assembly RS_GCF_000701985.1. The GC content of the type genome is 39.47 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Butyrivibrio hibisigena sp. nov.

Candidatus Butyrivibrio hibisigena (NL. fem. n. *hibisigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000424265*. The type genome for the species is the GenBank assembly RS_GCF_000424265.1. The GC content of the type genome is 41.47 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Butyrivibrio milifax sp. nov.

Candidatus Butyrivibrio milifax (NL. fem. n. *milifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp900102515*. The type genome for the species is the GenBank assembly RS_GCF_900102515.1. The GC content of the type genome is 40.58 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Butyrivibrio musulitudo sp. nov.

Candidatus Butyrivibrio musulitudo (NL. fem. n. *musulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000423945*. The type genome for the species is the GenBank assembly RS_GCF_000423945.1. The GC content of the type genome is 41.77 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Butyrivibrio nefariforma sp. nov.

Candidatus Butyrivibrio nefariforma (NL. fem. n. *nefariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000424145*. The type genome for the species is the GenBank assembly RS_GCF_000424145.1. The GC content of the type genome is 40.11 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Butyrivibrio noninitoga sp. nov.

Candidatus Butyrivibrio noninitoga (NL. fem. n. *noninitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000424285*. The type genome for the species is the GenBank assembly RS_GCF_000424165.1. The GC content of the type genome is 41.46 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Butyrivibrio notacitrix sp. nov.

Candidatus Butyrivibrio notacitrix (NL. fem. n. *notacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Butyrivibrio sp900104155*. The type genome for the species is the GenBank assembly RS_GCF_000424485.1. The GC content of the type genome is 41.95 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Butyrivibrio occenitio sp. nov.

Candidatus Butyrivibrio occenitio (NL. fem. n. *occenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp002372465*. The type genome for the species is the GenBank assembly GCA_002372465.1. The GC content of the type genome is 44.72 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Butyrivibrio rutabibula sp. nov.

Candidatus Butyrivibrio rutabibula (NL. fem. n. *rutabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000621565*. The type genome for the species is the GenBank assembly RS_GCF_000621565.1. The GC content of the type genome is 40.62 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Butyrivibrio rutabitia sp. nov.

Candidatus Butyrivibrio rutabitia (NL. fem. n. *rutabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000421405*. The type genome for the species is the GenBank assembly RS_GCF_000421405.1. The GC content of the type genome is 43.61 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Butyrivibrio scaccedo sp. nov.

Candidatus Butyrivibrio scaccedo (NL. fem. n. *scaccedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000420825*. The type genome for the species is the GenBank assembly RS_GCF_000420825.1. The GC content of the type genome is 39.85 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Butyrivibrio subacicula sp. nov.

Candidatus Butyrivibrio subacicula (NL. fem. n. *subacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp003625485*. The type genome for the species is the GenBank assembly RS_GCF_003625485.1. The GC content of the type genome is 43.7 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Butyrivibrio subofilega sp. nov.

Candidatus Butyrivibrio subofilega (NL. fem. n. *subofilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000703165*. The type genome for the species is the GenBank assembly RS_GCF_000703165.1. The GC content of the type genome is 39.6 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Butyrivibrio tirocatica sp. nov.

Candidatus Butyrivibrio tirocatica (NL. fem. n. *tirocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio sp000420865*. The type genome for the species is the GenBank assembly RS_GCF_000420865.1. The GC content of the type genome is 43.37 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Butyrivibrio adcucatica sp. nov.

Candidatus Butyrivibrio adcucatica (NL. fem. n. *adcucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio_A sp900771195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900771195.1. The GC content of the type genome is 43.78 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Butyrivibrio alcibisca sp. nov.

Candidatus Butyrivibrio alcibisca (NL. fem. n. *alcibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio_A sp900768755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900768755.1. The GC content of the type genome is 45.66 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Butyrivibrio letifitica sp. nov.

Candidatus Butyrivibrio letifitica (NL. fem. n. *letifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio_A sp900543865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900543865.1. The GC content of the type genome is 37.38 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Butyrivibrio monimitura sp. nov.

Candidatus Butyrivibrio monimitura (NL. fem. n. *monimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Butyrivibrio_A sp000431815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900538285.1. The GC content of the type genome is 41.53 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Buxanana colipilega sp. nov.

Candidatus Buxanana colipilega (NL. fem. n. *colipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWCZ01 sp002070295*. The type genome for the species is the GenBank assembly GCA_002070295.1. The GC content of the type genome is 59.73 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Buxanana gen. nov.

Candidatus Buxanana (NL. fem. n. *Buxanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCZ01*. The type species for the genus is *Candidatus* Buxanana colipilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MWCZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxananaceae.

Description of *Candidatus* Buxananaceae fam. nov.

Candidatus Buxananaceae (NL. fem. n. *Buxananaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWCZ01.* The type genus for the taxon is *Candidatus* Buxanana .

According to the original version of GTDB R06-RS202, this family belongs to the order *MWCZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxananales.

Description of *Candidatus* Buxananales ord. nov.

Candidatus Buxananales (NL. fem. n. *Buxananales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWCZ01.* The type genus for the taxon is *Candidatus* Buxanana .

According to the GTDB R06-RS202, this order belongs to the class *Latescibacteria*.

Description of *Candidatus* Buxanaria cimitugo sp. nov.

Candidatus Buxanaria cimitugo (NL. fem. n. *cimitugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp6-AA45 sp003222535*. The type genome for the species is the GenBank assembly GCA_003222505.1. The GC content of the type genome is 65.46 % and the genome length is 7.17 Mbp.

Description of *Candidatus* Buxanaria gen. nov.

Candidatus Buxanaria (NL. fem. n. *Buxanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp6-AA45*. The type species for the genus is *Candidatus* Buxanaria cimitugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Buxanaria infesetta sp. nov.

Candidatus Buxanaria infesetta (NL. fem. n. *infesetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp6-AA45 sp003223775*. The type genome for the species is the GenBank assembly GCA_003223775.1. The GC content of the type genome is 68.39 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Buxanella brasmitio sp. nov.

Candidatus Buxanella brasmitio (NL. fem. n. *brasmitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACVAW01 sp902727925*. The type genome for the species is the GenBank assembly GCA_902727925.1. The GC content of the type genome is 29.96 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Buxanella gen. nov.

Candidatus Buxanella (NL. fem. n. *Buxanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACVAW01*. The type species for the genus is *Candidatus* Buxanella brasmitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACVAW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxanellaceae.

Description of *Candidatus* Buxanellaceae fam. nov.

Candidatus Buxanellaceae (NL. fem. n. *Buxanellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACVAW01.* The type genus for the taxon is *Candidatus* Buxanella .

According to GTDB R06-RS202, this family belongs to the order *Campylobacterales*.

Description of *Candidatus* Buxania actutilega sp. nov.

Candidatus Buxania actutilega (NL. fem. n. *actutilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14515 sp902782395*. The type genome for the species is the GenBank assembly GCA_902782395.1. The GC content of the type genome is 36.62 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Buxania gen. nov.

Candidatus Buxania (NL. fem. n. *Buxania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14515*. The type species for the genus is *Candidatus* Buxania actutilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Buxania alismitudo sp. nov.

Candidatus Buxania alismitudo (NL. fem. n. *alismitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14515 sp012837435*. The type genome for the species is the GenBank assembly GCA_012837435.1. The GC content of the type genome is 36.3 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Buxania ammuritudo sp. nov.

Candidatus Buxania ammuritudo (NL. fem. n. *ammuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14515 sp902799855*. The type genome for the species is the GenBank assembly GCA_902799855.1. The GC content of the type genome is 36.11 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Buxania catapitrix sp. nov.

Candidatus Buxania catapitrix (NL. fem. n. *catapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14515 sp012511695*. The type genome for the species is the GenBank assembly GCA_012511695.1. The GC content of the type genome is 37.61 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Buxania coturitica sp. nov.

Candidatus Buxania coturitica (NL. fem. n. *coturitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14515 sp012744375*. The type genome for the species is the GenBank assembly GCA_012744375.1. The GC content of the type genome is 36.23 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Buxania depecugo sp. nov.

Candidatus Buxania depecugo (NL. fem. n. *depecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14515 sp902763555*. The type genome for the species is the GenBank assembly GCA_902791275.1. The GC content of the type genome is 36.16 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Buxania excerisca sp. nov.

Candidatus Buxania excerisca (NL. fem. n. *excerisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14515 sp902801805*. The type genome for the species is the GenBank assembly GCA_902801805.1. The GC content of the type genome is 36.68 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Buxania insenago sp. nov.

Candidatus Buxania insenago (NL. fem. n. *insenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14515 sp902777015*. The type genome for the species is the GenBank assembly GCA_902777015.1. The GC content of the type genome is 34.48 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Buxania sicaribula sp. nov.

Candidatus Buxania sicaribula (NL. fem. n. *sicaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14515 sp902798595*. The type genome for the species is the GenBank assembly GCA_902798595.1. The GC content of the type genome is 36.59 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Buxanida dehisivita sp. nov.

Candidatus Buxanida dehisivita (NL. fem. n. *dehisivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZZ01 sp013695715*. The type genome for the species is the GenBank assembly GCA_013695715.1. The GC content of the type genome is 39.25 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Buxanida gen. nov.

Candidatus Buxanida (NL. fem. n. *Buxanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZZ01*. The type species for the genus is *Candidatus* Buxanida dehisivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10324*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vereciaceae.

Description of *Candidatus* Buxanida exsufitudo sp. nov.

Candidatus Buxanida exsufitudo (NL. fem. n. *exsufitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZZ01 sp013695775*. The type genome for the species is the GenBank assembly GCA_013695775.1. The GC content of the type genome is 40.48 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Buxanosa actutessa sp. nov.

Candidatus Buxanosa actutessa (NL. fem. n. *actutessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3BBIN04 sp002898195*. The type genome for the species is the GenBank assembly GCA_002898195.1. The GC content of the type genome is 50.95 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Buxanosa gen. nov.

Candidatus Buxanosa (NL. fem. n. *Buxanosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3BBIN04*. The type species for the genus is *Candidatus* Buxanosa actutessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3BBIN04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxanosaceae.

Description of *Candidatus* Buxanosaceae fam. nov.

Candidatus Buxanosaceae (NL. fem. n. *Buxanosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3BBIN04.* The type genus for the taxon is *Candidatus* Buxanosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *BMS3BBIN04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxanosales.

Description of *Candidatus* Buxanosales ord. nov.

Candidatus Buxanosales (NL. fem. n. *Buxanosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3BBIN04.* The type genus for the taxon is *Candidatus* Buxanosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *BMS3BBIN04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Buxanosae.

Description of *Candidatus* Buxanosae class. nov.

Candidatus Buxanosae (NL. fem. n. *c__Buxanosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3BBIN04.* The type genus for the taxon is *Candidatus* Buxanosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *AABM5-125-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Desonellota.

Description of *Candidatus* Buxanula bacifago sp. nov.

Candidatus Buxanula bacifago (NL. fem. n. *bacifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-45-10 sp001804065*. The type genome for the species is the GenBank assembly GCA_001804305.1. The GC content of the type genome is 45.07 % and the genome length is 1.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Buxanula gen. nov.

Candidatus Buxanula (NL. fem. n. *Buxanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-45-10*. The type species for the genus is *Candidatus* Buxanula bacifago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-45-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxanulaceae.

Description of *Candidatus* Buxanulaceae fam. nov.

Candidatus Buxanulaceae (NL. fem. n. *Buxanulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-45-10.* The type genus for the taxon is *Candidatus* Buxanula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1560*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vacilellales.

Description of *Candidatus* Buxifana absoricula sp. nov.

Candidatus Buxifana absoricula (NL. fem. n. *absoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp002255315*. The type genome for the species is the GenBank assembly GCA_002255315.1. The GC content of the type genome is 63.04 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Buxifana gen. nov.

Candidatus Buxifana (NL. fem. n. *Buxifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RAAP-2*. The type species for the genus is *Candidatus* Buxifana absoricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Buxifanaceae fam. nov.

Candidatus Buxifanaceae (NL. fem. n. *Buxifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RAAP-2.* The type genus for the taxon is *Candidatus* Buxifana .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Buxifana acrotatica sp. nov.

Candidatus Buxifana acrotatica (NL. fem. n. *acrotatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003152215*. The type genome for the species is the GenBank assembly GCA_003152215.1. The GC content of the type genome is 61.0 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Buxifana alluvimonas sp. nov.

Candidatus Buxifana alluvimonas (NL. fem. n. *alluvimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003134515*. The type genome for the species is the GenBank assembly GCA_003134515.1. The GC content of the type genome is 61.78 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Buxifana amercitura sp. nov.

Candidatus Buxifana amercitura (NL. fem. n. *amercitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003133665*. The type genome for the species is the GenBank assembly GCA_003133665.1. The GC content of the type genome is 63.86 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Buxifana arillatica sp. nov.

Candidatus Buxifana arillatica (NL. fem. n. *arillatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003158855*. The type genome for the species is the GenBank assembly GCA_003158855.1. The GC content of the type genome is 63.17 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Buxifana astapiforma sp. nov.

Candidatus Buxifana astapiforma (NL. fem. n. *astapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp013044265*. The type genome for the species is the GenBank assembly GCA_013044265.1. The GC content of the type genome is 59.9 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Buxifana benivivita sp. nov.

Candidatus Buxifana benivivita (NL. fem. n. *benivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003152555*. The type genome for the species is the GenBank assembly GCA_003152555.1. The GC content of the type genome is 60.19 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Buxifana bipinibula sp. nov.

Candidatus Buxifana bipinibula (NL. fem. n. *bipinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp002255565*. The type genome for the species is the GenBank assembly GCA_002255565.1. The GC content of the type genome is 72.54 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Buxifana buxificula sp. nov.

Candidatus Buxifana buxificula (NL. fem. n. *buxificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903826715*. The type genome for the species is the GenBank assembly GCA_903895875.1. The GC content of the type genome is 49.49 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Buxifana capudago sp. nov.

Candidatus Buxifana capudago (NL. fem. n. *capudago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903860745*. The type genome for the species is the GenBank assembly GCA_903833445.1. The GC content of the type genome is 67.82 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Buxifana carecastra sp. nov.

Candidatus Buxifana carecastra (NL. fem. n. *carecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903830745*. The type genome for the species is the GenBank assembly GCA_903832945.1. The GC content of the type genome is 49.85 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Buxifana cicatitica sp. nov.

Candidatus Buxifana cicatitica (NL. fem. n. *cicatitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903893745*. The type genome for the species is the GenBank assembly GCA_903903895.1. The GC content of the type genome is 57.99 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Buxifana conopigena sp. nov.

Candidatus Buxifana conopigena (NL. fem. n. *conopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003133005*. The type genome for the species is the GenBank assembly GCA_003133005.1. The GC content of the type genome is 59.5 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Buxifana conopitia sp. nov.

Candidatus Buxifana conopitia (NL. fem. n. *conopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003168075*. The type genome for the species is the GenBank assembly GCA_003139595.1. The GC content of the type genome is 61.9 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Buxifana decomitas sp. nov.

Candidatus Buxifana decomitas (NL. fem. n. *decomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003133125*. The type genome for the species is the GenBank assembly GCA_003164235.1. The GC content of the type genome is 61.32 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Buxifana deculitio sp. nov.

Candidatus Buxifana deculitio (NL. fem. n. *deculitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003132205*. The type genome for the species is the GenBank assembly GCA_003132205.1. The GC content of the type genome is 62.95 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Buxifana denigilenta sp. nov.

Candidatus Buxifana denigilenta (NL. fem. n. *denigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903970515*. The type genome for the species is the GenBank assembly GCA_903970515.1. The GC content of the type genome is 60.45 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Buxifana depetessa sp. nov.

Candidatus Buxifana depetessa (NL. fem. n. *depetessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RAAP-2 sp003155915*. The type genome for the species is the GenBank assembly GCA_003168835.1. The GC content of the type genome is 61.98 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Buxifana depocitas sp. nov.

Candidatus Buxifana depocitas (NL. fem. n. *depocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003133685*. The type genome for the species is the GenBank assembly GCA_003135115.1. The GC content of the type genome is 62.05 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Buxifana dilicicella sp. nov.

Candidatus Buxifana dilicicella (NL. fem. n. *dilicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903854175*. The type genome for the species is the GenBank assembly GCA_903824535.1. The GC content of the type genome is 48.63 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Buxifana dilogimonas sp. nov.

Candidatus Buxifana dilogimonas (NL. fem. n. *dilogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903830655*. The type genome for the species is the GenBank assembly GCA_903868425.1. The GC content of the type genome is 55.41 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Buxifana dimacibra sp. nov.

Candidatus Buxifana dimacibra (NL. fem. n. *dimacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003136495*. The type genome for the species is the GenBank assembly GCA_003134195.1. The GC content of the type genome is 64.41 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Buxifana disidigena sp. nov.

Candidatus Buxifana disidigena (NL. fem. n. *disidigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003138815*. The type genome for the species is the GenBank assembly GCA_003160225.1. The GC content of the type genome is 65.64 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Buxifana ensigisca sp. nov.

Candidatus Buxifana ensigisca (NL. fem. n. *ensigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp009701115*. The type genome for the species is the GenBank assembly GCA_009701115.1. The GC content of the type genome is 59.07 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Buxifana evangastra sp. nov.

Candidatus Buxifana evangastra (NL. fem. n. *evangastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003163875*. The type genome for the species is the GenBank assembly GCA_003163875.1. The GC content of the type genome is 58.75 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Buxifana femeletta sp. nov.

Candidatus Buxifana femeletta (NL. fem. n. *femeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003142095*. The type genome for the species is the GenBank assembly GCA_003142095.1. The GC content of the type genome is 61.03 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Buxifana fuligisca sp. nov.

Candidatus Buxifana fuligisca (NL. fem. n. *fuligisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003131665*. The type genome for the species is the GenBank assembly GCA_003131665.1. The GC content of the type genome is 61.55 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Buxifana fumacicula sp. nov.

Candidatus Buxifana fumacicula (NL. fem. n. *fumacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003160115*. The type genome for the species is the GenBank assembly GCA_003134395.1. The GC content of the type genome is 62.19 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Buxifana gerunitoga sp. nov.

Candidatus Buxifana gerunitoga (NL. fem. n. *gerunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003167415*. The type genome for the species is the GenBank assembly GCA_003152475.1. The GC content of the type genome is 62.1 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Buxifana homicessa sp. nov.

Candidatus Buxifana homicessa (NL. fem. n. *homicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003133405*. The type genome for the species is the GenBank assembly GCA_003151195.1. The GC content of the type genome is 61.91 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Buxifana inbelimonas sp. nov.

Candidatus Buxifana inbelimonas (NL. fem. n. *inbelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RAAP-2 sp003151555*. The type genome for the species is the GenBank assembly GCA_003151555.1. The GC content of the type genome is 62.6 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Buxifana invetentia sp. nov.

Candidatus Buxifana invetentia (NL. fem. n. *invetentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp001443545*. The type genome for the species is the GenBank assembly GCA_001443545.1. The GC content of the type genome is 65.54 % and the genome length is 2.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "15% reads came from bioreactor metagenome SAMN04151528 and 85% came from mine drainage metagenome SAMN04151554".

Description of *Candidatus* Buxifana irrotisca sp. nov.

Candidatus Buxifana irrotisca (NL. fem. n. *irrotisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003170315*. The type genome for the species is the GenBank assembly GCA_003170315.1. The GC content of the type genome is 62.03 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Buxifana loraribula sp. nov.

Candidatus Buxifana loraribula (NL. fem. n. *loraribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003138895*. The type genome for the species is the GenBank assembly GCA_003138895.1. The GC content of the type genome is 56.12 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Buxifana mavoritas sp. nov.

Candidatus Buxifana mavoritas (NL. fem. n. *mavoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp009726065*. The type genome for the species is the

GenBank assembly GCA_009726065.1. The GC content of the type genome is 58.3 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Buxifana mirifitoga sp. nov.

Candidatus Buxifana mirifitoga (NL. fem. n. *mirifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003136415*. The type genome for the species is the GenBank assembly GCA_003136415.1. The GC content of the type genome is 62.19 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Buxifana nicotentia sp. nov.

Candidatus Buxifana nicotentia (NL. fem. n. *nicotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp013044405*. The type genome for the species is the GenBank assembly GCA_013044405.1. The GC content of the type genome is 61.55 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Buxifana prodricella sp. nov.

Candidatus Buxifana prodricella (NL. fem. n. *prodricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003162475*. The type genome for the species is the GenBank assembly GCA_003162475.1. The GC content of the type genome is 61.33 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Buxifana pudibifica sp. nov.

Candidatus Buxifana pudibifica (NL. fem. n. *pudibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903924205*. The type genome for the species is the GenBank assembly GCA_903874945.1. The GC content of the type genome is 61.07 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Buxifana regigax sp. nov.

Candidatus Buxifana regigax (NL. fem. n. *regigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903825765*. The type genome for the species is the GenBank assembly GCA_903916315.1. The GC content of the type genome is 61.34 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Buxifana relecousia sp. nov.

Candidatus Buxifana relecousia (NL. fem. n. *relecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903885505*. The type genome for the species is the GenBank assembly GCA_903881845.1. The GC content of the type genome is 62.01 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Buxifana relenessa sp. nov.

Candidatus Buxifana relenessa (NL. fem. n. *relenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003132305*. The type genome for the species is the GenBank assembly GCA_003132705.1. The GC content of the type genome is 61.37 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Buxifana resurifica sp. nov.

Candidatus Buxifana resurifica (NL. fem. n. *resurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903871335*. The type genome for the species is the GenBank assembly GCA_903850515.1. The GC content of the type genome is 61.75 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Buxifana rosaritura sp. nov.

Candidatus Buxifana rosaritura (NL. fem. n. *rosaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003141095*. The type genome for the species is the GenBank assembly GCA_003156335.1. The GC content of the type genome is 61.99 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Buxifana selecitudo sp. nov.

Candidatus Buxifana selecitudo (NL. fem. n. *selecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903825035*. The type genome for the species is the GenBank assembly GCA_903845005.1. The GC content of the type genome is 55.06 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Buxifana sicinilenta sp. nov.

Candidatus Buxifana sicinilenta (NL. fem. n. *sicinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003141815*. The type genome for the species is the GenBank assembly GCA_003141815.1. The GC content of the type genome is 61.03 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Buxifana siligitia sp. nov.

Candidatus Buxifana siligitia (NL. fem. n. *siligitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903873775*. The type genome for the species is the GenBank assembly GCA_903878655.1. The GC content of the type genome is 63.28 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Buxifana siticitrix sp. nov.

Candidatus Buxifana siticitrix (NL. fem. n. *siticitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003133075*. The type genome for the species is the GenBank assembly GCA_003137115.1. The GC content of the type genome is 64.25 %

and the genome length is 1.54 Mbp.

Description of *Candidatus* Buxifana solifica sp. nov.

Candidatus Buxifana solifica (NL. fem. n. *solifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903848885*. The type genome for the species is the GenBank assembly GCA_903826605.1. The GC content of the type genome is 59.31 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Buxifana sonipitrix sp. nov.

Candidatus Buxifana sonipitrix (NL. fem. n. *sonipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903860915*. The type genome for the species is the GenBank assembly GCA_903833945.1. The GC content of the type genome is 58.78 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Buxifana subucitio sp. nov.

Candidatus Buxifana subucitio (NL. fem. n. *subucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903828785*. The type genome for the species is the GenBank assembly GCA_903828785.1. The GC content of the type genome is 60.88 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Buxifana utpotivita sp. nov.

Candidatus Buxifana utpotivita (NL. fem. n. *utpotivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp903832015*. The type genome for the species is the GenBank assembly GCA_903832015.1. The GC content of the type genome is 56.16 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Buxifana vehemitrix sp. nov.

Candidatus Buxifana vehemitrix (NL. fem. n. *vehemitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp013044285*. The type genome for the species is the GenBank assembly GCA_013044285.1. The GC content of the type genome is 63.81 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Buxifana vivifitura sp. nov.

Candidatus Buxifana vivifitura (NL. fem. n. *vivifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-2 sp003132165*. The type genome for the species is the GenBank assembly GCA_003133365.1. The GC content of the type genome is 62.01 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Buxifella acrimetta sp. nov.

Candidatus Buxifella acrimetta (NL. fem. n. *acrimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007694095*. The type genome for the species is the GenBank assembly GCA_007694095.1. The GC content of the type genome is 43.46 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Buxifella gen. nov.

Candidatus Buxifella (NL. fem. n. *Buxifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2664*. The type species for the genus is *Candidatus* Buxifella acrimetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Buxifella alsidousia sp. nov.

Candidatus Buxifella alsidousia (NL. fem. n. *alsidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007127395*. The type genome for the species is the GenBank assembly GCA_007127395.1. The GC content of the type genome is 43.2 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Buxifella aterrugo sp. nov.

Candidatus Buxifella aterrugo (NL. fem. n. *aterrugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007693395*. The type genome for the species is the GenBank assembly GCA_007693395.1. The GC content of the type genome is 43.22 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Buxifella coniniforma sp. nov.

Candidatus Buxifella coniniforma (NL. fem. n. *coniniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007127745*. The type genome for the species is the GenBank assembly GCA_007133965.1. The GC content of the type genome is 44.12 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Buxifella conubitas sp. nov.

Candidatus Buxifella conubitas (NL. fem. n. *conubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007693745*. The type genome for the species is the GenBank assembly GCA_007693745.1. The GC content of the type genome is 47.87 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Buxifella decapatica sp. nov.

Candidatus Buxifella decapatica (NL. fem. n. *decapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007123715*. The type genome for the species is the GenBank assembly GCA_007123715.1. The GC content of the type genome is 43.34 %

and the genome length is 3.91 Mbp.

Description of *Candidatus* Buxifella desucatica sp. nov.

Candidatus Buxifella desucatica (NL. fem. n. *desucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007123785*. The type genome for the species is the GenBank assembly GCA_007131645.1. The GC content of the type genome is 44.46 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Buxifella effemax sp. nov.

Candidatus Buxifella effemax (NL. fem. n. *effemax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp002359315*. The type genome for the species is the GenBank assembly GCA_002359315.1. The GC content of the type genome is 41.29 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Buxifella fetifedo sp. nov.

Candidatus Buxifella fetifedo (NL. fem. n. *fetifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp003559375*. The type genome for the species is the GenBank assembly GCA_007128775.1. The GC content of the type genome is 42.77 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Buxifella ficedastra sp. nov.

Candidatus Buxifella ficedastra (NL. fem. n. *ficedastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007135335*. The type genome for the species is the GenBank assembly GCA_007135335.1. The GC content of the type genome is 43.29 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Buxifella filifitoga sp. nov.

Candidatus Buxifella filifitoga (NL. fem. n. *filifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007131725*. The type genome for the species is the GenBank assembly GCA_007131725.1. The GC content of the type genome is 44.18 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Buxifella musuledo sp. nov.

Candidatus Buxifella musuledo (NL. fem. n. *musuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007134085*. The type genome for the species is the GenBank assembly GCA_003561455.1. The GC content of the type genome is 44.02 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Buxifella vinolago sp. nov.

Candidatus Buxifella vinolago (NL. fem. n. *vinolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2664 sp007123985*. The type genome for the species is the GenBank assembly GCA_003568095.1. The GC content of the type genome is 42.88 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Buxifia curacitudo sp. nov.

Candidatus Buxifia curacitudo (NL. fem. n. *curacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9160 sp003520425*. The type genome for the species is the GenBank assembly GCA_003520425.1. The GC content of the type genome is 66.39 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Buxifia gen. nov.

Candidatus Buxifia (NL. fem. n. *Buxifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9160*. The type species for the genus is *Candidatus* Buxifia curacitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifiaceae.

Description of *Candidatus* Buxifiaceae fam. nov.

Candidatus Buxifiaceae (NL. fem. n. *Buxifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9160.* The type genus for the taxon is *Candidatus* Buxifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxifiales.

Description of *Candidatus* Buxifiales ord. nov.

Candidatus Buxifiales (NL. fem. n. *Buxifiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9160.* The type genus for the taxon is *Candidatus* Buxifia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Buxifiae.

Description of *Candidatus* Buxifiae class. nov.

Candidatus Buxifiae (NL. fem. n. *c__Buxifiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9160.* The type genus for the taxon is *Candidatus* Buxifia .

According to GTDB R06-RS202, this class belongs to the phylum *Myxococcota*.

Description of *Candidatus* Buxifida apperitio sp. nov.

Candidatus Buxifida apperitio (NL. fem. n. *apperitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1535 sp002332905*. The type genome for the species is the GenBank assembly GCA_002332905.1. The GC content of the type genome is 29.7 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Buxifida gen. nov.

Candidatus Buxifida (NL. fem. n. *Buxifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1535*. The type species for the genus is *Candidatus* Buxifida apperitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Buxifida apsenicella sp. nov.

Candidatus Buxifida apsenicella (NL. fem. n. *apsenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1535 sp002396645*. The type genome for the species is the GenBank assembly GCA_002396645.1. The GC content of the type genome is 33.22 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Buxifida repepugo sp. nov.

Candidatus Buxifida repepugo (NL. fem. n. *repepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1535 sp002479485*. The type genome for the species is the GenBank assembly GCA_002363015.1. The GC content of the type genome is 29.97 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Buxifida voragibra sp. nov.

Candidatus Buxifida voragibra (NL. fem. n. *voragibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1535 sp002323775*. The type genome for the species is the

GenBank assembly GCA_002323775.1. The GC content of the type genome is 31.52 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Buxifosa cacomugo sp. nov.

Candidatus Buxifosa cacomugo (NL. fem. n. *cacomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002719695 sp002719695*. The type genome for the species is the GenBank assembly GCA_002719695.1. The GC content of the type genome is 32.11 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Buxifosa gen. nov.

Candidatus Buxifosa (NL. fem. n. *Buxifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002719695*. The type species for the genus is *Candidatus* Buxifosa cacomugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002719695*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifosaceae.

Description of *Candidatus* Buxifosaceae fam. nov.

Candidatus Buxifosaceae (NL. fem. n. *Buxifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002719695.* The type genus for the taxon is *Candidatus* Buxifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2716485*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resurulales.

Description of *Candidatus* Buxifosa exhilax sp. nov.

Candidatus Buxifosa exhilax (NL. fem. n. *exhilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002719695 sp002716725*. The type genome for the species is the

GenBank assembly GCA_002716725.1. The GC content of the type genome is 32.78 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Buxifosa revulitio sp. nov.

Candidatus Buxifosa revulitio (NL. fem. n. *revulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002719695 sp002697535*. The type genome for the species is the GenBank assembly GCA_002295665.1. The GC content of the type genome is 32.56 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Buxifula adessitas sp. nov.

Candidatus Buxifula adessitas (NL. fem. n. *adessitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002862325 sp002685335*. The type genome for the species is the GenBank assembly GCA_002685335.1. The GC content of the type genome is 64.95 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Buxifula gen. nov.

Candidatus Buxifula (NL. fem. n. *Buxifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002862325*. The type species for the genus is *Candidatus* Buxifula adessitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Buxifula antipibula sp. nov.

Candidatus Buxifula antipibula (NL. fem. n. *antipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002862325 sp002683195*. The type genome for the species is the GenBank assembly GCA_002683195.1. The GC content of the type genome is 63.35 %

and the genome length is 3.59 Mbp.

Description of *Candidatus* Buxifula innasilega sp. nov.

Candidatus Buxifula innasilega (NL. fem. n. *innasilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002862325 sp002862325*. The type genome for the species is the GenBank assembly GCA_002862325.1. The GC content of the type genome is 64.89 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Buxifula nitelatica sp. nov.

Candidatus Buxifula nitelatica (NL. fem. n. *nitelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002862325 sp002709295*. The type genome for the species is the GenBank assembly GCA_002709295.1. The GC content of the type genome is 65.71 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Bythopirellula apoplicula sp. nov.

Candidatus Bythopirellula apoplicula (NL. fem. n. *apoplicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bythopirellula sp013152205*. The type genome for the species is the GenBank assembly GCA_013152205.1. The GC content of the type genome is 53.84 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Bythopirellula attoletta sp. nov.

Candidatus Bythopirellula attoletta (NL. fem. n. *attoletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bythopirellula sp007860015*. The type genome for the species is the GenBank assembly RS_GCF_007860015.1. The GC content of the type genome is 52.94 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Bythopirellula esculibra sp. nov.

Candidatus Bythopirellula esculibra (NL. fem. n. *esculibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bythopirellula sp013152515*. The type genome for the species is the GenBank assembly GCA_013152515.1. The GC content of the type genome is 54.77 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Bythopirellula monumitoga sp. nov.

Candidatus Bythopirellula monumitoga (NL. fem. n. *monumitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bythopirellula sp013151315*. The type genome for the species is the GenBank assembly GCA_013151315.1. The GC content of the type genome is 55.96 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Bythopirellula subacousia sp. nov.

Candidatus Bythopirellula subacousia (NL. fem. n. *subacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Bythopirellula sp002713555*. The type genome for the species is the GenBank assembly GCA_002713555.1. The GC content of the type genome is 50.26 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Caballeronia adcogibra sp. nov.

Candidatus Caballeronia adcogibra (NL. fem. n. *adcogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caballeronia sp902506145*. The type genome for the species is the GenBank assembly RS_GCF_902506145.1. The GC content of the type genome is 63.38 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Caballeronia conopimonas sp. nov.

Candidatus Caballeronia conopimonas (NL. fem. n. *conopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caballeronia sp001557535*. The type genome for the species is the GenBank assembly RS_GCF_001935975.1. The GC content of the type genome is 59.82 % and the genome length is 7.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Lichen".

Description of *Candidatus* Caballeronia democentia sp. nov.

Candidatus Caballeronia democentia (NL. fem. n. *democentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caballeronia sp011493005*. The type genome for the species is the GenBank assembly RS_GCF_011039955.1. The GC content of the type genome is 59.52 % and the genome length is 9.32 Mbp.

Description of *Candidatus* Caballeronia ensigivita sp. nov.

Candidatus Caballeronia ensigivita (NL. fem. n. *ensigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caballeronia sp009766085*. The type genome for the species is the GenBank assembly RS_GCF_009766085.1. The GC content of the type genome is 59.63 % and the genome length is 8.49 Mbp.

Description of *Candidatus* Caballeronia maligigena sp. nov.

Candidatus Caballeronia maligigena (NL. fem. n. *maligigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caballeronia sp001424345*. The type genome for the species is the GenBank assembly RS_GCF_001424345.1. The GC content of the type genome is 59.2 % and the genome length is 6.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Caballeronia resupimonia sp. nov.

Candidatus Caballeronia resupimonia (NL. fem. n. *resupimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Caballeronia sp902833455*. The type genome for the species is the GenBank assembly RS_GCF_902833455.1. The GC content of the type genome is 63.7 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Cacalana adsigigena sp. nov.

Candidatus Cacalana adsigigena (NL. fem. n. *adsigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002725925 sp002714085*. The type genome for the species is the GenBank assembly GCA_002714085.1. The GC content of the type genome is 47.51 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Cacalana gen. nov.

Candidatus Cacalana (NL. fem. n. *Cacalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002725925*. The type species for the genus is *Candidatus* Cacalana adsigigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelanaceae.

Description of *Candidatus* Cacalana dicibilega sp. nov.

Candidatus Cacalana dicibilega (NL. fem. n. *dicibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002725925 sp009392785*. The type genome for the species is the GenBank assembly GCA_008373165.1. The GC content of the type genome is 46.49 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Cacalana irremitrix sp. nov.

Candidatus Cacalana irremitrix (NL. fem. n. *irremitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002725925 sp009392215*. The type genome for the species is the

GenBank assembly GCA_009392215.1. The GC content of the type genome is 46.21 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Cacalana levidicula sp. nov.

Candidatus Cacalana levidicula (NL. fem. n. *levidicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002725925 sp002725925*. The type genome for the species is the GenBank assembly GCA_002725925.1. The GC content of the type genome is 46.64 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Cacalana omninitura sp. nov.

Candidatus Cacalana omninitura (NL. fem. n. *omninitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002725925 sp002687335*. The type genome for the species is the GenBank assembly GCA_002687335.1. The GC content of the type genome is 46.33 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Cacalaria cosigitas sp. nov.

Candidatus Cacalaria cosigitas (NL. fem. n. *cosigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXPL01 sp903829815*. The type genome for the species is the GenBank assembly GCA_903848175.1. The GC content of the type genome is 64.43 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Cacalaria gen. nov.

Candidatus Cacalaria (NL. fem. n. *Cacalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXPL01*. The type species for the genus is *Candidatus* Cacalaria cosigitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Cacalaria rarefitoga sp. nov.

Candidatus Cacalaria rarefitoga (NL. fem. n. *rarefitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXPL01 sp903921325*. The type genome for the species is the GenBank assembly GCA_903909875.1. The GC content of the type genome is 61.51 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Cacalella acrufifica sp. nov.

Candidatus Cacalella acrufifica (NL. fem. n. *acrufifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-417 sp002477275*. The type genome for the species is the GenBank assembly GCA_002477275.1. The GC content of the type genome is 25.8 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Cacalella gen. nov.

Candidatus Cacalella (NL. fem. n. *Cacalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-417*. The type species for the genus is *Candidatus* Cacalella acrufifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Cacalella casabago sp. nov.

Candidatus Cacalella casabago (NL. fem. n. *casabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-417 sp902791625*. The type genome for the species is the GenBank assembly GCA_902791625.1. The GC content of the type genome is 26.35 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Cacalella depubicella sp. nov.

Candidatus Cacalella depubicella (NL. fem. n. *depubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-417 sp000432835*. The type genome for the species is the GenBank assembly GCA_900538565.1. The GC content of the type genome is 27.76 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Cacalida voragilenta sp. nov.

Candidatus Cacalida voragilenta (NL. fem. n. *voragilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXHP01 sp903919315*. The type genome for the species is the GenBank assembly GCA_903862705.1. The GC content of the type genome is 59.77 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Cacalida gen. nov.

Candidatus Cacalida (NL. fem. n. *Cacalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXHP01*. The type species for the genus is *Candidatus* Cacalida voragilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9219*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luticidaceae.

Description of *Candidatus* Cacalosa lapicitica sp. nov.

Candidatus Cacalosa lapicitica (NL. fem. n. *lapicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs140 sp903908015*. The type genome for the species is the GenBank assembly GCA_903842525.1. The GC content of the type genome is 50.53 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Cacalosa gen. nov.

Candidatus Cacalosa (NL. fem. n. *Cacalosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-60-MAGs140*. The type species for the genus is *Candidatus* Cacalosa lapicitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7662*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manubanaceae.

Description of *Candidatus* Cacalosa vecoritia sp. nov.

Candidatus Cacalosa vecoritia (NL. fem. n. *vecoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs140 sp005799065*. The type genome for the species is the GenBank assembly GCA_005799065.1. The GC content of the type genome is 49.79 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Cacalula dicibimonia sp. nov.

Candidatus Cacalula dicibimonia (NL. fem. n. *dicibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXSK01 sp005793375*. The type genome for the species is the GenBank assembly GCA_005805585.1. The GC content of the type genome is 56.73 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Cacalula gen. nov.

Candidatus Cacalula (NL. fem. n. *Cacalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXSK01*. The type species for the genus is *Candidatus* Cacalula dicibimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9464*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilariaceae.

Description of *Candidatus* Cacomana intamitura sp. nov.

Candidatus Cacomana intamitura (NL. fem. n. *intamitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10347 sp003485885*. The type genome for the species is the GenBank assembly GCA_003485885.1. The GC content of the type genome is 60.1 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Cacomana gen. nov.

Candidatus Cacomana (NL. fem. n. *Cacomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10347*. The type species for the genus is *Candidatus* Cacomana intamitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10347*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomanaceae.

Description of *Candidatus* Cacomanaceae fam. nov.

Candidatus Cacomanaceae (NL. fem. n. *Cacomanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10347.* The type genus for the taxon is *Candidatus* Cacomana .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Cacomaria colubilenta sp. nov.

Candidatus Cacomaria colubilenta (NL. fem. n. *colubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1845 sp002338715*. The type genome for the species is the GenBank assembly GCA_002338715.1. The GC content of the type genome is 57.0 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Cacomaria gen. nov.

Candidatus Cacomaria (NL. fem. n. *Cacomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1845*. The type species for the genus is *Candidatus* Cacomaria colubilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomariaceae.

Description of *Candidatus* Cacomariaceae fam. nov.

Candidatus Cacomariaceae (NL. fem. n. *Cacomariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1845.* The type genus for the taxon is *Candidatus* Cacomaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cacomariales.

Description of *Candidatus* Cacomariales ord. nov.

Candidatus Cacomariales (NL. fem. n. *Cacomariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1845.* The type genus for the taxon is *Candidatus* Cacomaria .

According to the GTDB R06-RS202, this order belongs to the class *Phycisphaerae*.

Description of *Candidatus* Cacomaria illuvilega sp. nov.

Candidatus Cacomaria illuvilega (NL. fem. n. *illuvilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1845 sp013151185*. The type genome for the species is the GenBank assembly GCA_013151185.1. The GC content of the type genome is 56.6 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Cacomella adrumugo sp. nov.

Candidatus Cacomella adrumugo (NL. fem. n. *adrumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GM7ARS4 sp014332745*. The type genome for the species is the GenBank assembly GCA_014332745.1. The GC content of the type genome is 51.98 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Cacomella gen. nov.

Candidatus Cacomella (NL. fem. n. *Cacomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GM7ARS4*. The type species for the genus is *Candidatus* Cacomella adrumugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GM7ARS4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomellaceae.

Description of *Candidatus* Cacomellaceae fam. nov.

Candidatus Cacomellaceae (NL. fem. n. *Cacomellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GM7ARS4.* The type genus for the taxon is *Candidatus* Cacomella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GM7ARS4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cacomellales.

Description of *Candidatus* Cacomellales ord. nov.

Candidatus Cacomellales (NL. fem. n. *Cacomellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GM7ARS4.* The type genus for the taxon is *Candidatus* Cacomella .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Cacomia cohorimonia sp. nov.

Candidatus Cacomia cohorimonia (NL. fem. n. *cohorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITKP01 sp903885085*. The type genome for the species is the GenBank assembly GCA_903852365.1. The GC content of the type genome is 36.54 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Cacomia gen. nov.

Candidatus Cacomia (NL. fem. n. *Cacomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITKP01*. The type species for the genus is *Candidatus* Cacomia cohorimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cacomia parocatio sp. nov.

Candidatus Cacomia parocatio (NL. fem. n. *parocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITKP01 sp903892995*. The type genome for the species is the GenBank assembly GCA_903905525.1. The GC content of the type genome is 36.48 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Cacomida detunago sp. nov.

Candidatus Cacomida detunago (NL. fem. n. *detunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-16 sp011043375*. The type genome for the species is the GenBank assembly GCA_011043375.1. The GC content of the type genome is 36.97 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Cacomida gen. nov.

Candidatus Cacomida (NL. fem. n. *Cacomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HyVt-16*. The type species for the genus is *Candidatus* Cacomida detunago .

According to the original version of GTDB R06-RS202, this genus belongs to the family

HyVt-16. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomidaceae.

Description of *Candidatus* Cacomidaceae fam. nov.

Candidatus Cacomidaceae (NL. fem. n. *Cacomidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HyVt-16.* The type genus for the taxon is *Candidatus* Cacomida .

According to the original version of GTDB R06-RS202, this family belongs to the order *B21-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hexagidales.

Description of *Candidatus* Cacomosa milipatio sp. nov.

Candidatus Cacomosa milipatio (NL. fem. n. *milipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJYI01 sp903824855*. The type genome for the species is the GenBank assembly GCA_903833805.1. The GC content of the type genome is 39.77 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Cacomosa gen. nov.

Candidatus Cacomosa (NL. fem. n. *Cacomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJYI01*. The type species for the genus is *Candidatus* Cacomosa milipatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIJYI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomosaceae.

Description of *Candidatus* Cacomosaceae fam. nov.

Candidatus Cacomosaceae (NL. fem. n. *Cacomosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIJYI01.* The type genus for the taxon is *Candidatus* Cacomosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Cacomula tenemitica sp. nov.

Candidatus Cacomula tenemitica (NL. fem. n. *tenemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYQM01 sp012519315*. The type genome for the species is the GenBank assembly GCA_012519315.1. The GC content of the type genome is 45.38 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Cacomula gen. nov.

Candidatus Cacomula (NL. fem. n. *Cacomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYQM01*. The type species for the genus is *Candidatus* Cacomula tenemitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Cacopana utputetta sp. nov.

Candidatus Cacopana utputetta (NL. fem. n. *utputetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADJB01 sp013151035*. The type genome for the species is the GenBank assembly GCA_013151035.1. The GC content of the type genome is 46.57 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Cacopana gen. nov.

Candidatus Cacopana (NL. fem. n. *Cacopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADJB01*. The type species for the genus is *Candidatus* Cacopana

utputetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADJB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacopanaceae.

Description of *Candidatus* Cacopanaceae fam. nov.

Candidatus Cacopanaceae (NL. fem. n. *Cacopanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADJB01*. The type genus for the taxon is *Candidatus* Cacopana .

According to GTDB R06-RS202, this family belongs to the order *Thiohalobacterales*.

Description of *Candidatus* Cacoparia homunitoga sp. nov.

Candidatus Cacoparia homunitoga (NL. fem. n. *homunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-45-11 sp001817685*. The type genome for the species is the GenBank assembly GCA_001817795.1. The GC content of the type genome is 45.5 % and the genome length is 0.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Cacoparia gen. nov.

Candidatus Cacoparia (NL. fem. n. *Cacoparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-45-11*. The type species for the genus is *Candidatus* Cacoparia homunitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cacopia apharitrix sp. nov.

Candidatus Cacopia apharitrix (NL. fem. n. *apharitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DTOL01 sp011358165*. The type genome for the species is the GenBank assembly GCA_011358165.1. The GC content of the type genome is 58.88 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Cacopia gen. nov.

Candidatus Cacopia (NL. fem. n. *Cacopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTOL01*. The type species for the genus is *Candidatus* Cacopia apharitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTOL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacopiaceae.

Description of *Candidatus* Cacopiaceae fam. nov.

Candidatus Cacopiaceae (NL. fem. n. *Cacopiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTOL01.* The type genus for the taxon is *Candidatus* Cacopia .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTOL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cacopiales.

Description of *Candidatus* Cacopiales ord. nov.

Candidatus Cacopiales (NL. fem. n. *Cacopiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTOL01.* The type genus for the taxon is *Candidatus* Cacopia .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTOL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cacopiae.

Description of *Candidatus* Cacopiae class. nov.

Candidatus Cacopiae (NL. fem. n. *c__Cacopiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *DTOL01*. The type genus for the taxon is *Candidatus* Cacopia .

According to GTDB R06-RS202, this class belongs to the phylum *Chloroflexota*.

Description of *Candidatus* Cacopida assibago sp. nov.

Candidatus Cacopida assibago (NL. fem. n. *assibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26134_A sp010027235*. The type genome for the species is the GenBank assembly GCA_010027235.1. The GC content of the type genome is 61.68 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Cacopida gen. nov.

Candidatus Cacopida (NL. fem. n. *Cacopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IMCC26134_A*. The type species for the genus is *Candidatus* Cacopida assibago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cacopida capudousia sp. nov.

Candidatus Cacopida capudousia (NL. fem. n. *capudousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26134_A sp903869675*. The type genome for the species is the GenBank assembly GCA_903851485.1. The GC content of the type genome is 63.35 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Cacopida hirunigena sp. nov.

Candidatus Cacopida hirunigena (NL. fem. n. *hirunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26134_A sp000972765*. The type genome for the species is the GenBank assembly GCA_903876315.1. The GC content of the type genome is 61.62 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Cacoposa monogimonas sp. nov.

Candidatus Cacoposa monogimonas (NL. fem. n. *monogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Asp313 sp003073475*. The type genome for the species is the GenBank assembly RS_GCF_003073475.1. The GC content of the type genome is 60.64 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Cacoposa gen. nov.

Candidatus Cacoposa (NL. fem. n. *Cacoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Asp313*. The type species for the genus is *Candidatus* Cacoposa monogimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cacopula nutamimonas sp. nov.

Candidatus Cacopula nutamimonas (NL. fem. n. *nutamimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2377 sp002344205*. The type genome for the species is the GenBank assembly GCA_002344205.1. The GC content of the type genome is 65.29 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Cacopula gen. nov.

Candidatus Cacopula (NL. fem. n. *Cacopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2377*. The type species for the genus is *Candidatus* Cacopula nutamimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cacopula rinocitudo sp. nov.

Candidatus Cacopula rinocitudo (NL. fem. n. *rinocitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2377 sp903952145*. The type genome for the species is the GenBank assembly GCA_903885535.1. The GC content of the type genome is 63.95 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Cadavana fraglitoga sp. nov.

Candidatus Cadavana fraglitoga (NL. fem. n. *fraglitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA970 sp002292805*. The type genome for the species is the GenBank assembly GCA_002292805.1. The GC content of the type genome is 40.11 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Cadavana gen. nov.

Candidatus Cadavana (NL. fem. n. *Cadavana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA970*. The type species for the genus is *Candidatus* Cadavana fraglitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Cadavana vinoligena sp. nov.

Candidatus Cadavana vinoligena (NL. fem. n. *vinoligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA970 sp903845135*. The type genome for the species is the GenBank assembly GCA_903898885.1. The GC content of the type genome is 38.5 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Cadavaria bipenitas sp. nov.

Candidatus Cadavaria bipenitas (NL. fem. n. *bipenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YA12-FULL-51-18 sp903867985*. The type genome for the species is the GenBank assembly GCA_903827825.1. The GC content of the type genome is 52.49 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Cadavaria gen. nov.

Candidatus Cadavaria (NL. fem. n. *Cadavaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YA12-FULL-51-18*. The type species for the genus is *Candidatus* Cadavaria bipenitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9959*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvidaceae.

Description of *Candidatus* Cadavaria ficulitoga sp. nov.

Candidatus Cadavaria ficulitoga (NL. fem. n. *ficulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YA12-FULL-51-18 sp001800245*. The type genome for the species is the GenBank assembly GCA_001800375.1. The GC content of the type genome is 52.83 % and the genome length is 3.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Cadavaria subacatica sp. nov.

Candidatus Cadavaria subacatica (NL. fem. n. *subacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YA12-FULL-51-18 sp001799575*. The type genome for the species is the GenBank assembly GCA_001799575.1. The GC content of the type genome is 56.41 % and the genome length is 2.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Cadavella inorditura sp. nov.

Candidatus Cadavella inorditura (NL. fem. n. *inorditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-80-MAGS106 sp005805305*. The type genome for the species is the GenBank assembly GCA_005805305.1. The GC content of the type genome is 58.27 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Cadavella gen. nov.

Candidatus Cadavella (NL. fem. n. *Cadavella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-80-MAGS106*. The type species for the genus is *Candidatus* Cadavella inorditura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F1-80-MAGS106*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadavellaceae.

Description of *Candidatus* Cadavellaceae fam. nov.

Candidatus Cadavellaceae (NL. fem. n. *Cadavellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *F1-80-MAGS106.* The type genus for the taxon is *Candidatus* Cadavella .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Cadavia catafimonas sp. nov.

Candidatus Cadavia catafimonas (NL. fem. n. *catafimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKAW01 sp903825575*. The type genome for the species is the GenBank assembly GCA_903901755.1. The GC content of the type genome is 60.79 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Cadavia gen. nov.

Candidatus Cadavia (NL. fem. n. *Cadavia* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKAW01*. The type species for the genus is *Candidatus* Cadavia catafimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIKAW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadaviaceae.

Description of *Candidatus* Cadaviaceae fam. nov.

Candidatus Cadaviaceae (NL. fem. n. *Cadaviaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIKAW01.* The type genus for the taxon is *Candidatus* Cadavia .

According to GTDB R06-RS202, this family belongs to the order *Nanopelagicales*.

Description of *Candidatus* Cadavida effacitura sp. nov.

Candidatus Cadavida effacitura (NL. fem. n. *effacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOD01 sp012838995*. The type genome for the species is the GenBank assembly GCA_012838995.1. The GC content of the type genome is 42.67 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Cadavida gen. nov.

Candidatus Cadavida (NL. fem. n. *Cadavida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOD01*. The type species for the genus is *Candidatus* Cadavida effacitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUOD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadavidaceae.

Description of *Candidatus* Cadavidaceae fam. nov.

Candidatus Cadavidaceae (NL. fem. n. *Cadavidaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUOD01*. The type genus for the taxon is *Candidatus* Cadavida .

According to GTDB R06-RS202, this family belongs to the order *Mahellales*.

Description of *Candidatus* Cadavosa conaritia sp. nov.

Candidatus Cadavosa conaritia (NL. fem. n. *conaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ATCC-39006 sp002847015*. The type genome for the species is the GenBank assembly RS_GCF_002847015.1. The GC content of the type genome is 49.3 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Cadavosa gen. nov.

Candidatus Cadavosa (NL. fem. n. *Cadavosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ATCC-39006*. The type species for the genus is *Candidatus* Cadavosa conaritia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cadavula egrititio sp. nov.

Candidatus Cadavula egrititio (NL. fem. n. *egrititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-4 sp005877815*. The type genome for the species is the GenBank assembly GCA_005877815.1. The GC content of the type genome is 58.02 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Cadavula gen. nov.

Candidatus Cadavula (NL. fem. n. *Cadavula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *NS-4*. The type species for the genus is *Candidatus* Cadavula egrititio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NS-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadavulaceae.

Description of *Candidatus* Cadavulaceae fam. nov.

Candidatus Cadavulaceae (NL. fem. n. *Cadavulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NS-4.* The type genus for the taxon is *Candidatus* Cadavula .

According to GTDB R06-RS202, this family belongs to the order *Nitrospirales*.

Description of *Candidatus* Cadurana adfamitudo sp. nov.

Candidatus Cadurana adfamitudo (NL. fem. n. *adfamitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900767595*. The type genome for the species is the GenBank assembly RS_GCF_900767595.1. The GC content of the type genome is 46.7 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Cadurana gen. nov.

Candidatus Cadurana (NL. fem. n. *Cadurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RF16*. The type species for the genus is *Candidatus* Cadurana adfamitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cadurana adgubibula sp. nov.

Candidatus Cadurana adgubibula (NL. fem. n. *adgubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902774185*. The type genome for the species is the GenBank assembly GCA_902774185.1. The GC content of the type genome is 47.67 % and the

genome length is 2.19 Mbp.

Description of *Candidatus* Cadurana admulivita sp. nov.

Candidatus Cadurana admulivita (NL. fem. n. *admulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902799875*. The type genome for the species is the GenBank assembly GCA_902799875.1. The GC content of the type genome is 49.31 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Cadurana adselessa sp. nov.

Candidatus Cadurana adselessa (NL. fem. n. *adselessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902798015*. The type genome for the species is the GenBank assembly GCA_902798015.1. The GC content of the type genome is 49.59 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Cadurana amnenitia sp. nov.

Candidatus Cadurana amnenitia (NL. fem. n. *amnenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902780495*. The type genome for the species is the GenBank assembly GCA_902780495.1. The GC content of the type genome is 47.06 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Cadurana artociforma sp. nov.

Candidatus Cadurana artociforma (NL. fem. n. *artociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900766775*. The type genome for the species is the GenBank assembly RS_GCF_900766775.1. The GC content of the type genome is 52.14 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Cadurana artocugo sp. nov.

Candidatus Cadurana artocugo (NL. fem. n. *artocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002351925*. The type genome for the species is the GenBank assembly GCA_002351925.1. The GC content of the type genome is 52.55 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Cadurana benificella sp. nov.

Candidatus Cadurana benificella (NL. fem. n. *benificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902779705*. The type genome for the species is the GenBank assembly GCA_902779705.1. The GC content of the type genome is 48.71 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Cadurana bifisisca sp. nov.

Candidatus Cadurana bifisisca (NL. fem. n. *bifisisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002477945*. The type genome for the species is the GenBank assembly GCA_002477945.1. The GC content of the type genome is 47.31 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Cadurana bigarastra sp. nov.

Candidatus Cadurana bigarastra (NL. fem. n. *bigarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900319995*. The type genome for the species is the GenBank assembly GCA_900319995.1. The GC content of the type genome is 46.43 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Cadurana bugilitura sp. nov.

Candidatus Cadurana bugilitura (NL. fem. n. *bugilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002371785*. The type genome for the species is the GenBank assembly GCA_002371785.1. The GC content of the type genome is 52.94 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Cadurana catobicella sp. nov.

Candidatus Cadurana catobicella (NL. fem. n. *catobicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900319645*. The type genome for the species is the GenBank assembly GCA_902758385.1. The GC content of the type genome is 49.38 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Cadurana cerimitica sp. nov.

Candidatus Cadurana cerimitica (NL. fem. n. *cerimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902769535*. The type genome for the species is the GenBank assembly GCA_902769535.1. The GC content of the type genome is 49.71 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Cadurana ciciledo sp. nov.

Candidatus Cadurana ciciledo (NL. fem. n. *ciciledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900316005*. The type genome for the species is the GenBank assembly GCA_900316005.1. The GC content of the type genome is 50.36 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Cadurana cimitatio sp. nov.

Candidatus Cadurana cimitatio (NL. fem. n. *cimitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902771935*. The type genome for the species is the GenBank assembly GCA_902771935.1. The GC content of the type genome is 45.33 % and the

genome length is 2.06 Mbp.

Description of *Candidatus* Cadurana cimitisca sp. nov.

Candidatus Cadurana cimitisca (NL. fem. n. *cimitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002373505*. The type genome for the species is the GenBank assembly GCA_902800915.1. The GC content of the type genome is 49.8 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Cadurana cinipugo sp. nov.

Candidatus Cadurana cinipugo (NL. fem. n. *cinipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002309835*. The type genome for the species is the GenBank assembly GCA_002309835.1. The GC content of the type genome is 49.83 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Cadurana citipicella sp. nov.

Candidatus Cadurana citipicella (NL. fem. n. *citipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002392745*. The type genome for the species is the GenBank assembly GCA_002392745.1. The GC content of the type genome is 49.33 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Cadurana citivibula sp. nov.

Candidatus Cadurana citivibula (NL. fem. n. *citivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900319035*. The type genome for the species is the GenBank assembly GCA_902794715.1. The GC content of the type genome is 47.88 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Cadurana cocolimonia sp. nov.

Candidatus Cadurana cocolimonia (NL. fem. n. *cocolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002440265*. The type genome for the species is the GenBank assembly GCA_002321485.1. The GC content of the type genome is 51.24 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Cadurana conigitura sp. nov.

Candidatus Cadurana conigitura (NL. fem. n. *conigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900320865*. The type genome for the species is the GenBank assembly GCA_902771975.1. The GC content of the type genome is 48.86 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cadurana culibimonia sp. nov.

Candidatus Cadurana culibimonia (NL. fem. n. *culibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902780235*. The type genome for the species is the GenBank assembly GCA_902780235.1. The GC content of the type genome is 49.14 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Cadurana decatitas sp. nov.

Candidatus Cadurana decatitas (NL. fem. n. *decatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900321005*. The type genome for the species is the GenBank assembly GCA_902771915.1. The GC content of the type genome is 50.21 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Cadurana delebitas sp. nov.

Candidatus Cadurana delebitas (NL. fem. n. *delebitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900319105*. The type genome for the species is the GenBank assembly GCA_900319105.1. The GC content of the type genome is 49.15 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Cadurana demigentia sp. nov.

Candidatus Cadurana demigentia (NL. fem. n. *demigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002387325*. The type genome for the species is the GenBank assembly GCA_002297085.1. The GC content of the type genome is 49.76 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Cadurana desomicella sp. nov.

Candidatus Cadurana desomicella (NL. fem. n. *desomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002452095*. The type genome for the species is the GenBank assembly GCA_002476535.1. The GC content of the type genome is 49.34 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Cadurana dibucicula sp. nov.

Candidatus Cadurana dibucicula (NL. fem. n. *dibucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002354055*. The type genome for the species is the GenBank assembly GCA_002354055.1. The GC content of the type genome is 49.89 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Cadurana dicanugo sp. nov.

Candidatus Cadurana dicanugo (NL. fem. n. *dicanugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902774075*. The type genome for the species is the GenBank assembly GCA_902774075.1. The GC content of the type genome is 50.34 % and the

genome length is 1.8 Mbp.

Description of *Candidatus* Cadurana dicibugo sp. nov.

Candidatus Cadurana dicibugo (NL. fem. n. *dicibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002352705*. The type genome for the species is the GenBank assembly GCA_002352705.1. The GC content of the type genome is 47.64 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Cadurana dilogitia sp. nov.

Candidatus Cadurana dilogitia (NL. fem. n. *dilogitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902798385*. The type genome for the species is the GenBank assembly GCA_902798385.1. The GC content of the type genome is 50.33 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Cadurana diminessa sp. nov.

Candidatus Cadurana diminessa (NL. fem. n. *diminessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902765485*. The type genome for the species is the GenBank assembly GCA_902765485.1. The GC content of the type genome is 49.54 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Cadurana effositura sp. nov.

Candidatus Cadurana effositura (NL. fem. n. *effositura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902792535*. The type genome for the species is the GenBank assembly GCA_902792535.1. The GC content of the type genome is 50.01 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Cadurana epicratio sp. nov.

Candidatus Cadurana epicratio (NL. fem. n. *epicratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902800525*. The type genome for the species is the GenBank assembly GCA_902800525.1. The GC content of the type genome is 48.36 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Cadurana expenibra sp. nov.

Candidatus Cadurana expenibra (NL. fem. n. *expenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002369075*. The type genome for the species is the GenBank assembly GCA_002369075.1. The GC content of the type genome is 51.06 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Cadurana extunilenta sp. nov.

Candidatus Cadurana extunilenta (NL. fem. n. *extunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902798965*. The type genome for the species is the GenBank assembly GCA_902798965.1. The GC content of the type genome is 50.02 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Cadurana famelitoga sp. nov.

Candidatus Cadurana famelitoga (NL. fem. n. *famelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002394335*. The type genome for the species is the GenBank assembly GCA_002394335.1. The GC content of the type genome is 49.46 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Cadurana funamatica sp. nov.

Candidatus Cadurana funamatica (NL. fem. n. *funamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900319005*. The type genome for the species is the GenBank assembly GCA_902791205.1. The GC content of the type genome is 47.36 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Cadurana inculugo sp. nov.

Candidatus Cadurana inculugo (NL. fem. n. *inculugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002315745*. The type genome for the species is the GenBank assembly GCA_002315745.1. The GC content of the type genome is 47.02 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Cadurana indiventia sp. nov.

Candidatus Cadurana indiventia (NL. fem. n. *indiventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002395805*. The type genome for the species is the GenBank assembly GCA_002395805.1. The GC content of the type genome is 49.54 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Cadurana infucitura sp. nov.

Candidatus Cadurana infucitura (NL. fem. n. *infucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902774995*. The type genome for the species is the GenBank assembly GCA_902774995.1. The GC content of the type genome is 51.44 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Cadurana inhabatica sp. nov.

Candidatus Cadurana inhabatica (NL. fem. n. *inhabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002309255*. The type genome for the species is the GenBank assembly GCA_002309255.1. The GC content of the type genome is 52.01 % and the

genome length is 2.23 Mbp.

Description of *Candidatus* Cadurana lapicimonas sp. nov.

Candidatus Cadurana lapicimonas (NL. fem. n. *lapicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902762355*. The type genome for the species is the GenBank assembly GCA_902762355.1. The GC content of the type genome is 49.93 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Cadurana letifitio sp. nov.

Candidatus Cadurana letifitio (NL. fem. n. *letifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902785605*. The type genome for the species is the GenBank assembly GCA_902798175.1. The GC content of the type genome is 50.51 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Cadurana loripitura sp. nov.

Candidatus Cadurana loripitura (NL. fem. n. *loripitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900317885*. The type genome for the species is the GenBank assembly GCA_002393655.1. The GC content of the type genome is 49.51 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Cadurana medimatica sp. nov.

Candidatus Cadurana medimatica (NL. fem. n. *medimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002310195*. The type genome for the species is the GenBank assembly GCA_002367495.1. The GC content of the type genome is 52.28 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Cadurana mirabedo sp. nov.

Candidatus Cadurana mirabedo (NL. fem. n. *mirabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900768725*. The type genome for the species is the GenBank assembly RS_GCF_900768725.1. The GC content of the type genome is 52.28 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Cadurana navicousia sp. nov.

Candidatus Cadurana navicousia (NL. fem. n. *navicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900316845*. The type genome for the species is the GenBank assembly GCA_002372695.1. The GC content of the type genome is 50.66 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Cadurana nosocimonas sp. nov.

Candidatus Cadurana nosocimonas (NL. fem. n. *nosocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902783545*. The type genome for the species is the GenBank assembly GCA_902783545.1. The GC content of the type genome is 52.26 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Cadurana octodimonia sp. nov.

Candidatus Cadurana octodimonia (NL. fem. n. *octodimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002308815*. The type genome for the species is the GenBank assembly GCA_002308815.1. The GC content of the type genome is 52.44 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Cadurana papavax sp. nov.

Candidatus Cadurana papavax (NL. fem. n. *papavax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900318245*. The type genome for the species is the GenBank assembly GCA_902799775.1. The GC content of the type genome is 50.89 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Cadurana peribilenta sp. nov.

Candidatus Cadurana peribilenta (NL. fem. n. *peribilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902778935*. The type genome for the species is the GenBank assembly GCA_902784215.1. The GC content of the type genome is 49.2 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Cadurana pulegicella sp. nov.

Candidatus Cadurana pulegicella (NL. fem. n. *pulegicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902792835*. The type genome for the species is the GenBank assembly GCA_902792835.1. The GC content of the type genome is 50.44 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Cadurana ranunitura sp. nov.

Candidatus Cadurana ranunitura (NL. fem. n. *ranunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900319025*. The type genome for the species is the GenBank assembly GCA_902763395.1. The GC content of the type genome is 44.79 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Cadurana recucastra sp. nov.

Candidatus Cadurana recucastra (NL. fem. n. *recucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902799705*. The type genome for the species is the GenBank assembly GCA_902799705.1. The GC content of the type genome is 48.71 % and the

genome length is 2.33 Mbp.

Description of *Candidatus* Cadurana repecitica sp. nov.

Candidatus Cadurana repecitica (NL. fem. n. *repecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002394395*. The type genome for the species is the GenBank assembly GCA_002394395.1. The GC content of the type genome is 50.08 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Cadurana rorifitia sp. nov.

Candidatus Cadurana rorifitia (NL. fem. n. *rorifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002368645*. The type genome for the species is the GenBank assembly GCA_002368645.1. The GC content of the type genome is 45.91 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Cadurana rumifitia sp. nov.

Candidatus Cadurana rumifitia (NL. fem. n. *rumifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900321605*. The type genome for the species is the GenBank assembly GCA_902791495.1. The GC content of the type genome is 47.7 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Cadurana saxopentia sp. nov.

Candidatus Cadurana saxopentia (NL. fem. n. *saxopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902800215*. The type genome for the species is the GenBank assembly GCA_902800695.1. The GC content of the type genome is 48.61 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Cadurana siticago sp. nov.

Candidatus Cadurana siticago (NL. fem. n. *siticago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900321775*. The type genome for the species is the GenBank assembly GCA_902784385.1. The GC content of the type genome is 51.1 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Cadurana sonivugo sp. nov.

Candidatus Cadurana sonivugo (NL. fem. n. *sonivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902799555*. The type genome for the species is the GenBank assembly GCA_902799555.1. The GC content of the type genome is 48.6 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Cadurana suboditudo sp. nov.

Candidatus Cadurana suboditudo (NL. fem. n. *suboditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902784585*. The type genome for the species is the GenBank assembly GCA_902784585.1. The GC content of the type genome is 51.69 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Cadurana subucifica sp. nov.

Candidatus Cadurana subucifica (NL. fem. n. *subucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902799185*. The type genome for the species is the GenBank assembly GCA_902799185.1. The GC content of the type genome is 51.35 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Cadurana tametibra sp. nov.

Candidatus Cadurana tametibra (NL. fem. n. *tametibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002479035*. The type genome for the species is the GenBank assembly GCA_002478995.1. The GC content of the type genome is 50.21 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Cadurana terebitio sp. nov.

Candidatus Cadurana terebitio (NL. fem. n. *terebitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp902785805*. The type genome for the species is the GenBank assembly GCA_902785805.1. The GC content of the type genome is 47.96 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Cadurana tirunivita sp. nov.

Candidatus Cadurana tirunivita (NL. fem. n. *tirunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900317745*. The type genome for the species is the GenBank assembly GCA_902780295.1. The GC content of the type genome is 49.85 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Cadurana totidigena sp. nov.

Candidatus Cadurana totidigena (NL. fem. n. *totidigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900556095*. The type genome for the species is the GenBank assembly GCA_900556095.1. The GC content of the type genome is 47.74 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Cadurana totidimonas sp. nov.

Candidatus Cadurana totidimonas (NL. fem. n. *totidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002308195*. The type genome for the species is the GenBank assembly GCA_002308195.1. The GC content of the type genome is 47.71 % and the

genome length is 1.54 Mbp.

Description of *Candidatus* Cadurana turifigena sp. nov.

Candidatus Cadurana turifigena (NL. fem. n. *turifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900317345*. The type genome for the species is the GenBank assembly GCA_902759235.1. The GC content of the type genome is 49.58 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Cadurana vecorimonia sp. nov.

Candidatus Cadurana vecorimonia (NL. fem. n. *vecorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002449665*. The type genome for the species is the GenBank assembly GCA_002394445.1. The GC content of the type genome is 48.13 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Cadurana vilitax sp. nov.

Candidatus Cadurana vilitax (NL. fem. n. *vilitax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp900542355*. The type genome for the species is the GenBank assembly GCA_900542355.1. The GC content of the type genome is 48.3 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Cadurana volubastra sp. nov.

Candidatus Cadurana volubastra (NL. fem. n. *volubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002372135*. The type genome for the species is the GenBank assembly GCA_002394915.1. The GC content of the type genome is 47.89 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Cadurana xenopitia sp. nov.

Candidatus Cadurana xenopitia (NL. fem. n. *xenopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RF16 sp002317295*. The type genome for the species is the GenBank assembly GCA_002317295.1. The GC content of the type genome is 47.12 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Caduraria cohonousia sp. nov.

Candidatus Caduraria cohonousia (NL. fem. n. *cohonousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1183 sp003136635*. The type genome for the species is the GenBank assembly GCA_003136635.1. The GC content of the type genome is 46.69 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Caduraria gen. nov.

Candidatus Caduraria (NL. fem. n. *Caduraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-1183*. The type species for the genus is *Candidatus* Caduraria cohonousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1180*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Chernanaceae.

Description of *Candidatus* Caduraria derecatica sp. nov.

Candidatus Caduraria derecatica (NL. fem. n. *derecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1183 sp013286205*. The type genome for the species is the GenBank assembly GCA_013286205.1. The GC content of the type genome is 48.75 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Cadurella dilemitas sp. nov.

Candidatus Cadurella dilemitas (NL. fem. n. *dilemitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077560 sp903896045*. The type genome for the species is the GenBank assembly GCA_903819775.1. The GC content of the type genome is 60.22 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Cadurella gen. nov.

Candidatus Cadurella (NL. fem. n. *Cadurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077560*. The type species for the genus is *Candidatus* Cadurella dilemitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077560*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadurellaceae.

Description of *Candidatus* Cadurellaceae fam. nov.

Candidatus Cadurellaceae (NL. fem. n. *Cadurellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ga0077560.* The type genus for the taxon is *Candidatus* Cadurella .

According to the original version of GTDB R06-RS202, this family belongs to the order *Ga0077560*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cadurellales.

Description of *Candidatus* Cadurellales ord. nov.

Candidatus Cadurellales (NL. fem. n. *Cadurellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ga0077560.* The type genus for the taxon is *Candidatus* Cadurella .

According to the GTDB R06-RS202, this order belongs to the class *Thermoleophilia*.

Description of *Candidatus* Cadurella semodisca sp. nov.

Candidatus Cadurella semodisca (NL. fem. n. *semodisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077560 sp001464275*. The type genome for the species is the GenBank assembly GCA_001464275.1. The GC content of the type genome is 73.61 % and the genome length is 3.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Caduria alectilenta sp. nov.

Candidatus Caduria alectilenta (NL. fem. n. *alectilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721545 sp014237605*. The type genome for the species is the GenBank assembly GCA_014237605.1. The GC content of the type genome is 39.63 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Caduria gen. nov.

Candidatus Caduria (NL. fem. n. *Caduria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2721545*. The type species for the genus is *Candidatus* Caduria alectilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Caduria dinupicula sp. nov.

Candidatus Caduria dinupicula (NL. fem. n. *dinupicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721545 sp002721545*. The type genome for the species is the GenBank assembly GCA_002448775.1. The GC content of the type genome is 36.36 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Caduria innasimonas sp. nov.

Candidatus Caduria innasimonas (NL. fem. n. *innasimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721545 sp004525885*. The type genome for the species is the GenBank assembly GCA_004525885.1. The GC content of the type genome is 42.19 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Caduria manufedo sp. nov.

Candidatus Caduria manufedo (NL. fem. n. *manufedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721545 sp004356775*. The type genome for the species is the GenBank assembly GCA_004356835.1. The GC content of the type genome is 44.44 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Caduria monocimonia sp. nov.

Candidatus Caduria monocimonia (NL. fem. n. *monocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721545 sp003230615*. The type genome for the species is the GenBank assembly GCA_003230615.1. The GC content of the type genome is 43.13 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Cadurida cimitiforma sp. nov.

Candidatus Cadurida cimitiforma (NL. fem. n. *cimitiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG30 sp003242275*. The type genome for the species is the GenBank assembly GCA_003242275.1. The GC content of the type genome is 69.86 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Cadurida gen. nov.

Candidatus Cadurida (NL. fem. n. *Cadurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG30*. The type species for the genus is *Candidatus* Cadurida cimitiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cadurida homulax sp. nov.

Candidatus Cadurida homulax (NL. fem. n. *homulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG30 sp903868595*. The type genome for the species is the GenBank assembly GCA_903924525.1. The GC content of the type genome is 67.48 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Cadurida obfenitrix sp. nov.

Candidatus Cadurida obfenitrix (NL. fem. n. *obfenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG30 sp903908825*. The type genome for the species is the GenBank assembly GCA_903908825.1. The GC content of the type genome is 62.46 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Cadurosa cocibastra sp. nov.

Candidatus Cadurosa cocibastra (NL. fem. n. *cocibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WSZJ01 sp009773755*. The type genome for the species is the GenBank assembly GCA_009773755.1. The GC content of the type genome is 65.7 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Cadurosa gen. nov.

Candidatus Cadurosa (NL. fem. n. *Cadurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WSZJ01*. The type species for the genus is *Candidatus* Cadurosa cocibastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WSZJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadurosaceae.

Description of *Candidatus* Cadurosaceae fam. nov.

Candidatus Cadurosaceae (NL. fem. n. *Cadurosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WSZJ01*. The type genus for the taxon is *Candidatus* Cadurosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *WSZJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cadurosales.

Description of *Candidatus* Cadurosales ord. nov.

Candidatus Cadurosales (NL. fem. n. *Cadurosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WSZJ01*. The type genus for the taxon is *Candidatus* Cadurosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *MHYJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Fetifosae.

Description of *Candidatus* Cadurula nubecitura sp. nov.

Candidatus Cadurula nubecitura (NL. fem. n. *nubecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EMTCatB1 sp001950395*. The type genome for the species is the GenBank assembly GCA_001950395.1. The GC content of the type genome is 67.17 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Cadurula gen. nov.

Candidatus Cadurula (NL. fem. n. *Cadurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *EMTCatB1*. The type species for the genus is *Candidatus* Cadurula nubecitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2279*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depeciaceae.

Description of *Candidatus* Caecibacter cacalitica sp. nov.

Candidatus Caecibacter cacalitica (NL. fem. n. *cacalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caecibacter sp900549385*. The type genome for the species is the GenBank assembly GCA_900752195.1. The GC content of the type genome is 46.13 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Caecibacter maxilax sp. nov.

Candidatus Caecibacter maxilax (NL. fem. n. *maxilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caecibacter sp003467125*. The type genome for the species is the GenBank assembly GCA_900765725.1. The GC content of the type genome is 49.75 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Caenibius ceracisca sp. nov.

Candidatus Caenibius ceracisca (NL. fem. n. *ceracisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caenibius sp001898545*. The type genome for the species is the GenBank assembly GCA_001898545.1. The GC content of the type genome is 62.5 % and the genome length is 3.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Caenibius expurago sp. nov.

Candidatus Caenibius expurago (NL. fem. n. *expurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caenibius sp001305965*. The type genome for the species is the GenBank assembly RS_GCF_001305965.1. The GC content of the type genome is 63.03 % and the genome length is 3.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Caldatribacterium fiducitrix sp. nov.

Candidatus Caldatribacterium fiducitrix (NL. fem. n. *fiducitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldatribacterium sp014359405*. The type genome for the species is the GenBank assembly GCA_014359405.1. The GC content of the type genome is 54.01 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Caldilinea capudugo sp. nov.

Candidatus Caldilinea capudugo (NL. fem. n. *capudugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldilinea sp003451595*. The type genome for the species is the GenBank assembly GCA_003451595.1. The GC content of the type genome is 60.84 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Caldilinea dehisisca sp. nov.

Candidatus Caldilinea dehisisca (NL. fem. n. *dehisisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldilinea sp002391565*. The type genome for the species is the GenBank assembly GCA_002391565.1. The GC content of the type genome is 60.95 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Caldilinea turibiforma sp. nov.

Candidatus Caldilinea turibiforma (NL. fem. n. *turibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldilinea sp903858085*. The type genome for the species is the GenBank assembly GCA_903820485.1. The GC content of the type genome is 62.31 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Caldilinea venabigena sp. nov.

Candidatus Caldilinea venabigena (NL. fem. n. *venabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldilinea sp903879975*. The type genome for the species is the GenBank assembly GCA_903932405.1. The GC content of the type genome is 60.75 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Caldimicrobium ablepisca sp. nov.

Candidatus Caldimicrobium ablepisca (NL. fem. n. *ablepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldimicrobium sp011055415*. The type genome for the species is the GenBank assembly GCA_011055415.1. The GC content of the type genome is 41.89 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Caldimicrobium abrepentia sp. nov.

Candidatus Caldimicrobium abrepentia (NL. fem. n. *abrepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldimicrobium sp002441555*. The type genome for the species is the GenBank assembly GCA_002441555.1. The GC content of the type genome is 37.32 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Caldimicrobium cocodentia sp. nov.

Candidatus Caldimicrobium cocodentia (NL. fem. n. *cocodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldimicrobium sp009903935*. The type genome for the species is the GenBank assembly GCA_009903935.1. The GC content of the type genome is 42.64 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Caldimicrobium luxurimonia sp. nov.

Candidatus Caldimicrobium luxurimonia (NL. fem. n. *luxurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldimicrobium sp011375865*. The type genome for the species is the GenBank assembly GCA_011375865.1. The GC content of the type genome is 42.05 %

and the genome length is 1.19 Mbp.

Description of *Candidatus* Caldipriscus inmenitica sp. nov.

Candidatus Caldipriscus inmenitica (NL. fem. n. *inmenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldipriscus sp000980735*. The type genome for the species is the GenBank assembly GCA_000980735.1. The GC content of the type genome is 44.3 % and the genome length is 1.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hot spring filament".

Description of *Candidatus* Caldithrix adlicatica sp. nov.

Candidatus Caldithrix adlicatica (NL. fem. n. *adlicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caldithrix sp013151275*. The type genome for the species is the GenBank assembly GCA_013151275.1. The GC content of the type genome is 44.05 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Calescibacterium carecimonas sp. nov.

Candidatus Calescibacterium carecimonas (NL. fem. n. *carecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calescibacterium sp011364105*. The type genome for the species is the GenBank assembly GCA_011367265.1. The GC content of the type genome is 36.4 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Calescibacterium insufentia sp. nov.

Candidatus Calescibacterium insufentia (NL. fem. n. *insufentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calescibacterium sp002898315*. The type genome for the species is the GenBank assembly GCA_002898315.1. The GC content of the type genome is 36.94 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Calidifontibacillus futatitura sp. nov.

Candidatus Calidifontibacillus futatitura (NL. fem. n. *futatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calidifontibacillus sp012840465*. The type genome for the species is the GenBank assembly GCA_012840465.1. The GC content of the type genome is 37.84 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Calidifontibacillus intoressa sp. nov.

Candidatus Calidifontibacillus intoressa (NL. fem. n. *intoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calidifontibacillus sp013303125*. The type genome for the species is the GenBank assembly RS_GCF_013303125.1. The GC content of the type genome is 36.12 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Calidifontibacillus necubentia sp. nov.

Candidatus Calidifontibacillus necubentia (NL. fem. n. *necubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calidifontibacillus sp012842745*. The type genome for the species is the GenBank assembly GCA_012842745.1. The GC content of the type genome is 36.88 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Calipana malogivita sp. nov.

Candidatus Calipana malogivita (NL. fem. n. *malogivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITZA01 sp903896745*. The type genome for the species is the GenBank assembly GCA_903909775.1. The GC content of the type genome is 47.27 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Calipana gen. nov.

Candidatus Calipana (NL. fem. n. *Calipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITZA01*. The type species for the genus is *Candidatus* Calipana malogivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Caliparia denomilega sp. nov.

Candidatus Caliparia denomilega (NL. fem. n. *denomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL14 sp010023085*. The type genome for the species is the GenBank assembly GCA_010022565.1. The GC content of the type genome is 34.92 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Caliparia gen. nov.

Candidatus Caliparia (NL. fem. n. *Caliparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BACL14*. The type species for the genus is *Candidatus* Caliparia denomilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Caliparia derelastra sp. nov.

Candidatus Caliparia derelastra (NL. fem. n. *derelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL14 sp002384685*. The type genome for the species is the GenBank assembly GCA_002340895.1. The GC content of the type genome is 38.37 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Caliparia holovitura sp. nov.

Candidatus Caliparia holovitura (NL. fem. n. *holovitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL14 sp000168995*. The type genome for the species is the

GenBank assembly RS_GCF_000168995.1. The GC content of the type genome is 37.93 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Caliparia locupentia sp. nov.

Candidatus Caliparia locupentia (NL. fem. n. *locupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL14 sp001044335*. The type genome for the species is the GenBank assembly RS_GCF_001044355.1. The GC content of the type genome is 35.48 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Caliparia palifitia sp. nov.

Candidatus Caliparia palifitia (NL. fem. n. *palifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL14 sp013205275*. The type genome for the species is the GenBank assembly GCA_013205275.1. The GC content of the type genome is 37.69 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Caliparia rubecitoga sp. nov.

Candidatus Caliparia rubecitoga (NL. fem. n. *rubecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL14 sp902558495*. The type genome for the species is the GenBank assembly GCA_902558495.1. The GC content of the type genome is 33.73 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Caliparia viragilenta sp. nov.

Candidatus Caliparia viragilenta (NL. fem. n. *viragilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL14 sp000156155*. The type genome for the species is the GenBank assembly RS_GCF_000156155.1. The GC content of the type genome is 35.37 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Calipella mimogousia sp. nov.

Candidatus Calipella mimogousia (NL. fem. n. *mimogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2247 sp002347295*. The type genome for the species is the GenBank assembly GCA_002347295.1. The GC content of the type genome is 42.59 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Calipella gen. nov.

Candidatus Calipella (NL. fem. n. *Calipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2247*. The type species for the genus is *Candidatus* Calipella mimogousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2247*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Calipellaceae.

Description of *Candidatus* Calipellaceae fam. nov.

Candidatus Calipellaceae (NL. fem. n. *Calipellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2247.* The type genus for the taxon is *Candidatus* Calipella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2247*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Calipellales.

Description of *Candidatus* Calipellales ord. nov.

Candidatus Calipellales (NL. fem. n. *Calipellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2247.* The type genus for the taxon is *Candidatus* Calipella .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Calipia revulessa sp. nov.

Candidatus Calipia revulessa (NL. fem. n. *revulessa* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXPQ01 sp009839485*. The type genome for the species is the GenBank assembly GCA_009839485.1. The GC content of the type genome is 58.72 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Calipia gen. nov.

Candidatus Calipia (NL. fem. n. *Calipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXPQ01*. The type species for the genus is *Candidatus* Calipia revulessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VXPQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Calipiaceae.

Description of *Candidatus* Calipiaceae fam. nov.

Candidatus Calipiaceae (NL. fem. n. *Calipiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXPQ01.* The type genus for the taxon is *Candidatus* Calipia .

According to GTDB R06-RS202, this family belongs to the order *Rhodothermales*.

Description of *Candidatus* Calipida biparibra sp. nov.

Candidatus Calipida biparibra (NL. fem. n. *biparibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA817 sp002296285*. The type genome for the species is the GenBank assembly GCA_002480255.1. The GC content of the type genome is 39.22 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Calipida gen. nov.

Candidatus Calipida (NL. fem. n. *Calipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA817*. The type species for the genus is *Candidatus* Calipida biparibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA817*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Calipidaceae.

Description of *Candidatus* Calipidaceae fam. nov.

Candidatus Calipidaceae (NL. fem. n. *Calipidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA817.* The type genus for the taxon is *Candidatus* Calipida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA817*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Calipidales.

Description of *Candidatus* Calipidales ord. nov.

Candidatus Calipidales (NL. fem. n. *Calipidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA817.* The type genus for the taxon is *Candidatus* Calipida .

According to the GTDB R06-RS202, this order belongs to the class *Marinamargulisbacteria*.

Description of *Candidatus* Caliposa adnicimonas sp. nov.

Candidatus Caliposa adnicimonas (NL. fem. n. *adnicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-313 sp900760745*. The type genome for the species is the GenBank assembly RS_GCF_900760745.1. The GC content of the type genome is 30.89 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Caliposa gen. nov.

Candidatus Caliposa (NL. fem. n. *Caliposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-313*. The type species for the genus is *Candidatus* Caliposa adnicimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caliposaceae.

Description of *Candidatus* Caliposaceae fam. nov.

Candidatus Caliposaceae (NL. fem. n. *Caliposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-313.* The type genus for the taxon is *Candidatus* Caliposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *ML615J-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monopidales.

Description of *Candidatus* Caliposa hemitedo sp. nov.

Candidatus Caliposa hemitedo (NL. fem. n. *hemitedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-313 sp003539625*. The type genome for the species is the GenBank assembly GCA_900538525.1. The GC content of the type genome is 29.24 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Caliposa rumifedo sp. nov.

Candidatus Caliposa rumifedo (NL. fem. n. *rumifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-313 sp000433035*. The type genome for the species is the GenBank assembly GCA_900539305.1. The GC content of the type genome is 28.62 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Caliposa sacomousia sp. nov.

Candidatus Caliposa sacomousia (NL. fem. n. *sacomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-313 sp900539265*. The type genome for the species is the GenBank assembly GCA_900539265.1. The GC content of the type genome is 27.63 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Calipula monogibula sp. nov.

Candidatus Calipula monogibula (NL. fem. n. *monogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMN01 sp009841055*. The type genome for the species is the GenBank assembly GCA_009837045.1. The GC content of the type genome is 62.54 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Calipula gen. nov.

Candidatus Calipula (NL. fem. n. *Calipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXMN01*. The type species for the genus is *Candidatus* Calipula monogibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VXMN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Calipulaceae.

Description of *Candidatus* Calipulaceae fam. nov.

Candidatus Calipulaceae (NL. fem. n. *Calipulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXMN01.* The type genus for the taxon is *Candidatus* Calipula .

According to the original version of GTDB R06-RS202, this family belongs to the order *VXMN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Calipulales.

Description of *Candidatus* Calipulales ord. nov.

Candidatus Calipulales (NL. fem. n. *Calipulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXMN01*. The type genus for the taxon is *Candidatus* Calipula .

According to the GTDB R06-RS202, this order belongs to the class *Acidobacteriae*.

Description of *Candidatus* Caloramator inculessa sp. nov.

Candidatus Caloramator inculessa (NL. fem. n. *inculessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caloramator_B sp006016075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_006016075.1. The GC content of the type genome is 31.31 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Caloranaerobacter divolax sp. nov.

Candidatus Caloranaerobacter divolax (NL. fem. n. *divolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caloranaerobacter sp001316435*. The type genome for the species is the GenBank assembly RS_GCF_001316435.1. The GC content of the type genome is 29.52 % and the genome length is 2.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface sediment from deep-sea hydrothermal field".

Description of *Candidatus* Calothrix adsecilega sp. nov.

Candidatus Calothrix adsecilega (NL. fem. n. *adsecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calothrix sp004296455*. The type genome for the species is the GenBank assembly GCA_004296455.1. The GC content of the type genome is 39.66 % and the genome length is 7.59 Mbp.

Description of *Candidatus* Calothrix cerofiforma sp. nov.

Candidatus Calothrix cerofiforma (NL. fem. n. *cerofiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calothrix sp001904745*. The type genome for the species is the GenBank assembly RS_GCF_001904745.1. The GC content of the type genome is 38.82 % and the genome length is 9.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Calothrix foricastra sp. nov.

Candidatus Calothrix foricastra (NL. fem. n. *foricastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calothrix sp012034595*. The type genome for the species is the GenBank assembly GCA_012034595.1. The GC content of the type genome is 39.17 % and the genome length is 7.44 Mbp.

Description of *Candidatus* Calothrix ignobilega sp. nov.

Candidatus Calothrix ignobilega (NL. fem. n. *ignobilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calothrix sp000734895*. The type genome for the species is the GenBank assembly RS_GCF_000734895.2. The GC content of the type genome is 41.1 % and the genome length is 6.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Calothrix immigitoga sp. nov.

Candidatus Calothrix immigitoga (NL. fem. n. *immigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calothrix sp000331305*. The type genome for the species is the GenBank assembly RS_GCF_000331305.1. The GC content of the type genome is 38.55 % and the genome length is 11.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "herbarium material of Anacystis montana".

Description of *Candidatus* Calothrix pimenetta sp. nov.

Candidatus Calothrix pimenetta (NL. fem. n. *pimenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calothrix sp002368415*. The type genome for the species is the GenBank assembly RS_GCF_002368415.1. The GC content of the type genome is 39.0 % and the genome length is 12.04 Mbp.

Description of *Candidatus* Calothrix sceptousia sp. nov.

Candidatus Calothrix sceptousia (NL. fem. n. *sceptousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Calothrix sp002368395*. The type genome for the species is the GenBank assembly RS_GCF_002368395.1. The GC content of the type genome is 41.53 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Camilana miracitio sp. nov.

Candidatus Camilana miracitio (NL. fem. n. *miracitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLQV01 sp009697555*. The type genome for the species is the GenBank assembly GCA_009697555.1. The GC content of the type genome is 48.77 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Camilana gen. nov.

Candidatus Camilana (NL. fem. n. *Camilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLQV01*. The type species for the genus is *Candidatus* Camilana miracitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Camilella volucax sp. nov.

Candidatus Camilella volucax (NL. fem. n. *volucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLOWO2-12-39-15 sp001804915*. The type genome for the species is

the GenBank assembly GCA_001804905.1. The GC content of the type genome is 39.11 % and the genome length is 1.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; 10% subassembly".

Description of *Candidatus* Camilella gen. nov.

Candidatus Camilella (NL. fem. n. *Camilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PLOWO2-12-39-15*. The type species for the genus is *Candidatus* Camilella volucax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9942*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vivifidaceae.

Description of *Candidatus* Camilida lavabicella sp. nov.

Candidatus Camilida lavabicella (NL. fem. n. *lavabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002782345 sp002782345*. The type genome for the species is the GenBank assembly GCA_002790585.1. The GC content of the type genome is 33.38 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Camilida gen. nov.

Candidatus Camilida (NL. fem. n. *Camilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002782345*. The type species for the genus is *Candidatus* Camilida lavabicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Camilosa arancago sp. nov.

Candidatus Camilosa arancago (NL. fem. n. *arancago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp002361875*. The type genome for the species is the GenBank assembly GCA_002361875.1. The GC content of the type genome is 41.23 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Camilosa gen. nov.

Candidatus Camilosa (NL. fem. n. *Camilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-180*. The type species for the genus is *Candidatus* Camilosa arancago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Camilosa baropax sp. nov.

Candidatus Camilosa baropax (NL. fem. n. *baropax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp004555265*. The type genome for the species is the GenBank assembly GCA_004552955.1. The GC content of the type genome is 49.33 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Camilosa bipatibula sp. nov.

Candidatus Camilosa bipatibula (NL. fem. n. *bipatibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp900545625*. The type genome for the species is the GenBank assembly GCA_900545625.1. The GC content of the type genome is 55.22 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Camilosa conibiforma sp. nov.

Candidatus Camilosa conibiforma (NL. fem. n. *conibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp900540295*. The type genome for the species is the

GenBank assembly GCA_900540295.1. The GC content of the type genome is 48.78 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Camilosa excanessa sp. nov.

Candidatus Camilosa excanessa (NL. fem. n. *excanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp002437245*. The type genome for the species is the GenBank assembly GCA_002437245.1. The GC content of the type genome is 44.99 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Camilosa filifentia sp. nov.

Candidatus Camilosa filifentia (NL. fem. n. *filifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp000432435*. The type genome for the species is the GenBank assembly GCA_003541735.1. The GC content of the type genome is 45.12 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Camilosa inmematio sp. nov.

Candidatus Camilosa inmematio (NL. fem. n. *inmematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp900766945*. The type genome for the species is the GenBank assembly RS_GCF_900766945.1. The GC content of the type genome is 49.15 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Camilosa manibicula sp. nov.

Candidatus Camilosa manibicula (NL. fem. n. *manibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp004556705*. The type genome for the species is the GenBank assembly GCA_900540325.1. The GC content of the type genome is 41.87 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Camilosa negidimonia sp. nov.

Candidatus Camilosa negidimonia (NL. fem. n. *negidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp900315985*. The type genome for the species is the GenBank assembly GCA_900315235.1. The GC content of the type genome is 42.33 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Camilosa sacopilega sp. nov.

Candidatus Camilosa sacopilega (NL. fem. n. *sacopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp002314305*. The type genome for the species is the GenBank assembly GCA_002314305.1. The GC content of the type genome is 55.5 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Camilosa semibugo sp. nov.

Candidatus Camilosa semibugo (NL. fem. n. *semibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp002490525*. The type genome for the species is the GenBank assembly GCA_002491545.1. The GC content of the type genome is 46.64 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Camilosa turilitas sp. nov.

Candidatus Camilosa turilitas (NL. fem. n. *turilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-180 sp002490425*. The type genome for the species is the GenBank assembly GCA_002490425.1. The GC content of the type genome is 41.01 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Camilula depacibra sp. nov.

Candidatus Camilula depacibra (NL. fem. n. *depacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4066 sp002383685*. The type genome for the species is the GenBank assembly GCA_002328605.1. The GC content of the type genome is 52.35 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Camilula gen. nov.

Candidatus Camilula (NL. fem. n. *Camilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4066*. The type species for the genus is *Candidatus* Camilula depacibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Campylobacter conabibra sp. nov.

Candidatus Campylobacter conabibra (NL. fem. n. *conabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter sp002139875*. The type genome for the species is the GenBank assembly RS_GCF_002139795.1. The GC content of the type genome is 32.43 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Campylobacter depacitio sp. nov.

Candidatus Campylobacter depacitio (NL. fem. n. *depacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter sp900319915*. The type genome for the species is the GenBank assembly GCA_900319915.1. The GC content of the type genome is 47.87 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Campylobacter exhonitudo sp. nov.

Candidatus Campylobacter exhonitudo (NL. fem. n. *exhonitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter sp002317305*. The type genome for the species is the

GenBank assembly GCA_002317305.1. The GC content of the type genome is 43.96 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Campylobacter furibitio sp. nov.

Candidatus Campylobacter furibitio (NL. fem. n. *furibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter sp013416015*. The type genome for the species is the GenBank assembly RS_GCF_900766765.1. The GC content of the type genome is 35.64 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Campylobacter recocax sp. nov.

Candidatus Campylobacter recocax (NL. fem. n. *recocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter sp900753405*. The type genome for the species is the GenBank assembly RS_GCF_900753405.1. The GC content of the type genome is 46.79 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Campylobacter taraxilega sp. nov.

Candidatus Campylobacter taraxilega (NL. fem. n. *taraxilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter sp002139915*. The type genome for the species is the GenBank assembly RS_GCF_002138695.1. The GC content of the type genome is 33.48 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Campylobacter venucitoga sp. nov.

Candidatus Campylobacter venucitoga (NL. fem. n. *venucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter sp002139855*. The type genome for the species is the GenBank assembly RS_GCF_002139855.1. The GC content of the type genome is 34.22 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Campylobacter dapifitrix sp. nov.

Candidatus Campylobacter dapifitrix (NL. fem. n. *dapifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_A sp004803835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012978655.1. The GC content of the type genome is 37.49 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Campylobacter divolimonia sp. nov.

Candidatus Campylobacter divolimonia (NL. fem. n. *divolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_A sp012978815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012978835.1. The GC content of the type genome is 36.31 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Campylobacter fecunilenta sp. nov.

Candidatus Campylobacter fecunilenta (NL. fem. n. *fecunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_A sp004803855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004803855.2. The GC content of the type genome is 35.74 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Campylobacter ridibatio sp. nov.

Candidatus Campylobacter ridibatio (NL. fem. n. *ridibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Campylobacter_A sp013201975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012978795.1. The GC content of the type genome is 37.78 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Campylobacter timefiforma sp. nov.

Candidatus Campylobacter timefiforma (NL. fem. n. *timefiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_A sp014253065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014253065.1. The GC content of the type genome is 45.72 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Campylobacter abnepastra sp. nov.

Candidatus Campylobacter abnepastra (NL. fem. n. *abnepastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_B sp012519705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012519705.1. The GC content of the type genome is 34.82 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Campylobacter funamimonas sp. nov.

Candidatus Campylobacter funamimonas (NL. fem. n. *funamimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_B sp900539505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900539505.1. The GC content of the type genome is 47.44 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Campylobacter risibifica sp. nov.

Candidatus Campylobacter risibifica (NL. fem. n. *risibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_B sp009690845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009690845.1. The GC content of the type genome is 28.34 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Campylobacter uberratica sp. nov.

Candidatus Campylobacter uberratica (NL. fem. n. *uberratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_B sp012728225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012728225.1. The GC content of the type genome is 32.68 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Campylobacter apsoressa sp. nov.

Candidatus Campylobacter apsoressa (NL. fem. n. *apsoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp003627915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003627915.1. The GC content of the type genome is 31.52 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Campylobacter dicanifica sp. nov.

Candidatus Campylobacter dicanifica (NL. fem. n. *dicanifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp004378855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004378855.1. The GC content of the type genome is 30.7 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Campylobacter hibisitas sp. nov.

Candidatus Campylobacter hibisitas (NL. fem. n. *hibisitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp006864455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_006864455.1. The GC content of the type genome is 33.93 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Campylobacter lavacitia sp. nov.

Candidatus Campylobacter lavacitia (NL. fem. n. *lavacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp900539255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900772045.1. The GC content of the type genome is 41.25 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Campylobacter malogessa sp. nov.

Candidatus Campylobacter malogessa (NL. fem. n. *malogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp900772495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900772495.1. The GC content of the type genome is 41.2 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Campylobacter mirabigena sp. nov.

Candidatus Campylobacter mirabigena (NL. fem. n. *mirabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp006864535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005406235.1. The GC content of the type genome is 34.67 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Campylobacter miracugo sp. nov.

Candidatus Campylobacter miracugo (NL. fem. n. *miracugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp006864365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_006864365.1. The GC content of the type genome is 34.01 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Campylobacter nutamigena sp. nov.

Candidatus Campylobacter nutamigena (NL. fem. n. *nutamigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp002738235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002738235.1. The GC content of the type genome is 34.7 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Campylobacter semodugo sp. nov.

Candidatus Campylobacter semodugo (NL. fem. n. *semodugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp008633915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008633875.1. The GC content of the type genome is 29.91 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Campylobacter taraximonia sp. nov.

Candidatus Campylobacter taraximonia (NL. fem. n. *taraximonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Campylobacter_D sp000816245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000816245.1. The GC content of the type genome is 28.47 % and the genome length is 1.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "River water".

Description of *Candidatus* Canacana antimigena sp. nov.

Candidatus Canacana antimigena (NL. fem. n. *antimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKH01 sp903839985*. The type genome for the species is the GenBank assembly GCA_903839985.1. The GC content of the type genome is 41.61 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Canacana gen. nov.

Candidatus Canacana (NL. fem. n. *Canacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKH01*. The type species for the genus is *Candidatus* Canacana antimigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VFKH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Canacanaceae.

Description of *Candidatus* Canacanaceae fam. nov.

Candidatus Canacanaceae (NL. fem. n. *Canacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VFKH01*. The type genus for the taxon is *Candidatus* Canacana .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Canacana depupetta sp. nov.

Candidatus Canacana depupetta (NL. fem. n. *depupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKH01 sp009885615*. The type genome for the species is the GenBank assembly GCA_009885615.1. The GC content of the type genome is 39.84 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Canacaria hibisitica sp. nov.

Candidatus Canacaria hibisitica (NL. fem. n. *hibisitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACPR01 sp009995365*. The type genome for the species is the GenBank assembly GCA_009995365.1. The GC content of the type genome is 33.74 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Canacaria gen. nov.

Candidatus Canacaria (NL. fem. n. *Canacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACPR01*. The type species for the genus is *Candidatus* Canacaria hibisitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACPR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Canacariaceae.

Description of *Candidatus* Canacariaceae fam. nov.

Candidatus Canacariaceae (NL. fem. n. *Canacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAACPR01.* The type genus for the taxon is *Candidatus* Canacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Canacella pericugo sp. nov.

Candidatus Canacella pericugo (NL. fem. n. *pericugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED15 sp002729015*. The type genome for the species is the GenBank assembly GCA_002729015.1. The GC content of the type genome is 40.37 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Canacella gen. nov.

Candidatus Canacella (NL. fem. n. *Canacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED15*. The type species for the genus is *Candidatus* Canacella pericugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9662*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumulaceae.

Description of *Candidatus* Canacella semibedo sp. nov.

Candidatus Canacella semibedo (NL. fem. n. *semibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED15 sp002714785*. The type genome for the species is the GenBank assembly GCA_002726605.1. The GC content of the type genome is 40.19 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Canacia deculetta sp. nov.

Candidatus Canacia deculetta (NL. fem. n. *deculetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGNO01 sp003228195*. The type genome for the species is the GenBank assembly GCA_003228195.2. The GC content of the type genome is 45.9 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Canacia gen. nov.

Candidatus Canacia (NL. fem. n. *Canacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QGNO01*. The type species for the genus is *Candidatus* Canacia deculetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QGNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Canaciaceae.

Description of *Candidatus* Canaciaceae fam. nov.

Candidatus Canaciaceae (NL. fem. n. *Canaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QGNO01*. The type genus for the taxon is *Candidatus* Canacia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6952*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Baditariales.

Description of *Candidatus* Canacida depubitio sp. nov.

Candidatus Canacida depubitio (NL. fem. n. *depubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLRW01 sp003567955*. The type genome for the species is the GenBank assembly GCA_007128575.1. The GC content of the type genome is 61.5 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Canacida gen. nov.

Candidatus Canacida (NL. fem. n. *Canacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLRW01*. The type species for the genus is *Candidatus* Canacida depubitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5335*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verifosaceae.

Description of *Candidatus* Canacida manupivita sp. nov.

Candidatus Canacida manupivita (NL. fem. n. *manupivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLRW01 sp007130745*. The type genome for the species is the GenBank assembly GCA_003559115.1. The GC content of the type genome is 61.03 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Canacosa semibitica sp. nov.

Candidatus Canacosa semibitica (NL. fem. n. *semibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14258 sp902797345*. The type genome for the species is the GenBank assembly GCA_902797345.1. The GC content of the type genome is 54.34 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Canacosa gen. nov.

Candidatus Canacosa (NL. fem. n. *Canacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14258*. The type species for the genus is *Candidatus* Canacosa semibitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Canacula necubitrix sp. nov.

Candidatus Canacula necubitrix (NL. fem. n. *necubitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTIZ01 sp011370625*. The type genome for the species is the GenBank assembly GCA_011370625.1. The GC content of the type genome is 68.78 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Canacula gen. nov.

Candidatus Canacula (NL. fem. n. *Canacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTIZ01*. The type species for the genus is *Candidatus* Canacula necubitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTIZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Canaculaceae.

Description of *Candidatus* Canaculaceae fam. nov.

Candidatus Canaculaceae (NL. fem. n. *Canaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTIZ01.* The type genus for the taxon is *Candidatus* Canacula .

According to the original version of GTDB R06-RS202, this family belongs to the order *WVXJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repeculales.

Description of *Candidatus* Candidimonas apogredo sp. nov.

Candidatus Candidimonas apogredo (NL. fem. n. *apogredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Candidimonas_A sp002849655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002849655.1. The GC content of the type genome is 57.92 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Candidimonas cisalibra sp. nov.

Candidatus Candidimonas cisalibra (NL. fem. n. *cisalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Candidimonas_A sp002849615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002849615.1. The GC content of the type genome is 57.24 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Candidimonas epistimonas sp. nov.

Candidatus Candidimonas epistimonas (NL. fem. n. *epistimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Candidimonas_A sp004339425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004339425.1. The GC content of the type genome is 55.63 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Candidimonas fatifousia sp. nov.

Candidatus Candidimonas fatifousia (NL. fem. n. *fatifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Candidimonas_A sp003971065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003971065.1. The GC content of the type genome is 55.43 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Candidimonas luculessa sp. nov.

Candidatus Candidimonas luculessa (NL. fem. n. *luculessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Candidimonas_A sp013416445*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013416445.1. The GC content of the type genome is 55.39 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Canibacter venefiforma sp. nov.

Candidatus Canibacter venefiforma (NL. fem. n. *venefiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Canibacter sp003859945*. The type genome for the species is the GenBank assembly RS_GCF_003859945.1. The GC content of the type genome is 58.87 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Canibacter vitigitudo sp. nov.

Candidatus Canibacter vitigitudo (NL. fem. n. *vitigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Canibacter sp011752015*. The type genome for the species is the GenBank assembly RS_GCF_011752015.1. The GC content of the type genome is 54.56 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Capabana inconisca sp. nov.

Candidatus Capabana inconisca (NL. fem. n. *inconisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRLZ01 sp011322755*. The type genome for the species is the GenBank assembly GCA_011322755.1. The GC content of the type genome is 43.88 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Capabana gen. nov.

Candidatus Capabana (NL. fem. n. *Capabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRLZ01*. The type species for the genus is *Candidatus* Capabana inconisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family

DRLZ01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capabanaceae.

Description of *Candidatus* Capabanaceae fam. nov.

Candidatus Capabanaceae (NL. fem. n. *Capabanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRLZ01*. The type genus for the taxon is *Candidatus* Capabana .

According to GTDB R06-RS202, this family belongs to the order *Methylococcales*.

Description of *Candidatus* Capabaria peribastra sp. nov.

Candidatus Capabaria peribastra (NL. fem. n. *peribastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABABJ01 sp014238275*. The type genome for the species is the GenBank assembly GCA_014238275.1. The GC content of the type genome is 39.22 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Capabaria gen. nov.

Candidatus Capabaria (NL. fem. n. *Capabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABABJ01*. The type species for the genus is *Candidatus* Capabaria peribastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABAAI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanulaceae.

Description of *Candidatus* Capabella categimonia sp. nov.

Candidatus Capabella categimonia (NL. fem. n. *categimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2702235 sp002702235*. The type genome for the species is the GenBank assembly GCA_902601745.1. The GC content of the type genome is 30.91 %

and the genome length is 0.86 Mbp.

Description of *Candidatus* Capabella gen. nov.

Candidatus Capabella (NL. fem. n. *Capabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2702235*. The type species for the genus is *Candidatus* Capabella categimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002705445*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifanaceae.

Description of *Candidatus* Capabia cosigibra sp. nov.

Candidatus Capabia cosigibra (NL. fem. n. *cosigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10449 sp001917815*. The type genome for the species is the GenBank assembly GCA_001918325.1. The GC content of the type genome is 65.28 % and the genome length is 2.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; 2 days after first rain event (91mm)".

Description of *Candidatus* Capabia gen. nov.

Candidatus Capabia (NL. fem. n. *Capabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10449*. The type species for the genus is *Candidatus* Capabia cosigibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Capabia cululatica sp. nov.

Candidatus Capabia cululatica (NL. fem. n. *cululatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10449 sp005880315*. The type genome for the species is the

GenBank assembly GCA_005880155.1. The GC content of the type genome is 65.88 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Capabia delubitica sp. nov.

Candidatus Capabia delubitica (NL. fem. n. *delubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10449 sp003446775*. The type genome for the species is the GenBank assembly GCA_003448015.1. The GC content of the type genome is 65.83 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Capabia denupitura sp. nov.

Candidatus Capabia denupitura (NL. fem. n. *denupitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10449 sp001917895*. The type genome for the species is the GenBank assembly GCA_005883585.1. The GC content of the type genome is 65.64 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Capabia notacatica sp. nov.

Candidatus Capabia notacatica (NL. fem. n. *notacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10449 sp005880855*. The type genome for the species is the GenBank assembly GCA_005880855.1. The GC content of the type genome is 65.81 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Capabia voluciforma sp. nov.

Candidatus Capabia voluciforma (NL. fem. n. *voluciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10449 sp005879945*. The type genome for the species is the GenBank assembly GCA_005879945.1. The GC content of the type genome is 65.52 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Capabida excamimonia sp. nov.

Candidatus Capabida excamimonia (NL. fem. n. *excamimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL21 sp009921505*. The type genome for the species is the GenBank assembly GCA_009921505.1. The GC content of the type genome is 42.5 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Capabida gen. nov.

Candidatus Capabida (NL. fem. n. *Capabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BACL21*. The type species for the genus is *Candidatus* Capabida excamimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Capabida homolibra sp. nov.

Candidatus Capabida homolibra (NL. fem. n. *homolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL21 sp002335345*. The type genome for the species is the GenBank assembly GCA_002335345.1. The GC content of the type genome is 43.35 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Capabida levidedo sp. nov.

Candidatus Capabida levidedo (NL. fem. n. *levidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL21 sp002707025*. The type genome for the species is the GenBank assembly GCA_002696065.1. The GC content of the type genome is 39.43 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Capabida monacitoga sp. nov.

Candidatus Capabida monacitoga (NL. fem. n. *monacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL21 sp900299425*. The type genome for the species is the GenBank assembly GCA_900299425.1. The GC content of the type genome is 43.09 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Capabida regifitura sp. nov.

Candidatus Capabida regifitura (NL. fem. n. *regifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL21 sp002384055*. The type genome for the species is the GenBank assembly GCA_002430205.1. The GC content of the type genome is 44.34 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Capabida saxopicula sp. nov.

Candidatus Capabida saxopicula (NL. fem. n. *saxopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL21 sp002694465*. The type genome for the species is the GenBank assembly GCA_002694465.1. The GC content of the type genome is 36.05 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Capabida tibicastra sp. nov.

Candidatus Capabida tibicastra (NL. fem. n. *tibicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL21 sp011525065*. The type genome for the species is the GenBank assembly GCA_011525065.1. The GC content of the type genome is 44.63 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Capabida tibicilenta sp. nov.

Candidatus Capabida tibicilenta (NL. fem. n. *tibicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL21 sp002440705*. The type genome for the species is the GenBank assembly GCA_002440705.1. The GC content of the type genome is 43.54 %

and the genome length is 2.9 Mbp.

Description of *Candidatus* Capabosa ciloticula sp. nov.

Candidatus Capabosa ciloticula (NL. fem. n. *ciloticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-26 sp003554145*. The type genome for the species is the GenBank assembly GCA_003554145.1. The GC content of the type genome is 48.3 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Capabosa gen. nov.

Candidatus Capabosa (NL. fem. n. *Capabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1SED10-26*. The type species for the genus is *Candidatus* Capabosa ciloticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B1SED10-174*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocosaceae.

Description of *Candidatus* Capabosa cohorago sp. nov.

Candidatus Capabosa cohorago (NL. fem. n. *cohorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-26 sp003550445*. The type genome for the species is the GenBank assembly GCA_003550445.1. The GC content of the type genome is 42.28 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Capabosa conabicella sp. nov.

Candidatus Capabosa conabicella (NL. fem. n. *conabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-26 sp003551665*. The type genome for the species is the GenBank assembly GCA_003551665.1. The GC content of the type genome is 45.9 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Capabosa hirunitura sp. nov.

Candidatus Capabosa hirunitura (NL. fem. n. *hirunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-26 sp007122335*. The type genome for the species is the GenBank assembly GCA_003554285.1. The GC content of the type genome is 43.9 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Capabosa infenugo sp. nov.

Candidatus Capabosa infenugo (NL. fem. n. *infenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-26 sp003554585*. The type genome for the species is the GenBank assembly GCA_003554585.1. The GC content of the type genome is 44.88 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Capabula affulago sp. nov.

Candidatus Capabula affulago (NL. fem. n. *affulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746255 sp002746255*. The type genome for the species is the GenBank assembly GCA_002746255.1. The GC content of the type genome is 56.52 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Capabula gen. nov.

Candidatus Capabula (NL. fem. n. *Capabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746255*. The type species for the genus is *Candidatus* Capabula affulago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2746255*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capabulaceae.

Description of *Candidatus* Capabulaceae fam. nov.

Candidatus Capabulaceae (NL. fem. n. *Capabulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2746255.* The type genus for the taxon is *Candidatus* Capabula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2746255*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Capabulales.

Description of *Candidatus* Capabulales ord. nov.

Candidatus Capabulales (NL. fem. n. *Capabulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2746255.* The type genus for the taxon is *Candidatus* Capabula .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Capilana denigitio sp. nov.

Candidatus Capilana denigitio (NL. fem. n. *denigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9933 sp001029635*. The type genome for the species is the GenBank assembly GCA_000998475.1. The GC content of the type genome is 46.84 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Capilana gen. nov.

Candidatus Capilana (NL. fem. n. *Capilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9933*. The type species for the genus is *Candidatus* Capilana denigitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9933*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capilanaceae.

Description of *Candidatus* Capilanaceae fam. nov.

Candidatus Capilanaceae (NL. fem. n. *Capilanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9933.* The type genus for the taxon is *Candidatus* Capilana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Capilana hexagessa sp. nov.

Candidatus Capilana hexagessa (NL. fem. n. *hexagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9933 sp001000675*. The type genome for the species is the GenBank assembly GCA_003508115.1. The GC content of the type genome is 43.54 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Capilana opercibra sp. nov.

Candidatus Capilana opercibra (NL. fem. n. *opercibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9933 sp001793895*. The type genome for the species is the GenBank assembly GCA_001793895.1. The GC content of the type genome is 48.76 % and the genome length is 0.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Capilana sifunatio sp. nov.

Candidatus Capilana sifunatio (NL. fem. n. *sifunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9933 sp001793945*. The type genome for the species is the GenBank assembly GCA_001793975.1. The GC content of the type genome is 48.19 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Capilella defulisca sp. nov.

Candidatus Capilella defulisca (NL. fem. n. *defulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QPIN01 sp003666385*. The type genome for the species is the GenBank assembly GCA_003666335.1. The GC content of the type genome is 37.83 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Capilella gen. nov.

Candidatus Capilella (NL. fem. n. *Capilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QPIN01*. The type species for the genus is *Candidatus* Capilella defulisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Capilella demadastra sp. nov.

Candidatus Capilella demadastra (NL. fem. n. *demadastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QPIN01 sp003666325*. The type genome for the species is the GenBank assembly GCA_003666345.1. The GC content of the type genome is 37.67 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Capilella insurimonia sp. nov.

Candidatus Capilella insurimonia (NL. fem. n. *insurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QPIN01 sp013139755*. The type genome for the species is the GenBank assembly GCA_013139755.1. The GC content of the type genome is 38.51 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Capilia colipimonia sp. nov.

Candidatus Capilia colipimonia (NL. fem. n. *colipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPEB01 sp903863885*. The type genome for the species is the GenBank assembly GCA_903922865.1. The GC content of the type genome is 60.93 % and the genome length is 11.01 Mbp.

Description of *Candidatus* Capilia gen. nov.

Candidatus Capilia (NL. fem. n. *Capilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPEB01*. The type species for the genus is *Candidatus* Capilia colipimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Capilida blactisca sp. nov.

Candidatus Capilida blactisca (NL. fem. n. *blactisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDLF01 sp013003115*. The type genome for the species is the GenBank assembly GCA_013003115.1. The GC content of the type genome is 58.55 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Capilida gen. nov.

Candidatus Capilida (NL. fem. n. *Capilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDLF01*. The type species for the genus is *Candidatus* Capilida blactisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDLF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capilidaceae.

Description of *Candidatus* Capilidaceae fam. nov.

Candidatus Capilidaceae (NL. fem. n. *Capilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDLF01.* The type genus for the taxon is *Candidatus* Capilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABDLF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Capilidales.

Description of *Candidatus* Capilidales ord. nov.

Candidatus Capilidales (NL. fem. n. *Capilidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDLF01.* The type genus for the taxon is *Candidatus* Capilida .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Capilosa accogitio sp. nov.

Candidatus Capilosa accogitio (NL. fem. n. *accogitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3537 sp902516685*. The type genome for the species is the GenBank assembly GCA_902516685.1. The GC content of the type genome is 33.3 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Capilosa gen. nov.

Candidatus Capilosa (NL. fem. n. *Capilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3537*. The type species for the genus is *Candidatus* Capilosa accogitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Capilosa ambecugo sp. nov.

Candidatus Capilosa ambecugo (NL. fem. n. *ambecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3537 sp002698705*. The type genome for the species is the GenBank assembly GCA_002698705.1. The GC content of the type genome is 33.12 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Capilosa arcifitrix sp. nov.

Candidatus Capilosa arcifitrix (NL. fem. n. *arcifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3537 sp002721175*. The type genome for the species is the GenBank assembly GCA_002721175.1. The GC content of the type genome is 32.12 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Capilosa deculimonas sp. nov.

Candidatus Capilosa deculimonas (NL. fem. n. *deculimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3537 sp002709185*. The type genome for the species is the GenBank assembly GCA_002709185.1. The GC content of the type genome is 37.24 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Capilosa desupicula sp. nov.

Candidatus Capilosa desupicula (NL. fem. n. *desupicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3537 sp002690085*. The type genome for the species is the GenBank assembly GCA_002690085.1. The GC content of the type genome is 36.9 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Capilosa giganivita sp. nov.

Candidatus Capilosa giganivita (NL. fem. n. *giganivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3537 sp002684355*. The type genome for the species is the GenBank assembly GCA_002684355.1. The GC content of the type genome is 37.13 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Capilosa homogousia sp. nov.

Candidatus Capilosa homogousia (NL. fem. n. *homogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3537 sp001735715*. The type genome for the species is the GenBank assembly GCA_009936855.1. The GC content of the type genome is 36.62 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Capilosa perabimonia sp. nov.

Candidatus Capilosa perabimonia (NL. fem. n. *perabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3537 sp002725015*. The type genome for the species is the GenBank assembly GCA_902605145.1. The GC content of the type genome is 37.88 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Capilula visocetta sp. nov.

Candidatus Capilula visocetta (NL. fem. n. *visocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4851 sp002408445*. The type genome for the species is the GenBank assembly GCA_002411165.1. The GC content of the type genome is 45.23 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Capilula gen. nov.

Candidatus Capilula (NL. fem. n. *Capilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4851*. The type species for the genus is *Candidatus* Capilula visocetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Capnocytophaga adlenilega sp. nov.

Candidatus Capnocytophaga adlenilega (NL. fem. n. *adlenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Capnocytophaga sp002999135*. The type genome for the species is the GenBank assembly RS_GCF_002999135.1. The GC content of the type genome is 37.95 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Capnocytophaga appecivita sp. nov.

Candidatus Capnocytophaga appecivita (NL. fem. n. *appecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Capnocytophaga sp000318275*. The type genome for the species is the GenBank assembly RS_GCF_000318275.2. The GC content of the type genome is 38.4 % and the genome length is 2.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity".

Description of *Candidatus* Capnocytophaga metapitio sp. nov.

Candidatus Capnocytophaga metapitio (NL. fem. n. *metapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Capnocytophaga sp000466425*. The type genome for the species is the GenBank assembly RS_GCF_000466425.1. The GC content of the type genome is 41.62 % and the genome length is 2.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "supragingival plaque biofilm of a molar".

Description of *Candidatus* Capnocytophaga semigitica sp. nov.

Candidatus Capnocytophaga semigitica (NL. fem. n. *semigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Capnocytophaga sp000192225*. The type genome for the species is the GenBank assembly RS_GCF_000192225.1. The GC content of the type genome is 36.67 % and the genome length is 2.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity".

Description of *Candidatus* Caprobacter absorax sp. nov.

Candidatus Caprobacter absorax (NL. fem. n. *absorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp004103755*. The type genome for the species is the GenBank assembly RS_GCF_004103755.1. The GC content of the type genome is 53.81 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Caprobacter advigitura sp. nov.

Candidatus Caprobacter advigitura (NL. fem. n. *advigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp002399225*. The type genome for the species is the GenBank assembly GCA_002399225.1. The GC content of the type genome is 52.41 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Caprobacter cohonimonia sp. nov.

Candidatus Caprobacter cohonimonia (NL. fem. n. *cohonimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp002407675*. The type genome for the species is the GenBank assembly GCA_002316875.1. The GC content of the type genome is 50.71 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Caprobacter dehisugo sp. nov.

Candidatus Caprobacter dehisugo (NL. fem. n. *dehisugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp002409585*. The type genome for the species is the GenBank assembly GCA_002409585.1. The GC content of the type genome is 49.26 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Caprobacter excucugo sp. nov.

Candidatus Caprobacter excucugo (NL. fem. n. *excucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp900184925*. The type genome for the species is the GenBank assembly RS_GCF_900184925.1. The GC content of the type genome is 52.5

% and the genome length is 3.01 Mbp.

Description of *Candidatus* Caprobacter inhabilenta sp. nov.

Candidatus Caprobacter inhabilenta (NL. fem. n. *inhabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp002397355*. The type genome for the species is the GenBank assembly GCA_002397355.1. The GC content of the type genome is 59.72 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Caprobacter notabitrix sp. nov.

Candidatus Caprobacter notabitrix (NL. fem. n. *notabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp002411365*. The type genome for the species is the GenBank assembly GCA_002400245.1. The GC content of the type genome is 46.93 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Caprobacter ruricitoga sp. nov.

Candidatus Caprobacter ruricitoga (NL. fem. n. *ruricitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp002409675*. The type genome for the species is the GenBank assembly GCA_002426635.1. The GC content of the type genome is 61.3 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Caprobacter veridatio sp. nov.

Candidatus Caprobacter veridatio (NL. fem. n. *veridatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp002316805*. The type genome for the species is the GenBank assembly GCA_002316805.1. The GC content of the type genome is 46.17 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Caprobacter visibilega sp. nov.

Candidatus Caprobacter visibilega (NL. fem. n. *visibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caprobacter sp002410755*. The type genome for the species is the GenBank assembly GCA_002410755.1. The GC content of the type genome is 49.19 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Caproiciproducens acontitio sp. nov.

Candidatus Caproiciproducens acontitio (NL. fem. n. *acontitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caproiciproducens sp002378845*. The type genome for the species is the GenBank assembly GCA_002378845.1. The GC content of the type genome is 47.35 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Caproiciproducens butubatica sp. nov.

Candidatus Caproiciproducens butubatica (NL. fem. n. *butubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caproiciproducens sp000752215*. The type genome for the species is the GenBank assembly RS_GCF_000752215.1. The GC content of the type genome is 51.34 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Caproiciproducens incesigena sp. nov.

Candidatus Caproiciproducens incesigena (NL. fem. n. *incesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caproiciproducens sp002338255*. The type genome for the species is the GenBank assembly GCA_002338255.1. The GC content of the type genome is 43.98 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Caproiciproducens inexcicella sp. nov.

Candidatus Caproiciproducens inexcicella (NL. fem. n. *inexcicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caproiciproducens sp002359465*. The type genome for the species is the GenBank assembly GCA_002359465.1. The GC content of the type genome is 48.97 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Caproiciproducens maxumousia sp. nov.

Candidatus Caproiciproducens maxumousia (NL. fem. n. *maxumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caproiciproducens sp012839345*. The type genome for the species is the GenBank assembly GCA_012839345.1. The GC content of the type genome is 49.3 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Caproiciproducens morigitoga sp. nov.

Candidatus Caproiciproducens morigitoga (NL. fem. n. *morigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caproiciproducens sp012516295*. The type genome for the species is the GenBank assembly GCA_012516295.1. The GC content of the type genome is 50.03 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Caproiciproducens pragmitudo sp. nov.

Candidatus Caproiciproducens pragmitudo (NL. fem. n. *pragmitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caproiciproducens sp012517675*. The type genome for the species is the GenBank assembly GCA_012517675.1. The GC content of the type genome is 54.81 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Caproiciproducens sarabilenta sp. nov.

Candidatus Caproiciproducens sarabilenta (NL. fem. n. *sarabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caproiciproducens sp002407645*. The type genome for the species is the GenBank assembly GCA_002316755.1. The GC content of the type genome is 37.52

% and the genome length is 1.44 Mbp.

Description of *Candidatus* Caproiciproducens taxilitica sp. nov.

Candidatus Caproiciproducens taxilitica (NL. fem. n. *taxilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caproiciproducens sp900546895*. The type genome for the species is the GenBank assembly GCA_900546895.1. The GC content of the type genome is 51.47 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Capucana adsesicella sp. nov.

Candidatus Capucana adsesicella (NL. fem. n. *adsesicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp003569165*. The type genome for the species is the GenBank assembly GCA_003569165.1. The GC content of the type genome is 63.43 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Capucana gen. nov.

Candidatus Capucana (NL. fem. n. *Capucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA953*. The type species for the genus is *Candidatus* Capucana adsesicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA953*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucanaceae.

Description of *Candidatus* Capucanaceae fam. nov.

Candidatus Capucanaceae (NL. fem. n. *Capucanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA953*. The type genus for the taxon is *Candidatus* Capucana .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Capucana binocitas sp. nov.

Candidatus Capucana binocitas (NL. fem. n. *binocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903924185*. The type genome for the species is the GenBank assembly GCA_903924185.1. The GC content of the type genome is 61.15 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Capucana cenotitica sp. nov.

Candidatus Capucana cenotitica (NL. fem. n. *cenotitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903925205*. The type genome for the species is the GenBank assembly GCA_903925205.1. The GC content of the type genome is 62.5 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Capucana chancastra sp. nov.

Candidatus Capucana chancastra (NL. fem. n. *chancastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp009926645*. The type genome for the species is the GenBank assembly GCA_009926645.1. The GC content of the type genome is 48.58 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Capucana cinefitoga sp. nov.

Candidatus Capucana cinefitoga (NL. fem. n. *cinefitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp009917805*. The type genome for the species is the GenBank assembly GCA_009917805.1. The GC content of the type genome is 66.5 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Capucana cocibifica sp. nov.

Candidatus Capucana cocibifica (NL. fem. n. *cocibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903860195*. The type genome for the species is the GenBank assembly GCA_903910275.1. The GC content of the type genome is 68.32 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Capucana defosilega sp. nov.

Candidatus Capucana defosilega (NL. fem. n. *defosilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903840235*. The type genome for the species is the GenBank assembly GCA_903840235.1. The GC content of the type genome is 47.72 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Capucana demogifica sp. nov.

Candidatus Capucana demogifica (NL. fem. n. *demogifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903910245*. The type genome for the species is the GenBank assembly GCA_903910245.1. The GC content of the type genome is 62.82 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Capucana depicimonia sp. nov.

Candidatus Capucana depicimonia (NL. fem. n. *depicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903895475*. The type genome for the species is the GenBank assembly GCA_903845765.1. The GC content of the type genome is 61.31 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Capucana dimidicula sp. nov.

Candidatus Capucana dimidicula (NL. fem. n. *dimidicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA953 sp009924535*. The type genome for the species is the GenBank assembly GCA_009924535.1. The GC content of the type genome is 64.81 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Capucana dinupitas sp. nov.

Candidatus Capucana dinupitas (NL. fem. n. *dinupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903882335*. The type genome for the species is the GenBank assembly GCA_903926065.1. The GC content of the type genome is 68.03 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Capucana direcentia sp. nov.

Candidatus Capucana direcentia (NL. fem. n. *direcentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903831005*. The type genome for the species is the GenBank assembly GCA_903831005.1. The GC content of the type genome is 62.52 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Capucana fetulitica sp. nov.

Candidatus Capucana fetulitica (NL. fem. n. *fetulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp005798925*. The type genome for the species is the GenBank assembly GCA_005798925.1. The GC content of the type genome is 67.42 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Capucana fidenatio sp. nov.

Candidatus Capucana fidenatio (NL. fem. n. *fidenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp003569245*. The type genome for the species is the GenBank assembly GCA_003569245.1. The GC content of the type genome is 68.36 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Capucana hexagimonas sp. nov.

Candidatus Capucana hexagimonas (NL. fem. n. *hexagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903879465*. The type genome for the species is the GenBank assembly GCA_903879465.1. The GC content of the type genome is 60.53 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Capucana hirudedo sp. nov.

Candidatus Capucana hirudedo (NL. fem. n. *hirudedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903829855*. The type genome for the species is the GenBank assembly GCA_903850585.1. The GC content of the type genome is 60.16 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Capucana irremitudo sp. nov.

Candidatus Capucana irremitudo (NL. fem. n. *irremitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp003569205*. The type genome for the species is the GenBank assembly GCA_003569205.1. The GC content of the type genome is 61.2 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Capucana maledilenta sp. nov.

Candidatus Capucana maledilenta (NL. fem. n. *maledilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp002293125*. The type genome for the species is the GenBank assembly GCA_002293125.1. The GC content of the type genome is 64.11 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Capucana monopugo sp. nov.

Candidatus Capucana monopugo (NL. fem. n. *monopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp007280935*. The type genome for the species is the GenBank assembly GCA_007280935.1. The GC content of the type genome is 58.31 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Capucana nitelousia sp. nov.

Candidatus Capucana nitelousia (NL. fem. n. *nitelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp009924965*. The type genome for the species is the GenBank assembly GCA_009924965.1. The GC content of the type genome is 65.94 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Capucana pabilimonas sp. nov.

Candidatus Capucana pabilimonas (NL. fem. n. *pabilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp004293385*. The type genome for the species is the GenBank assembly GCA_004293385.1. The GC content of the type genome is 66.78 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Capucana palifedo sp. nov.

Candidatus Capucana palifedo (NL. fem. n. *palifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903850885*. The type genome for the species is the GenBank assembly GCA_903865765.1. The GC content of the type genome is 58.32 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Capucana pericilenta sp. nov.

Candidatus Capucana pericilenta (NL. fem. n. *pericilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA953 sp002737185*. The type genome for the species is the GenBank assembly GCA_009691685.1. The GC content of the type genome is 48.4 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Capucana pinacatio sp. nov.

Candidatus Capucana pinacatio (NL. fem. n. *pinacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903859115*. The type genome for the species is the GenBank assembly GCA_903859115.1. The GC content of the type genome is 46.95 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Capucana proslitrix sp. nov.

Candidatus Capucana proslitrix (NL. fem. n. *proslitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903889525*. The type genome for the species is the GenBank assembly GCA_903889525.1. The GC content of the type genome is 60.75 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Capucana repecitas sp. nov.

Candidatus Capucana repecitas (NL. fem. n. *repecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp003569405*. The type genome for the species is the GenBank assembly GCA_903820765.1. The GC content of the type genome is 66.21 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Capucana repudatio sp. nov.

Candidatus Capucana repudatio (NL. fem. n. *repudatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903909465*. The type genome for the species is the GenBank assembly GCA_903868735.1. The GC content of the type genome is 53.22 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Capucana saxifimonia sp. nov.

Candidatus Capucana saxifimonia (NL. fem. n. *saxifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903853185*. The type genome for the species is the GenBank assembly GCA_903883615.1. The GC content of the type genome is 63.72 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Capucana semidatio sp. nov.

Candidatus Capucana semidatio (NL. fem. n. *semidatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp002470605*. The type genome for the species is the GenBank assembly GCA_903874045.1. The GC content of the type genome is 58.04 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Capucana semigigena sp. nov.

Candidatus Capucana semigigena (NL. fem. n. *semigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903840355*. The type genome for the species is the GenBank assembly GCA_903825845.1. The GC content of the type genome is 54.37 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Capucana seposentia sp. nov.

Candidatus Capucana seposentia (NL. fem. n. *seposentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903919185*. The type genome for the species is the GenBank assembly GCA_903900735.1. The GC content of the type genome is 61.16 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Capucana sonipatica sp. nov.

Candidatus Capucana sonipatica (NL. fem. n. *sonipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903921665*. The type genome for the species is the GenBank assembly GCA_903921665.1. The GC content of the type genome is 64.92 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Capucana timefitica sp. nov.

Candidatus Capucana timefitica (NL. fem. n. *timefitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp002293065*. The type genome for the species is the GenBank assembly GCA_002293065.1. The GC content of the type genome is 64.52 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Capucana venucitia sp. nov.

Candidatus Capucana venucitia (NL. fem. n. *venucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903913915*. The type genome for the species is the GenBank assembly GCA_903913915.1. The GC content of the type genome is 65.66 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Capucana vitifisca sp. nov.

Candidatus Capucana vitifisca (NL. fem. n. *vitifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA953 sp903855995*. The type genome for the species is the GenBank assembly GCA_903905055.1. The GC content of the type genome is 62.17 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Capucaria obfenitia sp. nov.

Candidatus Capucaria obfenitia (NL. fem. n. *obfenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA9980 sp002423385*. The type genome for the species is the GenBank assembly GCA_002423385.1. The GC content of the type genome is 42.63 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Capucaria gen. nov.

Candidatus Capucaria (NL. fem. n. *Capucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9980*. The type species for the genus is *Candidatus* Capucaria obfenitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9980*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucariaceae.

Description of *Candidatus* Capucariaceae fam. nov.

Candidatus Capucariaceae (NL. fem. n. *Capucariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9980.* The type genus for the taxon is *Candidatus* Capucaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9980*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Capucariales.

Description of *Candidatus* Capucariales ord. nov.

Candidatus Capucariales (NL. fem. n. *Capucariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9980.* The type genus for the taxon is *Candidatus* Capucaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9980*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Capucariae.

Description of *Candidatus* Capucariae class. nov.

Candidatus Capucariae (NL. fem. n. *c__Capucariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA9980.* The type genus for the taxon is *Candidatus* Capucaria .

According to GTDB R06-RS202, this class belongs to the phylum *Wallbacteria*.

Description of *Candidatus* Capucaria pimeniforma sp. nov.

Candidatus Capucaria pimeniforma (NL. fem. n. *pimeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9980 sp001791795*. The type genome for the species is the GenBank assembly GCA_001791795.1. The GC content of the type genome is 49.87 % and the genome length is 3.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Capucaria senipilega sp. nov.

Candidatus Capucaria senipilega (NL. fem. n. *senipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9980 sp002069765*. The type genome for the species is the GenBank assembly GCA_002069765.1. The GC content of the type genome is 45.94 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Capucella absegiforma sp. nov.

Candidatus Capucella absegiforma (NL. fem. n. *absegiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXON01 sp009692585*. The type genome for the species is the GenBank assembly GCA_009692585.1. The GC content of the type genome is 69.21 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Capucella gen. nov.

Candidatus Capucella (NL. fem. n. *Capucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXON01*. The type species for the genus is *Candidatus* Capucella absegiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXON01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucellaceae.

Description of *Candidatus* Capucellaceae fam. nov.

Candidatus Capucellaceae (NL. fem. n. *Capucellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SXON01.* The type genus for the taxon is *Candidatus* Capucella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Melilanales.

Description of *Candidatus* Capucella adpinivita sp. nov.

Candidatus Capucella adpinivita (NL. fem. n. *adpinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXON01 sp014191855*. The type genome for the species is the GenBank assembly GCA_014191855.1. The GC content of the type genome is 68.2 % and the genome length is 6.95 Mbp.

Description of *Candidatus* Capucella antepatica sp. nov.

Candidatus Capucella antepatica (NL. fem. n. *antepatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXON01 sp005776735*. The type genome for the species is the GenBank assembly GCA_005776735.1. The GC content of the type genome is 72.45 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Capucella dicanousia sp. nov.

Candidatus Capucella dicanousia (NL. fem. n. *dicanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXON01 sp005778355*. The type genome for the species is the

GenBank assembly GCA_005804125.1. The GC content of the type genome is 69.64 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Capucella necubugo sp. nov.

Candidatus Capucella necubugo (NL. fem. n. *necubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXON01 sp903885375*. The type genome for the species is the GenBank assembly GCA_903820515.1. The GC content of the type genome is 71.4 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Capucella secunetta sp. nov.

Candidatus Capucella secunetta (NL. fem. n. *secunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXON01 sp903921785*. The type genome for the species is the GenBank assembly GCA_903871285.1. The GC content of the type genome is 71.41 % and the genome length is 7.47 Mbp.

Description of *Candidatus* Capucia delucibula sp. nov.

Candidatus Capucia delucibula (NL. fem. n. *delucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6594 sp002480165*. The type genome for the species is the GenBank assembly GCA_002714285.1. The GC content of the type genome is 42.39 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Capucia gen. nov.

Candidatus Capucia (NL. fem. n. *Capucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6594*. The type species for the genus is *Candidatus* Capucia delucibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6594*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capuciaceae.

Description of *Candidatus* Capuciaceae fam. nov.

Candidatus Capuciaceae (NL. fem. n. *Capuciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6594.* The type genus for the taxon is *Candidatus* Capucia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7916*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venuniales.

Description of *Candidatus* Capucida recogitrix sp. nov.

Candidatus Capucida recogitrix (NL. fem. n. *recogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002282575 sp002281095*. The type genome for the species is the GenBank assembly GCA_002281095.1. The GC content of the type genome is 46.33 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Capucida gen. nov.

Candidatus Capucida (NL. fem. n. *Capucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002282575*. The type species for the genus is *Candidatus* Capucida recogitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Capucosa assucilenta sp. nov.

Candidatus Capucosa assucilenta (NL. fem. n. *assucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2199 sp004525465*. The type genome for the species is the GenBank assembly GCA_004525465.1. The GC content of the type genome is 54.25 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Capucosa gen. nov.

Candidatus Capucosa (NL. fem. n. *Capucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2199*. The type species for the genus is *Candidatus* Capucosa assucilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucosaceae.

Description of *Candidatus* Capucosaceae fam. nov.

Candidatus Capucosaceae (NL. fem. n. *Capucosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2199.* The type genus for the taxon is *Candidatus* Capucosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Capucosales.

Description of *Candidatus* Capucosales ord. nov.

Candidatus Capucosales (NL. fem. n. *Capucosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2199.* The type genus for the taxon is *Candidatus* Capucosa .

According to the GTDB R06-RS202, this order belongs to the class *Aminicenantia*.

Description of *Candidatus* Capucosa cerevicella sp. nov.

Candidatus Capucosa cerevicella (NL. fem. n. *cerevicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2199 sp002327965*. The type genome for the species is the GenBank assembly GCA_002327965.1. The GC content of the type genome is 62.18 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Capucosa dimidicella sp. nov.

Candidatus Capucosa dimidicella (NL. fem. n. *dimidicella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2199 sp002436105*. The type genome for the species is the GenBank assembly GCA_002436105.1. The GC content of the type genome is 62.56 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Capucosa ficulitia sp. nov.

Candidatus Capucosa ficulitia (NL. fem. n. *ficulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2199 sp002335385*. The type genome for the species is the GenBank assembly GCA_002335385.1. The GC content of the type genome is 62.76 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Capucula cocolilega sp. nov.

Candidatus Capucula cocolilega (NL. fem. n. *cocolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA910 sp002294445*. The type genome for the species is the GenBank assembly GCA_002294445.1. The GC content of the type genome is 38.88 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Capucula gen. nov.

Candidatus Capucula (NL. fem. n. *Capucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA910*. The type species for the genus is *Candidatus* Capucula cocolilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Capucula pudibax sp. nov.

Candidatus Capucula pudibax (NL. fem. n. *pudibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA910 sp903870365*. The type genome for the species is the GenBank assembly GCA_903867005.1. The GC content of the type genome is 41.04 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Capudaria adordimonia sp. nov.

Candidatus Capudaria adordimonia (NL. fem. n. *adordimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU064 sp012522015*. The type genome for the species is the GenBank assembly GCA_012522015.1. The GC content of the type genome is 44.7 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Capudaria gen. nov.

Candidatus Capudaria (NL. fem. n. *Capudaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU064*. The type species for the genus is *Candidatus* Capudaria adordimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Capudaria malogastra sp. nov.

Candidatus Capudaria malogastra (NL. fem. n. *malogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU064 sp001513385*. The type genome for the species is the GenBank assembly GCA_001513385.1. The GC content of the type genome is 45.17 % and the genome length is 1.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Capudella taxilago sp. nov.

Candidatus Capudella taxilago (NL. fem. n. *taxilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUSF01 sp012033255*. The type genome for the species is the GenBank assembly GCA_012033255.1. The GC content of the type genome is 48.14 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Capudella gen. nov.

Candidatus Capudella (NL. fem. n. *Capudella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUSF01*. The type species for the genus is *Candidatus* Capudella taxilago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Capudia cinefitas sp. nov.

Candidatus Capudia cinefitas (NL. fem. n. *cinefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11707 sp903848275*. The type genome for the species is the GenBank assembly GCA_903848275.1. The GC content of the type genome is 51.47 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Capudia gen. nov.

Candidatus Capudia (NL. fem. n. *Capudia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11707*. The type species for the genus is *Candidatus* Capudia cinefitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9934*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivanaceae.

Description of *Candidatus* Capudia desulilega sp. nov.

Candidatus Capudia desulilega (NL. fem. n. *desulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11707 sp003518105*. The type genome for the species is the GenBank assembly GCA_003518105.1. The GC content of the type genome is 50.84 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Capudia minagicula sp. nov.

Candidatus Capudia minagicula (NL. fem. n. *minagicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11707 sp903891735*. The type genome for the species is the GenBank assembly GCA_903891735.1. The GC content of the type genome is 52.19 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Capudida curotitrix sp. nov.

Candidatus Capudida curotitrix (NL. fem. n. *curotitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-45-18 sp001774075*. The type genome for the species is the GenBank assembly GCA_001774005.1. The GC content of the type genome is 44.28 % and the genome length is 0.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Capudida gen. nov.

Candidatus Capudida (NL. fem. n. *Capudida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-45-18*. The type species for the genus is *Candidatus* Capudida curotitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10092*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monimellaceae.

Description of *Candidatus* Capudosa innuledo sp. nov.

Candidatus Capudosa innuledo (NL. fem. n. *innuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B14-G1 sp011039915*. The type genome for the species is the GenBank assembly GCA_011039915.1. The GC content of the type genome is 53.65 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Capudosa gen. nov.

Candidatus Capudosa (NL. fem. n. *Capudosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B14-G1*. The type species for the genus is *Candidatus* Capudosa innuledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B14-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capudosaceae.

Description of *Candidatus* Capudosaceae fam. nov.

Candidatus Capudosaceae (NL. fem. n. *Capudosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B14-G1.* The type genus for the taxon is *Candidatus* Capudosa .

According to GTDB R06-RS202, this family belongs to the order *Thermosulfidibacterales*.

Description of *Candidatus* Capudosa munimivita sp. nov.

Candidatus Capudosa munimivita (NL. fem. n. *munimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B14-G1 sp003648675*. The type genome for the species is the GenBank assembly GCA_003648675.1. The GC content of the type genome is 53.53 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Capudula resuricella sp. nov.

Candidatus Capudula resuricella (NL. fem. n. *resuricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5754 sp002419025*. The type genome for the species is the GenBank assembly GCA_002419025.1. The GC content of the type genome is 57.54 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Capudula gen. nov.

Candidatus Capudula (NL. fem. n. *Capudula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5754*. The type species for the genus is *Candidatus* Capudula resuricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5754*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capudulaceae.

Description of *Candidatus* Capudulaceae fam. nov.

Candidatus Capudulaceae (NL. fem. n. *Capudulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5754.* The type genus for the taxon is *Candidatus* Capudula .

According to GTDB R06-RS202, this family belongs to the order *Dissulfuribacterales*.

Description of *Candidatus* Caravaria adgesessa sp. nov.

Candidatus Caravaria adgesessa (NL. fem. n. *adgesessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5436 sp012838135*. The type genome for the species is the GenBank assembly GCA_012838135.1. The GC content of the type genome is 37.36 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Caravaria gen. nov.

Candidatus Caravaria (NL. fem. n. *Caravaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5436*. The type species for the genus is *Candidatus* Caravaria adgesessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decunariaceae.

Description of *Candidatus* Caravaria arcelastra sp. nov.

Candidatus Caravaria arcelastra (NL. fem. n. *arcelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5436 sp012522435*. The type genome for the species is the GenBank assembly GCA_012522435.1. The GC content of the type genome is 36.52 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Caravaria ciminitica sp. nov.

Candidatus Caravaria ciminitica (NL. fem. n. *ciminitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5436 sp012521015*. The type genome for the species is the GenBank assembly GCA_012521015.1. The GC content of the type genome is 36.07 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Caravaria impugugo sp. nov.

Candidatus Caravaria impugugo (NL. fem. n. *impugugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5436 sp012838795*. The type genome for the species is the GenBank assembly GCA_012838795.1. The GC content of the type genome is 36.75 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Caravaria monumibra sp. nov.

Candidatus Caravaria monumibra (NL. fem. n. *monumibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5436 sp012518795*. The type genome for the species is the GenBank assembly GCA_012518795.1. The GC content of the type genome is 36.12 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Caravaria peribivita sp. nov.

Candidatus Caravaria peribivita (NL. fem. n. *peribivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5436 sp002427545*. The type genome for the species is the GenBank assembly GCA_012800445.1. The GC content of the type genome is 32.57 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Caravaria ulcisugo sp. nov.

Candidatus Caravaria ulcisugo (NL. fem. n. *ulcisugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5436 sp012518845*. The type genome for the species is the GenBank assembly GCA_012518845.1. The GC content of the type genome is 33.77 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Caravia dicaniforma sp. nov.

Candidatus Caravia dicaniforma (NL. fem. n. *dicaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTY01 sp012031265*. The type genome for the species is the GenBank assembly GCA_012031265.1. The GC content of the type genome is 57.82 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Caravia gen. nov.

Candidatus Caravia (NL. fem. n. *Caravia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUTY01*. The type species for the genus is *Candidatus* Caravia dicaniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Caravosa demaditura sp. nov.

Candidatus Caravosa demaditura (NL. fem. n. *demaditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILQE01 sp903836325*. The type genome for the species is the GenBank assembly GCA_903847695.1. The GC content of the type genome is 34.42 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Caravosa gen. nov.

Candidatus Caravosa (NL. fem. n. *Caravosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILQE01*. The type species for the genus is *Candidatus* Caravosa demaditura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Caravula resupilega sp. nov.

Candidatus Caravula resupilega (NL. fem. n. *resupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMUX01 sp903844735*. The type genome for the species is the GenBank assembly GCA_903958525.1. The GC content of the type genome is 65.54 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Caravula gen. nov.

Candidatus Caravula (NL. fem. n. *Caravula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMUX01*. The type species for the genus is *Candidatus* Caravula resupilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIMUX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravulaceae.

Description of *Candidatus* Caravulaceae fam. nov.

Candidatus Caravulaceae (NL. fem. n. *Caravulaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIMUX01.* The type genus for the taxon is *Candidatus* Caravula .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIMUX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Caravulales.

Description of *Candidatus* Caravulales ord. nov.

Candidatus Caravulales (NL. fem. n. *Caravulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIMUX01.* The type genus for the taxon is *Candidatus* Caravula .

According to the original version of GTDB R06-RS202, this family belongs to the class *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Sonabidae.

Description of *Candidatus* Carboxylicivirga conubousia sp. nov.

Candidatus Carboxylicivirga conubousia (NL. fem. n. *conubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Carboxylicivirga sp002429115*. The type genome for the species is the GenBank assembly GCA_002429115.1. The GC content of the type genome is 38.7 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Carboxylicivirga siteliforma sp. nov.

Candidatus Carboxylicivirga siteliforma (NL. fem. n. *siteliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Carboxylicivirga sp007097485*. The type genome for the species is the GenBank assembly RS_GCF_007097485.1. The GC content of the type genome is 37.97 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Cardinium advorastra sp. nov.

Candidatus Cardinium advorastra (NL. fem. n. *advorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cardinium sp003351905*. The type genome for the species is the GenBank assembly RS_GCF_003351905.1. The GC content of the type genome is 39.23 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Cardinium ammatentia sp. nov.

Candidatus Cardinium ammatentia (NL. fem. n. *ammatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cardinium sp007559345*. The type genome for the species is the GenBank assembly RS_GCF_007559345.1. The GC content of the type genome is 37.29 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Cardinium culigibra sp. nov.

Candidatus Cardinium culigibra (NL. fem. n. *culigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cardinium sp000689375*. The type genome for the species is the GenBank assembly RS_GCF_004300865.1. The GC content of the type genome is 36.15 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Cardinium funamicula sp. nov.

Candidatus Cardinium funamicula (NL. fem. n. *funamicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cardinium sp004354815*. The type genome for the species is the GenBank assembly RS_GCF_004354815.1. The GC content of the type genome is 33.71 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Cardinium infenax sp. nov.

Candidatus Cardinium infenax (NL. fem. n. *infenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Cardinium sp000304455*. The type genome for the species is the GenBank assembly RS_GCF_000304455.1. The GC content of the type genome is 36.31 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Carecana adtacax sp. nov.

Candidatus Carecana adtacax (NL. fem. n. *adtacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP16D-bin41 sp903896925*. The type genome for the species is the GenBank assembly GCA_903896925.1. The GC content of the type genome is 64.64 % and the genome length is 7.22 Mbp.

Description of *Candidatus* Carecana gen. nov.

Candidatus Carecana (NL. fem. n. *Carecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DP16D-bin41*. The type species for the genus is *Candidatus* Carecana adtacax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIQIC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semibellaceae.

Description of *Candidatus* Carecana catocitudo sp. nov.

Candidatus Carecana catocitudo (NL. fem. n. *catocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP16D-bin41 sp903912445*. The type genome for the species is the GenBank assembly GCA_903912445.1. The GC content of the type genome is 64.77 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Carecana cobalitudo sp. nov.

Candidatus Carecana cobalitudo (NL. fem. n. *cobalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP16D-bin41 sp903889245*. The type genome for the species is the

GenBank assembly GCA_903928265.1. The GC content of the type genome is 64.76 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Carecana ruricigena sp. nov.

Candidatus Carecana ruricigena (NL. fem. n. *ruricigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP16D-bin41 sp004321905*. The type genome for the species is the GenBank assembly GCA_004321905.1. The GC content of the type genome is 58.99 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Carecaria innabimonas sp. nov.

Candidatus Carecaria innabimonas (NL. fem. n. *innabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GPF-1 sp013619125*. The type genome for the species is the GenBank assembly GCA_013619125.1. The GC content of the type genome is 44.15 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Carecaria gen. nov.

Candidatus Carecaria (NL. fem. n. *Carecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GPF-1*. The type species for the genus is *Candidatus* Carecaria innabimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GPF-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carecariaceae.

Description of *Candidatus* Carecariaceae fam. nov.

Candidatus Carecariaceae (NL. fem. n. *Carecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GPF-1.* The type genus for the taxon is *Candidatus* Carecaria .

According to GTDB R06-RS202, this family belongs to the order *Tissierellales*.

Description of *Candidatus* Carecella bisacitas sp. nov.

Candidatus Carecella bisacitas (NL. fem. n. *bisacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMIW01 sp900299205*. The type genome for the species is the GenBank assembly GCA_900299205.1. The GC content of the type genome is 53.85 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Carecella gen. nov.

Candidatus Carecella (NL. fem. n. *Carecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OMIW01*. The type species for the genus is *Candidatus* Carecella bisacitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recuciaceae.

Description of *Candidatus* Carecosa derelimonas sp. nov.

Candidatus Carecosa derelimonas (NL. fem. n. *derelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5633 sp002452735*. The type genome for the species is the GenBank assembly GCA_002452735.1. The GC content of the type genome is 43.09 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Carecosa gen. nov.

Candidatus Carecosa (NL. fem. n. *Carecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5633*. The type species for the genus is *Candidatus* Carecosa derelimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5633*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carecosaceae.

Description of *Candidatus* Carecosaceae fam. nov.

Candidatus Carecosaceae (NL. fem. n. *Carecosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5633.* The type genus for the taxon is *Candidatus* Carecosa .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Carecosa effositrix sp. nov.

Candidatus Carecosa effositrix (NL. fem. n. *effositrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5633 sp002382025*. The type genome for the species is the GenBank assembly GCA_002382025.1. The GC content of the type genome is 29.16 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Carecula gasifitas sp. nov.

Candidatus Carecula gasifitas (NL. fem. n. *gasifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMEP01 sp007375595*. The type genome for the species is the GenBank assembly GCA_007375595.1. The GC content of the type genome is 39.14 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Carecula gen. nov.

Candidatus Carecula (NL. fem. n. *Carecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMEP01*. The type species for the genus is *Candidatus* Carecula gasifitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VMEP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Careculaceae.

Description of *Candidatus* Careculaceae fam. nov.

Candidatus Careculaceae (NL. fem. n. *Careculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VMEP01.* The type genus for the taxon is *Candidatus* Carecula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Carnobacterium facunastra sp. nov.

Candidatus Carnobacterium facunastra (NL. fem. n. *facunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Carnobacterium_A sp001483965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001483965.1. The GC content of the type genome is 38.11 % and the genome length is 2.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Carnobacterium ingurago sp. nov.

Candidatus Carnobacterium ingurago (NL. fem. n. *ingurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Carnobacterium_A sp000195575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000195575.1. The GC content of the type genome is 35.18 % and the genome length is 2.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Carnobacterium tirocilega sp. nov.

Candidatus Carnobacterium tirocilega (NL. fem. n. *tirocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Carnobacterium_A sp002418295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002418295.1. The GC content of the type genome is 36.36 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Carucana decinitia sp. nov.

Candidatus Carucana decinitia (NL. fem. n. *decinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002774445 sp002774445*. The type genome for the species is the GenBank assembly GCA_002771995.1. The GC content of the type genome is 41.02 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Carucana gen. nov.

Candidatus Carucana (NL. fem. n. *Carucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002774445*. The type species for the genus is *Candidatus* Carucana decinitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Carucella bimotitura sp. nov.

Candidatus Carucella bimotitura (NL. fem. n. *bimotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1151 sp002311865*. The type genome for the species is the GenBank assembly GCA_002311865.1. The GC content of the type genome is 57.2 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Carucella gen. nov.

Candidatus Carucella (NL. fem. n. *Carucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA1151*. The type species for the genus is *Candidatus* Carucella bimotitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carucellaceae.

Description of *Candidatus* Carucellaceae fam. nov.

Candidatus Carucellaceae (NL. fem. n. *Carucellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1151.* The type genus for the taxon is *Candidatus* Carucella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Carucellales.

Description of *Candidatus* Carucellales ord. nov.

Candidatus Carucellales (NL. fem. n. *Carucellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1151.* The type genus for the taxon is *Candidatus* Carucella .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Carucella offiretta sp. nov.

Candidatus Carucella offiretta (NL. fem. n. *offiretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1151 sp013204555*. The type genome for the species is the GenBank assembly GCA_013204555.1. The GC content of the type genome is 55.97 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Carucia delacatio sp. nov.

Candidatus Carucia delacatio (NL. fem. n. *delacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *BMS3Abin08 sp002897935*. The type genome for the species is the GenBank assembly GCA_002897875.1. The GC content of the type genome is 48.04 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Carucia gen. nov.

Candidatus Carucia (NL. fem. n. *Carucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Abin08*. The type species for the genus is *Candidatus* Carucia delacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-85*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benepiaceae.

Description of *Candidatus* Carucida vaniditica sp. nov.

Candidatus Carucida vaniditica (NL. fem. n. *vaniditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB-PLM-1 sp003388505*. The type genome for the species is the GenBank assembly GCA_003388505.1. The GC content of the type genome is 62.58 % and the genome length is 6.78 Mbp.

Description of *Candidatus* Carucida gen. nov.

Candidatus Carucida (NL. fem. n. *Carucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MB-PLM-1*. The type species for the genus is *Candidatus* Carucida vaniditica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Carucosa acrobigena sp. nov.

Candidatus Carucosa acrobigena (NL. fem. n. *acrobigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-752 sp003157715*. The type genome for the species is the

GenBank assembly GCA_003157715.1. The GC content of the type genome is 69.48 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Carucosa gen. nov.

Candidatus Carucosa (NL. fem. n. *Carucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-752*. The type species for the genus is *Candidatus* Carucosa acrobigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2241*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocariaceae.

Description of *Candidatus* Carucosa denupetta sp. nov.

Candidatus Carucosa denupetta (NL. fem. n. *denupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-752 sp003132645*. The type genome for the species is the GenBank assembly GCA_003132645.1. The GC content of the type genome is 68.77 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Carucosa foricitura sp. nov.

Candidatus Carucosa foricitura (NL. fem. n. *foricitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-752 sp003164655*. The type genome for the species is the GenBank assembly GCA_003164655.1. The GC content of the type genome is 69.08 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Carucula refinifica sp. nov.

Candidatus Carucula refinifica (NL. fem. n. *refinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2794595 sp002794595*. The type genome for the species is the GenBank assembly GCA_002794595.1. The GC content of the type genome is 50.82 %

and the genome length is 2.21 Mbp.

Description of *Candidatus* Carucula gen. nov.

Candidatus Carucula (NL. fem. n. *Carucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2794595*. The type species for the genus is *Candidatus* Carucula refinifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Carunana oppanitas sp. nov.

Candidatus Carunana oppanitas (NL. fem. n. *oppanitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-229 sp003228405*. The type genome for the species is the GenBank assembly GCA_003228405.1. The GC content of the type genome is 42.71 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Carunana gen. nov.

Candidatus Carunana (NL. fem. n. *Carunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-229*. The type species for the genus is *Candidatus* Carunana oppanitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-229*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunanaceae.

Description of *Candidatus* Carunanaceae fam. nov.

Candidatus Carunanaceae (NL. fem. n. *Carunanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-229.* The type genus for the taxon is *Candidatus* Carunana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-229*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Carunanales.

Description of *Candidatus* Carunanales ord. nov.

Candidatus Carunanales (NL. fem. n. *Carunanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-229.* The type genus for the taxon is *Candidatus* Carunana .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Carunana solacibula sp. nov.

Candidatus Carunana solacibula (NL. fem. n. *solacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-229 sp003349885*. The type genome for the species is the GenBank assembly GCA_003349885.1. The GC content of the type genome is 38.89 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Carunaria catafousia sp. nov.

Candidatus Carunaria catafousia (NL. fem. n. *catafousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-40-21 sp000996205*. The type genome for the species is the GenBank assembly GCA_000996205.1. The GC content of the type genome is 40.37 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Carunaria gen. nov.

Candidatus Carunaria (NL. fem. n. *Carunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-40-21*. The type species for the genus is *Candidatus* Carunaria catafousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA1-40-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunariaceae.

Description of *Candidatus* Carunariaceae fam. nov.

Candidatus Carunariaceae (NL. fem. n. *Carunariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA1-40-21.* The type genus for the taxon is *Candidatus* Carunaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Carunella diminugo sp. nov.

Candidatus Carunella diminugo (NL. fem. n. *diminugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITNM01 sp903893805*. The type genome for the species is the GenBank assembly GCA_903860665.1. The GC content of the type genome is 38.99 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Carunella gen. nov.

Candidatus Carunella (NL. fem. n. *Carunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITNM01*. The type species for the genus is *Candidatus* Carunella diminugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11393*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifanaceae.

Description of *Candidatus* Carunella fumacitrix sp. nov.

Candidatus Carunella fumacitrix (NL. fem. n. *fumacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITNM01 sp903874955*. The type genome for the species is the GenBank assembly GCA_903874955.1. The GC content of the type genome is 38.11 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Carunia nutabitia sp. nov.

Candidatus Carunia nutabitia (NL. fem. n. *nutabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLCC01 sp007126035*. The type genome for the species is the GenBank assembly GCA_007126035.1. The GC content of the type genome is 68.55 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Carunia gen. nov.

Candidatus Carunia (NL. fem. n. *Carunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLCC01*. The type species for the genus is *Candidatus* Carunia nutabitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RSA9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatulaceae.

Description of *Candidatus* Carunida invicetta sp. nov.

Candidatus Carunida invicetta (NL. fem. n. *invicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-943 sp003170595*. The type genome for the species is the GenBank assembly GCA_003170595.1. The GC content of the type genome is 66.1 % and the genome length is 6.45 Mbp.

Description of *Candidatus* Carunida gen. nov.

Candidatus Carunida (NL. fem. n. *Carunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-943*. The type species for the genus is *Candidatus* Carunida

invicetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-943*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunidaceae.

Description of *Candidatus* Carunidaceae fam. nov.

Candidatus Carunidaceae (NL. fem. n. *Carunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-943.* The type genus for the taxon is *Candidatus* Carunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5377*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Latibosales.

Description of *Candidatus* Carunosa adcesivita sp. nov.

Candidatus Carunosa adcesivita (NL. fem. n. *adcesivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5172 sp903970395*. The type genome for the species is the GenBank assembly GCA_903970395.1. The GC content of the type genome is 60.21 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Carunosa gen. nov.

Candidatus Carunosa (NL. fem. n. *Carunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5172*. The type species for the genus is *Candidatus* Carunosa adcesivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Carunosa bisacousia sp. nov.

Candidatus Carunosa bisacousia (NL. fem. n. *bisacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA5172 sp002413385*. The type genome for the species is the GenBank assembly GCA_002413385.1. The GC content of the type genome is 58.89 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Carunosa docibitia sp. nov.

Candidatus Carunosa docibitia (NL. fem. n. *docibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5172 sp014083945*. The type genome for the species is the GenBank assembly RS_GCF_014083945.1. The GC content of the type genome is 61.09 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Carunosa peracivita sp. nov.

Candidatus Carunosa peracivita (NL. fem. n. *peracivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5172 sp009765785*. The type genome for the species is the GenBank assembly RS_GCF_009765785.1. The GC content of the type genome is 58.64 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Carunosa ruricatio sp. nov.

Candidatus Carunosa ruricatio (NL. fem. n. *ruricatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5172 sp003138795*. The type genome for the species is the GenBank assembly GCA_003159275.1. The GC content of the type genome is 60.03 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Carunula immeditudo sp. nov.

Candidatus Carunula immeditudo (NL. fem. n. *immeditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACTMZ01 sp014584375*. The type genome for the species is the GenBank assembly GCA_014584375.1. The GC content of the type genome is 57.24 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Carunula gen. nov.

Candidatus Carunula (NL. fem. n. *Carunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACTMZ01*. The type species for the genus is *Candidatus* Carunula immeditudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACTMZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunulaceae.

Description of *Candidatus* Carunulaceae fam. nov.

Candidatus Carunulaceae (NL. fem. n. *Carunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACTMZ01.* The type genus for the taxon is *Candidatus* Carunula .

According to GTDB R06-RS202, this family belongs to the order *Chthoniobacterales*.

Description of *Candidatus* Carunula pudibetta sp. nov.

Candidatus Carunula pudibetta (NL. fem. n. *pudibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACTMZ01 sp903934135*. The type genome for the species is the GenBank assembly GCA_903934135.1. The GC content of the type genome is 61.79 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Carunula visocastra sp. nov.

Candidatus Carunula visocastra (NL. fem. n. *visocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACTMZ01 sp903953565*. The type genome for the species is the GenBank assembly GCA_903940655.1. The GC content of the type genome is 61.3 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Casabana nugacigena sp. nov.

Candidatus Casabana nugacigena (NL. fem. n. *nugacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-40-24 sp001776975*. The type genome for the species is the GenBank assembly GCA_001776975.1. The GC content of the type genome is 40.3 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Casabana gen. nov.

Candidatus Casabana (NL. fem. n. *Casabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-40-24*. The type species for the genus is *Candidatus* Casabana nugacigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Casabaria cisorimonia sp. nov.

Candidatus Casabaria cisorimonia (NL. fem. n. *cisorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-00278855 sp002788855*. The type genome for the species is the GenBank assembly GCA_002788855.1. The GC content of the type genome is 37.96 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Casabaria gen. nov.

Candidatus Casabaria (NL. fem. n. *Casabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-00278855*. The type species for the genus is *Candidatus* Casabaria cisorimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-00278855*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casabariaceae.

Description of *Candidatus* Casabariaceae fam. nov.

Candidatus Casabariaceae (NL. fem. n. *Casabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-00278855.* The type genus for the taxon is *Candidatus* Casabaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-001788215*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vocifosales.

Description of *Candidatus* Casabella purulitoga sp. nov.

Candidatus Casabella purulitoga (NL. fem. n. *purulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-149 sp003230795*. The type genome for the species is the GenBank assembly GCA_003230795.1. The GC content of the type genome is 48.41 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Casabella gen. nov.

Candidatus Casabella (NL. fem. n. *Casabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-149*. The type species for the genus is *Candidatus* Casabella purulitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-149*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casabellaceae.

Description of *Candidatus* Casabellaceae fam. nov.

Candidatus Casabellaceae (NL. fem. n. *Casabellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-149.* The type genus for the taxon is *Candidatus* Casabella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-149*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Casabellales.

Description of *Candidatus* Casabellales ord. nov.

Candidatus Casabellales (NL. fem. n. *Casabellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-149.* The type genus for the taxon is *Candidatus* Casabella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Recuciae.

Description of *Candidatus* Casabia benemicella sp. nov.

Candidatus Casabia benemicella (NL. fem. n. *benemicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLDT01 sp007125125*. The type genome for the species is the GenBank assembly GCA_007125125.1. The GC content of the type genome is 69.18 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Casabia gen. nov.

Candidatus Casabia (NL. fem. n. *Casabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLDT01*. The type species for the genus is *Candidatus* Casabia benemicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Casabida ermelitia sp. nov.

Candidatus Casabida ermelitia (NL. fem. n. *ermelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-259 sp003235465*. The type genome for the species is the GenBank assembly GCA_003235465.1. The GC content of the type genome is 62.26 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Casabida gen. nov.

Candidatus Casabida (NL. fem. n. *Casabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-259*. The type species for the genus is *Candidatus* Casabida ermelitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Casabida minagetta sp. nov.

Candidatus Casabida minagetta (NL. fem. n. *minagetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-259 sp003246675*. The type genome for the species is the GenBank assembly GCA_003246675.1. The GC content of the type genome is 59.51 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Casabosa adaggax sp. nov.

Candidatus Casabosa adaggax (NL. fem. n. *adaggax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-7375 sp000482245*. The type genome for the species is the GenBank assembly RS_GCF_000482245.1. The GC content of the type genome is 48.05 % and the genome length is 8.06 Mbp.

Description of *Candidatus* Casabosa gen. nov.

Candidatus Casabosa (NL. fem. n. *Casabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-7375*. The type species for the genus is *Candidatus* Casabosa adaggax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Casabosa carecisca sp. nov.

Candidatus Casabosa carecisca (NL. fem. n. *carecisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-7375 sp011009555*. The type genome for the species is the GenBank assembly RS_GCF_011009535.1. The GC content of the type genome is 47.38 % and the genome length is 8.89 Mbp.

Description of *Candidatus* Casabosa deculicella sp. nov.

Candidatus Casabosa deculicella (NL. fem. n. *deculicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-7375 sp000316115*. The type genome for the species is the GenBank assembly RS_GCF_000316115.1. The GC content of the type genome is 47.62 % and the genome length is 9.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "plankton".

Description of *Candidatus* Casabula depubigena sp. nov.

Candidatus Casabula depubigena (NL. fem. n. *depubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWZ01 sp004356455*. The type genome for the species is the GenBank assembly GCA_004356455.1. The GC content of the type genome is 65.95 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Casabula gen. nov.

Candidatus Casabula (NL. fem. n. *Casabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMWZ01*. The type species for the genus is *Candidatus* Casabula depubigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomaciaceae.

Description of *Candidatus* Caselana ignobessa sp. nov.

Candidatus Caselana ignobessa (NL. fem. n. *ignobessa* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN21 sp011373595*. The type genome for the species is the GenBank assembly GCA_011373595.1. The GC content of the type genome is 64.14 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Caselana gen. nov.

Candidatus Caselana (NL. fem. n. *Caselana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN21*. The type species for the genus is *Candidatus* Caselana ignobessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NICIL-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifellaceae.

Description of *Candidatus* Caselana invetifica sp. nov.

Candidatus Caselana invetifica (NL. fem. n. *invetifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN21 sp011373555*. The type genome for the species is the GenBank assembly GCA_011373555.1. The GC content of the type genome is 56.44 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Caselana refinimonia sp. nov.

Candidatus Caselana refinimonia (NL. fem. n. *refinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN21 sp002898295*. The type genome for the species is the GenBank assembly GCA_002898295.1. The GC content of the type genome is 61.74 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Caselaria luticitas sp. nov.

Candidatus Caselaria luticitas (NL. fem. n. *luticitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACDM01 sp009936795*. The type genome for the species is the GenBank assembly GCA_009936715.1. The GC content of the type genome is 54.06 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Caselaria gen. nov.

Candidatus Caselaria (NL. fem. n. *Caselaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACDM01*. The type species for the genus is *Candidatus* Caselaria luticitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DEV007*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragosaceae.

Description of *Candidatus* Caselella exculago sp. nov.

Candidatus Caselella exculago (NL. fem. n. *exculago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-5 sp003233535*. The type genome for the species is the GenBank assembly GCA_003233535.1. The GC content of the type genome is 59.83 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Caselella gen. nov.

Candidatus Caselella (NL. fem. n. *Caselella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-5*. The type species for the genus is *Candidatus* Caselella exculago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caselellaceae.

Description of *Candidatus* Caselellaceae fam. nov.

Candidatus Caselellaceae (NL. fem. n. *Caselellaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-5*. The type genus for the taxon is *Candidatus* Caselella .

According to GTDB R06-RS202, this family belongs to the order *Xanthomonadales*.

Description of *Candidatus* Caselia cenodisca sp. nov.

Candidatus Caselia cenodisca (NL. fem. n. *cenodisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp902779875*. The type genome for the species is the GenBank assembly GCA_902762365.1. The GC content of the type genome is 51.55 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Caselia gen. nov.

Candidatus Caselia (NL. fem. n. *Caselia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1179*. The type species for the genus is *Candidatus* Caselia cenodisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Caselia delacibra sp. nov.

Candidatus Caselia delacibra (NL. fem. n. *delacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp002340405*. The type genome for the species is the GenBank assembly GCA_003491575.1. The GC content of the type genome is 46.89 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Caselia divoredo sp. nov.

Candidatus Caselia divoredo (NL. fem. n. *divoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp900318995*. The type genome for the species is the GenBank assembly GCA_900321045.1. The GC content of the type genome is 48.67 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Caselia documentia sp. nov.

Candidatus Caselia documentia (NL. fem. n. *documentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp902802285*. The type genome for the species is the GenBank assembly GCA_902802285.1. The GC content of the type genome is 49.0 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Caselia extorifica sp. nov.

Candidatus Caselia extorifica (NL. fem. n. *extorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp902763885*. The type genome for the species is the GenBank assembly GCA_902763885.1. The GC content of the type genome is 46.9 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Caselia funivatica sp. nov.

Candidatus Caselia funivatica (NL. fem. n. *funivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp900319225*. The type genome for the species is the GenBank assembly GCA_902787675.1. The GC content of the type genome is 49.46 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Caselia gasomedo sp. nov.

Candidatus Caselia gasomedo (NL. fem. n. *gasomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp902782245*. The type genome for the species is the GenBank assembly GCA_902782245.1. The GC content of the type genome is 49.45 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Caselia lanugax sp. nov.

Candidatus Caselia lanugax (NL. fem. n. *lanugax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp002309915*. The type genome for the species is the GenBank assembly GCA_002309915.1. The GC content of the type genome is 50.36 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Caselia licenitio sp. nov.

Candidatus Caselia licenitio (NL. fem. n. *licenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp002310015*. The type genome for the species is the GenBank assembly GCA_002310015.1. The GC content of the type genome is 47.01 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Caselia loraricula sp. nov.

Candidatus Caselia loraricula (NL. fem. n. *loraricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp902799685*. The type genome for the species is the GenBank assembly GCA_902799685.1. The GC content of the type genome is 48.21 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Caselia molecibra sp. nov.

Candidatus Caselia molecibra (NL. fem. n. *molecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp902798685*. The type genome for the species is the GenBank assembly GCA_902798685.1. The GC content of the type genome is 49.95 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Caselia ontolitica sp. nov.

Candidatus Caselia ontolitica (NL. fem. n. *ontolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp902774275*. The type genome for the species is the GenBank assembly GCA_902774275.1. The GC content of the type genome is 47.35 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Caselia pericimonas sp. nov.

Candidatus Caselia pericimonas (NL. fem. n. *pericimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp902760965*. The type genome for the species is the GenBank assembly GCA_902760965.1. The GC content of the type genome is 47.7 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Caselia recocousia sp. nov.

Candidatus Caselia recocousia (NL. fem. n. *recocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp902774335*. The type genome for the species is the GenBank assembly GCA_902800825.1. The GC content of the type genome is 51.58 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Caselia sotulitas sp. nov.

Candidatus Caselia sotulitas (NL. fem. n. *sotulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1179 sp002310175*. The type genome for the species is the GenBank assembly GCA_002310175.1. The GC content of the type genome is 47.43 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Caselida adnumitio sp. nov.

Candidatus Caselida adnumitio (NL. fem. n. *adnumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1177 sp902780365*. The type genome for the species is the GenBank assembly GCA_902780365.1. The GC content of the type genome is 45.46 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Caselida gen. nov.

Candidatus Caselida (NL. fem. n. *Caselida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1177*. The type species for the genus is *Candidatus* Caselida adnumitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1177*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caselidaceae.

Description of *Candidatus* Caselidaceae fam. nov.

Candidatus Caselidaceae (NL. fem. n. *Caselidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1177.* The type genus for the taxon is *Candidatus* Caselida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1177*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Caselidales.

Description of *Candidatus* Caselidales ord. nov.

Candidatus Caselidales (NL. fem. n. *Caselidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1177.* The type genus for the taxon is *Candidatus* Caselida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1177*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Caselidae.

Description of *Candidatus* Caselidae class. nov.

Candidatus Caselidae (NL. fem. n. *c__Caselidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA1177*. The type genus for the taxon is *Candidatus* Caselida .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBP6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Bicinellota.

Description of *Candidatus* Caselida defulessa sp. nov.

Candidatus Caselida defulessa (NL. fem. n. *defulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1177 sp002310995*. The type genome for the species is the GenBank assembly GCA_002366955.1. The GC content of the type genome is 44.14 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Caselida inherilega sp. nov.

Candidatus Caselida inherilega (NL. fem. n. *inherilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1177 sp002309575*. The type genome for the species is the GenBank assembly GCA_002309575.1. The GC content of the type genome is 49.79 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Caselida labecimonia sp. nov.

Candidatus Caselida labecimonia (NL. fem. n. *labecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1177 sp902774115*. The type genome for the species is the GenBank assembly GCA_902774115.1. The GC content of the type genome is 44.86 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Caselida obtunitio sp. nov.

Candidatus Caselida obtunitio (NL. fem. n. *obtunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1177 sp002310035*. The type genome for the species is the

GenBank assembly GCA_002310035.1. The GC content of the type genome is 45.68 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Caselosa demagastra sp. nov.

Candidatus Caselosa demagastra (NL. fem. n. *demagastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-93 sp002085385*. The type genome for the species is the GenBank assembly GCA_002085385.1. The GC content of the type genome is 48.63 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Caselosa gen. nov.

Candidatus Caselosa (NL. fem. n. *Caselosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-93*. The type species for the genus is *Candidatus* Caselosa demagastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-93*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caselosaceae.

Description of *Candidatus* Caselosaceae fam. nov.

Candidatus Caselosaceae (NL. fem. n. *Caselosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-93.* The type genus for the taxon is *Candidatus* Caselosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *4484-93*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Caselosales.

Description of *Candidatus* Caselosales ord. nov.

Candidatus Caselosales (NL. fem. n. *Caselosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-93.* The type genus for the taxon is *Candidatus* Caselosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6098*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Vehemidae.

Description of *Candidatus* Caselula dilibibra sp. nov.

Candidatus Caselula dilibibra (NL. fem. n. *dilibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXDN01 sp903918235*. The type genome for the species is the GenBank assembly GCA_903864325.1. The GC content of the type genome is 46.89 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Caselula gen. nov.

Candidatus Caselula (NL. fem. n. *Caselula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXDN01*. The type species for the genus is *Candidatus* Caselula dilibibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-60-25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugigulaceae.

Description of *Candidatus* Casigaria bicodicula sp. nov.

Candidatus Casigaria bicodicula (NL. fem. n. *bicodicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9089 sp003485015*. The type genome for the species is the GenBank assembly GCA_003485015.1. The GC content of the type genome is 44.14 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Casigaria gen. nov.

Candidatus Casigaria (NL. fem. n. *Casigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9089*. The type species for the genus is *Candidatus* Casigaria

bicodicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigariaceae.

Description of *Candidatus* Casigariaceae fam. nov.

Candidatus Casigariaceae (NL. fem. n. *Casigariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9089.* The type genus for the taxon is *Candidatus* Casigaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Casigariales.

Description of *Candidatus* Casigariales ord. nov.

Candidatus Casigariales (NL. fem. n. *Casigariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9089.* The type genus for the taxon is *Candidatus* Casigaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Casigariae.

Description of *Candidatus* Casigariae class. nov.

Candidatus Casigariae (NL. fem. n. *c__Casigariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9089.* The type genus for the taxon is *Candidatus* Casigaria .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBA9089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Casigariota.

Description of *Candidatus* Casigariota phyl. nov.

Candidatus Casigariota (NL. fem. n. *Casigariota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9089.* The type genus for the taxon is *Candidatus* Casigaria .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Casigella direcitio sp. nov.

Candidatus Casigella direcitio (NL. fem. n. *direcitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA927 sp002430725*. The type genome for the species is the GenBank assembly GCA_002430675.1. The GC content of the type genome is 44.3 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Casigella gen. nov.

Candidatus Casigella (NL. fem. n. *Casigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA927*. The type species for the genus is *Candidatus* Casigella direcitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA927*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigellaceae.

Description of *Candidatus* Casigellaceae fam. nov.

Candidatus Casigellaceae (NL. fem. n. *Casigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA927.* The type genus for the taxon is *Candidatus* Casigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10105*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lupanellales.

Description of *Candidatus* Casigella sitelessa sp. nov.

Candidatus Casigella sitelessa (NL. fem. n. *sitelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA927 sp002433895*. The type genome for the species is the GenBank assembly GCA_002433895.1. The GC content of the type genome is 47.38 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Casigia ludimugo sp. nov.

Candidatus Casigia ludimugo (NL. fem. n. *ludimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-33-46 sp002792735*. The type genome for the species is the GenBank assembly GCA_002772915.1. The GC content of the type genome is 33.22 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Casigia gen. nov.

Candidatus Casigia (NL. fem. n. *Casigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-33-46*. The type species for the genus is *Candidatus* Casigia ludimugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-33-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigiaceae.

Description of *Candidatus* Casigiaceae fam. nov.

Candidatus Casigiaceae (NL. fem. n. *Casigiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-33-46.* The type genus for the taxon is *Candidatus* Casigia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-33-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Casigiales.

Description of *Candidatus* Casigiales ord. nov.

Candidatus Casigiales (NL. fem. n. *Casigiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-33-46.* The type genus for the taxon is *Candidatus* Casigia .

According to the original version of GTDB R06-RS202, this family belongs to the class *CPR2_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Sitelidae.

Description of *Candidatus* Casigida adcesatio sp. nov.

Candidatus Casigida adcesatio (NL. fem. n. *adcesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11063 sp003538525*. The type genome for the species is the GenBank assembly GCA_003538525.1. The GC content of the type genome is 37.87 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Casigida gen. nov.

Candidatus Casigida (NL. fem. n. *Casigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11063*. The type species for the genus is *Candidatus* Casigida adcesatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11063*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigidaceae.

Description of *Candidatus* Casigidaceae fam. nov.

Candidatus Casigidaceae (NL. fem. n. *Casigidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11063.* The type genus for the taxon is *Candidatus* Casigida .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Casigida anancitrix sp. nov.

Candidatus Casigida anancitrix (NL. fem. n. *anancitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11063 sp002892535*. The type genome for the species is the GenBank assembly RS_GCF_002892535.1. The GC content of the type genome is 36.43 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Casigida attorigena sp. nov.

Candidatus Casigida attorigena (NL. fem. n. *attorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11063 sp003962895*. The type genome for the species is the GenBank assembly GCA_003962895.1. The GC content of the type genome is 32.95 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Casigida denomitrix sp. nov.

Candidatus Casigida denomitrix (NL. fem. n. *denomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11063 sp003963245*. The type genome for the species is the GenBank assembly GCA_003963245.1. The GC content of the type genome is 36.69 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Casigida inoccisca sp. nov.

Candidatus Casigida inoccisca (NL. fem. n. *inoccisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11063 sp008017145*. The type genome for the species is the GenBank assembly GCA_008017145.1. The GC content of the type genome is 36.74 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Casigida molecatica sp. nov.

Candidatus Casigida molecatica (NL. fem. n. *molecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11063 sp903891375*. The type genome for the species is the GenBank assembly GCA_903842265.1. The GC content of the type genome is 32.79 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Casigida repepibula sp. nov.

Candidatus Casigida repepibula (NL. fem. n. *repepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11063 sp003962985*. The type genome for the species is the GenBank assembly GCA_003962985.1. The GC content of the type genome is 35.03 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Casigida semigicula sp. nov.

Candidatus Casigida semigicula (NL. fem. n. *semigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11063 sp008017155*. The type genome for the species is the GenBank assembly GCA_008017155.1. The GC content of the type genome is 35.45 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Casigosa everbax sp. nov.

Candidatus Casigosa everbax (NL. fem. n. *everbax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9968 sp001798565*. The type genome for the species is the GenBank assembly GCA_001798565.1. The GC content of the type genome is 60.02 % and the genome length is 1.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Casigosa gen. nov.

Candidatus Casigosa (NL. fem. n. *Casigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9968*. The type species for the genus is *Candidatus* Casigosa everbax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigosaceae.

Description of *Candidatus* Casigosaceae fam. nov.

Candidatus Casigosaceae (NL. fem. n. *Casigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9968.* The type genus for the taxon is *Candidatus* Casigosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Casigosales.

Description of *Candidatus* Casigosales ord. nov.

Candidatus Casigosales (NL. fem. n. *Casigosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9968.* The type genus for the taxon is *Candidatus* Casigosa .

According to the GTDB R06-RS202, this order belongs to the class *Binatia*.

Description of *Candidatus* Casigosa gerunousia sp. nov.

Candidatus Casigosa gerunousia (NL. fem. n. *gerunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9968 sp001799045*. The type genome for the species is the GenBank assembly GCA_001799125.1. The GC content of the type genome is 55.32 % and the genome length is 2.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; 10% subassembly".

Description of *Candidatus* Casigosa levidatica sp. nov.

Candidatus Casigosa levidatica (NL. fem. n. *levidatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9968 sp001798995*. The type genome for the species is the GenBank assembly GCA_001798995.1. The GC content of the type genome is 59.94 % and the genome length is 1.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Casigosa ossifedo sp. nov.

Candidatus Casigosa ossifedo (NL. fem. n. *ossifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9968 sp003490035*. The type genome for the species is the GenBank assembly GCA_003490035.1. The GC content of the type genome is 54.76 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Casigula fefelivita sp. nov.

Candidatus Casigula fefelivita (NL. fem. n. *fefelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *38-11 sp001509345*. The type genome for the species is the GenBank assembly GCA_003500195.1. The GC content of the type genome is 38.32 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Casigula gen. nov.

Candidatus Casigula (NL. fem. n. *Casigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *38-11*. The type species for the genus is *Candidatus* Casigula fefelivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Casigula utrarimonas sp. nov.

Candidatus Casigula utrarimonas (NL. fem. n. *utrarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *38-11 sp003446975*. The type genome for the species is the GenBank assembly GCA_003446975.1. The GC content of the type genome is 39.5 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Casimicrobium abluvitica sp. nov.

Candidatus Casimicrobium abluvitica (NL. fem. n. *abluvitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Casimicrobium sp013298045*. The type genome for the species is the GenBank assembly GCA_013298045.1. The GC content of the type genome is 57.5 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Casimicrobium demogitio sp. nov.

Candidatus Casimicrobium demogitio (NL. fem. n. *demogitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Casimicrobium sp014378555*. The type genome for the species is the GenBank assembly GCA_014378555.1. The GC content of the type genome is 57.6 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Casimicrobium immusentia sp. nov.

Candidatus Casimicrobium immusentia (NL. fem. n. *immusentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Casimicrobium sp013298695*. The type genome for the species is the GenBank assembly GCA_013298695.1. The GC content of the type genome is 55.4 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Casimicrobium invesimonia sp. nov.

Candidatus Casimicrobium invesimonia (NL. fem. n. *invesimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Casimicrobium sp013298765*. The type genome for the species is the GenBank assembly GCA_013298765.1. The GC content of the type genome is 56.87 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Casimicrobium necubatio sp. nov.

Candidatus Casimicrobium necubatio (NL. fem. n. *necubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Casimicrobium sp004293675*. The type genome for the species is the GenBank assembly GCA_004294085.1. The GC content of the type genome is 56.73 %

and the genome length is 3.79 Mbp.

Description of *Candidatus* Casimicrobium penicax sp. nov.

Candidatus Casimicrobium penicax (NL. fem. n. *penicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Casimicrobium sp004294365*. The type genome for the species is the GenBank assembly GCA_004294365.1. The GC content of the type genome is 56.55 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Casimicrobium salubivita sp. nov.

Candidatus Casimicrobium salubivita (NL. fem. n. *salubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Casimicrobium sp013298455*. The type genome for the species is the GenBank assembly GCA_013298455.1. The GC content of the type genome is 57.35 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Castellaniella filifitio sp. nov.

Candidatus Castellaniella filifitio (NL. fem. n. *filifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Castellaniella sp004321985*. The type genome for the species is the GenBank assembly GCA_004321985.1. The GC content of the type genome is 62.66 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Castellaniella infanago sp. nov.

Candidatus Castellaniella infanago (NL. fem. n. *infanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Castellaniella sp002421865*. The type genome for the species is the GenBank assembly GCA_002421865.1. The GC content of the type genome is 66.44 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Catabana bimotentia sp. nov.

Candidatus Catabana bimotentia (NL. fem. n. *bimotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002723295 sp002713495*. The type genome for the species is the GenBank assembly GCA_002713495.1. The GC content of the type genome is 29.45 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Catabana gen. nov.

Candidatus Catabana (NL. fem. n. *Catabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002723295*. The type species for the genus is *Candidatus* Catabana bimotentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catabana cilicatio sp. nov.

Candidatus Catabana cilicatio (NL. fem. n. *cilicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002723295 sp002721275*. The type genome for the species is the GenBank assembly GCA_002721275.1. The GC content of the type genome is 30.36 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Catabana ciminilega sp. nov.

Candidatus Catabana ciminilega (NL. fem. n. *ciminilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002723295 sp002711185*. The type genome for the species is the GenBank assembly GCA_002711185.1. The GC content of the type genome is 29.9 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Catabana decenicula sp. nov.

Candidatus Catabana decenicula (NL. fem. n. *decenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002723295 sp002723295*. The type genome for the species is the GenBank assembly GCA_002723295.1. The GC content of the type genome is 29.45 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Catabana tomacibra sp. nov.

Candidatus Catabana tomacibra (NL. fem. n. *tomacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002723295 sp002690805*. The type genome for the species is the GenBank assembly GCA_002690805.1. The GC content of the type genome is 29.47 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Catabaria angipicella sp. nov.

Candidatus Catabaria angipicella (NL. fem. n. *angipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4459 sp002869465*. The type genome for the species is the GenBank assembly GCA_002869465.1. The GC content of the type genome is 38.91 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Catabaria gen. nov.

Candidatus Catabaria (NL. fem. n. *Catabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4459*. The type species for the genus is *Candidatus* Catabaria angipicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Catabaria conopitoga sp. nov.

Candidatus Catabaria conopitoga (NL. fem. n. *conopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4459 sp003648625*. The type genome for the species is the GenBank assembly GCA_003650385.1. The GC content of the type genome is 42.1 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Catabaria ecfacicella sp. nov.

Candidatus Catabaria ecfacicella (NL. fem. n. *ecfacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4459 sp002389465*. The type genome for the species is the GenBank assembly GCA_002389465.1. The GC content of the type genome is 42.02 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Catabella desupisca sp. nov.

Candidatus Catabella desupisca (NL. fem. n. *desupisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3031 sp003485335*. The type genome for the species is the GenBank assembly GCA_003485335.1. The GC content of the type genome is 44.44 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Catabella gen. nov.

Candidatus Catabella (NL. fem. n. *Catabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3031*. The type species for the genus is *Candidatus* Catabella desupisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3031*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabellaceae.

Description of *Candidatus* Catabellaceae fam. nov.

Candidatus Catabellaceae (NL. fem. n. *Catabellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3031.* The type genus for the taxon is *Candidatus* Catabella .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Catabella feditatio sp. nov.

Candidatus Catabella feditatio (NL. fem. n. *feditatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3031 sp002167745*. The type genome for the species is the GenBank assembly GCA_002167745.1. The GC content of the type genome is 44.12 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Catabella fuligitica sp. nov.

Candidatus Catabella fuligitica (NL. fem. n. *fuligitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3031 sp009886305*. The type genome for the species is the GenBank assembly GCA_009886305.1. The GC content of the type genome is 44.03 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Catabella maligedo sp. nov.

Candidatus Catabella maligedo (NL. fem. n. *maligedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3031 sp003483505*. The type genome for the species is the GenBank assembly GCA_003483505.1. The GC content of the type genome is 44.23 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Catabella tumefitrix sp. nov.

Candidatus Catabella tumefitrix (NL. fem. n. *tumefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3031 sp002367635*. The type genome for the species is the GenBank assembly GCA_002365775.1. The GC content of the type genome is 45.75 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Catabia camilitura sp. nov.

Candidatus Catabia camilitura (NL. fem. n. *camilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10133 sp002789895*. The type genome for the species is the GenBank assembly GCA_002770845.1. The GC content of the type genome is 42.93 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Catabia gen. nov.

Candidatus Catabia (NL. fem. n. *Catabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10133*. The type species for the genus is *Candidatus* Catabia camilitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MFAQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notabulaceae.

Description of *Candidatus* Catabia cohonatica sp. nov.

Candidatus Catabia cohonatica (NL. fem. n. *cohonatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10133 sp001774685*. The type genome for the species is the GenBank assembly GCA_001774655.1. The GC content of the type genome is 44.95 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Catabia denomitudo sp. nov.

Candidatus Catabia denomitudo (NL. fem. n. *denomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10133 sp001001485*. The type genome for the species is the GenBank assembly GCA_001001635.1. The GC content of the type genome is 43.71 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Catabia inargessa sp. nov.

Candidatus Catabia inargessa (NL. fem. n. *inargessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10133 sp000998025*. The type genome for the species is the GenBank assembly GCA_000998025.1. The GC content of the type genome is 43.41 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Catabia sicinicula sp. nov.

Candidatus Catabia sicinicula (NL. fem. n. *sicinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10133 sp001000865*. The type genome for the species is the GenBank assembly GCA_001000865.1. The GC content of the type genome is 43.46 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Catabia solifivita sp. nov.

Candidatus Catabia solifivita (NL. fem. n. *solifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10133 sp003531665*. The type genome for the species is the GenBank assembly GCA_001000665.1. The GC content of the type genome is 44.02 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Catabosa bipenilenta sp. nov.

Candidatus Catabosa bipenilenta (NL. fem. n. *bipenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8905 sp002402795*. The type genome for the species is the GenBank assembly GCA_003501825.1. The GC content of the type genome is 40.92 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Catabosa gen. nov.

Candidatus Catabosa (NL. fem. n. *Catabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8905*. The type species for the genus is *Candidatus* Catabosa bipenilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catabula delebivita sp. nov.

Candidatus Catabula delebivita (NL. fem. n. *delebivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3941 sp002385665*. The type genome for the species is the GenBank assembly GCA_002385665.1. The GC content of the type genome is 42.44 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Catabula gen. nov.

Candidatus Catabula (NL. fem. n. *Catabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3941*. The type species for the genus is *Candidatus* Catabula delebivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3941*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabulaceae.

Description of *Candidatus* Catabulaceae fam. nov.

Candidatus Catabulaceae (NL. fem. n. *Catabulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3941.* The type genus for the taxon is *Candidatus* Catabula .

According to GTDB R06-RS202, this family belongs to the order *Caldicoprobacterales*.

Description of *Candidatus* Catabula innoxisca sp. nov.

Candidatus Catabula innoxisca (NL. fem. n. *innoxisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3941 sp012518535*. The type genome for the species is the GenBank assembly GCA_012518535.1. The GC content of the type genome is 43.33 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Catafana foricigena sp. nov.

Candidatus Catafana foricigena (NL. fem. n. *foricigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746425 sp002746425*. The type genome for the species is the GenBank assembly GCA_002746425.1. The GC content of the type genome is 50.47 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Catafana gen. nov.

Candidatus Catafana (NL. fem. n. *Catafana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746425*. The type species for the genus is *Candidatus* Catafana foricigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2746425*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catafanaceae.

Description of *Candidatus* Catafanaceae fam. nov.

Candidatus Catafanaceae (NL. fem. n. *Catafanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2746425.* The type genus for the taxon is *Candidatus* Catafana .

According to GTDB R06-RS202, this family belongs to the order *Rhizobiales*.

Description of *Candidatus* Catafaria tubicitas sp. nov.

Candidatus Catafaria tubicitas (NL. fem. n. *tubicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZJ293 sp011751725*. The type genome for the species is the GenBank assembly RS_GCF_011751725.1. The GC content of the type genome is 35.25 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Catafaria gen. nov.

Candidatus Catafaria (NL. fem. n. *Catafaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZJ293*. The type species for the genus is *Candidatus* Catafaria tubicitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catafella locupitica sp. nov.

Candidatus Catafella locupitica (NL. fem. n. *locupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMV01 sp903897855*. The type genome for the species is the GenBank assembly GCA_903895395.1. The GC content of the type genome is 39.83 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Catafella gen. nov.

Candidatus Catafella (NL. fem. n. *Catafella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINMV01*. The type species for the genus is *Candidatus* Catafella locupitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAINMV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catafellaceae.

Description of *Candidatus* Catafellaceae fam. nov.

Candidatus Catafellaceae (NL. fem. n. *Catafellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAINMV01*. The type genus for the taxon is *Candidatus* Catafella .

According to the original version of GTDB R06-RS202, this family belongs to the order *NS11-12g*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peropanales.

Description of *Candidatus* Catafella negotibra sp. nov.

Candidatus Catafella negotibra (NL. fem. n. *negotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMV01 sp903850915*. The type genome for the species is the GenBank assembly GCA_903900375.1. The GC content of the type genome is 37.09 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Catafella nehalitia sp. nov.

Candidatus Catafella nehalitia (NL. fem. n. *nehalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMV01 sp903910445*. The type genome for the species is the GenBank assembly GCA_903910445.1. The GC content of the type genome is 38.16 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Catafia hecatilega sp. nov.

Candidatus Catafia hecatilega (NL. fem. n. *hecatilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASP10-05a sp000981645*. The type genome for the species is the GenBank assembly GCA_002453235.1. The GC content of the type genome is 38.02 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Catafia gen. nov.

Candidatus Catafia (NL. fem. n. *Catafia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ASP10-05a*. The type species for the genus is *Candidatus* Catafia hecatilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UA16. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilosaceae.

Description of *Candidatus* Catafia hegumigena sp. nov.

Candidatus Catafia hegumigena (NL. fem. n. *hegumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASP10-05a sp002336675*. The type genome for the species is the GenBank assembly GCA_002358805.1. The GC content of the type genome is 37.41 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Catafida forabicella sp. nov.

Candidatus Catafida forabicella (NL. fem. n. *forabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7930 sp003453535*. The type genome for the species is the GenBank assembly GCA_001508275.1. The GC content of the type genome is 66.08 % and the genome length is 2.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample SB1".

Description of *Candidatus* Catafida gen. nov.

Candidatus Catafida (NL. fem. n. *Catafida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7930*. The type species for the genus is *Candidatus* Catafida forabicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2279*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depeciaceae.

Description of *Candidatus* Catafida venunicella sp. nov.

Candidatus Catafida venunicella (NL. fem. n. *venunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA7930 sp011372845*. The type genome for the species is the GenBank assembly GCA_011372845.1. The GC content of the type genome is 66.57 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Catafosa cacalibula sp. nov.

Candidatus Catafosa cacalibula (NL. fem. n. *cacalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN34 sp002923395*. The type genome for the species is the GenBank assembly GCA_002923395.1. The GC content of the type genome is 30.74 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Catafosa gen. nov.

Candidatus Catafosa (NL. fem. n. *Catafosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN34*. The type species for the genus is *Candidatus* Catafosa cacalibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN34*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catafosaceae.

Description of *Candidatus* Catafosaceae fam. nov.

Candidatus Catafosaceae (NL. fem. n. *Catafosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN34.* The type genus for the taxon is *Candidatus* Catafosa .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Catafula denupitica sp. nov.

Candidatus Catafula denupitica (NL. fem. n. *denupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCYQ01 sp013290125*. The type genome for the species is the GenBank assembly GCA_013289595.1. The GC content of the type genome is 62.51 %

and the genome length is 2.91 Mbp.

Description of *Candidatus* Catafula gen. nov.

Candidatus Catafula (NL. fem. n. *Catafula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCYQ01*. The type species for the genus is *Candidatus* Catafula denupitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catagana obvalilenta sp. nov.

Candidatus Catagana obvalilenta (NL. fem. n. *obvalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin39 sp004376375*. The type genome for the species is the GenBank assembly GCA_004376375.1. The GC content of the type genome is 54.44 % and the genome length is 5.68 Mbp.

Description of *Candidatus* Catagana gen. nov.

Candidatus Catagana (NL. fem. n. *Catagana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin39*. The type species for the genus is *Candidatus* Catagana obvalilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cataganaceae.

Description of *Candidatus* Cataganaceae fam. nov.

Candidatus Cataganaceae (NL. fem. n. *Cataganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin39.* The type genus for the taxon is *Candidatus* Catagana .

According to the original version of GTDB R06-RS202, this family belongs to the order *E44-bin39*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Cataganales.

Description of *Candidatus* Cataganales ord. nov.

Candidatus Cataganales (NL. fem. n. *Cataganales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin39.* The type genus for the taxon is *Candidatus* Catagana .

According to the original version of GTDB R06-RS202, this family belongs to the class *E44-bin39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cataganae.

Description of *Candidatus* Cataganae class. nov.

Candidatus Cataganae (NL. fem. n. *c__Cataganae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin39.* The type genus for the taxon is *Candidatus* Catagana .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Catagaria hibisicella sp. nov.

Candidatus Catagaria hibisicella (NL. fem. n. *hibisicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTMQ01 sp011358805*. The type genome for the species is the GenBank assembly GCA_011358805.1. The GC content of the type genome is 44.26 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Catagaria gen. nov.

Candidatus Catagaria (NL. fem. n. *Catagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTMQ01*. The type species for the genus is *Candidatus* Catagaria hibisicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTMQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catagariaceae.

Description of *Candidatus* Catagariaceae fam. nov.

Candidatus Catagariaceae (NL. fem. n. *Catagariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTMQ01*. The type genus for the taxon is *Candidatus* Catagaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homulosales.

Description of *Candidatus* Catagella capudastra sp. nov.

Candidatus Catagella capudastra (NL. fem. n. *capudastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITGV01 sp903892035*. The type genome for the species is the GenBank assembly GCA_903842285.1. The GC content of the type genome is 36.12 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Catagella gen. nov.

Candidatus Catagella (NL. fem. n. *Catagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITGV01*. The type species for the genus is *Candidatus* Catagella capudastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relaposaceae.

Description of *Candidatus* Catagia cacopivita sp. nov.

Candidatus Catagia cacopivita (NL. fem. n. *cacopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1032 sp002410505*. The type genome for the species is the GenBank assembly GCA_002316885.1. The GC content of the type genome is 47.52 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Catagia gen. nov.

Candidatus Catagia (NL. fem. n. *Catagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1032*. The type species for the genus is *Candidatus* Catagia cacopivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catagia diponilenta sp. nov.

Candidatus Catagia diponilenta (NL. fem. n. *diponilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1032 sp002412625*. The type genome for the species is the GenBank assembly GCA_002412625.1. The GC content of the type genome is 50.29 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Catagida obrigitrix sp. nov.

Candidatus Catagida obrigitrix (NL. fem. n. *obrigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW-4-49-11 sp003021915*. The type genome for the species is the GenBank assembly GCA_003021915.1. The GC content of the type genome is 49.36 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Catagida gen. nov.

Candidatus Catagida (NL. fem. n. *Catagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SW-4-49-11*. The type species for the genus is *Candidatus* Catagida obrigitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SW-4-49-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catagidaceae.

Description of *Candidatus* Catagidaceae fam. nov.

Candidatus Catagidaceae (NL. fem. n. *Catagidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SW-4-49-11*. The type genus for the taxon is *Candidatus* Catagida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SW-4-49-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Catagidales.

Description of *Candidatus* Catagidales ord. nov.

Candidatus Catagidales (NL. fem. n. *Catagidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SW-4-49-11*. The type genus for the taxon is *Candidatus* Catagida .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Catagosa bulapimonas sp. nov.

Candidatus Catagosa bulapimonas (NL. fem. n. *bulapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UCB2 sp003577245*. The type genome for the species is the GenBank assembly GCA_003577245.1. The GC content of the type genome is 66.56 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Catagosa gen. nov.

Candidatus Catagosa (NL. fem. n. *Catagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UCB2*. The type species for the genus is *Candidatus* Catagosa bulapimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2991*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifariaceae.

Description of *Candidatus* Catalaria cocodetta sp. nov.

Candidatus Catalaria cocodetta (NL. fem. n. *cocodetta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA981 sp002292285*. The type genome for the species is the GenBank assembly GCA_002390245.1. The GC content of the type genome is 56.98 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Catalaria gen. nov.

Candidatus Catalaria (NL. fem. n. *Catalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA981*. The type species for the genus is *Candidatus* Catalaria cocodetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077536*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delebidaceae.

Description of *Candidatus* Catalella sonivitica sp. nov.

Candidatus Catalella sonivitica (NL. fem. n. *sonivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NSJ-50 sp014385105*. The type genome for the species is the GenBank assembly RS_GCF_900757245.1. The GC content of the type genome is 43.63 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Catalella gen. nov.

Candidatus Catalella (NL. fem. n. *Catalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NSJ-50*. The type species for the genus is *Candidatus* Catalella sonivitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1810*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehonariaceae.

Description of *Candidatus* Catalia lavacentia sp. nov.

Candidatus Catalia lavacentia (NL. fem. n. *lavacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMS01 sp007132505*. The type genome for the species is the GenBank assembly GCA_007132505.1. The GC content of the type genome is 64.84 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Catalia gen. nov.

Candidatus Catalia (NL. fem. n. *Catalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLMS01*. The type species for the genus is *Candidatus* Catalia lavacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLMS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cataliaceae.

Description of *Candidatus* Cataliaceae fam. nov.

Candidatus Cataliaceae (NL. fem. n. *Cataliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLMS01.* The type genus for the taxon is *Candidatus* Catalia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLMS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cataliales.

Description of *Candidatus* Cataliales ord. nov.

Candidatus Cataliales (NL. fem. n. *Cataliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLMS01.* The type genus for the taxon is *Candidatus* Catalia .

According to the GTDB R06-RS202, this order belongs to the class *Sumerlaeia*.

Description of *Candidatus* Catalia tumefilega sp. nov.

Candidatus Catalia tumefilega (NL. fem. n. *tumefilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMS01 sp007133495*. The type genome for the species is the GenBank assembly GCA_007133495.1. The GC content of the type genome is 64.82 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Catalida celametta sp. nov.

Candidatus Catalida celametta (NL. fem. n. *celametta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-223 sp011053995*. The type genome for the species is the GenBank assembly GCA_011047725.1. The GC content of the type genome is 66.87 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Catalida gen. nov.

Candidatus Catalida (NL. fem. n. *Catalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-223*. The type species for the genus is *Candidatus* Catalida celametta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-223*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catalidaceae.

Description of *Candidatus* Catalidaceae fam. nov.

Candidatus Catalidaceae (NL. fem. n. *Catalidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-223.* The type genus for the taxon is *Candidatus* Catalida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-223*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Catalidales.

Description of *Candidatus* Catalidales ord. nov.

Candidatus Catalidales (NL. fem. n. *Catalidales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-223.* The type genus for the taxon is *Candidatus* Catalida .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Catalosa relecicella sp. nov.

Candidatus Catalosa relecicella (NL. fem. n. *relecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1567 sp001872485*. The type genome for the species is the GenBank assembly GCA_001872485.1. The GC content of the type genome is 43.63 % and the genome length is 0.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Catalosa gen. nov.

Candidatus Catalosa (NL. fem. n. *Catalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1567*. The type species for the genus is *Candidatus* Catalosa relecicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catalula subabilenta sp. nov.

Candidatus Catalula subabilenta (NL. fem. n. *subabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin05 sp002897855*. The type genome for the species is the GenBank assembly GCA_002897855.1. The GC content of the type genome is 44.67 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Catalula gen. nov.

Candidatus Catalula (NL. fem. n. *Catalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Bbin05*. The type species for the genus is *Candidatus* Catalula subabilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3Bbin05*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catalulaceae.

Description of *Candidatus* Catalulaceae fam. nov.

Candidatus Catalulaceae (NL. fem. n. *Catalulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3Bbin05.* The type genus for the taxon is *Candidatus* Catalula .

According to GTDB R06-RS202, this family belongs to the order *Thermodesulfovibrionales*.

Description of *Candidatus* Catapana cimelugo sp. nov.

Candidatus Catapana cimelugo (NL. fem. n. *cimelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-86 sp002011815*. The type genome for the species is the GenBank assembly GCA_002011815.1. The GC content of the type genome is 45.26 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Catapana gen. nov.

Candidatus Catapana (NL. fem. n. *Catapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-86*. The type species for the genus is *Candidatus* Catapana cimelugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-86*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catapanaceae.

Description of *Candidatus* Catapanaceae fam. nov.

Candidatus Catapanaceae (NL. fem. n. *Catapanaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-86.* The type genus for the taxon is *Candidatus* Catapana .

According to GTDB R06-RS202, this family belongs to the order *Thermodesulfovibrionales*.

Description of *Candidatus* Cataparia attemiforma sp. nov.

Candidatus Cataparia attemiforma (NL. fem. n. *attemiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2715965 sp002715965*. The type genome for the species is the GenBank assembly GCA_002715965.1. The GC content of the type genome is 56.46 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Cataparia gen. nov.

Candidatus Cataparia (NL. fem. n. *Cataparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2715965*. The type species for the genus is *Candidatus* Cataparia attemiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2715965*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catapariaceae.

Description of *Candidatus* Catapariaceae fam. nov.

Candidatus Catapariaceae (NL. fem. n. *Catapariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2715965.* The type genus for the taxon is *Candidatus* Cataparia .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Catapella ancipastra sp. nov.

Candidatus Catapella ancipastra (NL. fem. n. *ancipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G3 sp002708935*. The type genome for the species is the GenBank assembly GCA_002708935.1. The GC content of the type genome is 52.97 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Catapella gen. nov.

Candidatus Catapella (NL. fem. n. *Catapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MedAcidi-G3*. The type species for the genus is *Candidatus* Catapella ancipastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TK06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaculaceae.

Description of *Candidatus* Catapella appagessa sp. nov.

Candidatus Catapella appagessa (NL. fem. n. *appagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G3 sp002457435*. The type genome for the species is the GenBank assembly GCA_002457435.1. The GC content of the type genome is 52.99 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Catapella depopessa sp. nov.

Candidatus Catapella depopessa (NL. fem. n. *depopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G3 sp000817105*. The type genome for the species is the GenBank assembly GCA_002335965.1. The GC content of the type genome is 51.4 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Catapella lavacimonia sp. nov.

Candidatus Catapella lavacimonia (NL. fem. n. *lavacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G3 sp003445455*. The type genome for the species is the GenBank assembly GCA_003445455.1. The GC content of the type genome is 51.55 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Catapella lenimifica sp. nov.

Candidatus Catapella lenimifica (NL. fem. n. *lenimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G3 sp002722565*. The type genome for the species is the GenBank assembly GCA_002434645.1. The GC content of the type genome is 51.82 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Catapella milifimonia sp. nov.

Candidatus Catapella milifimonia (NL. fem. n. *milifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G3 sp004214275*. The type genome for the species is the GenBank assembly GCA_004214275.1. The GC content of the type genome is 52.75 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Catapella refunibula sp. nov.

Candidatus Catapella refunibula (NL. fem. n. *refunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G3 sp002713975*. The type genome for the species is the GenBank assembly GCA_002713975.1. The GC content of the type genome is 53.0 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Catapia adsifentia sp. nov.

Candidatus Catapia adsifentia (NL. fem. n. *adsifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3076 sp003194485*. The type genome for the species is the GenBank assembly GCA_003194485.1. The GC content of the type genome is 49.06 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Catapia gen. nov.

Candidatus Catapia (NL. fem. n. *Catapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3076*. The type species for the genus is *Candidatus* Catapia adsifentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3076*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catapiaceae.

Description of *Candidatus* Catapiaceae fam. nov.

Candidatus Catapiaceae (NL. fem. n. *Catapiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3076.* The type genus for the taxon is *Candidatus* Catapia .

According to GTDB R06-RS202, this family belongs to the order *Dissulfuribacterales*.

Description of *Candidatus* Catapia demagivita sp. nov.

Candidatus Catapia demagivita (NL. fem. n. *demagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3076 sp003194495*. The type genome for the species is the GenBank assembly GCA_003194495.1. The GC content of the type genome is 46.84 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Catapia lanigitas sp. nov.

Candidatus Catapia lanigitas (NL. fem. n. *lanigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3076 sp002367355*. The type genome for the species is the GenBank assembly GCA_002367355.1. The GC content of the type genome is 47.27 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Catapia lucelivita sp. nov.

Candidatus Catapia lucelivita (NL. fem. n. *lucelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3076 sp013138705*. The type genome for the species is the GenBank assembly GCA_013138705.1. The GC content of the type genome is 47.79 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Catapia opuscisca sp. nov.

Candidatus Catapia opuscisca (NL. fem. n. *opuscisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3076 sp003645605*. The type genome for the species is the GenBank assembly GCA_003645605.1. The GC content of the type genome is 46.56 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Catapia pedifimonia sp. nov.

Candidatus Catapia pedifimonia (NL. fem. n. *pedifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3076 sp011042225*. The type genome for the species is the GenBank assembly GCA_011042225.1. The GC content of the type genome is 45.75 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Catapida nosocitoga sp. nov.

Candidatus Catapida nosocitoga (NL. fem. n. *nosocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B12-G15 sp003646055*. The type genome for the species is the GenBank assembly GCA_003644995.1. The GC content of the type genome is 41.66 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Catapida gen. nov.

Candidatus Catapida (NL. fem. n. *Catapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B12-G15*. The type species for the genus is *Candidatus* Catapida nosocitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B12-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catapidaceae.

Description of *Candidatus* Catapidaceae fam. nov.

Candidatus Catapidaceae (NL. fem. n. *Catapidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B12-G15.* The type genus for the taxon is *Candidatus* Catapida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tomogosales.

Description of *Candidatus* Cataposa subofimonas sp. nov.

Candidatus Cataposa subofimonas (NL. fem. n. *subofimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQCM01 sp903870305*. The type genome for the species is the GenBank assembly GCA_903876165.1. The GC content of the type genome is 53.45 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Cataposa gen. nov.

Candidatus Cataposa (NL. fem. n. *Cataposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQCM01*. The type species for the genus is *Candidatus* Cataposa subofimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIQCM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cataposaceae.

Description of *Candidatus* Cataposaceae fam. nov.

Candidatus Cataposaceae (NL. fem. n. *Cataposaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIQCM01.* The type genus for the taxon is *Candidatus* Cataposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Catapula fuligifica sp. nov.

Candidatus Catapula fuligifica (NL. fem. n. *fuligifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXQI01 sp008933045*. The type genome for the species is the GenBank assembly GCA_008933045.1. The GC content of the type genome is 52.1 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Catapula gen. nov.

Candidatus Catapula (NL. fem. n. *Catapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXQI01*. The type species for the genus is *Candidatus* Catapula fuligifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXQI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catapulaceae.

Description of *Candidatus* Catapulaceae fam. nov.

Candidatus Catapulaceae (NL. fem. n. *Catapulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SXQI01.* The type genus for the taxon is *Candidatus* Catapula .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Catapula monaciforma sp. nov.

Candidatus Catapula monaciforma (NL. fem. n. *monaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXQI01 sp005793025*. The type genome for the species is the GenBank assembly GCA_005800725.1. The GC content of the type genome is 51.31 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Catecaria caduritica sp. nov.

Candidatus Catecaria caduritica (NL. fem. n. *caduritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12049 sp001784155*. The type genome for the species is the GenBank assembly GCA_001782395.1. The GC content of the type genome is 40.37 % and the genome length is 0.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Catecaria gen. nov.

Candidatus Catecaria (NL. fem. n. *Catecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12049*. The type species for the genus is *Candidatus* Catecaria caduritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Catecariaceae fam. nov.

Candidatus Catecariaceae (NL. fem. n. *Catecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12049.* The type genus for the taxon is *Candidatus* Catecaria .

According to GTDB R06-RS202, this family belongs to the order *Levybacterales*.

Description of *Candidatus* Catecia mimogatica sp. nov.

Candidatus Catecia mimogatica (NL. fem. n. *mimogatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-557 sp000435275*. The type genome for the species is the GenBank assembly GCA_900552535.1. The GC content of the type genome is 34.34 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Catecia gen. nov.

Candidatus Catecia (NL. fem. n. *Catecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-557*. The type species for the genus is *Candidatus* Catecia mimogatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catecida hexapatica sp. nov.

Candidatus Catecida hexapatica (NL. fem. n. *hexapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQPS01 sp903873715*. The type genome for the species is the GenBank assembly GCA_903887145.1. The GC content of the type genome is 66.95 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Catecida gen. nov.

Candidatus Catecida (NL. fem. n. *Catecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQPS01*. The type species for the genus is *Candidatus* Catecida hexapatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demululaceae.

Description of *Candidatus* Catecosa admodousia sp. nov.

Candidatus Catecosa admodousia (NL. fem. n. *admodousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG591 sp902797275*. The type genome for the species is the GenBank assembly GCA_902797275.1. The GC content of the type genome is 23.87 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Catecosa gen. nov.

Candidatus Catecosa (NL. fem. n. *Catecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG591*. The type species for the genus is *Candidatus* Catecosa admodousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Catecosa expasimonas sp. nov.

Candidatus Catecosa expasimonas (NL. fem. n. *expasimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG591 sp902782915*. The type genome for the species is the GenBank assembly GCA_902782915.1. The GC content of the type genome is 24.58 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Catecosa selibicula sp. nov.

Candidatus Catecosa selibicula (NL. fem. n. *selibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG591 sp900320425*. The type genome for the species is the GenBank assembly GCA_902782525.1. The GC content of the type genome is 24.54 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Catecula catafessa sp. nov.

Candidatus Catecula catafessa (NL. fem. n. *catafessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8087 sp002684315*. The type genome for the species is the GenBank assembly GCA_002684315.1. The GC content of the type genome is 59.18 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Catecula gen. nov.

Candidatus Catecula (NL. fem. n. *Catecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8087*. The type species for the genus is *Candidatus* Catecula catafessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Catecula minagatio sp. nov.

Candidatus Catecula minagatio (NL. fem. n. *minagatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8087 sp002709755*. The type genome for the species is the GenBank assembly GCA_002709755.1. The GC content of the type genome is 59.93 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Catecula recomitas sp. nov.

Candidatus Catecula recomitas (NL. fem. n. *recomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8087 sp902521645*. The type genome for the species is the GenBank assembly RS_GCF_902521645.1. The GC content of the type genome is 58.48 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Catecula saburiforma sp. nov.

Candidatus Catecula saburiforma (NL. fem. n. *saburiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA8087 sp002171655*. The type genome for the species is the GenBank assembly GCA_002691635.1. The GC content of the type genome is 58.95 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Catecula tiguritica sp. nov.

Candidatus Catecula tiguritica (NL. fem. n. *tiguritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8087 sp002862305*. The type genome for the species is the GenBank assembly GCA_002862305.1. The GC content of the type genome is 68.02 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Categana accucastra sp. nov.

Candidatus Categana accucastra (NL. fem. n. *accucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-49-11 sp001794905*. The type genome for the species is the GenBank assembly GCA_001794905.1. The GC content of the type genome is 48.45 % and the genome length is 1.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Categana gen. nov.

Candidatus Categana (NL. fem. n. *Categana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-49-11*. The type species for the genus is *Candidatus* Categana accucastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-49-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categanaceae.

Description of *Candidatus* Categanaceae fam. nov.

Candidatus Categanaceae (NL. fem. n. *Categanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *2-12-FULL-49-11.* The type genus for the taxon is *Candidatus* Categana .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-12-FULL-49-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Categanales.

Description of *Candidatus* Categanales ord. nov.

Candidatus Categanales (NL. fem. n. *Categanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-49-11.* The type genus for the taxon is *Candidatus* Categana .

According to the GTDB R06-RS202, this order belongs to the class *Chlamydiia*.

Description of *Candidatus* Categella bisacatio sp. nov.

Candidatus Categella bisacatio (NL. fem. n. *bisacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV133 sp003219265*. The type genome for the species is the GenBank assembly GCA_003220095.1. The GC content of the type genome is 56.23 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Categella gen. nov.

Candidatus Categella (NL. fem. n. *Categella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AV133*. The type species for the genus is *Candidatus* Categella bisacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Categia adsecicula sp. nov.

Candidatus Categia adsecicula (NL. fem. n. *adsecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10212 sp001790525*. The type genome for the species is the GenBank assembly GCA_001790525.1. The GC content of the type genome is 46.63 % and the genome length is 0.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Categia gen. nov.

Candidatus Categia (NL. fem. n. *Categia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10212*. The type species for the genus is *Candidatus* Categia adsecicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10212*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categiaceae.

Description of *Candidatus* Categiaceae fam. nov.

Candidatus Categiaceae (NL. fem. n. *Categiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10212.* The type genus for the taxon is *Candidatus* Categia .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Categia socagitica sp. nov.

Candidatus Categia socagitica (NL. fem. n. *socagitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10212 sp001790575*. The type genome for the species is the GenBank assembly GCA_003545255.1. The GC content of the type genome is 46.98 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Categida adsicatio sp. nov.

Candidatus Categida adsicatio (NL. fem. n. *adsicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S36-B12 sp012103605*. The type genome for the species is the GenBank assembly GCA_012103605.1. The GC content of the type genome is 62.43 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Categida gen. nov.

Candidatus Categida (NL. fem. n. *Categida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *S36-B12*. The type species for the genus is *Candidatus* Categida adsicatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Categidaceae fam. nov.

Candidatus Categidaceae (NL. fem. n. *Categidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *S36-B12.* The type genus for the taxon is *Candidatus* Categida .

According to GTDB R06-RS202, this family belongs to the order *Nanopelagicales*.

Description of *Candidatus* Categida cosiditudo sp. nov.

Candidatus Categida cosiditudo (NL. fem. n. *cosiditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S36-B12 sp002729215*. The type genome for the species is the GenBank assembly GCA_002323875.1. The GC content of the type genome is 62.44 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Categida fiducitudo sp. nov.

Candidatus Categida fiducitudo (NL. fem. n. *fiducitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *S36-B12 sp010029945*. The type genome for the species is the GenBank assembly GCA_010026005.1. The GC content of the type genome is 62.58 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Categida momoritia sp. nov.

Candidatus Categida momoritia (NL. fem. n. *momoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S36-B12 sp002728915*. The type genome for the species is the GenBank assembly GCA_002728915.1. The GC content of the type genome is 62.45 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Categida semibax sp. nov.

Candidatus Categida semibax (NL. fem. n. *semibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S36-B12 sp002694095*. The type genome for the species is the GenBank assembly GCA_002359715.1. The GC content of the type genome is 62.6 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Categosa vinulitura sp. nov.

Candidatus Categosa vinulitura (NL. fem. n. *vinulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-48-10 sp002771615*. The type genome for the species is the GenBank assembly GCA_002793255.1. The GC content of the type genome is 48.57 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Categosa gen. nov.

Candidatus Categosa (NL. fem. n. *Categosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-48-10*. The type species for the genus is *Candidatus* Categosa vinulitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-48-10*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Categosaceae.

Description of *Candidatus* Categosaceae fam. nov.

Candidatus Categosaceae (NL. fem. n. *Categosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-48-10.* The type genus for the taxon is *Candidatus* Categosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Categula citivicula sp. nov.

Candidatus Categula citivicula (NL. fem. n. *citivicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJR01 sp013003415*. The type genome for the species is the GenBank assembly GCA_013003415.1. The GC content of the type genome is 55.22 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Categula gen. nov.

Candidatus Categula (NL. fem. n. *Categula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJR01*. The type species for the genus is *Candidatus* Categula citivicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDJR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categulaceae.

Description of *Candidatus* Categulaceae fam. nov.

Candidatus Categulaceae (NL. fem. n. *Categulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDJR01.* The type genus for the taxon is *Candidatus* Categula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABDJR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Categulales.

Description of *Candidatus* Categulales ord. nov.

Candidatus Categulales (NL. fem. n. *Categulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDJR01*. The type genus for the taxon is *Candidatus* Categula .

According to the original version of GTDB R06-RS202, this family belongs to the class *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Sonabidae.

Description of *Candidatus* Catelliglobosispora halucicella sp. nov.

Candidatus Catelliglobosispora halucicella (NL. fem. n. *halucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catelliglobosispora sp003543035*. The type genome for the species is the GenBank assembly GCA_003543015.1. The GC content of the type genome is 64.18 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Catenibacillus benemifica sp. nov.

Candidatus Catenibacillus benemifica (NL. fem. n. *benemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenibacillus sp900557175*. The type genome for the species is the GenBank assembly RS_GCF_900759215.1. The GC content of the type genome is 43.07 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Catenibacillus citipisca sp. nov.

Candidatus Catenibacillus citipisca (NL. fem. n. *citipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenibacillus sp902363555*. The type genome for the species is the

GenBank assembly RS_GCF_902363555.1. The GC content of the type genome is 47.45 % and the genome length is 6.64 Mbp.

Description of *Candidatus* Catenibacillus horomilega sp. nov.

Candidatus Catenibacillus horomilega (NL. fem. n. *horomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenibacillus sp900553975*. The type genome for the species is the GenBank assembly GCA_900553975.1. The GC content of the type genome is 43.49 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Catenibacterium celamax sp. nov.

Candidatus Catenibacterium celamax (NL. fem. n. *celamax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenibacterium sp900764725*. The type genome for the species is the GenBank assembly GCA_900764725.1. The GC content of the type genome is 34.18 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Catenibacterium devecessa sp. nov.

Candidatus Catenibacterium devecessa (NL. fem. n. *devecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenibacterium sp900540685*. The type genome for the species is the GenBank assembly GCA_900540685.1. The GC content of the type genome is 34.06 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Catenibacterium exorcitudo sp. nov.

Candidatus Catenibacterium exorcitudo (NL. fem. n. *exorcitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenibacterium sp900540665*. The type genome for the species is the GenBank assembly GCA_900540665.1. The GC content of the type genome is 33.87 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Catenibacterium femelago sp. nov.

Candidatus Catenibacterium femelago (NL. fem. n. *femelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenibacterium sp900764565*. The type genome for the species is the GenBank assembly GCA_900764565.1. The GC content of the type genome is 34.04 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Catenibacterium regifivita sp. nov.

Candidatus Catenibacterium regifivita (NL. fem. n. *regifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenibacterium sp000437715*. The type genome for the species is the GenBank assembly RS_GCF_009881245.1. The GC content of the type genome is 35.21 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Catenulispora epogdisca sp. nov.

Candidatus Catenulispora epogdisca (NL. fem. n. *epogdisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenulispora sp013362315*. The type genome for the species is the GenBank assembly GCA_013362315.1. The GC content of the type genome is 70.66 % and the genome length is 7.97 Mbp.

Description of *Candidatus* Catenulispora inabritura sp. nov.

Candidatus Catenulispora inabritura (NL. fem. n. *inabritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catenulispora sp013361685*. The type genome for the species is the GenBank assembly GCA_013361685.1. The GC content of the type genome is 70.92 % and the genome length is 9.53 Mbp.

Description of *Candidatus* Catilaria acrifastra sp. nov.

Candidatus Catilaria acrifastra (NL. fem. n. *acrifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903876465*. The type genome for the species is the GenBank assembly GCA_903876465.1. The GC content of the type genome is 39.55 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Catilaria gen. nov.

Candidatus Catilaria (NL. fem. n. *Catilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C7867-002*. The type species for the genus is *Candidatus* Catilaria acrifastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-1337*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colutulaceae.

Description of *Candidatus* Catilaria armifetta sp. nov.

Candidatus Catilaria armifetta (NL. fem. n. *armifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp002413065*. The type genome for the species is the GenBank assembly GCA_002413065.1. The GC content of the type genome is 45.36 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Catilaria cimititio sp. nov.

Candidatus Catilaria cimititio (NL. fem. n. *cimititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903846945*. The type genome for the species is the GenBank assembly GCA_903833515.1. The GC content of the type genome is 43.38 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Catilaria cohonitudo sp. nov.

Candidatus Catilaria cohonitudo (NL. fem. n. *cohonitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp003170325*. The type genome for the species is the GenBank assembly GCA_003170325.1. The GC content of the type genome is 49.21 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Catilaria coninitura sp. nov.

Candidatus Catilaria coninitura (NL. fem. n. *coninitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903842025*. The type genome for the species is the GenBank assembly GCA_903837745.1. The GC content of the type genome is 45.58 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Catilaria conipisca sp. nov.

Candidatus Catilaria conipisca (NL. fem. n. *conipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903900935*. The type genome for the species is the GenBank assembly GCA_903900935.1. The GC content of the type genome is 38.83 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Catilaria decinessa sp. nov.

Candidatus Catilaria decinessa (NL. fem. n. *decinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903826185*. The type genome for the species is the GenBank assembly GCA_903826185.1. The GC content of the type genome is 45.93 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Catilaria delebax sp. nov.

Candidatus Catilaria delebax (NL. fem. n. *delebax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp001821055*. The type genome for the species is the GenBank assembly GCA_001822495.1. The GC content of the type genome is 44.44 % and the genome length is 0.74 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Catilaria denicisca sp. nov.

Candidatus Catilaria denicisca (NL. fem. n. *denicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903839725*. The type genome for the species is the GenBank assembly GCA_903820715.1. The GC content of the type genome is 41.23 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Catilaria depetitudo sp. nov.

Candidatus Catilaria depetitudo (NL. fem. n. *depetitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903870235*. The type genome for the species is the GenBank assembly GCA_903870235.1. The GC content of the type genome is 42.63 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Catilaria domabetta sp. nov.

Candidatus Catilaria domabetta (NL. fem. n. *domabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903837075*. The type genome for the species is the GenBank assembly GCA_903837075.1. The GC content of the type genome is 44.87 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Catilaria domabifica sp. nov.

Candidatus Catilaria domabifica (NL. fem. n. *domabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903872035*. The type genome for the species is the GenBank assembly GCA_903874165.1. The GC content of the type genome is 46.57 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Catilaria inaccentia sp. nov.

Candidatus Catilaria inaccentia (NL. fem. n. *inaccentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903825415*. The type genome for the species is the GenBank assembly GCA_903825415.1. The GC content of the type genome is 46.19 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Catilaria lupanitura sp. nov.

Candidatus Catilaria lupanitura (NL. fem. n. *lupanitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903902315*. The type genome for the species is the GenBank assembly GCA_903821965.1. The GC content of the type genome is 39.22 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Catilaria notacastra sp. nov.

Candidatus Catilaria notacastra (NL. fem. n. *notacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903905325*. The type genome for the species is the GenBank assembly GCA_903905325.1. The GC content of the type genome is 39.72 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Catilaria obtunousia sp. nov.

Candidatus Catilaria obtunousia (NL. fem. n. *obtunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903864905*. The type genome for the species is the GenBank assembly GCA_903864905.1. The GC content of the type genome is 38.87 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Catilaria sifunicella sp. nov.

Candidatus Catilaria sifunicella (NL. fem. n. *sifunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp001822575*. The type genome for the species is the GenBank assembly GCA_001821095.1. The GC content of the type genome is 43.97 % and the genome length is 0.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Catilaria sonabitica sp. nov.

Candidatus Catilaria sonabitica (NL. fem. n. *sonabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903870315*. The type genome for the species is the GenBank assembly GCA_903819545.1. The GC content of the type genome is 41.57 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Catilaria tenililenta sp. nov.

Candidatus Catilaria tenililenta (NL. fem. n. *tenililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp903868845*. The type genome for the species is the GenBank assembly GCA_903868845.1. The GC content of the type genome is 41.55 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Catilaria tomacitrix sp. nov.

Candidatus Catilaria tomacitrix (NL. fem. n. *tomacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-002 sp001189105*. The type genome for the species is the GenBank assembly GCA_001189105.1. The GC content of the type genome is 44.15 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Hanford 300 Area IFRC 399-1-60 Groundwater".

Description of *Candidatus* Catilella notabivita sp. nov.

Candidatus Catilella notabivita (NL. fem. n. *notabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5122 sp002415485*. The type genome for the species is the GenBank assembly GCA_002415485.1. The GC content of the type genome is 55.03 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Catilella gen. nov.

Candidatus Catilella (NL. fem. n. *Catilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5122*. The type species for the genus is *Candidatus* Catilella notabivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catilida adcesimonia sp. nov.

Candidatus Catilida adcesimonia (NL. fem. n. *adcesimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLA2 sp011525755*. The type genome for the species is the GenBank assembly GCA_011525755.1. The GC content of the type genome is 71.82 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Catilida gen. nov.

Candidatus Catilida (NL. fem. n. *Catilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PLA2*. The type species for the genus is *Candidatus* Catilida adcesimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PLA2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catilidaceae.

Description of *Candidatus* Catilidaceae fam. nov.

Candidatus Catilidaceae (NL. fem. n. *Catilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *PLA2.* The type genus for the taxon is *Candidatus* Catilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *PLA2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Catilidales.

Description of *Candidatus* Catilidales ord. nov.

Candidatus Catilidales (NL. fem. n. *Catilidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PLA2.* The type genus for the taxon is *Candidatus* Catilida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Didacellae.

Description of *Candidatus* Catilosa bipalitas sp. nov.

Candidatus Catilosa bipalitas (NL. fem. n. *bipalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIULA01 sp903899945*. The type genome for the species is the GenBank assembly GCA_009921595.1. The GC content of the type genome is 39.54 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Catilosa gen. nov.

Candidatus Catilosa (NL. fem. n. *Catilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIULA01*. The type species for the genus is *Candidatus* Catilosa bipalitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11393*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifanaceae.

Description of *Candidatus* Catilula biverilenta sp. nov.

Candidatus Catilula biverilenta (NL. fem. n. *biverilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PB-SRB1 sp003500125*. The type genome for the species is the GenBank assembly GCA_000495595.1. The GC content of the type genome is 54.49 % and the genome length is 3.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pink berry consortia from the Sippewissett salt marsh".

Description of *Candidatus* Catilula gen. nov.

Candidatus Catilula (NL. fem. n. *Catilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PB-SRB1*. The type species for the genus is *Candidatus* Catilula biverilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catobana inhonago sp. nov.

Candidatus Catobana inhonago (NL. fem. n. *inhonago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISOG01 sp903887035*. The type genome for the species is the GenBank assembly GCA_903887035.1. The GC content of the type genome is 56.73 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Catobana gen. nov.

Candidatus Catobana (NL. fem. n. *Catobana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISOG01*. The type species for the genus is *Candidatus* Catobana inhonago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAISOG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobanaceae.

Description of *Candidatus* Catobanaceae fam. nov.

Candidatus Catobanaceae (NL. fem. n. *Catobanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAISOG01*. The type genus for the taxon is *Candidatus* Catobana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAISOG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Catobanales.

Description of *Candidatus* Catobanales ord. nov.

Candidatus Catobanales (NL. fem. n. *Catobanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAISOG01*. The type genus for the taxon is *Candidatus* Catobana .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Catobaria abmatimonas sp. nov.

Candidatus Catobaria abmatimonas (NL. fem. n. *abmatimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV80 sp003244145*. The type genome for the species is the GenBank assembly GCA_003244145.1. The GC content of the type genome is 58.43 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Catobaria gen. nov.

Candidatus Catobaria (NL. fem. n. *Catobaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AV80*. The type species for the genus is *Candidatus* Catobaria abmatimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Catobaria homolitio sp. nov.

Candidatus Catobaria homolitio (NL. fem. n. *homolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV80 sp003169695*. The type genome for the species is the GenBank assembly GCA_003169695.1. The GC content of the type genome is 57.16 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Catobaria intoretta sp. nov.

Candidatus Catobaria intoretta (NL. fem. n. *intoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV80 sp003218305*. The type genome for the species is the GenBank assembly GCA_003218305.1. The GC content of the type genome is 58.97 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Catobaria nocumessa sp. nov.

Candidatus Catobaria nocumessa (NL. fem. n. *nocumessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV80 sp003167555*. The type genome for the species is the GenBank assembly GCA_003134735.1. The GC content of the type genome is 58.58 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Catobaria pavimitrix sp. nov.

Candidatus Catobaria pavimitrix (NL. fem. n. *pavimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV80 sp003134785*. The type genome for the species is the GenBank assembly GCA_003134785.1. The GC content of the type genome is 57.81 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Catobaria pedepitas sp. nov.

Candidatus Catobaria pedepitas (NL. fem. n. *pedepitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV80 sp003134765*. The type genome for the species is the GenBank assembly GCA_003169855.1. The GC content of the type genome is 58.66 % and the

genome length is 4.33 Mbp.

Description of *Candidatus* Catobaria resupastra sp. nov.

Candidatus Catobaria resupastra (NL. fem. n. *resupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV80 sp003218375*. The type genome for the species is the GenBank assembly GCA_003218375.1. The GC content of the type genome is 58.82 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Catobia semibitas sp. nov.

Candidatus Catobia semibitas (NL. fem. n. *semibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3924 sp002385985*. The type genome for the species is the GenBank assembly GCA_002385985.1. The GC content of the type genome is 64.09 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Catobia gen. nov.

Candidatus Catobia (NL. fem. n. *Catobia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3924*. The type species for the genus is *Candidatus* Catobia semibitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catobida labecibula sp. nov.

Candidatus Catobida labecibula (NL. fem. n. *labecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1930 sp002337145*. The type genome for the species is the GenBank assembly GCA_002322745.1. The GC content of the type genome is 42.42 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Catobida gen. nov.

Candidatus Catobida (NL. fem. n. *Catobida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1930*. The type species for the genus is *Candidatus* Catobida labecibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catobida paracilenta sp. nov.

Candidatus Catobida paracilenta (NL. fem. n. *paracilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1930 sp004028795*. The type genome for the species is the GenBank assembly GCA_013823265.1. The GC content of the type genome is 34.46 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Catobula detoritas sp. nov.

Candidatus Catobula detoritas (NL. fem. n. *detoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-52-15 sp001818365*. The type genome for the species is the GenBank assembly GCA_001818395.1. The GC content of the type genome is 52.37 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Catobula gen. nov.

Candidatus Catobula (NL. fem. n. *Catobula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-52-15*. The type species for the genus is *Candidatus* Catobula detoritas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-52-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobulaceae.

Description of *Candidatus* Catobulaceae fam. nov.

Candidatus Catobulaceae (NL. fem. n. *Catobulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-52-15*. The type genus for the taxon is *Candidatus* Catobula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1558*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nugivellales.

Description of *Candidatus* Catocana adcesitia sp. nov.

Candidatus Catocana adcesitia (NL. fem. n. *adcesitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4466 sp013373595*. The type genome for the species is the GenBank assembly GCA_013373595.1. The GC content of the type genome is 40.94 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Catocana gen. nov.

Candidatus Catocana (NL. fem. n. *Catocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4466*. The type species for the genus is *Candidatus* Catocana adcesitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catocana advoritrix sp. nov.

Candidatus Catocana advoritrix (NL. fem. n. *advoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4466 sp003149635*. The type genome for the species is the GenBank assembly GCA_003149635.1. The GC content of the type genome is 42.78 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Catocana depopax sp. nov.

Candidatus Catocana depopax (NL. fem. n. *depopax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4466 sp002389415*. The type genome for the species is the GenBank assembly GCA_002389415.1. The GC content of the type genome is 35.31 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Catocana immedatica sp. nov.

Candidatus Catocana immedatica (NL. fem. n. *immedatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4466 sp002471375*. The type genome for the species is the GenBank assembly GCA_002471375.1. The GC content of the type genome is 39.1 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Catocana inorditia sp. nov.

Candidatus Catocana inorditia (NL. fem. n. *inorditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4466 sp002734065*. The type genome for the species is the GenBank assembly GCA_002734065.1. The GC content of the type genome is 36.97 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Catocana lutulisca sp. nov.

Candidatus Catocana lutulisca (NL. fem. n. *lutulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4466 sp013215515*. The type genome for the species is the GenBank assembly GCA_013215515.1. The GC content of the type genome is 37.6 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Catocana nicomibula sp. nov.

Candidatus Catocana nicomibula (NL. fem. n. *nicomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4466 sp002709305*. The type genome for the species is the GenBank assembly GCA_002709305.1. The GC content of the type genome is 32.5 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Catocana omnimimonas sp. nov.

Candidatus Catocana omnimimonas (NL. fem. n. *omnimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4466 sp002427735*. The type genome for the species is the GenBank assembly GCA_002427735.1. The GC content of the type genome is 39.99 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Catocana rarefimonas sp. nov.

Candidatus Catocana rarefimonas (NL. fem. n. *rarefimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4466 sp002733985*. The type genome for the species is the GenBank assembly GCA_013214785.1. The GC content of the type genome is 38.39 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Catocaria senipessa sp. nov.

Candidatus Catocaria senipessa (NL. fem. n. *senipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA124 sp003225075*. The type genome for the species is the GenBank assembly GCA_003225035.1. The GC content of the type genome is 55.57 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Catocaria gen. nov.

Candidatus Catocaria (NL. fem. n. *Catocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp1-AA124*. The type species for the genus is *Candidatus* Catocaria senipessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catocaria triscastra sp. nov.

Candidatus Catocaria triscastra (NL. fem. n. *triscastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA124 sp003225595*. The type genome for the species is the GenBank assembly GCA_003225595.1. The GC content of the type genome is 56.48 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Catocella benemitudo sp. nov.

Candidatus Catocella benemitudo (NL. fem. n. *benemitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RH-AL1 sp009765775*. The type genome for the species is the GenBank assembly RS_GCF_009765775.1. The GC content of the type genome is 63.75 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Catocella gen. nov.

Candidatus Catocella (NL. fem. n. *Catocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RH-AL1*. The type species for the genus is *Candidatus* Catocella benemitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Catocella reforessa sp. nov.

Candidatus Catocella reforessa (NL. fem. n. *reforessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RH-AL1 sp901457705*. The type genome for the species is the GenBank assembly RS_GCF_901457695.1. The GC content of the type genome is 68.4 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Catocia bimetilenta sp. nov.

Candidatus Catocia bimetilenta (NL. fem. n. *bimetilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDDJ01 sp013287645*. The type genome for the species is the GenBank assembly GCA_013287645.1. The GC content of the type genome is 40.39 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Catocia gen. nov.

Candidatus Catocia (NL. fem. n. *Catocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDJ01*. The type species for the genus is *Candidatus* Catocia bimetilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDDJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catociaceae.

Description of *Candidatus* Catociaceae fam. nov.

Candidatus Catociaceae (NL. fem. n. *Catociaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDDJ01.* The type genus for the taxon is *Candidatus* Catocia .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Catocida notacicula sp. nov.

Candidatus Catocida notacicula (NL. fem. n. *notacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINDQ01 sp903847465*. The type genome for the species is the GenBank assembly GCA_903847465.1. The GC content of the type genome is 39.73 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Catocida gen. nov.

Candidatus Catocida (NL. fem. n. *Catocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINDQ01*. The type species for the genus is *Candidatus* Catocida notacicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LOWO2-01-FULL-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifanaceae.

Description of *Candidatus* Catocosa rarefitica sp. nov.

Candidatus Catocosa rarefitica (NL. fem. n. *rarefitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBRS01 sp903958115*. The type genome for the species is the GenBank assembly GCA_903958115.1. The GC content of the type genome is 40.13 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Catocosa gen. nov.

Candidatus Catocosa (NL. fem. n. *Catocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBRS01*. The type species for the genus is *Candidatus* Catocosa rarefitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBRS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catocosaceae.

Description of *Candidatus* Catocosaceae fam. nov.

Candidatus Catocosaceae (NL. fem. n. *Catocosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAJBRS01.* The type genus for the taxon is *Candidatus* Catocosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Catocula agrapitas sp. nov.

Candidatus Catocula agrapitas (NL. fem. n. *agrapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VEMY01 sp009711825*. The type genome for the species is the GenBank assembly GCA_009711825.1. The GC content of the type genome is 50.55 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Catocula gen. nov.

Candidatus Catocula (NL. fem. n. *Catocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VEMY01*. The type species for the genus is *Candidatus* Catocula agrapitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VEMY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catoculaceae.

Description of *Candidatus* Catoculaceae fam. nov.

Candidatus Catoculaceae (NL. fem. n. *Catoculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VEMY01.* The type genus for the taxon is *Candidatus* Catocula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4975*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Saxopellales.

Description of *Candidatus* Catonella adorditio sp. nov.

Candidatus Catonella adorditio (NL. fem. n. *adorditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catonella sp902783375*. The type genome for the species is the GenBank assembly GCA_902783375.1. The GC content of the type genome is 53.39 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Catonella omnigastra sp. nov.

Candidatus Catonella omnigastra (NL. fem. n. *omnigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catonella sp902796595*. The type genome for the species is the GenBank assembly GCA_902796595.1. The GC content of the type genome is 40.23 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Catonella peripitia sp. nov.

Candidatus Catonella peripitia (NL. fem. n. *peripitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Catonella sp900314885*. The type genome for the species is the GenBank assembly GCA_902788285.1. The GC content of the type genome is 44.14 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Caulobacter abambousia sp. nov.

Candidatus Caulobacter abambousia (NL. fem. n. *abambousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp000426025*. The type genome for the species is the GenBank assembly RS_GCF_000426025.1. The GC content of the type genome is 68.64 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Caulobacter abluvivita sp. nov.

Candidatus Caulobacter abluvivita (NL. fem. n. *abluvivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp003185805*. The type genome for the species is the GenBank assembly RS_GCF_003185805.1. The GC content of the type genome is 68.99 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Caulobacter aglasibula sp. nov.

Candidatus Caulobacter aglasibula (NL. fem. n. *aglasibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp000019145*. The type genome for the species is the GenBank assembly RS_GCF_000019145.1. The GC content of the type genome is 67.35 % and the genome length is 5.89 Mbp.

Description of *Candidatus* Caulobacter bicipitura sp. nov.

Candidatus Caulobacter bicipitura (NL. fem. n. *bicipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp002280875*. The type genome for the species is the GenBank assembly GCA_002279625.1. The GC content of the type genome is 66.72 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Caulobacter bigarilenta sp. nov.

Candidatus Caulobacter bigarilenta (NL. fem. n. *bigarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp002742625*. The type genome for the species is the GenBank assembly RS_GCF_002742625.1. The GC content of the type genome is 67.38 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Caulobacter cacopifica sp. nov.

Candidatus Caulobacter cacopifica (NL. fem. n. *cacopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp011045195*. The type genome for the species is the GenBank assembly RS_GCF_011045195.1. The GC content of the type genome is 68.11 % and the genome length is 5.68 Mbp.

Description of *Candidatus* Caulobacter cenodibra sp. nov.

Candidatus Caulobacter cenodibra (NL. fem. n. *cenodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Caulobacter sp001556515*. The type genome for the species is the GenBank assembly RS_GCF_001556515.1. The GC content of the type genome is 67.67 % and the genome length is 4.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Caulobacter cinipitura sp. nov.

Candidatus Caulobacter cinipitura (NL. fem. n. *cinipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp001426905*. The type genome for the species is the GenBank assembly RS_GCF_001427165.1. The GC content of the type genome is 68.66 % and the genome length is 5.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Caulobacter cituvibula sp. nov.

Candidatus Caulobacter cituvibula (NL. fem. n. *cituvibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp003116815*. The type genome for the species is the GenBank assembly RS_GCF_003116815.1. The GC content of the type genome is 68.68 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Caulobacter conabitoga sp. nov.

Candidatus Caulobacter conabitoga (NL. fem. n. *conabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp004144935*. The type genome for the species is the GenBank assembly GCA_004144935.1. The GC content of the type genome is 69.07 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Caulobacter derunigena sp. nov.

Candidatus Caulobacter derunigena (NL. fem. n. *derunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp003060965*. The type genome for the species is the GenBank assembly RS_GCF_003061125.1. The GC content of the type genome is 66.69

% and the genome length is 3.92 Mbp.

Description of *Candidatus* Caulobacter desorentia sp. nov.

Candidatus Caulobacter desorentia (NL. fem. n. *desorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp002737755*. The type genome for the species is the GenBank assembly RS_GCF_002737755.1. The GC content of the type genome is 66.73 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Caulobacter echidivita sp. nov.

Candidatus Caulobacter echidivita (NL. fem. n. *echidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp903889785*. The type genome for the species is the GenBank assembly GCA_903889785.1. The GC content of the type genome is 63.36 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Caulobacter enimvitura sp. nov.

Candidatus Caulobacter enimvitura (NL. fem. n. *enimvitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp004342605*. The type genome for the species is the GenBank assembly RS_GCF_004342605.1. The GC content of the type genome is 68.78 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Caulobacter funivibra sp. nov.

Candidatus Caulobacter funivibra (NL. fem. n. *funivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp000799245*. The type genome for the species is the GenBank assembly RS_GCF_001425725.1. The GC content of the type genome is 68.08 % and the genome length is 5.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Caulobacter hecatousia sp. nov.

Candidatus Caulobacter hecatousia (NL. fem. n. *hecatousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp002742645*. The type genome for the species is the GenBank assembly RS_GCF_002742645.2. The GC content of the type genome is 66.71 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Caulobacter homicentia sp. nov.

Candidatus Caulobacter homicentia (NL. fem. n. *homicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp014378155*. The type genome for the species is the GenBank assembly GCA_014378155.1. The GC content of the type genome is 66.97 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Caulobacter illapimonia sp. nov.

Candidatus Caulobacter illapimonia (NL. fem. n. *illapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp002737765*. The type genome for the species is the GenBank assembly RS_GCF_002737765.1. The GC content of the type genome is 67.5 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Caulobacter inmemugo sp. nov.

Candidatus Caulobacter inmemugo (NL. fem. n. *inmemugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp011043625*. The type genome for the species is the GenBank assembly RS_GCF_011043625.1. The GC content of the type genome is 69.34 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Caulobacter inrepax sp. nov.

Candidatus Caulobacter inrepax (NL. fem. n. *inrepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp014207215*. The type genome for the species is the GenBank assembly RS_GCF_014207215.1. The GC content of the type genome is 67.75 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Caulobacter insusicula sp. nov.

Candidatus Caulobacter insusicula (NL. fem. n. *insusicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp002742635*. The type genome for the species is the GenBank assembly RS_GCF_002742635.1. The GC content of the type genome is 67.66 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Caulobacter labecitia sp. nov.

Candidatus Caulobacter labecitia (NL. fem. n. *labecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp000712075*. The type genome for the species is the GenBank assembly RS_GCF_000712075.1. The GC content of the type genome is 69.52 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Caulobacter lanugedo sp. nov.

Candidatus Caulobacter lanugedo (NL. fem. n. *lanugedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp001427665*. The type genome for the species is the GenBank assembly RS_GCF_001427665.1. The GC content of the type genome is 68.41 % and the genome length is 5.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Caulobacter oratribula sp. nov.

Candidatus Caulobacter oratribula (NL. fem. n. *oratribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp003931565*. The type genome for the species is the

GenBank assembly RS_GCF_003931565.1. The GC content of the type genome is 67.79 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Caulobacter perabitrix sp. nov.

Candidatus Caulobacter perabitrix (NL. fem. n. *perabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp001896875*. The type genome for the species is the GenBank assembly GCA_001896875.1. The GC content of the type genome is 68.33 % and the genome length is 3.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Caulobacter pinigitia sp. nov.

Candidatus Caulobacter pinigitia (NL. fem. n. *pinigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp903858185*. The type genome for the species is the GenBank assembly GCA_903923725.1. The GC content of the type genome is 68.07 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Caulobacter pluscugo sp. nov.

Candidatus Caulobacter pluscugo (NL. fem. n. *pluscugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp013181195*. The type genome for the species is the GenBank assembly RS_GCF_013181195.1. The GC content of the type genome is 67.55 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Caulobacter prospitoga sp. nov.

Candidatus Caulobacter prospitoga (NL. fem. n. *prospitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp009905535*. The type genome for the species is the GenBank assembly RS_GCF_009905535.1. The GC content of the type genome is 68.31 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Caulobacter rinocilega sp. nov.

Candidatus Caulobacter rinocilega (NL. fem. n. *rinocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp011058465*. The type genome for the species is the GenBank assembly GCA_011058465.1. The GC content of the type genome is 67.89 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Caulobacter sacopessa sp. nov.

Candidatus Caulobacter sacopessa (NL. fem. n. *sacopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp903900155*. The type genome for the species is the GenBank assembly GCA_902373295.1. The GC content of the type genome is 67.73 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Caulobacter uxorcivita sp. nov.

Candidatus Caulobacter uxorcivita (NL. fem. n. *uxorcivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp000281955*. The type genome for the species is the GenBank assembly RS_GCF_000281955.1. The GC content of the type genome is 68.95 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Caulobacter viburentia sp. nov.

Candidatus Caulobacter viburentia (NL. fem. n. *viburentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Caulobacter sp900114015*. The type genome for the species is the GenBank assembly RS_GCF_900114015.1. The GC content of the type genome is 68.74 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Cecembia arvecastra sp. nov.

Candidatus Cecembia arvecastra (NL. fem. n. *arvecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cecembia sp003797895*. The type genome for the species is the GenBank assembly RS_GCF_003797895.1. The GC content of the type genome is 39.23 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Cecembia colimitas sp. nov.

Candidatus Cecembia colimitas (NL. fem. n. *colimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cecembia sp007126775*. The type genome for the species is the GenBank assembly GCA_007118815.1. The GC content of the type genome is 40.33 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Cedecea acrufitrix sp. nov.

Candidatus Cedecea acrufitrix (NL. fem. n. *acrufitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cedecea sp011752815*. The type genome for the species is the GenBank assembly RS_GCF_011752815.1. The GC content of the type genome is 54.84 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Cedecea cicaritudo sp. nov.

Candidatus Cedecea cicaritudo (NL. fem. n. *cicaritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cedecea sp000277545*. The type genome for the species is the GenBank assembly RS_GCF_011752855.1. The GC content of the type genome is 54.88 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Cedecea peracatio sp. nov.

Candidatus Cedecea peracatio (NL. fem. n. *peracatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Cedecea sp009668225*. The type genome for the species is the GenBank assembly RS_GCF_009668225.1. The GC content of the type genome is 54.25 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Celamana attemibula sp. nov.

Candidatus Celamana attemibula (NL. fem. n. *attemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-252 sp003235575*. The type genome for the species is the GenBank assembly GCA_003235575.1. The GC content of the type genome is 68.06 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Celamana gen. nov.

Candidatus Celamana (NL. fem. n. *Celamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-252*. The type species for the genus is *Candidatus* Celamana attemibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-252*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamanaceae.

Description of *Candidatus* Celamanaceae fam. nov.

Candidatus Celamanaceae (NL. fem. n. *Celamanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-252.* The type genus for the taxon is *Candidatus* Celamana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-252*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Celamanales.

Description of *Candidatus* Celamanales ord. nov.

Candidatus Celamanales (NL. fem. n. *Celamanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-252.* The type genus for the taxon is *Candidatus* Celamana .

According to the original version of GTDB R06-RS202, this family belongs to the class *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Sonabidae.

Description of *Candidatus* Celamaria locelitas sp. nov.

Candidatus Celamaria locelitas (NL. fem. n. *locelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPLOWO2-01-44-7 sp001798075*. The type genome for the species is the GenBank assembly GCA_001799095.1. The GC content of the type genome is 44.04 % and the genome length is 2.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Celamaria gen. nov.

Candidatus Celamaria (NL. fem. n. *Celamaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPLOWO2-01-44-7*. The type species for the genus is *Candidatus* Celamaria locelitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SPLOWO2-01-44-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamariaceae.

Description of *Candidatus* Celamariaceae fam. nov.

Candidatus Celamariaceae (NL. fem. n. *Celamariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SPLOWO2-01-44-7.* The type genus for the taxon is *Candidatus* Celamaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SPLOWO2-01-44-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Celamariales.

Description of *Candidatus* Celamariales ord. nov.

Candidatus Celamariales (NL. fem. n. *Celamariales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SPLOWO2-01-44-7.* The type genus for the taxon is *Candidatus* Celamaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Domigosae.

Description of *Candidatus* Celamella inmobilenta sp. nov.

Candidatus Celamella inmobilenta (NL. fem. n. *inmobilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B48-G9 sp003644395*. The type genome for the species is the GenBank assembly GCA_003644395.1. The GC content of the type genome is 33.46 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Celamella gen. nov.

Candidatus Celamella (NL. fem. n. *Celamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B48-G9*. The type species for the genus is *Candidatus* Celamella inmobilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B48-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamellaceae.

Description of *Candidatus* Celamellaceae fam. nov.

Candidatus Celamellaceae (NL. fem. n. *Celamellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B48-G9.* The type genus for the taxon is *Candidatus* Celamella .

According to the original version of GTDB R06-RS202, this family belongs to the order *B48-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Celamellales.

Description of *Candidatus* Celamellales ord. nov.

Candidatus Celamellales (NL. fem. n. *Celamellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B48-G9.* The type genus for the taxon is *Candidatus* Celamella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8468*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Semodulae.

Description of *Candidatus* Celamida redacitoga sp. nov.

Candidatus Celamida redacitoga (NL. fem. n. *redacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-38-14 sp001772865*. The type genome for the species is the GenBank assembly GCA_001772885.1. The GC content of the type genome is 36.88 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Celamida gen. nov.

Candidatus Celamida (NL. fem. n. *Celamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-38-14*. The type species for the genus is *Candidatus* Celamida redacitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Celamosa intacibula sp. nov.

Candidatus Celamosa intacibula (NL. fem. n. *intacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-45-34 sp002778785*. The type genome for the species is the GenBank assembly GCA_002778785.1. The GC content of the type genome is 45.27 %

and the genome length is 3.06 Mbp.

Description of *Candidatus* Celamosa gen. nov.

Candidatus Celamosa (NL. fem. n. *Celamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-45-34*. The type species for the genus is *Candidatus* Celamosa intacibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-10-45-34*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamosaceae.

Description of *Candidatus* Celamosaceae fam. nov.

Candidatus Celamosaceae (NL. fem. n. *Celamosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-10-45-34.* The type genus for the taxon is *Candidatus* Celamosa .

According to GTDB R06-RS202, this family belongs to the order *Bdellovibrionales*.

Description of *Candidatus* Celamula amnigitia sp. nov.

Candidatus Celamula amnigitia (NL. fem. n. *amnigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTOW01 sp011358125*. The type genome for the species is the GenBank assembly GCA_011358125.1. The GC content of the type genome is 34.52 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Celamula gen. nov.

Candidatus Celamula (NL. fem. n. *Celamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTOW01*. The type species for the genus is *Candidatus* Celamula amnigitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTOW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Celamulaceae.

Description of *Candidatus* Celamulaceae fam. nov.

Candidatus Celamulaceae (NL. fem. n. *Celamulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTOW01.* The type genus for the taxon is *Candidatus* Celamula .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTOW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Celamulales.

Description of *Candidatus* Celamulales ord. nov.

Candidatus Celamulales (NL. fem. n. *Celamulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTOW01.* The type genus for the taxon is *Candidatus* Celamula .

According to the GTDB R06-RS202, this order belongs to the class *Brevinematia*.

Description of *Candidatus* Celeribacter melilitura sp. nov.

Candidatus Celeribacter melilitura (NL. fem. n. *melilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Celeribacter sp011806455*. The type genome for the species is the GenBank assembly GCA_013373135.1. The GC content of the type genome is 59.92 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Cellulomonas abpatessa sp. nov.

Candidatus Cellulomonas abpatessa (NL. fem. n. *abpatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp006715865*. The type genome for the species is the GenBank assembly RS_GCF_006715865.1. The GC content of the type genome is 75.15 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Cellulomonas ammixibula sp. nov.

Candidatus Cellulomonas ammixibula (NL. fem. n. *ammixibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp012931845*. The type genome for the species is the GenBank assembly RS_GCF_012931845.1. The GC content of the type genome is 71.99 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Cellulomonas ancipifica sp. nov.

Candidatus Cellulomonas ancipifica (NL. fem. n. *ancipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp003755175*. The type genome for the species is the GenBank assembly RS_GCF_003755175.1. The GC content of the type genome is 72.75 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Cellulomonas antepiforma sp. nov.

Candidatus Cellulomonas antepiforma (NL. fem. n. *antepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp009829685*. The type genome for the species is the GenBank assembly RS_GCF_009829685.1. The GC content of the type genome is 72.94 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Cellulomonas apharilenta sp. nov.

Candidatus Cellulomonas apharilenta (NL. fem. n. *apharilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp009720485*. The type genome for the species is the GenBank assembly RS_GCF_009720485.1. The GC content of the type genome is 75.6 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Cellulomonas armigago sp. nov.

Candidatus Cellulomonas armigago (NL. fem. n. *armigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp000426185*. The type genome for the species is the GenBank assembly RS_GCF_000426185.1. The GC content of the type genome is 71.37 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Cellulomonas bimeticella sp. nov.

Candidatus Cellulomonas bimeticella (NL. fem. n. *bimeticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp001898185*. The type genome for the species is the GenBank assembly GCA_001898185.1. The GC content of the type genome is 73.1 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Cellulomonas citivimonia sp. nov.

Candidatus Cellulomonas citivimonia (NL. fem. n. *citivimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp003115775*. The type genome for the species is the GenBank assembly RS_GCF_003115775.1. The GC content of the type genome is 71.71 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Cellulomonas deforitas sp. nov.

Candidatus Cellulomonas deforitas (NL. fem. n. *deforitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp000708885*. The type genome for the species is the GenBank assembly RS_GCF_000708885.1. The GC content of the type genome is 73.01 % and the genome length is 3.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Southeast Pahang tropical peat swamp forest soil".

Description of *Candidatus* Cellulomonas depasimonas sp. nov.

Candidatus Cellulomonas depasimonas (NL. fem. n. *depasimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp003851725*. The type genome for the species is the GenBank assembly RS_GCF_003851725.1. The GC content of the type genome is 74.29 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Cellulomonas depetastra sp. nov.

Candidatus Cellulomonas depetastra (NL. fem. n. *depetastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp001429255*. The type genome for the species is the GenBank assembly GCA_001429255.1. The GC content of the type genome is 72.52 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Cellulomonas detenatio sp. nov.

Candidatus Cellulomonas detenatio (NL. fem. n. *detenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp001426705*. The type genome for the species is the GenBank assembly RS_GCF_001426705.1. The GC content of the type genome is 72.28 % and the genome length is 4.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Cellulomonas devecago sp. nov.

Candidatus Cellulomonas devecago (NL. fem. n. *devecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp012927595*. The type genome for the species is the GenBank assembly GCA_012927595.1. The GC content of the type genome is 70.79 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Cellulomonas eclecatica sp. nov.

Candidatus Cellulomonas eclecatica (NL. fem. n. *eclecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp001424125*. The type genome for the species is the

GenBank assembly RS_GCF_001424125.1. The GC content of the type genome is 71.77 % and the genome length is 4.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Cellulomonas innoxago sp. nov.

Candidatus Cellulomonas innoxago (NL. fem. n. *innoxago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp009777345*. The type genome for the species is the GenBank assembly GCA_009777345.1. The GC content of the type genome is 70.66 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Cellulomonas inpasitia sp. nov.

Candidatus Cellulomonas inpasitia (NL. fem. n. *inpasitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp009783975*. The type genome for the species is the GenBank assembly GCA_009783975.1. The GC content of the type genome is 69.31 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Cellulomonas intolatio sp. nov.

Candidatus Cellulomonas intolatio (NL. fem. n. *intolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp009785115*. The type genome for the species is the GenBank assembly GCA_009785115.1. The GC content of the type genome is 70.49 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Cellulomonas lanigibra sp. nov.

Candidatus Cellulomonas lanigibra (NL. fem. n. *lanigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp000688475*. The type genome for the species is the GenBank assembly RS_GCF_000688475.1. The GC content of the type genome is 71.04 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Cellulomonas navifastra sp. nov.

Candidatus Cellulomonas navifastra (NL. fem. n. *navifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp008033115*. The type genome for the species is the GenBank assembly RS_GCF_008033115.1. The GC content of the type genome is 75.35 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Cellulomonas omnimimonia sp. nov.

Candidatus Cellulomonas omnimimonia (NL. fem. n. *omnimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp011603975*. The type genome for the species is the GenBank assembly RS_GCF_011603975.1. The GC content of the type genome is 75.49 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Cellulomonas pepenigena sp. nov.

Candidatus Cellulomonas pepenigena (NL. fem. n. *pepenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp004168625*. The type genome for the species is the GenBank assembly RS_GCF_004168625.1. The GC content of the type genome is 71.62 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Cellulomonas pinifitrix sp. nov.

Candidatus Cellulomonas pinifitrix (NL. fem. n. *pinifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp002441315*. The type genome for the species is the GenBank assembly GCA_002441315.1. The GC content of the type genome is 71.39 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Cellulomonas pudibivita sp. nov.

Candidatus Cellulomonas pudibivita (NL. fem. n. *pudibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp001462455*. The type genome for the species is the GenBank assembly RS_GCF_001462455.1. The GC content of the type genome is 75.07 % and the genome length is 4.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "decaying forest soil".

Description of *Candidatus* Cellulomonas rarefitio sp. nov.

Candidatus Cellulomonas rarefitio (NL. fem. n. *rarefitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp900114185*. The type genome for the species is the GenBank assembly RS_GCF_900114185.1. The GC content of the type genome is 74.64 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Cellulomonas tranvitrix sp. nov.

Candidatus Cellulomonas tranvitrix (NL. fem. n. *tranvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp001898175*. The type genome for the species is the GenBank assembly GCA_001898175.1. The GC content of the type genome is 73.47 % and the genome length is 3.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Cellulomonas troclessa sp. nov.

Candidatus Cellulomonas troclessa (NL. fem. n. *troclessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp003696205*. The type genome for the species is the GenBank assembly RS_GCF_003696205.1. The GC content of the type genome is 74.73 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Cellulomonas vigenetta sp. nov.

Candidatus Cellulomonas vigenetta (NL. fem. n. *vigenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp001424195*. The type genome for the species is the GenBank assembly RS_GCF_001424195.1. The GC content of the type genome is 72.31 % and the genome length is 4.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Cellulomonas volucimonia sp. nov.

Candidatus Cellulomonas volucimonia (NL. fem. n. *volucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulomonas sp009779195*. The type genome for the species is the GenBank assembly GCA_009779535.1. The GC content of the type genome is 68.09 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Cellulophaga defesax sp. nov.

Candidatus Cellulophaga defesax (NL. fem. n. *defesax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulophaga sp002813425*. The type genome for the species is the GenBank assembly RS_GCF_002813425.1. The GC content of the type genome is 32.0 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Cellulophaga epicricella sp. nov.

Candidatus Cellulophaga epicricella (NL. fem. n. *epicricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulophaga sp000799565*. The type genome for the species is the GenBank assembly RS_GCF_000799565.1. The GC content of the type genome is 35.3 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Cellulophaga perabessa sp. nov.

Candidatus Cellulophaga perabessa (NL. fem. n. *perabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulophaga sp009797025*. The type genome for the species is the

GenBank assembly RS_GCF_009797025.1. The GC content of the type genome is 34.04 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Cellulosilyticum inremilega sp. nov.

Candidatus Cellulosilyticum inremilega (NL. fem. n. *inremilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulosilyticum sp002735925*. The type genome for the species is the GenBank assembly RS_GCF_002735925.1. The GC content of the type genome is 35.33 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Cellulosilyticum vocifigena sp. nov.

Candidatus Cellulosilyticum vocifigena (NL. fem. n. *vocifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulosilyticum sp900556665*. The type genome for the species is the GenBank assembly GCA_900556665.1. The GC content of the type genome is 33.48 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Cellulosimicrobium hexagitura sp. nov.

Candidatus Cellulosimicrobium hexagitura (NL. fem. n. *hexagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulosimicrobium sp009708005*. The type genome for the species is the GenBank assembly RS_GCF_009708005.2. The GC content of the type genome is 73.89 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Cellulosimicrobium obveriforma sp. nov.

Candidatus Cellulosimicrobium obveriforma (NL. fem. n. *obveriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellulosimicrobium sp001942335*. The type genome for the species is the GenBank assembly RS_GCF_001942335.1. The GC content of the type genome is 74.64 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Cellvibrio bicapisca sp. nov.

Candidatus Cellvibrio bicapisca (NL. fem. n. *bicapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp004363885*. The type genome for the species is the GenBank assembly RS_GCF_004363885.1. The GC content of the type genome is 48.34 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Cellvibrio cenoditia sp. nov.

Candidatus Cellvibrio cenoditia (NL. fem. n. *cenoditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp003524365*. The type genome for the species is the GenBank assembly GCA_003524365.1. The GC content of the type genome is 47.66 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Cellvibrio defaredo sp. nov.

Candidatus Cellvibrio defaredo (NL. fem. n. *defaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp000263355*. The type genome for the species is the GenBank assembly RS_GCF_008806955.1. The GC content of the type genome is 49.1 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Cellvibrio eclecimonas sp. nov.

Candidatus Cellvibrio eclecimonas (NL. fem. n. *eclecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp003056245*. The type genome for the species is the GenBank assembly GCA_003056245.1. The GC content of the type genome is 46.21 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Cellvibrio ephementia sp. nov.

Candidatus Cellvibrio ephementia (NL. fem. n. *ephementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp000953825*. The type genome for the species is the GenBank assembly RS_GCF_000953825.1. The GC content of the type genome is 47.71 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Cellvibrio expurimonia sp. nov.

Candidatus Cellvibrio expurimonia (NL. fem. n. *expurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp002162135*. The type genome for the species is the GenBank assembly RS_GCF_002162135.1. The GC content of the type genome is 50.54 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Cellvibrio herinitas sp. nov.

Candidatus Cellvibrio herinitas (NL. fem. n. *herinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp002007605*. The type genome for the species is the GenBank assembly RS_GCF_002007605.1. The GC content of the type genome is 49.36 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Cellvibrio hexagisca sp. nov.

Candidatus Cellvibrio hexagisca (NL. fem. n. *hexagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp008806975*. The type genome for the species is the GenBank assembly RS_GCF_008806975.1. The GC content of the type genome is 47.89 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Cellvibrio incocisca sp. nov.

Candidatus Cellvibrio incocisca (NL. fem. n. *incocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp004173475*. The type genome for the species is the GenBank assembly GCA_004173475.1. The GC content of the type genome is 44.1 %

and the genome length is 4.73 Mbp.

Description of *Candidatus* Cellvibrio inobliforma sp. nov.

Candidatus Cellvibrio inobliforma (NL. fem. n. *inobliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp002483365*. The type genome for the species is the GenBank assembly GCA_002483365.1. The GC content of the type genome is 47.5 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Cellvibrio monopatio sp. nov.

Candidatus Cellvibrio monopatio (NL. fem. n. *monopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp002483145*. The type genome for the species is the GenBank assembly GCA_002483145.1. The GC content of the type genome is 47.94 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Cellvibrio murilitas sp. nov.

Candidatus Cellvibrio murilitas (NL. fem. n. *murilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp004172865*. The type genome for the species is the GenBank assembly GCA_004172865.1. The GC content of the type genome is 44.04 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Cellvibrio proscitica sp. nov.

Candidatus Cellvibrio proscitica (NL. fem. n. *proscitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp005801205*. The type genome for the species is the GenBank assembly GCA_005801205.1. The GC content of the type genome is 45.31 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Cellvibrio revulitrix sp. nov.

Candidatus Cellvibrio revulitrix (NL. fem. n. *revulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp001183545*. The type genome for the species is the GenBank assembly RS_GCF_001183545.1. The GC content of the type genome is 47.56 % and the genome length is 4.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Cellvibrio vicatentia sp. nov.

Candidatus Cellvibrio vicatentia (NL. fem. n. *vicatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cellvibrio sp903858205*. The type genome for the species is the GenBank assembly GCA_903858205.1. The GC content of the type genome is 48.41 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Celumaria dehisicula sp. nov.

Candidatus Celumaria dehisicula (NL. fem. n. *dehisicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKO01 sp011359065*. The type genome for the species is the GenBank assembly GCA_011359065.1. The GC content of the type genome is 59.56 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Celumaria gen. nov.

Candidatus Celumaria (NL. fem. n. *Celumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKO01*. The type species for the genus is *Candidatus* Celumaria dehisicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTKO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumariaceae.

Description of *Candidatus* Celumariaceae fam. nov.

Candidatus Celumariaceae (NL. fem. n. *Celumariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTKO01.* The type genus for the taxon is *Candidatus* Celumaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTKO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Celumariales.

Description of *Candidatus* Celumariales ord. nov.

Candidatus Celumariales (NL. fem. n. *Celumariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTKO01.* The type genus for the taxon is *Candidatus* Celumaria .

According to the GTDB R06-RS202, this order belongs to the class *Methylomirabilia*.

Description of *Candidatus* Celumella capudicula sp. nov.

Candidatus Celumella capudicula (NL. fem. n. *capudicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYLH01 sp903884235*. The type genome for the species is the GenBank assembly GCA_903849415.1. The GC content of the type genome is 69.02 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Celumella gen. nov.

Candidatus Celumella (NL. fem. n. *Celumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYLH01*. The type species for the genus is *Candidatus* Celumella capudicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Celumella nitelitudo sp. nov.

Candidatus Celumella nitelitudo (NL. fem. n. *nitelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYLH01 sp903879335*. The type genome for the species is the GenBank assembly GCA_903895245.1. The GC content of the type genome is 59.45 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Celumella rarefetta sp. nov.

Candidatus Celumella rarefetta (NL. fem. n. *rarefetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYLH01 sp903927005*. The type genome for the species is the GenBank assembly GCA_903828995.1. The GC content of the type genome is 65.84 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Celumella vavasicula sp. nov.

Candidatus Celumella vavasicula (NL. fem. n. *vavasicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYLH01 sp903908265*. The type genome for the species is the GenBank assembly GCA_903843385.1. The GC content of the type genome is 61.04 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Celumia fetulibra sp. nov.

Candidatus Celumia fetulibra (NL. fem. n. *fetulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J004 sp003696775*. The type genome for the species is the GenBank assembly GCA_003696775.1. The GC content of the type genome is 49.3 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Celumia gen. nov.

Candidatus Celumia (NL. fem. n. *Celumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J004*. The type species for the genus is *Candidatus* Celumia fetulibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family

J004. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumiaceae.

Description of *Candidatus* Celumiaceae fam. nov.

Candidatus Celumiaceae (NL. fem. n. *Celumiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J004.* The type genus for the taxon is *Candidatus* Celumia .

According to GTDB R06-RS202, this family belongs to the order *Calditrichales*.

Description of *Candidatus* Celumia palifitas sp. nov.

Candidatus Celumia palifitas (NL. fem. n. *palifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J004 sp011051485*. The type genome for the species is the GenBank assembly GCA_011051485.1. The GC content of the type genome is 51.23 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Celumida adalgatica sp. nov.

Candidatus Celumida adalgatica (NL. fem. n. *adalgatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXZ01 sp005789375*. The type genome for the species is the GenBank assembly GCA_005789375.1. The GC content of the type genome is 60.46 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Celumida gen. nov.

Candidatus Celumida (NL. fem. n. *Celumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXXZ01*. The type species for the genus is *Candidatus* Celumida adalgatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9464*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilariaceae.

Description of *Candidatus* Celumida adnumax sp. nov.

Candidatus Celumida adnumax (NL. fem. n. *adnumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXZ01 sp009695405*. The type genome for the species is the GenBank assembly GCA_009695405.1. The GC content of the type genome is 51.43 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Celumida latibisca sp. nov.

Candidatus Celumida latibisca (NL. fem. n. *latibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXZ01 sp903854475*. The type genome for the species is the GenBank assembly GCA_903854475.1. The GC content of the type genome is 59.7 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Celumida lenimibula sp. nov.

Candidatus Celumida lenimibula (NL. fem. n. *lenimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXZ01 sp903939515*. The type genome for the species is the GenBank assembly GCA_903940805.1. The GC content of the type genome is 59.99 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Celumida scintilenta sp. nov.

Candidatus Celumida scintilenta (NL. fem. n. *scintilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXZ01 sp903858835*. The type genome for the species is the GenBank assembly GCA_903858835.1. The GC content of the type genome is 66.42 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Celumida tigurilega sp. nov.

Candidatus Celumida tigurilega (NL. fem. n. *tigurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXZ01 sp005805505*. The type genome for the species is the GenBank assembly GCA_005805505.1. The GC content of the type genome is 60.34 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Celumida utrolitudo sp. nov.

Candidatus Celumida utrolitudo (NL. fem. n. *utrolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXZ01 sp903930165*. The type genome for the species is the GenBank assembly GCA_903930165.1. The GC content of the type genome is 67.41 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Celumosa metucilenta sp. nov.

Candidatus Celumosa metucilenta (NL. fem. n. *metucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBMK01 sp903954165*. The type genome for the species is the GenBank assembly GCA_903940695.1. The GC content of the type genome is 42.78 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Celumosa gen. nov.

Candidatus Celumosa (NL. fem. n. *Celumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBMK01*. The type species for the genus is *Candidatus* Celumosa metucilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBMK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumosaceae.

Description of *Candidatus* Celumosaceae fam. nov.

Candidatus Celumosaceae (NL. fem. n. *Celumosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAJBMK01*. The type genus for the taxon is *Candidatus* Celumosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Celumula cimelisca sp. nov.

Candidatus Celumula cimelisca (NL. fem. n. *cimelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9662 sp002697225*. The type genome for the species is the GenBank assembly GCA_002713895.1. The GC content of the type genome is 41.98 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Celumula gen. nov.

Candidatus Celumula (NL. fem. n. *Celumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9662*. The type species for the genus is *Candidatus* Celumula cimelisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9662*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumulaceae.

Description of *Candidatus* Celumulaceae fam. nov.

Candidatus Celumulaceae (NL. fem. n. *Celumulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9662*. The type genus for the taxon is *Candidatus* Celumula .

According to the original version of GTDB R06-RS202, this family belongs to the order *WGA-4E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Demociales.

Description of *Candidatus* Celumula delubatio sp. nov.

Candidatus Celumula delubatio (NL. fem. n. *delubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9662 sp002690165*. The type genome for the species is the GenBank assembly GCA_002729415.1. The GC content of the type genome is 43.61 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Celumula expuratica sp. nov.

Candidatus Celumula expuratica (NL. fem. n. *expuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9662 sp002709695*. The type genome for the species is the GenBank assembly GCA_002709695.1. The GC content of the type genome is 41.1 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Celumula viripisca sp. nov.

Candidatus Celumula viripisca (NL. fem. n. *viripisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9662 sp012963885*. The type genome for the species is the GenBank assembly GCA_012963885.1. The GC content of the type genome is 43.68 % and the genome length is 6.84 Mbp.

Description of *Candidatus* Cemenana aplesentia sp. nov.

Candidatus Cemenana aplesentia (NL. fem. n. *aplesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYU01 sp013695765*. The type genome for the species is the GenBank assembly GCA_013695765.1. The GC content of the type genome is 60.01 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Cemenana gen. nov.

Candidatus Cemenana (NL. fem. n. *Cemenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCYU01*. The type species for the genus is *Candidatus* Cemenana

aplesentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACCYU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cemenanaceae.

Description of *Candidatus* Cemenanaceae fam. nov.

Candidatus Cemenanaceae (NL. fem. n. *Cemenanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCYU01.* The type genus for the taxon is *Candidatus* Cemenana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Paraciales.

Description of *Candidatus* Cemenana inremitura sp. nov.

Candidatus Cemenana inremitura (NL. fem. n. *inremitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYU01 sp013696315*. The type genome for the species is the GenBank assembly GCA_013696315.1. The GC content of the type genome is 60.36 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Cemenaria excinimonia sp. nov.

Candidatus Cemenaria excinimonia (NL. fem. n. *excinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUL01 sp013044465*. The type genome for the species is the GenBank assembly GCA_013044465.1. The GC content of the type genome is 44.66 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Cemenaria gen. nov.

Candidatus Cemenaria (NL. fem. n. *Cemenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEUL01*. The type species for the genus is *Candidatus* Cemenaria

excinimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABEUL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cemenariaceae.

Description of *Candidatus* Cemenariaceae fam. nov.

Candidatus Cemenariaceae (NL. fem. n. *Cemenariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABEUL01.* The type genus for the taxon is *Candidatus* Cemenaria .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Cemenia perexax sp. nov.

Candidatus Cemenia perexax (NL. fem. n. *perexax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-51-13 sp003520745*. The type genome for the species is the GenBank assembly GCA_001800835.1. The GC content of the type genome is 50.36 % and the genome length is 2.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 5 / E; 5m depth; 0.2 filter".

Description of *Candidatus* Cemenia gen. nov.

Candidatus Cemenia (NL. fem. n. *Cemenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE2-51-13*. The type species for the genus is *Candidatus* Cemenia perexax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cemenida sicunentia sp. nov.

Candidatus Cemenida sicunentia (NL. fem. n. *sicunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2861595 sp002861595*. The type genome for the species is the GenBank assembly GCA_002861595.1. The GC content of the type genome is 71.38 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Cemenida gen. nov.

Candidatus Cemenida (NL. fem. n. *Cemenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2861595*. The type species for the genus is *Candidatus* Cemenida sicunentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2861595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cemenidaceae.

Description of *Candidatus* Cemenidaceae fam. nov.

Candidatus Cemenidaceae (NL. fem. n. *Cemenidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2861595.* The type genus for the taxon is *Candidatus* Cemenida .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Cemenosa colepessa sp. nov.

Candidatus Cemenosa colepessa (NL. fem. n. *colepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFQ01 sp011064725*. The type genome for the species is the GenBank assembly GCA_011064725.1. The GC content of the type genome is 37.48 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Cemenosa gen. nov.

Candidatus Cemenosa (NL. fem. n. *Cemenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFQ01*. The type species for the genus is *Candidatus* Cemenosa colepessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAKFQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cemenosaceae.

Description of *Candidatus* Cemenosaceae fam. nov.

Candidatus Cemenosaceae (NL. fem. n. *Cemenosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAKFQ01.* The type genus for the taxon is *Candidatus* Cemenosa .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Cemenula exhoratio sp. nov.

Candidatus Cemenula exhoratio (NL. fem. n. *exhoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNNO01 sp013824265*. The type genome for the species is the GenBank assembly GCA_013824265.1. The GC content of the type genome is 38.9 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Cemenula gen. nov.

Candidatus Cemenula (NL. fem. n. *Cemenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNNO01*. The type species for the genus is *Candidatus* Cemenula exhoratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PNNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cemenulaceae.

Description of *Candidatus* Cemenulaceae fam. nov.

Candidatus Cemenulaceae (NL. fem. n. *Cemenulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PNNO01.* The type genus for the taxon is *Candidatus* Cemenula .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA1369. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Cenacana tomacicula sp. nov.

Candidatus Cenacana tomacicula (NL. fem. n. *tomacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6620 sp002433075*. The type genome for the species is the GenBank assembly GCA_002720695.1. The GC content of the type genome is 59.38 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Cenacana gen. nov.

Candidatus Cenacana (NL. fem. n. *Cenacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6620*. The type species for the genus is *Candidatus* Cenacana tomacicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Medimellaceae.

Description of *Candidatus* Cenacaria adnecilega sp. nov.

Candidatus Cenacaria adnecilega (NL. fem. n. *adnecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp011322135*. The type genome for the species is the GenBank assembly GCA_011322135.1. The GC content of the type genome is 42.12 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Cenacaria gen. nov.

Candidatus Cenacaria (NL. fem. n. *Cenacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C7867-001*. The type species for the genus is *Candidatus* Cenacaria adnecilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Cenacaria arvecatio sp. nov.

Candidatus Cenacaria arvecatio (NL. fem. n. *arvecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp002773355*. The type genome for the species is the GenBank assembly GCA_002773355.1. The GC content of the type genome is 56.21 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Cenacaria benivitica sp. nov.

Candidatus Cenacaria benivitica (NL. fem. n. *benivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001189215*. The type genome for the species is the GenBank assembly GCA_001189215.1. The GC content of the type genome is 47.89 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Hanford 300 Area IFRC 399-1-60 Groundwater".

Description of *Candidatus* Cenacaria cacalilega sp. nov.

Candidatus Cenacaria cacalilega (NL. fem. n. *cacalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001781915*. The type genome for the species is the GenBank assembly GCA_001781915.1. The GC content of the type genome is 47.06 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Cenacaria derunitica sp. nov.

Candidatus Cenacaria derunitica (NL. fem. n. *derunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001004905*. The type genome for the species is the GenBank assembly GCA_003531405.1. The GC content of the type genome is 56.4 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Cenacaria desulicella sp. nov.

Candidatus Cenacaria desulicella (NL. fem. n. *desulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp003230945*. The type genome for the species is the GenBank assembly GCA_003230945.1. The GC content of the type genome is 41.24 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Cenacaria didacax sp. nov.

Candidatus Cenacaria didacax (NL. fem. n. *didacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp013815345*. The type genome for the species is the GenBank assembly GCA_013815345.1. The GC content of the type genome is 47.65 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Cenacaria dilibitas sp. nov.

Candidatus Cenacaria dilibitas (NL. fem. n. *dilibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001189095*. The type genome for the species is the GenBank assembly GCA_001189095.1. The GC content of the type genome is 53.39 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Hanford 300 Area IFRC 399-1-60 Groundwater".

Description of *Candidatus* Cenacaria exheditudo sp. nov.

Candidatus Cenacaria exheditudo (NL. fem. n. *exheditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp903825105*. The type genome for the species is the

GenBank assembly GCA_903825105.1. The GC content of the type genome is 46.77 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Cenacaria exsusimonas sp. nov.

Candidatus Cenacaria exsusimonas (NL. fem. n. *exsusimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001781715*. The type genome for the species is the GenBank assembly GCA_001781715.1. The GC content of the type genome is 55.3 % and the genome length is 0.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cenacaria favonetta sp. nov.

Candidatus Cenacaria favonetta (NL. fem. n. *favonetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001783465*. The type genome for the species is the GenBank assembly GCA_001781565.1. The GC content of the type genome is 54.2 % and the genome length is 0.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Cenacaria impilimonas sp. nov.

Candidatus Cenacaria impilimonas (NL. fem. n. *impilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001781095*. The type genome for the species is the GenBank assembly GCA_001781095.1. The GC content of the type genome is 52.52 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cenacaria milifibra sp. nov.

Candidatus Cenacaria milifibra (NL. fem. n. *milifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp903994795*. The type genome for the species is the GenBank assembly GCA_903994775.1. The GC content of the type genome is 45.89 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Cenacaria modifentia sp. nov.

Candidatus Cenacaria modifentia (NL. fem. n. *modifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp002793115*. The type genome for the species is the GenBank assembly GCA_002322665.1. The GC content of the type genome is 50.22 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Cenacaria nefanatica sp. nov.

Candidatus Cenacaria nefanatica (NL. fem. n. *nefanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001781625*. The type genome for the species is the GenBank assembly GCA_001781625.1. The GC content of the type genome is 56.18 % and the genome length is 0.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Cenacaria nimiricella sp. nov.

Candidatus Cenacaria nimiricella (NL. fem. n. *nimiricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp011052355*. The type genome for the species is the GenBank assembly GCA_011052355.1. The GC content of the type genome is 43.97 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Cenacaria nubecitrix sp. nov.

Candidatus Cenacaria nubecitrix (NL. fem. n. *nubecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001189195*. The type genome for the species is the

GenBank assembly GCA_001189195.1. The GC content of the type genome is 48.12 % and the genome length is 0.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Hanford 300 Area IFRC 399-1-60 Groundwater".

Description of *Candidatus* Cenacaria pulegimonia sp. nov.

Candidatus Cenacaria pulegimonia (NL. fem. n. *pulegimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp003229135*. The type genome for the species is the GenBank assembly GCA_003229135.1. The GC content of the type genome is 42.48 % and the genome length is 0.45 Mbp.

Description of *Candidatus* Cenacaria ranunibula sp. nov.

Candidatus Cenacaria ranunibula (NL. fem. n. *ranunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp002255585*. The type genome for the species is the GenBank assembly GCA_002255585.1. The GC content of the type genome is 53.52 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Cenacaria selibitoga sp. nov.

Candidatus Cenacaria selibitoga (NL. fem. n. *selibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp002441425*. The type genome for the species is the GenBank assembly GCA_002441425.1. The GC content of the type genome is 48.08 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Cenacaria semigimonia sp. nov.

Candidatus Cenacaria semigimonia (NL. fem. n. *semigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp002429325*. The type genome for the species is the GenBank assembly GCA_002429325.1. The GC content of the type genome is 51.7 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Cenacaria sicunitia sp. nov.

Candidatus Cenacaria sicunitia (NL. fem. n. *sicunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp001189075*. The type genome for the species is the GenBank assembly GCA_001189075.1. The GC content of the type genome is 56.07 % and the genome length is 0.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Hanford 300 Area IFRC 399-1-60 Groundwater".

Description of *Candidatus* Cenacaria vecorivita sp. nov.

Candidatus Cenacaria vecorivita (NL. fem. n. *vecorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-001 sp900299275*. The type genome for the species is the GenBank assembly GCA_900299275.1. The GC content of the type genome is 52.59 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Cenacella delebessa sp. nov.

Candidatus Cenacella delebessa (NL. fem. n. *delebessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1685 sp900546845*. The type genome for the species is the GenBank assembly GCA_900546845.1. The GC content of the type genome is 59.14 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Cenacella gen. nov.

Candidatus Cenacella (NL. fem. n. *Cenacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1685*. The type species for the genus is *Candidatus* Cenacella delebessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Cenacella habacitura sp. nov.

Candidatus Cenacella habacitura (NL. fem. n. *habacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1685 sp004560435*. The type genome for the species is the GenBank assembly GCA_004560435.1. The GC content of the type genome is 57.94 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Cenacella paracugo sp. nov.

Candidatus Cenacella paracugo (NL. fem. n. *paracugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1685 sp002320595*. The type genome for the species is the GenBank assembly GCA_004556605.1. The GC content of the type genome is 55.27 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Cenacida volunugo sp. nov.

Candidatus Cenacida volunugo (NL. fem. n. *volunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIO1D9 sp010672865*. The type genome for the species is the GenBank assembly GCA_010672865.1. The GC content of the type genome is 41.34 % and the genome length is 6.16 Mbp.

Description of *Candidatus* Cenacida gen. nov.

Candidatus Cenacida (NL. fem. n. *Cenacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIO1D9*. The type species for the genus is *Candidatus* Cenacida volunugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SIO1D9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenacidaceae.

Description of *Candidatus* Cenacidaceae fam. nov.

Candidatus Cenacidaceae (NL. fem. n. *Cenacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SIO1D9.* The type genus for the taxon is *Candidatus* Cenacida .

According to GTDB R06-RS202, this family belongs to the order *Cyanobacteriales*.

Description of *Candidatus* Cenacosa alismilenta sp. nov.

Candidatus Cenacosa alismilenta (NL. fem. n. *alismilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS902 sp900546635*. The type genome for the species is the GenBank assembly GCA_900546635.1. The GC content of the type genome is 51.07 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Cenacosa gen. nov.

Candidatus Cenacosa (NL. fem. n. *Cenacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS902*. The type species for the genus is *Candidatus* Cenacosa alismilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Cenacosa bovicilega sp. nov.

Candidatus Cenacosa bovicilega (NL. fem. n. *bovicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS902 sp004554105*. The type genome for the species is the GenBank assembly GCA_004552185.1. The GC content of the type genome is 57.66 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Cenacosa exculilega sp. nov.

Candidatus Cenacosa exculilega (NL. fem. n. *exculilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS902 sp900761025*. The type genome for the species is the GenBank assembly RS_GCF_900761025.1. The GC content of the type genome is 58.72 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Cenacosa peracentia sp. nov.

Candidatus Cenacosa peracentia (NL. fem. n. *peracentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS902 sp003343845*. The type genome for the species is the GenBank assembly GCA_900546405.1. The GC content of the type genome is 58.51 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Cenobana apsuribra sp. nov.

Candidatus Cenobana apsuribra (NL. fem. n. *apsuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA932 sp002293585*. The type genome for the species is the GenBank assembly GCA_002293585.1. The GC content of the type genome is 47.18 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Cenobana gen. nov.

Candidatus Cenobana (NL. fem. n. *Cenobana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA932*. The type species for the genus is *Candidatus* Cenobana apsuribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Cenobanaceae fam. nov.

Candidatus Cenobanaceae (NL. fem. n. *Cenobanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA932.* The type genus for the taxon is *Candidatus* Cenobana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Cenobana dicimimonas sp. nov.

Candidatus Cenobana dicimimonas (NL. fem. n. *dicimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA932 sp009777095*. The type genome for the species is the GenBank assembly GCA_009776795.1. The GC content of the type genome is 43.67 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Cenobaria ammatibula sp. nov.

Candidatus Cenobaria ammatibula (NL. fem. n. *ammatibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTMZ01 sp011355155*. The type genome for the species is the GenBank assembly GCA_011355155.1. The GC content of the type genome is 49.54 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Cenobaria gen. nov.

Candidatus Cenobaria (NL. fem. n. *Cenobaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTMZ01*. The type species for the genus is *Candidatus* Cenobaria ammatibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homulosaceae.

Description of *Candidatus* Cenobaria lenimitas sp. nov.

Candidatus Cenobaria lenimitas (NL. fem. n. *lenimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DTMZ01 sp011051175*. The type genome for the species is the GenBank assembly GCA_011051175.1. The GC content of the type genome is 53.84 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Cenobella telegitica sp. nov.

Candidatus Cenobella telegitica (NL. fem. n. *telegitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4142 sp002400365*. The type genome for the species is the GenBank assembly GCA_002412505.1. The GC content of the type genome is 60.11 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Cenobella gen. nov.

Candidatus Cenobella (NL. fem. n. *Cenobella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4142*. The type species for the genus is *Candidatus* Cenobella telegitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4142*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobellaceae.

Description of *Candidatus* Cenobellaceae fam. nov.

Candidatus Cenobellaceae (NL. fem. n. *Cenobellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4142.* The type genus for the taxon is *Candidatus* Cenobella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4142*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenobellales.

Description of *Candidatus* Cenobellales ord. nov.

Candidatus Cenobellales (NL. fem. n. *Cenobellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4142.* The type genus for the taxon is *Candidatus* Cenobella .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Cenobida conifetta sp. nov.

Candidatus Cenobida conifetta (NL. fem. n. *conifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTXE01 sp012962595*. The type genome for the species is the GenBank assembly GCA_012962595.1. The GC content of the type genome is 42.07 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Cenobida gen. nov.

Candidatus Cenobida (NL. fem. n. *Cenobida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTXE01*. The type species for the genus is *Candidatus* Cenobida conifetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTXE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobidaceae.

Description of *Candidatus* Cenobidaceae fam. nov.

Candidatus Cenobidaceae (NL. fem. n. *Cenobidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTXE01.* The type genus for the taxon is *Candidatus* Cenobida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTXE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenobidales.

Description of *Candidatus* Cenobidales ord. nov.

Candidatus Cenobidales (NL. fem. n. *Cenobidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTXE01.* The type genus for the taxon is *Candidatus* Cenobida .

According to the original version of GTDB R06-RS202, this family belongs to the class

DTXE01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cenobidae.

Description of *Candidatus* Cenobidae class. nov.

Candidatus Cenobidae (NL. fem. n. *c__Cenobidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTXE01*. The type genus for the taxon is *Candidatus* Cenobida .

According to GTDB R06-RS202, this class belongs to the phylum *Desulfobacterota*.

Description of *Candidatus* Cenobosa bicipicella sp. nov.

Candidatus Cenobosa bicipicella (NL. fem. n. *bicipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6168 sp004297645*. The type genome for the species is the GenBank assembly GCA_004297645.1. The GC content of the type genome is 51.25 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Cenobosa gen. nov.

Candidatus Cenobosa (NL. fem. n. *Cenobosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6168*. The type species for the genus is *Candidatus* Cenobosa bicipicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cenobosa inculatio sp. nov.

Candidatus Cenobosa inculatio (NL. fem. n. *inculatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6168 sp011321935*. The type genome for the species is the GenBank assembly GCA_011321935.1. The GC content of the type genome is 47.51 % and the genome length is 6.74 Mbp.

Description of *Candidatus* Cenobosa irrotatio sp. nov.

Candidatus Cenobosa irrotatio (NL. fem. n. *irrotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6168 sp002435785*. The type genome for the species is the GenBank assembly GCA_002435785.1. The GC content of the type genome is 51.44 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Cenobosa remedastra sp. nov.

Candidatus Cenobosa remedastra (NL. fem. n. *remedastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6168 sp002698985*. The type genome for the species is the GenBank assembly GCA_002698985.1. The GC content of the type genome is 51.85 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Cenobula adnumibula sp. nov.

Candidatus Cenobula adnumibula (NL. fem. n. *adnumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHG01 sp013297585*. The type genome for the species is the GenBank assembly GCA_013297585.1. The GC content of the type genome is 35.92 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Cenobula gen. nov.

Candidatus Cenobula (NL. fem. n. *Cenobula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHG01*. The type species for the genus is *Candidatus* Cenobula adnumibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cenobula cisoratio sp. nov.

Candidatus Cenobula cisoratio (NL. fem. n. *cisoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHG01 sp903895845*. The type genome for the species is the GenBank assembly GCA_903897955.1. The GC content of the type genome is 38.68 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Cenobula infacicula sp. nov.

Candidatus Cenobula infacicula (NL. fem. n. *infacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHG01 sp903883945*. The type genome for the species is the GenBank assembly GCA_903883945.1. The GC content of the type genome is 37.51 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Cenodaria duricitrix sp. nov.

Candidatus Cenodaria duricitrix (NL. fem. n. *duricitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12445 sp003504275*. The type genome for the species is the GenBank assembly GCA_000993015.1. The GC content of the type genome is 36.97 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Cenodaria gen. nov.

Candidatus Cenodaria (NL. fem. n. *Cenodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12445*. The type species for the genus is *Candidatus* Cenodaria duricitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12445*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenodariaceae.

Description of *Candidatus* Cenodariaceae fam. nov.

Candidatus Cenodariaceae (NL. fem. n. *Cenodariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12445.* The type genus for the taxon is *Candidatus* Cenodaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Cenodella affabedo sp. nov.

Candidatus Cenodella affabedo (NL. fem. n. *affabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11096 sp003696155*. The type genome for the species is the GenBank assembly GCA_003696155.1. The GC content of the type genome is 46.39 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Cenodella gen. nov.

Candidatus Cenodella (NL. fem. n. *Cenodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11096*. The type species for the genus is *Candidatus* Cenodella affabedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cenodella depacax sp. nov.

Candidatus Cenodella depacax (NL. fem. n. *depacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11096 sp011006175*. The type genome for the species is the GenBank assembly RS_GCF_011006175.1. The GC content of the type genome is 44.03 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Cenodella remeditrix sp. nov.

Candidatus Cenodella remeditrix (NL. fem. n. *remeditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11096 sp003534055*. The type genome for the species is the GenBank assembly GCA_003534055.1. The GC content of the type genome is 43.51 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Cenodella rudicatica sp. nov.

Candidatus Cenodella rudicatica (NL. fem. n. *rudicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11096 sp011054805*. The type genome for the species is the GenBank assembly GCA_011057385.1. The GC content of the type genome is 42.65 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Cenodia inargibra sp. nov.

Candidatus Cenodia inargibra (NL. fem. n. *inargibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OXYB2-FULL-49-7 sp001800515*. The type genome for the species is the GenBank assembly GCA_001800515.1. The GC content of the type genome is 48.74 % and the genome length is 3.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Cenodia gen. nov.

Candidatus Cenodia (NL. fem. n. *Cenodia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OXYB2-FULL-49-7*. The type species for the genus is *Candidatus* Cenodia inargibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OXYB2-FULL-49-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenodiaceae.

Description of *Candidatus* Cenodiaceae fam. nov.

Candidatus Cenodiaceae (NL. fem. n. *Cenodiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OXYB2-FULL-49-7*. The type genus for the taxon is *Candidatus* Cenodia .

According to the original version of GTDB R06-RS202, this family belongs to the order *OXYB2-FULL-49-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodiales.

Description of *Candidatus* Cenodiales ord. nov.

Candidatus Cenodiales (NL. fem. n. *Cenodiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OXYB2-FULL-49-7*. The type genus for the taxon is *Candidatus* Cenodia .

According to the original version of GTDB R06-RS202, this family belongs to the class *OXYB2-FULL-49-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cenodiae.

Description of *Candidatus* Cenodiae class. nov.

Candidatus Cenodiae (NL. fem. n. *c__Cenodiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OXYB2-FULL-49-7*. The type genus for the taxon is *Candidatus* Cenodia .

According to GTDB R06-RS202, this class belongs to the phylum *Fibrobacterota*.

Description of *Candidatus* Cenodida colipimonas sp. nov.

Candidatus Cenodida colipimonas (NL. fem. n. *colipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1829 sp900760615*. The type genome for the species is the GenBank assembly RS_GCF_900760615.1. The GC content of the type genome is 53.02 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Cenodida gen. nov.

Candidatus Cenodida (NL. fem. n. *Cenodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1829*. The type species for the genus is *Candidatus* Cenodida colipimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenodidaceae.

Description of *Candidatus* Cenodidaceae fam. nov.

Candidatus Cenodidaceae (NL. fem. n. *Cenodidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1829.* The type genus for the taxon is *Candidatus* Cenodida .

According to GTDB R06-RS202, this family belongs to the order *Victivallales*.

Description of *Candidatus* Cenodida dicibastra sp. nov.

Candidatus Cenodida dicibastra (NL. fem. n. *dicibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1829 sp002338895*. The type genome for the species is the GenBank assembly GCA_002338895.1. The GC content of the type genome is 56.75 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Cenodida excogedo sp. nov.

Candidatus Cenodida excogedo (NL. fem. n. *excogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1829 sp002405835*. The type genome for the species is the GenBank assembly GCA_002405835.1. The GC content of the type genome is 54.67 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Cenodida lametax sp. nov.

Candidatus Cenodida lametax (NL. fem. n. *lametax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1829 sp900549415*. The type genome for the species is the GenBank assembly GCA_900549415.1. The GC content of the type genome is 55.07 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Cenodida luculilenta sp. nov.

Candidatus Cenodida luculilenta (NL. fem. n. *luculilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1829 sp900549045*. The type genome for the species is the GenBank assembly RS_GCF_900768925.1. The GC content of the type genome is 55.77 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Cenodida tubicetta sp. nov.

Candidatus Cenodida tubicetta (NL. fem. n. *tubicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1829 sp900548385*. The type genome for the species is the GenBank assembly GCA_900548385.1. The GC content of the type genome is 53.47 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Cenodosa selibitia sp. nov.

Candidatus Cenodosa selibitia (NL. fem. n. *selibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F11 sp002176905*. The type genome for the species is the GenBank assembly GCA_002176905.1. The GC content of the type genome is 44.45 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Cenodosa gen. nov.

Candidatus Cenodosa (NL. fem. n. *Cenodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F11*. The type species for the genus is *Candidatus* Cenodosa selibitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the

family *Candidatus* Cenodosaceae.

Description of *Candidatus* Cenodosaceae fam. nov.

Candidatus Cenodosaceae (NL. fem. n. *Cenodosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *F11*. The type genus for the taxon is *Candidatus* Cenodosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *F11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodosales.

Description of *Candidatus* Cenodosales ord. nov.

Candidatus Cenodosales (NL. fem. n. *Cenodosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *F11*. The type genus for the taxon is *Candidatus* Cenodosa .

According to the GTDB R06-RS202, this order belongs to the class *Elusimicrobia*.

Description of *Candidatus* Cenodula artopivita sp. nov.

Candidatus Cenodula artopivita (NL. fem. n. *artopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-51-18 sp001804125*. The type genome for the species is the GenBank assembly GCA_001804125.1. The GC content of the type genome is 51.42 % and the genome length is 1.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Cenodula gen. nov.

Candidatus Cenodula (NL. fem. n. *Cenodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-51-18*. The type species for the genus is *Candidatus* Cenodula artopivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family

2-02-FULL-51-18. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenodulaceae.

Description of *Candidatus* Cenodulaceae fam. nov.

Candidatus Cenodulaceae (NL. fem. n. *Cenodulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-51-18.* The type genus for the taxon is *Candidatus* Cenodula .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-51-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodulales.

Description of *Candidatus* Cenodulales ord. nov.

Candidatus Cenodulales (NL. fem. n. *Cenodulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-51-18.* The type genus for the taxon is *Candidatus* Cenodula .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Cenotana adsesatica sp. nov.

Candidatus Cenotana adsesatica (NL. fem. n. *adsesatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902510475*. The type genome for the species is the GenBank assembly GCA_902510475.1. The GC content of the type genome is 31.01 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Cenotana gen. nov.

Candidatus Cenotana (NL. fem. n. *Cenotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *MED-G13*. The type species for the genus is *Candidatus* Cenotana adsesatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cenotana cemenatica sp. nov.

Candidatus Cenotana cemenatica (NL. fem. n. *cemenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902626365*. The type genome for the species is the GenBank assembly GCA_902626365.1. The GC content of the type genome is 30.88 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Cenotana cnestigena sp. nov.

Candidatus Cenotana cnestigena (NL. fem. n. *cnestigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902626585*. The type genome for the species is the GenBank assembly GCA_902626585.1. The GC content of the type genome is 31.52 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Cenotana defunentia sp. nov.

Candidatus Cenotana defunentia (NL. fem. n. *defunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902605445*. The type genome for the species is the GenBank assembly GCA_902605445.1. The GC content of the type genome is 30.18 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Cenotana depicastra sp. nov.

Candidatus Cenotana depicastra (NL. fem. n. *depicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902560045*. The type genome for the species is the GenBank assembly GCA_902560045.1. The GC content of the type genome is 30.95 %

and the genome length is 1.16 Mbp.

Description of *Candidatus* Cenotana depicilenta sp. nov.

Candidatus Cenotana depicilenta (NL. fem. n. *depicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902526075*. The type genome for the species is the GenBank assembly GCA_902526075.1. The GC content of the type genome is 31.11 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Cenotana desuricella sp. nov.

Candidatus Cenotana desuricella (NL. fem. n. *desuricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp002702745*. The type genome for the species is the GenBank assembly GCA_002702745.1. The GC content of the type genome is 30.41 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Cenotana dupunatio sp. nov.

Candidatus Cenotana dupunatio (NL. fem. n. *dupunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902510415*. The type genome for the species is the GenBank assembly GCA_902510415.1. The GC content of the type genome is 30.1 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Cenotana ephemitas sp. nov.

Candidatus Cenotana ephemitas (NL. fem. n. *ephemitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp002697255*. The type genome for the species is the GenBank assembly GCA_002697255.1. The GC content of the type genome is 29.61 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Cenotana ficeditoga sp. nov.

Candidatus Cenotana ficeditoga (NL. fem. n. *ficeditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp008081325*. The type genome for the species is the GenBank assembly GCA_008081325.1. The GC content of the type genome is 30.48 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Cenotana forabitura sp. nov.

Candidatus Cenotana forabitura (NL. fem. n. *forabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902604715*. The type genome for the species is the GenBank assembly GCA_902605685.1. The GC content of the type genome is 31.07 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Cenotana gasomimonia sp. nov.

Candidatus Cenotana gasomimonia (NL. fem. n. *gasomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp002691265*. The type genome for the species is the GenBank assembly GCA_902541085.1. The GC content of the type genome is 30.76 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Cenotana inaccitio sp. nov.

Candidatus Cenotana inaccitio (NL. fem. n. *inaccitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902525795*. The type genome for the species is the GenBank assembly GCA_902525795.1. The GC content of the type genome is 30.95 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Cenotana inlepitia sp. nov.

Candidatus Cenotana inlepitia (NL. fem. n. *inlepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902519075*. The type genome for the species is the GenBank assembly GCA_902519075.1. The GC content of the type genome is 30.7 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Cenotana lenunitio sp. nov.

Candidatus Cenotana lenunitio (NL. fem. n. *lenunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902602415*. The type genome for the species is the GenBank assembly GCA_902531285.1. The GC content of the type genome is 30.87 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Cenotana progrentia sp. nov.

Candidatus Cenotana progrentia (NL. fem. n. *progrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902581145*. The type genome for the species is the GenBank assembly GCA_902581145.1. The GC content of the type genome is 30.99 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Cenotana ratifedo sp. nov.

Candidatus Cenotana ratifedo (NL. fem. n. *ratifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902608795*. The type genome for the species is the GenBank assembly GCA_902608795.1. The GC content of the type genome is 30.78 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Cenotana socagitoga sp. nov.

Candidatus Cenotana socagitoga (NL. fem. n. *socagitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902557655*. The type genome for the species is the GenBank assembly GCA_902558865.1. The GC content of the type genome is 30.93 %

and the genome length is 1.23 Mbp.

Description of *Candidatus* Cenotana subodisca sp. nov.

Candidatus Cenotana subodisca (NL. fem. n. *subodisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp002457735*. The type genome for the species is the GenBank assembly GCA_002457735.1. The GC content of the type genome is 30.28 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Cenotana verifastra sp. nov.

Candidatus Cenotana verifastra (NL. fem. n. *verifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902517895*. The type genome for the species is the GenBank assembly GCA_902517895.1. The GC content of the type genome is 30.79 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Cenotana vinolitia sp. nov.

Candidatus Cenotana vinolitia (NL. fem. n. *vinolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902518355*. The type genome for the species is the GenBank assembly GCA_902614955.1. The GC content of the type genome is 30.84 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Cenotana vitigax sp. nov.

Candidatus Cenotana vitigax (NL. fem. n. *vitigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G13 sp902509675*. The type genome for the species is the GenBank assembly GCA_902509675.1. The GC content of the type genome is 31.41 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Cenotaria renavax sp. nov.

Candidatus Cenotaria renavax (NL. fem. n. *renavax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM1-46 sp001304215*. The type genome for the species is the GenBank assembly GCA_002451215.1. The GC content of the type genome is 62.04 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Cenotaria gen. nov.

Candidatus Cenotaria (NL. fem. n. *Cenotaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM1-46*. The type species for the genus is *Candidatus* Cenotaria renavax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cenotella luxuretta sp. nov.

Candidatus Cenotella luxuretta (NL. fem. n. *luxuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZYF01 sp010014665*. The type genome for the species is the GenBank assembly GCA_010014665.1. The GC content of the type genome is 42.8 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Cenotella gen. nov.

Candidatus Cenotella (NL. fem. n. *Cenotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RZYF01*. The type species for the genus is *Candidatus* Cenotella luxuretta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cenotia depelitas sp. nov.

Candidatus Cenotia depelitas (NL. fem. n. *depelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACEH01 sp011682595*. The type genome for the species is the GenBank assembly GCA_011682595.1. The GC content of the type genome is 64.38 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Cenotia gen. nov.

Candidatus Cenotia (NL. fem. n. *Cenotia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACEH01*. The type species for the genus is *Candidatus* Cenotia depelitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACEH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenotiaceae.

Description of *Candidatus* Cenotiaceae fam. nov.

Candidatus Cenotiaceae (NL. fem. n. *Cenotiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAACEH01.* The type genus for the taxon is *Candidatus* Cenotia .

According to the original version of GTDB R06-RS202, this family belongs to the order *FEN-1346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Gerunidales.

Description of *Candidatus* Cenotida celamessa sp. nov.

Candidatus Cenotida celamessa (NL. fem. n. *celamessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6156 sp002422365*. The type genome for the species is the GenBank assembly GCA_002422365.1. The GC content of the type genome is 59.68 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Cenotida gen. nov.

Candidatus Cenotida (NL. fem. n. *Cenotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6156*. The type species for the genus is *Candidatus* Cenotida celamessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6156*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenotidaceae.

Description of *Candidatus* Cenotidaceae fam. nov.

Candidatus Cenotidaceae (NL. fem. n. *Cenotidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6156.* The type genus for the taxon is *Candidatus* Cenotida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1280*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redacariales.

Description of *Candidatus* Cenotida innecetta sp. nov.

Candidatus Cenotida innecetta (NL. fem. n. *innecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6156 sp003241595*. The type genome for the species is the GenBank assembly GCA_003241595.1. The GC content of the type genome is 56.05 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Cenotida laculessa sp. nov.

Candidatus Cenotida laculessa (NL. fem. n. *laculessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6156 sp005768725*. The type genome for the species is the GenBank assembly GCA_005768725.1. The GC content of the type genome is 56.62 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Cenotosa pepenitas sp. nov.

Candidatus Cenotosa pepenitas (NL. fem. n. *pepenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVR01 sp009694185*. The type genome for the species is the GenBank assembly GCA_009694185.1. The GC content of the type genome is 66.32 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Cenotosa gen. nov.

Candidatus Cenotosa (NL. fem. n. *Cenotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVR01*. The type species for the genus is *Candidatus* Cenotosa pepenitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHVR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenotosaceae.

Description of *Candidatus* Cenotosaceae fam. nov.

Candidatus Cenotosaceae (NL. fem. n. *Cenotosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVR01*. The type genus for the taxon is *Candidatus* Cenotosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHVR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenotosales.

Description of *Candidatus* Cenotosales ord. nov.

Candidatus Cenotosales (NL. fem. n. *Cenotosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVR01*. The type genus for the taxon is *Candidatus* Cenotosa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Cenotula alsisetta sp. nov.

Candidatus Cenotula alsisetta (NL. fem. n. *alsisetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-16 sp002310155*. The type genome for the species is the GenBank assembly GCA_002310155.1. The GC content of the type genome is 49.92 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Cenotula gen. nov.

Candidatus Cenotula (NL. fem. n. *Cenotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Firm-16*. The type species for the genus is *Candidatus* Cenotula alsisetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cenotula anteviforma sp. nov.

Candidatus Cenotula anteviforma (NL. fem. n. *anteviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-16 sp001604185*. The type genome for the species is the GenBank assembly GCA_001604185.1. The GC content of the type genome is 49.32 % and the genome length is 3.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Cenotula infenivita sp. nov.

Candidatus Cenotula infenivita (NL. fem. n. *infenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-16 sp900317035*. The type genome for the species is the GenBank assembly GCA_900317035.1. The GC content of the type genome is 48.95 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Cenotula volubessa sp. nov.

Candidatus Cenotula volubessa (NL. fem. n. *volubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Firm-16 sp002368805*. The type genome for the species is the GenBank assembly GCA_003485275.1. The GC content of the type genome is 49.29 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Centipeda demagatio sp. nov.

Candidatus Centipeda demagatio (NL. fem. n. *demagatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Centipeda sp000315545*. The type genome for the species is the GenBank assembly RS_GCF_000315545.1. The GC content of the type genome is 58.5 % and the genome length is 2.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Centipeda herinicella sp. nov.

Candidatus Centipeda herinicella (NL. fem. n. *herinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Centipeda sp001683335*. The type genome for the species is the GenBank assembly RS_GCF_001683335.1. The GC content of the type genome is 57.11 % and the genome length is 2.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "curette".

Description of *Candidatus* Centipeda irregedo sp. nov.

Candidatus Centipeda irregedo (NL. fem. n. *irregedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Centipeda sp000468035*. The type genome for the species is the GenBank assembly RS_GCF_000468035.1. The GC content of the type genome is 54.91 % and the genome length is 2.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity- mouth".

Description of *Candidatus* Centipeda meridigena sp. nov.

Candidatus Centipeda meridigena (NL. fem. n. *meridigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Centipeda sp000286455*. The type genome for the species is the

GenBank assembly RS_GCF_000286455.1. The GC content of the type genome is 57.08 % and the genome length is 2.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Centipeda nosocitia sp. nov.

Candidatus Centipeda nosocitia (NL. fem. n. *nosocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Centipeda sp000318175*. The type genome for the species is the GenBank assembly RS_GCF_000318175.2. The GC content of the type genome is 56.87 % and the genome length is 2.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity".

Description of *Candidatus* Centipeda peribitica sp. nov.

Candidatus Centipeda peribitica (NL. fem. n. *peribitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Centipeda sp001717585*. The type genome for the species is the GenBank assembly RS_GCF_001717585.1. The GC content of the type genome is 55.84 % and the genome length is 2.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "curette".

Description of *Candidatus* Cephaloticoccus caravifica sp. nov.

Candidatus Cephaloticoccus caravifica (NL. fem. n. *caravifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cephaloticoccus sp002713695*. The type genome for the species is the GenBank assembly GCA_002713695.1. The GC content of the type genome is 55.96 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Cephaloticoccus insibiforma sp. nov.

Candidatus Cephaloticoccus insibiforma (NL. fem. n. *insibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cephaloticoccus sp002367815*. The type genome for the species is the GenBank assembly GCA_002367815.1. The GC content of the type genome is 54.25 %

and the genome length is 2.8 Mbp.

Description of *Candidatus* Cepulana desomimonia sp. nov.

Candidatus Cepulana desomimonia (NL. fem. n. *desomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPSZ01 sp903867845*. The type genome for the species is the GenBank assembly GCA_903927195.1. The GC content of the type genome is 54.7 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Cepulana gen. nov.

Candidatus Cepulana (NL. fem. n. *Cepulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPSZ01*. The type species for the genus is *Candidatus* Cepulana desomimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PEXW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benifiaceae.

Description of *Candidatus* Cepularia bulapigena sp. nov.

Candidatus Cepularia bulapigena (NL. fem. n. *bulapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGCAAA288-L16 sp003451695*. The type genome for the species is the GenBank assembly GCA_005239395.1. The GC content of the type genome is 45.62 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Cepularia gen. nov.

Candidatus Cepularia (NL. fem. n. *Cepularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCGCAAA288-L16*. The type species for the genus is *Candidatus* Cepularia bulapigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cepularia cibarimonia sp. nov.

Candidatus Cepularia cibarimonia (NL. fem. n. *cibarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGCAAA288-L16 sp002731985*. The type genome for the species is the GenBank assembly GCA_003487765.1. The GC content of the type genome is 45.73 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Cepularia ossifentia sp. nov.

Candidatus Cepularia ossifentia (NL. fem. n. *ossifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGCAAA288-L16 sp000372225*. The type genome for the species is the GenBank assembly GCA_000372225.1. The GC content of the type genome is 39.47 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Cepulella effuniforma sp. nov.

Candidatus Cepulella effuniforma (NL. fem. n. *effuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5808 sp903789415*. The type genome for the species is the GenBank assembly GCA_903789415.1. The GC content of the type genome is 47.81 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Cepulella gen. nov.

Candidatus Cepulella (NL. fem. n. *Cepulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5808*. The type species for the genus is *Candidatus* Cepulella effuniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cepulella palifilega sp. nov.

Candidatus Cepulella palifilega (NL. fem. n. *palifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5808 sp002417975*. The type genome for the species is the GenBank assembly GCA_002417975.1. The GC content of the type genome is 46.38 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Cepulia depupax sp. nov.

Candidatus Cepulia depupax (NL. fem. n. *depupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3636 sp002448475*. The type genome for the species is the GenBank assembly GCA_002373635.1. The GC content of the type genome is 64.62 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Cepulia gen. nov.

Candidatus Cepulia (NL. fem. n. *Cepulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3636*. The type species for the genus is *Candidatus* Cepulia depupax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3636*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cepuliaceae.

Description of *Candidatus* Cepuliaceae fam. nov.

Candidatus Cepuliaceae (NL. fem. n. *Cepuliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3636.* The type genus for the taxon is *Candidatus* Cepulia .

According to the original version of GTDB R06-RS202, this family belongs to the order *RFP12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Capudanales.

Description of *Candidatus* Cepulia seposiforma sp. nov.

Candidatus Cepulia seposiforma (NL. fem. n. *seposiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3636 sp902761575*. The type genome for the species is the GenBank assembly GCA_902764755.1. The GC content of the type genome is 70.06 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Cepulia utricousia sp. nov.

Candidatus Cepulia utricousia (NL. fem. n. *utricousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3636 sp902793555*. The type genome for the species is the GenBank assembly GCA_902793555.1. The GC content of the type genome is 69.85 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Cepulida sanabax sp. nov.

Candidatus Cepulida sanabax (NL. fem. n. *sanabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINCQ01 sp903847095*. The type genome for the species is the GenBank assembly GCA_903862575.1. The GC content of the type genome is 46.25 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Cepulida gen. nov.

Candidatus Cepulida (NL. fem. n. *Cepulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINCQ01*. The type species for the genus is *Candidatus* Cepulida sanabax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subodiaceae.

Description of *Candidatus* Cepulosa ratifatica sp. nov.

Candidatus Cepulosa ratifatica (NL. fem. n. *ratifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-44-24b sp001793235*. The type genome for the species is the GenBank assembly GCA_001792455.1. The GC content of the type genome is 43.57 % and the genome length is 1.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cepulosa gen. nov.

Candidatus Cepulosa (NL. fem. n. *Cepulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-44-24b*. The type species for the genus is *Candidatus* Cepulosa ratifatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Cepulula citipiforma sp. nov.

Candidatus Cepulula citipiforma (NL. fem. n. *citipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5388 sp002409975*. The type genome for the species is the GenBank assembly GCA_002398595.1. The GC content of the type genome is 41.9 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Cepulula gen. nov.

Candidatus Cepulula (NL. fem. n. *Cepulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5388*. The type species for the genus is *Candidatus* Cepulula citipiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Valefulaceae.

Description of *Candidatus* Cepuraria negotago sp. nov.

Candidatus Cepuraria negotago (NL. fem. n. *negotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9786 sp003518745*. The type genome for the species is the GenBank assembly GCA_003518745.1. The GC content of the type genome is 49.0 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Cepuraria gen. nov.

Candidatus Cepuraria (NL. fem. n. *Cepuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9786*. The type species for the genus is *Candidatus* Cepuraria negotago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cepuraria pulegitio sp. nov.

Candidatus Cepuraria pulegitio (NL. fem. n. *pulegitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9786 sp902785705*. The type genome for the species is the GenBank assembly GCA_902785705.1. The GC content of the type genome is 53.85 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Cepurella defenatio sp. nov.

Candidatus Cepurella defenatio (NL. fem. n. *defenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12042 sp001775555*. The type genome for the species is the GenBank assembly GCA_001773735.1. The GC content of the type genome is 47.69 % and the genome length is 0.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Cepurella gen. nov.

Candidatus Cepurella (NL. fem. n. *Cepurella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12042*. The type species for the genus is *Candidatus* Cepurella defenatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cepurella hexapibra sp. nov.

Candidatus Cepurella hexapibra (NL. fem. n. *hexapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12042 sp001002325*. The type genome for the species is the GenBank assembly GCA_001773795.1. The GC content of the type genome is 46.82 % and the genome length is 0.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Cepuria echogitrix sp. nov.

Candidatus Cepuria echogitrix (NL. fem. n. *echogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3532 sp002376965*. The type genome for the species is the GenBank assembly GCA_002376965.1. The GC content of the type genome is 46.73 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Cepuria gen. nov.

Candidatus Cepuria (NL. fem. n. *Cepuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3532*. The type species for the genus is *Candidatus* Cepuria echogitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cepuriaceae.

Description of *Candidatus* Cepuriaceae fam. nov.

Candidatus Cepuriaceae (NL. fem. n. *Cepuriaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3532.* The type genus for the taxon is *Candidatus* Cepuria .

According to GTDB R06-RS202, this family belongs to the order *Enterobacterales*.

Description of *Candidatus* Cepurida haricatio sp. nov.

Candidatus Cepurida haricatio (NL. fem. n. *haricatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3465 sp002729885*. The type genome for the species is the GenBank assembly GCA_002380645.1. The GC content of the type genome is 49.92 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Cepurida gen. nov.

Candidatus Cepurida (NL. fem. n. *Cepurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3465*. The type species for the genus is *Candidatus* Cepurida haricatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cepurida odollitio sp. nov.

Candidatus Cepurida odollitio (NL. fem. n. *odollitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3465 sp002717505*. The type genome for the species is the GenBank assembly GCA_002717505.1. The GC content of the type genome is 50.28 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Cepurida sicubugo sp. nov.

Candidatus Cepurida sicubugo (NL. fem. n. *sicubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3465 sp002730875*. The type genome for the species is the GenBank assembly GCA_002730875.1. The GC content of the type genome is 52.98 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Cepurosa adsesetta sp. nov.

Candidatus Cepurosa adsesetta (NL. fem. n. *adsesetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3065 sp009923755*. The type genome for the species is the GenBank assembly GCA_009923755.1. The GC content of the type genome is 65.7 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Cepurosa gen. nov.

Candidatus Cepurosa (NL. fem. n. *Cepurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3065*. The type species for the genus is *Candidatus* Cepurosa adsesetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cepurosaceae.

Description of *Candidatus* Cepurosaceae fam. nov.

Candidatus Cepurosaceae (NL. fem. n. *Cepurosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3065.* The type genus for the taxon is *Candidatus* Cepurosa .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Cepurosa denixivita sp. nov.

Candidatus Cepurosa denixivita (NL. fem. n. *denixivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA3065 sp002367415*. The type genome for the species is the GenBank assembly GCA_002367415.1. The GC content of the type genome is 64.27 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Cepurula favonimonas sp. nov.

Candidatus Cepurula favonimonas (NL. fem. n. *favonimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMDX01 sp903839905*. The type genome for the species is the GenBank assembly GCA_903839905.1. The GC content of the type genome is 40.91 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Cepurula gen. nov.

Candidatus Cepurula (NL. fem. n. *Cepurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMDX01*. The type species for the genus is *Candidatus* Cepurula favonimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5633*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carecosaceae.

Description of *Candidatus* Ceracana effinatica sp. nov.

Candidatus Ceracana effinatica (NL. fem. n. *effinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1Sed10-126 sp003554945*. The type genome for the species is the GenBank assembly GCA_003554945.1. The GC content of the type genome is 48.13 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Ceracana gen. nov.

Candidatus Ceracana (NL. fem. n. *Ceracana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1Sed10-126*. The type species for the genus is *Candidatus* Ceracana effinatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *T1Sed10-126*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracanaceae.

Description of *Candidatus* Ceracanaceae fam. nov.

Candidatus Ceracanaceae (NL. fem. n. *Ceracanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T1Sed10-126.* The type genus for the taxon is *Candidatus* Ceracana .

According to the original version of GTDB R06-RS202, this family belongs to the order *T1Sed10-126*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ceracanales.

Description of *Candidatus* Ceracanales ord. nov.

Candidatus Ceracanales (NL. fem. n. *Ceracanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T1Sed10-126.* The type genus for the taxon is *Candidatus* Ceracana .

According to the original version of GTDB R06-RS202, this family belongs to the class *T1Sed10-126*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ceracanae.

Description of *Candidatus* Ceracanae class. nov.

Candidatus Ceracanae (NL. fem. n. *c__Ceracanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T1Sed10-126.* The type genus for the taxon is *Candidatus* Ceracana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *T1Sed10-126*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Ceracanota.

Description of *Candidatus* Ceracanota phyl. nov.

Candidatus Ceracanota (NL. fem. n. *Ceracanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *T1Sed10-126.* The type genus for the taxon is *Candidatus* Ceracana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Ceracaria patibitia sp. nov.

Candidatus Ceracaria patibitia (NL. fem. n. *patibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMOW01 sp013204025*. The type genome for the species is the GenBank assembly GCA_013204025.1. The GC content of the type genome is 40.39 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Ceracaria gen. nov.

Candidatus Ceracaria (NL. fem. n. *Ceracaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMOW01*. The type species for the genus is *Candidatus* Ceracaria patibitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMOW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracariaceae.

Description of *Candidatus* Ceracariaceae fam. nov.

Candidatus Ceracariaceae (NL. fem. n. *Ceracariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMOW01.* The type genus for the taxon is *Candidatus* Ceracaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Ceracella bicalitoga sp. nov.

Candidatus Ceracella bicalitoga (NL. fem. n. *bicalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA3637 sp002373815*. The type genome for the species is the GenBank assembly GCA_002373815.1. The GC content of the type genome is 38.67 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Ceracella gen. nov.

Candidatus Ceracella (NL. fem. n. *Ceracella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3637*. The type species for the genus is *Candidatus* Ceracella bicalitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3637*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracellaceae.

Description of *Candidatus* Ceracellaceae fam. nov.

Candidatus Ceracellaceae (NL. fem. n. *Ceracellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3637.* The type genus for the taxon is *Candidatus* Ceracella .

According to the original version of GTDB R06-RS202, this family belongs to the order *RF32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resaculales.

Description of *Candidatus* Ceracella domabitica sp. nov.

Candidatus Ceracella domabitica (NL. fem. n. *domabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3637 sp002372315*. The type genome for the species is the GenBank assembly GCA_002372315.1. The GC content of the type genome is 37.45 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Ceracella problibula sp. nov.

Candidatus Ceracella problibula (NL. fem. n. *problibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA3637 sp002373615*. The type genome for the species is the GenBank assembly GCA_002373615.1. The GC content of the type genome is 40.99 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Ceracida vilipatica sp. nov.

Candidatus Ceracida vilipatica (NL. fem. n. *vilipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRIO01 sp009782695*. The type genome for the species is the GenBank assembly GCA_009782695.1. The GC content of the type genome is 39.27 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Ceracida gen. nov.

Candidatus Ceracida (NL. fem. n. *Ceracida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRIO01*. The type species for the genus is *Candidatus* Ceracida vilipatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRIO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracidaceae.

Description of *Candidatus* Ceracidaceae fam. nov.

Candidatus Ceracidaceae (NL. fem. n. *Ceracidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRIO01.* The type genus for the taxon is *Candidatus* Ceracida .

According to GTDB R06-RS202, this family belongs to the order *Cloacimonadales*.

Description of *Candidatus* Ceracosa adremedo sp. nov.

Candidatus Ceracosa adremedo (NL. fem. n. *adremedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mor1 sp001664505*. The type genome for the species is the GenBank assembly GCA_001664505.1. The GC content of the type genome is 66.8 % and the

genome length is 5.99 Mbp.

Description of *Candidatus* Ceracosa gen. nov.

Candidatus Ceracosa (NL. fem. n. *Ceracosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Mor1*. The type species for the genus is *Candidatus* Ceracosa adremedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Mor1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracosaceae.

Description of *Candidatus* Ceracosaceae fam. nov.

Candidatus Ceracosaceae (NL. fem. n. *Ceracosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Mor1*. The type genus for the taxon is *Candidatus* Ceracosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *Mor1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ceracosales.

Description of *Candidatus* Ceracosales ord. nov.

Candidatus Ceracosales (NL. fem. n. *Ceracosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Mor1*. The type genus for the taxon is *Candidatus* Ceracosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *Mor1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ceracosae.

Description of *Candidatus* Ceracosae class. nov.

Candidatus Ceracosae (NL. fem. n. *c__Ceracosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Mor1*. The type genus for the taxon is *Candidatus* Ceracosa .

According to GTDB R06-RS202, this class belongs to the phylum *Acidobacteriota*.

Description of *Candidatus* Ceracula catabicella sp. nov.

Candidatus Ceracula catabicella (NL. fem. n. *catabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903930425*. The type genome for the species is the GenBank assembly GCA_903930425.1. The GC content of the type genome is 57.93 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Ceracula gen. nov.

Candidatus Ceracula (NL. fem. n. *Ceracula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1315*. The type species for the genus is *Candidatus* Ceracula catabicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ceracula colutentia sp. nov.

Candidatus Ceracula colutentia (NL. fem. n. *colutentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp012032235*. The type genome for the species is the GenBank assembly GCA_012032235.1. The GC content of the type genome is 50.81 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Ceracula detesilega sp. nov.

Candidatus Ceracula detesilega (NL. fem. n. *detesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp007126655*. The type genome for the species is the GenBank assembly GCA_007126655.1. The GC content of the type genome is 63.22 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Ceracula exsolilenta sp. nov.

Candidatus Ceracula exsolilenta (NL. fem. n. *exsolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp008932935*. The type genome for the species is the GenBank assembly GCA_008932935.1. The GC content of the type genome is 60.46 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Ceracula facunugo sp. nov.

Candidatus Ceracula facunugo (NL. fem. n. *facunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903875675*. The type genome for the species is the GenBank assembly GCA_903875675.1. The GC content of the type genome is 58.85 % and the genome length is 6.56 Mbp.

Description of *Candidatus* Ceracula famelicella sp. nov.

Candidatus Ceracula famelicella (NL. fem. n. *famelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp008932955*. The type genome for the species is the GenBank assembly GCA_008932955.1. The GC content of the type genome is 60.29 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Ceracula funametta sp. nov.

Candidatus Ceracula funametta (NL. fem. n. *funametta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903919975*. The type genome for the species is the GenBank assembly GCA_903941275.1. The GC content of the type genome is 57.34 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Ceracula galacibula sp. nov.

Candidatus Ceracula galacibula (NL. fem. n. *galacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903837825*. The type genome for the species is the GenBank assembly GCA_903837825.1. The GC content of the type genome is 55.12 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Ceracula galacitas sp. nov.

Candidatus Ceracula galacitas (NL. fem. n. *galacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp002307065*. The type genome for the species is the GenBank assembly GCA_002307065.1. The GC content of the type genome is 55.29 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Ceracula hexagatica sp. nov.

Candidatus Ceracula hexagatica (NL. fem. n. *hexagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp004294095*. The type genome for the species is the GenBank assembly GCA_013297845.1. The GC content of the type genome is 52.11 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Ceracula irrelentia sp. nov.

Candidatus Ceracula irrelentia (NL. fem. n. *irrelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903908495*. The type genome for the species is the GenBank assembly GCA_903908495.1. The GC content of the type genome is 62.55 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Ceracula manufitrix sp. nov.

Candidatus Ceracula manufitrix (NL. fem. n. *manufitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1315 sp014379305*. The type genome for the species is the GenBank assembly GCA_014379305.1. The GC content of the type genome is 55.06 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Ceracula paropiforma sp. nov.

Candidatus Ceracula paropiforma (NL. fem. n. *paropiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903906515*. The type genome for the species is the GenBank assembly GCA_903906515.1. The GC content of the type genome is 56.92 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Ceracula penicilenta sp. nov.

Candidatus Ceracula penicilenta (NL. fem. n. *penicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903827375*. The type genome for the species is the GenBank assembly GCA_903870255.1. The GC content of the type genome is 58.57 % and the genome length is 7.17 Mbp.

Description of *Candidatus* Ceracula ranunitio sp. nov.

Candidatus Ceracula ranunitio (NL. fem. n. *ranunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903826205*. The type genome for the species is the GenBank assembly GCA_903866835.1. The GC content of the type genome is 61.27 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Ceracula robigisca sp. nov.

Candidatus Ceracula robigisca (NL. fem. n. *robigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp005787565*. The type genome for the species is the GenBank assembly GCA_005787565.1. The GC content of the type genome is 60.21 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Ceracula scintentia sp. nov.

Candidatus Ceracula scintentia (NL. fem. n. *scintentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp003820635*. The type genome for the species is the GenBank assembly GCA_003820635.1. The GC content of the type genome is 60.79 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Ceracula senacimonia sp. nov.

Candidatus Ceracula senacimonia (NL. fem. n. *senacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903909905*. The type genome for the species is the GenBank assembly GCA_903909905.1. The GC content of the type genome is 57.76 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Ceracula sicaricella sp. nov.

Candidatus Ceracula sicaricella (NL. fem. n. *sicaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903888515*. The type genome for the species is the GenBank assembly GCA_903960095.1. The GC content of the type genome is 58.97 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Ceracula turicitas sp. nov.

Candidatus Ceracula turicitas (NL. fem. n. *turicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp009885905*. The type genome for the species is the GenBank assembly GCA_009885905.1. The GC content of the type genome is 52.29 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Ceracula venunilega sp. nov.

Candidatus Ceracula venunilega (NL. fem. n. *venunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1315 sp903934285*. The type genome for the species is the GenBank assembly GCA_903934285.1. The GC content of the type genome is 62.75 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Cerarana bisulitio sp. nov.

Candidatus Cerarana bisulitio (NL. fem. n. *bisulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753745 sp002753745*. The type genome for the species is the GenBank assembly GCA_002753745.1. The GC content of the type genome is 49.55 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Cerarana gen. nov.

Candidatus Cerarana (NL. fem. n. *Cerarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2753745*. The type species for the genus is *Candidatus* Cerarana bisulitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002753745*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosaculaceae.

Description of *Candidatus* Cerarana dinupimonas sp. nov.

Candidatus Cerarana dinupimonas (NL. fem. n. *dinupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753745 sp903908245*. The type genome for the species is the GenBank assembly GCA_903878855.1. The GC content of the type genome is 52.41 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Cerararia resurilenta sp. nov.

Candidatus Cerararia resurilenta (NL. fem. n. *resurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU065 sp001512545*. The type genome for the species is the GenBank assembly GCA_002385915.1. The GC content of the type genome is 48.87 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Cerararia gen. nov.

Candidatus Cerararia (NL. fem. n. *Cerararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU065*. The type species for the genus is *Candidatus* Cerararia resurilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerararia ceae.

Description of *Candidatus* Cerararia ceae fam. nov.

Candidatus Cerararia ceae (NL. fem. n. *Cerararia ceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU065.* The type genus for the taxon is *Candidatus* Cerararia .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cerararia les.

Description of *Candidatus* Cerararia les ord. nov.

Candidatus Cerararia les (NL. fem. n. *Cerararia les* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU065.* The type genus for the taxon is *Candidatus* Cerararia .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cerararia e.

Description of *Candidatus* Cerararia e class. nov.

Candidatus Cerararia e (NL. fem. n. *c__Cerararia e* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU065.* The type genus for the taxon is *Candidatus* Cerararia .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_G*.

Description of *Candidatus* Cerarella cacalatio sp. nov.

Candidatus Cerarella cacalatio (NL. fem. n. *cacalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin88 sp004375675*. The type genome for the species is the GenBank assembly GCA_004375675.1. The GC content of the type genome is 57.23 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Cerarella gen. nov.

Candidatus Cerarella (NL. fem. n. *Cerarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin88*. The type species for the genus is *Candidatus* Cerarella cacalatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin88*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerarellaceae.

Description of *Candidatus* Cerarellaceae fam. nov.

Candidatus Cerarellaceae (NL. fem. n. *Cerarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin88.* The type genus for the taxon is *Candidatus* Cerarella .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Cerarella edulcax sp. nov.

Candidatus Cerarella edulcax (NL. fem. n. *edulcax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *E44-bin88 sp013202445*. The type genome for the species is the GenBank assembly GCA_013202445.1. The GC content of the type genome is 54.91 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Cerarella invecicula sp. nov.

Candidatus Cerarella invecicula (NL. fem. n. *invecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin88 sp011176635*. The type genome for the species is the GenBank assembly GCA_011176635.1. The GC content of the type genome is 55.56 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Cerarida bonititica sp. nov.

Candidatus Cerarida bonititica (NL. fem. n. *bonititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBBL01 sp005239745*. The type genome for the species is the GenBank assembly GCA_005239745.1. The GC content of the type genome is 52.91 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Cerarida gen. nov.

Candidatus Cerarida (NL. fem. n. *Cerarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBBL01*. The type species for the genus is *Candidatus* Cerarida bonititica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBBL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceraridaceae.

Description of *Candidatus* Ceraridaceae fam. nov.

Candidatus Ceraridaceae (NL. fem. n. *Ceraridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBL01.* The type genus for the taxon is *Candidatus* Cerarida .

According to the original version of GTDB R06-RS202, this family belongs to the order

SBBL01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ceraridales.

Description of *Candidatus* Ceraridales ord. nov.

Candidatus Ceraridales (NL. fem. n. *Ceraridales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBL01.* The type genus for the taxon is *Candidatus* Cerarida .

According to the GTDB R06-RS202, this order belongs to the class *Nitrospiria*.

Description of *Candidatus* Cerarosa umbilatica sp. nov.

Candidatus Cerarosa umbilatica (NL. fem. n. *umbilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OSU-TB39 sp009392195*. The type genome for the species is the GenBank assembly GCA_009392195.1. The GC content of the type genome is 35.84 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Cerarosa gen. nov.

Candidatus Cerarosa (NL. fem. n. *Cerarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OSU-TB39*. The type species for the genus is *Candidatus* Cerarosa umbilatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OSU-TB39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerarosaceae.

Description of *Candidatus* Cerarosaceae fam. nov.

Candidatus Cerarosaceae (NL. fem. n. *Cerarosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OSU-TB39.* The type genus for the taxon is *Candidatus* Cerarosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Defulidales.

Description of *Candidatus* Cerarula dedigitudo sp. nov.

Candidatus Cerarula dedigitudo (NL. fem. n. *dedigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDSEA-S09-B13 sp002456995*. The type genome for the species is the GenBank assembly GCA_012960865.1. The GC content of the type genome is 51.6 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Cerarula gen. nov.

Candidatus Cerarula (NL. fem. n. *Cerarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REDSEA-S09-B13*. The type species for the genus is *Candidatus* Cerarula dedigitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA868*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotanaceae.

Description of *Candidatus* Cerarula exceressa sp. nov.

Candidatus Cerarula exceressa (NL. fem. n. *exceressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDSEA-S09-B13 sp002731295*. The type genome for the species is the GenBank assembly GCA_002731295.1. The GC content of the type genome is 52.41 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Cerarula forabedo sp. nov.

Candidatus Cerarula forabedo (NL. fem. n. *forabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDSEA-S09-B13 sp003447825*. The type genome for the species is the GenBank assembly GCA_003972885.1. The GC content of the type genome is 53.67

% and the genome length is 2.81 Mbp.

Description of *Candidatus* Cerarula ratifentia sp. nov.

Candidatus Cerarula ratifentia (NL. fem. n. *ratifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDSEA-S09-B13 sp001629395*. The type genome for the species is the GenBank assembly GCA_001629415.1. The GC content of the type genome is 52.09 % and the genome length is 2.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 34 - depth 200m".

Description of *Candidatus* Cerasibacillus pepenitoga sp. nov.

Candidatus Cerasibacillus pepenitoga (NL. fem. n. *pepenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cerasibacillus sp001310515*. The type genome for the species is the GenBank assembly RS_GCF_008039555.1. The GC content of the type genome is 34.83 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Cerebana accogilega sp. nov.

Candidatus Cerebana accogilega (NL. fem. n. *accogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp013140605*. The type genome for the species is the GenBank assembly GCA_013140605.1. The GC content of the type genome is 48.98 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Cerebana gen. nov.

Candidatus Cerebana (NL. fem. n. *Cerebana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB14*. The type species for the genus is *Candidatus* Cerebana accogilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Cerebana adnarimonas sp. nov.

Candidatus Cerebana adnarimonas (NL. fem. n. *adnarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp003599285*. The type genome for the species is the GenBank assembly GCA_003599285.1. The GC content of the type genome is 54.7 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Cerebana adpenibra sp. nov.

Candidatus Cerebana adpenibra (NL. fem. n. *adpenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp001567105*. The type genome for the species is the GenBank assembly GCA_001567105.1. The GC content of the type genome is 40.16 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Cerebana adtagimonas sp. nov.

Candidatus Cerebana adtagimonas (NL. fem. n. *adtagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp013388795*. The type genome for the species is the GenBank assembly GCA_013388795.1. The GC content of the type genome is 53.05 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Cerebana argimousia sp. nov.

Candidatus Cerebana argimousia (NL. fem. n. *argimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp003524705*. The type genome for the species is the GenBank assembly GCA_003524705.1. The GC content of the type genome is 40.74 % and the

genome length is 2.98 Mbp.

Description of *Candidatus* Cerebana crastitrix sp. nov.

Candidatus Cerebana crastitrix (NL. fem. n. *crastitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp008363285*. The type genome for the species is the GenBank assembly GCA_008363285.1. The GC content of the type genome is 53.63 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Cerebana defetitura sp. nov.

Candidatus Cerebana defetitura (NL. fem. n. *defetitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp013112685*. The type genome for the species is the GenBank assembly GCA_013112685.1. The GC content of the type genome is 55.71 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Cerebana dinupugo sp. nov.

Candidatus Cerebana dinupugo (NL. fem. n. *dinupugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp009885945*. The type genome for the species is the GenBank assembly GCA_009885945.1. The GC content of the type genome is 44.74 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Cerebana feficentia sp. nov.

Candidatus Cerebana feficentia (NL. fem. n. *feficentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp011046595*. The type genome for the species is the GenBank assembly GCA_011046595.1. The GC content of the type genome is 46.12 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Cerebana innupilega sp. nov.

Candidatus Cerebana innupilega (NL. fem. n. *innupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp009885525*. The type genome for the species is the GenBank assembly GCA_009885525.1. The GC content of the type genome is 49.2 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Cerebana luculibula sp. nov.

Candidatus Cerebana luculibula (NL. fem. n. *luculibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp903837815*. The type genome for the species is the GenBank assembly GCA_903837815.1. The GC content of the type genome is 54.5 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Cerebana melliliforma sp. nov.

Candidatus Cerebana melliliforma (NL. fem. n. *melliliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp002343775*. The type genome for the species is the GenBank assembly GCA_002344295.1. The GC content of the type genome is 53.28 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Cerebana necopilenta sp. nov.

Candidatus Cerebana necopilenta (NL. fem. n. *necopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp900696595*. The type genome for the species is the GenBank assembly GCA_003577345.1. The GC content of the type genome is 56.77 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Cerebana paropicella sp. nov.

Candidatus Cerebana paropicella (NL. fem. n. *paropicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp903914955*. The type genome for the species is the GenBank assembly GCA_903840345.1. The GC content of the type genome is 47.84 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Cerebana senipisca sp. nov.

Candidatus Cerebana senipisca (NL. fem. n. *senipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp014379595*. The type genome for the species is the GenBank assembly GCA_014379595.1. The GC content of the type genome is 44.68 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Cerebana terebatica sp. nov.

Candidatus Cerebana terebatica (NL. fem. n. *terebatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB14 sp002345215*. The type genome for the species is the GenBank assembly GCA_002344225.1. The GC content of the type genome is 40.81 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Cerebaria ludifibra sp. nov.

Candidatus Cerebaria ludifibra (NL. fem. n. *ludifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM13010 sp900754965*. The type genome for the species is the GenBank assembly GCA_900754965.1. The GC content of the type genome is 54.39 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Cerebaria gen. nov.

Candidatus Cerebaria (NL. fem. n. *Cerebaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM13010*. The type species for the genus is *Candidatus* Cerebaria ludifibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerebia gasifigena sp. nov.

Candidatus Cerebia gasifigena (NL. fem. n. *gasifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7741 sp900314575*. The type genome for the species is the GenBank assembly GCA_900314575.1. The GC content of the type genome is 68.91 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Cerebia gen. nov.

Candidatus Cerebia (NL. fem. n. *Cerebia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7741*. The type species for the genus is *Candidatus* Cerebia gasifigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerebia purulastra sp. nov.

Candidatus Cerebia purulastra (NL. fem. n. *purulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7741 sp900314495*. The type genome for the species is the GenBank assembly GCA_900314495.1. The GC content of the type genome is 64.07 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Cerebida hirunitia sp. nov.

Candidatus Cerebida hirunitia (NL. fem. n. *hirunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMJO01 sp900299395*. The type genome for the species is the GenBank assembly GCA_900299395.1. The GC content of the type genome is 47.76 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Cerebida gen. nov.

Candidatus Cerebida (NL. fem. n. *Cerebida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OMJO01*. The type species for the genus is *Candidatus* Cerebida hirunitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OMJO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerebidaceae.

Description of *Candidatus* Cerebidaceae fam. nov.

Candidatus Cerebidaceae (NL. fem. n. *Cerebidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OMJO01.* The type genus for the taxon is *Candidatus* Cerebida .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Cerebosa dapifibra sp. nov.

Candidatus Cerebosa dapifibra (NL. fem. n. *dapifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp900544625*. The type genome for the species is the GenBank assembly RS_GCF_900761245.1. The GC content of the type genome is 26.41 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Cerebosa gen. nov.

Candidatus Cerebosa (NL. fem. n. *Cerebosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-460*. The type species for the genus is *Candidatus* Cerebosa dapifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Cerebosa deforax sp. nov.

Candidatus Cerebosa deforax (NL. fem. n. *deforax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp002439555*. The type genome for the species is the GenBank assembly GCA_002404925.1. The GC content of the type genome is 26.06 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Cerebosa exceritrix sp. nov.

Candidatus Cerebosa exceritrix (NL. fem. n. *exceritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp900751815*. The type genome for the species is the GenBank assembly RS_GCF_900751815.1. The GC content of the type genome is 27.53 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Cerebosa feficibra sp. nov.

Candidatus Cerebosa feficibra (NL. fem. n. *feficibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp000437355*. The type genome for the species is the GenBank assembly GCA_000437355.1. The GC content of the type genome is 26.31 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Cerebosa fumacax sp. nov.

Candidatus Cerebosa fumacax (NL. fem. n. *fumacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp000437315*. The type genome for the species is the GenBank assembly GCA_000437315.1. The GC content of the type genome is 25.28 % and the genome length is 1.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Cerebosa ignicilega sp. nov.

Candidatus Cerebosa ignicilega (NL. fem. n. *ignicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp012799635*. The type genome for the species is the GenBank assembly GCA_012799635.1. The GC content of the type genome is 26.87 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Cerebosa immatilenta sp. nov.

Candidatus Cerebosa immatilenta (NL. fem. n. *immatilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp902797105*. The type genome for the species is the GenBank assembly GCA_902797105.1. The GC content of the type genome is 26.74 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Cerebosa monopatica sp. nov.

Candidatus Cerebosa monopatica (NL. fem. n. *monopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp000438075*. The type genome for the species is the GenBank assembly GCA_900549315.1. The GC content of the type genome is 26.61 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Cerebosa navicimonia sp. nov.

Candidatus Cerebosa navicimonia (NL. fem. n. *navicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp900546715*. The type genome for the species is the GenBank assembly GCA_900546715.1. The GC content of the type genome is 27.28 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Cerebosa vinacitoga sp. nov.

Candidatus Cerebosa vinacitoga (NL. fem. n. *vinacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-460 sp900551525*. The type genome for the species is the GenBank assembly GCA_900551525.1. The GC content of the type genome is 26.73 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Cerebula turifitica sp. nov.

Candidatus Cerebula turifitica (NL. fem. n. *turifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10001 sp003512705*. The type genome for the species is the GenBank assembly GCA_003512705.1. The GC content of the type genome is 44.0 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Cerebula gen. nov.

Candidatus Cerebula (NL. fem. n. *Cerebula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10001*. The type species for the genus is *Candidatus* Cerebula turifitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redacellaceae.

Description of *Candidatus* Cereibacter immusigena sp. nov.

Candidatus Cereibacter immusigena (NL. fem. n. *immusigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cereibacter_A sp002407205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002407205.1. The GC content of the type genome is 68.54 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Cerevana malogitrix sp. nov.

Candidatus Cerevana malogitrix (NL. fem. n. *malogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2712665 sp002938035*. The type genome for the species is the GenBank assembly GCA_002712665.1. The GC content of the type genome is 44.66 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Cerevana gen. nov.

Candidatus Cerevana (NL. fem. n. *Cerevana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2712665*. The type species for the genus is *Candidatus* Cerevana malogitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubanaceae.

Description of *Candidatus* Cerevana modifitio sp. nov.

Candidatus Cerevana modifitio (NL. fem. n. *modifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2712665 sp012963665*. The type genome for the species is the GenBank assembly GCA_012963665.1. The GC content of the type genome is 44.85 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Cerevaria tirunessa sp. nov.

Candidatus Cerevaria tirunessa (NL. fem. n. *tirunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISCU01 sp903883965*. The type genome for the species is the GenBank assembly GCA_903878395.1. The GC content of the type genome is 36.31 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Cerevaria gen. nov.

Candidatus Cerevaria (NL. fem. n. *Cerevaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CAISCU01*. The type species for the genus is *Candidatus* Cerevaria tirunessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefananaceae.

Description of *Candidatus* Cerevella sonabastra sp. nov.

Candidatus Cerevella sonabastra (NL. fem. n. *sonabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MES13 sp009711765*. The type genome for the species is the GenBank assembly GCA_009711765.1. The GC content of the type genome is 27.63 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Cerevella gen. nov.

Candidatus Cerevella (NL. fem. n. *Cerevella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MES13*. The type species for the genus is *Candidatus* Cerevella sonabastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MES13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerevellaceae.

Description of *Candidatus* Cerevellaceae fam. nov.

Candidatus Cerevellaceae (NL. fem. n. *Cerevellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MES13.* The type genus for the taxon is *Candidatus* Cerevella .

According to GTDB R06-RS202, this family belongs to the order *Tissierellales*.

Description of *Candidatus* Cerevella tolutisca sp. nov.

Candidatus Cerevella tolutisca (NL. fem. n. *tolutisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MES13 sp009711785*. The type genome for the species is the GenBank assembly GCA_009711785.1. The GC content of the type genome is 27.72 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Cerevia indepitica sp. nov.

Candidatus Cerevia indepitica (NL. fem. n. *indepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3496 sp002377645*. The type genome for the species is the GenBank assembly GCA_002377645.1. The GC content of the type genome is 35.26 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Cerevia gen. nov.

Candidatus Cerevia (NL. fem. n. *Cerevia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3496*. The type species for the genus is *Candidatus* Cerevia indepitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3496*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cereviaceae.

Description of *Candidatus* Cereviaceae fam. nov.

Candidatus Cereviaceae (NL. fem. n. *Cereviaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3496.* The type genus for the taxon is *Candidatus* Cerevia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Turifosales.

Description of *Candidatus* Cerevida loripibula sp. nov.

Candidatus Cerevida loripibula (NL. fem. n. *loripibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBEU01 sp903952265*. The type genome for the species is the GenBank assembly GCA_903819765.1. The GC content of the type genome is 36.67 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Cerevida gen. nov.

Candidatus Cerevida (NL. fem. n. *Cerevida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBEU01*. The type species for the genus is *Candidatus* Cerevida loripibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerevosa milifatio sp. nov.

Candidatus Cerevosa milifatio (NL. fem. n. *milifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYGM01 sp005799545*. The type genome for the species is the GenBank assembly GCA_005776895.1. The GC content of the type genome is 66.97 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Cerevosa gen. nov.

Candidatus Cerevosa (NL. fem. n. *Cerevosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYGM01*. The type species for the genus is *Candidatus* Cerevosa milifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Cerevula catobisca sp. nov.

Candidatus Cerevula catobisca (NL. fem. n. *catobisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CSSED10-376 sp003557445*. The type genome for the species is the GenBank assembly GCA_003557445.1. The GC content of the type genome is 32.34 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Cerevula gen. nov.

Candidatus Cerevula (NL. fem. n. *Cerevula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED10-376*. The type species for the genus is *Candidatus* Cerevula catobisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSSED10-376*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerevulaceae.

Description of *Candidatus* Cerevulaceae fam. nov.

Candidatus Cerevulaceae (NL. fem. n. *Cerevulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSSED10-376.* The type genus for the taxon is *Candidatus* Cerevula .

According to GTDB R06-RS202, this family belongs to the order *Halanaerobiales*.

Description of *Candidatus* Cerifaria actaribula sp. nov.

Candidatus Cerifaria actaribula (NL. fem. n. *actaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MARSEILLE-P3954 sp900604345*. The type genome for the species is the GenBank assembly RS_GCF_900604345.1. The GC content of the type genome is 60.82 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Cerifaria gen. nov.

Candidatus Cerifaria (NL. fem. n. *Cerifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MARSEILLE-P3954*. The type species for the genus is *Candidatus* Cerifaria actaribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MARSEILLE-P3954*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerifariaceae.

Description of *Candidatus* Cerifariaceae fam. nov.

Candidatus Cerifariaceae (NL. fem. n. *Cerifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MARSEILLE-P3954.* The type genus for the taxon is *Candidatus* Cerifaria .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Cerifella acontilega sp. nov.

Candidatus Cerifella acontilega (NL. fem. n. *acontilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003135495*. The type genome for the species is the GenBank assembly GCA_003135495.1. The GC content of the type genome is 55.03 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Cerifella gen. nov.

Candidatus Cerifella (NL. fem. n. *Cerifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-209*. The type species for the genus is *Candidatus* Cerifella acontilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerifella cunabedo sp. nov.

Candidatus Cerifella cunabedo (NL. fem. n. *cunabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003132325*. The type genome for the species is the GenBank assembly GCA_003132325.1. The GC content of the type genome is 58.58 %

and the genome length is 5.32 Mbp.

Description of *Candidatus* Cerifella domicessa sp. nov.

Candidatus Cerifella domicessa (NL. fem. n. *domicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003138955*. The type genome for the species is the GenBank assembly GCA_003138955.1. The GC content of the type genome is 58.58 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Cerifella doxolilega sp. nov.

Candidatus Cerifella doxolilega (NL. fem. n. *doxolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003162255*. The type genome for the species is the GenBank assembly GCA_003162255.1. The GC content of the type genome is 58.01 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Cerifella fetulago sp. nov.

Candidatus Cerifella fetulago (NL. fem. n. *fetulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003162935*. The type genome for the species is the GenBank assembly GCA_003135275.1. The GC content of the type genome is 58.88 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Cerifella malagax sp. nov.

Candidatus Cerifella malagax (NL. fem. n. *malagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003168235*. The type genome for the species is the GenBank assembly GCA_003139375.1. The GC content of the type genome is 57.67 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Cerifella malivibra sp. nov.

Candidatus Cerifella malivibra (NL. fem. n. *malivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003139095*. The type genome for the species is the GenBank assembly GCA_003168695.1. The GC content of the type genome is 58.86 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Cerifella peropilega sp. nov.

Candidatus Cerifella peropilega (NL. fem. n. *peropilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003134435*. The type genome for the species is the GenBank assembly GCA_003134435.1. The GC content of the type genome is 58.13 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Cerifella pocilatio sp. nov.

Candidatus Cerifella pocilatio (NL. fem. n. *pocilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003139995*. The type genome for the species is the GenBank assembly GCA_003160385.1. The GC content of the type genome is 58.11 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Cerifella reduvax sp. nov.

Candidatus Cerifella reduvax (NL. fem. n. *reduvax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003131315*. The type genome for the species is the GenBank assembly GCA_003131315.1. The GC content of the type genome is 58.25 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Cerifella subofatica sp. nov.

Candidatus Cerifella subofatica (NL. fem. n. *subofatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003152795*. The type genome for the species is the GenBank assembly GCA_003152795.1. The GC content of the type genome is 59.05 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Cerifella uxorcetta sp. nov.

Candidatus Cerifella uxorcetta (NL. fem. n. *uxorcetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003139975*. The type genome for the species is the GenBank assembly GCA_003139975.1. The GC content of the type genome is 58.47 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Cerifella vecorousia sp. nov.

Candidatus Cerifella vecorousia (NL. fem. n. *vecorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-209 sp003132405*. The type genome for the species is the GenBank assembly GCA_003153635.1. The GC content of the type genome is 56.63 % and the genome length is 6.12 Mbp.

Description of *Candidatus* Cerifia lanifousia sp. nov.

Candidatus Cerifia lanifousia (NL. fem. n. *lanifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWEI01 sp003553465*. The type genome for the species is the GenBank assembly GCA_003553465.1. The GC content of the type genome is 50.42 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Cerifia gen. nov.

Candidatus Cerifia (NL. fem. n. *Cerifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWEI01*. The type species for the genus is *Candidatus* Cerifia lanifousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinulaceae.

Description of *Candidatus* Cerifida giganentia sp. nov.

Candidatus Cerifida giganentia (NL. fem. n. *giganentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-58-11 sp001770235*. The type genome for the species is the GenBank assembly GCA_001770235.1. The GC content of the type genome is 58.14 % and the genome length is 2.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Cerifida gen. nov.

Candidatus Cerifida (NL. fem. n. *Cerifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-58-11*. The type species for the genus is *Candidatus* Cerifida giganentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-58-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerifidaceae.

Description of *Candidatus* Cerifidaceae fam. nov.

Candidatus Cerifidaceae (NL. fem. n. *Cerifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-58-11.* The type genus for the taxon is *Candidatus* Cerifida .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Cerifosa cenobigena sp. nov.

Candidatus Cerifosa cenobigena (NL. fem. n. *cenobigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin94 sp009844885*. The type genome for the species is the GenBank assembly GCA_009841825.1. The GC content of the type genome is 66.89 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Cerifosa gen. nov.

Candidatus Cerifosa (NL. fem. n. *Cerifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin94*. The type species for the genus is *Candidatus* Cerifosa cenobigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Cerifosa hexapessa sp. nov.

Candidatus Cerifosa hexapessa (NL. fem. n. *hexapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin94 sp009840215*. The type genome for the species is the GenBank assembly GCA_009839035.1. The GC content of the type genome is 67.18 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Cerifosa papilitio sp. nov.

Candidatus Cerifosa papilitio (NL. fem. n. *papilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin94 sp009838975*. The type genome for the species is the GenBank assembly GCA_009839265.1. The GC content of the type genome is 67.43 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Cerifosa pinacetta sp. nov.

Candidatus Cerifosa pinacetta (NL. fem. n. *pinacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Bin94 sp009841475*. The type genome for the species is the GenBank assembly GCA_009836825.1. The GC content of the type genome is 67.82 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Cerifosa refunilega sp. nov.

Candidatus Cerifosa refunilega (NL. fem. n. *refunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin94 sp009841165*. The type genome for the species is the GenBank assembly GCA_009841165.1. The GC content of the type genome is 67.34 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Cerifosa vicecago sp. nov.

Candidatus Cerifosa vicecago (NL. fem. n. *vicecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin94 sp002238865*. The type genome for the species is the GenBank assembly GCA_002238865.1. The GC content of the type genome is 66.9 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Cerifula bipenicella sp. nov.

Candidatus Cerifula bipenicella (NL. fem. n. *bipenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAALKR01 sp011087955*. The type genome for the species is the GenBank assembly GCA_011087955.1. The GC content of the type genome is 44.57 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Cerifula gen. nov.

Candidatus Cerifula (NL. fem. n. *Cerifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAALKR01*. The type species for the genus is *Candidatus* Cerifula bipenicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAALKR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Cerifulaceae.

Description of *Candidatus* Cerifulaceae fam. nov.

Candidatus Cerifulaceae (NL. fem. n. *Cerifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAALKR01.* The type genus for the taxon is *Candidatus* Cerifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIPTA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cocibiales.

Description of *Candidatus* Cerimana affunessa sp. nov.

Candidatus Cerimana affunessa (NL. fem. n. *affunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2708415 sp013215815*. The type genome for the species is the GenBank assembly GCA_013215815.1. The GC content of the type genome is 43.15 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Cerimana gen. nov.

Candidatus Cerimana (NL. fem. n. *Cerimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2708415*. The type species for the genus is *Candidatus* Cerimana affunessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerimana fatilitoga sp. nov.

Candidatus Cerimana fatilitoga (NL. fem. n. *fatilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2708415 sp002708415*. The type genome for the species is the GenBank assembly GCA_002708415.1. The GC content of the type genome is 41.55 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Cerimana metabimonas sp. nov.

Candidatus Cerimana metabimonas (NL. fem. n. *metabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2708415 sp009995595*. The type genome for the species is the GenBank assembly GCA_009995595.1. The GC content of the type genome is 43.75 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Cerimaria timefilenta sp. nov.

Candidatus Cerimaria timefilenta (NL. fem. n. *timefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *9FT-COMBO-42-15 sp001803815*. The type genome for the species is the GenBank assembly GCA_001803815.1. The GC content of the type genome is 41.42 % and the genome length is 1.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 19ft depth".

Description of *Candidatus* Cerimaria gen. nov.

Candidatus Cerimaria (NL. fem. n. *Cerimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *9FT-COMBO-42-15*. The type species for the genus is *Candidatus* Cerimaria timefilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *9FT-COMBO-42-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerimariaceae.

Description of *Candidatus* Cerimariaceae fam. nov.

Candidatus Cerimariaceae (NL. fem. n. *Cerimariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *9FT-COMBO-42-15.* The type genus for the taxon is *Candidatus* Cerimaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *9FT-COMBO-42-15*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the order *Candidatus* Cerimariales.

Description of *Candidatus* Cerimariales ord. nov.

Candidatus Cerimariales (NL. fem. n. *Cerimariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *9FT-COMBO-42-15.* The type genus for the taxon is *Candidatus* Cerimaria .

According to the GTDB R06-RS202, this order belongs to the class *Nitrospiria*.

Description of *Candidatus* Cerimella modifax sp. nov.

Candidatus Cerimella modifax (NL. fem. n. *modifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-104 sp003231075*. The type genome for the species is the GenBank assembly GCA_003231075.1. The GC content of the type genome is 38.52 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Cerimella gen. nov.

Candidatus Cerimella (NL. fem. n. *Cerimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-104*. The type species for the genus is *Candidatus* Cerimella modifax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-104*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerimellaceae.

Description of *Candidatus* Cerimellaceae fam. nov.

Candidatus Cerimellaceae (NL. fem. n. *Cerimellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-104.* The type genus for the taxon is *Candidatus* Cerimella .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Bucolosales.

Description of *Candidatus* Cerimia acropibra sp. nov.

Candidatus Cerimia acropibra (NL. fem. n. *acropibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIWT01 sp014360825*. The type genome for the species is the GenBank assembly GCA_014360825.1. The GC content of the type genome is 56.84 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Cerimia gen. nov.

Candidatus Cerimia (NL. fem. n. *Cerimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIWT01*. The type species for the genus is *Candidatus* Cerimia acropibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACIWT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerimiaceae.

Description of *Candidatus* Cerimiaceae fam. nov.

Candidatus Cerimiaceae (NL. fem. n. *Cerimiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIWT01.* The type genus for the taxon is *Candidatus* Cerimia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2200*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homunulales.

Description of *Candidatus* Cerimida bigarisca sp. nov.

Candidatus Cerimida bigarisca (NL. fem. n. *bigarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1 sp903927505*. The type genome for the species is the GenBank

assembly GCA_903899455.1. The GC content of the type genome is 36.56 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Cerimida gen. nov.

Candidatus Cerimida (NL. fem. n. *Cerimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1*. The type species for the genus is *Candidatus* Cerimida bigarisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefananaceae.

Description of *Candidatus* Cerimida impugitura sp. nov.

Candidatus Cerimida impugitura (NL. fem. n. *impugitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1 sp014376805*. The type genome for the species is the GenBank assembly GCA_014376805.1. The GC content of the type genome is 35.58 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Cerimida lenunitoga sp. nov.

Candidatus Cerimida lenunitoga (NL. fem. n. *lenunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1 sp002256395*. The type genome for the species is the GenBank assembly GCA_002256395.1. The GC content of the type genome is 36.28 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Cerimida occumitura sp. nov.

Candidatus Cerimida occumitura (NL. fem. n. *occumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1 sp903834625*. The type genome for the species is the GenBank assembly GCA_903834625.1. The GC content of the type genome is 37.58 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Cerimosa pavimugo sp. nov.

Candidatus Cerimosa pavimugo (NL. fem. n. *pavimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-33-14 sp001820215*. The type genome for the species is the GenBank assembly GCA_001820215.1. The GC content of the type genome is 33.01 % and the genome length is 0.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cerimosa gen. nov.

Candidatus Cerimosa (NL. fem. n. *Cerimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-33-14*. The type species for the genus is *Candidatus* Cerimosa pavimugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerimula lacinedo sp. nov.

Candidatus Cerimula lacinedo (NL. fem. n. *lacinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1081 sp003963305*. The type genome for the species is the GenBank assembly GCA_003963305.1. The GC content of the type genome is 50.29 % and the genome length is 7.48 Mbp.

Description of *Candidatus* Cerimula gen. nov.

Candidatus Cerimula (NL. fem. n. *Cerimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1081*. The type species for the genus is *Candidatus* Cerimula lacinedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerimula nivomitas sp. nov.

Candidatus Cerimula nivomitas (NL. fem. n. *nivomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1081 sp003153555*. The type genome for the species is the GenBank assembly GCA_003153555.1. The GC content of the type genome is 48.48 % and the genome length is 7.84 Mbp.

Description of *Candidatus* Cerimula repecetta sp. nov.

Candidatus Cerimula repecetta (NL. fem. n. *repecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1081 sp003151275*. The type genome for the species is the GenBank assembly GCA_003151275.1. The GC content of the type genome is 48.47 % and the genome length is 8.36 Mbp.

Description of *Candidatus* Cerofana annicugo sp. nov.

Candidatus Cerofana annicugo (NL. fem. n. *annicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp000403495*. The type genome for the species is the GenBank assembly RS_GCF_000403495.2. The GC content of the type genome is 40.95 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Cerofana gen. nov.

Candidatus Cerofana (NL. fem. n. *Cerofana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-95*. The type species for the genus is *Candidatus* Cerofana annicugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerofana caselentia sp. nov.

Candidatus Cerofana caselentia (NL. fem. n. *caselentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp002490775*. The type genome for the species is the GenBank assembly GCA_002490775.1. The GC content of the type genome is 40.21 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Cerofana corocitas sp. nov.

Candidatus Cerofana corocitas (NL. fem. n. *corocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp003612395*. The type genome for the species is the GenBank assembly RS_GCF_003612395.1. The GC content of the type genome is 43.48 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Cerofana decapedo sp. nov.

Candidatus Cerofana decapedo (NL. fem. n. *decapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp900554925*. The type genome for the species is the GenBank assembly GCA_900554925.1. The GC content of the type genome is 42.81 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Cerofana depicitio sp. nov.

Candidatus Cerofana depicitio (NL. fem. n. *depicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp900066375*. The type genome for the species is the GenBank assembly GCA_900066375.1. The GC content of the type genome is 44.43 % and the genome length is 3.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Cerofana dicibitoga sp. nov.

Candidatus Cerofana dicibitoga (NL. fem. n. *dicibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp000438155*. The type genome for the species is the

GenBank assembly GCA_003521595.1. The GC content of the type genome is 43.88 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Cerofana exaspousia sp. nov.

Candidatus Cerofana exaspousia (NL. fem. n. *exaspousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp009917485*. The type genome for the species is the GenBank assembly RS_GCF_009917485.1. The GC content of the type genome is 42.79 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Cerofana excanatica sp. nov.

Candidatus Cerofana excanatica (NL. fem. n. *excanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp009917455*. The type genome for the species is the GenBank assembly RS_GCF_009917455.1. The GC content of the type genome is 46.32 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Cerofana favilitudo sp. nov.

Candidatus Cerofana favilitudo (NL. fem. n. *favilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp009774465*. The type genome for the species is the GenBank assembly GCA_009774465.1. The GC content of the type genome is 41.33 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Cerofana infucibra sp. nov.

Candidatus Cerofana infucibra (NL. fem. n. *infucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp002492465*. The type genome for the species is the GenBank assembly GCA_002492465.1. The GC content of the type genome is 45.25 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Cerofana innupifica sp. nov.

Candidatus Cerofana innupifica (NL. fem. n. *innupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp011959285*. The type genome for the species is the GenBank assembly RS_GCF_011959285.1. The GC content of the type genome is 43.59 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Cerofana penurigena sp. nov.

Candidatus Cerofana penurigena (NL. fem. n. *penurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp900553305*. The type genome for the species is the GenBank assembly RS_GCF_900772925.1. The GC content of the type genome is 44.99 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Cerofana ridibitia sp. nov.

Candidatus Cerofana ridibitia (NL. fem. n. *ridibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp000436115*. The type genome for the species is the GenBank assembly GCA_000436115.1. The GC content of the type genome is 45.67 % and the genome length is 2.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Cerofana semipibula sp. nov.

Candidatus Cerofana semipibula (NL. fem. n. *semipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp902766365*. The type genome for the species is the GenBank assembly GCA_902766365.1. The GC content of the type genome is 45.34 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Cerofana soniviforma sp. nov.

Candidatus Cerofana soniviforma (NL. fem. n. *soniviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-95 sp009911035*. The type genome for the species is the GenBank assembly RS_GCF_009911035.1. The GC content of the type genome is 44.5 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Cerofaria cunabatica sp. nov.

Candidatus Cerofaria cunabatica (NL. fem. n. *cunabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYBN01 sp903850505*. The type genome for the species is the GenBank assembly GCA_903850505.1. The GC content of the type genome is 66.48 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Cerofaria gen. nov.

Candidatus Cerofaria (NL. fem. n. *Cerofaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYBN01*. The type species for the genus is *Candidatus* Cerofaria cunabatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubigariaceae.

Description of *Candidatus* Cerofaria curabentia sp. nov.

Candidatus Cerofaria curabentia (NL. fem. n. *curabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYBN01 sp903869075*. The type genome for the species is the GenBank assembly GCA_903869075.1. The GC content of the type genome is 67.89 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Cerofaria desuricula sp. nov.

Candidatus Cerofaria desuricula (NL. fem. n. *desuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYBN01 sp903896545*. The type genome for the species is the GenBank assembly GCA_903900455.1. The GC content of the type genome is 64.37 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Cerofaria dilacitrix sp. nov.

Candidatus Cerofaria dilacitrix (NL. fem. n. *dilacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYBN01 sp903929795*. The type genome for the species is the GenBank assembly GCA_903928185.1. The GC content of the type genome is 66.81 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Cerofaria oratrifica sp. nov.

Candidatus Cerofaria oratrifica (NL. fem. n. *oratrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYBN01 sp903924465*. The type genome for the species is the GenBank assembly GCA_903924465.1. The GC content of the type genome is 64.51 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Cerofaria penurago sp. nov.

Candidatus Cerofaria penurago (NL. fem. n. *penurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYBN01 sp903842345*. The type genome for the species is the GenBank assembly GCA_903842345.1. The GC content of the type genome is 66.33 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Cerofia demagiforma sp. nov.

Candidatus Cerofia demagiforma (NL. fem. n. *demagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTFX01 sp011523825*. The type genome for the species is the GenBank assembly GCA_011523825.1. The GC content of the type genome is 67.45 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Cerofia gen. nov.

Candidatus Cerofia (NL. fem. n. *Cerofia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTFX01*. The type species for the genus is *Candidatus* Cerofia demagiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TK06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaculaceae.

Description of *Candidatus* Cerofia galacastra sp. nov.

Candidatus Cerofia galacastra (NL. fem. n. *galacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTFX01 sp009843525*. The type genome for the species is the GenBank assembly GCA_009836375.1. The GC content of the type genome is 67.11 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Cerofida vigenatio sp. nov.

Candidatus Cerofida vigenatio (NL. fem. n. *vigenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-46-19 sp001872925*. The type genome for the species is the GenBank assembly GCA_002781825.1. The GC content of the type genome is 45.8 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Cerofida gen. nov.

Candidatus Cerofida (NL. fem. n. *Cerofida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-46-19*. The type species for the genus is *Candidatus* Cerofida vigenatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Cerofosa cocoditudo sp. nov.

Candidatus Cerofosa cocoditudo (NL. fem. n. *cocoditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-37-11 sp001776865*. The type genome for the species is the GenBank assembly GCA_001777095.1. The GC content of the type genome is 36.69 % and the genome length is 0.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Cerofosa gen. nov.

Candidatus Cerofosa (NL. fem. n. *Cerofosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-37-11*. The type species for the genus is *Candidatus* Cerofosa cocoditudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Cerofula adpanetta sp. nov.

Candidatus Cerofula adpanetta (NL. fem. n. *adpanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5278 sp002427165*. The type genome for the species is the GenBank assembly GCA_002427165.1. The GC content of the type genome is 47.47 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Cerofula gen. nov.

Candidatus Cerofula (NL. fem. n. *Cerofula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5278*. The type species for the genus is *Candidatus* Cerofula adpanetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU084*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Sonabellaceae.

Description of *Candidatus* Cerofula docibitura sp. nov.

Candidatus Cerofula docibitura (NL. fem. n. *docibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5278 sp002409105*. The type genome for the species is the GenBank assembly GCA_002411405.1. The GC content of the type genome is 48.98 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Ceromana pocilessa sp. nov.

Candidatus Ceromana pocilessa (NL. fem. n. *pocilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRAY01 sp903876665*. The type genome for the species is the GenBank assembly GCA_903939345.1. The GC content of the type genome is 52.3 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Ceromana gen. nov.

Candidatus Ceromana (NL. fem. n. *Ceromana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRAY01*. The type species for the genus is *Candidatus* Ceromana pocilessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ceromaria decucibra sp. nov.

Candidatus Ceromaria decucibra (NL. fem. n. *decucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKKN01 sp007121455*. The type genome for the species is the GenBank assembly GCA_007126965.1. The GC content of the type genome is 66.39 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Ceromaria gen. nov.

Candidatus Ceromaria (NL. fem. n. *Ceromaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKKN01*. The type species for the genus is *Candidatus* Ceromaria decucibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Ceromia bipenimonia sp. nov.

Candidatus Ceromia bipenimonia (NL. fem. n. *bipenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG343 sp902789225*. The type genome for the species is the GenBank assembly GCA_902789225.1. The GC content of the type genome is 26.12 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Ceromia gen. nov.

Candidatus Ceromia (NL. fem. n. *Ceromia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG343*. The type species for the genus is *Candidatus* Ceromia bipenimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Ceromia munimax sp. nov.

Candidatus Ceromia munimax (NL. fem. n. *munimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG343 sp900317975*. The type genome for the species is the GenBank assembly GCA_902787765.1. The GC content of the type genome is 26.38 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Ceromida defalivita sp. nov.

Candidatus Ceromida defalivita (NL. fem. n. *defalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3939 sp002385705*. The type genome for the species is the GenBank assembly GCA_012842865.1. The GC content of the type genome is 62.41 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Ceromida gen. nov.

Candidatus Ceromida (NL. fem. n. *Ceromida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3939*. The type species for the genus is *Candidatus* Ceromida defalivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3939*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceromidaceae.

Description of *Candidatus* Ceromidaceae fam. nov.

Candidatus Ceromidaceae (NL. fem. n. *Ceromidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3939.* The type genus for the taxon is *Candidatus* Ceromida .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Ceromosa abpatimonia sp. nov.

Candidatus Ceromosa abpatimonia (NL. fem. n. *abpatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1740 sp002315715*. The type genome for the species is the GenBank assembly GCA_002315715.1. The GC content of the type genome is 50.73 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Ceromosa gen. nov.

Candidatus Ceromosa (NL. fem. n. *Ceromosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1740*. The type species for the genus is *Candidatus* Ceromosa abpatimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Ceromosa carucatio sp. nov.

Candidatus Ceromosa carucatio (NL. fem. n. *carucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1740 sp902778985*. The type genome for the species is the GenBank assembly GCA_902778985.1. The GC content of the type genome is 60.04 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Ceromosa decunicella sp. nov.

Candidatus Ceromosa decunicella (NL. fem. n. *decunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1740 sp900767415*. The type genome for the species is the GenBank assembly RS_GCF_900767415.1. The GC content of the type genome is 54.73 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Ceromosa gasomousia sp. nov.

Candidatus Ceromosa gasomousia (NL. fem. n. *gasomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1740 sp902796505*. The type genome for the species is the GenBank assembly GCA_902796505.1. The GC content of the type genome is 57.74 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Ceromosa locelatica sp. nov.

Candidatus Ceromosa locelatica (NL. fem. n. *locelatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1740 sp902779285*. The type genome for the species is the GenBank assembly GCA_902779285.1. The GC content of the type genome is 59.29 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Ceromosa manufitia sp. nov.

Candidatus Ceromosa manufitia (NL. fem. n. *manufitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1740 sp004558975*. The type genome for the species is the GenBank assembly RS_GCF_900766365.1. The GC content of the type genome is 58.07 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Ceromula dicimivita sp. nov.

Candidatus Ceromula dicimivita (NL. fem. n. *dicimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTCHB3 sp008363265*. The type genome for the species is the GenBank assembly GCA_008363265.1. The GC content of the type genome is 47.98 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Ceromula gen. nov.

Candidatus Ceromula (NL. fem. n. *Ceromula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UTCHB3*. The type species for the genus is *Candidatus* Ceromula dicimivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ceromula sifunilenta sp. nov.

Candidatus Ceromula sifunilenta (NL. fem. n. *sifunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTCHB3 sp002050155*. The type genome for the species is the GenBank assembly GCA_008933765.1. The GC content of the type genome is 42.28 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Cerucana octobedo sp. nov.

Candidatus Cerucana octobedo (NL. fem. n. *octobedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WM01 sp004570605*. The type genome for the species is the GenBank assembly RS_GCF_004570605.1. The GC content of the type genome is 33.18 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Cerucana gen. nov.

Candidatus Cerucana (NL. fem. n. *Cerucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WM01*. The type species for the genus is *Candidatus* Cerucana octobedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerucana velivax sp. nov.

Candidatus Cerucana velivax (NL. fem. n. *velivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WM01 sp013874835*. The type genome for the species is the GenBank assembly RS_GCF_010892375.1. The GC content of the type genome is 33.58 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Cerucaria futatilega sp. nov.

Candidatus Cerucaria futatilega (NL. fem. n. *futatilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACOMY01 sp014324045*. The type genome for the species is the GenBank assembly GCA_014324045.1. The GC content of the type genome is 63.24 %

and the genome length is 2.82 Mbp.

Description of *Candidatus* Cerucaria gen. nov.

Candidatus Cerucaria (NL. fem. n. *Cerucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACOMY01*. The type species for the genus is *Candidatus* Cerucaria futatilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACOMY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerucariaceae.

Description of *Candidatus* Cerucariaceae fam. nov.

Candidatus Cerucariaceae (NL. fem. n. *Cerucariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACOMY01.* The type genus for the taxon is *Candidatus* Cerucaria .

According to GTDB R06-RS202, this family belongs to the order *Kiloniellales*.

Description of *Candidatus* Cerucella bicubitoga sp. nov.

Candidatus Cerucella bicubitoga (NL. fem. n. *bicubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSF01 sp012523975*. The type genome for the species is the GenBank assembly GCA_012523975.1. The GC content of the type genome is 43.35 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Cerucella gen. nov.

Candidatus Cerucella (NL. fem. n. *Cerucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSF01*. The type species for the genus is *Candidatus* Cerucella bicubitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYSF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Cerucellaceae.

Description of *Candidatus* Cerucellaceae fam. nov.

Candidatus Cerucellaceae (NL. fem. n. *Cerucellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYSF01*. The type genus for the taxon is *Candidatus* Cerucella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYSF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cerucellales.

Description of *Candidatus* Cerucellales ord. nov.

Candidatus Cerucellales (NL. fem. n. *Cerucellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYSF01*. The type genus for the taxon is *Candidatus* Cerucella .

According to the GTDB R06-RS202, this order belongs to the class *Negativicutes*.

Description of *Candidatus* Cerucia dilicivita sp. nov.

Candidatus Cerucia dilicivita (NL. fem. n. *dilicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLGR01 sp007136585*. The type genome for the species is the GenBank assembly GCA_007136585.1. The GC content of the type genome is 51.43 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Cerucia gen. nov.

Candidatus Cerucia (NL. fem. n. *Cerucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLGR01*. The type species for the genus is *Candidatus* Cerucia dilicivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLGR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceruciaceae.

Description of *Candidatus* Ceruciaceae fam. nov.

Candidatus Ceruciaceae (NL. fem. n. *Ceruciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLGR01*. The type genus for the taxon is *Candidatus* Cerucia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLGR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ceruciales.

Description of *Candidatus* Ceruciales ord. nov.

Candidatus Ceruciales (NL. fem. n. *Ceruciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLGR01*. The type genus for the taxon is *Candidatus* Cerucia .

According to the original version of GTDB R06-RS202, this family belongs to the class *SLGR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ceruciae.

Description of *Candidatus* Ceruciae class. nov.

Candidatus Ceruciae (NL. fem. n. *c__Ceruciae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLGR01*. The type genus for the taxon is *Candidatus* Cerucia .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *CG03*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Laxitanota.

Description of *Candidatus* Cerucida cisorimonas sp. nov.

Candidatus Cerucida cisorimonas (NL. fem. n. *cisorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2262 sp001799285*. The type genome for the species is the GenBank assembly GCA_001799285.1. The GC content of the type genome is 56.42 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point D".

Description of *Candidatus* Cerucida gen. nov.

Candidatus Cerucida (NL. fem. n. *Cerucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2262*. The type species for the genus is *Candidatus* Cerucida cisorimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerucida defenugo sp. nov.

Candidatus Cerucida defenugo (NL. fem. n. *defenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2262 sp002347095*. The type genome for the species is the GenBank assembly GCA_004348915.1. The GC content of the type genome is 57.58 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Cerucida detotastra sp. nov.

Candidatus Cerucida detotastra (NL. fem. n. *detotastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2262 sp003517965*. The type genome for the species is the GenBank assembly GCA_001798725.1. The GC content of the type genome is 53.09 % and the genome length is 2.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point D".

Description of *Candidatus* Cerucida eclecitoga sp. nov.

Candidatus Cerucida eclecitoga (NL. fem. n. *eclecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2262 sp013791995*. The type genome for the species is the GenBank assembly GCA_013791995.1. The GC content of the type genome is 53.99 %

and the genome length is 2.96 Mbp.

Description of *Candidatus* Cerucida feculigena sp. nov.

Candidatus Cerucida feculigena (NL. fem. n. *feculigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2262 sp002841785*. The type genome for the species is the GenBank assembly GCA_002841785.1. The GC content of the type genome is 57.95 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Cerucida fusififorma sp. nov.

Candidatus Cerucida fusififorma (NL. fem. n. *fusififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2262 sp903869265*. The type genome for the species is the GenBank assembly GCA_903830245.1. The GC content of the type genome is 55.91 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Cerucida humecilenta sp. nov.

Candidatus Cerucida humecilenta (NL. fem. n. *humecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2262 sp002347185*. The type genome for the species is the GenBank assembly GCA_002347185.1. The GC content of the type genome is 61.68 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Cerucida minagilenta sp. nov.

Candidatus Cerucida minagilenta (NL. fem. n. *minagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2262 sp001799255*. The type genome for the species is the GenBank assembly GCA_001799255.1. The GC content of the type genome is 55.67 % and the genome length is 2.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point D".

Description of *Candidatus* Cerucida opuscicula sp. nov.

Candidatus Cerucida opuscicula (NL. fem. n. *opuscicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2262 sp013349295*. The type genome for the species is the GenBank assembly GCA_013349295.1. The GC content of the type genome is 55.15 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Cerucosa acratibra sp. nov.

Candidatus Cerucosa acratibra (NL. fem. n. *acratibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002840015 sp002840015*. The type genome for the species is the GenBank assembly GCA_002840015.1. The GC content of the type genome is 61.46 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Cerucosa gen. nov.

Candidatus Cerucosa (NL. fem. n. *Cerucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002840015*. The type species for the genus is *Candidatus* Cerucosa acratibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerucosa acrimedo sp. nov.

Candidatus Cerucosa acrimedo (NL. fem. n. *acrimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002840015 sp002839995*. The type genome for the species is the GenBank assembly GCA_002839995.1. The GC content of the type genome is 64.22 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Cerucosa solacicella sp. nov.

Candidatus Cerucosa solacicella (NL. fem. n. *solacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002840015 sp002782905*. The type genome for the species is the GenBank assembly GCA_002771025.1. The GC content of the type genome is 63.58 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Cerucula anatrifica sp. nov.

Candidatus Cerucula anatrifica (NL. fem. n. *anatrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYUN01 sp903919625*. The type genome for the species is the GenBank assembly GCA_903919625.1. The GC content of the type genome is 64.02 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Cerucula gen. nov.

Candidatus Cerucula (NL. fem. n. *Cerucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYUN01*. The type species for the genus is *Candidatus* Cerucula anatrifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cerucula benivatica sp. nov.

Candidatus Cerucula benivatica (NL. fem. n. *benivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYUN01 sp903929355*. The type genome for the species is the GenBank assembly GCA_903929355.1. The GC content of the type genome is 65.7 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Cerucula citivicella sp. nov.

Candidatus Cerucula citivicella (NL. fem. n. *citivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIYUN01 sp903872425*. The type genome for the species is the GenBank assembly GCA_903872425.1. The GC content of the type genome is 62.07 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Cerucula robigitica sp. nov.

Candidatus Cerucula robigitica (NL. fem. n. *robigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYUN01 sp903869665*. The type genome for the species is the GenBank assembly GCA_903869665.1. The GC content of the type genome is 66.1 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Cerucula viburimonas sp. nov.

Candidatus Cerucula viburimonas (NL. fem. n. *viburimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYUN01 sp903869955*. The type genome for the species is the GenBank assembly GCA_903824555.1. The GC content of the type genome is 64.95 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Cesiribacter morigicula sp. nov.

Candidatus Cesiribacter morigicula (NL. fem. n. *morigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cesiribacter sp000597885*. The type genome for the species is the GenBank assembly RS_GCF_000597885.1. The GC content of the type genome is 46.47 % and the genome length is 6.67 Mbp.

Description of *Candidatus* Cetarana monumibula sp. nov.

Candidatus Cetarana monumibula (NL. fem. n. *monumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU027 sp002385745*. The type genome for the species is the GenBank assembly GCA_012838605.1. The GC content of the type genome is 49.28 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Cetarana gen. nov.

Candidatus Cetarana (NL. fem. n. *Cetarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU027*. The type species for the genus is *Candidatus* Cetarana monumibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cetararia delebastra sp. nov.

Candidatus Cetararia delebastra (NL. fem. n. *delebastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-213 sp002085025*. The type genome for the species is the GenBank assembly GCA_002085025.1. The GC content of the type genome is 40.41 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Cetararia gen. nov.

Candidatus Cetararia (NL. fem. n. *Cetararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-213*. The type species for the genus is *Candidatus* Cetararia delebastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-213*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetararia ceae.

Description of *Candidatus* Cetararia ceae fam. nov.

Candidatus Cetararia ceae (NL. fem. n. *Cetararia ceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-213.* The type genus for the taxon is *Candidatus* Cetararia .

According to the original version of GTDB R06-RS202, this family belongs to the order *4484-213*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cetararia les.

Description of *Candidatus* Cetarariales ord. nov.

Candidatus Cetarariales (NL. fem. n. *Cetarariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-213.* The type genus for the taxon is *Candidatus* Cetararia .

According to the original version of GTDB R06-RS202, this family belongs to the class *4484-213*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetarariae.

Description of *Candidatus* Cetarariae class. nov.

Candidatus Cetarariae (NL. fem. n. *c__Cetarariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-213.* The type genus for the taxon is *Candidatus* Cetararia .

According to GTDB R06-RS202, this class belongs to the phylum *Omnitrophota*.

Description of *Candidatus* Cetarella utrinetta sp. nov.

Candidatus Cetarella utrinetta (NL. fem. n. *utrinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-254 sp003235555*. The type genome for the species is the GenBank assembly GCA_003235555.1. The GC content of the type genome is 61.85 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Cetarella gen. nov.

Candidatus Cetarella (NL. fem. n. *Cetarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-254*. The type species for the genus is *Candidatus* Cetarella utrinetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-254*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarellaceae.

Description of *Candidatus* Cetarellaceae fam. nov.

Candidatus Cetarellaceae (NL. fem. n. *Cetarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-254.* The type genus for the taxon is *Candidatus* Cetarella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vagabanales.

Description of *Candidatus* Cetaria allacitudo sp. nov.

Candidatus Cetaria allacitudo (NL. fem. n. *allacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU015 sp012841065*. The type genome for the species is the GenBank assembly GCA_012841065.1. The GC content of the type genome is 51.43 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Cetaria gen. nov.

Candidatus Cetaria (NL. fem. n. *Cetaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU015*. The type species for the genus is *Candidatus* Cetaria allacitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicatosaceae.

Description of *Candidatus* Cetariae class. nov.

Candidatus Cetariae (NL. fem. n. *c__Cetariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU015.* The type genus for the taxon is *Candidatus* Cetaria .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_E*.

Description of *Candidatus* Cetaria apsurago sp. nov.

Candidatus Cetaria apsurago (NL. fem. n. *apsurago* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU015 sp012842105*. The type genome for the species is the GenBank assembly GCA_012842105.1. The GC content of the type genome is 49.82 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Cetaria lapilicula sp. nov.

Candidatus Cetaria lapilicula (NL. fem. n. *lapilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU015 sp012512325*. The type genome for the species is the GenBank assembly GCA_012512325.1. The GC content of the type genome is 54.7 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Cetaria novilatio sp. nov.

Candidatus Cetaria novilatio (NL. fem. n. *novilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU015 sp012837895*. The type genome for the species is the GenBank assembly GCA_012837895.1. The GC content of the type genome is 51.19 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Cetaria semivitoga sp. nov.

Candidatus Cetaria semivitoga (NL. fem. n. *semivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU015 sp001513185*. The type genome for the species is the GenBank assembly GCA_012720035.1. The GC content of the type genome is 53.36 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Cetarida ephipigena sp. nov.

Candidatus Cetarida ephipigena (NL. fem. n. *ephipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002788555 sp002788555*. The type genome for the species is the GenBank assembly GCA_002788555.1. The GC content of the type genome is 35.51 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Cetarida gen. nov.

Candidatus Cetarida (NL. fem. n. *Cetarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002788555*. The type species for the genus is *Candidatus* Cetarida ephipigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002788555*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetaridaceae.

Description of *Candidatus* Cetaridaceae fam. nov.

Candidatus Cetaridaceae (NL. fem. n. *Cetaridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002788555.* The type genus for the taxon is *Candidatus* Cetarida .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Cetarosa conamibra sp. nov.

Candidatus Cetarosa conamibra (NL. fem. n. *conamibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp900763705*. The type genome for the species is the GenBank assembly GCA_900763705.1. The GC content of the type genome is 60.35 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Cetarosa gen. nov.

Candidatus Cetarosa (NL. fem. n. *Cetarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ER4*. The type species for the genus is *Candidatus* Cetarosa conamibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cetarosa decamitio sp. nov.

Candidatus Cetarosa decamitio (NL. fem. n. *decamitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp003522105*. The type genome for the species is the GenBank assembly GCA_004557605.1. The GC content of the type genome is 58.03 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Cetarosa defetastra sp. nov.

Candidatus Cetarosa defetastra (NL. fem. n. *defetastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp900768135*. The type genome for the species is the GenBank assembly GCA_900768135.1. The GC content of the type genome is 59.62 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Cetarosa demulax sp. nov.

Candidatus Cetarosa demulax (NL. fem. n. *demulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp900550165*. The type genome for the species is the GenBank assembly GCA_900754235.1. The GC content of the type genome is 59.89 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Cetarosa extorigena sp. nov.

Candidatus Cetarosa extorigena (NL. fem. n. *extorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp900552375*. The type genome for the species is the GenBank assembly GCA_900552375.1. The GC content of the type genome is 60.2 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Cetarosa facunivita sp. nov.

Candidatus Cetarosa facunivita (NL. fem. n. *facunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp900546295*. The type genome for the species is the GenBank assembly GCA_900546295.1. The GC content of the type genome is 59.7 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Cetarosa inmenago sp. nov.

Candidatus Cetarosa inmenago (NL. fem. n. *inmenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp900552015*. The type genome for the species is the GenBank assembly GCA_900552015.1. The GC content of the type genome is 59.2 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Cetarosa lapiliforma sp. nov.

Candidatus Cetarosa lapiliforma (NL. fem. n. *lapiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp000765235*. The type genome for the species is the GenBank assembly RS_GCF_003481145.1. The GC content of the type genome is 55.69 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Cetarosa nutabatio sp. nov.

Candidatus Cetarosa nutabatio (NL. fem. n. *nutabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp900556145*. The type genome for the species is the GenBank assembly GCA_900556145.1. The GC content of the type genome is 60.75 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Cetarosa papavatio sp. nov.

Candidatus Cetarosa papavatio (NL. fem. n. *papavatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp900317525*. The type genome for the species is the GenBank assembly GCA_004551705.1. The GC content of the type genome is 62.16 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Cetarosa rutabugo sp. nov.

Candidatus Cetarosa rutabugo (NL. fem. n. *rutabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp002405995*. The type genome for the species is the GenBank assembly GCA_002405995.1. The GC content of the type genome is 61.58 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Cetarosa semunimonia sp. nov.

Candidatus Cetarosa semunimonia (NL. fem. n. *semunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER4 sp002437735*. The type genome for the species is the GenBank assembly GCA_002296425.1. The GC content of the type genome is 61.77 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Cetarula adcelifica sp. nov.

Candidatus Cetarula adcelifica (NL. fem. n. *adcelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-3 sp011390465*. The type genome for the species is the GenBank assembly GCA_011390465.1. The GC content of the type genome is 51.04 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Cetarula gen. nov.

Candidatus Cetarula (NL. fem. n. *Cetarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-3*. The type species for the genus is *Candidatus* Cetarula adcelifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarulaceae.

Description of *Candidatus* Cetarulaceae fam. nov.

Candidatus Cetarulaceae (NL. fem. n. *Cetarulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-3.* The type genus for the taxon is *Candidatus* Cetarula .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Cetarula herinilega sp. nov.

Candidatus Cetarula herinilega (NL. fem. n. *herinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-3 sp014237465*. The type genome for the species is the GenBank assembly GCA_014237275.1. The GC content of the type genome is 44.02 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Cetarula nefarilenta sp. nov.

Candidatus Cetarula nefarilenta (NL. fem. n. *nefarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-3 sp011390415*. The type genome for the species is the GenBank assembly GCA_011390415.1. The GC content of the type genome is 48.64 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Cetarula uberricella sp. nov.

Candidatus Cetarula uberricella (NL. fem. n. *uberricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-3 sp003599885*. The type genome for the species is the GenBank assembly GCA_003599885.1. The GC content of the type genome is 49.04 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Cetobacterium excometta sp. nov.

Candidatus Cetobacterium excometta (NL. fem. n. *excometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cetobacterium sp014250685*. The type genome for the species is the GenBank assembly RS_GCF_014250685.1. The GC content of the type genome is 29.85 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Cetobacterium abluvax sp. nov.

Candidatus Cetobacterium abluvax (NL. fem. n. *abluvax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cetobacterium_A sp002428805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002428805.1. The GC content of the type genome is 30.35 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Cetobacterium cinipibra sp. nov.

Candidatus Cetobacterium cinipibra (NL. fem. n. *cinipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cetobacterium_A sp000799075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002436145.1. The GC content of the type genome is 29.78 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Cetobacterium indotimonia sp. nov.

Candidatus Cetobacterium indotimonia (NL. fem. n. *indotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cetobacterium_A sp014250675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_014250675.1. The GC content of the type genome is 29.88 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Cetobacterium visibago sp. nov.

Candidatus Cetobacterium visibago (NL. fem. n. *visibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cetobacterium_A sp900766645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900766645.1. The GC content of the type genome is 29.32 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Chachezhania apercitas sp. nov.

Candidatus Chachezhania apercitas (NL. fem. n. *apercitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chachezhania sp009765275*. The type genome for the species is the GenBank assembly RS_GCF_009765275.1. The GC content of the type genome is 65.64 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Chakrabartia adremago sp. nov.

Candidatus Chakrabartia adremago (NL. fem. n. *adremago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chakrabartia sp009923795*. The type genome for the species is the GenBank assembly GCA_009923795.1. The GC content of the type genome is 57.93 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Chakrabartia fetulitas sp. nov.

Candidatus Chakrabartia fetulitas (NL. fem. n. *fetulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chakrabartia sp903958285*. The type genome for the species is the GenBank assembly GCA_903958285.1. The GC content of the type genome is 60.07 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Chakrabartia nefanifica sp. nov.

Candidatus Chakrabartia nefanifica (NL. fem. n. *nefanifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chakrabartia sp009920915*. The type genome for the species is the GenBank assembly GCA_009928105.1. The GC content of the type genome is 57.93 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Chakrabartia vatilentia sp. nov.

Candidatus Chakrabartia vatilentia (NL. fem. n. *vatilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chakrabartia sp002478575*. The type genome for the species is the GenBank assembly GCA_002478575.1. The GC content of the type genome is 56.38 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Chakrabartia vitupatica sp. nov.

Candidatus Chakrabartia vitupatica (NL. fem. n. *vitupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chakrabartia sp903839675*. The type genome for the species is the GenBank assembly GCA_903862675.1. The GC content of the type genome is 59.98 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Chalbana adsifitudo sp. nov.

Candidatus Chalbana adsifitudo (NL. fem. n. *adsifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B10-G9 sp003648195*. The type genome for the species is the GenBank assembly GCA_003648195.1. The GC content of the type genome is 47.31 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Chalbana gen. nov.

Candidatus Chalbana (NL. fem. n. *Chalbana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B10-G9*. The type species for the genus is *Candidatus* Chalbana adsifitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11858*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifellaceae.

Description of *Candidatus* Chalbana mureliforma sp. nov.

Candidatus Chalbana mureliforma (NL. fem. n. *mureliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B10-G9 sp011039385*. The type genome for the species is the GenBank assembly GCA_011039385.1. The GC content of the type genome is 52.36 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Chalbella adfuniforma sp. nov.

Candidatus Chalbella adfuniforma (NL. fem. n. *adfuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WSXW01 sp009773495*. The type genome for the species is the GenBank assembly GCA_009773495.1. The GC content of the type genome is 48.75 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Chalbella gen. nov.

Candidatus Chalbella (NL. fem. n. *Chalbella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WSXW01*. The type species for the genus is *Candidatus* Chalbella adfuniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA994*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehonellaceae.

Description of *Candidatus* Chalbia gasomatio sp. nov.

Candidatus Chalbia gasomatio (NL. fem. n. *gasomatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-30 sp001303245*. The type genome for the species is the GenBank assembly GCA_001303245.1. The GC content of the type genome is 68.73 % and the genome length is 2.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-rich zone estuary sediments 8-12 cm".

Description of *Candidatus* Chalbia gen. nov.

Candidatus Chalbia (NL. fem. n. *Chalbia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG8-30*. The type species for the genus is *Candidatus* Chalbia gasomatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Chalbida licenastra sp. nov.

Candidatus Chalbida licenastra (NL. fem. n. *licenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-607 sp003134755*. The type genome for the species is the GenBank assembly GCA_003134755.1. The GC content of the type genome is 66.89 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Chalbida gen. nov.

Candidatus Chalbida (NL. fem. n. *Chalbida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-607*. The type species for the genus is *Candidatus* Chalbida licenastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Chalbosa intabatica sp. nov.

Candidatus Chalbosa intabatica (NL. fem. n. *intabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYOS01 sp012520195*. The type genome for the species is the GenBank assembly GCA_012520195.1. The GC content of the type genome is 45.12 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Chalbosa gen. nov.

Candidatus Chalbosa (NL. fem. n. *Chalbosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYOS01*. The type species for the genus is *Candidatus* Chalbosa intabatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Chalbosa pedepousia sp. nov.

Candidatus Chalbosa pedepousia (NL. fem. n. *pedepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYOS01 sp012521525*. The type genome for the species is the GenBank assembly GCA_012521525.1. The GC content of the type genome is 49.07 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Chancana resalousia sp. nov.

Candidatus Chancana resalousia (NL. fem. n. *resalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJ17 sp014584395*. The type genome for the species is the GenBank assembly GCA_014584395.1. The GC content of the type genome is 59.39 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Chancana gen. nov.

Candidatus Chancana (NL. fem. n. *Chancana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJ17*. The type species for the genus is *Candidatus* Chancana resalousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homululaceae.

Description of *Candidatus* Chancaria direpitia sp. nov.

Candidatus Chancaria direpitia (NL. fem. n. *direpitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUG01 sp012841675*. The type genome for the species is the GenBank assembly GCA_012841675.1. The GC content of the type genome is 50.71 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Chancaria gen. nov.

Candidatus Chancaria (NL. fem. n. *Chancaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUUG01*. The type species for the genus is *Candidatus* Chancaria direpitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QAMX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubidaceae.

Description of *Candidatus* Chancella monopitoga sp. nov.

Candidatus Chancella monopitoga (NL. fem. n. *monopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-46-10 sp001824645*. The type genome for the species is the GenBank assembly GCA_001824645.1. The GC content of the type genome is 44.57 % and the genome length is 1.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Chancella gen. nov.

Candidatus Chancella (NL. fem. n. *Chancella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-46-10*. The type species for the genus is *Candidatus* Chancella monopitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Chancida expasifica sp. nov.

Candidatus Chancida expasifica (NL. fem. n. *expasifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED78 sp002171615*. The type genome for the species is the GenBank assembly GCA_002171615.1. The GC content of the type genome is 34.5 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Chancida gen. nov.

Candidatus Chancida (NL. fem. n. *Chancida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED78*. The type species for the genus is *Candidatus* Chancida expasifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6522*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudecariaceae.

Description of *Candidatus* Chania femelax sp. nov.

Candidatus Chania femelax (NL. fem. n. *femelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chania sp000743355*. The type genome for the species is the GenBank assembly RS_GCF_000743365.1. The GC content of the type genome is 52.27 % and the genome length is 5.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mosquito larval gut".

Description of *Candidatus* Chelativorans adcucitoga sp. nov.

Candidatus Chelativorans adcucitoga (NL. fem. n. *adcucitoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chelativorans sp010993735*. The type genome for the species is the GenBank assembly RS_GCF_010993735.1. The GC content of the type genome is 64.11 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Chelativorans ambifimonia sp. nov.

Candidatus Chelativorans ambifimonia (NL. fem. n. *ambifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chelativorans sp000518985*. The type genome for the species is the GenBank assembly RS_GCF_000518985.1. The GC content of the type genome is 61.23 % and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Chelativorans evangitio sp. nov.

Candidatus Chelativorans evangitio (NL. fem. n. *evangitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chelativorans sp009812055*. The type genome for the species is the GenBank assembly RS_GCF_009812055.1. The GC content of the type genome is 64.33 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Chelativorans exaspivita sp. nov.

Candidatus Chelativorans exaspivita (NL. fem. n. *exaspivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chelativorans sp902809845*. The type genome for the species is the GenBank assembly RS_GCF_902809845.1. The GC content of the type genome is 59.67 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Chelonobacter codifetta sp. nov.

Candidatus Chelonobacter codifetta (NL. fem. n. *codifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chelonobacter sp006228005*. The type genome for the species is the GenBank assembly RS_GCF_006228025.1. The GC content of the type genome is 45.31 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Chengkuizengella senipedo sp. nov.

Candidatus Chengkuizengella senipedo (NL. fem. n. *senipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chengkuizengella sp009910845*. The type genome for the species is the GenBank assembly RS_GCF_009910845.1. The GC content of the type genome is 33.12 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Chernana acropivita sp. nov.

Candidatus Chernana acropivita (NL. fem. n. *acropivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1180 sp003152075*. The type genome for the species is the GenBank assembly GCA_003152075.1. The GC content of the type genome is 50.93 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Chernana gen. nov.

Candidatus Chernana (NL. fem. n. *Chernana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1180*. The type species for the genus is *Candidatus* Chernana acropivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1180*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Chernanaceae.

Description of *Candidatus* Chernanaceae fam. nov.

Candidatus Chernanaceae (NL. fem. n. *Chernanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *Palsa-1180.* The type genus for the taxon is *Candidatus* Chernana .

According to the original version of GTDB R06-RS202, this family belongs to the order *Palsa-1180*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Chernanales.

Description of *Candidatus* Chernanales ord. nov.

Candidatus Chernanales (NL. fem. n. *Chernanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1180.* The type genus for the taxon is *Candidatus* Chernana .

According to the original version of GTDB R06-RS202, this family belongs to the class *Palsa-1180*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Chernanae.

Description of *Candidatus* Chernanae class. nov.

Candidatus Chernanae (NL. fem. n. *c__Chernanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1180.* The type genus for the taxon is *Candidatus* Chernana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *FCPU426*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Denecariota.

Description of *Candidatus* Chernia esculentia sp. nov.

Candidatus Chernia esculentia (NL. fem. n. *esculentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1649 sp900553785*. The type genome for the species is the GenBank assembly GCA_900553785.1. The GC content of the type genome is 30.68 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Chernia gen. nov.

Candidatus Chernia (NL. fem. n. *Chernia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UMGS1649*. The type species for the genus is *Candidatus* Chernia esculentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Televiaceae.

Description of *Candidatus* Chernida adalgugo sp. nov.

Candidatus Chernida adalgugo (NL. fem. n. *adalgugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRLX01 sp011322715*. The type genome for the species is the GenBank assembly GCA_011322715.1. The GC content of the type genome is 50.79 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Chernida gen. nov.

Candidatus Chernida (NL. fem. n. *Chernida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRLX01*. The type species for the genus is *Candidatus* Chernida adalgugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Chernida antevax sp. nov.

Candidatus Chernida antevax (NL. fem. n. *antevax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRLX01 sp011051825*. The type genome for the species is the GenBank assembly GCA_011051825.1. The GC content of the type genome is 52.55 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Chernosa capucatio sp. nov.

Candidatus Chernosa capucatio (NL. fem. n. *capucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SURF-55 sp003604985*. The type genome for the species is the GenBank assembly GCA_003604985.1. The GC content of the type genome is 55.69 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Chernosa gen. nov.

Candidatus Chernosa (NL. fem. n. *Chernosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-55*. The type species for the genus is *Candidatus* Chernosa capucatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Chernosa defanicula sp. nov.

Candidatus Chernosa defanicula (NL. fem. n. *defanicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-55 sp012961725*. The type genome for the species is the GenBank assembly GCA_012961725.1. The GC content of the type genome is 57.25 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Chernula lapicitoga sp. nov.

Candidatus Chernula lapicitoga (NL. fem. n. *lapicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYQ01 sp009692765*. The type genome for the species is the GenBank assembly GCA_009692765.1. The GC content of the type genome is 71.79 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Chernula gen. nov.

Candidatus Chernula (NL. fem. n. *Chernula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYQ01*. The type species for the genus is *Candidatus* Chernula lapicitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Chernula omnigitudo sp. nov.

Candidatus Chernula omnigitudo (NL. fem. n. *omnigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYQ01 sp903917615*. The type genome for the species is the GenBank assembly GCA_903917615.1. The GC content of the type genome is 69.29 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Chimaeribacter arcubedo sp. nov.

Candidatus Chimaeribacter arcubedo (NL. fem. n. *arcubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chimaeribacter sp005491205*. The type genome for the species is the GenBank assembly RS_GCF_005491205.1. The GC content of the type genome is 60.02 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Chishuiella plascitura sp. nov.

Candidatus Chishuiella plascitura (NL. fem. n. *plascitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chishuiella sp002430925*. The type genome for the species is the GenBank assembly GCA_002430925.1. The GC content of the type genome is 28.5 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Chishuiella vicatitia sp. nov.

Candidatus Chishuiella vicatitia (NL. fem. n. *vicatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chishuiella sp002484335*. The type genome for the species is the GenBank assembly GCA_002484335.1. The GC content of the type genome is 28.01 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Chitinibacter inoffitio sp. nov.

Candidatus Chitinibacter inoffitio (NL. fem. n. *inoffitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinibacter sp013403565*. The type genome for the species is the GenBank assembly RS_GCF_013403565.1. The GC content of the type genome is 50.58 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Chitinibacter invetitia sp. nov.

Candidatus Chitinibacter invetitia (NL. fem. n. *invetitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinibacter sp009760905*. The type genome for the species is the GenBank assembly RS_GCF_009760905.1. The GC content of the type genome is 53.95 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Chitinimonas necubicella sp. nov.

Candidatus Chitinimonas necubicella (NL. fem. n. *necubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinimonas sp002735695*. The type genome for the species is the GenBank assembly RS_GCF_006151725.2. The GC content of the type genome is 54.36 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Chitinispirillum bifisicula sp. nov.

Candidatus Chitinispirillum bifisicula (NL. fem. n. *bifisicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinispirillum sp007115975*. The type genome for the species is the GenBank assembly GCA_007115975.1. The GC content of the type genome is 45.31 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Chitinivorax vicatitoga sp. nov.

Candidatus Chitinivorax vicatitoga (NL. fem. n. *vicatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinivorax sp005503445*. The type genome for the species is the GenBank assembly RS_GCF_005503445.1. The GC content of the type genome is 53.18 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Chitinophaga agripitia sp. nov.

Candidatus Chitinophaga agripitia (NL. fem. n. *agripitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp902168105*. The type genome for the species is the GenBank assembly GCA_902168105.1. The GC content of the type genome is 45.15 % and the genome length is 8.1 Mbp.

Description of *Candidatus* Chitinophaga albogessa sp. nov.

Candidatus Chitinophaga albogessa (NL. fem. n. *albogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp902168175*. The type genome for the species is the GenBank assembly GCA_902168175.1. The GC content of the type genome is 47.66 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Chitinophaga benevatica sp. nov.

Candidatus Chitinophaga benevatica (NL. fem. n. *benevatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp001975825*. The type genome for the species is the GenBank assembly RS_GCF_001975825.1. The GC content of the type genome is 43.45 % and the genome length is 8.63 Mbp.

Description of *Candidatus* Chitinophaga brabritica sp. nov.

Candidatus Chitinophaga brabritica (NL. fem. n. *brabritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp010093065*. The type genome for the species is the GenBank assembly RS_GCF_010093065.1. The GC content of the type genome is 46.19

% and the genome length is 7.97 Mbp.

Description of *Candidatus* Chitinophaga cerofitudo sp. nov.

Candidatus Chitinophaga cerofitudo (NL. fem. n. *cerofitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp003177275*. The type genome for the species is the GenBank assembly RS_GCF_003568665.1. The GC content of the type genome is 53.4 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Chitinophaga depicitudo sp. nov.

Candidatus Chitinophaga depicitudo (NL. fem. n. *depicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp003994345*. The type genome for the species is the GenBank assembly RS_GCF_003994345.2. The GC content of the type genome is 48.46 % and the genome length is 8.08 Mbp.

Description of *Candidatus* Chitinophaga depopibra sp. nov.

Candidatus Chitinophaga depopibra (NL. fem. n. *depopibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp012516355*. The type genome for the species is the GenBank assembly RS_GCF_012516355.1. The GC content of the type genome is 50.95 % and the genome length is 8.51 Mbp.

Description of *Candidatus* Chitinophaga depupibula sp. nov.

Candidatus Chitinophaga depupibula (NL. fem. n. *depupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp004363865*. The type genome for the species is the GenBank assembly RS_GCF_004363865.1. The GC content of the type genome is 45.0 % and the genome length is 8.71 Mbp.

Description of *Candidatus* Chitinophaga dicanitoga sp. nov.

Candidatus Chitinophaga dicanitoga (NL. fem. n. *dicanitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp002290065*. The type genome for the species is the GenBank assembly RS_GCF_002290065.1. The GC content of the type genome is 47.58 % and the genome length is 7.66 Mbp.

Description of *Candidatus* Chitinophaga dimiditura sp. nov.

Candidatus Chitinophaga dimiditura (NL. fem. n. *dimiditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp003412465*. The type genome for the species is the GenBank assembly RS_GCF_003412465.1. The GC content of the type genome is 44.71 % and the genome length is 8.36 Mbp.

Description of *Candidatus* Chitinophaga excocedo sp. nov.

Candidatus Chitinophaga excocedo (NL. fem. n. *excocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp003419895*. The type genome for the species is the GenBank assembly RS_GCF_003419895.1. The GC content of the type genome is 39.81 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Chitinophaga holovibra sp. nov.

Candidatus Chitinophaga holovibra (NL. fem. n. *holovibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp011752935*. The type genome for the species is the GenBank assembly RS_GCF_011752935.1. The GC content of the type genome is 45.59 % and the genome length is 7.57 Mbp.

Description of *Candidatus* Chitinophaga illapago sp. nov.

Candidatus Chitinophaga illapago (NL. fem. n. *illapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp900112615*. The type genome for the species is the GenBank assembly RS_GCF_900112615.1. The GC content of the type genome is 41.41 % and the genome length is 8.14 Mbp.

Description of *Candidatus* Chitinophaga infatastra sp. nov.

Candidatus Chitinophaga infatastra (NL. fem. n. *infatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp009758205*. The type genome for the species is the GenBank assembly RS_GCF_009758205.1. The GC content of the type genome is 45.64 % and the genome length is 7.97 Mbp.

Description of *Candidatus* Chitinophaga infelicula sp. nov.

Candidatus Chitinophaga infelicula (NL. fem. n. *infelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp900110995*. The type genome for the species is the GenBank assembly RS_GCF_900110995.1. The GC content of the type genome is 42.37 % and the genome length is 8.07 Mbp.

Description of *Candidatus* Chitinophaga insuficella sp. nov.

Candidatus Chitinophaga insuficella (NL. fem. n. *insuficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp900114995*. The type genome for the species is the GenBank assembly RS_GCF_900114995.1. The GC content of the type genome is 45.51 % and the genome length is 9.12 Mbp.

Description of *Candidatus* Chitinophaga lapilax sp. nov.

Candidatus Chitinophaga lapilax (NL. fem. n. *lapilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp008086345*. The type genome for the species is the GenBank assembly RS_GCF_008086345.1. The GC content of the type genome is 51.49

% and the genome length is 6.18 Mbp.

Description of *Candidatus* Chitinophaga miracastra sp. nov.

Candidatus Chitinophaga miracastra (NL. fem. n. *miracastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp003149455*. The type genome for the species is the GenBank assembly RS_GCF_003149455.1. The GC content of the type genome is 50.54 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Chitinophaga novilatica sp. nov.

Candidatus Chitinophaga novilatica (NL. fem. n. *novilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp003182155*. The type genome for the species is the GenBank assembly RS_GCF_003182155.1. The GC content of the type genome is 45.06 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Chitinophaga oblonetta sp. nov.

Candidatus Chitinophaga oblonetta (NL. fem. n. *oblonetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp009647655*. The type genome for the species is the GenBank assembly RS_GCF_009647655.1. The GC content of the type genome is 45.26 % and the genome length is 7.14 Mbp.

Description of *Candidatus* Chitinophaga papiledo sp. nov.

Candidatus Chitinophaga papiledo (NL. fem. n. *papiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp012927205*. The type genome for the species is the GenBank assembly RS_GCF_012927205.1. The GC content of the type genome is 48.68 % and the genome length is 8.37 Mbp.

Description of *Candidatus* Chitinophaga saxifivita sp. nov.

Candidatus Chitinophaga saxifivita (NL. fem. n. *saxifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp012726295*. The type genome for the species is the GenBank assembly RS_GCF_012641295.1. The GC content of the type genome is 46.44 % and the genome length is 7.95 Mbp.

Description of *Candidatus* Chitinophaga venunitoga sp. nov.

Candidatus Chitinophaga venunitoga (NL. fem. n. *venunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp008386695*. The type genome for the species is the GenBank assembly RS_GCF_008386695.1. The GC content of the type genome is 49.49 % and the genome length is 8.31 Mbp.

Description of *Candidatus* Chitinophaga vocifilega sp. nov.

Candidatus Chitinophaga vocifilega (NL. fem. n. *vocifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chitinophaga sp900142925*. The type genome for the species is the GenBank assembly RS_GCF_900142925.1. The GC content of the type genome is 45.47 % and the genome length is 8.63 Mbp.

Description of *Candidatus* Chlamydophila exsolitudo sp. nov.

Candidatus Chlamydophila exsolitudo (NL. fem. n. *exsolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlamydophila sp001653975*. The type genome for the species is the GenBank assembly RS_GCF_001653975.1. The GC content of the type genome is 38.5 % and the genome length is 1.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "choana".

Description of *Candidatus* Chlamydophila roruledo sp. nov.

Candidatus Chlamydophila roruledo (NL. fem. n. *roruledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlamydophila sp900239945*. The type genome for the species is the GenBank assembly RS_GCF_900239945.1. The GC content of the type genome is 37.42 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Chlamydophila subabibula sp. nov.

Candidatus Chlamydophila subabibula (NL. fem. n. *subabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlamydophila sp900239975*. The type genome for the species is the GenBank assembly RS_GCF_900239975.1. The GC content of the type genome is 37.47 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Chloracidobacterium adcomifica sp. nov.

Candidatus Chloracidobacterium adcomifica (NL. fem. n. *adcomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chloracidobacterium sp002254845*. The type genome for the species is the GenBank assembly GCA_002254845.1. The GC content of the type genome is 64.18 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Chlorobaculum abverivita sp. nov.

Candidatus Chlorobaculum abverivita (NL. fem. n. *abverivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp900299075*. The type genome for the species is the GenBank assembly GCA_900299075.1. The GC content of the type genome is 62.61 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Chlorobaculum advorago sp. nov.

Candidatus Chlorobaculum advorago (NL. fem. n. *advorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp013334975*. The type genome for the species is the GenBank assembly GCA_013334975.1. The GC content of the type genome is 52.34 %

and the genome length is 2.79 Mbp.

Description of *Candidatus* Chlorobaculum bulapivita sp. nov.

Candidatus Chlorobaculum bulapivita (NL. fem. n. *bulapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp903901395*. The type genome for the species is the GenBank assembly GCA_903901395.1. The GC content of the type genome is 54.78 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Chlorobaculum casabatio sp. nov.

Candidatus Chlorobaculum casabatio (NL. fem. n. *casabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp013334655*. The type genome for the species is the GenBank assembly GCA_013334655.1. The GC content of the type genome is 55.56 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Chlorobaculum infisibra sp. nov.

Candidatus Chlorobaculum infisibra (NL. fem. n. *infisibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp013335115*. The type genome for the species is the GenBank assembly GCA_013335115.1. The GC content of the type genome is 59.51 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Chlorobaculum inpudago sp. nov.

Candidatus Chlorobaculum inpudago (NL. fem. n. *inpudago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp013334855*. The type genome for the species is the GenBank assembly GCA_013334855.1. The GC content of the type genome is 55.65 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Chlorobaculum locupatica sp. nov.

Candidatus Chlorobaculum locupatica (NL. fem. n. *locupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp013334525*. The type genome for the species is the GenBank assembly GCA_013334525.1. The GC content of the type genome is 54.19 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Chlorobaculum occenimonia sp. nov.

Candidatus Chlorobaculum occenimonia (NL. fem. n. *occenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp013334965*. The type genome for the species is the GenBank assembly GCA_013334965.1. The GC content of the type genome is 54.07 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Chlorobaculum penuritica sp. nov.

Candidatus Chlorobaculum penuritica (NL. fem. n. *penuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp001602925*. The type genome for the species is the GenBank assembly GCA_001602925.1. The GC content of the type genome is 56.24 % and the genome length is 2.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Chlorobaculum refulisca sp. nov.

Candidatus Chlorobaculum refulisca (NL. fem. n. *refulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp004118635*. The type genome for the species is the GenBank assembly RS_GCF_004118635.1. The GC content of the type genome is 56.72 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Chlorobaculum rubicigena sp. nov.

Candidatus Chlorobaculum rubicigena (NL. fem. n. *rubicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp013334335*. The type genome for the species is the GenBank assembly GCA_013335825.1. The GC content of the type genome is 58.46 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Chlorobaculum semimilega sp. nov.

Candidatus Chlorobaculum semimilega (NL. fem. n. *semimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp013334925*. The type genome for the species is the GenBank assembly GCA_013334925.1. The GC content of the type genome is 54.75 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Chlorobaculum tolutugo sp. nov.

Candidatus Chlorobaculum tolutugo (NL. fem. n. *tolutugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp013334865*. The type genome for the species is the GenBank assembly GCA_013334865.1. The GC content of the type genome is 60.18 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Chlorobaculum vehemessa sp. nov.

Candidatus Chlorobaculum vehemessa (NL. fem. n. *vehemessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobaculum sp903929135*. The type genome for the species is the GenBank assembly GCA_903929135.1. The GC content of the type genome is 57.88 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Chlorobium adtoretta sp. nov.

Candidatus Chlorobium adtoretta (NL. fem. n. *adtoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Chlorobium sp013334485*. The type genome for the species is the GenBank assembly GCA_013334485.1. The GC content of the type genome is 48.0 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Chlorobium annecilega sp. nov.

Candidatus Chlorobium annecilega (NL. fem. n. *annecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903920215*. The type genome for the species is the GenBank assembly GCA_903920215.1. The GC content of the type genome is 45.84 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Chlorobium arbavisca sp. nov.

Candidatus Chlorobium arbavisca (NL. fem. n. *arbavisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903838025*. The type genome for the species is the GenBank assembly GCA_903838025.1. The GC content of the type genome is 48.37 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Chlorobium bicalago sp. nov.

Candidatus Chlorobium bicalago (NL. fem. n. *bicalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903822595*. The type genome for the species is the GenBank assembly GCA_903822595.1. The GC content of the type genome is 48.25 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Chlorobium bicapibula sp. nov.

Candidatus Chlorobium bicapibula (NL. fem. n. *bicapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903882665*. The type genome for the species is the GenBank assembly GCA_903835515.1. The GC content of the type genome is 48.8 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Chlorobium bipenibula sp. nov.

Candidatus Chlorobium bipenibula (NL. fem. n. *bipenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903824295*. The type genome for the species is the GenBank assembly GCA_903876775.1. The GC content of the type genome is 48.91 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Chlorobium bonifetta sp. nov.

Candidatus Chlorobium bonifetta (NL. fem. n. *bonifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903851535*. The type genome for the species is the GenBank assembly GCA_903851535.1. The GC content of the type genome is 49.23 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Chlorobium cerofitrix sp. nov.

Candidatus Chlorobium cerofitrix (NL. fem. n. *cerofitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp013334755*. The type genome for the species is the GenBank assembly GCA_013335795.1. The GC content of the type genome is 46.88 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Chlorobium ceromedo sp. nov.

Candidatus Chlorobium ceromedo (NL. fem. n. *ceromedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903840935*. The type genome for the species is the GenBank assembly GCA_903840935.1. The GC content of the type genome is 48.63 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Chlorobium coninimonas sp. nov.

Candidatus Chlorobium coninimonas (NL. fem. n. *coninimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp005843805*. The type genome for the species is the GenBank assembly GCA_005843805.1. The GC content of the type genome is 48.46 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Chlorobium corocugo sp. nov.

Candidatus Chlorobium corocugo (NL. fem. n. *corocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903940125*. The type genome for the species is the GenBank assembly GCA_903836935.1. The GC content of the type genome is 45.33 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Chlorobium cuferigena sp. nov.

Candidatus Chlorobium cuferigena (NL. fem. n. *cuferigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903937835*. The type genome for the species is the GenBank assembly GCA_903951235.1. The GC content of the type genome is 47.47 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Chlorobium cuferivita sp. nov.

Candidatus Chlorobium cuferivita (NL. fem. n. *cuferivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903851385*. The type genome for the species is the GenBank assembly GCA_903943615.1. The GC content of the type genome is 45.78 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Chlorobium culibisca sp. nov.

Candidatus Chlorobium culibisca (NL. fem. n. *culibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Chlorobium sp005862285*. The type genome for the species is the GenBank assembly GCA_005862285.1. The GC content of the type genome is 48.74 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Chlorobium curacifica sp. nov.

Candidatus Chlorobium curacifica (NL. fem. n. *curacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903869365*. The type genome for the species is the GenBank assembly GCA_903861705.1. The GC content of the type genome is 46.1 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Chlorobium decenastra sp. nov.

Candidatus Chlorobium decenastra (NL. fem. n. *decenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp013335405*. The type genome for the species is the GenBank assembly GCA_013335405.1. The GC content of the type genome is 52.55 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Chlorobium decomugo sp. nov.

Candidatus Chlorobium decomugo (NL. fem. n. *decomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp005843815*. The type genome for the species is the GenBank assembly GCA_005843815.1. The GC content of the type genome is 48.28 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Chlorobium defalicella sp. nov.

Candidatus Chlorobium defalicella (NL. fem. n. *defalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp013334435*. The type genome for the species is the GenBank assembly GCA_013335785.1. The GC content of the type genome is 55.54 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Chlorobium denunilega sp. nov.

Candidatus Chlorobium denunilega (NL. fem. n. *denunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903994635*. The type genome for the species is the GenBank assembly GCA_903994415.1. The GC content of the type genome is 47.91 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Chlorobium depetigena sp. nov.

Candidatus Chlorobium depetigena (NL. fem. n. *depetigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903843305*. The type genome for the species is the GenBank assembly GCA_903898535.1. The GC content of the type genome is 46.28 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Chlorobium depetimonia sp. nov.

Candidatus Chlorobium depetimonia (NL. fem. n. *depetimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903939765*. The type genome for the species is the GenBank assembly GCA_903939765.1. The GC content of the type genome is 49.01 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Chlorobium derelessa sp. nov.

Candidatus Chlorobium derelessa (NL. fem. n. *derelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903917955*. The type genome for the species is the GenBank assembly GCA_903917955.1. The GC content of the type genome is 49.06 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Chlorobium desoniforma sp. nov.

Candidatus Chlorobium desoniforma (NL. fem. n. *desoniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903895195*. The type genome for the species is the GenBank assembly GCA_903858515.1. The GC content of the type genome is 46.81 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Chlorobium dibucitica sp. nov.

Candidatus Chlorobium dibucitica (NL. fem. n. *dibucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp005862225*. The type genome for the species is the GenBank assembly GCA_005862225.1. The GC content of the type genome is 46.81 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Chlorobium dicanigena sp. nov.

Candidatus Chlorobium dicanigena (NL. fem. n. *dicanigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp013203905*. The type genome for the species is the GenBank assembly GCA_013203905.1. The GC content of the type genome is 53.06 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Chlorobium direcugo sp. nov.

Candidatus Chlorobium direcugo (NL. fem. n. *direcugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903820085*. The type genome for the species is the GenBank assembly GCA_903821405.1. The GC content of the type genome is 48.51 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Chlorobium divulibula sp. nov.

Candidatus Chlorobium divulibula (NL. fem. n. *divulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Chlorobium sp012972825*. The type genome for the species is the GenBank assembly GCA_012972825.1. The GC content of the type genome is 45.67 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Chlorobium feditilega sp. nov.

Candidatus Chlorobium feditilega (NL. fem. n. *feditilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903859055*. The type genome for the species is the GenBank assembly GCA_903859055.1. The GC content of the type genome is 47.94 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Chlorobium fefelugo sp. nov.

Candidatus Chlorobium fefelugo (NL. fem. n. *fefelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903839405*. The type genome for the species is the GenBank assembly GCA_903839405.1. The GC content of the type genome is 51.22 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Chlorobium fetifatica sp. nov.

Candidatus Chlorobium fetifatica (NL. fem. n. *fetifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp012972835*. The type genome for the species is the GenBank assembly GCA_012972835.1. The GC content of the type genome is 45.73 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Chlorobium figilugo sp. nov.

Candidatus Chlorobium figilugo (NL. fem. n. *figilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp011601315*. The type genome for the species is the GenBank assembly RS_GCF_011601315.1. The GC content of the type genome is 49.58 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Chlorobium foricicella sp. nov.

Candidatus Chlorobium foricicella (NL. fem. n. *foricicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp005843825*. The type genome for the species is the GenBank assembly GCA_903844325.1. The GC content of the type genome is 46.31 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Chlorobium fusificella sp. nov.

Candidatus Chlorobium fusificella (NL. fem. n. *fusificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903824045*. The type genome for the species is the GenBank assembly GCA_903819835.1. The GC content of the type genome is 54.2 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Chlorobium inoffitica sp. nov.

Candidatus Chlorobium inoffitica (NL. fem. n. *inoffitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903838095*. The type genome for the species is the GenBank assembly GCA_903838095.1. The GC content of the type genome is 46.7 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Chlorobium laxitilenta sp. nov.

Candidatus Chlorobium laxitilenta (NL. fem. n. *laxitilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp013336025*. The type genome for the species is the GenBank assembly GCA_013336025.1. The GC content of the type genome is 47.71 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Chlorobium luceledo sp. nov.

Candidatus Chlorobium luceledo (NL. fem. n. *luceledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp004332115*. The type genome for the species is the GenBank assembly RS_GCF_004332115.1. The GC content of the type genome is 61.46 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Chlorobium lucifitica sp. nov.

Candidatus Chlorobium lucifitica (NL. fem. n. *lucifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903908555*. The type genome for the species is the GenBank assembly GCA_903908555.1. The GC content of the type genome is 45.77 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Chlorobium megalitia sp. nov.

Candidatus Chlorobium megalitia (NL. fem. n. *megalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903866255*. The type genome for the species is the GenBank assembly GCA_903922235.1. The GC content of the type genome is 47.82 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Chlorobium monacibra sp. nov.

Candidatus Chlorobium monacibra (NL. fem. n. *monacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903887845*. The type genome for the species is the GenBank assembly GCA_903847795.1. The GC content of the type genome is 47.24 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Chlorobium murilatica sp. nov.

Candidatus Chlorobium murilatica (NL. fem. n. *murilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Chlorobium sp903871235*. The type genome for the species is the GenBank assembly GCA_903897035.1. The GC content of the type genome is 48.19 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Chlorobium nutabimonas sp. nov.

Candidatus Chlorobium nutabimonas (NL. fem. n. *nutabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903994455*. The type genome for the species is the GenBank assembly GCA_903845695.1. The GC content of the type genome is 47.78 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Chlorobium pedepicula sp. nov.

Candidatus Chlorobium pedepicula (NL. fem. n. *pedepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp013334565*. The type genome for the species is the GenBank assembly GCA_013334565.1. The GC content of the type genome is 53.63 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Chlorobium pedifimonas sp. nov.

Candidatus Chlorobium pedifimonas (NL. fem. n. *pedifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903929845*. The type genome for the species is the GenBank assembly GCA_903870225.1. The GC content of the type genome is 47.29 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Chlorobium penurivita sp. nov.

Candidatus Chlorobium penurivita (NL. fem. n. *penurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903904495*. The type genome for the species is the GenBank assembly GCA_903904495.1. The GC content of the type genome is 46.08 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Chlorobium perabitas sp. nov.

Candidatus Chlorobium perabitas (NL. fem. n. *perabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903836465*. The type genome for the species is the GenBank assembly GCA_903845435.1. The GC content of the type genome is 47.3 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Chlorobium pericessa sp. nov.

Candidatus Chlorobium pericessa (NL. fem. n. *pericessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903994365*. The type genome for the species is the GenBank assembly GCA_903835785.1. The GC content of the type genome is 47.55 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Chlorobium recomiforma sp. nov.

Candidatus Chlorobium recomiforma (NL. fem. n. *recomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903942355*. The type genome for the species is the GenBank assembly GCA_903942355.1. The GC content of the type genome is 48.53 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Chlorobium redacastra sp. nov.

Candidatus Chlorobium redacastra (NL. fem. n. *redacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903915955*. The type genome for the species is the GenBank assembly GCA_903915955.1. The GC content of the type genome is 47.31 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Chlorobium saburibula sp. nov.

Candidatus Chlorobium saburibula (NL. fem. n. *saburibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp013334225*. The type genome for the species is the GenBank assembly GCA_013334225.1. The GC content of the type genome is 48.87 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Chlorobium sanabatica sp. nov.

Candidatus Chlorobium sanabatica (NL. fem. n. *sanabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp005843835*. The type genome for the species is the GenBank assembly GCA_903838815.1. The GC content of the type genome is 43.92 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Chlorobium telegimonas sp. nov.

Candidatus Chlorobium telegimonas (NL. fem. n. *telegimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903994525*. The type genome for the species is the GenBank assembly GCA_903914055.1. The GC content of the type genome is 47.43 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Chlorobium verecicella sp. nov.

Candidatus Chlorobium verecicella (NL. fem. n. *verecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903895485*. The type genome for the species is the GenBank assembly GCA_903901615.1. The GC content of the type genome is 48.72 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Chlorobium vicatitrix sp. nov.

Candidatus Chlorobium vicatitrix (NL. fem. n. *vicatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Chlorobium sp903928225*. The type genome for the species is the GenBank assembly GCA_903928225.1. The GC content of the type genome is 53.01 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Chlorobium vinulifica sp. nov.

Candidatus Chlorobium vinulifica (NL. fem. n. *vinulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903874585*. The type genome for the species is the GenBank assembly GCA_903874585.1. The GC content of the type genome is 46.18 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Chlorobium volubivita sp. nov.

Candidatus Chlorobium volubivita (NL. fem. n. *volubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium sp903865705*. The type genome for the species is the GenBank assembly GCA_903844805.1. The GC content of the type genome is 47.68 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Chlorobium cibaritudo sp. nov.

Candidatus Chlorobium cibaritudo (NL. fem. n. *cibaritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium_A sp002240205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002240205.1. The GC content of the type genome is 55.97 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Chlorobium denixicella sp. nov.

Candidatus Chlorobium denixicella (NL. fem. n. *denixicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorobium_A sp004028745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004028745.1. The GC content of the type genome is 47.83 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Chloroflexus armidugo sp. nov.

Candidatus Chloroflexus armidugo (NL. fem. n. *armidugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chloroflexus sp000516515*. The type genome for the species is the GenBank assembly RS_GCF_000516515.1. The GC content of the type genome is 53.93 % and the genome length is 4.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Chloroflexus denecilega sp. nov.

Candidatus Chloroflexus denecilega (NL. fem. n. *denecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chloroflexus sp000735195*. The type genome for the species is the GenBank assembly RS_GCF_000735195.1. The GC content of the type genome is 54.26 % and the genome length is 4.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "phototrophic microbial mat".

Description of *Candidatus* Chlorogloeopsis viragicula sp. nov.

Candidatus Chlorogloeopsis viragicula (NL. fem. n. *viragicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chlorogloeopsis sp000332255*. The type genome for the species is the GenBank assembly RS_GCF_000332255.1. The GC content of the type genome is 42.39 % and the genome length is 4.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Chloroploca adgenitica sp. nov.

Candidatus Chloroploca adgenitica (NL. fem. n. *adgenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chloroploca sp004138165*. The type genome for the species is the GenBank assembly RS_GCF_004138165.1. The GC content of the type genome is 58.86 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Chloroploca lanigivita sp. nov.

Candidatus Chloroploca lanigivita (NL. fem. n. *lanigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chloroploca sp004762035*. The type genome for the species is the GenBank assembly RS_GCF_004762035.1. The GC content of the type genome is 58.53 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Christensenella inhonitoga sp. nov.

Candidatus Christensenella inhonitoga (NL. fem. n. *inhonitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Christensenella sp014287795*. The type genome for the species is the GenBank assembly RS_GCF_014287795.1. The GC content of the type genome is 48.9 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Christensenella necubimonas sp. nov.

Candidatus Christensenella necubimonas (NL. fem. n. *necubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Christensenella sp001678845*. The type genome for the species is the GenBank assembly RS_GCF_001678845.1. The GC content of the type genome is 52.07 % and the genome length is 3.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gut".

Description of *Candidatus* Chromatium cicatimonas sp. nov.

Candidatus Chromatium cicatimonas (NL. fem. n. *cicatimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chromatium sp903897335*. The type genome for the species is the GenBank assembly GCA_903897335.1. The GC content of the type genome is 58.27 %

and the genome length is 3.29 Mbp.

Description of *Candidatus* Chromobacterium adperitia sp. nov.

Candidatus Chromobacterium adperitia (NL. fem. n. *adperitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chromobacterium sp002924365*. The type genome for the species is the GenBank assembly RS_GCF_002924365.1. The GC content of the type genome is 63.36 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Chromobacterium aggenitoga sp. nov.

Candidatus Chromobacterium aggenitoga (NL. fem. n. *aggenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chromobacterium sp002848345*. The type genome for the species is the GenBank assembly RS_GCF_002848345.1. The GC content of the type genome is 65.13 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Chromobacterium atropitia sp. nov.

Candidatus Chromobacterium atropitia (NL. fem. n. *atropitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chromobacterium sp002213445*. The type genome for the species is the GenBank assembly RS_GCF_002213445.1. The GC content of the type genome is 64.66 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Chromobacterium cerifitio sp. nov.

Candidatus Chromobacterium cerifitio (NL. fem. n. *cerifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chromobacterium sp003325495*. The type genome for the species is the GenBank assembly RS_GCF_003325475.1. The GC content of the type genome is 63.91 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Chromobacterium hexapitoga sp. nov.

Candidatus Chromobacterium hexapitoga (NL. fem. n. *hexapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chromobacterium sp001043705*. The type genome for the species is the GenBank assembly RS_GCF_001043705.1. The GC content of the type genome is 64.96 % and the genome length is 5.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Plant".

Description of *Candidatus* Chromobacterium ignicifica sp. nov.

Candidatus Chromobacterium ignicifica (NL. fem. n. *ignicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chromobacterium sp008275125*. The type genome for the species is the GenBank assembly RS_GCF_008275125.1. The GC content of the type genome is 63.63 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Chromobacterium orgetago sp. nov.

Candidatus Chromobacterium orgetago (NL. fem. n. *orgetago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chromobacterium sp001043555*. The type genome for the species is the GenBank assembly RS_GCF_001043555.1. The GC content of the type genome is 63.64 % and the genome length is 4.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Plant".

Description of *Candidatus* Chromobacterium vigenago sp. nov.

Candidatus Chromobacterium vigenago (NL. fem. n. *vigenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chromobacterium sp003052555*. The type genome for the species is the GenBank assembly RS_GCF_003052555.1. The GC content of the type genome is 64.02 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Chroogloeocystis adposisca sp. nov.

Candidatus Chroogloeocystis adposisca (NL. fem. n. *adposisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chroogloeocystis sp000317555*. The type genome for the species is the GenBank assembly RS_GCF_000317555.1. The GC content of the type genome is 43.36 % and the genome length is 5.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "moderate hot spring".

Description of *Candidatus* Chroogloeocystis cemenago sp. nov.

Candidatus Chroogloeocystis cemenago (NL. fem. n. *cemenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chroogloeocystis sp002964865*. The type genome for the species is the GenBank assembly RS_GCF_002964865.1. The GC content of the type genome is 42.42 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Chroogloeocystis epogdicella sp. nov.

Candidatus Chroogloeocystis epogdicella (NL. fem. n. *epogdicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chroogloeocystis sp002939305*. The type genome for the species is the GenBank assembly RS_GCF_002939305.1. The GC content of the type genome is 43.4 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Chroogloeocystis uberrago sp. nov.

Candidatus Chroogloeocystis uberrago (NL. fem. n. *uberrago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chroogloeocystis sp002749975*. The type genome for the species is the GenBank assembly RS_GCF_002749975.1. The GC content of the type genome is 41.77 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Chryseobacterium abhinicula sp. nov.

Candidatus Chryseobacterium abhinicula (NL. fem. n. *abhinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000333355*. The type genome for the species is the GenBank assembly RS_GCF_000333355.1. The GC content of the type genome is 37.05 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Chryseobacterium adculousia sp. nov.

Candidatus Chryseobacterium adculousia (NL. fem. n. *adculousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp006829085*. The type genome for the species is the GenBank assembly RS_GCF_006829085.1. The GC content of the type genome is 36.94 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Chryseobacterium adcumigena sp. nov.

Candidatus Chryseobacterium adcumigena (NL. fem. n. *adcumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp001424145*. The type genome for the species is the GenBank assembly RS_GCF_001424145.1. The GC content of the type genome is 36.69 % and the genome length is 3.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Chryseobacterium addubimonia sp. nov.

Candidatus Chryseobacterium addubimonia (NL. fem. n. *addubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp002754245*. The type genome for the species is the GenBank assembly RS_GCF_002754245.1. The GC content of the type genome is 37.04 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Chryseobacterium adinvitica sp. nov.

Candidatus Chryseobacterium adinvitica (NL. fem. n. *adinvitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp001045445*. The type genome for the species is the GenBank assembly RS_GCF_001045445.1. The GC content of the type genome is

37.57 % and the genome length is 4.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater Creek".

Description of *Candidatus* Chryseobacterium admorisca sp. nov.

Candidatus Chryseobacterium admorisca (NL. fem. n. *admorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp001045455*. The type genome for the species is the GenBank assembly RS_GCF_001045455.1. The GC content of the type genome is 34.16 % and the genome length is 3.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater Creek".

Description of *Candidatus* Chryseobacterium adrumicella sp. nov.

Candidatus Chryseobacterium adrumicella (NL. fem. n. *adrumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp013153155*. The type genome for the species is the GenBank assembly GCA_013153155.1. The GC content of the type genome is 36.49 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Chryseobacterium almitessa sp. nov.

Candidatus Chryseobacterium almitessa (NL. fem. n. *almitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp002979455*. The type genome for the species is the GenBank assembly RS_GCF_002979455.1. The GC content of the type genome is 35.63 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Chryseobacterium ammuritrix sp. nov.

Candidatus Chryseobacterium ammuritrix (NL. fem. n. *ammuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003347605*. The type genome for the species is the GenBank assembly RS_GCF_003347605.1. The GC content of the type genome is 36.61 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Chryseobacterium ancipicula sp. nov.

Candidatus Chryseobacterium ancipicula (NL. fem. n. *ancipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp902728305*. The type genome for the species is the GenBank assembly RS_GCF_902728305.1. The GC content of the type genome is 34.54 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Chryseobacterium apercitura sp. nov.

Candidatus Chryseobacterium apercitura (NL. fem. n. *apercitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp002455915*. The type genome for the species is the GenBank assembly GCA_002455915.1. The GC content of the type genome is 34.66 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Chryseobacterium apsenivita sp. nov.

Candidatus Chryseobacterium apsenivita (NL. fem. n. *apsenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003815715*. The type genome for the species is the GenBank assembly RS_GCF_003815715.1. The GC content of the type genome is 35.53 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Chryseobacterium arrabitura sp. nov.

Candidatus Chryseobacterium arrabitura (NL. fem. n. *arrabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000799235*. The type genome for the species is the GenBank assembly RS_GCF_000799235.1. The GC content of the type genome is 36.18 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Chryseobacterium attorago sp. nov.

Candidatus Chryseobacterium attorago (NL. fem. n. *attorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp002434285*. The type genome for the species is the GenBank assembly GCA_002434285.1. The GC content of the type genome is 37.02 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Chryseobacterium bipatilega sp. nov.

Candidatus Chryseobacterium bipatilega (NL. fem. n. *bipatilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003385515*. The type genome for the species is the GenBank assembly RS_GCF_003385515.1. The GC content of the type genome is 35.64 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Chryseobacterium celumitrix sp. nov.

Candidatus Chryseobacterium celumitrix (NL. fem. n. *celumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000799335*. The type genome for the species is the GenBank assembly RS_GCF_000799335.1. The GC content of the type genome is 35.99 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Chryseobacterium cerebentia sp. nov.

Candidatus Chryseobacterium cerebentia (NL. fem. n. *cerebentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp011752975*. The type genome for the species is the GenBank assembly RS_GCF_011752975.1. The GC content of the type genome is 36.18 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Chryseobacterium cetaritio sp. nov.

Candidatus Chryseobacterium cetaritio (NL. fem. n. *cetaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Chryseobacterium sp001677955*. The type genome for the species is the GenBank assembly RS_GCF_001677955.1. The GC content of the type genome is 33.57 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Chryseobacterium cimititas sp. nov.

Candidatus Chryseobacterium cimititas (NL. fem. n. *cimititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000799255*. The type genome for the species is the GenBank assembly RS_GCF_000799255.1. The GC content of the type genome is 35.17 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Chryseobacterium colapigena sp. nov.

Candidatus Chryseobacterium colapigena (NL. fem. n. *colapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp009900745*. The type genome for the species is the GenBank assembly RS_GCF_009900745.1. The GC content of the type genome is 35.17 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Chryseobacterium crasticula sp. nov.

Candidatus Chryseobacterium crasticula (NL. fem. n. *crasticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp012927325*. The type genome for the species is the GenBank assembly RS_GCF_012927325.1. The GC content of the type genome is 36.92 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Chryseobacterium culibimonas sp. nov.

Candidatus Chryseobacterium culibimonas (NL. fem. n. *culibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp903166575*. The type genome for the species is the GenBank assembly RS_GCF_903166575.1. The GC content of the type genome is 33.52 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Chryseobacterium decamicella sp. nov.

Candidatus Chryseobacterium decamicella (NL. fem. n. *decamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp001297705*. The type genome for the species is the GenBank assembly RS_GCF_001297705.1. The GC content of the type genome is 34.07 % and the genome length is 5.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Moraine Ridge Soil".

Description of *Candidatus* Chryseobacterium decucifica sp. nov.

Candidatus Chryseobacterium decucifica (NL. fem. n. *decucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003815675*. The type genome for the species is the GenBank assembly RS_GCF_003815675.1. The GC content of the type genome is 35.99 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Chryseobacterium delacugo sp. nov.

Candidatus Chryseobacterium delacugo (NL. fem. n. *delacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp008329705*. The type genome for the species is the GenBank assembly RS_GCF_008329705.1. The GC content of the type genome is 41.11 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Chryseobacterium depubimonia sp. nov.

Candidatus Chryseobacterium depubimonia (NL. fem. n. *depubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp008274625*. The type genome for the species is the GenBank assembly RS_GCF_008274625.1. The GC content of the type genome is 36.45 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Chryseobacterium detosilenta sp. nov.

Candidatus Chryseobacterium detosilenta (NL. fem. n. *detosilenta* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp004119445*. The type genome for the species is the GenBank assembly RS_GCF_004119445.1. The GC content of the type genome is 35.86 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Chryseobacterium dilemousia sp. nov.

Candidatus Chryseobacterium dilemousia (NL. fem. n. *dilemousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp004119455*. The type genome for the species is the GenBank assembly RS_GCF_004119415.1. The GC content of the type genome is 35.56 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Chryseobacterium divorifica sp. nov.

Candidatus Chryseobacterium divorifica (NL. fem. n. *divorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003669035*. The type genome for the species is the GenBank assembly RS_GCF_003669035.1. The GC content of the type genome is 34.5 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Chryseobacterium duponastra sp. nov.

Candidatus Chryseobacterium duponastra (NL. fem. n. *duponastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003729935*. The type genome for the species is the GenBank assembly RS_GCF_003729935.1. The GC content of the type genome is 36.82 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Chryseobacterium eccisigena sp. nov.

Candidatus Chryseobacterium eccisigena (NL. fem. n. *eccisigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000737715*. The type genome for the species is the GenBank assembly RS_GCF_000737715.1. The GC content of the type genome is 38.05 % and the genome length is 5.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "milk carafe".

Description of *Candidatus* Chryseobacterium epogdivita sp. nov.

Candidatus Chryseobacterium epogdivita (NL. fem. n. *epogdivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp002899825*. The type genome for the species is the GenBank assembly RS_GCF_002899825.2. The GC content of the type genome is 36.3 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Chryseobacterium exaspago sp. nov.

Candidatus Chryseobacterium exaspago (NL. fem. n. *exaspago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp009602705*. The type genome for the species is the GenBank assembly RS_GCF_009602705.1. The GC content of the type genome is 37.4 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Chryseobacterium exhoritrix sp. nov.

Candidatus Chryseobacterium exhoritrix (NL. fem. n. *exhoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp001421435*. The type genome for the species is the GenBank assembly RS_GCF_001421435.1. The GC content of the type genome is 39.54 % and the genome length is 4.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Chryseobacterium forabimonia sp. nov.

Candidatus Chryseobacterium forabimonia (NL. fem. n. *forabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp900156075*. The type genome for the species is

the GenBank assembly RS_GCF_900156075.1. The GC content of the type genome is 35.03 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Chryseobacterium fragmatio sp. nov.

Candidatus Chryseobacterium fragmatio (NL. fem. n. *fragmatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000799515*. The type genome for the species is the GenBank assembly RS_GCF_000799515.1. The GC content of the type genome is 34.83 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Chryseobacterium ignifimonia sp. nov.

Candidatus Chryseobacterium ignifimonia (NL. fem. n. *ignifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp002216065*. The type genome for the species is the GenBank assembly RS_GCF_002216065.1. The GC content of the type genome is 35.22 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Chryseobacterium impigicula sp. nov.

Candidatus Chryseobacterium impigicula (NL. fem. n. *impigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp012927265*. The type genome for the species is the GenBank assembly RS_GCF_012927265.1. The GC content of the type genome is 37.25 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Chryseobacterium impiriforma sp. nov.

Candidatus Chryseobacterium impiriforma (NL. fem. n. *impiriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp001424105*. The type genome for the species is the GenBank assembly RS_GCF_001424105.1. The GC content of the type genome is 36.52 % and the genome length is 4.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Chryseobacterium inaspitas sp. nov.

Candidatus Chryseobacterium inaspitas (NL. fem. n. *inaspitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000829375*. The type genome for the species is the GenBank assembly RS_GCF_000829375.1. The GC content of the type genome is 35.59 % and the genome length is 5.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Chryseobacterium isoscisca sp. nov.

Candidatus Chryseobacterium isoscisca (NL. fem. n. *isoscisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000745535*. The type genome for the species is the GenBank assembly RS_GCF_000745535.1. The GC content of the type genome is 35.88 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Chryseobacterium lavacicula sp. nov.

Candidatus Chryseobacterium lavacicula (NL. fem. n. *lavacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003815655*. The type genome for the species is the GenBank assembly RS_GCF_003815655.1. The GC content of the type genome is 34.16 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Chryseobacterium mirabibra sp. nov.

Candidatus Chryseobacterium mirabibra (NL. fem. n. *mirabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000745795*. The type genome for the species is the GenBank assembly RS_GCF_000745795.1. The GC content of the type genome is 33.8 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Chryseobacterium negotitica sp. nov.

Candidatus Chryseobacterium negotitica (NL. fem. n. *negotitica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003384725*. The type genome for the species is the GenBank assembly RS_GCF_003384725.1. The GC content of the type genome is 38.55 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Chryseobacterium occumetta sp. nov.

Candidatus Chryseobacterium occumetta (NL. fem. n. *occumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp001424585*. The type genome for the species is the GenBank assembly RS_GCF_001424585.1. The GC content of the type genome is 38.33 % and the genome length is 3.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Chryseobacterium optumitrix sp. nov.

Candidatus Chryseobacterium optumitrix (NL. fem. n. *optumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000799455*. The type genome for the species is the GenBank assembly RS_GCF_000799455.1. The GC content of the type genome is 34.49 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Chryseobacterium ossucatio sp. nov.

Candidatus Chryseobacterium ossucatio (NL. fem. n. *ossucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp013184525*. The type genome for the species is the GenBank assembly RS_GCF_013184525.1. The GC content of the type genome is 36.18 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Chryseobacterium penecibula sp. nov.

Candidatus Chryseobacterium penecibula (NL. fem. n. *penecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp900128945*. The type genome for the species is the GenBank assembly RS_GCF_000800075.1. The GC content of the type genome is 38.06 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Chryseobacterium pociledo sp. nov.

Candidatus Chryseobacterium pociledo (NL. fem. n. *pociledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp900156935*. The type genome for the species is the GenBank assembly RS_GCF_903969135.1. The GC content of the type genome is 36.11 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Chryseobacterium recucimonia sp. nov.

Candidatus Chryseobacterium recucimonia (NL. fem. n. *recucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp002835665*. The type genome for the species is the GenBank assembly RS_GCF_002835665.1. The GC content of the type genome is 34.78 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Chryseobacterium remulitas sp. nov.

Candidatus Chryseobacterium remulitas (NL. fem. n. *remulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp013410675*. The type genome for the species is the GenBank assembly RS_GCF_013410675.1. The GC content of the type genome is 35.41 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Chryseobacterium serotitoga sp. nov.

Candidatus Chryseobacterium serotitoga (NL. fem. n. *serotitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003182335*. The type genome for the species is the GenBank assembly GCA_009648535.1. The GC content of the type genome is 36.85

% and the genome length is 5.0 Mbp.

Description of *Candidatus* Chryseobacterium triscitudo sp. nov.

Candidatus Chryseobacterium triscitudo (NL. fem. n. *triscitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp003663845*. The type genome for the species is the GenBank assembly RS_GCF_003663845.1. The GC content of the type genome is 36.02 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Chryseobacterium vatilibra sp. nov.

Candidatus Chryseobacterium vatilibra (NL. fem. n. *vatilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp001456155*. The type genome for the species is the GenBank assembly RS_GCF_003384775.1. The GC content of the type genome is 35.54 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Chryseobacterium vavasimonas sp. nov.

Candidatus Chryseobacterium vavasimonas (NL. fem. n. *vavasimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp000799195*. The type genome for the species is the GenBank assembly RS_GCF_000799195.1. The GC content of the type genome is 34.22 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Chryseobacterium velivastra sp. nov.

Candidatus Chryseobacterium velivastra (NL. fem. n. *velivastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseobacterium sp001425355*. The type genome for the species is the GenBank assembly RS_GCF_001425355.1. The GC content of the type genome is 34.27 % and the genome length is 4.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Chryseoglobus ammixitio sp. nov.

Candidatus Chryseoglobus ammixitio (NL. fem. n. *ammixitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseoglobus sp005777405*. The type genome for the species is the GenBank assembly GCA_005777405.1. The GC content of the type genome is 67.7 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Chryseoglobus assibastra sp. nov.

Candidatus Chryseoglobus assibastra (NL. fem. n. *assibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseoglobus sp013414345*. The type genome for the species is the GenBank assembly RS_GCF_013414345.1. The GC content of the type genome is 69.61 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Chryseoglobus denomessa sp. nov.

Candidatus Chryseoglobus denomessa (NL. fem. n. *denomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseoglobus sp002729155*. The type genome for the species is the GenBank assembly RS_GCF_009371975.2. The GC content of the type genome is 69.42 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Chryseoglobus impudago sp. nov.

Candidatus Chryseoglobus impudago (NL. fem. n. *impudago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseoglobus sp001464255*. The type genome for the species is the GenBank assembly GCA_001464255.1. The GC content of the type genome is 71.28 % and the genome length is 2.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Chryseoglobus inlumastra sp. nov.

Candidatus Chryseoglobus inlumastra (NL. fem. n. *inlumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseoglobus sp002813345*. The type genome for the species is the GenBank assembly RS_GCF_002813345.1. The GC content of the type genome is 68.36 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Chryseoglobus monacigena sp. nov.

Candidatus Chryseoglobus monacigena (NL. fem. n. *monacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseoglobus sp013823625*. The type genome for the species is the GenBank assembly GCA_013824105.1. The GC content of the type genome is 66.51 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Chryseoglobus prospimonas sp. nov.

Candidatus Chryseoglobus prospimonas (NL. fem. n. *prospimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseoglobus sp002280615*. The type genome for the species is the GenBank assembly GCA_002280615.1. The GC content of the type genome is 70.45 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Chryseoglobus rudicigena sp. nov.

Candidatus Chryseoglobus rudicigena (NL. fem. n. *rudicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseoglobus sp002423075*. The type genome for the species is the GenBank assembly GCA_002423075.1. The GC content of the type genome is 67.55 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Chryseoglobus valefigena sp. nov.

Candidatus Chryseoglobus valefigena (NL. fem. n. *valefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Chryseoglobus sp013297625*. The type genome for the species is the GenBank assembly GCA_013297625.1. The GC content of the type genome is 66.46 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Chryseoglobus vavasivita sp. nov.

Candidatus Chryseoglobus vavasivita (NL. fem. n. *vavasivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseoglobus sp005778835*. The type genome for the species is the GenBank assembly GCA_005778835.1. The GC content of the type genome is 69.33 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Chryseotalea incesisca sp. nov.

Candidatus Chryseotalea incesisca (NL. fem. n. *incesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chryseotalea sp001464155*. The type genome for the species is the GenBank assembly GCA_001464155.1. The GC content of the type genome is 42.83 % and the genome length is 3.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Chthoniobacter valefiforma sp. nov.

Candidatus Chthoniobacter valefiforma (NL. fem. n. *valefiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Chthoniobacter sp903874975*. The type genome for the species is the GenBank assembly GCA_008932945.1. The GC content of the type genome is 65.1 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Cibarana almucibula sp. nov.

Candidatus Cibarana almucibula (NL. fem. n. *almucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMJ01 sp014360335*. The type genome for the species is the GenBank assembly GCA_014360335.1. The GC content of the type genome is 37.65 %

and the genome length is 2.37 Mbp.

Description of *Candidatus* Cibarana gen. nov.

Candidatus Cibarana (NL. fem. n. *Cibarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMJ01*. The type species for the genus is *Candidatus* Cibarana almucibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibaranaceae.

Description of *Candidatus* Cibaranaceae fam. nov.

Candidatus Cibaranaceae (NL. fem. n. *Cibaranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMJ01.* The type genus for the taxon is *Candidatus* Cibarana .

According to the original version of GTDB R06-RS202, this family belongs to the order *DUMJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cibaranales.

Description of *Candidatus* Cibaranales ord. nov.

Candidatus Cibaranales (NL. fem. n. *Cibaranales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMJ01.* The type genus for the taxon is *Candidatus* Cibarana .

According to the original version of GTDB R06-RS202, this family belongs to the class *DUMJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cibaranae.

Description of *Candidatus* Cibaranae class. nov.

Candidatus Cibaranae (NL. fem. n. *c__Cibaranae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMJ01.* The type genus for the taxon is *Candidatus* Cibarana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *DUMJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Cibaranota.

Description of *Candidatus* Cibaranota phyl. nov.

Candidatus Cibaranota (NL. fem. n. *Cibaranota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMJ01*. The type genus for the taxon is *Candidatus* Cibarana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Cibarana epitritas sp. nov.

Candidatus Cibarana epitritas (NL. fem. n. *epitritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMJ01 sp011333285*. The type genome for the species is the GenBank assembly GCA_011333285.1. The GC content of the type genome is 40.75 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Cibarana excarugo sp. nov.

Candidatus Cibarana excarugo (NL. fem. n. *excarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMJ01 sp011334575*. The type genome for the species is the GenBank assembly GCA_011334575.1. The GC content of the type genome is 39.67 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Cibarana viginicella sp. nov.

Candidatus Cibarana viginicella (NL. fem. n. *viginicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMJ01 sp012839925*. The type genome for the species is the GenBank assembly GCA_012839925.1. The GC content of the type genome is 39.59 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Cibararia alceditura sp. nov.

Candidatus Cibararia alceditura (NL. fem. n. *alceditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-64-10 sp002787095*. The type genome for the species is the GenBank assembly GCA_002787095.1. The GC content of the type genome is 64.49 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Cibararia gen. nov.

Candidatus Cibararia (NL. fem. n. *Cibararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-64-10*. The type species for the genus is *Candidatus* Cibararia alceditura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-20-64-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarariaceae.

Description of *Candidatus* Cibarariaceae fam. nov.

Candidatus Cibarariaceae (NL. fem. n. *Cibarariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-20-64-10.* The type genus for the taxon is *Candidatus* Cibararia .

According to the original version of GTDB R06-RS202, this family belongs to the order *1-14-0-20-64-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cibarariales.

Description of *Candidatus* Cibarariales ord. nov.

Candidatus Cibarariales (NL. fem. n. *Cibarariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-20-64-10.* The type genus for the taxon is *Candidatus* Cibararia .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Cibarella repurisca sp. nov.

Candidatus Cibarella repurisca (NL. fem. n. *repurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTK01 sp009377745*. The type genome for the species is the GenBank assembly GCA_009377745.1. The GC content of the type genome is 63.76 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Cibarella gen. nov.

Candidatus Cibarella (NL. fem. n. *Cibarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTK01*. The type species for the genus is *Candidatus* Cibarella repurisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHTK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarellaceae.

Description of *Candidatus* Cibarellaceae fam. nov.

Candidatus Cibarellaceae (NL. fem. n. *Cibarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WHTK01.* The type genus for the taxon is *Candidatus* Cibarella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSTF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cinefiales.

Description of *Candidatus* Cibarida vagabitia sp. nov.

Candidatus Cibarida vagabitia (NL. fem. n. *vagabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QXXE01 sp009911355*. The type genome for the species is the GenBank assembly RS_GCF_009911335.1. The GC content of the type genome is 57.14 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Cibarida gen. nov.

Candidatus Cibarida (NL. fem. n. *Cibarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QXXE01*. The type species for the genus is *Candidatus* Cibarida vagabitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cibarosa obsolimonas sp. nov.

Candidatus Cibarosa obsolimonas (NL. fem. n. *obsolimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6265 sp002440805*. The type genome for the species is the GenBank assembly GCA_002440805.1. The GC content of the type genome is 58.98 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Cibarosa gen. nov.

Candidatus Cibarosa (NL. fem. n. *Cibarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6265*. The type species for the genus is *Candidatus* Cibarosa obsolimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Cibarosaceae fam. nov.

Candidatus Cibarosaceae (NL. fem. n. *Cibarosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6265.* The type genus for the taxon is *Candidatus* Cibarosa .

According to GTDB R06-RS202, this family belongs to the order *Thermomicrobiales*.

Description of *Candidatus* Cibarula defanitrix sp. nov.

Candidatus Cibarula defanitrix (NL. fem. n. *defanitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9637 sp001797665*. The type genome for the species is the GenBank assembly GCA_001797665.1. The GC content of the type genome is 42.05 % and the genome length is 2.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Cibarula gen. nov.

Candidatus Cibarula (NL. fem. n. *Cibarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9637*. The type species for the genus is *Candidatus* Cibarula defanitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9637*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarulaceae.

Description of *Candidatus* Cibarulaceae fam. nov.

Candidatus Cibarulaceae (NL. fem. n. *Cibarulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9637*. The type genus for the taxon is *Candidatus* Cibarula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabifellales.

Description of *Candidatus* Cibicana aruspentia sp. nov.

Candidatus Cibicana aruspentia (NL. fem. n. *aruspentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW10 sp002172625*. The type genome for the species is the GenBank assembly GCA_002172625.1. The GC content of the type genome is 53.96 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Cibicana gen. nov.

Candidatus Cibicana (NL. fem. n. *Cibicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SW10*. The type species for the genus is *Candidatus* Cibicana aruspentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cibicana casigentia sp. nov.

Candidatus Cibicana casigentia (NL. fem. n. *casigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW10 sp002323895*. The type genome for the species is the GenBank assembly GCA_002862925.1. The GC content of the type genome is 49.25 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Cibicana insalifica sp. nov.

Candidatus Cibicana insalifica (NL. fem. n. *insalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW10 sp000383735*. The type genome for the species is the GenBank assembly GCA_000383735.1. The GC content of the type genome is 48.53 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Cibicana nimirastra sp. nov.

Candidatus Cibicana nimirastra (NL. fem. n. *nimirastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW10 sp002420315*. The type genome for the species is the GenBank assembly GCA_003446495.1. The GC content of the type genome is 48.93 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Cibicana ratifitas sp. nov.

Candidatus Cibicana ratifitas (NL. fem. n. *ratifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW10 sp002729295*. The type genome for the species is the GenBank assembly GCA_002729295.1. The GC content of the type genome is 53.24 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Cibicaria virecitica sp. nov.

Candidatus Cibicaria virecitica (NL. fem. n. *virecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2742935 sp002742935*. The type genome for the species is the GenBank assembly GCA_002748965.1. The GC content of the type genome is 31.4 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Cibicaria gen. nov.

Candidatus Cibicaria (NL. fem. n. *Cibicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2742935*. The type species for the genus is *Candidatus* Cibicaria virecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4055*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecariaceae.

Description of *Candidatus* Cibicella latibitudo sp. nov.

Candidatus Cibicella latibitudo (NL. fem. n. *latibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6910 sp002451065*. The type genome for the species is the GenBank assembly GCA_002451065.1. The GC content of the type genome is 65.24 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Cibicella gen. nov.

Candidatus Cibicella (NL. fem. n. *Cibicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6910*. The type species for the genus is *Candidatus* Cibicella latibitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6910*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibicellaceae.

Description of *Candidatus* Cibicellaceae fam. nov.

Candidatus Cibicellaceae (NL. fem. n. *Cibicellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6910.* The type genus for the taxon is *Candidatus* Cibicella .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Cibicia alsisicella sp. nov.

Candidatus Cibicia alsisicella (NL. fem. n. *alsisicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *58-81 sp012729145*. The type genome for the species is the GenBank assembly GCA_012729145.1. The GC content of the type genome is 56.54 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cibicia gen. nov.

Candidatus Cibicia (NL. fem. n. *Cibicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *58-81*. The type species for the genus is *Candidatus* Cibicia alsisicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cibicia bipatetta sp. nov.

Candidatus Cibicia bipatetta (NL. fem. n. *bipatetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *58-81 sp012523215*. The type genome for the species is the GenBank

assembly GCA_012523215.1. The GC content of the type genome is 58.02 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Cibicia dibapilenta sp. nov.

Candidatus Cibicia dibapilenta (NL. fem. n. *dibapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *58-81 sp001509095*. The type genome for the species is the GenBank assembly GCA_001509095.1. The GC content of the type genome is 57.32 % and the genome length is 1.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample SB2".

Description of *Candidatus* Cibicia seposugo sp. nov.

Candidatus Cibicia seposugo (NL. fem. n. *seposugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *58-81 sp002070395*. The type genome for the species is the GenBank assembly GCA_002070395.1. The GC content of the type genome is 60.09 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Cibicosa desurifica sp. nov.

Candidatus Cibicosa desurifica (NL. fem. n. *desurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12191 sp002167285*. The type genome for the species is the GenBank assembly GCA_002167285.1. The GC content of the type genome is 52.28 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Cibicosa gen. nov.

Candidatus Cibicosa (NL. fem. n. *Cibicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12191*. The type species for the genus is *Candidatus* Cibicosa desurifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1146*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Vigenanaceae.

Description of *Candidatus* Cibicosa homolitura sp. nov.

Candidatus Cibicosa homolitura (NL. fem. n. *homolitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12191 sp002691835*. The type genome for the species is the GenBank assembly GCA_002691835.1. The GC content of the type genome is 51.79 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Cibicosa lucerago sp. nov.

Candidatus Cibicosa lucerago (NL. fem. n. *lucerago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12191 sp013911165*. The type genome for the species is the GenBank assembly GCA_013911165.1. The GC content of the type genome is 55.29 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Cibicosa malagago sp. nov.

Candidatus Cibicosa malagago (NL. fem. n. *malagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12191 sp009937185*. The type genome for the species is the GenBank assembly GCA_014239525.1. The GC content of the type genome is 49.81 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Cibicosa monumax sp. nov.

Candidatus Cibicosa monumax (NL. fem. n. *monumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12191 sp012269595*. The type genome for the species is the GenBank assembly GCA_012269595.1. The GC content of the type genome is 55.53 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Cibicosa rurigax sp. nov.

Candidatus Cibicosa rurigax (NL. fem. n. *rurigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12191 sp003540375*. The type genome for the species is the GenBank assembly GCA_014382255.1. The GC content of the type genome is 49.88 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Cibicula occenetta sp. nov.

Candidatus Cibicula occenetta (NL. fem. n. *occenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGB01 sp012727955*. The type genome for the species is the GenBank assembly GCA_012727955.1. The GC content of the type genome is 53.38 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Cibicula gen. nov.

Candidatus Cibicula (NL. fem. n. *Cibicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYGB01*. The type species for the genus is *Candidatus* Cibicula occenetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYGB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibiculaceae.

Description of *Candidatus* Cibiculaceae fam. nov.

Candidatus Cibiculaceae (NL. fem. n. *Cibiculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYGB01.* The type genus for the taxon is *Candidatus* Cibicula .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Holovosales.

Description of *Candidatus* Cicarana actarisca sp. nov.

Candidatus Cicarana actarisca (NL. fem. n. *actarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003158875*. The type genome for the species is the GenBank assembly GCA_003158875.1. The GC content of the type genome is 65.99 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Cicarana gen. nov.

Candidatus Cicarana (NL. fem. n. *Cicarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1039*. The type species for the genus is *Candidatus* Cicarana actarisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Cicarana adtoritura sp. nov.

Candidatus Cicarana adtoritura (NL. fem. n. *adtoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003153755*. The type genome for the species is the GenBank assembly GCA_003153755.1. The GC content of the type genome is 67.11 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Cicarana adveratio sp. nov.

Candidatus Cicarana adveratio (NL. fem. n. *adveratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003156975*. The type genome for the species is the GenBank assembly GCA_003156975.1. The GC content of the type genome is 66.6 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Cicarana ascalitia sp. nov.

Candidatus Cicarana ascalitia (NL. fem. n. *ascalitia* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003157875*. The type genome for the species is the GenBank assembly GCA_003157875.1. The GC content of the type genome is 67.64 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Cicarana cepuritudo sp. nov.

Candidatus Cicarana cepuritudo (NL. fem. n. *cepuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003158495*. The type genome for the species is the GenBank assembly GCA_003158495.1. The GC content of the type genome is 67.59 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Cicarana cicatousia sp. nov.

Candidatus Cicarana cicatousia (NL. fem. n. *cicatousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003142755*. The type genome for the species is the GenBank assembly GCA_003171455.1. The GC content of the type genome is 67.74 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Cicarana curacitica sp. nov.

Candidatus Cicarana curacitica (NL. fem. n. *curacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003165675*. The type genome for the species is the GenBank assembly GCA_003156995.1. The GC content of the type genome is 68.0 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Cicarana decomousia sp. nov.

Candidatus Cicarana decomousia (NL. fem. n. *decomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003141455*. The type genome for the species is the GenBank assembly GCA_003141455.1. The GC content of the type genome is 67.68 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Cicarana effemiforma sp. nov.

Candidatus Cicarana effemiforma (NL. fem. n. *effemiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003171255*. The type genome for the species is the GenBank assembly GCA_003171255.1. The GC content of the type genome is 67.58 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Cicarana holovivita sp. nov.

Candidatus Cicarana holovivita (NL. fem. n. *holovivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003171065*. The type genome for the species is the GenBank assembly GCA_003142735.1. The GC content of the type genome is 68.13 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Cicarana monimago sp. nov.

Candidatus Cicarana monimago (NL. fem. n. *monimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003158295*. The type genome for the species is the GenBank assembly GCA_003170695.1. The GC content of the type genome is 67.8 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Cicarana pomifugo sp. nov.

Candidatus Cicarana pomifugo (NL. fem. n. *pomifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003158675*. The type genome for the species is the GenBank assembly GCA_003158675.1. The GC content of the type genome is 67.22 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Cicarana recomastra sp. nov.

Candidatus Cicarana recomastra (NL. fem. n. *recomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003152995*. The type genome for the species is the GenBank assembly GCA_003152995.1. The GC content of the type genome is 67.49 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Cicarana sarabitura sp. nov.

Candidatus Cicarana sarabitura (NL. fem. n. *sarabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003141955*. The type genome for the species is the GenBank assembly GCA_003154815.1. The GC content of the type genome is 68.7 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Cicarana semigessa sp. nov.

Candidatus Cicarana semigessa (NL. fem. n. *semigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003141245*. The type genome for the species is the GenBank assembly GCA_003141245.1. The GC content of the type genome is 68.26 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Cicarana tetenibra sp. nov.

Candidatus Cicarana tetenibra (NL. fem. n. *tetenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003157175*. The type genome for the species is the GenBank assembly GCA_003165825.1. The GC content of the type genome is 68.22 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Cicarana verecicula sp. nov.

Candidatus Cicarana verecicula (NL. fem. n. *verecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1039 sp003171035*. The type genome for the species is the GenBank assembly GCA_003171035.1. The GC content of the type genome is 67.16 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Cicararia ceracugo sp. nov.

Candidatus Cicararia ceracugo (NL. fem. n. *ceracugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS929 sp900546875*. The type genome for the species is the GenBank assembly GCA_900546875.1. The GC content of the type genome is 45.33 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Cicararia gen. nov.

Candidatus Cicararia (NL. fem. n. *Cicararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS929*. The type species for the genus is *Candidatus* Cicararia ceracugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-314*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurariaceae.

Description of *Candidatus* Cicarella cosiditura sp. nov.

Candidatus Cicarella cosiditura (NL. fem. n. *cosiditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPRI01 sp003818505*. The type genome for the species is the GenBank assembly GCA_003818505.1. The GC content of the type genome is 44.77 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Cicarella gen. nov.

Candidatus Cicarella (NL. fem. n. *Cicarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPRI01*. The type species for the genus is *Candidatus* Cicarella cosiditura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RPRI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicarellaceae.

Description of *Candidatus* Cicarellaceae fam. nov.

Candidatus Cicarellaceae (NL. fem. n. *Cicarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RPRI01*. The type genus for the taxon is *Candidatus* Cicarella .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Cicarella decinousia sp. nov.

Candidatus Cicarella decinousia (NL. fem. n. *decinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPRI01 sp011391695*. The type genome for the species is the GenBank assembly GCA_011391695.1. The GC content of the type genome is 44.27 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Cicaria octupitio sp. nov.

Candidatus Cicaria octupitio (NL. fem. n. *octupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNKJ01 sp014382085*. The type genome for the species is the GenBank assembly GCA_014382085.1. The GC content of the type genome is 57.28 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Cicaria gen. nov.

Candidatus Cicaria (NL. fem. n. *Cicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNKJ01*. The type species for the genus is *Candidatus* Cicaria

octupitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACNKJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicariaceae.

Description of *Candidatus* Cicariaceae fam. nov.

Candidatus Cicariaceae (NL. fem. n. *Cicariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACNKJ01.* The type genus for the taxon is *Candidatus* Cicaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACNKJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cicariales.

Description of *Candidatus* Cicariales ord. nov.

Candidatus Cicariales (NL. fem. n. *Cicariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACNKJ01.* The type genus for the taxon is *Candidatus* Cicaria .

According to the GTDB R06-RS202, this order belongs to the class *Krumholzibacteria*.

Description of *Candidatus* Cicarida ornitisca sp. nov.

Candidatus Cicarida ornitisca (NL. fem. n. *ornitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp22-AA3 sp003223145*. The type genome for the species is the GenBank assembly GCA_003223145.1. The GC content of the type genome is 68.15 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Cicarida gen. nov.

Candidatus Cicarida (NL. fem. n. *Cicarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp22-AA3*. The type species for the genus is *Candidatus* Cicarida ornitisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Gp22-AA2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilibosaceae.

Description of *Candidatus* Cicarida recucicella sp. nov.

Candidatus Cicarida recucicella (NL. fem. n. *recucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp22-AA3 sp003223135*. The type genome for the species is the GenBank assembly GCA_003223135.1. The GC content of the type genome is 67.57 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Cicarosa demadivita sp. nov.

Candidatus Cicarosa demadivita (NL. fem. n. *demadivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG10-46-32 sp001889965*. The type genome for the species is the GenBank assembly GCA_001889965.1. The GC content of the type genome is 45.86 % and the genome length is 1.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater".

Description of *Candidatus* Cicarosa gen. nov.

Candidatus Cicarosa (NL. fem. n. *Cicarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG10-46-32*. The type species for the genus is *Candidatus* Cicarosa demadivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2169*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacosaceae.

Description of *Candidatus* Cicatana cacalugo sp. nov.

Candidatus Cicatana cacalugo (NL. fem. n. *cacalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B13-G4 sp014237365*. The type genome for the species is the GenBank assembly GCA_014237195.1. The GC content of the type genome is 39.87 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Cicatana gen. nov.

Candidatus Cicatana (NL. fem. n. *Cicatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B13-G4*. The type species for the genus is *Candidatus* Cicatana cacalugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ETH-SRB1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benevulaceae.

Description of *Candidatus* Cicatana cocodiforma sp. nov.

Candidatus Cicatana cocodiforma (NL. fem. n. *cocodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B13-G4 sp013792055*. The type genome for the species is the GenBank assembly GCA_013792055.1. The GC content of the type genome is 40.77 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Cicatana inperilega sp. nov.

Candidatus Cicatana inperilega (NL. fem. n. *inperilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B13-G4 sp003647525*. The type genome for the species is the GenBank assembly GCA_003647525.1. The GC content of the type genome is 39.2 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Cicataria vinulastra sp. nov.

Candidatus Cicataria vinulastra (NL. fem. n. *vinulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA8475 sp002780785*. The type genome for the species is the GenBank assembly GCA_002780785.1. The GC content of the type genome is 44.98 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Cicataria gen. nov.

Candidatus Cicataria (NL. fem. n. *Cicataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8475*. The type species for the genus is *Candidatus* Cicataria vinulastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-42-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Biveridaceae.

Description of *Candidatus* Cicatia attemitoga sp. nov.

Candidatus Cicatia attemitoga (NL. fem. n. *attemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1413 sp012729335*. The type genome for the species is the GenBank assembly GCA_012729335.1. The GC content of the type genome is 54.09 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Cicatia gen. nov.

Candidatus Cicatia (NL. fem. n. *Cicatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1413*. The type species for the genus is *Candidatus* Cicatia attemitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cicatia carecitoga sp. nov.

Candidatus Cicatia carecitoga (NL. fem. n. *carecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1413 sp003486765*. The type genome for the species is the

GenBank assembly GCA_003486765.1. The GC content of the type genome is 44.39 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Cicatia decucitio sp. nov.

Candidatus Cicatia decucitio (NL. fem. n. *decucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1413 sp002304925*. The type genome for the species is the GenBank assembly GCA_012719055.1. The GC content of the type genome is 49.93 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Cicatia defanessa sp. nov.

Candidatus Cicatia defanessa (NL. fem. n. *defanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1413 sp002419285*. The type genome for the species is the GenBank assembly GCA_002419285.1. The GC content of the type genome is 44.04 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Cicatia incucitoga sp. nov.

Candidatus Cicatia incucitoga (NL. fem. n. *incucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1413 sp001270045*. The type genome for the species is the GenBank assembly RS_GCF_001270045.2. The GC content of the type genome is 45.47 % and the genome length is 4.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "paddy field soil in Japan".

Description of *Candidatus* Cicatia lacinatio sp. nov.

Candidatus Cicatia lacinatio (NL. fem. n. *lacinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1413 sp002428215*. The type genome for the species is the GenBank assembly GCA_002428215.1. The GC content of the type genome is 45.57 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Cicatia telegitrix sp. nov.

Candidatus Cicatia telegitrix (NL. fem. n. *telegitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1413 sp009782655*. The type genome for the species is the GenBank assembly GCA_009782655.1. The GC content of the type genome is 45.51 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Cicatida dilogigena sp. nov.

Candidatus Cicatida dilogigena (NL. fem. n. *dilogigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIWR01 sp014360845*. The type genome for the species is the GenBank assembly GCA_014360845.1. The GC content of the type genome is 60.22 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Cicatida gen. nov.

Candidatus Cicatida (NL. fem. n. *Cicatida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIWR01*. The type species for the genus is *Candidatus* Cicatida dilogigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACIWR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatidaceae.

Description of *Candidatus* Cicatidaceae fam. nov.

Candidatus Cicatidaceae (NL. fem. n. *Cicatidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIWR01.* The type genus for the taxon is *Candidatus* Cicatida .

According to the original version of GTDB R06-RS202, this family belongs to the order *E26-bin7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Penecariales.

Description of *Candidatus* Cicatosa delucitoga sp. nov.

Candidatus Cicatosa delucitoga (NL. fem. n. *delucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8231 sp002726335*. The type genome for the species is the GenBank assembly GCA_002726335.1. The GC content of the type genome is 63.93 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Cicatosa gen. nov.

Candidatus Cicatosa (NL. fem. n. *Cicatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8231*. The type species for the genus is *Candidatus* Cicatosa delucitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8231*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatosaceae.

Description of *Candidatus* Cicatosaceae fam. nov.

Candidatus Cicatosaceae (NL. fem. n. *Cicatosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8231.* The type genus for the taxon is *Candidatus* Cicatosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8231*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cicatosales.

Description of *Candidatus* Cicatosales ord. nov.

Candidatus Cicatosales (NL. fem. n. *Cicatosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8231.* The type genus for the taxon is *Candidatus* Cicatosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Medimellae.

Description of *Candidatus* Cicatula monocax sp. nov.

Candidatus Cicatula monocax (NL. fem. n. *monocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RSA9 sp003242735*. The type genome for the species is the GenBank assembly GCA_003242735.1. The GC content of the type genome is 71.51 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Cicatula gen. nov.

Candidatus Cicatula (NL. fem. n. *Cicatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RSA9*. The type species for the genus is *Candidatus* Cicatula monocax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RSA9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatulaceae.

Description of *Candidatus* Cicatulaceae fam. nov.

Candidatus Cicatulaceae (NL. fem. n. *Cicatulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RSA9.* The type genus for the taxon is *Candidatus* Cicatula .

According to GTDB R06-RS202, this family belongs to the order *Longimicrobiales*.

Description of *Candidatus* Cicilana bonifugo sp. nov.

Candidatus Cicilana bonifugo (NL. fem. n. *bonifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC1-40-35 sp001775095*. The type genome for the species is the GenBank assembly GCA_001775005.1. The GC content of the type genome is 40.93 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cicilana gen. nov.

Candidatus Cicilana (NL. fem. n. *Cicilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC1-40-35*. The type species for the genus is *Candidatus* Cicilana bonifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-41-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Cicilaria anancimonia sp. nov.

Candidatus Cicilaria anancimonia (NL. fem. n. *anancimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCBR16-9 sp007116095*. The type genome for the species is the GenBank assembly GCA_007116095.1. The GC content of the type genome is 57.64 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Cicilaria gen. nov.

Candidatus Cicilaria (NL. fem. n. *Cicilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCBR16-9*. The type species for the genus is *Candidatus* Cicilaria anancimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCBR16-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicilariaceae.

Description of *Candidatus* Cicilariaceae fam. nov.

Candidatus Cicilariaceae (NL. fem. n. *Cicilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCBR16-9.* The type genus for the taxon is *Candidatus* Cicilaria .

According to GTDB R06-RS202, this family belongs to the order *Hydrogenedentiales*.

Description of *Candidatus* Cicilida errabugo sp. nov.

Candidatus Cicilida errabugo (NL. fem. n. *errabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-313 sp011047295*. The type genome for the species is the GenBank assembly GCA_011047295.1. The GC content of the type genome is 66.94 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Cicilida gen. nov.

Candidatus Cicilida (NL. fem. n. *Cicilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-313*. The type species for the genus is *Candidatus* Cicilida errabugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicilidaceae.

Description of *Candidatus* Cicilidaceae fam. nov.

Candidatus Cicilidaceae (NL. fem. n. *Cicilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-313.* The type genus for the taxon is *Candidatus* Cicilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cicilidales.

Description of *Candidatus* Cicilidales ord. nov.

Candidatus Cicilidales (NL. fem. n. *Cicilidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-313.* The type genus for the taxon is *Candidatus* Cicilida .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Cicilosa enuclessa sp. nov.

Candidatus Cicilosa enuclessa (NL. fem. n. *enuclessa* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4722 sp013287765*. The type genome for the species is the GenBank assembly GCA_013287765.1. The GC content of the type genome is 35.49 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Cicilosa gen. nov.

Candidatus Cicilosa (NL. fem. n. *Cicilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4722*. The type species for the genus is *Candidatus* Cicilosa enuclessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Cicilosa exceribula sp. nov.

Candidatus Cicilosa exceribula (NL. fem. n. *exceribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4722 sp013287235*. The type genome for the species is the GenBank assembly GCA_013287235.1. The GC content of the type genome is 36.71 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Cicilosa exoscisca sp. nov.

Candidatus Cicilosa exoscisca (NL. fem. n. *exoscisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4722 sp002404295*. The type genome for the species is the GenBank assembly GCA_002404295.1. The GC content of the type genome is 38.91 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Cicilosa impavousia sp. nov.

Candidatus Cicilosa impavousia (NL. fem. n. *impavousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4722 sp013288655*. The type genome for the species is the GenBank assembly GCA_013288655.1. The GC content of the type genome is 37.06 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Cicilosa manufugo sp. nov.

Candidatus Cicilosa manufugo (NL. fem. n. *manufugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4722 sp013287025*. The type genome for the species is the GenBank assembly GCA_013287885.1. The GC content of the type genome is 36.64 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Cicilosa ridibetta sp. nov.

Candidatus Cicilosa ridibetta (NL. fem. n. *ridibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4722 sp014132595*. The type genome for the species is the GenBank assembly GCA_014132595.1. The GC content of the type genome is 39.47 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Cicilula lapicitudo sp. nov.

Candidatus Cicilula lapicitudo (NL. fem. n. *lapicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-426-M11 sp003213095*. The type genome for the species is the GenBank assembly GCA_002696265.1. The GC content of the type genome is 36.58 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Cicilula gen. nov.

Candidatus Cicilula (NL. fem. n. *Cicilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-426-M11*. The type species for the genus is *Candidatus* Cicilula

lapicitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivariaceae.

Description of *Candidatus* Cilibana bacificella sp. nov.

Candidatus Cilibana bacificella (NL. fem. n. *bacificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7001 sp002449785*. The type genome for the species is the GenBank assembly GCA_902778595.1. The GC content of the type genome is 26.16 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Cilibana gen. nov.

Candidatus Cilibana (NL. fem. n. *Cilibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7001*. The type species for the genus is *Candidatus* Cilibana bacificella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Cilibana fetuliforma sp. nov.

Candidatus Cilibana fetuliforma (NL. fem. n. *fetuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7001 sp900553685*. The type genome for the species is the GenBank assembly GCA_900553685.1. The GC content of the type genome is 25.52 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Cilibana nicotivita sp. nov.

Candidatus Cilibana nicotivita (NL. fem. n. *nicotivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7001 sp900768805*. The type genome for the species is the GenBank assembly RS_GCF_900768805.1. The GC content of the type genome is 26.39 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Cilibaria admodibra sp. nov.

Candidatus Cilibaria admodibra (NL. fem. n. *admodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTE01 sp012031815*. The type genome for the species is the GenBank assembly GCA_012031815.1. The GC content of the type genome is 52.28 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Cilibaria gen. nov.

Candidatus Cilibaria (NL. fem. n. *Cilibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUTE01*. The type species for the genus is *Candidatus* Cilibaria admodibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAUTE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibariaceae.

Description of *Candidatus* Cilibariaceae fam. nov.

Candidatus Cilibariaceae (NL. fem. n. *Cilibariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAUTE01.* The type genus for the taxon is *Candidatus* Cilibaria .

According to GTDB R06-RS202, this family belongs to the order *Cyanobacteriales*.

Description of *Candidatus* Cilibella immemimonas sp. nov.

Candidatus Cilibella immemimonas (NL. fem. n. *immemimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-62 sp001303955*. The type genome for the species is the

GenBank assembly GCA_001303955.1. The GC content of the type genome is 45.9 % and the genome length is 5.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Cilibella gen. nov.

Candidatus Cilibella (NL. fem. n. *Cilibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-62*. The type species for the genus is *Candidatus* Cilibella immemimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-62*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibellaceae.

Description of *Candidatus* Cilibellaceae fam. nov.

Candidatus Cilibellaceae (NL. fem. n. *Cilibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-62.* The type genus for the taxon is *Candidatus* Cilibella .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Cilibella levifimonas sp. nov.

Candidatus Cilibella levifimonas (NL. fem. n. *levifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-62 sp011053095*. The type genome for the species is the GenBank assembly GCA_011053095.1. The GC content of the type genome is 43.29 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Cilibida horomugo sp. nov.

Candidatus Cilibida horomugo (NL. fem. n. *horomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA922 sp002293825*. The type genome for the species is the

GenBank assembly GCA_002293825.1. The GC content of the type genome is 41.4 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Cilibida gen. nov.

Candidatus Cilibida (NL. fem. n. *Cilibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA922*. The type species for the genus is *Candidatus* Cilibida horomugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Cilibidaceae fam. nov.

Candidatus Cilibidaceae (NL. fem. n. *Cilibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA922.* The type genus for the taxon is *Candidatus* Cilibida .

According to GTDB R06-RS202, this family belongs to the order *Magasanikbacterales*.

Description of *Candidatus* Cilibosa advecetta sp. nov.

Candidatus Cilibosa advecetta (NL. fem. n. *advecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002432795*. The type genome for the species is the GenBank assembly GCA_002432795.1. The GC content of the type genome is 50.96 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Cilibosa gen. nov.

Candidatus Cilibosa (NL. fem. n. *Cilibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T78*. The type species for the genus is *Candidatus* Cilibosa advecetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cilibosa antefibra sp. nov.

Candidatus Cilibosa antefibra (NL. fem. n. *antefibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002435825*. The type genome for the species is the GenBank assembly GCA_002435825.1. The GC content of the type genome is 51.67 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Cilibosa apsolessa sp. nov.

Candidatus Cilibosa apsolessa (NL. fem. n. *apsolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002305635*. The type genome for the species is the GenBank assembly GCA_002305635.1. The GC content of the type genome is 50.31 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Cilibosa arvecousia sp. nov.

Candidatus Cilibosa arvecousia (NL. fem. n. *arvecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp012839565*. The type genome for the species is the GenBank assembly GCA_012839565.1. The GC content of the type genome is 46.83 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Cilibosa asbesimonia sp. nov.

Candidatus Cilibosa asbesimonia (NL. fem. n. *asbesimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp012729755*. The type genome for the species is the GenBank assembly GCA_012729755.1. The GC content of the type genome is 50.34 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Cilibosa atrusitas sp. nov.

Candidatus Cilibosa atrusitas (NL. fem. n. *atrusitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002306055*. The type genome for the species is the GenBank assembly GCA_002306055.1. The GC content of the type genome is 50.75 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Cilibosa cacalitas sp. nov.

Candidatus Cilibosa cacalitas (NL. fem. n. *cacalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp011620465*. The type genome for the species is the GenBank assembly GCA_011620465.1. The GC content of the type genome is 48.75 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Cilibosa cacomimonia sp. nov.

Candidatus Cilibosa cacomimonia (NL. fem. n. *cacomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp012514645*. The type genome for the species is the GenBank assembly GCA_012514645.1. The GC content of the type genome is 50.04 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Cilibosa capucago sp. nov.

Candidatus Cilibosa capucago (NL. fem. n. *capucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002423495*. The type genome for the species is the GenBank assembly GCA_002423495.1. The GC content of the type genome is 50.86 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Cilibosa cohorilenta sp. nov.

Candidatus Cilibosa cohorilenta (NL. fem. n. *cohorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *T78 sp002409365*. The type genome for the species is the GenBank assembly GCA_002408985.1. The GC content of the type genome is 48.3 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Cilibosa defarimonas sp. nov.

Candidatus Cilibosa defarimonas (NL. fem. n. *defarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp011620445*. The type genome for the species is the GenBank assembly GCA_011620445.1. The GC content of the type genome is 50.11 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Cilibosa feditivita sp. nov.

Candidatus Cilibosa feditivita (NL. fem. n. *feditivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002409625*. The type genome for the species is the GenBank assembly GCA_002398025.1. The GC content of the type genome is 46.92 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Cilibosa inbelitudo sp. nov.

Candidatus Cilibosa inbelitudo (NL. fem. n. *inbelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp011620505*. The type genome for the species is the GenBank assembly GCA_011620505.1. The GC content of the type genome is 51.87 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cilibosa infenitia sp. nov.

Candidatus Cilibosa infenitia (NL. fem. n. *infenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp001603765*. The type genome for the species is the GenBank assembly GCA_001603765.1. The GC content of the type genome is 52.51 % and the genome length is 1.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters

sampled at day 96 and day 362".

Description of *Candidatus* Cilibosa innumastra sp. nov.

Candidatus Cilibosa innumastra (NL. fem. n. *innumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002399085*. The type genome for the species is the GenBank assembly GCA_002399085.1. The GC content of the type genome is 50.13 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Cilibosa insemilenta sp. nov.

Candidatus Cilibosa insemilenta (NL. fem. n. *insemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp003532515*. The type genome for the species is the GenBank assembly GCA_003532515.1. The GC content of the type genome is 48.0 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Cilibosa irrotitura sp. nov.

Candidatus Cilibosa irrotitura (NL. fem. n. *irrotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002407905*. The type genome for the species is the GenBank assembly GCA_002407905.1. The GC content of the type genome is 56.69 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Cilibosa mirifessa sp. nov.

Candidatus Cilibosa mirifessa (NL. fem. n. *mirifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp012800995*. The type genome for the species is the GenBank assembly GCA_012800995.1. The GC content of the type genome is 46.01 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Cilibosa paralousia sp. nov.

Candidatus Cilibosa paralousia (NL. fem. n. *paralousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002347705*. The type genome for the species is the GenBank assembly GCA_002412845.1. The GC content of the type genome is 50.73 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Cilibosa turilicula sp. nov.

Candidatus Cilibosa turilicula (NL. fem. n. *turilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T78 sp002411175*. The type genome for the species is the GenBank assembly GCA_002400055.1. The GC content of the type genome is 49.74 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Cilibula baropilenta sp. nov.

Candidatus Cilibula baropilenta (NL. fem. n. *baropilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINFV01 sp903848235*. The type genome for the species is the GenBank assembly GCA_903848235.1. The GC content of the type genome is 47.48 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Cilibula gen. nov.

Candidatus Cilibula (NL. fem. n. *Cilibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINFV01*. The type species for the genus is *Candidatus* Cilibula baropilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1388*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conabulaceae.

Description of *Candidatus* Cilicana intesessa sp. nov.

Candidatus Cilicana intesessa (NL. fem. n. *intesessa* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-50-19 sp003141835*. The type genome for the species is the GenBank assembly GCA_003141835.1. The GC content of the type genome is 51.75 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Cilicana gen. nov.

Candidatus Cilicana (NL. fem. n. *Cilicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-50-19*. The type species for the genus is *Candidatus* Cilicana intesessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6215*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Remulellaceae.

Description of *Candidatus* Cilicana recumetta sp. nov.

Candidatus Cilicana recumetta (NL. fem. n. *recumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-50-19 sp903889135*. The type genome for the species is the GenBank assembly GCA_903889135.1. The GC content of the type genome is 51.91 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Cilicana verifitura sp. nov.

Candidatus Cilicana verifitura (NL. fem. n. *verifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-50-19 sp001805885*. The type genome for the species is the GenBank assembly GCA_001805545.1. The GC content of the type genome is 49.69 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cilicaria rubecitio sp. nov.

Candidatus Cilicaria rubecitio (NL. fem. n. *rubecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6414 sp002438545*. The type genome for the species is the GenBank assembly GCA_002438545.1. The GC content of the type genome is 27.16 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Cilicaria gen. nov.

Candidatus Cilicaria (NL. fem. n. *Cilicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6414*. The type species for the genus is *Candidatus* Cilicaria rubecitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Cilicella catabitio sp. nov.

Candidatus Cilicella catabitio (NL. fem. n. *catabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDZD01 sp013299045*. The type genome for the species is the GenBank assembly GCA_013299045.1. The GC content of the type genome is 42.0 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Cilicella gen. nov.

Candidatus Cilicella (NL. fem. n. *Cilicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDZD01*. The type species for the genus is *Candidatus* Cilicella catabitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cilicella resalastra sp. nov.

Candidatus Cilicella resalastra (NL. fem. n. *resalastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDZD01 sp004293815*. The type genome for the species is the GenBank assembly GCA_004293815.1. The GC content of the type genome is 41.25 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Cilicosa femelimonia sp. nov.

Candidatus Cilicosa femelimonia (NL. fem. n. *femelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3064 sp002342365*. The type genome for the species is the GenBank assembly GCA_002359985.1. The GC content of the type genome is 56.88 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Cilicosa gen. nov.

Candidatus Cilicosa (NL. fem. n. *Cilicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3064*. The type species for the genus is *Candidatus* Cilicosa femelimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cilicosa penuratio sp. nov.

Candidatus Cilicosa penuratio (NL. fem. n. *penuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3064 sp002359635*. The type genome for the species is the GenBank assembly GCA_010021925.1. The GC content of the type genome is 54.78 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Cilicosa tomogitura sp. nov.

Candidatus Cilicosa tomogitura (NL. fem. n. *tomogitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3064 sp005787245*. The type genome for the species is the GenBank assembly GCA_900299165.1. The GC content of the type genome is 52.99 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Cilicula lorarentia sp. nov.

Candidatus Cilicula lorarentia (NL. fem. n. *lorarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-37-14 sp002778705*. The type genome for the species is the GenBank assembly GCA_009992115.1. The GC content of the type genome is 37.11 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Cilicula gen. nov.

Candidatus Cilicula (NL. fem. n. *Cilicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-37-14*. The type species for the genus is *Candidatus* Cilicula lorarentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuriaceae.

Description of *Candidatus* Cilotana acculessa sp. nov.

Candidatus Cilotana acculessa (NL. fem. n. *acculessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VAUL01 sp012026975*. The type genome for the species is the GenBank assembly GCA_012026975.1. The GC content of the type genome is 62.21 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Cilotana gen. nov.

Candidatus Cilotana (NL. fem. n. *Cilotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VAUL01*. The type species for the genus is *Candidatus* Cilotana

acculessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM103*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defetellaceae.

Description of *Candidatus* Cilotana domicifica sp. nov.

Candidatus Cilotana domicifica (NL. fem. n. *domicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VAUL01 sp005774545*. The type genome for the species is the GenBank assembly GCA_005774545.1. The GC content of the type genome is 65.26 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Cilotaria velifitio sp. nov.

Candidatus Cilotaria velifitio (NL. fem. n. *velifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-43-16 sp001821935*. The type genome for the species is the GenBank assembly GCA_001820305.1. The GC content of the type genome is 43.36 % and the genome length is 0.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cilotaria gen. nov.

Candidatus Cilotaria (NL. fem. n. *Cilotaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-43-16*. The type species for the genus is *Candidatus* Cilotaria velifitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cilotella metucilega sp. nov.

Candidatus Cilotella metucilega (NL. fem. n. *metucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002795985 sp002792395*. The type genome for the species is the GenBank assembly GCA_002782065.1. The GC content of the type genome is 44.04 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Cilotella gen. nov.

Candidatus Cilotella (NL. fem. n. *Cilotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002795985*. The type species for the genus is *Candidatus* Cilotella metucilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002795985*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilotellaceae.

Description of *Candidatus* Cilotellaceae fam. nov.

Candidatus Cilotellaceae (NL. fem. n. *Cilotellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002795985.* The type genus for the taxon is *Candidatus* Cilotella .

According to GTDB R06-RS202, this family belongs to the order *Portnoybacterales*.

Description of *Candidatus* Cilotia infabousia sp. nov.

Candidatus Cilotia infabousia (NL. fem. n. *infabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-107 sp002059205*. The type genome for the species is the GenBank assembly GCA_002059205.1. The GC content of the type genome is 55.5 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Cilotia gen. nov.

Candidatus Cilotia (NL. fem. n. *Cilotia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-107*. The type species for the genus is *Candidatus* Cilotia infabousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-107*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilotiaceae.

Description of *Candidatus* Cilotiaceae fam. nov.

Candidatus Cilotiaceae (NL. fem. n. *Cilotiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-107.* The type genus for the taxon is *Candidatus* Cilotia .

According to the original version of GTDB R06-RS202, this family belongs to the order *4484-107*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cilotiales.

Description of *Candidatus* Cilotiales ord. nov.

Candidatus Cilotiales (NL. fem. n. *Cilotiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-107.* The type genus for the taxon is *Candidatus* Cilotia .

According to the GTDB R06-RS202, this order belongs to the class *Latescibacteria_A*.

Description of *Candidatus* Cilotida manufago sp. nov.

Candidatus Cilotida manufago (NL. fem. n. *manufago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC2-FULL-41-22 sp001788795*. The type genome for the species is the GenBank assembly GCA_001788805.1. The GC content of the type genome is 41.28 % and the genome length is 1.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point B".

Description of *Candidatus* Cilotida gen. nov.

Candidatus Cilotida (NL. fem. n. *Cilotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYC2-FULL-41-22*. The type species for the genus is *Candidatus*

Cilotida manufago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12470*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penurariaceae.

Description of *Candidatus* Cilotosa supelitio sp. nov.

Candidatus Cilotosa supelitio (NL. fem. n. *supelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFBF01 sp006515885*. The type genome for the species is the GenBank assembly GCA_006515885.1. The GC content of the type genome is 66.36 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Cilotosa gen. nov.

Candidatus Cilotosa (NL. fem. n. *Cilotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFBF01*. The type species for the genus is *Candidatus* Cilotosa supelitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cilotula inexpedo sp. nov.

Candidatus Cilotula inexpedo (NL. fem. n. *inexpedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WYAZ01 sp011526105*. The type genome for the species is the GenBank assembly GCA_011526105.1. The GC content of the type genome is 65.54 % and the genome length is 7.28 Mbp.

Description of *Candidatus* Cilotula gen. nov.

Candidatus Cilotula (NL. fem. n. *Cilotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WYAZ01*. The type species for the genus is *Candidatus* Cilotula inexpedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WYAZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilotulaceae.

Description of *Candidatus* Cilotulaceae fam. nov.

Candidatus Cilotulaceae (NL. fem. n. *Cilotulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WYAZ01.* The type genus for the taxon is *Candidatus* Cilotula .

According to the original version of GTDB R06-RS202, this family belongs to the order *WYAZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cilotulales.

Description of *Candidatus* Cilotulales ord. nov.

Candidatus Cilotulales (NL. fem. n. *Cilotulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WYAZ01.* The type genus for the taxon is *Candidatus* Cilotula .

According to the original version of GTDB R06-RS202, this family belongs to the class *WYAZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cilotulae.

Description of *Candidatus* Cilotulae class. nov.

Candidatus Cilotulae (NL. fem. n. *c__Cilotulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WYAZ01.* The type genus for the taxon is *Candidatus* Cilotula .

According to GTDB R06-RS202, this class belongs to the phylum *Myxococcota*.

Description of *Candidatus* Cimelana colepimonas sp. nov.

Candidatus Cimelana colepimonas (NL. fem. n. *colepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp009698745*. The type genome for the species is the

GenBank assembly GCA_009698745.1. The GC content of the type genome is 51.68 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Cimelana gen. nov.

Candidatus Cimelana (NL. fem. n. *Cimelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3006*. The type species for the genus is *Candidatus* Cimelana colepimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cimelana demadago sp. nov.

Candidatus Cimelana demadago (NL. fem. n. *demadago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp903853285*. The type genome for the species is the GenBank assembly GCA_010023845.1. The GC content of the type genome is 51.4 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Cimelana derunibula sp. nov.

Candidatus Cimelana derunibula (NL. fem. n. *derunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp903895515*. The type genome for the species is the GenBank assembly GCA_903895515.1. The GC content of the type genome is 51.7 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Cimelana fetuticella sp. nov.

Candidatus Cimelana fetuticella (NL. fem. n. *fetuticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp007279905*. The type genome for the species is the GenBank assembly GCA_007279905.1. The GC content of the type genome is 52.03 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Cimelana loripessa sp. nov.

Candidatus Cimelana loripessa (NL. fem. n. *loripessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp009701105*. The type genome for the species is the GenBank assembly GCA_009701105.1. The GC content of the type genome is 51.34 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Cimelana ossarigena sp. nov.

Candidatus Cimelana ossarigena (NL. fem. n. *ossarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp001438985*. The type genome for the species is the GenBank assembly GCA_001438985.1. The GC content of the type genome is 52.19 % and the genome length is 1.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water; brackish water collected from the surface of the Baltic Sea".

Description of *Candidatus* Cimelana relenilenta sp. nov.

Candidatus Cimelana relenilenta (NL. fem. n. *relenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp002367695*. The type genome for the species is the GenBank assembly GCA_002346915.1. The GC content of the type genome is 51.16 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Cimelana scellessa sp. nov.

Candidatus Cimelana scellessa (NL. fem. n. *scellessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp009927375*. The type genome for the species is the GenBank assembly GCA_009927375.1. The GC content of the type genome is 61.13 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Cimelana totidugo sp. nov.

Candidatus Cimelana totidugo (NL. fem. n. *totidugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp903850275*. The type genome for the species is the GenBank assembly GCA_009703155.1. The GC content of the type genome is 53.86 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Cimelana venunousia sp. nov.

Candidatus Cimelana venunousia (NL. fem. n. *venunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3006 sp014190095*. The type genome for the species is the GenBank assembly GCA_014190095.1. The GC content of the type genome is 51.29 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Cimelaria fusifigena sp. nov.

Candidatus Cimelaria fusifigena (NL. fem. n. *fusifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-950 sp903927935*. The type genome for the species is the GenBank assembly GCA_903927935.1. The GC content of the type genome is 41.3 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Cimelaria gen. nov.

Candidatus Cimelaria (NL. fem. n. *Cimelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-950*. The type species for the genus is *Candidatus* Cimelaria fusifigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LD1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalidaceae.

Description of *Candidatus* Cimelaria peradax sp. nov.

Candidatus Cimelaria peradax (NL. fem. n. *peradax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-950 sp903919075*. The type genome for the species is the GenBank assembly GCA_903864205.1. The GC content of the type genome is 40.05 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Cimelaria relapatica sp. nov.

Candidatus Cimelaria relapatica (NL. fem. n. *relapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-950 sp903889265*. The type genome for the species is the GenBank assembly GCA_903919955.1. The GC content of the type genome is 43.14 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Cimelaria satacax sp. nov.

Candidatus Cimelaria satacax (NL. fem. n. *satacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-950 sp903861145*. The type genome for the species is the GenBank assembly GCA_903866755.1. The GC content of the type genome is 42.35 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Cimelaria semivilenta sp. nov.

Candidatus Cimelaria semivilenta (NL. fem. n. *semivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-950 sp003165895*. The type genome for the species is the GenBank assembly GCA_003165895.1. The GC content of the type genome is 42.62 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Cimelella tetenugo sp. nov.

Candidatus Cimelella tetenugo (NL. fem. n. *tetenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-42-13 sp002796125*. The type genome for the species is the GenBank assembly GCA_002796125.1. The GC content of the type genome is 41.89 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Cimelella gen. nov.

Candidatus Cimelella (NL. fem. n. *Cimelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-42-13*. The type species for the genus is *Candidatus* Cimelella tetenugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-20-42-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimelellaceae.

Description of *Candidatus* Cimelellaceae fam. nov.

Candidatus Cimelellaceae (NL. fem. n. *Cimelellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-20-42-13.* The type genus for the taxon is *Candidatus* Cimelella .

According to the original version of GTDB R06-RS202, this family belongs to the order *1-14-0-20-42-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cimelellales.

Description of *Candidatus* Cimelellales ord. nov.

Candidatus Cimelellales (NL. fem. n. *Cimelellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-20-42-13.* The type genus for the taxon is *Candidatus* Cimelella .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Cimelida peripetta sp. nov.

Candidatus Cimelida peripetta (NL. fem. n. *peripetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOKK01 sp004374725*. The type genome for the species is the GenBank assembly GCA_004374725.1. The GC content of the type genome is 40.09 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Cimelida gen. nov.

Candidatus Cimelida (NL. fem. n. *Cimelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SOKK01*. The type species for the genus is *Candidatus* Cimelida peripetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SOKK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimelidaceae.

Description of *Candidatus* Cimelidaceae fam. nov.

Candidatus Cimelidaceae (NL. fem. n. *Cimelidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SOKK01.* The type genus for the taxon is *Candidatus* Cimelida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SOKK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cimelidales.

Description of *Candidatus* Cimelidales ord. nov.

Candidatus Cimelidales (NL. fem. n. *Cimelidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SOKK01.* The type genus for the taxon is *Candidatus* Cimelida .

According to the original version of GTDB R06-RS202, this family belongs to the class *SOKK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cimelidae.

Description of *Candidatus* Cimelidae class. nov.

Candidatus Cimelidae (NL. fem. n. *c__Cimelidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SOKK01.* The type genus for the taxon is *Candidatus* Cimelida .

According to GTDB R06-RS202, this class belongs to the phylum *Patescibacteria*.

Description of *Candidatus* Cimelosa amnenentia sp. nov.

Candidatus Cimelosa amnenentia (NL. fem. n. *amnenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWKH01 sp003559765*. The type genome for the species is the GenBank assembly GCA_003559765.1. The GC content of the type genome is 55.3 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Cimelosa gen. nov.

Candidatus Cimelosa (NL. fem. n. *Cimelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWKH01*. The type species for the genus is *Candidatus* Cimelosa amnenentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWKH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimelosaceae.

Description of *Candidatus* Cimelosaceae fam. nov.

Candidatus Cimelosaceae (NL. fem. n. *Cimelosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWKH01.* The type genus for the taxon is *Candidatus* Cimelosa .

According to GTDB R06-RS202, this family belongs to the order *Spirochaetales_D*.

Description of *Candidatus* Cimelosa anxifago sp. nov.

Candidatus Cimelosa anxifago (NL. fem. n. *anxifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *PWKH01 sp003557605*. The type genome for the species is the GenBank assembly GCA_003557605.1. The GC content of the type genome is 50.9 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Cimelosa obsoritia sp. nov.

Candidatus Cimelosa obsoritia (NL. fem. n. *obsoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWKH01 sp007116075*. The type genome for the species is the GenBank assembly GCA_007116075.1. The GC content of the type genome is 51.07 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Cimelula detositica sp. nov.

Candidatus Cimelula detositica (NL. fem. n. *detositica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJPD01 sp903822495*. The type genome for the species is the GenBank assembly GCA_903822495.1. The GC content of the type genome is 71.65 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Cimelula gen. nov.

Candidatus Cimelula (NL. fem. n. *Cimelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJPD01*. The type species for the genus is *Candidatus* Cimelula detositica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Ciminana feditifica sp. nov.

Candidatus Ciminana feditifica (NL. fem. n. *feditifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6120 sp002422535*. The type genome for the species is the

GenBank assembly GCA_003451945.1. The GC content of the type genome is 42.88 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Ciminana gen. nov.

Candidatus Ciminana (NL. fem. n. *Ciminana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6120*. The type species for the genus is *Candidatus* Ciminana feditifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Ciminaria nefanivita sp. nov.

Candidatus Ciminaria nefanivita (NL. fem. n. *nefanivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AE-B3A sp009618505*. The type genome for the species is the GenBank assembly GCA_009618505.1. The GC content of the type genome is 40.99 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Ciminaria gen. nov.

Candidatus Ciminaria (NL. fem. n. *Ciminaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AE-B3A*. The type species for the genus is *Candidatus* Ciminaria nefanivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AE-B3A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ciminariaceae.

Description of *Candidatus* Ciminariaceae fam. nov.

Candidatus Ciminariaceae (NL. fem. n. *Ciminariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AE-B3A*. The type genus for the taxon is *Candidatus* Ciminaria .

According to GTDB R06-RS202, this family belongs to the order *Aerophobales*.

Description of *Candidatus* Ciminaria vocificula sp. nov.

Candidatus Ciminaria vocificula (NL. fem. n. *vocificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AE-B3A sp005223095*. The type genome for the species is the GenBank assembly GCA_005223095.1. The GC content of the type genome is 41.81 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Ciminella vitififica sp. nov.

Candidatus Ciminella vitififica (NL. fem. n. *vitififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-36-5 sp001776785*. The type genome for the species is the GenBank assembly GCA_001776785.1. The GC content of the type genome is 36.8 % and the genome length is 1.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Ciminella gen. nov.

Candidatus Ciminella (NL. fem. n. *Ciminella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-36-5*. The type species for the genus is *Candidatus* Ciminella vitififica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Ciminia adtacitas sp. nov.

Candidatus Ciminia adtacitas (NL. fem. n. *adtacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA11891 sp011524905*. The type genome for the species is the GenBank assembly GCA_011524905.1. The GC content of the type genome is 40.21 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Ciminia gen. nov.

Candidatus Ciminia (NL. fem. n. *Ciminia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11891*. The type species for the genus is *Candidatus* Ciminia adtacitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ciminia odollivita sp. nov.

Candidatus Ciminia odollivita (NL. fem. n. *odollivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11891 sp009886755*. The type genome for the species is the GenBank assembly GCA_009886755.1. The GC content of the type genome is 42.17 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Ciminia tumefastra sp. nov.

Candidatus Ciminia tumefastra (NL. fem. n. *tumefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11891 sp003533785*. The type genome for the species is the GenBank assembly GCA_003533785.1. The GC content of the type genome is 40.88 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Ciminida velififica sp. nov.

Candidatus Ciminida velififica (NL. fem. n. *velififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYO01 sp009692745*. The type genome for the species is the GenBank assembly GCA_009692745.1. The GC content of the type genome is 55.7 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Ciminida gen. nov.

Candidatus Ciminida (NL. fem. n. *Ciminida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYO01*. The type species for the genus is *Candidatus* Ciminida velififica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ciminidaceae.

Description of *Candidatus* Ciminidaceae fam. nov.

Candidatus Ciminidaceae (NL. fem. n. *Ciminidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYO01.* The type genus for the taxon is *Candidatus* Ciminida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UCB3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Derunosales.

Description of *Candidatus* Ciminosa renavitudo sp. nov.

Candidatus Ciminosa renavitudo (NL. fem. n. *renavitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ARS69 sp002686915*. The type genome for the species is the GenBank assembly GCA_002686915.1. The GC content of the type genome is 65.6 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Ciminosa gen. nov.

Candidatus Ciminosa (NL. fem. n. *Ciminosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ARS69*. The type species for the genus is *Candidatus* Ciminosa renavitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ARS69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Ciminosaceae.

Description of *Candidatus* Ciminosaceae fam. nov.

Candidatus Ciminosaceae (NL. fem. n. *Ciminosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ARS69.* The type genus for the taxon is *Candidatus* Ciminosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *ARS69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ciminosales.

Description of *Candidatus* Ciminosales ord. nov.

Candidatus Ciminosales (NL. fem. n. *Ciminosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ARS69.* The type genus for the taxon is *Candidatus* Ciminosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *ARS69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ciminosae.

Description of *Candidatus* Ciminosae class. nov.

Candidatus Ciminosae (NL. fem. n. *c__Ciminosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ARS69.* The type genus for the taxon is *Candidatus* Ciminosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *ARS69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Ciminosota.

Description of *Candidatus* Ciminosota phyl. nov.

Candidatus Ciminosota (NL. fem. n. *Ciminosota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ARS69.* The type genus for the taxon is *Candidatus* Ciminosa .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Ciminula risibitudo sp. nov.

Candidatus Ciminula risibitudo (NL. fem. n. *risibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIURC01 sp903901425*. The type genome for the species is the GenBank assembly GCA_903833885.1. The GC content of the type genome is 61.48 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Ciminula gen. nov.

Candidatus Ciminula (NL. fem. n. *Ciminula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIURC01*. The type species for the genus is *Candidatus* Ciminula risibitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cimitana recumax sp. nov.

Candidatus Cimitana recumax (NL. fem. n. *recumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2711125 sp902627575*. The type genome for the species is the GenBank assembly GCA_902627575.1. The GC content of the type genome is 29.6 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Cimitana gen. nov.

Candidatus Cimitana (NL. fem. n. *Cimitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2711125*. The type species for the genus is *Candidatus* Cimitana recumax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Cimitana tirunitas sp. nov.

Candidatus Cimitana tirunitas (NL. fem. n. *tirunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2711125 sp002711125*. The type genome for the species is the GenBank assembly GCA_902588055.1. The GC content of the type genome is 29.54 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Cimitella depubax sp. nov.

Candidatus Cimitella depubax (NL. fem. n. *depubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSUN01 sp011327615*. The type genome for the species is the GenBank assembly GCA_011327615.1. The GC content of the type genome is 68.44 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Cimitella gen. nov.

Candidatus Cimitella (NL. fem. n. *Cimitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSUN01*. The type species for the genus is *Candidatus* Cimitella depubax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSUN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimitellaceae.

Description of *Candidatus* Cimitellaceae fam. nov.

Candidatus Cimitellaceae (NL. fem. n. *Cimitellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSUN01*. The type genus for the taxon is *Candidatus* Cimitella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSUN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cimitellales.

Description of *Candidatus* Cimitellales ord. nov.

Candidatus Cimitellales (NL. fem. n. *Cimitellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSUN01*. The type genus for the taxon is *Candidatus* Cimitella .

According to the original version of GTDB R06-RS202, this family belongs to the class *PUPC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Siteliae.

Description of *Candidatus* Cimitella essonax sp. nov.

Candidatus Cimitella essonax (NL. fem. n. *essonax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSUN01 sp011329035*. The type genome for the species is the GenBank assembly GCA_011329035.1. The GC content of the type genome is 68.58 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Cimitia cadavicella sp. nov.

Candidatus Cimitia cadavicella (NL. fem. n. *cadavicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFHL01 sp009392005*. The type genome for the species is the GenBank assembly GCA_009392005.1. The GC content of the type genome is 44.82 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Cimitia gen. nov.

Candidatus Cimitia (NL. fem. n. *Cimitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFHL01*. The type species for the genus is *Candidatus* Cimitia cadavicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VFHL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimitiaceae.

Description of *Candidatus* Cimitiaceae fam. nov.

Candidatus Cimitiaceae (NL. fem. n. *Cimitiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VFHL01.* The type genus for the taxon is *Candidatus* Cimitia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6926*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Paropulales.

Description of *Candidatus* Cimitida dicanibula sp. nov.

Candidatus Cimitida dicanibula (NL. fem. n. *dicanibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLXD01 sp012103255*. The type genome for the species is the GenBank assembly GCA_012103255.1. The GC content of the type genome is 64.26 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Cimitida gen. nov.

Candidatus Cimitida (NL. fem. n. *Cimitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLXD01*. The type species for the genus is *Candidatus* Cimitida dicanibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WLXD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimitidaceae.

Description of *Candidatus* Cimitidaceae fam. nov.

Candidatus Cimitidaceae (NL. fem. n. *Cimitidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WLXD01.* The type genus for the taxon is *Candidatus* Cimitida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA890*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tumefidales.

Description of *Candidatus* Cimitosa ammigago sp. nov.

Candidatus Cimitosa ammigago (NL. fem. n. *ammigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2863065 sp002863065*. The type genome for the species is the GenBank assembly GCA_002863065.1. The GC content of the type genome is 53.85 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Cimitosa gen. nov.

Candidatus Cimitosa (NL. fem. n. *Cimitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2863065*. The type species for the genus is *Candidatus* Cimitosa ammigago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2863065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimitosaceae.

Description of *Candidatus* Cimitosaceae fam. nov.

Candidatus Cimitosaceae (NL. fem. n. *Cimitosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2863065.* The type genus for the taxon is *Candidatus* Cimitosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2863065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cimitosales.

Description of *Candidatus* Cimitosales ord. nov.

Candidatus Cimitosales (NL. fem. n. *Cimitosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2863065.* The type genus for the taxon is *Candidatus* Cimitosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubigariae.

Description of *Candidatus* Cimitula adalgilenta sp. nov.

Candidatus Cimitula adalgilenta (NL. fem. n. *adalgilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6680 sp002454955*. The type genome for the species is the GenBank assembly GCA_002454955.1. The GC content of the type genome is 34.21 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Cimitula gen. nov.

Candidatus Cimitula (NL. fem. n. *Cimitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6680*. The type species for the genus is *Candidatus* Cimitula adalgilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6680*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimitulaceae.

Description of *Candidatus* Cimitulaceae fam. nov.

Candidatus Cimitulaceae (NL. fem. n. *Cimitulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6680.* The type genus for the taxon is *Candidatus* Cimitula .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Cinefana morigax sp. nov.

Candidatus Cinefana morigax (NL. fem. n. *morigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-43-22 sp001797675*. The type genome for the species is the GenBank assembly GCA_001797675.1. The GC content of the type genome is 48.06 % and the genome length is 3.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Cinefana gen. nov.

Candidatus Cinefana (NL. fem. n. *Cinefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-43-22*. The type species for the genus is *Candidatus* Cinefana morigax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-43-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinefanaceae.

Description of *Candidatus* Cinefanaceae fam. nov.

Candidatus Cinefanaceae (NL. fem. n. *Cinefanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-43-22.* The type genus for the taxon is *Candidatus* Cinefana .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-13-43-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cinefanales.

Description of *Candidatus* Cinefanales ord. nov.

Candidatus Cinefanales (NL. fem. n. *Cinefanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-43-22.* The type genus for the taxon is *Candidatus* Cinefana .

According to the GTDB R06-RS202, this order belongs to the class *Desulfobaccia_A*.

Description of *Candidatus* Cinefaria bugililega sp. nov.

Candidatus Cinefaria bugililega (NL. fem. n. *bugililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-160 sp011065235*. The type genome for the species is the GenBank assembly GCA_011065235.1. The GC content of the type genome is 44.48 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Cinefaria gen. nov.

Candidatus Cinefaria (NL. fem. n. *Cinefaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-160*. The type species for the genus is *Candidatus* Cinefaria bugililega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cinefaria pudibilenta sp. nov.

Candidatus Cinefaria pudibilenta (NL. fem. n. *pudibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-160 sp003228815*. The type genome for the species is the GenBank assembly GCA_011064915.1. The GC content of the type genome is 42.98 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Cinefaria siligax sp. nov.

Candidatus Cinefaria siligax (NL. fem. n. *siligax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-160 sp011065225*. The type genome for the species is the GenBank assembly GCA_011065225.1. The GC content of the type genome is 41.77 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Cinefella lanificella sp. nov.

Candidatus Cinefella lanificella (NL. fem. n. *lanificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WCHB1-27 sp002328485*. The type genome for the species is the GenBank assembly GCA_002328485.1. The GC content of the type genome is 53.57 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Cinefella gen. nov.

Candidatus Cinefella (NL. fem. n. *Cinefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WCHB1-27*. The type species for the genus is *Candidatus* Cinefella lanificella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinefellaceae.

Description of *Candidatus* Cinefellaceae fam. nov.

Candidatus Cinefellaceae (NL. fem. n. *Cinefellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WCHB1-27.* The type genus for the taxon is *Candidatus* Cinefella .

According to GTDB R06-RS202, this family belongs to the order *Syntrophorhabdales*.

Description of *Candidatus* Cinefida docibentia sp. nov.

Candidatus Cinefida docibentia (NL. fem. n. *docibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGG01 sp900696485*. The type genome for the species is the GenBank assembly GCA_011526055.1. The GC content of the type genome is 69.81 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Cinefida gen. nov.

Candidatus Cinefida (NL. fem. n. *Cinefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAADGG01*. The type species for the genus is *Candidatus* Cinefida docibentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifiaceae.

Description of *Candidatus* Cinefosa triclicula sp. nov.

Candidatus Cinefosa triclicula (NL. fem. n. *triclicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CR04bin15 sp004357015*. The type genome for the species is the GenBank assembly GCA_004357015.1. The GC content of the type genome is 51.33 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Cinefosa gen. nov.

Candidatus Cinefosa (NL. fem. n. *Cinefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CR04bin15*. The type species for the genus is *Candidatus* Cinefosa triclicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CR04bin15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinefosaceae.

Description of *Candidatus* Cinefosaceae fam. nov.

Candidatus Cinefosaceae (NL. fem. n. *Cinefosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CR04bin15.* The type genus for the taxon is *Candidatus* Cinefosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CR04bin15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cinefosales.

Description of *Candidatus* Cinefosales ord. nov.

Candidatus Cinefosales (NL. fem. n. *Cinefosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CR04bin15.* The type genus for the taxon is *Candidatus* Cinefosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Renavosae.

Description of *Candidatus* Cinefula cocoligena sp. nov.

Candidatus Cinefula cocoligena (NL. fem. n. *cocoligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10181 sp001784285*. The type genome for the species is the GenBank assembly GCA_001783045.1. The GC content of the type genome is 46.88 % and the genome length is 1.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Cinefula gen. nov.

Candidatus Cinefula (NL. fem. n. *Cinefula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10181*. The type species for the genus is *Candidatus* Cinefula cocoligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Cinipana pedifitas sp. nov.

Candidatus Cinipana pedifitas (NL. fem. n. *pedifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLNR01 sp007132905*. The type genome for the species is the GenBank assembly GCA_007132905.1. The GC content of the type genome is 44.52 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Cinipana gen. nov.

Candidatus Cinipana (NL. fem. n. *Cinipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLNR01*. The type species for the genus is *Candidatus* Cinipana pedifitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLNR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinipanaceae.

Description of *Candidatus* Cinipanaceae fam. nov.

Candidatus Cinipanaceae (NL. fem. n. *Cinipanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLNR01.* The type genus for the taxon is *Candidatus* Cinipana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLNR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cinipanales.

Description of *Candidatus* Cinipanales ord. nov.

Candidatus Cinipanales (NL. fem. n. *Cinipanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLNR01.* The type genus for the taxon is *Candidatus* Cinipana .

According to the original version of GTDB R06-RS202, this family belongs to the class *SLNR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cinipanae.

Description of *Candidatus* Cinipanae class. nov.

Candidatus Cinipanae (NL. fem. n. *c__Cinipanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLNR01.* The type genus for the taxon is *Candidatus* Cinipana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *SLNR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Cinipanota.

Description of *Candidatus* Cinipanota phyl. nov.

Candidatus Cinipanota (NL. fem. n. *Cinipanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLNR01.* The type genus for the taxon is *Candidatus* Cinipana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Ciniparia bipalentia sp. nov.

Candidatus Ciniparia bipalentia (NL. fem. n. *bipalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIAM-69d sp001698445*. The type genome for the species is the GenBank assembly GCA_001698445.1. The GC content of the type genome is 55.28 % and the genome length is 4.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "co-culture originated from a tropical freshwater lake".

Description of *Candidatus* Ciniparia gen. nov.

Candidatus Ciniparia (NL. fem. n. *Ciniparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACIAM-69d*. The type species for the genus is *Candidatus* Ciniparia bipalentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACIAM-69d*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinipariaceae.

Description of *Candidatus* Cinipariaceae fam. nov.

Candidatus Cinipariaceae (NL. fem. n. *Cinipariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACIAM-69d.* The type genus for the taxon is *Candidatus* Ciniparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CACIAM-69d*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cinipariales.

Description of *Candidatus* Cinipariales ord. nov.

Candidatus Cinipariales (NL. fem. n. *Cinipariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACIAM-69d.* The type genus for the taxon is *Candidatus* Ciniparia .

According to the GTDB R06-RS202, this order belongs to the class *Cyanobacteriia*.

Description of *Candidatus* Ciniparia dimiditoga sp. nov.

Candidatus Ciniparia dimiditoga (NL. fem. n. *dimiditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIAM-69d sp004292515*. The type genome for the species is the GenBank assembly GCA_004292515.1. The GC content of the type genome is 56.35 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Ciniparia viripatio sp. nov.

Candidatus Ciniparia viripatio (NL. fem. n. *viripatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIAM-69d sp001913845*. The type genome for the species is the GenBank assembly GCA_001913845.2. The GC content of the type genome is 55.23 % and the genome length is 4.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Cinipella expugastra sp. nov.

Candidatus Cinipella expugastra (NL. fem. n. *expugastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp6-AA40 sp013140775*. The type genome for the species is the GenBank assembly GCA_013140775.1. The GC content of the type genome is 63.37 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Cinipella gen. nov.

Candidatus Cinipella (NL. fem. n. *Cinipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp6-AA40*. The type species for the genus is *Candidatus* Cinipella expugastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Cinipella vecoredo sp. nov.

Candidatus Cinipella vecoredo (NL. fem. n. *vecoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp6-AA40 sp003222635*. The type genome for the species is the GenBank assembly GCA_003222635.1. The GC content of the type genome is 65.46 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Cinipia detenastra sp. nov.

Candidatus Cinipia detenastra (NL. fem. n. *detenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKRC01 sp007134665*. The type genome for the species is the GenBank assembly GCA_003556665.1. The GC content of the type genome is 41.89 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Cinipia gen. nov.

Candidatus Cinipia (NL. fem. n. *Cinipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKRC01*. The type species for the genus is *Candidatus* Cinipia detenastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cinipia maleditio sp. nov.

Candidatus Cinipia maleditio (NL. fem. n. *maleditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKRC01 sp007118695*. The type genome for the species is the GenBank assembly GCA_007130715.1. The GC content of the type genome is 47.4 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Cinipida cepulibula sp. nov.

Candidatus Cinipida cepulibula (NL. fem. n. *cepulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKKG01 sp903827975*. The type genome for the species is the GenBank assembly GCA_903851715.1. The GC content of the type genome is 39.78 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Cinipida gen. nov.

Candidatus Cinipida (NL. fem. n. *Cinipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKKG01*. The type species for the genus is *Candidatus* Cinipida cepulibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Ciniposa notacitica sp. nov.

Candidatus Ciniposa notacitica (NL. fem. n. *notacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM714 sp002869095*. The type genome for the species is the GenBank assembly GCA_002869095.1. The GC content of the type genome is 44.5 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Ciniposa gen. nov.

Candidatus Ciniposa (NL. fem. n. *Ciniposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM714*. The type species for the genus is *Candidatus* Ciniposa notacitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM714*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ciniposaceae.

Description of *Candidatus* Ciniposaceae fam. nov.

Candidatus Ciniposaceae (NL. fem. n. *Ciniposaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM714.* The type genus for the taxon is *Candidatus* Ciniposa .

According to GTDB R06-RS202, this family belongs to the order *Peptostreptococcales*.

Description of *Candidatus* Cinipula saxifugo sp. nov.

Candidatus Cinipula saxifugo (NL. fem. n. *saxifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-21 sp003233345*. The type genome for the species is the GenBank assembly GCA_003233345.1. The GC content of the type genome is 41.85 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Cinipula gen. nov.

Candidatus Cinipula (NL. fem. n. *Cinipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-21*. The type species for the genus is *Candidatus* Cinipula saxifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinipulaceae.

Description of *Candidatus* Cinipulaceae fam. nov.

Candidatus Cinipulaceae (NL. fem. n. *Cinipulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-21.* The type genus for the taxon is *Candidatus* Cinipula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cinipulales.

Description of *Candidatus* Cinipulales ord. nov.

Candidatus Cinipulales (NL. fem. n. *Cinipulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-21.* The type genus for the taxon is *Candidatus* Cinipula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Cisalana cohonibula sp. nov.

Candidatus Cisalana cohonibula (NL. fem. n. *cohonibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXA01 sp010027915*. The type genome for the species is the GenBank assembly GCA_010027915.1. The GC content of the type genome is 51.59 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Cisalana gen. nov.

Candidatus Cisalana (NL. fem. n. *Cisalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXXA01*. The type species for the genus is *Candidatus* Cisalana cohonibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXXA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisalanaceae.

Description of *Candidatus* Cisalanaceae fam. nov.

Candidatus Cisalanaceae (NL. fem. n. *Cisalanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SXXA01.* The type genus for the taxon is *Candidatus* Cisalana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SXXA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cisalanales.

Description of *Candidatus* Cisalanales ord. nov.

Candidatus Cisalanales (NL. fem. n. *Cisalanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SXXA01*. The type genus for the taxon is *Candidatus* Cisalana .

According to the GTDB R06-RS202, this order belongs to the class *Marinamargulisbacteria*.

Description of *Candidatus* Cisalana defarilenta sp. nov.

Candidatus Cisalana defarilenta (NL. fem. n. *defarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXA01 sp005791325*. The type genome for the species is the GenBank assembly GCA_005791325.1. The GC content of the type genome is 46.06 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Cisalaria bisacugo sp. nov.

Candidatus Cisalaria bisacugo (NL. fem. n. *bisacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQNR01 sp903873255*. The type genome for the species is the GenBank assembly GCA_903873255.1. The GC content of the type genome is 35.92 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Cisalaria gen. nov.

Candidatus Cisalaria (NL. fem. n. *Cisalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQNR01*. The type species for the genus is *Candidatus* Cisalaria bisacugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIQNR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisalariaceae.

Description of *Candidatus* Cisalariaceae fam. nov.

Candidatus Cisalariaceae (NL. fem. n. *Cisalariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIQNR01.* The type genus for the taxon is *Candidatus* Cisalaria .

According to GTDB R06-RS202, this family belongs to the order *Babeliales*.

Description of *Candidatus* Cisalia vilipitica sp. nov.

Candidatus Cisalia vilipitica (NL. fem. n. *vilipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQK01 sp013203265*. The type genome for the species is the GenBank assembly GCA_013203265.1. The GC content of the type genome is 35.95 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Cisalia gen. nov.

Candidatus Cisalia (NL. fem. n. *Cisalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQK01*. The type species for the genus is *Candidatus* Cisalia vilipitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMQK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisaliaceae.

Description of *Candidatus* Cisaliaceae fam. nov.

Candidatus Cisaliaceae (NL. fem. n. *Cisaliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQK01.* The type genus for the taxon is *Candidatus* Cisalia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1572*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Celumanales.

Description of *Candidatus* Cisalida conopousia sp. nov.

Candidatus Cisalida conopousia (NL. fem. n. *conopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1322 sp900769815*. The type genome for the species is the GenBank assembly RS_GCF_900769815.1. The GC content of the type genome is 37.98 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Cisalida gen. nov.

Candidatus Cisalida (NL. fem. n. *Cisalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1322*. The type species for the genus is *Candidatus* Cisalida conopousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QALW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanugariaceae.

Description of *Candidatus* Cisalida delecimonia sp. nov.

Candidatus Cisalida delecimonia (NL. fem. n. *delecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1322 sp900550765*. The type genome for the species is the GenBank assembly RS_GCF_900760805.1. The GC content of the type genome is 46.34 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Cisalosa abrumitica sp. nov.

Candidatus Cisalosa abrumitica (NL. fem. n. *abrumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp014379165*. The type genome for the species is the GenBank assembly GCA_014379165.1. The GC content of the type genome is 47.97 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Cisalosa gen. nov.

Candidatus Cisalosa (NL. fem. n. *Cisalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-54-10*. The type species for the genus is *Candidatus* Cisalosa

abrumitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Cisalosa adtilisca sp. nov.

Candidatus Cisalosa adtilisca (NL. fem. n. *adtilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp001775475*. The type genome for the species is the GenBank assembly GCA_001775475.1. The GC content of the type genome is 53.0 % and the genome length is 0.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Cisalosa bigemitica sp. nov.

Candidatus Cisalosa bigemitica (NL. fem. n. *bigemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp903878285*. The type genome for the species is the GenBank assembly GCA_903820465.1. The GC content of the type genome is 53.85 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Cisalosa casigifica sp. nov.

Candidatus Cisalosa casigifica (NL. fem. n. *casigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp003135635*. The type genome for the species is the GenBank assembly GCA_003135635.1. The GC content of the type genome is 46.48 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Cisalosa citocifica sp. nov.

Candidatus Cisalosa citocifica (NL. fem. n. *citocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp001773575*. The type genome for the species is the GenBank assembly GCA_001773575.1. The GC content of the type genome is 47.77 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point C".

Description of *Candidatus* Cisalosa decapibra sp. nov.

Candidatus Cisalosa decapibra (NL. fem. n. *decapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp007375995*. The type genome for the species is the GenBank assembly GCA_007375995.1. The GC content of the type genome is 49.57 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Cisalosa demagugo sp. nov.

Candidatus Cisalosa demagugo (NL. fem. n. *demagugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp903915735*. The type genome for the species is the GenBank assembly GCA_903915735.1. The GC content of the type genome is 55.21 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Cisalosa demulisca sp. nov.

Candidatus Cisalosa demulisca (NL. fem. n. *demulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp009691465*. The type genome for the species is the GenBank assembly GCA_009691465.1. The GC content of the type genome is 56.72 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Cisalosa denunigena sp. nov.

Candidatus Cisalosa denunigena (NL. fem. n. *denunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp903884345*. The type genome for the species is the

GenBank assembly GCA_903835995.1. The GC content of the type genome is 57.51 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Cisalosa depacitas sp. nov.

Candidatus Cisalosa depacitas (NL. fem. n. *depacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp903819895*. The type genome for the species is the GenBank assembly GCA_903819895.1. The GC content of the type genome is 54.89 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Cisalosa diminitas sp. nov.

Candidatus Cisalosa diminitas (NL. fem. n. *diminitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp903851045*. The type genome for the species is the GenBank assembly GCA_903904145.1. The GC content of the type genome is 54.52 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Cisalosa divulitoga sp. nov.

Candidatus Cisalosa divulitoga (NL. fem. n. *divulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp903840375*. The type genome for the species is the GenBank assembly GCA_903840375.1. The GC content of the type genome is 49.79 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Cisalosa doxolentia sp. nov.

Candidatus Cisalosa doxolentia (NL. fem. n. *doxolentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp001775445*. The type genome for the species is the GenBank assembly GCA_001773545.1. The GC content of the type genome is 54.06 % and the genome length is 0.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cisalosa hecatatio sp. nov.

Candidatus Cisalosa hecatatio (NL. fem. n. *hecatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp903900775*. The type genome for the species is the GenBank assembly GCA_903900775.1. The GC content of the type genome is 54.25 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Cisalosa inbelitura sp. nov.

Candidatus Cisalosa inbelitura (NL. fem. n. *inbelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp001004665*. The type genome for the species is the GenBank assembly GCA_001004665.1. The GC content of the type genome is 53.73 % and the genome length is 0.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Cisalosa pavicibula sp. nov.

Candidatus Cisalosa pavicibula (NL. fem. n. *pavicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp903824155*. The type genome for the species is the GenBank assembly GCA_903895825.1. The GC content of the type genome is 51.47 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Cisalosa roruletta sp. nov.

Candidatus Cisalosa roruletta (NL. fem. n. *roruletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-54-10 sp001775485*. The type genome for the species is the GenBank assembly GCA_001775485.1. The GC content of the type genome is 51.44 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cisalula abinvatio sp. nov.

Candidatus Cisalula abinvatio (NL. fem. n. *abinvatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902783065*. The type genome for the species is the GenBank assembly GCA_902783065.1. The GC content of the type genome is 39.64 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Cisalula gen. nov.

Candidatus Cisalula (NL. fem. n. *Cisalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1213*. The type species for the genus is *Candidatus* Cisalula abinvatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cisalula absocitrix sp. nov.

Candidatus Cisalula absocitrix (NL. fem. n. *absocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902783815*. The type genome for the species is the GenBank assembly GCA_902783815.1. The GC content of the type genome is 41.67 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Cisalula acustedo sp. nov.

Candidatus Cisalula acustedo (NL. fem. n. *acustedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902763365*. The type genome for the species is the GenBank assembly GCA_902763365.1. The GC content of the type genome is 41.56 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Cisalula adsicitas sp. nov.

Candidatus Cisalula adsicitas (NL. fem. n. *adsicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902785555*. The type genome for the species is the GenBank assembly GCA_902785555.1. The GC content of the type genome is 38.15 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Cisalula aggesivita sp. nov.

Candidatus Cisalula aggesivita (NL. fem. n. *aggesivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902803385*. The type genome for the species is the GenBank assembly GCA_902803385.1. The GC content of the type genome is 45.68 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Cisalula arcubicella sp. nov.

Candidatus Cisalula arcubicella (NL. fem. n. *arcubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902772855*. The type genome for the species is the GenBank assembly GCA_902772855.1. The GC content of the type genome is 54.4 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Cisalula argimago sp. nov.

Candidatus Cisalula argimago (NL. fem. n. *argimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902773135*. The type genome for the species is the GenBank assembly GCA_902773135.1. The GC content of the type genome is 41.04 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Cisalula asbesedo sp. nov.

Candidatus Cisalula asbesedo (NL. fem. n. *asbesedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902802985*. The type genome for the species is the GenBank assembly GCA_902802985.1. The GC content of the type genome is 41.81 %

and the genome length is 2.08 Mbp.

Description of *Candidatus* Cisalula cimeledo sp. nov.

Candidatus Cisalula cimeledo (NL. fem. n. *cimeledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900321195*. The type genome for the species is the GenBank assembly GCA_900321195.1. The GC content of the type genome is 42.52 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cisalula cohuricella sp. nov.

Candidatus Cisalula cohuricella (NL. fem. n. *cohuricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902778175*. The type genome for the species is the GenBank assembly GCA_902789975.1. The GC content of the type genome is 44.71 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Cisalula colimilega sp. nov.

Candidatus Cisalula colimilega (NL. fem. n. *colimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900319255*. The type genome for the species is the GenBank assembly GCA_902803425.1. The GC content of the type genome is 45.68 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Cisalula colubastra sp. nov.

Candidatus Cisalula colubastra (NL. fem. n. *colubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902766305*. The type genome for the species is the GenBank assembly GCA_902766305.1. The GC content of the type genome is 41.06 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Cisalula cosigimonas sp. nov.

Candidatus Cisalula cosigimonas (NL. fem. n. *cosigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902767155*. The type genome for the species is the GenBank assembly GCA_902767155.1. The GC content of the type genome is 39.5 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Cisalula cunabigena sp. nov.

Candidatus Cisalula cunabigena (NL. fem. n. *cunabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902772955*. The type genome for the species is the GenBank assembly GCA_902772955.1. The GC content of the type genome is 48.53 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Cisalula curabilega sp. nov.

Candidatus Cisalula curabilega (NL. fem. n. *curabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902803805*. The type genome for the species is the GenBank assembly GCA_902803805.1. The GC content of the type genome is 43.14 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Cisalula cuticibra sp. nov.

Candidatus Cisalula cuticibra (NL. fem. n. *cuticibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902802105*. The type genome for the species is the GenBank assembly GCA_902802105.1. The GC content of the type genome is 46.43 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Cisalula decatitica sp. nov.

Candidatus Cisalula decatitica (NL. fem. n. *decatitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902786345*. The type genome for the species is the GenBank assembly GCA_902786345.1. The GC content of the type genome is 38.68 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Cisalula denunago sp. nov.

Candidatus Cisalula denunago (NL. fem. n. *denunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900317795*. The type genome for the species is the GenBank assembly GCA_900317795.1. The GC content of the type genome is 39.43 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Cisalula derunousia sp. nov.

Candidatus Cisalula derunousia (NL. fem. n. *derunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902768825*. The type genome for the species is the GenBank assembly GCA_902768825.1. The GC content of the type genome is 47.99 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Cisalula desepitio sp. nov.

Candidatus Cisalula desepitio (NL. fem. n. *desepitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900316925*. The type genome for the species is the GenBank assembly GCA_900316925.1. The GC content of the type genome is 51.75 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Cisalula desorifica sp. nov.

Candidatus Cisalula desorifica (NL. fem. n. *desorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900316485*. The type genome for the species is the GenBank assembly GCA_902765315.1. The GC content of the type genome is 41.67 %

and the genome length is 3.07 Mbp.

Description of *Candidatus* Cisalula detecitio sp. nov.

Candidatus Cisalula detecitio (NL. fem. n. *detecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900320925*. The type genome for the species is the GenBank assembly GCA_900320925.1. The GC content of the type genome is 48.01 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Cisalula effigentia sp. nov.

Candidatus Cisalula effigentia (NL. fem. n. *effigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902764235*. The type genome for the species is the GenBank assembly GCA_902764235.1. The GC content of the type genome is 42.61 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Cisalula hecatitia sp. nov.

Candidatus Cisalula hecatitia (NL. fem. n. *hecatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902773065*. The type genome for the species is the GenBank assembly GCA_902773065.1. The GC content of the type genome is 41.73 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Cisalula hibisatio sp. nov.

Candidatus Cisalula hibisatio (NL. fem. n. *hibisatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900322145*. The type genome for the species is the GenBank assembly GCA_902776555.1. The GC content of the type genome is 46.83 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Cisalula homilicula sp. nov.

Candidatus Cisalula homilicula (NL. fem. n. *homilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp002309275*. The type genome for the species is the GenBank assembly GCA_002309275.1. The GC content of the type genome is 40.05 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Cisalula incivatica sp. nov.

Candidatus Cisalula incivatica (NL. fem. n. *incivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902772895*. The type genome for the species is the GenBank assembly GCA_902772895.1. The GC content of the type genome is 46.78 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Cisalula incocifica sp. nov.

Candidatus Cisalula incocifica (NL. fem. n. *incocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902800065*. The type genome for the species is the GenBank assembly GCA_902800065.1. The GC content of the type genome is 38.03 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Cisalula lapilimonas sp. nov.

Candidatus Cisalula lapilimonas (NL. fem. n. *lapilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902801715*. The type genome for the species is the GenBank assembly GCA_902801715.1. The GC content of the type genome is 41.5 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Cisalula legifisca sp. nov.

Candidatus Cisalula legifisca (NL. fem. n. *legifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900322105*. The type genome for the species is the GenBank assembly GCA_902799155.1. The GC content of the type genome is 47.91 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Cisalula locelibra sp. nov.

Candidatus Cisalula locelibra (NL. fem. n. *locelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900317215*. The type genome for the species is the GenBank assembly GCA_900317215.1. The GC content of the type genome is 46.46 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Cisalula lucerifica sp. nov.

Candidatus Cisalula lucerifica (NL. fem. n. *lucerifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902800005*. The type genome for the species is the GenBank assembly GCA_902800005.1. The GC content of the type genome is 40.8 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Cisalula ludifatica sp. nov.

Candidatus Cisalula ludifatica (NL. fem. n. *ludifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902773325*. The type genome for the species is the GenBank assembly GCA_902773325.1. The GC content of the type genome is 47.88 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Cisalula manufigena sp. nov.

Candidatus Cisalula manufigena (NL. fem. n. *manufigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902796475*. The type genome for the species is the GenBank assembly GCA_902796475.1. The GC content of the type genome is 47.0 %

and the genome length is 2.37 Mbp.

Description of *Candidatus* Cisalula metapitia sp. nov.

Candidatus Cisalula metapitia (NL. fem. n. *metapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902801055*. The type genome for the species is the GenBank assembly GCA_902801055.1. The GC content of the type genome is 46.44 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Cisalula mirabago sp. nov.

Candidatus Cisalula mirabago (NL. fem. n. *mirabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902783855*. The type genome for the species is the GenBank assembly GCA_902783855.1. The GC content of the type genome is 46.15 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Cisalula molecessa sp. nov.

Candidatus Cisalula molecessa (NL. fem. n. *molecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902803125*. The type genome for the species is the GenBank assembly GCA_902803125.1. The GC content of the type genome is 48.93 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Cisalula monumugo sp. nov.

Candidatus Cisalula monumugo (NL. fem. n. *monumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900315875*. The type genome for the species is the GenBank assembly GCA_902775145.1. The GC content of the type genome is 45.36 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Cisalula negiditudo sp. nov.

Candidatus Cisalula negiditudo (NL. fem. n. *negiditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902762335*. The type genome for the species is the GenBank assembly GCA_902762335.1. The GC content of the type genome is 50.1 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Cisalula nivomatica sp. nov.

Candidatus Cisalula nivomatica (NL. fem. n. *nivomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp002351795*. The type genome for the species is the GenBank assembly GCA_002351795.1. The GC content of the type genome is 42.02 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Cisalula ocissimonia sp. nov.

Candidatus Cisalula ocissimonia (NL. fem. n. *ocissimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902766585*. The type genome for the species is the GenBank assembly GCA_902766585.1. The GC content of the type genome is 42.46 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cisalula omnimilega sp. nov.

Candidatus Cisalula omnimilega (NL. fem. n. *omnimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902773025*. The type genome for the species is the GenBank assembly GCA_902773025.1. The GC content of the type genome is 40.2 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Cisalula patibitudo sp. nov.

Candidatus Cisalula patibitudo (NL. fem. n. *patibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902767125*. The type genome for the species is the GenBank assembly GCA_902767125.1. The GC content of the type genome is 39.78 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Cisalula pulegibra sp. nov.

Candidatus Cisalula pulegibra (NL. fem. n. *pulegibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp002350705*. The type genome for the species is the GenBank assembly GCA_002350705.1. The GC content of the type genome is 43.23 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Cisalula purulilenta sp. nov.

Candidatus Cisalula purulilenta (NL. fem. n. *purulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900317395*. The type genome for the species is the GenBank assembly GCA_900317395.1. The GC content of the type genome is 40.51 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Cisalula secunousia sp. nov.

Candidatus Cisalula secunousia (NL. fem. n. *secunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp002308635*. The type genome for the species is the GenBank assembly GCA_902773405.1. The GC content of the type genome is 44.96 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Cisalula telegivita sp. nov.

Candidatus Cisalula telegivita (NL. fem. n. *telegivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902785765*. The type genome for the species is the GenBank assembly GCA_902785765.1. The GC content of the type genome is 51.67 %

and the genome length is 2.23 Mbp.

Description of *Candidatus* Cisalula vatilisca sp. nov.

Candidatus Cisalula vatilisca (NL. fem. n. *vatilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900315465*. The type genome for the species is the GenBank assembly GCA_900315465.1. The GC content of the type genome is 38.64 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Cisalula velivugo sp. nov.

Candidatus Cisalula velivugo (NL. fem. n. *velivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp900320235*. The type genome for the species is the GenBank assembly GCA_900320235.1. The GC content of the type genome is 40.25 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Cisalula vitabilega sp. nov.

Candidatus Cisalula vitabilega (NL. fem. n. *vitabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902803585*. The type genome for the species is the GenBank assembly GCA_902803585.1. The GC content of the type genome is 46.36 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Cisalula xeropetta sp. nov.

Candidatus Cisalula xeropetta (NL. fem. n. *xeropetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1213 sp902767175*. The type genome for the species is the GenBank assembly GCA_902767175.1. The GC content of the type genome is 43.54 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Cisorana adtenax sp. nov.

Candidatus Cisorana adtenax (NL. fem. n. *adtenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-64-43 sp001796965*. The type genome for the species is the GenBank assembly GCA_001796965.1. The GC content of the type genome is 64.95 % and the genome length is 1.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Cisorana gen. nov.

Candidatus Cisorana (NL. fem. n. *Cisorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-64-43*. The type species for the genus is *Candidatus* Cisorana adtenax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-43*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisoranaceae.

Description of *Candidatus* Cisoranaceae fam. nov.

Candidatus Cisoranaceae (NL. fem. n. *Cisoranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-64-43.* The type genus for the taxon is *Candidatus* Cisorana .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Cisoraria siteligena sp. nov.

Candidatus Cisoraria siteligena (NL. fem. n. *siteligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11346 sp003482625*. The type genome for the species is the GenBank assembly GCA_003482625.1. The GC content of the type genome is 68.04 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Cisoraria gen. nov.

Candidatus Cisoraria (NL. fem. n. *Cisoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11346*. The type species for the genus is *Candidatus* Cisoraria siteligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisorariaceae.

Description of *Candidatus* Cisorariaceae fam. nov.

Candidatus Cisorariaceae (NL. fem. n. *Cisorariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11346.* The type genus for the taxon is *Candidatus* Cisoraria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cisorariales.

Description of *Candidatus* Cisorariales ord. nov.

Candidatus Cisorariales (NL. fem. n. *Cisorariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11346.* The type genus for the taxon is *Candidatus* Cisoraria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cisorariae.

Description of *Candidatus* Cisorariae class. nov.

Candidatus Cisorariae (NL. fem. n. *c__Cisorariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11346.* The type genus for the taxon is *Candidatus* Cisoraria .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Cisorella colapimonia sp. nov.

Candidatus Cisorella colapimonia (NL. fem. n. *colapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSJ01 sp007130525*. The type genome for the species is the GenBank assembly GCA_007122725.1. The GC content of the type genome is 63.15 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Cisorella gen. nov.

Candidatus Cisorella (NL. fem. n. *Cisorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLSJ01*. The type species for the genus is *Candidatus* Cisorella colapimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cisoria nucifax sp. nov.

Candidatus Cisoria nucifax (NL. fem. n. *nucifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXXC01 sp903923205*. The type genome for the species is the GenBank assembly GCA_903923205.1. The GC content of the type genome is 59.96 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Cisoria gen. nov.

Candidatus Cisoria (NL. fem. n. *Cisoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXXC01*. The type species for the genus is *Candidatus* Cisoria nucifax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cisoria perabitia sp. nov.

Candidatus Cisoria perabitia (NL. fem. n. *perabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXXC01 sp903897565*. The type genome for the species is the GenBank assembly GCA_903897565.1. The GC content of the type genome is 65.03 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Cisorida echogibula sp. nov.

Candidatus Cisorida echogibula (NL. fem. n. *echogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2174 sp011042305*. The type genome for the species is the GenBank assembly GCA_011042305.1. The GC content of the type genome is 64.03 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Cisorida gen. nov.

Candidatus Cisorida (NL. fem. n. *Cisorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2174*. The type species for the genus is *Candidatus* Cisorida echogibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2174*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisoridaceae.

Description of *Candidatus* Cisoridaceae fam. nov.

Candidatus Cisoridaceae (NL. fem. n. *Cisoridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2174.* The type genus for the taxon is *Candidatus* Cisorida .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Cisorida lucelicella sp. nov.

Candidatus Cisorida lucelicella (NL. fem. n. *lucelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2174 sp002327445*. The type genome for the species is the GenBank assembly GCA_002327445.1. The GC content of the type genome is 62.31 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Cisorosa domigatio sp. nov.

Candidatus Cisorosa domigatio (NL. fem. n. *domigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-FULL-40-11 sp001776505*. The type genome for the species is the GenBank assembly GCA_001774915.1. The GC content of the type genome is 38.13 % and the genome length is 0.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Cisorosa gen. nov.

Candidatus Cisorosa (NL. fem. n. *Cisorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-FULL-40-11*. The type species for the genus is *Candidatus* Cisorosa domigatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-41-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Cisorula inreticula sp. nov.

Candidatus Cisorula inreticula (NL. fem. n. *inreticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3857 sp002392505*. The type genome for the species is the GenBank assembly GCA_002392505.1. The GC content of the type genome is 57.0 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Cisorula gen. nov.

Candidatus Cisorula (NL. fem. n. *Cisorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA3857*. The type species for the genus is *Candidatus* Cisorula inreticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Cisorula xenopedo sp. nov.

Candidatus Cisorula xenopedo (NL. fem. n. *xenopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3857 sp900313585*. The type genome for the species is the GenBank assembly GCA_900313585.1. The GC content of the type genome is 49.94 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Citipana minuritoga sp. nov.

Candidatus Citipana minuritoga (NL. fem. n. *minuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSH01 sp013140705*. The type genome for the species is the GenBank assembly GCA_013140705.1. The GC content of the type genome is 46.01 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Citipana gen. nov.

Candidatus Citipana (NL. fem. n. *Citipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFSH01*. The type species for the genus is *Candidatus* Citipana minuritoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Citiparia sugilatio sp. nov.

Candidatus Citiparia sugilatio (NL. fem. n. *sugilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *XYA12-FULL-58-9 sp001798605*. The type genome for the species is the GenBank assembly GCA_001798605.1. The GC content of the type genome is 58.35 % and the genome length is 6.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Citiparia gen. nov.

Candidatus Citiparia (NL. fem. n. *Citiparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYA12-FULL-58-9*. The type species for the genus is *Candidatus* Citiparia sugilatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYA12-FULL-58-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citipariaceae.

Description of *Candidatus* Citipariaceae fam. nov.

Candidatus Citipariaceae (NL. fem. n. *Citipariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYA12-FULL-58-9.* The type genus for the taxon is *Candidatus* Citiparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYA12-FULL-58-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Citipariales.

Description of *Candidatus* Citipariales ord. nov.

Candidatus Citipariales (NL. fem. n. *Citipariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYA12-FULL-58-9.* The type genus for the taxon is *Candidatus* Citiparia .

According to the original version of GTDB R06-RS202, this family belongs to the class *XYA12-FULL-58-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Citipariae.

Description of *Candidatus* Citipariae class. nov.

Candidatus Citipariae (NL. fem. n. *c__Citipariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYA12-FULL-58-9.* The type genus for the taxon is *Candidatus* Citiparia .

According to GTDB R06-RS202, this class belongs to the phylum *Myxococcota*.

Description of *Candidatus* Citipella horomatica sp. nov.

Candidatus Citipella horomatica (NL. fem. n. *horomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA961 sp002293005*. The type genome for the species is the GenBank assembly GCA_002293005.1. The GC content of the type genome is 40.82 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Citipella gen. nov.

Candidatus Citipella (NL. fem. n. *Citipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA961*. The type species for the genus is *Candidatus* Citipella horomatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA961*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citipellaceae.

Description of *Candidatus* Citipellaceae fam. nov.

Candidatus Citipellaceae (NL. fem. n. *Citipellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA961.* The type genus for the taxon is *Candidatus* Citipella .

According to GTDB R06-RS202, this family belongs to the order *Kapabacteriales*.

Description of *Candidatus* Citipella redunitura sp. nov.

Candidatus Citipella redunitura (NL. fem. n. *redunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA961 sp009919265*. The type genome for the species is the GenBank assembly GCA_009919265.1. The GC content of the type genome is 39.59 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Citipella repudilenta sp. nov.

Candidatus Citipella repudilenta (NL. fem. n. *repudilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA961 sp005788035*. The type genome for the species is the GenBank assembly GCA_014191135.1. The GC content of the type genome is 40.22 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Citipia culilibra sp. nov.

Candidatus Citipia culilibra (NL. fem. n. *culilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED25 sp002699615*. The type genome for the species is the GenBank assembly GCA_902526095.1. The GC content of the type genome is 35.75 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Citipia gen. nov.

Candidatus Citipia (NL. fem. n. *Citipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED25*. The type species for the genus is *Candidatus* Citipia culilibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citipiaceae.

Description of *Candidatus* Citipiaceae fam. nov.

Candidatus Citipiaceae (NL. fem. n. *Citipiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED25.* The type genus for the taxon is *Candidatus* Citipia .

According to GTDB R06-RS202, this family belongs to the order *Rhizobiales_B*.

Description of *Candidatus* Citipia desulibra sp. nov.

Candidatus Citipia desulibra (NL. fem. n. *desulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED25 sp002704755*. The type genome for the species is the GenBank assembly GCA_002704755.1. The GC content of the type genome is 33.75 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Citipia minurisca sp. nov.

Candidatus Citipia minurisca (NL. fem. n. *minurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED25 sp902633855*. The type genome for the species is the GenBank assembly GCA_902633855.1. The GC content of the type genome is 35.96 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Citipia ridibitrix sp. nov.

Candidatus Citipia ridibitrix (NL. fem. n. *ridibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED25 sp902538185*. The type genome for the species is the GenBank assembly GCA_902538185.1. The GC content of the type genome is 35.79 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Citipia rubefago sp. nov.

Candidatus Citipia rubefago (NL. fem. n. *rubefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED25 sp002694595*. The type genome for the species is the GenBank assembly GCA_002694595.1. The GC content of the type genome is 35.55 %

and the genome length is 0.63 Mbp.

Description of *Candidatus* Citipia saxifedo sp. nov.

Candidatus Citipia saxifedo (NL. fem. n. *saxifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED25 sp002168075*. The type genome for the species is the GenBank assembly GCA_002716505.1. The GC content of the type genome is 33.21 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Citipia vanititrix sp. nov.

Candidatus Citipia vanititrix (NL. fem. n. *vanititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED25 sp902632055*. The type genome for the species is the GenBank assembly GCA_902632055.1. The GC content of the type genome is 35.82 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Citipia vivifilega sp. nov.

Candidatus Citipia vivifilega (NL. fem. n. *vivifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED25 sp902613795*. The type genome for the species is the GenBank assembly GCA_902613795.1. The GC content of the type genome is 35.98 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Citipida detumax sp. nov.

Candidatus Citipida detumax (NL. fem. n. *detumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mt11 sp001282665*. The type genome for the species is the GenBank assembly RS_GCF_001282665.1. The GC content of the type genome is 31.48 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Citipida gen. nov.

Candidatus Citipida (NL. fem. n. *Citipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Mt11*. The type species for the genus is *Candidatus* Citipida detumax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Citipida utrarousia sp. nov.

Candidatus Citipida utrarousia (NL. fem. n. *utrarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mt11 sp002398845*. The type genome for the species is the GenBank assembly GCA_002398845.1. The GC content of the type genome is 31.42 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Citiposa acratessa sp. nov.

Candidatus Citiposa acratessa (NL. fem. n. *acratessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8438 sp002726085*. The type genome for the species is the GenBank assembly GCA_002726085.1. The GC content of the type genome is 65.28 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Citiposa gen. nov.

Candidatus Citiposa (NL. fem. n. *Citiposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8438*. The type species for the genus is *Candidatus* Citiposa acratessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8438*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citiposaceae.

Description of *Candidatus* Citiposaceae fam. nov.

Candidatus Citiposaceae (NL. fem. n. *Citiposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8438.* The type genus for the taxon is *Candidatus* Citiposa .

According to GTDB R06-RS202, this family belongs to the order *Vicinamibacterales*.

Description of *Candidatus* Citiposa cocolitoga sp. nov.

Candidatus Citiposa cocolitoga (NL. fem. n. *cocolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8438 sp002346545*. The type genome for the species is the GenBank assembly GCA_002346545.1. The GC content of the type genome is 64.48 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Citiposa cohoratio sp. nov.

Candidatus Citiposa cohoratio (NL. fem. n. *cohoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8438 sp002347025*. The type genome for the species is the GenBank assembly GCA_002456055.1. The GC content of the type genome is 53.37 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Citiposa insusedo sp. nov.

Candidatus Citiposa insusedo (NL. fem. n. *insusedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8438 sp005778315*. The type genome for the species is the GenBank assembly GCA_005778315.1. The GC content of the type genome is 65.86 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Citiposa laxitimonas sp. nov.

Candidatus Citiposa laxitimonas (NL. fem. n. *laxitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8438 sp003533545*. The type genome for the species is the

GenBank assembly GCA_003533545.1. The GC content of the type genome is 60.26 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Citiposa oppugentia sp. nov.

Candidatus Citiposa oppugentia (NL. fem. n. *oppugentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8438 sp002712885*. The type genome for the species is the GenBank assembly GCA_002712885.1. The GC content of the type genome is 64.89 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Citipula saxifimonas sp. nov.

Candidatus Citipula saxifimonas (NL. fem. n. *saxifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC1-FULL-37-79 sp001769975*. The type genome for the species is the GenBank assembly GCA_001769975.1. The GC content of the type genome is 35.59 % and the genome length is 2.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point A".

Description of *Candidatus* Citipula gen. nov.

Candidatus Citipula (NL. fem. n. *Citipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYC1-FULL-37-79*. The type species for the genus is *Candidatus* Citipula saxifimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Citipula senipiforma sp. nov.

Candidatus Citipula senipiforma (NL. fem. n. *senipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC1-FULL-37-79 sp001770015*. The type genome for the species is the GenBank assembly GCA_001769995.1. The GC content of the type genome is 37.18

% and the genome length is 2.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point A".

Description of *Candidatus* Citivana adgenedo sp. nov.

Candidatus Citivana adgenedo (NL. fem. n. *adgenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBG01 sp009781275*. The type genome for the species is the GenBank assembly GCA_009781275.1. The GC content of the type genome is 46.77 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Citivana gen. nov.

Candidatus Citivana (NL. fem. n. *Citivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBG01*. The type species for the genus is *Candidatus* Citivana adgenedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Citivana aprarifica sp. nov.

Candidatus Citivana aprarifica (NL. fem. n. *aprarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBG01 sp009778375*. The type genome for the species is the GenBank assembly GCA_009778375.1. The GC content of the type genome is 46.92 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Citivana citocatio sp. nov.

Candidatus Citivana citocatio (NL. fem. n. *citocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBG01 sp009784635*. The type genome for the species is the

GenBank assembly GCA_009784635.1. The GC content of the type genome is 47.48 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Citivaria apoplimonia sp. nov.

Candidatus Citivaria apoplimonia (NL. fem. n. *apoplimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-25 sp005888395*. The type genome for the species is the GenBank assembly GCA_005888395.1. The GC content of the type genome is 71.31 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Citivaria gen. nov.

Candidatus Citivaria (NL. fem. n. *Citivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-25*. The type species for the genus is *Candidatus* Citivaria apoplimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AC-25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citivariaceae.

Description of *Candidatus* Citivariaceae fam. nov.

Candidatus Citivariaceae (NL. fem. n. *Citivariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AC-25.* The type genus for the taxon is *Candidatus* Citivaria .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Citivella petulitudo sp. nov.

Candidatus Citivella petulitudo (NL. fem. n. *petulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG210 sp902796835*. The type genome for the species is the GenBank assembly GCA_902796835.1. The GC content of the type genome is 52.17 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Citivella gen. nov.

Candidatus Citivella (NL. fem. n. *Citivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG210*. The type species for the genus is *Candidatus* Citivella petulitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Citivella televitudo sp. nov.

Candidatus Citivella televitudo (NL. fem. n. *televitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG210 sp003265305*. The type genome for the species is the GenBank assembly RS_GCF_003265305.2. The GC content of the type genome is 46.38 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Citivella venucax sp. nov.

Candidatus Citivella venucax (NL. fem. n. *venucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG210 sp900316575*. The type genome for the species is the GenBank assembly GCA_902757175.1. The GC content of the type genome is 48.68 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Citivia parocedo sp. nov.

Candidatus Citivia parocedo (NL. fem. n. *parocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-38-27 sp001821475*. The type genome for the species is the GenBank assembly GCA_000992685.1. The GC content of the type genome is 38.27 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Citivia gen. nov.

Candidatus Citivia (NL. fem. n. *Citivia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-38-27*. The type species for the genus is *Candidatus* Citivia parocedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-38-27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citiviaceae.

Description of *Candidatus* Citiviaceae fam. nov.

Candidatus Citiviaceae (NL. fem. n. *Citiviaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-38-27.* The type genus for the taxon is *Candidatus* Citivia .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Citivida delebilega sp. nov.

Candidatus Citivida delebilega (NL. fem. n. *delebilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1255 sp003162215*. The type genome for the species is the GenBank assembly GCA_003162215.1. The GC content of the type genome is 55.56 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Citivida gen. nov.

Candidatus Citivida (NL. fem. n. *Citivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1255*. The type species for the genus is *Candidatus* Citivida delebilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6906*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibellaceae.

Description of *Candidatus* Citivida resulitio sp. nov.

Candidatus Citivida resulitio (NL. fem. n. *resulitio* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1255 sp003154155*. The type genome for the species is the GenBank assembly GCA_003160615.1. The GC content of the type genome is 59.01 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Citivosa bigemitudo sp. nov.

Candidatus Citivosa bigemitudo (NL. fem. n. *bigemitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-45-20 sp002773335*. The type genome for the species is the GenBank assembly GCA_002773335.1. The GC content of the type genome is 44.82 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Citivosa gen. nov.

Candidatus Citivosa (NL. fem. n. *Citivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-45-20*. The type species for the genus is *Candidatus* Citivosa bigemitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Citivosa cacalitia sp. nov.

Candidatus Citivosa cacalitia (NL. fem. n. *cacalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-45-20 sp007378985*. The type genome for the species is the GenBank assembly GCA_007378985.1. The GC content of the type genome is 44.32 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Citivosa denecitudo sp. nov.

Candidatus Citivosa denecitudo (NL. fem. n. *denecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-45-20 sp004296925*. The type genome for the species is the GenBank assembly GCA_004296925.1. The GC content of the type genome is 44.03 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Citivosa insinicella sp. nov.

Candidatus Citivosa insinicella (NL. fem. n. *insinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-45-20 sp004322365*. The type genome for the species is the GenBank assembly GCA_004322365.1. The GC content of the type genome is 44.19 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Citivosa nocumigena sp. nov.

Candidatus Citivosa nocumigena (NL. fem. n. *nocumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-45-20 sp011331835*. The type genome for the species is the GenBank assembly GCA_011331835.1. The GC content of the type genome is 54.38 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Citivula indifugo sp. nov.

Candidatus Citivula indifugo (NL. fem. n. *indifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-600 sp011333005*. The type genome for the species is the GenBank assembly GCA_011333005.1. The GC content of the type genome is 54.63 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Citivula gen. nov.

Candidatus Citivula (NL. fem. n. *Citivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-600*. The type species for the genus is *Candidatus* Citivula indifugo

.

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-600*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citivulaceae.

Description of *Candidatus* Citivulaceae fam. nov.

Candidatus Citivulaceae (NL. fem. n. *Citivulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-600.* The type genus for the taxon is *Candidatus* Citivula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-600*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Citivulales.

Description of *Candidatus* Citivulales ord. nov.

Candidatus Citivulales (NL. fem. n. *Citivulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-600.* The type genus for the taxon is *Candidatus* Citivula .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Citivula manibitio sp. nov.

Candidatus Citivula manibitio (NL. fem. n. *manibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-600 sp011364775*. The type genome for the species is the GenBank assembly GCA_011364115.1. The GC content of the type genome is 51.09 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Citivula sitelax sp. nov.

Candidatus Citivula sitelax (NL. fem. n. *sitelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-600 sp011366485*. The type genome for the species is the GenBank assembly GCA_011366485.1. The GC content of the type genome is 53.33 %

and the genome length is 2.15 Mbp.

Description of *Candidatus* Citocana acertatio sp. nov.

Candidatus Citocana acertatio (NL. fem. n. *acertatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4416 sp014378485*. The type genome for the species is the GenBank assembly GCA_014378485.1. The GC content of the type genome is 34.85 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Citocana gen. nov.

Candidatus Citocana (NL. fem. n. *Citocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4416*. The type species for the genus is *Candidatus* Citocana acertatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-17BO*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogariaceae.

Description of *Candidatus* Citocana arcatitas sp. nov.

Candidatus Citocana arcatitas (NL. fem. n. *arcatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4416 sp013823565*. The type genome for the species is the GenBank assembly GCA_013823565.1. The GC content of the type genome is 32.23 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Citocana assubitica sp. nov.

Candidatus Citocana assubitica (NL. fem. n. *assubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4416 sp005800865*. The type genome for the species is the GenBank assembly GCA_005800865.1. The GC content of the type genome is 33.3 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Citocana colipatio sp. nov.

Candidatus Citocana colipatio (NL. fem. n. *colipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4416 sp002420145*. The type genome for the species is the GenBank assembly GCA_002420145.1. The GC content of the type genome is 32.3 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Citocana conarilenta sp. nov.

Candidatus Citocana conarilenta (NL. fem. n. *conarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4416 sp903928655*. The type genome for the species is the GenBank assembly GCA_903928655.1. The GC content of the type genome is 30.47 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Citocana expalitoga sp. nov.

Candidatus Citocana expalitoga (NL. fem. n. *expalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4416 sp002390745*. The type genome for the species is the GenBank assembly GCA_002390745.1. The GC content of the type genome is 48.34 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Citocana fetutessa sp. nov.

Candidatus Citocana fetutessa (NL. fem. n. *fetutessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4416 sp903893815*. The type genome for the species is the GenBank assembly GCA_903893815.1. The GC content of the type genome is 32.69 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Citocana necubifica sp. nov.

Candidatus Citocana necubifica (NL. fem. n. *necubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4416 sp903834765*. The type genome for the species is the GenBank assembly GCA_903825025.1. The GC content of the type genome is 32.36 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Citocaria defunibra sp. nov.

Candidatus Citocaria defunibra (NL. fem. n. *defunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4971 sp002424305*. The type genome for the species is the GenBank assembly GCA_002398585.1. The GC content of the type genome is 47.8 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Citocaria gen. nov.

Candidatus Citocaria (NL. fem. n. *Citocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4971*. The type species for the genus is *Candidatus* Citocaria defunibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4971*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citocariaceae.

Description of *Candidatus* Citocariaceae fam. nov.

Candidatus Citocariaceae (NL. fem. n. *Citocariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4971.* The type genus for the taxon is *Candidatus* Citocaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4971*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Citocariales.

Description of *Candidatus* Citocariales ord. nov.

Candidatus Citocariales (NL. fem. n. *Citocariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4971.* The type genus for the taxon is *Candidatus* Citocaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *SHA-98*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Taxilidae.

Description of *Candidatus* Citocaria exherugo sp. nov.

Candidatus Citocaria exherugo (NL. fem. n. *exherugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4971 sp012518595*. The type genome for the species is the GenBank assembly GCA_012518595.1. The GC content of the type genome is 49.14 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Citocaria fidenugo sp. nov.

Candidatus Citocaria fidenugo (NL. fem. n. *fidenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4971 sp900019985*. The type genome for the species is the GenBank assembly GCA_002340435.1. The GC content of the type genome is 49.59 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Citocaria genufax sp. nov.

Candidatus Citocaria genufax (NL. fem. n. *genufax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4971 sp012512055*. The type genome for the species is the GenBank assembly GCA_012512055.1. The GC content of the type genome is 50.46 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Citocaria irradatica sp. nov.

Candidatus Citocaria irradatica (NL. fem. n. *irradatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4971 sp012841305*. The type genome for the species is the GenBank assembly GCA_012841305.1. The GC content of the type genome is 49.92 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Citocaria occucisca sp. nov.

Candidatus Citocaria occucisca (NL. fem. n. *occucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4971 sp012689375*. The type genome for the species is the GenBank assembly GCA_012689375.1. The GC content of the type genome is 42.97 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Citocaria rinocitica sp. nov.

Candidatus Citocaria rinocitica (NL. fem. n. *rinocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4971 sp002398515*. The type genome for the species is the GenBank assembly GCA_002397915.1. The GC content of the type genome is 49.71 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Citocella visifisca sp. nov.

Candidatus Citocella visifisca (NL. fem. n. *visifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6733 sp002454165*. The type genome for the species is the GenBank assembly GCA_002453935.1. The GC content of the type genome is 51.49 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Citocella gen. nov.

Candidatus Citocella (NL. fem. n. *Citocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6733*. The type species for the genus is *Candidatus* Citocella visifisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family

HTCC2089. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Citocia adcesitas sp. nov.

Candidatus Citocia adcesitas (NL. fem. n. *adcesitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3900 sp012519465*. The type genome for the species is the GenBank assembly GCA_012519465.1. The GC content of the type genome is 49.04 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Citocia gen. nov.

Candidatus Citocia (NL. fem. n. *Citocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3900*. The type species for the genus is *Candidatus* Citocia adcesitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Citocia exsanitio sp. nov.

Candidatus Citocia exsanitio (NL. fem. n. *exsanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3900 sp012522935*. The type genome for the species is the GenBank assembly GCA_012522935.1. The GC content of the type genome is 49.38 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Citocia vinolessa sp. nov.

Candidatus Citocia vinolessa (NL. fem. n. *vinolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3900 sp002391675*. The type genome for the species is the GenBank assembly GCA_002391675.1. The GC content of the type genome is 51.13 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Citocida affamilenta sp. nov.

Candidatus Citocida affamilenta (NL. fem. n. *affamilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7542 sp003161635*. The type genome for the species is the GenBank assembly GCA_003161635.1. The GC content of the type genome is 56.81 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Citocida gen. nov.

Candidatus Citocida (NL. fem. n. *Citocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7542*. The type species for the genus is *Candidatus* Citocida affamilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11358*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Loceliaceae.

Description of *Candidatus* Citocida murelibra sp. nov.

Candidatus Citocida murelibra (NL. fem. n. *murelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7542 sp003134375*. The type genome for the species is the GenBank assembly GCA_003138605.1. The GC content of the type genome is 56.74 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Citocida proclatica sp. nov.

Candidatus Citocida proclatica (NL. fem. n. *proclatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7542 sp002479245*. The type genome for the species is the GenBank assembly GCA_002479245.1. The GC content of the type genome is 56.73 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Citocosa aterricella sp. nov.

Candidatus Citocosa aterricella (NL. fem. n. *aterricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEVD01 sp013044025*. The type genome for the species is the GenBank assembly GCA_013044025.1. The GC content of the type genome is 57.89 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Citocosa gen. nov.

Candidatus Citocosa (NL. fem. n. *Citocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEVD01*. The type species for the genus is *Candidatus* Citocosa aterricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABEVD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citocosaceae.

Description of *Candidatus* Citocosaceae fam. nov.

Candidatus Citocosaceae (NL. fem. n. *Citocosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABEVD01.* The type genus for the taxon is *Candidatus* Citocosa .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Citocula cuticessa sp. nov.

Candidatus Citocula cuticessa (NL. fem. n. *cuticessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED131 sp002689905*. The type genome for the species is the GenBank assembly GCA_002171235.1. The GC content of the type genome is 34.65 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Citocula gen. nov.

Candidatus Citocula (NL. fem. n. *Citocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED131*. The type species for the genus is *Candidatus* Citocula cuticessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citoculaceae.

Description of *Candidatus* Citoculaceae fam. nov.

Candidatus Citoculaceae (NL. fem. n. *Citoculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED131.* The type genus for the taxon is *Candidatus* Citocula .

According to the original version of GTDB R06-RS202, this family belongs to the order *TMED109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nubifariales.

Description of *Candidatus* Citricoccus cepurax sp. nov.

Candidatus Citricoccus cepurax (NL. fem. n. *cepurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Citricoccus sp005877055*. The type genome for the species is the GenBank assembly RS_GCF_005877055.1. The GC content of the type genome is 73.41 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Citricoccus giganisca sp. nov.

Candidatus Citricoccus giganisca (NL. fem. n. *giganisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Citricoccus sp000224415*. The type genome for the species is the GenBank assembly RS_GCF_014199555.1. The GC content of the type genome is 71.04 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Citricoccus modifousia sp. nov.

Candidatus Citricoccus modifousia (NL. fem. n. *modifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Citricoccus sp902506195*. The type genome for the species is the GenBank assembly RS_GCF_902506195.1. The GC content of the type genome is 68.57 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Citrobacter adinvessa sp. nov.

Candidatus Citrobacter adinvessa (NL. fem. n. *adinvessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Citrobacter sp004684345*. The type genome for the species is the GenBank assembly RS_GCF_004684345.1. The GC content of the type genome is 51.95 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Citrobacter delubiforma sp. nov.

Candidatus Citrobacter delubiforma (NL. fem. n. *delubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Citrobacter sp005281345*. The type genome for the species is the GenBank assembly RS_GCF_005281345.1. The GC content of the type genome is 51.57 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Citrobacter impililega sp. nov.

Candidatus Citrobacter impililega (NL. fem. n. *impililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Citrobacter sp010231475*. The type genome for the species is the GenBank assembly RS_GCF_010231475.1. The GC content of the type genome is 51.76 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Citrobacter allacetta sp. nov.

Candidatus Citrobacter allacetta (NL. fem. n. *allacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Citrobacter_A sp013836145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013836145.1. The GC content of the type genome is 52.75 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Citrobacter direcitoga sp. nov.

Candidatus Citrobacter direcitoga (NL. fem. n. *direcitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Citrobacter_A sp009363175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009363175.1. The GC content of the type genome is 53.29 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Cituvana vinulitudo sp. nov.

Candidatus Cituvana vinulitudo (NL. fem. n. *vinulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HMF5848 sp003944835*. The type genome for the species is the GenBank assembly RS_GCF_003944835.1. The GC content of the type genome is 37.38 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Cituvana gen. nov.

Candidatus Cituvana (NL. fem. n. *Cituvana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HMF5848*. The type species for the genus is *Candidatus* Cituvana vinulitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HMF5848*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cituvanaceae.

Description of *Candidatus* Cituvanaceae fam. nov.

Candidatus Cituvanaceae (NL. fem. n. *Cituvanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HMF5848.* The type genus for the taxon is *Candidatus* Cituvana .

According to GTDB R06-RS202, this family belongs to the order *Bacillales*.

Description of *Candidatus* Cituvella galacitrix sp. nov.

Candidatus Cituvella galacitrix (NL. fem. n. *galacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5456 sp002427325*. The type genome for the species is the GenBank assembly GCA_002427325.1. The GC content of the type genome is 46.32 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Cituvella gen. nov.

Candidatus Cituvella (NL. fem. n. *Cituvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5456*. The type species for the genus is *Candidatus* Cituvella galacitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cituvella turibilega sp. nov.

Candidatus Cituvella turibilega (NL. fem. n. *turibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5456 sp012839325*. The type genome for the species is the GenBank assembly GCA_012839325.1. The GC content of the type genome is 46.34 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Cituvia inretentia sp. nov.

Candidatus Cituvia inretentia (NL. fem. n. *inretentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-30 sp001303695*. The type genome for the species is the

GenBank assembly GCA_001303695.1. The GC content of the type genome is 51.01 % and the genome length is 4.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Cituvia gen. nov.

Candidatus Cituvia (NL. fem. n. *Cituvia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-30*. The type species for the genus is *Candidatus* Cituvia inretentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-30*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cituviaceae.

Description of *Candidatus* Cituviaceae fam. nov.

Candidatus Cituviaceae (NL. fem. n. *Cituviaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-30.* The type genus for the taxon is *Candidatus* Cituvia .

According to GTDB R06-RS202, this family belongs to the order *Sedimentisphaerales*.

Description of *Candidatus* Cituvida nidifatio sp. nov.

Candidatus Cituvida nidifatio (NL. fem. n. *nidifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-150 sp011056185*. The type genome for the species is the GenBank assembly GCA_011054695.1. The GC content of the type genome is 68.61 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Cituvida gen. nov.

Candidatus Cituvida (NL. fem. n. *Cituvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-150*. The type species for the genus is *Candidatus* Cituvida nidifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Valefiaceae.

Description of *Candidatus* Cituvosa habacatio sp. nov.

Candidatus Cituvosa habacatio (NL. fem. n. *habacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11359 sp003455555*. The type genome for the species is the GenBank assembly GCA_003455555.1. The GC content of the type genome is 44.34 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Cituvosa gen. nov.

Candidatus Cituvosa (NL. fem. n. *Cituvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11359*. The type species for the genus is *Candidatus* Cituvosa habacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cituvosaceae.

Description of *Candidatus* Cituvosaceae fam. nov.

Candidatus Cituvosaceae (NL. fem. n. *Cituvosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11359.* The type genus for the taxon is *Candidatus* Cituvosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Cituvosa pinacilega sp. nov.

Candidatus Cituvosa pinacilega (NL. fem. n. *pinacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11359 sp903831815*. The type genome for the species is the GenBank assembly GCA_903831815.1. The GC content of the type genome is 41.72 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Cituvula arvecentia sp. nov.

Candidatus Cituvula arvecentia (NL. fem. n. *arvecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG806 sp012839185*. The type genome for the species is the GenBank assembly GCA_012839185.1. The GC content of the type genome is 39.37 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Cituvula gen. nov.

Candidatus Cituvula (NL. fem. n. *Cituvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG806*. The type species for the genus is *Candidatus* Cituvula arvecentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cituvula direpitas sp. nov.

Candidatus Cituvula direpitas (NL. fem. n. *direpitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG806 sp900313475*. The type genome for the species is the GenBank assembly GCA_900313475.1. The GC content of the type genome is 48.38 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Clancana gasifivita sp. nov.

Candidatus Clancana gasifivita (NL. fem. n. *gasifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2698995 sp002698995*. The type genome for the species is the GenBank assembly GCA_002698995.1. The GC content of the type genome is 31.9 %

and the genome length is 4.23 Mbp.

Description of *Candidatus* Clancana gen. nov.

Candidatus Clancana (NL. fem. n. *Clancana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2698995*. The type species for the genus is *Candidatus* Clancana gasifivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Clancaria intemilega sp. nov.

Candidatus Clancaria intemilega (NL. fem. n. *intemilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJU01 sp013298165*. The type genome for the species is the GenBank assembly GCA_013298165.1. The GC content of the type genome is 49.71 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Clancaria gen. nov.

Candidatus Clancaria (NL. fem. n. *Clancaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFJU01*. The type species for the genus is *Candidatus* Clancaria intemilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Clancia ammigentia sp. nov.

Candidatus Clancia ammigentia (NL. fem. n. *ammigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W0P29-029 sp004558035*. The type genome for the species is the GenBank assembly GCA_004558035.1. The GC content of the type genome is 63.83 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Clancia gen. nov.

Candidatus Clancia (NL. fem. n. *Clancia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W0P29-029*. The type species for the genus is *Candidatus* Clancia ammigentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA953*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucanaceae.

Description of *Candidatus* Clancula impugitas sp. nov.

Candidatus Clancula impugitas (NL. fem. n. *impugitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WARW01 sp013387215*. The type genome for the species is the GenBank assembly GCA_013387215.1. The GC content of the type genome is 34.37 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Clancula gen. nov.

Candidatus Clancula (NL. fem. n. *Clancula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WARW01*. The type species for the genus is *Candidatus* Clancula impugitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Clavibacter resulitas sp. nov.

Candidatus Clavibacter resulitas (NL. fem. n. *resulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clavibacter sp003576405*. The type genome for the species is the GenBank assembly RS_GCF_003576415.1. The GC content of the type genome is 73.15 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Clavibacter tibicivita sp. nov.

Candidatus Clavibacter tibicivita (NL. fem. n. *tibicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clavibacter sp003384945*. The type genome for the species is the GenBank assembly RS_GCF_003384945.1. The GC content of the type genome is 73.53 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Cloacibacterium immedousia sp. nov.

Candidatus Cloacibacterium immedousia (NL. fem. n. *immedousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cloacibacterium sp002337005*. The type genome for the species is the GenBank assembly GCA_002337005.1. The GC content of the type genome is 31.92 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Cloacibacterium recocedo sp. nov.

Candidatus Cloacibacterium recocedo (NL. fem. n. *recocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cloacibacterium sp002422665*. The type genome for the species is the GenBank assembly GCA_002422665.1. The GC content of the type genome is 32.79 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Cloacimonas volubago sp. nov.

Candidatus Cloacimonas volubago (NL. fem. n. *volubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cloacimonas sp002432865*. The type genome for the species is the GenBank assembly GCA_001603745.1. The GC content of the type genome is 36.45 % and the genome length is 1.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Clostridioides cuticitudo sp. nov.

Candidatus Clostridioides cuticitudo (NL. fem. n. *cuticitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridioides_A sp002390935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002387145.1. The GC content of the type genome is 30.49 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Clostridium addivitio sp. nov.

Candidatus Clostridium addivitio (NL. fem. n. *addivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp007115085*. The type genome for the species is the GenBank assembly RS_GCF_007115085.1. The GC content of the type genome is 29.78 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Clostridium admulugo sp. nov.

Candidatus Clostridium admulugo (NL. fem. n. *admulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp012520205*. The type genome for the species is the GenBank assembly GCA_012520205.1. The GC content of the type genome is 29.67 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Clostridium agnomitura sp. nov.

Candidatus Clostridium agnomitura (NL. fem. n. *agnomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp900766315*. The type genome for the species is the GenBank assembly GCA_900766315.1. The GC content of the type genome is 27.87 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Clostridium agricifica sp. nov.

Candidatus Clostridium agricifica (NL. fem. n. *agricifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp003539755*. The type genome for the species is the GenBank assembly GCA_003539755.1. The GC content of the type genome is 28.64 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Clostridium aphoribra sp. nov.

Candidatus Clostridium aphoribra (NL. fem. n. *aphoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp012843905*. The type genome for the species is the GenBank assembly RS_GCF_012843905.1. The GC content of the type genome is 28.59 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Clostridium arvecitas sp. nov.

Candidatus Clostridium arvecitas (NL. fem. n. *arvecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp900116755*. The type genome for the species is the GenBank assembly RS_GCF_900116755.1. The GC content of the type genome is 28.86 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Clostridium caravatica sp. nov.

Candidatus Clostridium caravatica (NL. fem. n. *caravatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp009928485*. The type genome for the species is the GenBank assembly RS_GCF_009928485.1. The GC content of the type genome is 29.02 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Clostridium cilibicella sp. nov.

Candidatus Clostridium cilibicella (NL. fem. n. *cilibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Clostridium sp900759995*. The type genome for the species is the GenBank assembly GCA_900759995.1. The GC content of the type genome is 27.93 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Clostridium daducessa sp. nov.

Candidatus Clostridium daducessa (NL. fem. n. *daducessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp000230835*. The type genome for the species is the GenBank assembly RS_GCF_000230835.1. The GC content of the type genome is 30.1 % and the genome length is 6.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Clostridium denigigena sp. nov.

Candidatus Clostridium denigigena (NL. fem. n. *denigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp900769625*. The type genome for the species is the GenBank assembly GCA_900769625.1. The GC content of the type genome is 30.21 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Clostridium denunatio sp. nov.

Candidatus Clostridium denunatio (NL. fem. n. *denunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp012519845*. The type genome for the species is the GenBank assembly GCA_012519845.1. The GC content of the type genome is 27.95 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Clostridium denunitoga sp. nov.

Candidatus Clostridium denunitoga (NL. fem. n. *denunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp001916075*. The type genome for the species is the GenBank assembly RS_GCF_014287855.1. The GC content of the type genome is 29.47

% and the genome length is 2.84 Mbp.

Description of *Candidatus* Clostridium dilemibra sp. nov.

Candidatus Clostridium dilemibra (NL. fem. n. *dilemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp000753455*. The type genome for the species is the GenBank assembly RS_GCF_000753455.2. The GC content of the type genome is 29.16 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Clostridium diludilenta sp. nov.

Candidatus Clostridium diludilenta (NL. fem. n. *diludilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp002760435*. The type genome for the species is the GenBank assembly GCA_000309845.1. The GC content of the type genome is 29.79 % and the genome length is 6.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sub-cultured for isolation from anaerobic microbial enrichment culture derived from a coal seam gas formation water sample".

Description of *Candidatus* Clostridium expisatica sp. nov.

Candidatus Clostridium expisatica (NL. fem. n. *expisatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp012519155*. The type genome for the species is the GenBank assembly GCA_012519155.1. The GC content of the type genome is 27.88 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Clostridium feditimonas sp. nov.

Candidatus Clostridium feditimonas (NL. fem. n. *feditimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp900540255*. The type genome for the species is the GenBank assembly GCA_900540255.1. The GC content of the type genome is 26.81 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Clostridium infesousia sp. nov.

Candidatus Clostridium infesousia (NL. fem. n. *infesousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp900547475*. The type genome for the species is the GenBank assembly GCA_900547475.1. The GC content of the type genome is 27.91 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Clostridium luticugo sp. nov.

Candidatus Clostridium luticugo (NL. fem. n. *luticugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp900543325*. The type genome for the species is the GenBank assembly GCA_900543325.1. The GC content of the type genome is 27.82 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Clostridium manomitrix sp. nov.

Candidatus Clostridium manomitrix (NL. fem. n. *manomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp900317445*. The type genome for the species is the GenBank assembly GCA_900317445.1. The GC content of the type genome is 27.21 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Clostridium navifilega sp. nov.

Candidatus Clostridium navifilega (NL. fem. n. *navifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp900539375*. The type genome for the species is the GenBank assembly GCA_900539375.1. The GC content of the type genome is 27.0 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Clostridium pluscitudo sp. nov.

Candidatus Clostridium pluscitudo (NL. fem. n. *pluscitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp902785295*. The type genome for the species is the GenBank assembly GCA_902785295.1. The GC content of the type genome is 27.38 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Clostridium podagitura sp. nov.

Candidatus Clostridium podagitura (NL. fem. n. *podagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp000435835*. The type genome for the species is the GenBank assembly GCA_900543995.1. The GC content of the type genome is 29.2 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Clostridium velivibula sp. nov.

Candidatus Clostridium velivibula (NL. fem. n. *velivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium sp000498355*. The type genome for the species is the GenBank assembly RS_GCF_000498355.1. The GC content of the type genome is 26.75 % and the genome length is 3.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "landfill leacheate sludge".

Description of *Candidatus* Clostridium fuligitrix sp. nov.

Candidatus Clostridium fuligitrix (NL. fem. n. *fuligitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_AD sp002403785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002403785.1. The GC content of the type genome is 30.69 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Clostridium alsidatio sp. nov.

Candidatus Clostridium alsidatio (NL. fem. n. *alsidatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_AI sp002297865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002297865.1. The GC content of the type genome is 35.98 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Clostridium manufibra sp. nov.

Candidatus Clostridium manufibra (NL. fem. n. *manufibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_AK sp900185645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000765165.1. The GC content of the type genome is 31.36 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Clostridium abantibula sp. nov.

Candidatus Clostridium abantibula (NL. fem. n. *abantibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_AM sp900759715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900759715.1. The GC content of the type genome is 31.21 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Clostridium corocatica sp. nov.

Candidatus Clostridium corocatica (NL. fem. n. *corocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_AM sp012926525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012926525.1. The GC content of the type genome is 29.45 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Clostridium panopatio sp. nov.

Candidatus Clostridium panopatio (NL. fem. n. *panopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_AP sp000509125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000471845.1. The GC content of the type genome is 47.54 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Clostridium femelilega sp. nov.

Candidatus Clostridium femelilega (NL. fem. n. *femelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_AQ sp000165065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003603255.1. The GC content of the type genome is 42.63 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Clostridium refinitia sp. nov.

Candidatus Clostridium refinitia (NL. fem. n. *refinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_AQ sp900552125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900759145.1. The GC content of the type genome is 32.79 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Clostridium retecitica sp. nov.

Candidatus Clostridium retecitica (NL. fem. n. *retecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_AQ sp003481775*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902385165.1. The GC content of the type genome is 43.59 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Clostridium addubimonas sp. nov.

Candidatus Clostridium addubimonas (NL. fem. n. *addubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_B sp004006395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004006395.2. The GC content of the type genome is 31.17 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Clostridium derelatica sp. nov.

Candidatus Clostridium derelatica (NL. fem. n. *derelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_B sp014050525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014050525.1. The GC content of the type genome is 29.79 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Clostridium dibapugo sp. nov.

Candidatus Clostridium dibapugo (NL. fem. n. *dibapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_B sp902809985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008692765.1. The GC content of the type genome is 34.16 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Clostridium vivifitudo sp. nov.

Candidatus Clostridium vivifitudo (NL. fem. n. *vivifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_B sp003497125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903789665.1. The GC content of the type genome is 35.69 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Clostridium negotitia sp. nov.

Candidatus Clostridium negotitia (NL. fem. n. *negotitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_E sp002397665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002397665.1. The GC content of the type genome is 55.56 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Clostridium gasififorma sp. nov.

Candidatus Clostridium gasififorma (NL. fem. n. *gasififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_F sp001276215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011017215.1. The GC content of the type genome is 27.33 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Clostridium adfunetta sp. nov.

Candidatus Clostridium adfunetta (NL. fem. n. *adfunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp900547625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900547625.1. The GC content of the type genome is 28.18 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Clostridium adgesimonia sp. nov.

Candidatus Clostridium adgesimonia (NL. fem. n. *adgesimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp002455975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002455975.1. The GC content of the type genome is 28.96 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Clostridium advecedo sp. nov.

Candidatus Clostridium advecedo (NL. fem. n. *advecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp002381695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002381695.1. The GC content of the type genome is 30.33 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Clostridium deforibula sp. nov.

Candidatus Clostridium deforibula (NL. fem. n. *deforibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp000447315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000447315.1. The GC content of the type genome is 31.31 % and the genome length is 4.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "stool sample from healthy individual".

Description of *Candidatus* Clostridium excinetta sp. nov.

Candidatus Clostridium excinetta (NL. fem. n. *excinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp002341865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002341865.1. The GC content of the type genome is 28.44 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Clostridium inbeletta sp. nov.

Candidatus Clostridium inbeletta (NL. fem. n. *inbeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp002453475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002453475.1. The GC content of the type genome is 29.94 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Clostridium parocitrix sp. nov.

Candidatus Clostridium parocitrix (NL. fem. n. *parocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp002316385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002316385.1. The GC content of the type genome is 29.84 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Clostridium peridetta sp. nov.

Candidatus Clostridium peridetta (NL. fem. n. *peridetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp900548455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900548455.1. The GC content of the type genome is 29.68 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Clostridium prosliforma sp. nov.

Candidatus Clostridium prosliforma (NL. fem. n. *prosliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp902363375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902363375.1. The GC content of the type genome is 29.91 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Clostridium recomimonia sp. nov.

Candidatus Clostridium recomimonia (NL. fem. n. *recomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_J sp000821305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000821305.1. The GC content of the type genome is 32.22 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Clostridium cepuricula sp. nov.

Candidatus Clostridium cepuricula (NL. fem. n. *cepuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_Q sp900547735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900547735.1. The GC content of the type genome is 49.17 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Clostridium defarifica sp. nov.

Candidatus Clostridium defarifica (NL. fem. n. *defarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_Q sp003024715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_003480955.1. The GC content of the type genome is 48.26 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Clostridium excalisca sp. nov.

Candidatus Clostridium excalisca (NL. fem. n. *excalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_Q sp009911305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009911305.1. The GC content of the type genome is 51.45 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Clostridium refunisca sp. nov.

Candidatus Clostridium refunisca (NL. fem. n. *refunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_Q sp000435655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900538835.1. The GC content of the type genome is 50.01 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Clostridium decapivita sp. nov.

Candidatus Clostridium decapivita (NL. fem. n. *decapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_R sp900321355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902766315.1. The GC content of the type genome is 57.97 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Clostridium fumifetta sp. nov.

Candidatus Clostridium fumifetta (NL. fem. n. *fumifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_R sp900321915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900321915.1. The GC content of the type genome is 56.81 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Clostridium retunitas sp. nov.

Candidatus Clostridium retunitas (NL. fem. n. *retunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_R sp003445895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902793165.1. The GC content of the type genome is 55.75 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Clostridium accucax sp. nov.

Candidatus Clostridium accucax (NL. fem. n. *accucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_S sp001270375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001270375.1. The GC content of the type genome is 30.63 % and the genome length is 3.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sludge of distillery waste treatment plant".

Description of *Candidatus* Clostridium veridimonas sp. nov.

Candidatus Clostridium veridimonas (NL. fem. n. *veridimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Clostridium_X sp002423705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002423705.1. The GC content of the type genome is 31.61 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Cnestana affunimonia sp. nov.

Candidatus Cnestana affunimonia (NL. fem. n. *affunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1203 sp002309695*. The type genome for the species is the GenBank assembly GCA_002309695.1. The GC content of the type genome is 60.56 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Cnestana gen. nov.

Candidatus Cnestana (NL. fem. n. *Cnestana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1203*. The type species for the genus is *Candidatus* Cnestana affunimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5297*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homogidaceae.

Description of *Candidatus* Cnestaria aminnilega sp. nov.

Candidatus Cnestaria aminnilega (NL. fem. n. *aminnilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWF01 sp011375985*. The type genome for the species is the GenBank assembly GCA_011375985.1. The GC content of the type genome is 54.87 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Cnestaria gen. nov.

Candidatus Cnestaria (NL. fem. n. *Cnestaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWF01*. The type species for the genus is *Candidatus* Cnestaria aminnilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cnestella detepiforma sp. nov.

Candidatus Cnestella detepiforma (NL. fem. n. *detepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYZZ01 sp012514595*. The type genome for the species is the GenBank assembly GCA_012514595.1. The GC content of the type genome is 58.2 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Cnestella gen. nov.

Candidatus Cnestella (NL. fem. n. *Cnestella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZZ01*. The type species for the genus is *Candidatus* Cnestella detepiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002753745*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosaculaceae.

Description of *Candidatus* Cnestida adambitio sp. nov.

Candidatus Cnestida adambitio (NL. fem. n. *adambitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIO3C6 sp010692645*. The type genome for the species is the GenBank assembly GCA_010692645.1. The GC content of the type genome is 43.17 % and the genome length is 7.75 Mbp.

Description of *Candidatus* Cnestida gen. nov.

Candidatus Cnestida (NL. fem. n. *Cnestida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIO3C6*. The type species for the genus is *Candidatus* Cnestida adambitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cnestida molecitura sp. nov.

Candidatus Cnestida molecitura (NL. fem. n. *molecitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIO3C6 sp010692425*. The type genome for the species is the GenBank assembly GCA_010692425.1. The GC content of the type genome is 42.55 % and the genome length is 7.49 Mbp.

Description of *Candidatus* Cnestosa conarisca sp. nov.

Candidatus Cnestosa conarisca (NL. fem. n. *conarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-56-16 sp001817495*. The type genome for the species is the GenBank assembly GCA_001817495.1. The GC content of the type genome is 55.63 % and the genome length is 1.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Cnestosa gen. nov.

Candidatus Cnestosa (NL. fem. n. *Cnestosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-56-16*. The type species for the genus is *Candidatus* Cnestosa conarisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecariaceae.

Description of *Candidatus* Cnestula demulivita sp. nov.

Candidatus Cnestula demulivita (NL. fem. n. *demulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XBD2001 sp900116395*. The type genome for the species is the GenBank assembly RS_GCF_900116395.1. The GC content of the type genome is 46.19 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Cnestula gen. nov.

Candidatus Cnestula (NL. fem. n. *Cnestula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XBD2001*. The type species for the genus is *Candidatus* Cnestula demulivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cobalana cruppessa sp. nov.

Candidatus Cobalana cruppessa (NL. fem. n. *cruppessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLST01 sp007130265*. The type genome for the species is the GenBank assembly GCA_007130265.1. The GC content of the type genome is 63.73 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Cobalana gen. nov.

Candidatus Cobalana (NL. fem. n. *Cobalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLST01*. The type species for the genus is *Candidatus* Cobalana cruppessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLST01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cobalanaceae.

Description of *Candidatus* Cobalanaceae fam. nov.

Candidatus Cobalanaceae (NL. fem. n. *Cobalanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLST01.* The type genus for the taxon is *Candidatus* Cobalana .

According to GTDB R06-RS202, this family belongs to the order *Spirochaetales_C*.

Description of *Candidatus* Cobalana detumetta sp. nov.

Candidatus Cobalana detumetta (NL. fem. n. *detumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLST01 sp007694025*. The type genome for the species is the GenBank assembly GCA_007694025.1. The GC content of the type genome is 64.39 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Cobalana ducilugo sp. nov.

Candidatus Cobalana ducilugo (NL. fem. n. *ducilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLST01 sp007118855*. The type genome for the species is the GenBank assembly GCA_007132295.1. The GC content of the type genome is 64.97 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Cobalana homunatica sp. nov.

Candidatus Cobalana homunatica (NL. fem. n. *homunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLST01 sp007127335*. The type genome for the species is the GenBank assembly GCA_003560785.1. The GC content of the type genome is 64.19 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Cobalana inretatica sp. nov.

Candidatus Cobalana inretatica (NL. fem. n. *inretatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLST01 sp007129695*. The type genome for the species is the GenBank assembly GCA_007129695.1. The GC content of the type genome is 64.86 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Cobalaria haricitas sp. nov.

Candidatus Cobalaria haricitas (NL. fem. n. *haricitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RFSX01 sp009923745*. The type genome for the species is the GenBank assembly GCA_009923745.1. The GC content of the type genome is 41.34 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cobalaria gen. nov.

Candidatus Cobalaria (NL. fem. n. *Cobalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFSX01*. The type species for the genus is *Candidatus* Cobalaria haricitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cobalaria inlibentia sp. nov.

Candidatus Cobalaria inlibentia (NL. fem. n. *inlibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFSX01 sp013042795*. The type genome for the species is the GenBank assembly GCA_013042795.1. The GC content of the type genome is 38.7 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Cobalaria redunibula sp. nov.

Candidatus Cobalaria redunibula (NL. fem. n. *redunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFSX01 sp013001975*. The type genome for the species is the GenBank assembly GCA_013001975.1. The GC content of the type genome is 34.0 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Cobalaria solacilega sp. nov.

Candidatus Cobalaria solacilega (NL. fem. n. *solacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFSX01 sp013002625*. The type genome for the species is the GenBank assembly GCA_013002625.1. The GC content of the type genome is 39.02 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Cobalella detecibula sp. nov.

Candidatus Cobalella detecibula (NL. fem. n. *detecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3375 sp900551955*. The type genome for the species is the GenBank assembly GCA_900551955.1. The GC content of the type genome is 30.27 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Cobalella gen. nov.

Candidatus Cobalella (NL. fem. n. *Cobalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3375*. The type species for the genus is *Candidatus* Cobalella detecibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3375*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cobalellaceae.

Description of *Candidatus* Cobalellaceae fam. nov.

Candidatus Cobalellaceae (NL. fem. n. *Cobalellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3375.* The type genus for the taxon is *Candidatus* Cobalella .

According to GTDB R06-RS202, this family belongs to the order *Mycoplasmatales*.

Description of *Candidatus* Cobalella isoscago sp. nov.

Candidatus Cobalella isoscago (NL. fem. n. *isoscago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3375 sp002359095*. The type genome for the species is the GenBank assembly GCA_002359095.1. The GC content of the type genome is 27.62 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Cobalida pereximonas sp. nov.

Candidatus Cobalida pereximonas (NL. fem. n. *pereximonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MarineAlpha4-Bin1 sp002937525*. The type genome for the species is the GenBank assembly GCA_002937525.1. The GC content of the type genome is 62.14 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Cobalida gen. nov.

Candidatus Cobalida (NL. fem. n. *Cobalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MarineAlpha4-Bin1*. The type species for the genus is *Candidatus* Cobalida pereximonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2717185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munimellaceae.

Description of *Candidatus* Cobalosa cimelitica sp. nov.

Candidatus Cobalosa cimelitica (NL. fem. n. *cimelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVBF01 sp903904095*. The type genome for the species is the GenBank assembly GCA_903901065.1. The GC content of the type genome is 35.49 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Cobalosa gen. nov.

Candidatus Cobalosa (NL. fem. n. *Cobalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVBF01*. The type species for the genus is *Candidatus* Cobalosa cimelitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Cobalula accenessa sp. nov.

Candidatus Cobalula accenessa (NL. fem. n. *accenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4644 sp900763355*. The type genome for the species is the GenBank assembly RS_GCF_900763355.1. The GC content of the type genome is 63.13 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Cobalula gen. nov.

Candidatus Cobalula (NL. fem. n. *Cobalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4644*. The type species for the genus is *Candidatus* Cobalula accenessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cobalula faticetta sp. nov.

Candidatus Cobalula faticetta (NL. fem. n. *faticetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4644 sp900555855*. The type genome for the species is the GenBank assembly GCA_900555855.1. The GC content of the type genome is 61.04 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Cobalula sifunitia sp. nov.

Candidatus Cobalula sifunitia (NL. fem. n. *sifunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4644 sp002405755*. The type genome for the species is the GenBank assembly GCA_002436645.1. The GC content of the type genome is 61.22 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cobetia cerevitoga sp. nov.

Candidatus Cobetia cerevitoga (NL. fem. n. *cerevitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cobetia sp009796845*. The type genome for the species is the GenBank assembly RS_GCF_009796845.1. The GC content of the type genome is 57.7 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Cocibana anagnitio sp. nov.

Candidatus Cocibana anagnitio (NL. fem. n. *anagnitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900553605*. The type genome for the species is the GenBank assembly GCA_900553605.1. The GC content of the type genome is 54.05 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Cocibana gen. nov.

Candidatus Cocibana (NL. fem. n. *Cocibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-1427*. The type species for the genus is *Candidatus* Cocibana anagnitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cocibana cerofetta sp. nov.

Candidatus Cocibana cerofetta (NL. fem. n. *cerofetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900547965*. The type genome for the species is the GenBank assembly RS_GCF_900755315.1. The GC content of the type genome is 53.43 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Cocibana colipitia sp. nov.

Candidatus Cocibana colipitia (NL. fem. n. *colipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-1427 sp000431675*. The type genome for the species is the GenBank assembly GCA_000431675.1. The GC content of the type genome is 45.38 % and the genome length is 2.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Cocibana denixousia sp. nov.

Candidatus Cocibana denixousia (NL. fem. n. *denixousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900548955*. The type genome for the species is the GenBank assembly GCA_902406295.1. The GC content of the type genome is 44.91 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Cocibana detunicula sp. nov.

Candidatus Cocibana detunicula (NL. fem. n. *detunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900546175*. The type genome for the species is the GenBank assembly GCA_900546175.1. The GC content of the type genome is 42.83 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Cocibana ephemibula sp. nov.

Candidatus Cocibana ephemibula (NL. fem. n. *ephemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900544455*. The type genome for the species is the GenBank assembly GCA_900544455.1. The GC content of the type genome is 53.29 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Cocibana genocitoga sp. nov.

Candidatus Cocibana genocitoga (NL. fem. n. *genocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900542265*. The type genome for the species is the GenBank assembly GCA_900542265.1. The GC content of the type genome is 45.65 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Cocibana latibedo sp. nov.

Candidatus Cocibana latibedo (NL. fem. n. *latibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900554685*. The type genome for the species is the GenBank assembly GCA_900554685.1. The GC content of the type genome is 45.69 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Cocibana laxitetta sp. nov.

Candidatus Cocibana laxitetta (NL. fem. n. *laxitetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900542525*. The type genome for the species is the GenBank assembly GCA_900542525.1. The GC content of the type genome is 52.94 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Cocibana menapifica sp. nov.

Candidatus Cocibana menapifica (NL. fem. n. *menapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp000434775*. The type genome for the species is the GenBank assembly GCA_000434775.1. The GC content of the type genome is 44.88 % and the genome length is 1.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Cocibana menapilenta sp. nov.

Candidatus Cocibana menapilenta (NL. fem. n. *menapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp000435475*. The type genome for the species is the GenBank assembly GCA_900539085.1. The GC content of the type genome is 45.15 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Cocibana negotousia sp. nov.

Candidatus Cocibana negotousia (NL. fem. n. *negotousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900753095*. The type genome for the species is the GenBank assembly RS_GCF_900753095.1. The GC content of the type genome is 57.65 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Cocibana redunitas sp. nov.

Candidatus Cocibana redunitas (NL. fem. n. *redunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900551155*. The type genome for the species is the GenBank assembly RS_GCF_900751735.1. The GC content of the type genome is 45.27 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cocibana refocimonia sp. nov.

Candidatus Cocibana refocimonia (NL. fem. n. *refocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900539675*. The type genome for the species is the GenBank assembly GCA_900539675.1. The GC content of the type genome is 49.08 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Cocibana refulitudo sp. nov.

Candidatus Cocibana refulitudo (NL. fem. n. *refulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900556585*. The type genome for the species is the GenBank assembly GCA_900556585.1. The GC content of the type genome is 44.79 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Cocibana revecago sp. nov.

Candidatus Cocibana revecago (NL. fem. n. *revecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900555755*. The type genome for the species is the GenBank assembly GCA_900555755.1. The GC content of the type genome is 56.55 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Cocibana semilitica sp. nov.

Candidatus Cocibana semilitica (NL. fem. n. *semilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp000435675*. The type genome for the species is the GenBank assembly GCA_000435675.1. The GC content of the type genome is 54.07 % and the genome length is 1.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Cocibana televitio sp. nov.

Candidatus Cocibana televitio (NL. fem. n. *televitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp000436075*. The type genome for the species is the GenBank assembly GCA_001915265.1. The GC content of the type genome is 52.92 % and the genome length is 1.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Cocibana timefessa sp. nov.

Candidatus Cocibana timefessa (NL. fem. n. *timefessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900540345*. The type genome for the species is the GenBank assembly GCA_900540345.1. The GC content of the type genome is 51.01 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Cocibana vepalax sp. nov.

Candidatus Cocibana vepalax (NL. fem. n. *vepalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1427 sp900538545*. The type genome for the species is the

GenBank assembly RS_GCF_900756395.1. The GC content of the type genome is 54.44 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Cocibaria episcicella sp. nov.

Candidatus Cocibaria episcicella (NL. fem. n. *episcicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYLA01 sp012522135*. The type genome for the species is the GenBank assembly GCA_012522135.1. The GC content of the type genome is 62.74 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Cocibaria gen. nov.

Candidatus Cocibaria (NL. fem. n. *Cocibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYLA01*. The type species for the genus is *Candidatus* Cocibaria episcicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYLA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocibariaceae.

Description of *Candidatus* Cocibariaceae fam. nov.

Candidatus Cocibariaceae (NL. fem. n. *Cocibariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYLA01*. The type genus for the taxon is *Candidatus* Cocibaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU080*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defosellales.

Description of *Candidatus* Cocibella butubousia sp. nov.

Candidatus Cocibella butubousia (NL. fem. n. *butubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4636 sp900770945*. The type genome for the species is the

GenBank assembly RS_GCF_900770945.1. The GC content of the type genome is 45.5 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Cocibella gen. nov.

Candidatus Cocibella (NL. fem. n. *Cocibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4636*. The type species for the genus is *Candidatus* Cocibella butubousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cocibella impugicella sp. nov.

Candidatus Cocibella impugicella (NL. fem. n. *impugicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4636 sp900764595*. The type genome for the species is the GenBank assembly RS_GCF_900764595.1. The GC content of the type genome is 42.41 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Cocibella mahelifica sp. nov.

Candidatus Cocibella mahelifica (NL. fem. n. *mahelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4636 sp002405915*. The type genome for the species is the GenBank assembly GCA_002404935.1. The GC content of the type genome is 45.14 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Cocibella utrinicella sp. nov.

Candidatus Cocibella utrinicella (NL. fem. n. *utrinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4636 sp902767455*. The type genome for the species is the GenBank assembly GCA_902767455.1. The GC content of the type genome is 47.39 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Cocibia monoditica sp. nov.

Candidatus Cocibia monoditica (NL. fem. n. *monoditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPTA01 sp903867855*. The type genome for the species is the GenBank assembly GCA_903867855.1. The GC content of the type genome is 47.14 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Cocibia gen. nov.

Candidatus Cocibia (NL. fem. n. *Cocibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPTA01*. The type species for the genus is *Candidatus* Cocibia monoditica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIPTA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocibiaceae.

Description of *Candidatus* Cocibiaceae fam. nov.

Candidatus Cocibiaceae (NL. fem. n. *Cocibiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIPTA01.* The type genus for the taxon is *Candidatus* Cocibia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIPTA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cocibiales.

Description of *Candidatus* Cocibiales ord. nov.

Candidatus Cocibiales (NL. fem. n. *Cocibiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIPTA01.* The type genus for the taxon is *Candidatus* Cocibia .

According to the GTDB R06-RS202, this order belongs to the class *Bdellovibrionia_A*.

Description of *Candidatus* Cocibida tabitilega sp. nov.

Candidatus Cocibida tabitilega (NL. fem. n. *tabitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002748415 sp002748415*. The type genome for the species is the GenBank assembly GCA_002748415.1. The GC content of the type genome is 68.15 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Cocibida gen. nov.

Candidatus Cocibida (NL. fem. n. *Cocibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002748415*. The type species for the genus is *Candidatus* Cocibida tabitilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002748415*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocibidaceae.

Description of *Candidatus* Cocibidaceae fam. nov.

Candidatus Cocibidaceae (NL. fem. n. *Cocibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002748415.* The type genus for the taxon is *Candidatus* Cocibida .

According to GTDB R06-RS202, this family belongs to the order *Actinomycetales*.

Description of *Candidatus* Cocibosa pomifimonas sp. nov.

Candidatus Cocibosa pomifimonas (NL. fem. n. *pomifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-53-67 sp001873285*. The type genome for the species is the GenBank assembly GCA_002783045.1. The GC content of the type genome is 52.81 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Cocibosa gen. nov.

Candidatus Cocibosa (NL. fem. n. *Cocibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-53-67*. The type species for the genus is *Candidatus* Cocibosa pomifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-53-67*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocibosaceae.

Description of *Candidatus* Cocibosaceae fam. nov.

Candidatus Cocibosaceae (NL. fem. n. *Cocibosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-53-67.* The type genus for the taxon is *Candidatus* Cocibosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-53-67*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cocibosales.

Description of *Candidatus* Cocibosales ord. nov.

Candidatus Cocibosales (NL. fem. n. *Cocibosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-53-67.* The type genus for the taxon is *Candidatus* Cocibosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *CG2-30-53-67*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cocibosae.

Description of *Candidatus* Cocibosae class. nov.

Candidatus Cocibosae (NL. fem. n. *c__Cocibosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-53-67.* The type genus for the taxon is *Candidatus* Cocibosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *CG2-30-53-67*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Cocibosota.

Description of *Candidatus* Cocibosota phyl. nov.

Candidatus Cocibosota (NL. fem. n. *Cocibosota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-53-67.* The type genus for the taxon is *Candidatus* Cocibosa .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Cocibula fecunisca sp. nov.

Candidatus Cocibula fecunisca (NL. fem. n. *fecunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-242 sp003235715*. The type genome for the species is the GenBank assembly GCA_003235715.1. The GC content of the type genome is 57.86 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Cocibula gen. nov.

Candidatus Cocibula (NL. fem. n. *Cocibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-242*. The type species for the genus is *Candidatus* Cocibula fecunisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocibulaceae.

Description of *Candidatus* Cocibulaceae fam. nov.

Candidatus Cocibulaceae (NL. fem. n. *Cocibulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-242.* The type genus for the taxon is *Candidatus* Cocibula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cocibulales.

Description of *Candidatus* Cocibulales ord. nov.

Candidatus Cocibulales (NL. fem. n. *Cocibulales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-242.* The type genus for the taxon is *Candidatus* Cocibula .

According to the GTDB R06-RS202, this order belongs to the class *Thermodesulfovibrionia*.

Description of *Candidatus* Cocleimonas artopitia sp. nov.

Candidatus Cocleimonas artopitia (NL. fem. n. *artopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cocleimonas sp003972955*. The type genome for the species is the GenBank assembly GCA_003972955.1. The GC content of the type genome is 39.88 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cocodana bipatatica sp. nov.

Candidatus Cocodana bipatatica (NL. fem. n. *bipatatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9862 sp012798755*. The type genome for the species is the GenBank assembly GCA_012798755.1. The GC content of the type genome is 43.99 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Cocodana gen. nov.

Candidatus Cocodana (NL. fem. n. *Cocodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9862*. The type species for the genus is *Candidatus* Cocodana bipatatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubiaceae.

Description of *Candidatus* Cocodana dilacedo sp. nov.

Candidatus Cocodana dilacedo (NL. fem. n. *dilacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9862 sp003444595*. The type genome for the species is the GenBank assembly GCA_012520495.1. The GC content of the type genome is 47.5 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Cocodana selibitura sp. nov.

Candidatus Cocodana selibitura (NL. fem. n. *selibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9862 sp003605065*. The type genome for the species is the GenBank assembly GCA_003605065.1. The GC content of the type genome is 46.17 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Cocodaria canacugo sp. nov.

Candidatus Cocodaria canacugo (NL. fem. n. *canacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHH01 sp009838645*. The type genome for the species is the GenBank assembly GCA_009845765.1. The GC content of the type genome is 62.34 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Cocodaria gen. nov.

Candidatus Cocodaria (NL. fem. n. *Cocodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXHH01*. The type species for the genus is *Candidatus* Cocodaria canacugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAXHH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocodariaceae.

Description of *Candidatus* Cocodariaceae fam. nov.

Candidatus Cocodariaceae (NL. fem. n. *Cocodariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXHH01.* The type genus for the taxon is *Candidatus* Cocodaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAXHH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cocodariales.

Description of *Candidatus* Cocodariales ord. nov.

Candidatus Cocodariales (NL. fem. n. *Cocodariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXHH01.* The type genus for the taxon is *Candidatus* Cocodaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *JAAXHH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cocodariae.

Description of *Candidatus* Cocodariae class. nov.

Candidatus Cocodariae (NL. fem. n. *c__Cocodariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXHH01.* The type genus for the taxon is *Candidatus* Cocodaria .

According to GTDB R06-RS202, this class belongs to the phylum *Latescibacterota*.

Description of *Candidatus* Cocodaria cicarisca sp. nov.

Candidatus Cocodaria cicarisca (NL. fem. n. *cicarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHH01 sp012270975*. The type genome for the species is the GenBank assembly GCA_012270975.1. The GC content of the type genome is 61.41 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Cocodaria desoratio sp. nov.

Candidatus Cocodaria desoratio (NL. fem. n. *desoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAXHH01 sp009841265*. The type genome for the species is the GenBank assembly GCA_009841265.1. The GC content of the type genome is 62.25 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Cocodaria menapitica sp. nov.

Candidatus Cocodaria menapitica (NL. fem. n. *menapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHH01 sp009835325*. The type genome for the species is the GenBank assembly GCA_009835325.1. The GC content of the type genome is 62.42 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Cocodaria vicatago sp. nov.

Candidatus Cocodaria vicatago (NL. fem. n. *vicatago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHH01 sp009837395*. The type genome for the species is the GenBank assembly GCA_009844015.1. The GC content of the type genome is 62.34 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Cocodella melopilega sp. nov.

Candidatus Cocodella melopilega (NL. fem. n. *melopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACUH01 sp009993005*. The type genome for the species is the GenBank assembly GCA_009995235.1. The GC content of the type genome is 67.18 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Cocodella gen. nov.

Candidatus Cocodella (NL. fem. n. *Cocodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACUH01*. The type species for the genus is *Candidatus* Cocodella melopilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cocodia utrolilenta sp. nov.

Candidatus Cocodia utrolilenta (NL. fem. n. *utrolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ARS1246 sp002688185*. The type genome for the species is the GenBank assembly GCA_002688185.1. The GC content of the type genome is 50.04 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Cocodia gen. nov.

Candidatus Cocodia (NL. fem. n. *Cocodia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ARS1246*. The type species for the genus is *Candidatus* Cocodia utrolilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ARS1246*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocodiaceae.

Description of *Candidatus* Cocodiaceae fam. nov.

Candidatus Cocodiaceae (NL. fem. n. *Cocodiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ARS1246.* The type genus for the taxon is *Candidatus* Cocodia .

According to the original version of GTDB R06-RS202, this family belongs to the order *ARS1246*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cocodiales.

Description of *Candidatus* Cocodiales ord. nov.

Candidatus Cocodiales (NL. fem. n. *Cocodiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ARS1246.* The type genus for the taxon is *Candidatus* Cocodia .

According to the GTDB R06-RS202, this order belongs to the class *Spirochaetia*.

Description of *Candidatus* Cocodida divoressa sp. nov.

Candidatus Cocodida divoressa (NL. fem. n. *divoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-41-12 sp002778735*. The type genome for the species is the GenBank assembly GCA_002778735.1. The GC content of the type genome is 40.56 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Cocodida gen. nov.

Candidatus Cocodida (NL. fem. n. *Cocodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-41-12*. The type species for the genus is *Candidatus* Cocodida divoressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-10-41-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocodidaceae.

Description of *Candidatus* Cocodidaceae fam. nov.

Candidatus Cocodidaceae (NL. fem. n. *Cocodidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-10-41-12.* The type genus for the taxon is *Candidatus* Cocodida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Panifidales.

Description of *Candidatus* Cocodosa argitatio sp. nov.

Candidatus Cocodosa argitatio (NL. fem. n. *argitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-594 sp900547225*. The type genome for the species is the GenBank assembly GCA_900547225.1. The GC content of the type genome is 27.74 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Cocodosa gen. nov.

Candidatus Cocodosa (NL. fem. n. *Cocodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-594*. The type species for the genus is *Candidatus* Cocodosa argitatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Cocodosa atlanitrix sp. nov.

Candidatus Cocodosa atlanitrix (NL. fem. n. *atlanitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-594 sp900772415*. The type genome for the species is the GenBank assembly RS_GCF_900772415.1. The GC content of the type genome is 26.38 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Cocodosa attoritudo sp. nov.

Candidatus Cocodosa attoritudo (NL. fem. n. *attoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-594 sp902795755*. The type genome for the species is the GenBank assembly GCA_902795755.1. The GC content of the type genome is 26.8 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Cocodosa bicapitia sp. nov.

Candidatus Cocodosa bicapitia (NL. fem. n. *bicapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-594 sp900766325*. The type genome for the species is the GenBank assembly RS_GCF_900766325.1. The GC content of the type genome is 30.27 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Cocodosa robigax sp. nov.

Candidatus Cocodosa robigax (NL. fem. n. *robigax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-594 sp000434835*. The type genome for the species is the GenBank assembly GCA_000434835.1. The GC content of the type genome is 27.42 % and the genome length is 1.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Cocodosa telegitas sp. nov.

Candidatus Cocodosa telegitas (NL. fem. n. *telegitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-594 sp900759985*. The type genome for the species is the GenBank assembly RS_GCF_900759985.1. The GC content of the type genome is 34.05 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Cocodosa vagabilega sp. nov.

Candidatus Cocodosa vagabilega (NL. fem. n. *vagabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-594 sp900771805*. The type genome for the species is the GenBank assembly RS_GCF_900771805.1. The GC content of the type genome is 24.86 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Cocodula desulimonas sp. nov.

Candidatus Cocodula desulimonas (NL. fem. n. *desulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDPF01 sp013001885*. The type genome for the species is the GenBank assembly GCA_013001885.1. The GC content of the type genome is 57.97 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Cocodula gen. nov.

Candidatus Cocodula (NL. fem. n. *Cocodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDPF01*. The type species for the genus is *Candidatus* Cocodula desulimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulellaceae.

Description of *Candidatus* Cocodula inornilenta sp. nov.

Candidatus Cocodula inornilenta (NL. fem. n. *inornilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDPF01 sp013042915*. The type genome for the species is the GenBank assembly GCA_013042915.1. The GC content of the type genome is 61.95 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Cocolana decunimonas sp. nov.

Candidatus Cocolana decunimonas (NL. fem. n. *decunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12151 sp000990585*. The type genome for the species is the GenBank assembly GCA_000992055.1. The GC content of the type genome is 36.42 % and the genome length is 0.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Cocolana gen. nov.

Candidatus Cocolana (NL. fem. n. *Cocolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12151*. The type species for the genus is *Candidatus* Cocolana decunimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9337-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilecosaceae.

Description of *Candidatus* Cocolaria gerunimonas sp. nov.

Candidatus Cocolaria gerunimonas (NL. fem. n. *gerunimonas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-62-14 sp001805245*. The type genome for the species is the GenBank assembly GCA_001805245.1. The GC content of the type genome is 61.66 % and the genome length is 2.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Cocolaria gen. nov.

Candidatus Cocolaria (NL. fem. n. *Cocolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-62-14*. The type species for the genus is *Candidatus* Cocolaria gerunimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cocolaria siticitudo sp. nov.

Candidatus Cocolaria siticitudo (NL. fem. n. *siticitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-62-14 sp009692155*. The type genome for the species is the GenBank assembly GCA_009692155.1. The GC content of the type genome is 60.52 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Cocolella foriciforma sp. nov.

Candidatus Cocolella foriciforma (NL. fem. n. *foriciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9215 sp003503995*. The type genome for the species is the GenBank assembly GCA_003503995.1. The GC content of the type genome is 41.15 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Cocolella gen. nov.

Candidatus Cocolella (NL. fem. n. *Cocolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9215*. The type species for the genus is *Candidatus* Cocolella foriciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9215*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocolellaceae.

Description of *Candidatus* Cocolellaceae fam. nov.

Candidatus Cocolellaceae (NL. fem. n. *Cocolellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9215.* The type genus for the taxon is *Candidatus* Cocolella .

According to GTDB R06-RS202, this family belongs to the order *Caedimonadales*.

Description of *Candidatus* Cocolella retunilega sp. nov.

Candidatus Cocolella retunilega (NL. fem. n. *retunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9215 sp009993885*. The type genome for the species is the GenBank assembly GCA_009993885.1. The GC content of the type genome is 42.72 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Cocolia almiticula sp. nov.

Candidatus Cocolia almiticula (NL. fem. n. *almiticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-317 sp011960265*. The type genome for the species is the GenBank assembly RS_GCF_011960265.1. The GC content of the type genome is 45.32 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Cocolia gen. nov.

Candidatus Cocolia (NL. fem. n. *Cocolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CAG-317*. The type species for the genus is *Candidatus* Cocolia almiticula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cocolia cohonitia sp. nov.

Candidatus Cocolia cohonitia (NL. fem. n. *cohonitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-317 sp900543415*. The type genome for the species is the GenBank assembly GCA_900543415.1. The GC content of the type genome is 41.67 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Cocolia semibitio sp. nov.

Candidatus Cocolia semibitio (NL. fem. n. *semibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-317 sp000433215*. The type genome for the species is the GenBank assembly RS_GCF_014287705.1. The GC content of the type genome is 41.16 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Cocolia siminimonas sp. nov.

Candidatus Cocolia siminimonas (NL. fem. n. *siminimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-317 sp000433535*. The type genome for the species is the GenBank assembly GCA_900542705.1. The GC content of the type genome is 41.28 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Cocolida homunatio sp. nov.

Candidatus Cocolida homunatio (NL. fem. n. *homunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PN-J185 sp001581925*. The type genome for the species is the GenBank assembly RS_GCF_001581925.1. The GC content of the type genome is 39.87

% and the genome length is 1.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "acid mine drainage water".

Description of *Candidatus* Cocolida gen. nov.

Candidatus Cocolida (NL. fem. n. *Cocolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PN-J185*. The type species for the genus is *Candidatus* Cocolida homunatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cocolida tenemicula sp. nov.

Candidatus Cocolida tenemicula (NL. fem. n. *tenemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PN-J185 sp001431705*. The type genome for the species is the GenBank assembly GCA_002279055.1. The GC content of the type genome is 44.23 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Cocolosa ablacitudo sp. nov.

Candidatus Cocolosa ablacitudo (NL. fem. n. *ablacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6944 sp002721305*. The type genome for the species is the GenBank assembly GCA_002721305.1. The GC content of the type genome is 54.37 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Cocolosa gen. nov.

Candidatus Cocolosa (NL. fem. n. *Cocolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6944*. The type species for the genus is *Candidatus* Cocolosa ablacitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TK06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaculaceae.

Description of *Candidatus* Cocolosa arcipisca sp. nov.

Candidatus Cocolosa arcipisca (NL. fem. n. *arcipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6944 sp002448715*. The type genome for the species is the GenBank assembly GCA_002448715.1. The GC content of the type genome is 52.96 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Cocolosa dilemitrix sp. nov.

Candidatus Cocolosa dilemitrix (NL. fem. n. *dilemitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6944 sp002296525*. The type genome for the species is the GenBank assembly GCA_002480245.1. The GC content of the type genome is 52.85 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Cocolosa vanititio sp. nov.

Candidatus Cocolosa vanititio (NL. fem. n. *vanititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6944 sp002724355*. The type genome for the species is the GenBank assembly GCA_002296165.1. The GC content of the type genome is 53.09 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Cocolula carucilenta sp. nov.

Candidatus Cocolula carucilenta (NL. fem. n. *carucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-46-14 sp001779925*. The type genome for the species is the GenBank assembly GCA_001779925.1. The GC content of the type genome is 47.08 % and the genome length is 1.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cocolula gen. nov.

Candidatus Cocolula (NL. fem. n. *Cocolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-46-14*. The type species for the genus is *Candidatus* Cocolula carucilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-46-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cocolulaceae.

Description of *Candidatus* Cocolulaceae fam. nov.

Candidatus Cocolulaceae (NL. fem. n. *Cocolulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-46-14.* The type genus for the taxon is *Candidatus* Cocolula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA920*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denicosales.

Description of *Candidatus* Cocolula rosaricella sp. nov.

Candidatus Cocolula rosaricella (NL. fem. n. *rosaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-46-14 sp001777515*. The type genome for the species is the GenBank assembly GCA_001777515.1. The GC content of the type genome is 47.75 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions 0.1 micron filter; 10% subassembly".

Description of *Candidatus* Codifana homolousia sp. nov.

Candidatus Codifana homolousia (NL. fem. n. *homolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-47-10 sp001824325*. The type genome for the species is the GenBank assembly GCA_001824325.1. The GC content of the type genome is 47.23

% and the genome length is 1.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Codifana gen. nov.

Candidatus Codifana (NL. fem. n. *Codifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-47-10*. The type species for the genus is *Candidatus* Codifana homolousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-47-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Codifanaceae.

Description of *Candidatus* Codifanaceae fam. nov.

Candidatus Codifanaceae (NL. fem. n. *Codifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-47-10.* The type genus for the taxon is *Candidatus* Codifana .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-01-FULL-47-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Codifanales.

Description of *Candidatus* Codifanales ord. nov.

Candidatus Codifanales (NL. fem. n. *Codifanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-47-10.* The type genus for the taxon is *Candidatus* Codifana .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Codifaria bipenatica sp. nov.

Candidatus Codifaria bipenatica (NL. fem. n. *bipenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-455 sp003166375*. The type genome for the species is the GenBank assembly GCA_003139075.1. The GC content of the type genome is 65.58 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Codifaria gen. nov.

Candidatus Codifaria (NL. fem. n. *Codifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-455*. The type species for the genus is *Candidatus* Codifaria bipenatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bog-793*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semibidaceae.

Description of *Candidatus* Codifaria casabitica sp. nov.

Candidatus Codifaria casabitica (NL. fem. n. *casabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-455 sp003140595*. The type genome for the species is the GenBank assembly GCA_003155305.1. The GC content of the type genome is 65.17 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Codifaria decupessa sp. nov.

Candidatus Codifaria decupessa (NL. fem. n. *decupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-455 sp003170375*. The type genome for the species is the GenBank assembly GCA_003169335.1. The GC content of the type genome is 66.18 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Codifaria recocetta sp. nov.

Candidatus Codifaria recocetta (NL. fem. n. *recocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Fen-455 sp003139355*. The type genome for the species is the GenBank assembly GCA_003155815.1. The GC content of the type genome is 66.35 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Codifella brasmessa sp. nov.

Candidatus Codifella brasmessa (NL. fem. n. *brasmessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3071 sp002366755*. The type genome for the species is the GenBank assembly GCA_002366755.1. The GC content of the type genome is 61.27 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Codifella gen. nov.

Candidatus Codifella (NL. fem. n. *Codifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3071*. The type species for the genus is *Candidatus* Codifella brasmessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3071*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Codifellaceae.

Description of *Candidatus* Codifellaceae fam. nov.

Candidatus Codifellaceae (NL. fem. n. *Codifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3071.* The type genus for the taxon is *Candidatus* Codifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3071*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Codifellales.

Description of *Candidatus* Codifellales ord. nov.

Candidatus Codifellales (NL. fem. n. *Codifellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3071.* The type genus for the taxon is *Candidatus* Codifella .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Codifida dilogessa sp. nov.

Candidatus Codifida dilogessa (NL. fem. n. *dilogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCQP01 sp004299485*. The type genome for the species is the GenBank assembly GCA_004299485.1. The GC content of the type genome is 64.61 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Codifida gen. nov.

Candidatus Codifida (NL. fem. n. *Codifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCQP01*. The type species for the genus is *Candidatus* Codifida dilogessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCQP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Codifidaceae.

Description of *Candidatus* Codifidaceae fam. nov.

Candidatus Codifidaceae (NL. fem. n. *Codifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCQP01*. The type genus for the taxon is *Candidatus* Codifida .

According to GTDB R06-RS202, this family belongs to the order *Acidobacteriales*.

Description of *Candidatus* Codifosa diminifica sp. nov.

Candidatus Codifosa diminifica (NL. fem. n. *diminifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5809 sp002417965*. The type genome for the species is the GenBank assembly GCA_002417965.1. The GC content of the type genome is 48.12 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Codifosa gen. nov.

Candidatus Codifosa (NL. fem. n. *Codifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5809*. The type species for the genus is *Candidatus* Codifosa diminifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Codifula siminicula sp. nov.

Candidatus Codifula siminicula (NL. fem. n. *siminicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYKL01 sp005797785*. The type genome for the species is the GenBank assembly GCA_005799695.1. The GC content of the type genome is 60.41 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Codifula gen. nov.

Candidatus Codifula (NL. fem. n. *Codifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYKL01*. The type species for the genus is *Candidatus* Codifula siminicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2862545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tolutanaceae.

Description of *Candidatus* Cognaticolwellia canacilega sp. nov.

Candidatus Cognaticolwellia canacilega (NL. fem. n. *canacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cognaticolwellia sp002077175*. The type genome for the species is the GenBank assembly RS_GCF_002077175.1. The GC content of the type genome is 38.56 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Cognaticolwellia decucitia sp. nov.

Candidatus Cognaticolwellia decucitia (NL. fem. n. *decucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cognaticolwellia sp014077005*. The type genome for the species is the GenBank assembly RS_GCF_014077065.1. The GC content of the type genome is 39.08 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Cognaticolwellia dedigousia sp. nov.

Candidatus Cognaticolwellia dedigousia (NL. fem. n. *dedigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cognaticolwellia sp003354085*. The type genome for the species is the GenBank assembly GCA_003354085.1. The GC content of the type genome is 38.99 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Cognaticolwellia disidiforma sp. nov.

Candidatus Cognaticolwellia disidiforma (NL. fem. n. *disidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cognaticolwellia sp007954265*. The type genome for the species is the GenBank assembly RS_GCF_007954265.1. The GC content of the type genome is 38.83 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Cognaticolwellia funebedo sp. nov.

Candidatus Cognaticolwellia funebedo (NL. fem. n. *funebedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cognaticolwellia sp014077095*. The type genome for the species is the GenBank assembly RS_GCF_014077095.1. The GC content of the type genome is 38.7 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Cognaticolwellia furibilenta sp. nov.

Candidatus Cognaticolwellia furibilenta (NL. fem. n. *furibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cognaticolwellia sp014077505*. The type genome for the species is the GenBank assembly RS_GCF_014077505.1. The GC content of the type genome is 38.18 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Cognaticolwellia myalgicula sp. nov.

Candidatus Cognaticolwellia myalgicula (NL. fem. n. *myalgicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cognaticolwellia sp003971255*. The type genome for the species is the GenBank assembly RS_GCF_003971255.1. The GC content of the type genome is 38.41 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Cognaticolwellia nehaligena sp. nov.

Candidatus Cognaticolwellia nehaligena (NL. fem. n. *nehaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cognaticolwellia sp003061515*. The type genome for the species is the GenBank assembly RS_GCF_003061515.1. The GC content of the type genome is 37.67 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Cognatishimia denupimonas sp. nov.

Candidatus Cognatishimia denupimonas (NL. fem. n. *denupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cognatishimia sp013215215*. The type genome for the species is the GenBank assembly GCA_013215215.1. The GC content of the type genome is 56.0 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Cohaesibacter lucifitrix sp. nov.

Candidatus Cohaesibacter lucifitrix (NL. fem. n. *lucifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohaesibacter sp900215505*. The type genome for the species is the GenBank assembly RS_GCF_900215505.1. The GC content of the type genome is 55.52

% and the genome length is 5.11 Mbp.

Description of *Candidatus* Cohnella absocilega sp. nov.

Candidatus Cohnella absocilega (NL. fem. n. *absocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp004801405*. The type genome for the species is the GenBank assembly RS_GCF_004801405.1. The GC content of the type genome is 58.52 % and the genome length is 8.52 Mbp.

Description of *Candidatus* Cohnella adsenifica sp. nov.

Candidatus Cohnella adsenifica (NL. fem. n. *adsenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp003570905*. The type genome for the species is the GenBank assembly RS_GCF_003570905.1. The GC content of the type genome is 53.32 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Cohnella bucelitio sp. nov.

Candidatus Cohnella bucelitio (NL. fem. n. *bucelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp003990975*. The type genome for the species is the GenBank assembly RS_GCF_003990975.1. The GC content of the type genome is 55.98 % and the genome length is 6.02 Mbp.

Description of *Candidatus* Cohnella dehinisca sp. nov.

Candidatus Cohnella dehinisca (NL. fem. n. *dehinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp003628305*. The type genome for the species is the GenBank assembly RS_GCF_003628305.1. The GC content of the type genome is 51.53 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Cohnella depacifica sp. nov.

Candidatus Cohnella depacifica (NL. fem. n. *depacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp014107495*. The type genome for the species is the GenBank assembly RS_GCF_014107495.1. The GC content of the type genome is 51.24 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Cohnella inaccastra sp. nov.

Candidatus Cohnella inaccastra (NL. fem. n. *inaccastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp007786475*. The type genome for the species is the GenBank assembly RS_GCF_007786475.1. The GC content of the type genome is 51.3 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Cohnella navifisca sp. nov.

Candidatus Cohnella navifisca (NL. fem. n. *navifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp900169535*. The type genome for the species is the GenBank assembly RS_GCF_900169535.1. The GC content of the type genome is 57.24 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Cohnella sceptisca sp. nov.

Candidatus Cohnella sceptisca (NL. fem. n. *sceptisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp005049045*. The type genome for the species is the GenBank assembly RS_GCF_005049045.1. The GC content of the type genome is 53.7 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Cohnella socagago sp. nov.

Candidatus Cohnella socagago (NL. fem. n. *socagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp012849095*. The type genome for the species is the GenBank assembly RS_GCF_012849095.1. The GC content of the type genome is 50.55 % and the genome length is 8.52 Mbp.

Description of *Candidatus* Cohnella tumefax sp. nov.

Candidatus Cohnella tumefax (NL. fem. n. *tumefax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp003001675*. The type genome for the species is the GenBank assembly RS_GCF_002237815.1. The GC content of the type genome is 56.69 % and the genome length is 8.24 Mbp.

Description of *Candidatus* Cohnella vocamifica sp. nov.

Candidatus Cohnella vocamifica (NL. fem. n. *vocamifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp014212055*. The type genome for the species is the GenBank assembly RS_GCF_014212055.1. The GC content of the type genome is 58.71 % and the genome length is 7.92 Mbp.

Description of *Candidatus* Cohnella vocifago sp. nov.

Candidatus Cohnella vocifago (NL. fem. n. *vocifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cohnella sp003208555*. The type genome for the species is the GenBank assembly RS_GCF_900112065.1. The GC content of the type genome is 59.34 % and the genome length is 7.47 Mbp.

Description of *Candidatus* Cohonana delapilega sp. nov.

Candidatus Cohonana delapilega (NL. fem. n. *delapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-505 sp011368345*. The type genome for the species is the GenBank assembly GCA_011389325.1. The GC content of the type genome is 43.8 %

and the genome length is 2.01 Mbp.

Description of *Candidatus* Cohonana gen. nov.

Candidatus Cohonana (NL. fem. n. *Cohonana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-505*. The type species for the genus is *Candidatus* Cohonana delapilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTGW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monumanaceae.

Description of *Candidatus* Cohonaria defosicella sp. nov.

Candidatus Cohonaria defosicella (NL. fem. n. *defosicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5938 sp002414865*. The type genome for the species is the GenBank assembly GCA_002363235.1. The GC content of the type genome is 65.92 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Cohonaria gen. nov.

Candidatus Cohonaria (NL. fem. n. *Cohonaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5938*. The type species for the genus is *Candidatus* Cohonaria defosicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cohonella cacomifica sp. nov.

Candidatus Cohonella cacomifica (NL. fem. n. *cacomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWN01 sp003645215*. The type genome for the species is the GenBank assembly GCA_003645215.1. The GC content of the type genome is 43.99 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Cohonella gen. nov.

Candidatus Cohonella (NL. fem. n. *Cohonella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMWN01*. The type species for the genus is *Candidatus* Cohonella cacomifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Cohonella tresvifica sp. nov.

Candidatus Cohonella tresvifica (NL. fem. n. *tresvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWN01 sp004356415*. The type genome for the species is the GenBank assembly GCA_004356415.1. The GC content of the type genome is 43.41 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Cohonia laculitica sp. nov.

Candidatus Cohonia laculitica (NL. fem. n. *laculitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-36-16 sp001873185*. The type genome for the species is the GenBank assembly GCA_001873185.1. The GC content of the type genome is 36.48 % and the genome length is 3.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Cohonia gen. nov.

Candidatus Cohonia (NL. fem. n. *Cohonia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-36-16*. The type species for the genus is *Candidatus* Cohonia laculitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cohonida obsatentia sp. nov.

Candidatus Cohonida obsatentia (NL. fem. n. *obsatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTJX01 sp011524675*. The type genome for the species is the GenBank assembly GCA_011524675.1. The GC content of the type genome is 36.23 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Cohonida gen. nov.

Candidatus Cohonida (NL. fem. n. *Cohonida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTJX01*. The type species for the genus is *Candidatus* Cohonida obsatentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WTJX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohonidaceae.

Description of *Candidatus* Cohonidaceae fam. nov.

Candidatus Cohonidaceae (NL. fem. n. *Cohonidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WTJX01*. The type genus for the taxon is *Candidatus* Cohonida .

According to GTDB R06-RS202, this family belongs to the order *Cytophagales*.

Description of *Candidatus* Cohonosa depupilega sp. nov.

Candidatus Cohonosa depupilega (NL. fem. n. *depupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC3088 sp000204315*. The type genome for the species is the GenBank assembly RS_GCF_000204315.1. The GC content of the type genome is 51.64 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Cohonosa gen. nov.

Candidatus Cohonosa (NL. fem. n. *Cohonosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IMCC3088*. The type species for the genus is *Candidatus* Cohonosa depupilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cohonosa resuribula sp. nov.

Candidatus Cohonosa resuribula (NL. fem. n. *resuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC3088 sp003520285*. The type genome for the species is the GenBank assembly GCA_002384045.1. The GC content of the type genome is 51.69 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Cohonula plascimonia sp. nov.

Candidatus Cohonula plascimonia (NL. fem. n. *plascimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADIA01 sp013151555*. The type genome for the species is the GenBank assembly GCA_013151555.1. The GC content of the type genome is 45.48 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Cohonula gen. nov.

Candidatus Cohonula (NL. fem. n. *Cohonula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADIA01*. The type species for the genus is *Candidatus* Cohonula plascimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADIA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohonulaceae.

Description of *Candidatus* Cohonulaceae fam. nov.

Candidatus Cohonulaceae (NL. fem. n. *Cohonulaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADIA01*. The type genus for the taxon is *Candidatus* Cohonula .

According to the original version of GTDB R06-RS202, this family belongs to the order *NPL-UPA2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cohoranales.

Description of *Candidatus* Cohorana aminnentia sp. nov.

Candidatus Cohorana aminnentia (NL. fem. n. *aminnentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NPL-UPA2 sp003574845*. The type genome for the species is the GenBank assembly GCA_003574845.1. The GC content of the type genome is 43.74 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Cohorana gen. nov.

Candidatus Cohorana (NL. fem. n. *Cohorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NPL-UPA2*. The type species for the genus is *Candidatus* Cohorana aminnentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NPL-UPA2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohoranaceae.

Description of *Candidatus* Cohoranaceae fam. nov.

Candidatus Cohoranaceae (NL. fem. n. *Cohoranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NPL-UPA2*. The type genus for the taxon is *Candidatus* Cohorana .

According to the original version of GTDB R06-RS202, this family belongs to the order *NPL-UPA2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cohoranales.

Description of *Candidatus* Cohoraria cadavitoga sp. nov.

Candidatus Cohoraria cadavitoga (NL. fem. n. *cadavitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp002457745*. The type genome for the species is the GenBank assembly GCA_002457745.1. The GC content of the type genome is 61.17 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Cohoraria gen. nov.

Candidatus Cohoraria (NL. fem. n. *Cohoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8309*. The type species for the genus is *Candidatus* Cohoraria cadavitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cohoraria dapifitio sp. nov.

Candidatus Cohoraria dapifitio (NL. fem. n. *dapifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp902526635*. The type genome for the species is the GenBank assembly GCA_902526635.1. The GC content of the type genome is 54.73 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Cohoraria delapitudo sp. nov.

Candidatus Cohoraria delapitudo (NL. fem. n. *delapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp009936825*. The type genome for the species is the GenBank assembly GCA_009936825.1. The GC content of the type genome is 52.99 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Cohoraria galaciforma sp. nov.

Candidatus Cohoraria galaciforma (NL. fem. n. *galaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp009920665*. The type genome for the species is the GenBank assembly GCA_009920665.1. The GC content of the type genome is 61.31 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Cohoraria genocessa sp. nov.

Candidatus Cohoraria genocessa (NL. fem. n. *genocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp002683535*. The type genome for the species is the GenBank assembly GCA_002683535.1. The GC content of the type genome is 57.24 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Cohoraria genufifica sp. nov.

Candidatus Cohoraria genufifica (NL. fem. n. *genufifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp002731315*. The type genome for the species is the GenBank assembly GCA_002731315.1. The GC content of the type genome is 54.62 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Cohoraria inabsimonas sp. nov.

Candidatus Cohoraria inabsimonas (NL. fem. n. *inabsimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp011524735*. The type genome for the species is the GenBank assembly GCA_011524735.1. The GC content of the type genome is 55.36 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Cohoraria nocumugo sp. nov.

Candidatus Cohoraria nocumugo (NL. fem. n. *nocumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp002689625*. The type genome for the species is the GenBank assembly GCA_002689625.1. The GC content of the type genome is 56.64 %

and the genome length is 1.73 Mbp.

Description of *Candidatus* Cohoraria nutabousia sp. nov.

Candidatus Cohoraria nutabousia (NL. fem. n. *nutabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp902528605*. The type genome for the species is the GenBank assembly GCA_902528605.1. The GC content of the type genome is 54.36 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Cohoraria pacifibula sp. nov.

Candidatus Cohoraria pacifibula (NL. fem. n. *pacifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp002457765*. The type genome for the species is the GenBank assembly GCA_002722835.1. The GC content of the type genome is 56.9 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Cohoraria penurastra sp. nov.

Candidatus Cohoraria penurastra (NL. fem. n. *penurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp002686685*. The type genome for the species is the GenBank assembly GCA_002323575.1. The GC content of the type genome is 58.46 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Cohoraria saxopastra sp. nov.

Candidatus Cohoraria saxopastra (NL. fem. n. *saxopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp004213025*. The type genome for the species is the GenBank assembly GCA_004213025.1. The GC content of the type genome is 61.6 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Cohoraria venunitica sp. nov.

Candidatus Cohoraria venunitica (NL. fem. n. *venunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp002695585*. The type genome for the species is the GenBank assembly GCA_002695585.1. The GC content of the type genome is 63.25 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Cohoraria vepalitudo sp. nov.

Candidatus Cohoraria vepalitudo (NL. fem. n. *vepalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8309 sp001627655*. The type genome for the species is the GenBank assembly GCA_002686815.1. The GC content of the type genome is 62.9 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Cohorella nicotitudo sp. nov.

Candidatus Cohorella nicotitudo (NL. fem. n. *nicotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUI01 sp012517765*. The type genome for the species is the GenBank assembly GCA_012517765.1. The GC content of the type genome is 46.9 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Cohorella gen. nov.

Candidatus Cohorella (NL. fem. n. *Cohorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUI01*. The type species for the genus is *Candidatus* Cohorella nicotitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYUI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohorellaceae.

Description of *Candidatus* Cohorellaceae fam. nov.

Candidatus Cohorellaceae (NL. fem. n. *Cohorellaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYUI01*. The type genus for the taxon is *Candidatus* Cohorella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYUI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cohorellales.

Description of *Candidatus* Cohorellales ord. nov.

Candidatus Cohorellales (NL. fem. n. *Cohorellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYUI01*. The type genus for the taxon is *Candidatus* Cohorella .

According to the GTDB R06-RS202, this order belongs to the class *Caldisericia*.

Description of *Candidatus* Cohorella renavugo sp. nov.

Candidatus Cohorella renavugo (NL. fem. n. *renavugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUI01 sp002070635*. The type genome for the species is the GenBank assembly GCA_002070635.1. The GC content of the type genome is 44.96 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cohoria decatago sp. nov.

Candidatus Cohoria decatago (NL. fem. n. *decatago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3933 sp002385805*. The type genome for the species is the GenBank assembly GCA_012728695.1. The GC content of the type genome is 37.66 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Cohoria gen. nov.

Candidatus Cohoria (NL. fem. n. *Cohoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3933*. The type species for the genus is *Candidatus* Cohoria decatago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BICA1-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Novilosaceae.

Description of *Candidatus* Cohorida benifitura sp. nov.

Candidatus Cohorida benifitura (NL. fem. n. *benifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAEO01 sp013388805*. The type genome for the species is the GenBank assembly GCA_013388805.1. The GC content of the type genome is 67.71 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Cohorida gen. nov.

Candidatus Cohorida (NL. fem. n. *Cohorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAEO01*. The type species for the genus is *Candidatus* Cohorida benifitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cohorosa conabago sp. nov.

Candidatus Cohorosa conabago (NL. fem. n. *conabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin103 sp002238925*. The type genome for the species is the GenBank assembly GCA_002238925.1. The GC content of the type genome is 67.36 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Cohorosa gen. nov.

Candidatus Cohorosa (NL. fem. n. *Cohorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Bin103*. The type species for the genus is *Candidatus* Cohorosa conabago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin103*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohorosaceae.

Description of *Candidatus* Cohorosaceae fam. nov.

Candidatus Cohorosaceae (NL. fem. n. *Cohorosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin103.* The type genus for the taxon is *Candidatus* Cohorosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Volucanales.

Description of *Candidatus* Cohorula bonificella sp. nov.

Candidatus Cohorula bonificella (NL. fem. n. *bonificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-433 sp000433675*. The type genome for the species is the GenBank assembly GCA_003530005.1. The GC content of the type genome is 24.78 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Cohorula gen. nov.

Candidatus Cohorula (NL. fem. n. *Cohorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-433*. The type species for the genus is *Candidatus* Cohorula bonificella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Cohorula facunetta sp. nov.

Candidatus Cohorula facunetta (NL. fem. n. *facunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-433 sp900546245*. The type genome for the species is the GenBank assembly GCA_900546245.1. The GC content of the type genome is 24.73 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Cohorula ludibimonas sp. nov.

Candidatus Cohorula ludibimonas (NL. fem. n. *ludibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-433 sp900320735*. The type genome for the species is the GenBank assembly GCA_900320735.1. The GC content of the type genome is 25.53 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Cohurana refocigena sp. nov.

Candidatus Cohurana refocigena (NL. fem. n. *refocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11475 sp003538975*. The type genome for the species is the GenBank assembly GCA_003538975.1. The GC content of the type genome is 42.69 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Cohurana gen. nov.

Candidatus Cohurana (NL. fem. n. *Cohurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11475*. The type species for the genus is *Candidatus* Cohurana refocigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cohuraria bigemilenta sp. nov.

Candidatus Cohuraria bigemilenta (NL. fem. n. *bigemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-314 sp900551395*. The type genome for the species is the GenBank assembly GCA_900551395.1. The GC content of the type genome is 49.31 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Cohuraria gen. nov.

Candidatus Cohuraria (NL. fem. n. *Cohuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-314*. The type species for the genus is *Candidatus* Cohuraria bigemilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-314*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurariaceae.

Description of *Candidatus* Cohurariaceae fam. nov.

Candidatus Cohurariaceae (NL. fem. n. *Cohurariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-314.* The type genus for the taxon is *Candidatus* Cohuraria .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Cohuraria desomivita sp. nov.

Candidatus Cohuraria desomivita (NL. fem. n. *desomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-314 sp000437915*. The type genome for the species is the GenBank assembly GCA_900542655.1. The GC content of the type genome is 48.69 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Cohurella acontessa sp. nov.

Candidatus Cohurella acontessa (NL. fem. n. *acontessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-31 sp003962975*. The type genome for the species is the GenBank assembly GCA_003962975.1. The GC content of the type genome is 46.68 %

and the genome length is 1.21 Mbp.

Description of *Candidatus* Cohurella gen. nov.

Candidatus Cohurella (NL. fem. n. *Cohurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AWTP1-31*. The type species for the genus is *Candidatus* Cohurella acontessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AWTP1-31*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurellaceae.

Description of *Candidatus* Cohurellaceae fam. nov.

Candidatus Cohurellaceae (NL. fem. n. *Cohurellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AWTP1-31.* The type genus for the taxon is *Candidatus* Cohurella .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Cohurella carucibra sp. nov.

Candidatus Cohurella carucibra (NL. fem. n. *carucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-31 sp903946795*. The type genome for the species is the GenBank assembly GCA_903937695.1. The GC content of the type genome is 41.43 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Cohuria bipinitrix sp. nov.

Candidatus Cohuria bipinitrix (NL. fem. n. *bipinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YD12-FULL-61-37 sp009497875*. The type genome for the species is the GenBank assembly RS_GCF_009497875.1. The GC content of the type genome is 61.65 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Cohuria gen. nov.

Candidatus Cohuria (NL. fem. n. *Cohuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YD12-FULL-61-37*. The type species for the genus is *Candidatus* Cohuria bipinitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cohuria redunifica sp. nov.

Candidatus Cohuria redunifica (NL. fem. n. *redunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YD12-FULL-61-37 sp001801995*. The type genome for the species is the GenBank assembly GCA_001801965.1. The GC content of the type genome is 61.26 % and the genome length is 3.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Cohurida funebitica sp. nov.

Candidatus Cohurida funebitica (NL. fem. n. *funebitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M2005 sp011371305*. The type genome for the species is the GenBank assembly GCA_011371305.1. The GC content of the type genome is 59.73 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Cohurida gen. nov.

Candidatus Cohurida (NL. fem. n. *Cohurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M2005*. The type species for the genus is *Candidatus* Cohurida funebitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deparosaceae.

Description of *Candidatus* Cohurida milipimonia sp. nov.

Candidatus Cohurida milipimonia (NL. fem. n. *milipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M2005 sp011192085*. The type genome for the species is the GenBank assembly GCA_012962505.1. The GC content of the type genome is 61.45 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Cohurosa ammixousia sp. nov.

Candidatus Cohurosa ammixousia (NL. fem. n. *ammixousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPPD01 sp003818675*. The type genome for the species is the GenBank assembly GCA_003818675.1. The GC content of the type genome is 48.13 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Cohurosa gen. nov.

Candidatus Cohurosa (NL. fem. n. *Cohurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPPD01*. The type species for the genus is *Candidatus* Cohurosa ammixousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RPPD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurosaceae.

Description of *Candidatus* Cohurosaceae fam. nov.

Candidatus Cohurosaceae (NL. fem. n. *Cohurosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RPPD01.* The type genus for the taxon is *Candidatus* Cohurosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Volucanales.

Description of *Candidatus* Cohurula pedifastra sp. nov.

Candidatus Cohurula pedifastra (NL. fem. n. *pedifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFX8 sp003577355*. The type genome for the species is the GenBank assembly GCA_003577355.1. The GC content of the type genome is 63.96 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Cohurula gen. nov.

Candidatus Cohurula (NL. fem. n. *Cohurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CFX8*. The type species for the genus is *Candidatus* Cohurula pedifastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CFX8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurulaceae.

Description of *Candidatus* Cohurulaceae fam. nov.

Candidatus Cohurulaceae (NL. fem. n. *Cohurulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CFX8.* The type genus for the taxon is *Candidatus* Cohurula .

According to GTDB R06-RS202, this family belongs to the order *Thermomicrobiales*.

Description of *Candidatus* Colapana dehinivita sp. nov.

Candidatus Colapana dehinivita (NL. fem. n. *dehinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-38-13 sp001782165*. The type genome for the species is the GenBank assembly GCA_001782165.1. The GC content of the type genome is 38.04 % and the genome length is 0.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Colapana gen. nov.

Candidatus Colapana (NL. fem. n. *Colapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-38-13*. The type species for the genus is *Candidatus* Colapana dehinivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Colaparia lapicetta sp. nov.

Candidatus Colaparia lapicetta (NL. fem. n. *lapicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HCHbin5 sp903913345*. The type genome for the species is the GenBank assembly GCA_903913345.1. The GC content of the type genome is 57.49 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Colaparia gen. nov.

Candidatus Colaparia (NL. fem. n. *Colaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HCHbin5*. The type species for the genus is *Candidatus* Colaparia lapicetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Colaparia mavorax sp. nov.

Candidatus Colaparia mavorax (NL. fem. n. *mavorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HCHbin5 sp002753505*. The type genome for the species is the GenBank assembly GCA_002753505.1. The GC content of the type genome is 56.97 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Colapella siticugo sp. nov.

Candidatus Colapella siticugo (NL. fem. n. *siticugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1343 sp003171335*. The type genome for the species is the GenBank assembly GCA_003171335.1. The GC content of the type genome is 64.37 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Colapella gen. nov.

Candidatus Colapella (NL. fem. n. *Colapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1343*. The type species for the genus is *Candidatus* Colapella siticugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1343*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colapellaceae.

Description of *Candidatus* Colapellaceae fam. nov.

Candidatus Colapellaceae (NL. fem. n. *Colapellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-1343.* The type genus for the taxon is *Candidatus* Colapella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Megalanales.

Description of *Candidatus* Colapia necubilenta sp. nov.

Candidatus Colapia necubilenta (NL. fem. n. *necubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWQF01 sp003556865*. The type genome for the species is the GenBank assembly GCA_003556865.1. The GC content of the type genome is 44.95 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Colapia gen. nov.

Candidatus Colapia (NL. fem. n. *Colapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWQF01*. The type species for the genus is *Candidatus* Colapia necubilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWQF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colapiaceae.

Description of *Candidatus* Colapiaceae fam. nov.

Candidatus Colapiaceae (NL. fem. n. *Colapiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWQF01.* The type genus for the taxon is *Candidatus* Colapia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLGR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ceruciales.

Description of *Candidatus* Colapida nubificula sp. nov.

Candidatus Colapida nubificula (NL. fem. n. *nubificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLI01 sp003559415*. The type genome for the species is the GenBank assembly GCA_003559415.1. The GC content of the type genome is 54.11 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Colapida gen. nov.

Candidatus Colapida (NL. fem. n. *Colapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWLI01*. The type species for the genus is *Candidatus* Colapida nubificula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWLI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colapidaceae.

Description of *Candidatus* Colapidaceae fam. nov.

Candidatus Colapidaceae (NL. fem. n. *Colapidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWLI01*. The type genus for the taxon is *Candidatus* Colapida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4975*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Saxopellales.

Description of *Candidatus* Colaposa fibicugo sp. nov.

Candidatus Colaposa fibicugo (NL. fem. n. *fibicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKRY01 sp003552765*. The type genome for the species is the GenBank assembly GCA_003552765.1. The GC content of the type genome is 60.75 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Colaposa gen. nov.

Candidatus Colaposa (NL. fem. n. *Colaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKRY01*. The type species for the genus is *Candidatus* Colaposa fibicugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLHB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegulaceae.

Description of *Candidatus* Colaposa licenimonia sp. nov.

Candidatus Colaposa licenimonia (NL. fem. n. *licenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKRY01 sp007118235*. The type genome for the species is the GenBank assembly GCA_007126205.1. The GC content of the type genome is 61.31 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Colapula vilipago sp. nov.

Candidatus Colapula vilipago (NL. fem. n. *vilipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZCA01 sp012513515*. The type genome for the species is the GenBank assembly GCA_002069625.1. The GC content of the type genome is 50.34 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Colapula gen. nov.

Candidatus Colapula (NL. fem. n. *Colapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZCA01*. The type species for the genus is *Candidatus* Colapula vilipago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZCA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colapulaceae.

Description of *Candidatus* Colapulaceae fam. nov.

Candidatus Colapulaceae (NL. fem. n. *Colapulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZCA01.* The type genus for the taxon is *Candidatus* Colapula .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-44-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Duponariales.

Description of *Candidatus* Colepana ludifax sp. nov.

Candidatus Colepana ludifax (NL. fem. n. *ludifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-70-394 sp001873295*. The type genome for the species is the GenBank assembly GCA_009994935.1. The GC content of the type genome is 70.36 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Colepana gen. nov.

Candidatus Colepana (NL. fem. n. *Colepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-70-394*. The type species for the genus is *Candidatus* Colepana ludifax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-70-394*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colepanaceae.

Description of *Candidatus* Colepanaceae fam. nov.

Candidatus Colepanaceae (NL. fem. n. *Colepanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-70-394.* The type genus for the taxon is *Candidatus* Colepana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-70-394*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colepanales.

Description of *Candidatus* Colepanales ord. nov.

Candidatus Colepanales (NL. fem. n. *Colepanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-70-394.* The type genus for the taxon is *Candidatus* Colepana .

According to the original version of GTDB R06-RS202, this family belongs to the class *CG2-30-70-394*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Colepanae.

Description of *Candidatus* Colepanae class. nov.

Candidatus Colepanae (NL. fem. n. *c__Colepanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-70-394.* The type genus for the taxon is *Candidatus* Colepana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *CG2-30-70-394*. According to the renamed version of GTDB R06-RS202, this

taxon belongs to the phylum *Candidatus* Colepanota.

Description of *Candidatus* Colepanota phyl. nov.

Candidatus Colepanota (NL. fem. n. *Colepanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-70-394.* The type genus for the taxon is *Candidatus* Colepana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Coleparia anamnibra sp. nov.

Candidatus Coleparia anamnibra (NL. fem. n. *anamnibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHBI01 sp006226565*. The type genome for the species is the GenBank assembly GCA_006226565.1. The GC content of the type genome is 72.26 % and the genome length is 7.71 Mbp.

Description of *Candidatus* Coleparia gen. nov.

Candidatus Coleparia (NL. fem. n. *Coleparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHBI01*. The type species for the genus is *Candidatus* Coleparia anamnibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHBI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colepariaceae.

Description of *Candidatus* Colepariaceae fam. nov.

Candidatus Colepariaceae (NL. fem. n. *Colepariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PHBI01.* The type genus for the taxon is *Candidatus* Coleparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *PHBI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colepariales.

Description of *Candidatus* Colepariales ord. nov.

Candidatus Colepariales (NL. fem. n. *Colepariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PHBI01*. The type genus for the taxon is *Candidatus* Coleparia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubigariae.

Description of *Candidatus* Coleparia delecugo sp. nov.

Candidatus Coleparia delecugo (NL. fem. n. *delecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHBI01 sp002841945*. The type genome for the species is the GenBank assembly GCA_002841945.1. The GC content of the type genome is 72.37 % and the genome length is 8.21 Mbp.

Description of *Candidatus* Colepida illapibra sp. nov.

Candidatus Colepida illapibra (NL. fem. n. *illapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-12-FULL-43-9 sp001798265*. The type genome for the species is the GenBank assembly GCA_001798265.1. The GC content of the type genome is 43.08 % and the genome length is 1.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Colepida gen. nov.

Candidatus Colepida (NL. fem. n. *Colepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-12-FULL-43-9*. The type species for the genus is *Candidatus* Colepida illapibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-12-FULL-43-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colepidaceae.

Description of *Candidatus* Colepidaceae fam. nov.

Candidatus Colepidaceae (NL. fem. n. *Colepidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *O2-12-FULL-43-9.* The type genus for the taxon is *Candidatus* Colepida .

According to the original version of GTDB R06-RS202, this family belongs to the order *O2-12-FULL-43-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colepidales.

Description of *Candidatus* Colepidales ord. nov.

Candidatus Colepidales (NL. fem. n. *Colepidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *O2-12-FULL-43-9.* The type genus for the taxon is *Candidatus* Colepida .

According to the original version of GTDB R06-RS202, this family belongs to the class *O2-12-FULL-43-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Colepidae.

Description of *Candidatus* Colepidae class. nov.

Candidatus Colepidae (NL. fem. n. *c__Colepidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *O2-12-FULL-43-9.* The type genus for the taxon is *Candidatus* Colepida .

According to GTDB R06-RS202, this class belongs to the phylum *Bdellovibrionota*.

Description of *Candidatus* Coleposa apporessa sp. nov.

Candidatus Coleposa apporessa (NL. fem. n. *apporessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730855 sp902532675*. The type genome for the species is the GenBank assembly GCA_902532675.1. The GC content of the type genome is 35.84 %

and the genome length is 1.34 Mbp.

Description of *Candidatus* Coleposa gen. nov.

Candidatus Coleposa (NL. fem. n. *Coleposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2730855*. The type species for the genus is *Candidatus* Coleposa apporessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SAR86*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludimulaceae.

Description of *Candidatus* Coleposa decupatica sp. nov.

Candidatus Coleposa decupatica (NL. fem. n. *decupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730855 sp902554355*. The type genome for the species is the GenBank assembly GCA_902554355.1. The GC content of the type genome is 35.7 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Coleposa herinifica sp. nov.

Candidatus Coleposa herinifica (NL. fem. n. *herinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730855 sp902532015*. The type genome for the species is the GenBank assembly GCA_902532015.1. The GC content of the type genome is 35.33 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Coleposa homogimonas sp. nov.

Candidatus Coleposa homogimonas (NL. fem. n. *homogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730855 sp002730855*. The type genome for the species is the GenBank assembly GCA_002730855.1. The GC content of the type genome is 35.89 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Coleposa inconiforma sp. nov.

Candidatus Coleposa inconiforma (NL. fem. n. *inconiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730855 sp902514295*. The type genome for the species is the GenBank assembly GCA_902514295.1. The GC content of the type genome is 36.38 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Colepula depecibra sp. nov.

Candidatus Colepula depecibra (NL. fem. n. *depecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-75 sp005880445*. The type genome for the species is the GenBank assembly GCA_005889335.1. The GC content of the type genome is 67.67 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Colepula gen. nov.

Candidatus Colepula (NL. fem. n. *Colepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-75*. The type species for the genus is *Candidatus* Colepula depecibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibiaceae.

Description of *Candidatus* Colimana cenacugo sp. nov.

Candidatus Colimana cenacugo (NL. fem. n. *cenacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTPJ01 sp011334435*. The type genome for the species is the GenBank assembly GCA_011334435.1. The GC content of the type genome is 37.44 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Colimana gen. nov.

Candidatus Colimana (NL. fem. n. *Colimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTPJ01*. The type species for the genus is *Candidatus* Colimana cenacugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTPJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimanaceae.

Description of *Candidatus* Colimanaceae fam. nov.

Candidatus Colimanaceae (NL. fem. n. *Colimanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTPJ01.* The type genus for the taxon is *Candidatus* Colimana .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTPJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colimanales.

Description of *Candidatus* Colimanales ord. nov.

Candidatus Colimanales (NL. fem. n. *Colimanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTPJ01.* The type genus for the taxon is *Candidatus* Colimana .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTPJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Colimanae.

Description of *Candidatus* Colimanae class. nov.

Candidatus Colimanae (NL. fem. n. *c__Colimanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTPJ01.* The type genus for the taxon is *Candidatus* Colimana .

According to GTDB R06-RS202, this class belongs to the phylum *Poribacteria*.

Description of *Candidatus* Colimaria adessibula sp. nov.

Candidatus Colimaria adessibula (NL. fem. n. *adessibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp002309875*. The type genome for the species is the GenBank assembly GCA_002309875.1. The GC content of the type genome is 38.75 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Colimaria gen. nov.

Candidatus Colimaria (NL. fem. n. *Colimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-196*. The type species for the genus is *Candidatus* Colimaria adessibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Colimaria adnunatica sp. nov.

Candidatus Colimaria adnunatica (NL. fem. n. *adnunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902760905*. The type genome for the species is the GenBank assembly GCA_902760905.1. The GC content of the type genome is 34.42 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Colimaria adrumitrix sp. nov.

Candidatus Colimaria adrumitrix (NL. fem. n. *adrumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902780525*. The type genome for the species is the GenBank assembly GCA_902780525.1. The GC content of the type genome is 34.68 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Colimaria ammuratica sp. nov.

Candidatus Colimaria ammuratica (NL. fem. n. *ammuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902798645*. The type genome for the species is the GenBank assembly GCA_902798645.1. The GC content of the type genome is 32.68 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Colimaria atrusifica sp. nov.

Candidatus Colimaria atrusifica (NL. fem. n. *atrusifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902782905*. The type genome for the species is the GenBank assembly GCA_902782905.1. The GC content of the type genome is 35.84 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Colimaria decomilega sp. nov.

Candidatus Colimaria decomilega (NL. fem. n. *decomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902777605*. The type genome for the species is the GenBank assembly GCA_902777605.1. The GC content of the type genome is 32.95 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Colimaria detunitura sp. nov.

Candidatus Colimaria detunitura (NL. fem. n. *detunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902803165*. The type genome for the species is the GenBank assembly GCA_902803165.1. The GC content of the type genome is 34.01 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Colimaria excucatio sp. nov.

Candidatus Colimaria excucatio (NL. fem. n. *excucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902797965*. The type genome for the species is the GenBank assembly GCA_902797965.1. The GC content of the type genome is 33.15 %

and the genome length is 2.08 Mbp.

Description of *Candidatus* Colimaria fusifitica sp. nov.

Candidatus Colimaria fusifitica (NL. fem. n. *fusifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902796585*. The type genome for the species is the GenBank assembly GCA_902796585.1. The GC content of the type genome is 32.48 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Colimaria horomiforma sp. nov.

Candidatus Colimaria horomiforma (NL. fem. n. *horomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902775025*. The type genome for the species is the GenBank assembly GCA_902775025.1. The GC content of the type genome is 32.62 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Colimaria ignifago sp. nov.

Candidatus Colimaria ignifago (NL. fem. n. *ignifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902797575*. The type genome for the species is the GenBank assembly GCA_902797575.1. The GC content of the type genome is 32.04 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Colimaria immemicula sp. nov.

Candidatus Colimaria immemicula (NL. fem. n. *immemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902779645*. The type genome for the species is the GenBank assembly GCA_902779645.1. The GC content of the type genome is 33.49 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Colimaria lametitica sp. nov.

Candidatus Colimaria lametitica (NL. fem. n. *lametitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp900553895*. The type genome for the species is the GenBank assembly GCA_900553895.1. The GC content of the type genome is 33.34 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Colimaria lapilugo sp. nov.

Candidatus Colimaria lapilugo (NL. fem. n. *lapilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902802935*. The type genome for the species is the GenBank assembly GCA_902802935.1. The GC content of the type genome is 32.93 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Colimaria levidago sp. nov.

Candidatus Colimaria levidago (NL. fem. n. *levidago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp900321205*. The type genome for the species is the GenBank assembly GCA_902755385.1. The GC content of the type genome is 35.51 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Colimaria notacimonas sp. nov.

Candidatus Colimaria notacimonas (NL. fem. n. *notacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902788575*. The type genome for the species is the GenBank assembly GCA_902788575.1. The GC content of the type genome is 34.67 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Colimaria valefimonas sp. nov.

Candidatus Colimaria valefimonas (NL. fem. n. *valefimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp902763805*. The type genome for the species is the GenBank assembly GCA_902763805.1. The GC content of the type genome is 35.63 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Colimaria vilipimonia sp. nov.

Candidatus Colimaria vilipimonia (NL. fem. n. *vilipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp900549855*. The type genome for the species is the GenBank assembly RS_GCF_900771885.1. The GC content of the type genome is 33.4 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Colimaria vinulilenta sp. nov.

Candidatus Colimaria vinulilenta (NL. fem. n. *vinulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-196 sp002102975*. The type genome for the species is the GenBank assembly GCA_001917235.1. The GC content of the type genome is 35.25 % and the genome length is 2.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Colimella altivimonas sp. nov.

Candidatus Colimella altivimonas (NL. fem. n. *altivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7883 sp002500605*. The type genome for the species is the GenBank assembly GCA_002500605.1. The GC content of the type genome is 40.99 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Colimella gen. nov.

Candidatus Colimella (NL. fem. n. *Colimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7883*. The type species for the genus is *Candidatus* Colimella altivimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7883*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimellaceae.

Description of *Candidatus* Colimellaceae fam. nov.

Candidatus Colimellaceae (NL. fem. n. *Colimellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7883.* The type genus for the taxon is *Candidatus* Colimella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7883*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colimellales.

Description of *Candidatus* Colimellales ord. nov.

Candidatus Colimellales (NL. fem. n. *Colimellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7883.* The type genus for the taxon is *Candidatus* Colimella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA7883*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Colimellae.

Description of *Candidatus* Colimellae class. nov.

Candidatus Colimellae (NL. fem. n. *c__Colimellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7883.* The type genus for the taxon is *Candidatus* Colimella .

According to GTDB R06-RS202, this class belongs to the phylum *Nitrospinota*.

Description of *Candidatus* Colimia taxilibra sp. nov.

Candidatus Colimia taxilibra (NL. fem. n. *taxilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTHC01 sp011334845*. The type genome for the species is the

GenBank assembly GCA_011334845.1. The GC content of the type genome is 45.33 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Colimia gen. nov.

Candidatus Colimia (NL. fem. n. *Colimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTHC01*. The type species for the genus is *Candidatus* Colimia taxilibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTHC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimiaceae.

Description of *Candidatus* Colimiaceae fam. nov.

Candidatus Colimiaceae (NL. fem. n. *Colimiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTHC01*. The type genus for the taxon is *Candidatus* Colimia .

According to GTDB R06-RS202, this family belongs to the order *Desulfatiglandales*.

Description of *Candidatus* Colimida revulitia sp. nov.

Candidatus Colimida revulitia (NL. fem. n. *revulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *42-11 sp001508835*. The type genome for the species is the GenBank assembly GCA_014360295.1. The GC content of the type genome is 42.43 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Colimida gen. nov.

Candidatus Colimida (NL. fem. n. *Colimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *42-11*. The type species for the genus is *Candidatus* Colimida revulitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Dehisanaceae.

Description of *Candidatus* Colimosa cobalifica sp. nov.

Candidatus Colimosa cobalifica (NL. fem. n. *cobalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005881175*. The type genome for the species is the GenBank assembly GCA_005881175.1. The GC content of the type genome is 65.12 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Colimosa gen. nov.

Candidatus Colimosa (NL. fem. n. *Colimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-13*. The type species for the genus is *Candidatus* Colimosa cobalifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CF-121*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Haluculaceae.

Description of *Candidatus* Colimosa cocibicula sp. nov.

Candidatus Colimosa cocibicula (NL. fem. n. *cocibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005880395*. The type genome for the species is the GenBank assembly GCA_005882575.1. The GC content of the type genome is 64.77 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Colimosa cohoribra sp. nov.

Candidatus Colimosa cohoribra (NL. fem. n. *cohoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005881715*. The type genome for the species is the GenBank assembly GCA_005882725.1. The GC content of the type genome is 65.68 % and the

genome length is 2.76 Mbp.

Description of *Candidatus* Colimosa conopisca sp. nov.

Candidatus Colimosa conopisca (NL. fem. n. *conopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005882525*. The type genome for the species is the GenBank assembly GCA_005879715.1. The GC content of the type genome is 66.33 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Colimosa cucurimonas sp. nov.

Candidatus Colimosa cucurimonas (NL. fem. n. *cucurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005889395*. The type genome for the species is the GenBank assembly GCA_005889395.1. The GC content of the type genome is 65.95 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Colimosa epicrigena sp. nov.

Candidatus Colimosa epicrigena (NL. fem. n. *epicrigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005881215*. The type genome for the species is the GenBank assembly GCA_005881215.1. The GC content of the type genome is 66.08 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Colimosa exturilenta sp. nov.

Candidatus Colimosa exturilenta (NL. fem. n. *exturilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005889225*. The type genome for the species is the GenBank assembly GCA_005889225.1. The GC content of the type genome is 65.63 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Colimosa inlibitudo sp. nov.

Candidatus Colimosa inlibitudo (NL. fem. n. *inlibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005889285*. The type genome for the species is the GenBank assembly GCA_005889285.1. The GC content of the type genome is 66.01 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Colimosa parocitudo sp. nov.

Candidatus Colimosa parocitudo (NL. fem. n. *parocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005882045*. The type genome for the species is the GenBank assembly GCA_005882045.1. The GC content of the type genome is 65.62 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Colimosa patibitas sp. nov.

Candidatus Colimosa patibitas (NL. fem. n. *patibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005889535*. The type genome for the species is the GenBank assembly GCA_005889535.1. The GC content of the type genome is 65.58 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Colimosa peropugo sp. nov.

Candidatus Colimosa peropugo (NL. fem. n. *peropugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005881235*. The type genome for the species is the GenBank assembly GCA_005881235.1. The GC content of the type genome is 65.99 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Colimosa redacitura sp. nov.

Candidatus Colimosa redacitura (NL. fem. n. *redacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005880875*. The type genome for the species is the GenBank assembly GCA_005887655.1. The GC content of the type genome is 66.24 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Colimosa resupilenta sp. nov.

Candidatus Colimosa resupilenta (NL. fem. n. *resupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005889345*. The type genome for the species is the GenBank assembly GCA_005889345.1. The GC content of the type genome is 65.78 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Colimosa vepalilenta sp. nov.

Candidatus Colimosa vepalilenta (NL. fem. n. *vepalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-13 sp005880605*. The type genome for the species is the GenBank assembly GCA_005889525.1. The GC content of the type genome is 65.62 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Colimula cadavitia sp. nov.

Candidatus Colimula cadavitia (NL. fem. n. *cadavitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2206 sp002772115*. The type genome for the species is the GenBank assembly GCA_002772115.1. The GC content of the type genome is 34.67 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Colimula gen. nov.

Candidatus Colimula (NL. fem. n. *Colimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2206*. The type species for the genus is *Candidatus* Colimula cadavitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Colimulaceae fam. nov.

Candidatus Colimulaceae (NL. fem. n. *Colimulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2206.* The type genus for the taxon is *Candidatus* Colimula .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Colimula epistastra sp. nov.

Candidatus Colimula epistastra (NL. fem. n. *epistastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2206 sp002400405*. The type genome for the species is the GenBank assembly GCA_002400405.1. The GC content of the type genome is 35.48 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Colimula hirudisca sp. nov.

Candidatus Colimula hirudisca (NL. fem. n. *hirudisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2206 sp003483065*. The type genome for the species is the GenBank assembly GCA_003512165.1. The GC content of the type genome is 35.96 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Colimula refacessa sp. nov.

Candidatus Colimula refacessa (NL. fem. n. *refacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2206 sp002328565*. The type genome for the species is the GenBank assembly GCA_002328565.1. The GC content of the type genome is 35.68 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Colimula viripifica sp. nov.

Candidatus Colimula viripifica (NL. fem. n. *viripifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2206 sp001784805*. The type genome for the species is the GenBank assembly GCA_000990805.1. The GC content of the type genome is 34.98 % and the genome length is 0.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Colipana artocastra sp. nov.

Candidatus Colipana artocastra (NL. fem. n. *artocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JADDFT01 sp013152765*. The type genome for the species is the GenBank assembly GCA_013152765.1. The GC content of the type genome is 60.31 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Colipana gen. nov.

Candidatus Colipana (NL. fem. n. *Colipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JADDFT01*. The type species for the genus is *Candidatus* Colipana artocastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JADDFT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipanaceae.

Description of *Candidatus* Colipanaceae fam. nov.

Candidatus Colipanaceae (NL. fem. n. *Colipanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JADDFT01.* The type genus for the taxon is *Candidatus* Colipana .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACIZP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Telegellales.

Description of *Candidatus* Coliparia bucolimonia sp. nov.

Candidatus Coliparia bucolimonia (NL. fem. n. *bucolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-272 sp000433515*. The type genome for the species is the GenBank assembly GCA_000433515.1. The GC content of the type genome is 52.16 % and the genome length is 2.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Coliparia gen. nov.

Candidatus Coliparia (NL. fem. n. *Coliparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-272*. The type species for the genus is *Candidatus* Coliparia bucolimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Colipariaceae fam. nov.

Candidatus Colipariaceae (NL. fem. n. *Colipariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-272.* The type genus for the taxon is *Candidatus* Coliparia .

According to GTDB R06-RS202, this family belongs to the order *Oscillospirales*.

Description of *Candidatus* Coliparia insomibula sp. nov.

Candidatus Coliparia insomibula (NL. fem. n. *insomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-272 sp900556615*. The type genome for the species is the GenBank assembly GCA_900556615.1. The GC content of the type genome is 43.08 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Colipella semimugo sp. nov.

Candidatus Colipella semimugo (NL. fem. n. *semimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACEG01 sp011682665*. The type genome for the species is the GenBank assembly GCA_011682665.1. The GC content of the type genome is 29.17 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Colipella gen. nov.

Candidatus Colipella (NL. fem. n. *Colipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACEG01*. The type species for the genus is *Candidatus* Colipella semimugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACEG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipellaceae.

Description of *Candidatus* Colipellaceae fam. nov.

Candidatus Colipellaceae (NL. fem. n. *Colipellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAACEG01.* The type genus for the taxon is *Candidatus* Colipella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAACEG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colipellales.

Description of *Candidatus* Colipellales ord. nov.

Candidatus Colipellales (NL. fem. n. *Colipellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAACEG01.* The type genus for the taxon is *Candidatus* Colipella .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Colipia adsicitrix sp. nov.

Candidatus Colipia adsicitrix (NL. fem. n. *adsicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-26 sp003599815*. The type genome for the species is the GenBank assembly GCA_003599815.1. The GC content of the type genome is 44.62 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Colipia gen. nov.

Candidatus Colipia (NL. fem. n. *Colipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-26*. The type species for the genus is *Candidatus* Colipia adsicitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipiaceae.

Description of *Candidatus* Colipiaceae fam. nov.

Candidatus Colipiaceae (NL. fem. n. *Colipiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-26.* The type genus for the taxon is *Candidatus* Colipia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SURF-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colipiales.

Description of *Candidatus* Colipiales ord. nov.

Candidatus Colipiales (NL. fem. n. *Colipiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-26.* The type genus for the taxon is *Candidatus* Colipia .

According to the original version of GTDB R06-RS202, this family belongs to the class *SURF-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Colipiae.

Description of *Candidatus* Colipiae class. nov.

Candidatus Colipiae (NL. fem. n. *c__Colipiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-26.* The type genus for the taxon is *Candidatus* Colipia .

According to GTDB R06-RS202, this class belongs to the phylum *Aureabacteria*.

Description of *Candidatus* Colipida bicalicula sp. nov.

Candidatus Colipida bicalicula (NL. fem. n. *bicalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7971 sp002686885*. The type genome for the species is the GenBank assembly GCA_003500775.1. The GC content of the type genome is 53.53 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Colipida gen. nov.

Candidatus Colipida (NL. fem. n. *Colipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7971*. The type species for the genus is *Candidatus* Colipida bicalicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AAA164-E04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recomosaceae.

Description of *Candidatus* Coliposa tenemessa sp. nov.

Candidatus Coliposa tenemessa (NL. fem. n. *tenemessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NDHX01 sp013626165*. The type genome for the species is the GenBank assembly GCA_013626165.1. The GC content of the type genome is 37.82 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Coliposa gen. nov.

Candidatus Coliposa (NL. fem. n. *Coliposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NDHX01*. The type species for the genus is *Candidatus* Coliposa tenemessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NDHX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coliposaceae.

Description of *Candidatus* Coliposaceae fam. nov.

Candidatus Coliposaceae (NL. fem. n. *Coliposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NDHX01.* The type genus for the taxon is *Candidatus* Coliposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *NDHX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Coliposales.

Description of *Candidatus* Coliposales ord. nov.

Candidatus Coliposales (NL. fem. n. *Coliposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NDHX01.* The type genus for the taxon is *Candidatus* Coliposa .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Colipula aciscilega sp. nov.

Candidatus Colipula aciscilega (NL. fem. n. *aciscilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FW602-bin22 sp004297775*. The type genome for the species is the GenBank assembly GCA_004297775.1. The GC content of the type genome is 65.31 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Colipula gen. nov.

Candidatus Colipula (NL. fem. n. *Colipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FW602-bin22*. The type species for the genus is *Candidatus* Colipula aciscilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FW602-bin22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipulaceae.

Description of *Candidatus* Colipulaceae fam. nov.

Candidatus Colipulaceae (NL. fem. n. *Colipulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FW602-bin22.* The type genus for the taxon is *Candidatus* Colipula .

According to the original version of GTDB R06-RS202, this family belongs to the order *FW602-bin22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colipulales.

Description of *Candidatus* Colipulales ord. nov.

Candidatus Colipulales (NL. fem. n. *Colipulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FW602-bin22.* The type genus for the taxon is *Candidatus* Colipula .

According to the original version of GTDB R06-RS202, this family belongs to the class *FW602-bin22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Colipulae.

Description of *Candidatus* Colipulae class. nov.

Candidatus Colipulae (NL. fem. n. *c__Colipulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FW602-bin22.* The type genus for the taxon is *Candidatus* Colipula .

According to GTDB R06-RS202, this class belongs to the phylum *Chloroflexota*.

Description of *Candidatus* Collimonas capilibula sp. nov.

Candidatus Collimonas capilibula (NL. fem. n. *capilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collimonas sp900112135*. The type genome for the species is the GenBank assembly RS_GCF_007829005.1. The GC content of the type genome is 59.83 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Collimonas cerifivita sp. nov.

Candidatus Collimonas cerifivita (NL. fem. n. *cerifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collimonas sp900111995*. The type genome for the species is the GenBank assembly RS_GCF_900111995.1. The GC content of the type genome is 56.02 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Collimonas feculastra sp. nov.

Candidatus Collimonas feculastra (NL. fem. n. *feculastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collimonas sp002325825*. The type genome for the species is the GenBank assembly GCA_002325825.1. The GC content of the type genome is 52.59 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Collimonas negiditica sp. nov.

Candidatus Collimonas negiditica (NL. fem. n. *negiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collimonas sp900113705*. The type genome for the species is the GenBank assembly RS_GCF_900113705.1. The GC content of the type genome is 55.99 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Collimonas risibedo sp. nov.

Candidatus Collimonas risibedo (NL. fem. n. *risibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collimonas sp900107095*. The type genome for the species is the GenBank assembly RS_GCF_900107095.1. The GC content of the type genome is 57.04 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Collimonas uxorcedo sp. nov.

Candidatus Collimonas uxorcedo (NL. fem. n. *uxorcedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collimonas sp002564105*. The type genome for the species is the GenBank assembly RS_GCF_002564105.1. The GC content of the type genome is 58.73 % and the genome length is 5.95 Mbp.

Description of *Candidatus* Collinsella abhinetta sp. nov.

Candidatus Collinsella abhinetta (NL. fem. n. *abhinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900547805*. The type genome for the species is the GenBank assembly GCA_900547805.1. The GC content of the type genome is 60.54 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Collinsella abpatisca sp. nov.

Candidatus Collinsella abpatisca (NL. fem. n. *abpatisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554325*. The type genome for the species is the GenBank assembly GCA_900554325.1. The GC content of the type genome is 59.75 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Collinsella acistibula sp. nov.

Candidatus Collinsella acistibula (NL. fem. n. *acistibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900549245*. The type genome for the species is the GenBank assembly GCA_900549245.1. The GC content of the type genome is 59.94 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Collinsella acrimitrix sp. nov.

Candidatus Collinsella acrimitrix (NL. fem. n. *acrimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900762345*. The type genome for the species is the GenBank assembly GCA_900762345.1. The GC content of the type genome is 59.87 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Collinsella acrobisca sp. nov.

Candidatus Collinsella acrobisca (NL. fem. n. *acrobisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540875*. The type genome for the species is the GenBank assembly GCA_900540875.1. The GC content of the type genome is 59.93 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Collinsella acrobitia sp. nov.

Candidatus Collinsella acrobitia (NL. fem. n. *acrobitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900547505*. The type genome for the species is the GenBank assembly GCA_900547505.1. The GC content of the type genome is 59.89 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Collinsella adcomitas sp. nov.

Candidatus Collinsella adcomitas (NL. fem. n. *adcomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544645*. The type genome for the species is the GenBank assembly GCA_900544645.1. The GC content of the type genome is 60.31 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Collinsella adessatio sp. nov.

Candidatus Collinsella adessatio (NL. fem. n. *adessatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900547855*. The type genome for the species is the GenBank assembly GCA_900547855.1. The GC content of the type genome is 60.08 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Collinsella adfunatio sp. nov.

Candidatus Collinsella adfunatio (NL. fem. n. *adfunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900767675*. The type genome for the species is the GenBank assembly GCA_900767675.1. The GC content of the type genome is 60.01 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Collinsella adgubitica sp. nov.

Candidatus Collinsella adgubitica (NL. fem. n. *adgubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900760325*. The type genome for the species is the GenBank assembly GCA_900760325.1. The GC content of the type genome is 59.73 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella adhoritudo sp. nov.

Candidatus Collinsella adhoritudo (NL. fem. n. *adhoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900555815*. The type genome for the species is the GenBank assembly GCA_900555815.1. The GC content of the type genome is 60.32 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Collinsella adhoritura sp. nov.

Candidatus Collinsella adhoritura (NL. fem. n. *adhoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552295*. The type genome for the species is the GenBank assembly GCA_900552295.1. The GC content of the type genome is 59.97 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Collinsella adlenibra sp. nov.

Candidatus Collinsella adlenibra (NL. fem. n. *adlenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900556285*. The type genome for the species is the GenBank assembly GCA_900556285.1. The GC content of the type genome is 59.81 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Collinsella adlenitura sp. nov.

Candidatus Collinsella adlenitura (NL. fem. n. *adlenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757595*. The type genome for the species is the GenBank assembly GCA_900757595.1. The GC content of the type genome is 59.84 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Collinsella adluvago sp. nov.

Candidatus Collinsella adluvago (NL. fem. n. *adluvago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551365*. The type genome for the species is the GenBank assembly GCA_900551365.1. The GC content of the type genome is 60.1 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Collinsella admuredo sp. nov.

Candidatus Collinsella admuredo (NL. fem. n. *admuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900762355*. The type genome for the species is the GenBank assembly GCA_900762355.1. The GC content of the type genome is 60.25 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Collinsella adnepitrix sp. nov.

Candidatus Collinsella adnepitrix (NL. fem. n. *adnepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900759435*. The type genome for the species is the GenBank assembly GCA_900759435.1. The GC content of the type genome is 60.43 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Collinsella adnilitia sp. nov.

Candidatus Collinsella adnilitia (NL. fem. n. *adnilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542555*. The type genome for the species is the GenBank assembly GCA_900542555.1. The GC content of the type genome is 59.88 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Collinsella adpagitas sp. nov.

Candidatus Collinsella adpagitas (NL. fem. n. *adpagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900557455*. The type genome for the species is the GenBank assembly GCA_900557455.1. The GC content of the type genome is 59.86 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Collinsella adpinastra sp. nov.

Candidatus Collinsella adpinastra (NL. fem. n. *adpinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900768265*. The type genome for the species is the GenBank assembly GCA_900768265.1. The GC content of the type genome is 60.27 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Collinsella adsecetta sp. nov.

Candidatus Collinsella adsecetta (NL. fem. n. *adsecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554495*. The type genome for the species is the GenBank assembly GCA_900554495.1. The GC content of the type genome is 60.29 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Collinsella adtagousia sp. nov.

Candidatus Collinsella adtagousia (NL. fem. n. *adtagousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541135*. The type genome for the species is the GenBank assembly GCA_900541135.1. The GC content of the type genome is 60.01 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Collinsella adtemastra sp. nov.

Candidatus Collinsella adtemastra (NL. fem. n. *adtemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900764025*. The type genome for the species is the GenBank assembly GCA_900764025.1. The GC content of the type genome is 60.9 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Collinsella adtilitudo sp. nov.

Candidatus Collinsella adtilitudo (NL. fem. n. *adtilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757385*. The type genome for the species is the GenBank assembly GCA_900757385.1. The GC content of the type genome is 60.21 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Collinsella adtolicella sp. nov.

Candidatus Collinsella adtolicella (NL. fem. n. *adtolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900555745*. The type genome for the species is the GenBank assembly GCA_900555745.1. The GC content of the type genome is 60.5 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Collinsella affamitica sp. nov.

Candidatus Collinsella affamitica (NL. fem. n. *affamitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554255*. The type genome for the species is the GenBank assembly GCA_900554255.1. The GC content of the type genome is 60.56 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Collinsella aglasitio sp. nov.

Candidatus Collinsella aglasitio (NL. fem. n. *aglasitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900752275*. The type genome for the species is the GenBank assembly GCA_900752275.1. The GC content of the type genome is 60.22 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Collinsella agnicatica sp. nov.

Candidatus Collinsella agnicatica (NL. fem. n. *agnicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541025*. The type genome for the species is the GenBank assembly GCA_900541025.1. The GC content of the type genome is 60.15 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Collinsella agravibula sp. nov.

Candidatus Collinsella agravibula (NL. fem. n. *agravibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900541665*. The type genome for the species is the GenBank assembly GCA_900541665.1. The GC content of the type genome is 59.96 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Collinsella agricitio sp. nov.

Candidatus Collinsella agricitio (NL. fem. n. *agricitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551625*. The type genome for the species is the GenBank assembly GCA_900551625.1. The GC content of the type genome is 60.34 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Collinsella albogetta sp. nov.

Candidatus Collinsella albogetta (NL. fem. n. *albogetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549535*. The type genome for the species is the GenBank assembly GCA_900549535.1. The GC content of the type genome is 60.25 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Collinsella alcedifica sp. nov.

Candidatus Collinsella alcedifica (NL. fem. n. *alcedifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900556675*. The type genome for the species is the GenBank assembly GCA_900556675.1. The GC content of the type genome is 60.21 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Collinsella allobitudo sp. nov.

Candidatus Collinsella allobitudo (NL. fem. n. *allobitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900553935*. The type genome for the species is the GenBank assembly GCA_900553935.1. The GC content of the type genome is 59.56 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Collinsella allubibra sp. nov.

Candidatus Collinsella allubibra (NL. fem. n. *allubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900751695*. The type genome for the species is the GenBank assembly GCA_900751695.1. The GC content of the type genome is 60.0 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Collinsella alsisitura sp. nov.

Candidatus Collinsella alsisitura (NL. fem. n. *alsisitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900550785*. The type genome for the species is the GenBank assembly GCA_900550785.1. The GC content of the type genome is 60.07 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Collinsella amercibula sp. nov.

Candidatus Collinsella amercibula (NL. fem. n. *amercibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554585*. The type genome for the species is the GenBank assembly GCA_900554585.1. The GC content of the type genome is 60.16 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Collinsella ammurago sp. nov.

Candidatus Collinsella ammurago (NL. fem. n. *ammurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900553345*. The type genome for the species is the GenBank assembly GCA_900553345.1. The GC content of the type genome is 59.73 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Collinsella ampenatio sp. nov.

Candidatus Collinsella ampenatio (NL. fem. n. *ampenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900548075*. The type genome for the species is the GenBank assembly GCA_900548075.1. The GC content of the type genome is 60.35 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Collinsella ancepentia sp. nov.

Candidatus Collinsella ancepentia (NL. fem. n. *ancepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900768795*. The type genome for the species is the GenBank assembly GCA_900768795.1. The GC content of the type genome is 58.02 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Collinsella aneclitura sp. nov.

Candidatus Collinsella aneclitura (NL. fem. n. *aneclitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900547025*. The type genome for the species is the GenBank assembly GCA_900547025.1. The GC content of the type genome is 60.11 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Collinsella anxifastra sp. nov.

Candidatus Collinsella anxifastra (NL. fem. n. *anxifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545745*. The type genome for the species is the GenBank assembly GCA_900545745.1. The GC content of the type genome is 60.35 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Collinsella apporitura sp. nov.

Candidatus Collinsella apporitura (NL. fem. n. *apporitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900757505*. The type genome for the species is the GenBank assembly GCA_900757505.1. The GC content of the type genome is 59.92 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Collinsella apposetta sp. nov.

Candidatus Collinsella apposetta (NL. fem. n. *apposetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542305*. The type genome for the species is the GenBank assembly GCA_900542305.1. The GC content of the type genome is 59.85 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Collinsella apposugo sp. nov.

Candidatus Collinsella apposugo (NL. fem. n. *apposugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900761615*. The type genome for the species is the GenBank assembly GCA_900761615.1. The GC content of the type genome is 60.13 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Collinsella aprariforma sp. nov.

Candidatus Collinsella aprariforma (NL. fem. n. *aprariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542905*. The type genome for the species is the GenBank assembly GCA_900542905.1. The GC content of the type genome is 59.96 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Collinsella apsimibula sp. nov.

Candidatus Collinsella apsimibula (NL. fem. n. *apsimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900766165*. The type genome for the species is the GenBank assembly GCA_900766165.1. The GC content of the type genome is 59.8 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Collinsella arcelentia sp. nov.

Candidatus Collinsella arcelentia (NL. fem. n. *arcelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551975*. The type genome for the species is the GenBank assembly GCA_900551975.1. The GC content of the type genome is 59.91 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Collinsella armigicella sp. nov.

Candidatus Collinsella armigicella (NL. fem. n. *armigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900765115*. The type genome for the species is the GenBank assembly GCA_900765115.1. The GC content of the type genome is 60.08 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Collinsella arrugilenta sp. nov.

Candidatus Collinsella arrugilenta (NL. fem. n. *arrugilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900546825*. The type genome for the species is the GenBank assembly GCA_900546825.1. The GC content of the type genome is 60.21 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Collinsella aruspicula sp. nov.

Candidatus Collinsella aruspicula (NL. fem. n. *aruspicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545055*. The type genome for the species is the GenBank assembly GCA_900545055.1. The GC content of the type genome is 60.03 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Collinsella atrusugo sp. nov.

Candidatus Collinsella atrusugo (NL. fem. n. *atrusugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900550355*. The type genome for the species is the GenBank assembly GCA_900550355.1. The GC content of the type genome is 59.96 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Collinsella baditiforma sp. nov.

Candidatus Collinsella baditiforma (NL. fem. n. *baditiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900557505*. The type genome for the species is the GenBank assembly GCA_900557505.1. The GC content of the type genome is 59.89 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Collinsella baropitas sp. nov.

Candidatus Collinsella baropitas (NL. fem. n. *baropitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900556605*. The type genome for the species is the GenBank assembly GCA_900556605.1. The GC content of the type genome is 60.31 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Collinsella benemax sp. nov.

Candidatus Collinsella benemax (NL. fem. n. *benemax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900548515*. The type genome for the species is the GenBank assembly GCA_900548515.1. The GC content of the type genome is 60.29 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Collinsella benevibula sp. nov.

Candidatus Collinsella benevibula (NL. fem. n. *benevibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900544865*. The type genome for the species is the GenBank assembly GCA_900544865.1. The GC content of the type genome is 59.78 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Collinsella benifitio sp. nov.

Candidatus Collinsella benifitio (NL. fem. n. *benifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551205*. The type genome for the species is the GenBank assembly GCA_900542075.1. The GC content of the type genome is 59.59 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Collinsella bicaliforma sp. nov.

Candidatus Collinsella bicaliforma (NL. fem. n. *bicaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003469185*. The type genome for the species is the GenBank assembly RS_GCF_003469185.1. The GC content of the type genome is 59.5 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Collinsella bifisilega sp. nov.

Candidatus Collinsella bifisilega (NL. fem. n. *bifisilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541205*. The type genome for the species is the GenBank assembly GCA_900541205.1. The GC content of the type genome is 59.87 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Collinsella bimetitica sp. nov.

Candidatus Collinsella bimetitica (NL. fem. n. *bimetitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900550815*. The type genome for the species is the GenBank assembly GCA_900550815.1. The GC content of the type genome is 60.16 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Collinsella bimotatio sp. nov.

Candidatus Collinsella bimotatio (NL. fem. n. *bimotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554665*. The type genome for the species is the GenBank assembly GCA_900554665.1. The GC content of the type genome is 60.38 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Collinsella bimotitica sp. nov.

Candidatus Collinsella bimotitica (NL. fem. n. *bimotitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003487125*. The type genome for the species is the GenBank assembly GCA_900550515.1. The GC content of the type genome is 60.16 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Collinsella binocivita sp. nov.

Candidatus Collinsella binocivita (NL. fem. n. *binocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551635*. The type genome for the species is the GenBank assembly GCA_900755395.1. The GC content of the type genome is 59.6 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Collinsella biparicella sp. nov.

Candidatus Collinsella biparicella (NL. fem. n. *biparicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552345*. The type genome for the species is the GenBank assembly GCA_900552345.1. The GC content of the type genome is 60.13 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Collinsella bipatitura sp. nov.

Candidatus Collinsella bipatitura (NL. fem. n. *bipatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900555355*. The type genome for the species is the GenBank assembly GCA_900555355.1. The GC content of the type genome is 60.18 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Collinsella bipenetta sp. nov.

Candidatus Collinsella bipenetta (NL. fem. n. *bipenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp902364645*. The type genome for the species is the GenBank assembly RS_GCF_902364645.1. The GC content of the type genome is 59.95 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Collinsella bisacago sp. nov.

Candidatus Collinsella bisacago (NL. fem. n. *bisacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549185*. The type genome for the species is the GenBank assembly GCA_900549185.1. The GC content of the type genome is 60.1 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Collinsella bisulitica sp. nov.

Candidatus Collinsella bisulitica (NL. fem. n. *bisulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp002232035*. The type genome for the species is the GenBank assembly GCA_900544915.1. The GC content of the type genome is 59.93 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Collinsella bonifificа sp. nov.

Candidatus Collinsella bonifificа (NL. fem. n. *bonifificа* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900552875*. The type genome for the species is the GenBank assembly GCA_900552875.1. The GC content of the type genome is 60.08 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Collinsella buxifibra sp. nov.

Candidatus Collinsella buxifibra (NL. fem. n. *buxifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900759045*. The type genome for the species is the GenBank assembly GCA_900759045.1. The GC content of the type genome is 59.75 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Collinsella buxifilenta sp. nov.

Candidatus Collinsella buxifilenta (NL. fem. n. *buxifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549345*. The type genome for the species is the GenBank assembly GCA_900549345.1. The GC content of the type genome is 60.17 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Collinsella cacaletta sp. nov.

Candidatus Collinsella cacaletta (NL. fem. n. *cacaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549455*. The type genome for the species is the GenBank assembly GCA_900542685.1. The GC content of the type genome is 59.84 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Collinsella capilitura sp. nov.

Candidatus Collinsella capilitura (NL. fem. n. *capilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552385*. The type genome for the species is the GenBank assembly GCA_900552385.1. The GC content of the type genome is 60.04 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Collinsella casigedo sp. nov.

Candidatus Collinsella casigedo (NL. fem. n. *casigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541015*. The type genome for the species is the GenBank assembly GCA_900763515.1. The GC content of the type genome is 60.2 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Collinsella catabago sp. nov.

Candidatus Collinsella catabago (NL. fem. n. *catabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540995*. The type genome for the species is the GenBank assembly GCA_900540995.1. The GC content of the type genome is 60.17 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella catagigena sp. nov.

Candidatus Collinsella catagigena (NL. fem. n. *catagigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541695*. The type genome for the species is the GenBank assembly GCA_900541695.1. The GC content of the type genome is 59.95 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Collinsella categago sp. nov.

Candidatus Collinsella categago (NL. fem. n. *categago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003436275*. The type genome for the species is the GenBank assembly RS_GCF_902399915.1. The GC content of the type genome is 60.05 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Collinsella catocatio sp. nov.

Candidatus Collinsella catocatio (NL. fem. n. *catocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp902388345*. The type genome for the species is the GenBank assembly RS_GCF_902364355.1. The GC content of the type genome is 59.82 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Collinsella ceracimonia sp. nov.

Candidatus Collinsella ceracimonia (NL. fem. n. *ceracimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551815*. The type genome for the species is the GenBank assembly GCA_900551815.1. The GC content of the type genome is 60.14 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Collinsella cerevugo sp. nov.

Candidatus Collinsella cerevugo (NL. fem. n. *cerevugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540855*. The type genome for the species is the GenBank assembly GCA_900548295.1. The GC content of the type genome is 60.13 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Collinsella cerimitudo sp. nov.

Candidatus Collinsella cerimitudo (NL. fem. n. *cerimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554985*. The type genome for the species is the GenBank assembly GCA_900554985.1. The GC content of the type genome is 60.81 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Collinsella cerucitoga sp. nov.

Candidatus Collinsella cerucitoga (NL. fem. n. *cerucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900554465*. The type genome for the species is the GenBank assembly GCA_900554465.1. The GC content of the type genome is 59.93 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Collinsella cibarentia sp. nov.

Candidatus Collinsella cibarentia (NL. fem. n. *cibarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900764415*. The type genome for the species is the GenBank assembly GCA_900764415.1. The GC content of the type genome is 59.6 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Collinsella cicatitrix sp. nov.

Candidatus Collinsella cicatitrix (NL. fem. n. *cicatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900543515*. The type genome for the species is the GenBank assembly GCA_900548885.1. The GC content of the type genome is 59.94 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Collinsella cicilessa sp. nov.

Candidatus Collinsella cicilessa (NL. fem. n. *cicilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003471585*. The type genome for the species is the GenBank assembly RS_GCF_902364675.1. The GC content of the type genome is 59.66 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Collinsella ciminentia sp. nov.

Candidatus Collinsella ciminentia (NL. fem. n. *ciminentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900547765*. The type genome for the species is the GenBank assembly GCA_900547765.1. The GC content of the type genome is 60.19 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Collinsella codifivita sp. nov.

Candidatus Collinsella codifivita (NL. fem. n. *codifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549025*. The type genome for the species is the GenBank assembly GCA_900549025.1. The GC content of the type genome is 60.02 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Collinsella cohorimonas sp. nov.

Candidatus Collinsella cohorimonas (NL. fem. n. *cohorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541645*. The type genome for the species is the GenBank assembly GCA_900544895.1. The GC content of the type genome is 59.7 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Collinsella colipastra sp. nov.

Candidatus Collinsella colipastra (NL. fem. n. *colipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542275*. The type genome for the species is the GenBank assembly GCA_900756965.1. The GC content of the type genome is 59.9 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Collinsella colipibula sp. nov.

Candidatus Collinsella colipibula (NL. fem. n. *colipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542125*. The type genome for the species is the GenBank assembly GCA_900542125.1. The GC content of the type genome is 60.07 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Collinsella colopatio sp. nov.

Candidatus Collinsella colopatio (NL. fem. n. *colopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900556515*. The type genome for the species is the GenBank assembly GCA_900556515.1. The GC content of the type genome is 59.99 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Collinsella colopimonas sp. nov.

Candidatus Collinsella colopimonas (NL. fem. n. *colopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541055*. The type genome for the species is the GenBank assembly GCA_900541005.1. The GC content of the type genome is 60.07 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Collinsella conabimonia sp. nov.

Candidatus Collinsella conabimonia (NL. fem. n. *conabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900553215*. The type genome for the species is the GenBank assembly GCA_902406275.1. The GC content of the type genome is 59.84 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Collinsella conifago sp. nov.

Candidatus Collinsella conifago (NL. fem. n. *conifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544755*. The type genome for the species is the GenBank assembly GCA_900544755.1. The GC content of the type genome is 60.0 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella conifigena sp. nov.

Candidatus Collinsella conifigena (NL. fem. n. *conifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900541185*. The type genome for the species is the GenBank assembly GCA_900541185.1. The GC content of the type genome is 59.98 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Collinsella conigitica sp. nov.

Candidatus Collinsella conigitica (NL. fem. n. *conigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900760245*. The type genome for the species is the GenBank assembly GCA_900760245.1. The GC content of the type genome is 60.26 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Collinsella conipitica sp. nov.

Candidatus Collinsella conipitica (NL. fem. n. *conipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003465825*. The type genome for the species is the GenBank assembly RS_GCF_003469085.1. The GC content of the type genome is 59.61 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Collinsella cosidilega sp. nov.

Candidatus Collinsella cosidilega (NL. fem. n. *cosidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900752425*. The type genome for the species is the GenBank assembly GCA_900752425.1. The GC content of the type genome is 60.19 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Collinsella cotenimonas sp. nov.

Candidatus Collinsella cotenimonas (NL. fem. n. *cotenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900758475*. The type genome for the species is the GenBank assembly GCA_900754635.1. The GC content of the type genome is 59.97 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Collinsella culibousia sp. nov.

Candidatus Collinsella culibousia (NL. fem. n. *culibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900556365*. The type genome for the species is the GenBank assembly GCA_900556365.1. The GC content of the type genome is 60.01 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Collinsella culilentia sp. nov.

Candidatus Collinsella culilentia (NL. fem. n. *culilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900761145*. The type genome for the species is the GenBank assembly GCA_900761145.1. The GC content of the type genome is 59.87 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Collinsella culilimonia sp. nov.

Candidatus Collinsella culilimonia (NL. fem. n. *culilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757465*. The type genome for the species is the GenBank assembly GCA_900757465.1. The GC content of the type genome is 59.89 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Collinsella curacigena sp. nov.

Candidatus Collinsella curacigena (NL. fem. n. *curacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549275*. The type genome for the species is the GenBank assembly GCA_900752565.1. The GC content of the type genome is 59.88 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Collinsella decacitia sp. nov.

Candidatus Collinsella decacitia (NL. fem. n. *decacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541855*. The type genome for the species is the GenBank assembly GCA_900541855.1. The GC content of the type genome is 60.25 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Collinsella decacitica sp. nov.

Candidatus Collinsella decacitica (NL. fem. n. *decacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544465*. The type genome for the species is the GenBank assembly GCA_900544465.1. The GC content of the type genome is 60.06 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Collinsella decamivita sp. nov.

Candidatus Collinsella decamivita (NL. fem. n. *decamivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544875*. The type genome for the species is the GenBank assembly GCA_900544875.1. The GC content of the type genome is 59.93 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Collinsella decapisca sp. nov.

Candidatus Collinsella decapisca (NL. fem. n. *decapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900543945*. The type genome for the species is the GenBank assembly GCA_900543945.1. The GC content of the type genome is 59.89 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Collinsella dedigilenta sp. nov.

Candidatus Collinsella dedigilenta (NL. fem. n. *dedigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900541745*. The type genome for the species is the GenBank assembly GCA_900543595.1. The GC content of the type genome is 59.81 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella defosatio sp. nov.

Candidatus Collinsella defosatio (NL. fem. n. *defosatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp002391315*. The type genome for the species is the GenBank assembly GCA_003452675.1. The GC content of the type genome is 60.04 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Collinsella defosugo sp. nov.

Candidatus Collinsella defosugo (NL. fem. n. *defosugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900754075*. The type genome for the species is the GenBank assembly GCA_900754075.1. The GC content of the type genome is 60.1 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Collinsella defulugo sp. nov.

Candidatus Collinsella defulugo (NL. fem. n. *defulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900758885*. The type genome for the species is the GenBank assembly GCA_900758885.1. The GC content of the type genome is 60.09 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Collinsella dehinitoga sp. nov.

Candidatus Collinsella dehinitoga (NL. fem. n. *dehinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003439125*. The type genome for the species is the GenBank assembly GCA_900539205.1. The GC content of the type genome is 59.78 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Collinsella delacitura sp. nov.

Candidatus Collinsella delacitura (NL. fem. n. *delacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551665*. The type genome for the species is the GenBank assembly GCA_900551665.1. The GC content of the type genome is 62.99 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Collinsella delecax sp. nov.

Candidatus Collinsella delecax (NL. fem. n. *delecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900754445*. The type genome for the species is the GenBank assembly GCA_900754445.1. The GC content of the type genome is 59.8 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Collinsella delecigena sp. nov.

Candidatus Collinsella delecigena (NL. fem. n. *delecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552425*. The type genome for the species is the GenBank assembly GCA_900552425.1. The GC content of the type genome is 60.16 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Collinsella delubetta sp. nov.

Candidatus Collinsella delubetta (NL. fem. n. *delubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554595*. The type genome for the species is the GenBank assembly GCA_900554595.1. The GC content of the type genome is 60.51 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Collinsella demigicella sp. nov.

Candidatus Collinsella demigicella (NL. fem. n. *demigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544115*. The type genome for the species is the GenBank assembly RS_GCF_003473055.1. The GC content of the type genome is 59.8 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Collinsella democax sp. nov.

Candidatus Collinsella democax (NL. fem. n. *democax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900752215*. The type genome for the species is the GenBank assembly GCA_900752215.1. The GC content of the type genome is 60.14 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Collinsella denorilenta sp. nov.

Candidatus Collinsella denorilenta (NL. fem. n. *denorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757705*. The type genome for the species is the GenBank assembly GCA_900757705.1. The GC content of the type genome is 60.1 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Collinsella denorimonas sp. nov.

Candidatus Collinsella denorimonas (NL. fem. n. *denorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541685*. The type genome for the species is the GenBank assembly GCA_900541685.1. The GC content of the type genome is 60.0 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Collinsella denupibra sp. nov.

Candidatus Collinsella denupibra (NL. fem. n. *denupibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900545165*. The type genome for the species is the GenBank assembly GCA_900545165.1. The GC content of the type genome is 60.07 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Collinsella depacitica sp. nov.

Candidatus Collinsella depacitica (NL. fem. n. *depacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900550835*. The type genome for the species is the GenBank assembly GCA_900550835.1. The GC content of the type genome is 59.88 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Collinsella depasivita sp. nov.

Candidatus Collinsella depasivita (NL. fem. n. *depasivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900761945*. The type genome for the species is the GenBank assembly GCA_900761945.1. The GC content of the type genome is 59.6 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Collinsella depecitrix sp. nov.

Candidatus Collinsella depecitrix (NL. fem. n. *depecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900556415*. The type genome for the species is the GenBank assembly GCA_900556415.1. The GC content of the type genome is 59.54 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Collinsella depicivita sp. nov.

Candidatus Collinsella depicivita (NL. fem. n. *depicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900756725*. The type genome for the species is the GenBank assembly GCA_900756725.1. The GC content of the type genome is 59.96 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Collinsella depopicula sp. nov.

Candidatus Collinsella depopicula (NL. fem. n. *depopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900761155*. The type genome for the species is the GenBank assembly GCA_900761155.1. The GC content of the type genome is 60.15 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Collinsella derecetta sp. nov.

Candidatus Collinsella derecetta (NL. fem. n. *derecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003459245*. The type genome for the species is the GenBank assembly RS_GCF_009876325.1. The GC content of the type genome is 59.87 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Collinsella derunilenta sp. nov.

Candidatus Collinsella derunilenta (NL. fem. n. *derunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900553165*. The type genome for the species is the GenBank assembly GCA_900553165.1. The GC content of the type genome is 59.35 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Collinsella desuciforma sp. nov.

Candidatus Collinsella desuciforma (NL. fem. n. *desuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541475*. The type genome for the species is the GenBank assembly GCA_900547245.1. The GC content of the type genome is 59.87 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Collinsella desuribula sp. nov.

Candidatus Collinsella desuribula (NL. fem. n. *desuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900760905*. The type genome for the species is the GenBank assembly GCA_900760905.1. The GC content of the type genome is 60.18 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Collinsella detenicella sp. nov.

Candidatus Collinsella detenicella (NL. fem. n. *detenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900556495*. The type genome for the species is the GenBank assembly GCA_900556495.1. The GC content of the type genome is 65.54 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Collinsella dibucatio sp. nov.

Candidatus Collinsella dibucatio (NL. fem. n. *dibucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541195*. The type genome for the species is the GenBank assembly GCA_900541195.1. The GC content of the type genome is 59.79 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Collinsella dicabitio sp. nov.

Candidatus Collinsella dicabitio (NL. fem. n. *dicabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900556705*. The type genome for the species is the GenBank assembly GCA_900556705.1. The GC content of the type genome is 60.26 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Collinsella dicimedo sp. nov.

Candidatus Collinsella dicimedo (NL. fem. n. *dicimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900754385*. The type genome for the species is the GenBank assembly GCA_900754385.1. The GC content of the type genome is 59.7 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Collinsella dicimibula sp. nov.

Candidatus Collinsella dicimibula (NL. fem. n. *dicimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900555225*. The type genome for the species is the GenBank assembly GCA_900555225.1. The GC content of the type genome is 59.92 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Collinsella dilecitio sp. nov.

Candidatus Collinsella dilecitio (NL. fem. n. *dilecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900754275*. The type genome for the species is the GenBank assembly GCA_900549575.1. The GC content of the type genome is 60.27 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Collinsella ecfacilenta sp. nov.

Candidatus Collinsella ecfacilenta (NL. fem. n. *ecfacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542825*. The type genome for the species is the GenBank assembly GCA_900542825.1. The GC content of the type genome is 59.83 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella echogifica sp. nov.

Candidatus Collinsella echogifica (NL. fem. n. *echogifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554655*. The type genome for the species is the GenBank assembly GCA_900554655.1. The GC content of the type genome is 60.66 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Collinsella edulcisca sp. nov.

Candidatus Collinsella edulcisca (NL. fem. n. *edulcisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549655*. The type genome for the species is the GenBank assembly GCA_900549655.1. The GC content of the type genome is 60.17 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Collinsella energiforma sp. nov.

Candidatus Collinsella energiforma (NL. fem. n. *energiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549195*. The type genome for the species is the GenBank assembly GCA_900549195.1. The GC content of the type genome is 60.09 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Collinsella enimvax sp. nov.

Candidatus Collinsella enimvax (NL. fem. n. *enimvax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541245*. The type genome for the species is the GenBank assembly GCA_900541245.1. The GC content of the type genome is 59.71 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Collinsella ensicitrix sp. nov.

Candidatus Collinsella ensicitrix (NL. fem. n. *ensicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544845*. The type genome for the species is the GenBank assembly GCA_900544845.1. The GC content of the type genome is 60.26 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Collinsella ensigitura sp. nov.

Candidatus Collinsella ensigitura (NL. fem. n. *ensigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552735*. The type genome for the species is the GenBank assembly GCA_900552735.1. The GC content of the type genome is 60.09 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Collinsella ephemifica sp. nov.

Candidatus Collinsella ephemifica (NL. fem. n. *ephemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551605*. The type genome for the species is the GenBank assembly GCA_900551605.1. The GC content of the type genome is 60.17 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Collinsella epigrousia sp. nov.

Candidatus Collinsella epigrousia (NL. fem. n. *epigrousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900548815*. The type genome for the species is the GenBank assembly GCA_900548815.1. The GC content of the type genome is 60.18 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Collinsella epistilenta sp. nov.

Candidatus Collinsella epistilenta (NL. fem. n. *epistilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900752015*. The type genome for the species is the GenBank assembly GCA_900752015.1. The GC content of the type genome is 60.09 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Collinsella epitritudo sp. nov.

Candidatus Collinsella epitritudo (NL. fem. n. *epitritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp902363125*. The type genome for the species is the GenBank assembly RS_GCF_902363125.1. The GC content of the type genome is 60.06 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Collinsella eviscitura sp. nov.

Candidatus Collinsella eviscitura (NL. fem. n. *eviscitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900761995*. The type genome for the species is the GenBank assembly GCA_900761995.1. The GC content of the type genome is 60.02 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Collinsella excanax sp. nov.

Candidatus Collinsella excanax (NL. fem. n. *excanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549715*. The type genome for the species is the GenBank assembly GCA_900549715.1. The GC content of the type genome is 59.84 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Collinsella excaressa sp. nov.

Candidatus Collinsella excaressa (NL. fem. n. *excaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757495*. The type genome for the species is the GenBank assembly GCA_900757495.1. The GC content of the type genome is 59.71 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Collinsella excocugo sp. nov.

Candidatus Collinsella excocugo (NL. fem. n. *excocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900755005*. The type genome for the species is the GenBank assembly GCA_900755005.1. The GC content of the type genome is 60.03 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella exorcimonas sp. nov.

Candidatus Collinsella exorcimonas (NL. fem. n. *exorcimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541795*. The type genome for the species is the GenBank assembly GCA_900541795.1. The GC content of the type genome is 60.05 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Collinsella exoscitrix sp. nov.

Candidatus Collinsella exoscitrix (NL. fem. n. *exoscitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554135*. The type genome for the species is the GenBank assembly GCA_900554135.1. The GC content of the type genome is 60.54 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Collinsella expugedo sp. nov.

Candidatus Collinsella expugedo (NL. fem. n. *expugedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900762015*. The type genome for the species is the GenBank assembly GCA_900762015.1. The GC content of the type genome is 60.52 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Collinsella exturibra sp. nov.

Candidatus Collinsella exturibra (NL. fem. n. *exturibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900555515*. The type genome for the species is the GenBank assembly GCA_900555515.1. The GC content of the type genome is 60.22 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Collinsella fetulilenta sp. nov.

Candidatus Collinsella fetulilenta (NL. fem. n. *fetulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552145*. The type genome for the species is the GenBank assembly GCA_900552145.1. The GC content of the type genome is 60.1 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Collinsella figiliforma sp. nov.

Candidatus Collinsella figiliforma (NL. fem. n. *figiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552705*. The type genome for the species is the GenBank assembly GCA_900552705.1. The GC content of the type genome is 60.29 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Collinsella futatilenta sp. nov.

Candidatus Collinsella futatilenta (NL. fem. n. *futatilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554905*. The type genome for the species is the GenBank assembly GCA_900554905.1. The GC content of the type genome is 60.05 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Collinsella gabinastra sp. nov.

Candidatus Collinsella gabinastra (NL. fem. n. *gabinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540945*. The type genome for the species is the GenBank assembly GCA_900540975.1. The GC content of the type genome is 59.61 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Collinsella gerunitica sp. nov.

Candidatus Collinsella gerunitica (NL. fem. n. *gerunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900759335*. The type genome for the species is the GenBank assembly GCA_900758255.1. The GC content of the type genome is 60.43 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Collinsella giganilega sp. nov.

Candidatus Collinsella giganilega (NL. fem. n. *giganilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541285*. The type genome for the species is the GenBank assembly GCA_900545485.1. The GC content of the type genome is 59.9 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Collinsella hibisivita sp. nov.

Candidatus Collinsella hibisivita (NL. fem. n. *hibisivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540845*. The type genome for the species is the GenBank assembly GCA_900540845.1. The GC content of the type genome is 62.35 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Collinsella hirudilenta sp. nov.

Candidatus Collinsella hirudilenta (NL. fem. n. *hirudilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544235*. The type genome for the species is the GenBank assembly GCA_900544235.1. The GC content of the type genome is 59.92 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Collinsella homulatio sp. nov.

Candidatus Collinsella homulatio (NL. fem. n. *homulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544995*. The type genome for the species is the GenBank assembly GCA_900544995.1. The GC content of the type genome is 60.0 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Collinsella homulousia sp. nov.

Candidatus Collinsella homulousia (NL. fem. n. *homulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900765185*. The type genome for the species is the GenBank assembly GCA_900765185.1. The GC content of the type genome is 59.97 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Collinsella homunilenta sp. nov.

Candidatus Collinsella homunilenta (NL. fem. n. *homunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900548255*. The type genome for the species is the GenBank assembly GCA_900548255.1. The GC content of the type genome is 60.0 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Collinsella immadibra sp. nov.

Candidatus Collinsella immadibra (NL. fem. n. *immadibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900547835*. The type genome for the species is the GenBank assembly GCA_900547835.1. The GC content of the type genome is 60.23 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Collinsella immadigena sp. nov.

Candidatus Collinsella immadigena (NL. fem. n. *immadigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545875*. The type genome for the species is the GenBank assembly GCA_900545875.1. The GC content of the type genome is 59.93 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Collinsella immedastra sp. nov.

Candidatus Collinsella immedastra (NL. fem. n. *immedastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552755*. The type genome for the species is the GenBank assembly GCA_900552755.1. The GC content of the type genome is 60.19 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Collinsella impinisca sp. nov.

Candidatus Collinsella impinisca (NL. fem. n. *impinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900546455*. The type genome for the species is the GenBank assembly GCA_900546455.1. The GC content of the type genome is 59.88 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Collinsella inargentia sp. nov.

Candidatus Collinsella inargentia (NL. fem. n. *inargentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544425*. The type genome for the species is the GenBank assembly GCA_900544425.1. The GC content of the type genome is 60.03 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Collinsella inaspitura sp. nov.

Candidatus Collinsella inaspitura (NL. fem. n. *inaspitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900759565*. The type genome for the species is the GenBank assembly GCA_900759565.1. The GC content of the type genome is 59.94 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Collinsella incunisca sp. nov.

Candidatus Collinsella incunisca (NL. fem. n. *incunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900752545*. The type genome for the species is the GenBank assembly GCA_900752545.1. The GC content of the type genome is 59.97 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Collinsella indipatica sp. nov.

Candidatus Collinsella indipatica (NL. fem. n. *indipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900543025*. The type genome for the species is the GenBank assembly GCA_900543025.1. The GC content of the type genome is 60.06 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Collinsella indomatica sp. nov.

Candidatus Collinsella indomatica (NL. fem. n. *indomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541785*. The type genome for the species is the GenBank assembly GCA_900541785.1. The GC content of the type genome is 59.88 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Collinsella inexcedo sp. nov.

Candidatus Collinsella inexcedo (NL. fem. n. *inexcedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900756765*. The type genome for the species is the GenBank assembly GCA_900756765.1. The GC content of the type genome is 59.96 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Collinsella infenilenta sp. nov.

Candidatus Collinsella infenilenta (NL. fem. n. *infenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900752475*. The type genome for the species is the GenBank assembly GCA_900752475.1. The GC content of the type genome is 60.06 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Collinsella inlusedo sp. nov.

Candidatus Collinsella inlusedo (NL. fem. n. *inlusedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757615*. The type genome for the species is the GenBank assembly GCA_900757615.1. The GC content of the type genome is 59.89 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Collinsella inmobiforma sp. nov.

Candidatus Collinsella inmobiforma (NL. fem. n. *inmobiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541715*. The type genome for the species is the GenBank assembly GCA_900541715.1. The GC content of the type genome is 59.93 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Collinsella inmodessa sp. nov.

Candidatus Collinsella inmodessa (NL. fem. n. *inmodessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900543615*. The type genome for the species is the GenBank assembly GCA_900543615.1. The GC content of the type genome is 60.2 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Collinsella inremibula sp. nov.

Candidatus Collinsella inremibula (NL. fem. n. *inremibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541045*. The type genome for the species is the GenBank assembly GCA_900541045.1. The GC content of the type genome is 59.87 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Collinsella insicifica sp. nov.

Candidatus Collinsella insicifica (NL. fem. n. *insicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544065*. The type genome for the species is the GenBank assembly GCA_900544065.1. The GC content of the type genome is 60.16 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella insopitudo sp. nov.

Candidatus Collinsella insopitudo (NL. fem. n. *insopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp008014645*. The type genome for the species is the GenBank assembly RS_GCF_008014645.1. The GC content of the type genome is 63.48 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Collinsella insubetta sp. nov.

Candidatus Collinsella insubetta (NL. fem. n. *insubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900751755*. The type genome for the species is the GenBank assembly GCA_900751755.1. The GC content of the type genome is 60.16 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Collinsella intementia sp. nov.

Candidatus Collinsella intementia (NL. fem. n. *intementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900751665*. The type genome for the species is the GenBank assembly GCA_900751665.1. The GC content of the type genome is 60.12 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Collinsella intemiforma sp. nov.

Candidatus Collinsella intemiforma (NL. fem. n. *intemiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900541675*. The type genome for the species is the GenBank assembly GCA_900541675.1. The GC content of the type genome is 59.73 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Collinsella invicousia sp. nov.

Candidatus Collinsella invicousia (NL. fem. n. *invicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp002437815*. The type genome for the species is the GenBank assembly GCA_002437815.1. The GC content of the type genome is 60.6 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Collinsella irrefitica sp. nov.

Candidatus Collinsella irrefitica (NL. fem. n. *irrefitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp000434535*. The type genome for the species is the GenBank assembly GCA_000434535.1. The GC content of the type genome is 60.05 % and the genome length is 1.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Collinsella latibitas sp. nov.

Candidatus Collinsella latibitas (NL. fem. n. *latibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554455*. The type genome for the species is the GenBank assembly RS_GCF_009875935.1. The GC content of the type genome is 60.25 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Collinsella lenimastra sp. nov.

Candidatus Collinsella lenimastra (NL. fem. n. *lenimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551655*. The type genome for the species is the GenBank assembly GCA_900551655.1. The GC content of the type genome is 60.03 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Collinsella levifago sp. nov.

Candidatus Collinsella levifago (NL. fem. n. *levifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540905*. The type genome for the species is the GenBank assembly GCA_900755625.1. The GC content of the type genome is 60.21 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Collinsella lucifitoga sp. nov.

Candidatus Collinsella lucifitoga (NL. fem. n. *lucifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900758845*. The type genome for the species is the GenBank assembly GCA_900758845.1. The GC content of the type genome is 60.01 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Collinsella lupanitoga sp. nov.

Candidatus Collinsella lupanitoga (NL. fem. n. *lupanitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544095*. The type genome for the species is the GenBank assembly GCA_900544095.1. The GC content of the type genome is 59.84 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Collinsella luxurivita sp. nov.

Candidatus Collinsella luxurivita (NL. fem. n. *luxurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541235*. The type genome for the species is the GenBank assembly GCA_900541235.1. The GC content of the type genome is 60.07 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Collinsella malivousia sp. nov.

Candidatus Collinsella malivousia (NL. fem. n. *malivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900547345*. The type genome for the species is the GenBank assembly GCA_900541115.1. The GC content of the type genome is 60.07 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Collinsella malogousia sp. nov.

Candidatus Collinsella malogousia (NL. fem. n. *malogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542235*. The type genome for the species is the GenBank assembly GCA_900542235.1. The GC content of the type genome is 60.01 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Collinsella masocedo sp. nov.

Candidatus Collinsella masocedo (NL. fem. n. *masocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542085*. The type genome for the species is the GenBank assembly GCA_900542085.1. The GC content of the type genome is 59.96 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Collinsella maxilessa sp. nov.

Candidatus Collinsella maxilessa (NL. fem. n. *maxilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540895*. The type genome for the species is the GenBank assembly GCA_900540895.1. The GC content of the type genome is 60.27 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella megaliforma sp. nov.

Candidatus Collinsella megaliforma (NL. fem. n. *megaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp003458415*. The type genome for the species is the GenBank assembly GCA_900542915.1. The GC content of the type genome is 60.07 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Collinsella megalivita sp. nov.

Candidatus Collinsella megalivita (NL. fem. n. *megalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900760215*. The type genome for the species is the GenBank assembly GCA_900760215.1. The GC content of the type genome is 60.07 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Collinsella melopugo sp. nov.

Candidatus Collinsella melopugo (NL. fem. n. *melopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544725*. The type genome for the species is the GenBank assembly GCA_900544725.1. The GC content of the type genome is 60.24 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Collinsella metabilega sp. nov.

Candidatus Collinsella metabilega (NL. fem. n. *metabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545835*. The type genome for the species is the GenBank assembly GCA_900545835.1. The GC content of the type genome is 60.18 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Collinsella metucimonia sp. nov.

Candidatus Collinsella metucimonia (NL. fem. n. *metucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542165*. The type genome for the species is the GenBank assembly GCA_900542165.1. The GC content of the type genome is 60.07 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella mimogastra sp. nov.

Candidatus Collinsella mimogastra (NL. fem. n. *mimogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549355*. The type genome for the species is the GenBank assembly GCA_900755965.1. The GC content of the type genome is 59.37 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Collinsella mirabifica sp. nov.

Candidatus Collinsella mirabifica (NL. fem. n. *mirabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003469205*. The type genome for the species is the GenBank assembly GCA_900543635.1. The GC content of the type genome is 60.14 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Collinsella molecilega sp. nov.

Candidatus Collinsella molecilega (NL. fem. n. *molecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554645*. The type genome for the species is the GenBank assembly GCA_900554645.1. The GC content of the type genome is 60.36 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Collinsella monocugo sp. nov.

Candidatus Collinsella monocugo (NL. fem. n. *monocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900555955*. The type genome for the species is the GenBank assembly GCA_900756005.1. The GC content of the type genome is 58.91 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Collinsella monodisca sp. nov.

Candidatus Collinsella monodisca (NL. fem. n. *monodisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545615*. The type genome for the species is the GenBank assembly GCA_900545615.1. The GC content of the type genome is 59.85 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Collinsella monopiforma sp. nov.

Candidatus Collinsella monopiforma (NL. fem. n. *monopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541725*. The type genome for the species is the GenBank assembly GCA_900541725.1. The GC content of the type genome is 60.08 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Collinsella monumilenta sp. nov.

Candidatus Collinsella monumilenta (NL. fem. n. *monumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551555*. The type genome for the species is the GenBank assembly GCA_900551555.1. The GC content of the type genome is 59.91 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Collinsella munifastra sp. nov.

Candidatus Collinsella munifastra (NL. fem. n. *munifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900758375*. The type genome for the species is the GenBank assembly GCA_900540925.1. The GC content of the type genome is 59.78 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Collinsella myalgifica sp. nov.

Candidatus Collinsella myalgifica (NL. fem. n. *myalgifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900762325*. The type genome for the species is the GenBank assembly GCA_900762325.1. The GC content of the type genome is 60.18 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Collinsella navifedo sp. nov.

Candidatus Collinsella navifedo (NL. fem. n. *navifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900754435*. The type genome for the species is the GenBank assembly GCA_900754435.1. The GC content of the type genome is 59.51 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Collinsella necopedo sp. nov.

Candidatus Collinsella necopedo (NL. fem. n. *necopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545605*. The type genome for the species is the GenBank assembly GCA_900545605.1. The GC content of the type genome is 59.93 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella nicotimonas sp. nov.

Candidatus Collinsella nicotimonas (NL. fem. n. *nicotimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900555585*. The type genome for the species is the GenBank assembly GCA_900555585.1. The GC content of the type genome is 65.43 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Collinsella nicotitia sp. nov.

Candidatus Collinsella nicotitia (NL. fem. n. *nicotitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp002305035*. The type genome for the species is the GenBank assembly GCA_002305035.1. The GC content of the type genome is 64.53 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Collinsella nivomiforma sp. nov.

Candidatus Collinsella nivomiforma (NL. fem. n. *nivomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544225*. The type genome for the species is the GenBank assembly GCA_900544225.1. The GC content of the type genome is 59.86 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Collinsella nosocatica sp. nov.

Candidatus Collinsella nosocatica (NL. fem. n. *nosocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900755685*. The type genome for the species is the GenBank assembly GCA_900541765.1. The GC content of the type genome is 60.2 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Collinsella nutamitrix sp. nov.

Candidatus Collinsella nutamitrix (NL. fem. n. *nutamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549335*. The type genome for the species is the GenBank assembly GCA_900549335.1. The GC content of the type genome is 60.39 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Collinsella obfusitudo sp. nov.

Candidatus Collinsella obfusitudo (NL. fem. n. *obfusitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545075*. The type genome for the species is the GenBank assembly GCA_900545075.1. The GC content of the type genome is 59.83 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Collinsella oblucitica sp. nov.

Candidatus Collinsella oblucitica (NL. fem. n. *oblucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549215*. The type genome for the species is the GenBank assembly GCA_900549215.1. The GC content of the type genome is 59.81 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Collinsella obnupugo sp. nov.

Candidatus Collinsella obnupugo (NL. fem. n. *obnupugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900752345*. The type genome for the species is the GenBank assembly GCA_900752345.1. The GC content of the type genome is 59.65 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Collinsella obsoligena sp. nov.

Candidatus Collinsella obsoligena (NL. fem. n. *obsoligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542155*. The type genome for the species is the GenBank assembly GCA_900542155.1. The GC content of the type genome is 59.67 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Collinsella obsurimonia sp. nov.

Candidatus Collinsella obsurimonia (NL. fem. n. *obsurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900555765*. The type genome for the species is the GenBank assembly GCA_900555765.1. The GC content of the type genome is 60.44 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Collinsella obtecimonas sp. nov.

Candidatus Collinsella obtecimonas (NL. fem. n. *obtecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900556445*. The type genome for the species is the GenBank assembly GCA_900556445.1. The GC content of the type genome is 58.84 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Collinsella obveratica sp. nov.

Candidatus Collinsella obveratica (NL. fem. n. *obveratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545505*. The type genome for the species is the GenBank assembly GCA_900545505.1. The GC content of the type genome is 59.85 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Collinsella omnipicula sp. nov.

Candidatus Collinsella omnipicula (NL. fem. n. *omnipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900550415*. The type genome for the species is the GenBank assembly GCA_900550415.1. The GC content of the type genome is 60.26 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Collinsella opercilenta sp. nov.

Candidatus Collinsella opercilenta (NL. fem. n. *opercilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541885*. The type genome for the species is the GenBank assembly GCA_900541885.1. The GC content of the type genome is 59.86 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Collinsella ossaribula sp. nov.

Candidatus Collinsella ossaribula (NL. fem. n. *ossaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545995*. The type genome for the species is the GenBank assembly GCA_900545995.1. The GC content of the type genome is 60.16 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Collinsella pabilitudo sp. nov.

Candidatus Collinsella pabilitudo (NL. fem. n. *pabilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552685*. The type genome for the species is the GenBank assembly GCA_900552685.1. The GC content of the type genome is 59.87 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Collinsella papiliforma sp. nov.

Candidatus Collinsella papiliforma (NL. fem. n. *papiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900761035*. The type genome for the species is the GenBank assembly GCA_900761035.1. The GC content of the type genome is 60.33 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Collinsella papilitrix sp. nov.

Candidatus Collinsella papilitrix (NL. fem. n. *papilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900547285*. The type genome for the species is the GenBank assembly GCA_900547285.1. The GC content of the type genome is 60.18 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Collinsella papilivita sp. nov.

Candidatus Collinsella papilivita (NL. fem. n. *papilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900553705*. The type genome for the species is the GenBank assembly GCA_900553705.1. The GC content of the type genome is 60.23 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Collinsella parocicula sp. nov.

Candidatus Collinsella parocicula (NL. fem. n. *parocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542325*. The type genome for the species is the GenBank assembly GCA_900542325.1. The GC content of the type genome is 60.06 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Collinsella parocilega sp. nov.

Candidatus Collinsella parocilega (NL. fem. n. *parocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900761085*. The type genome for the species is the GenBank assembly GCA_900761085.1. The GC content of the type genome is 60.09 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Collinsella parocisca sp. nov.

Candidatus Collinsella parocisca (NL. fem. n. *parocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900547125*. The type genome for the species is the GenBank assembly GCA_900547125.1. The GC content of the type genome is 59.89 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Collinsella parocitoga sp. nov.

Candidatus Collinsella parocitoga (NL. fem. n. *parocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900550205*. The type genome for the species is the GenBank assembly GCA_900550205.1. The GC content of the type genome is 59.71 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Collinsella patibitrix sp. nov.

Candidatus Collinsella patibitrix (NL. fem. n. *patibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900546775*. The type genome for the species is the GenBank assembly GCA_900546775.1. The GC content of the type genome is 60.37 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Collinsella pavicimonia sp. nov.

Candidatus Collinsella pavicimonia (NL. fem. n. *pavicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540935*. The type genome for the species is the GenBank assembly GCA_900761805.1. The GC content of the type genome is 60.05 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Collinsella pavimitas sp. nov.

Candidatus Collinsella pavimitas (NL. fem. n. *pavimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900555555*. The type genome for the species is the GenBank assembly GCA_900555555.1. The GC content of the type genome is 60.86 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Collinsella pecunitas sp. nov.

Candidatus Collinsella pecunitas (NL. fem. n. *pecunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542965*. The type genome for the species is the GenBank assembly GCA_900542965.1. The GC content of the type genome is 60.01 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Collinsella pedepibra sp. nov.

Candidatus Collinsella pedepibra (NL. fem. n. *pedepibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544205*. The type genome for the species is the GenBank assembly GCA_900544205.1. The GC content of the type genome is 60.21 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Collinsella penecousia sp. nov.

Candidatus Collinsella penecousia (NL. fem. n. *penecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900539035*. The type genome for the species is the GenBank assembly GCA_900539035.1. The GC content of the type genome is 60.31 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Collinsella peraditia sp. nov.

Candidatus Collinsella peraditia (NL. fem. n. *peraditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900539735*. The type genome for the species is the GenBank assembly GCA_900539735.1. The GC content of the type genome is 59.84 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Collinsella progrilenta sp. nov.

Candidatus Collinsella progrilenta (NL. fem. n. *progrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757265*. The type genome for the species is the GenBank assembly GCA_900757265.1. The GC content of the type genome is 60.07 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Collinsella protressa sp. nov.

Candidatus Collinsella protressa (NL. fem. n. *protressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900764955*. The type genome for the species is the GenBank assembly GCA_900764955.1. The GC content of the type genome is 60.41 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Collinsella rarefisca sp. nov.

Candidatus Collinsella rarefisca (NL. fem. n. *rarefisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541875*. The type genome for the species is the GenBank assembly GCA_900541875.1. The GC content of the type genome is 60.07 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Collinsella recogastra sp. nov.

Candidatus Collinsella recogastra (NL. fem. n. *recogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900754525*. The type genome for the species is the GenBank assembly GCA_900754525.1. The GC content of the type genome is 59.93 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Collinsella reduvatio sp. nov.

Candidatus Collinsella reduvatio (NL. fem. n. *reduvatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003437035*. The type genome for the species is the GenBank assembly RS_GCF_902364945.1. The GC content of the type genome is 59.74 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Collinsella refinitas sp. nov.

Candidatus Collinsella refinitas (NL. fem. n. *refinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540095*. The type genome for the species is the GenBank assembly GCA_900540095.1. The GC content of the type genome is 60.26 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Collinsella refocitudo sp. nov.

Candidatus Collinsella refocitudo (NL. fem. n. *refocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900548265*. The type genome for the species is the GenBank assembly GCA_900548265.1. The GC content of the type genome is 60.3 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Collinsella regigitica sp. nov.

Candidatus Collinsella regigitica (NL. fem. n. *regigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552155*. The type genome for the species is the GenBank assembly GCA_900552155.1. The GC content of the type genome is 60.3 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Collinsella relecivita sp. nov.

Candidatus Collinsella relecivita (NL. fem. n. *relecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900556205*. The type genome for the species is the GenBank assembly GCA_900556205.1. The GC content of the type genome is 59.92 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Collinsella relenetta sp. nov.

Candidatus Collinsella relenetta (NL. fem. n. *relenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900768435*. The type genome for the species is the GenBank assembly GCA_900768435.1. The GC content of the type genome is 60.27 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Collinsella renaventia sp. nov.

Candidatus Collinsella renaventia (NL. fem. n. *renaventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900546105*. The type genome for the species is the GenBank assembly GCA_900546105.1. The GC content of the type genome is 60.03 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Collinsella repepitrix sp. nov.

Candidatus Collinsella repepitrix (NL. fem. n. *repepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900543605*. The type genome for the species is the GenBank assembly GCA_900543605.1. The GC content of the type genome is 60.14 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Collinsella retecetta sp. nov.

Candidatus Collinsella retecetta (NL. fem. n. *retecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549555*. The type genome for the species is the GenBank assembly GCA_900751935.1. The GC content of the type genome is 59.9 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Collinsella rinocitura sp. nov.

Candidatus Collinsella rinocitura (NL. fem. n. *rinocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003438495*. The type genome for the species is the GenBank assembly RS_GCF_003438495.1. The GC content of the type genome is 59.86 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Collinsella risibitas sp. nov.

Candidatus Collinsella risibitas (NL. fem. n. *risibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp902362275*. The type genome for the species is the GenBank assembly GCA_008671825.1. The GC content of the type genome is 60.04 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Collinsella rudecatio sp. nov.

Candidatus Collinsella rudecatio (NL. fem. n. *rudecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542315*. The type genome for the species is the GenBank assembly GCA_900542315.1. The GC content of the type genome is 59.87 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Collinsella rudecicella sp. nov.

Candidatus Collinsella rudecicella (NL. fem. n. *rudecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541035*. The type genome for the species is the GenBank assembly GCA_900541035.1. The GC content of the type genome is 60.03 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Collinsella rudicitia sp. nov.

Candidatus Collinsella rudicitia (NL. fem. n. *rudicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900550185*. The type genome for the species is the GenBank assembly GCA_900550185.1. The GC content of the type genome is 60.04 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Collinsella rudicitica sp. nov.

Candidatus Collinsella rudicitica (NL. fem. n. *rudicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900754745*. The type genome for the species is the GenBank assembly GCA_900762405.1. The GC content of the type genome is 60.27 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Collinsella rudicousia sp. nov.

Candidatus Collinsella rudicousia (NL. fem. n. *rudicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp003459505*. The type genome for the species is the GenBank assembly RS_GCF_003459505.1. The GC content of the type genome is 59.81 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Collinsella rurigibula sp. nov.

Candidatus Collinsella rurigibula (NL. fem. n. *rurigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541065*. The type genome for the species is the GenBank assembly GCA_900541065.1. The GC content of the type genome is 59.98 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Collinsella saburitas sp. nov.

Candidatus Collinsella saburitas (NL. fem. n. *saburitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900550825*. The type genome for the species is the GenBank assembly GCA_900550825.1. The GC content of the type genome is 60.01 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Collinsella sacopatica sp. nov.

Candidatus Collinsella sacopatica (NL. fem. n. *sacopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003470665*. The type genome for the species is the GenBank assembly RS_GCF_003470665.1. The GC content of the type genome is 59.96 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Collinsella satacitura sp. nov.

Candidatus Collinsella satacitura (NL. fem. n. *satacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900550595*. The type genome for the species is the GenBank assembly GCA_900550595.1. The GC content of the type genome is 60.11 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Collinsella saxifax sp. nov.

Candidatus Collinsella saxifax (NL. fem. n. *saxifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542635*. The type genome for the species is the GenBank assembly GCA_900755055.1. The GC content of the type genome is 60.14 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Collinsella sceptitura sp. nov.

Candidatus Collinsella sceptitura (NL. fem. n. *sceptitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900542945*. The type genome for the species is the GenBank assembly GCA_900542945.1. The GC content of the type genome is 59.83 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Collinsella semipisca sp. nov.

Candidatus Collinsella semipisca (NL. fem. n. *semipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541145*. The type genome for the species is the GenBank assembly GCA_900542885.1. The GC content of the type genome is 60.5 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Collinsella semunastra sp. nov.

Candidatus Collinsella semunastra (NL. fem. n. *semunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541125*. The type genome for the species is the GenBank assembly GCA_900541125.1. The GC content of the type genome is 59.9 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Collinsella serotugo sp. nov.

Candidatus Collinsella serotugo (NL. fem. n. *serotugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900552995*. The type genome for the species is the GenBank assembly GCA_900756015.1. The GC content of the type genome is 59.85 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Collinsella sicubigena sp. nov.

Candidatus Collinsella sicubigena (NL. fem. n. *sicubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003462685*. The type genome for the species is the GenBank assembly RS_GCF_902364115.1. The GC content of the type genome is 59.84 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Collinsella sicubitio sp. nov.

Candidatus Collinsella sicubitio (NL. fem. n. *sicubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp000763055*. The type genome for the species is the GenBank assembly RS_GCF_902375365.1. The GC content of the type genome is 60.2 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Collinsella sonivibula sp. nov.

Candidatus Collinsella sonivibula (NL. fem. n. *sonivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900551015*. The type genome for the species is the GenBank assembly GCA_900551015.1. The GC content of the type genome is 59.74 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Collinsella sotulago sp. nov.

Candidatus Collinsella sotulago (NL. fem. n. *sotulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900545555*. The type genome for the species is the GenBank assembly GCA_900545555.1. The GC content of the type genome is 60.22 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Collinsella subacilenta sp. nov.

Candidatus Collinsella subacilenta (NL. fem. n. *subacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900548365*. The type genome for the species is the GenBank assembly GCA_900548365.1. The GC content of the type genome is 64.0 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Collinsella subadatica sp. nov.

Candidatus Collinsella subadatica (NL. fem. n. *subadatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900541175*. The type genome for the species is the GenBank assembly GCA_900541225.1. The GC content of the type genome is 60.09 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Collinsella subodessa sp. nov.

Candidatus Collinsella subodessa (NL. fem. n. *subodessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003479805*. The type genome for the species is the GenBank assembly GCA_900756915.1. The GC content of the type genome is 61.61 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Collinsella tametousia sp. nov.

Candidatus Collinsella tametousia (NL. fem. n. *tametousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900548935*. The type genome for the species is the GenBank assembly GCA_900548935.1. The GC content of the type genome is 59.94 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Collinsella taxilessa sp. nov.

Candidatus Collinsella taxilessa (NL. fem. n. *taxilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900540985*. The type genome for the species is the GenBank assembly GCA_900554065.1. The GC content of the type genome is 60.4 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Collinsella taxilisca sp. nov.

Candidatus Collinsella taxilisca (NL. fem. n. *taxilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900543845*. The type genome for the species is the GenBank assembly GCA_900758135.1. The GC content of the type genome is 60.21 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Collinsella tirunatica sp. nov.

Candidatus Collinsella tirunatica (NL. fem. n. *tirunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900554155*. The type genome for the species is the GenBank assembly GCA_902406155.1. The GC content of the type genome is 59.87 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Collinsella troclago sp. nov.

Candidatus Collinsella troclago (NL. fem. n. *troclago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545445*. The type genome for the species is the GenBank assembly GCA_900545445.1. The GC content of the type genome is 60.03 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Collinsella tumefigena sp. nov.

Candidatus Collinsella tumefigena (NL. fem. n. *tumefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757285*. The type genome for the species is the GenBank assembly GCA_900757285.1. The GC content of the type genome is 59.82 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Collinsella turicitia sp. nov.

Candidatus Collinsella turicitia (NL. fem. n. *turicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900546115*. The type genome for the species is the GenBank assembly RS_GCF_003475115.1. The GC content of the type genome is 59.72 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Collinsella venabimonia sp. nov.

Candidatus Collinsella venabimonia (NL. fem. n. *venabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900549085*. The type genome for the species is the GenBank assembly GCA_900763445.1. The GC content of the type genome is 60.26 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Collinsella viburitia sp. nov.

Candidatus Collinsella viburitia (NL. fem. n. *viburitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900553415*. The type genome for the species is the GenBank assembly GCA_900553415.1. The GC content of the type genome is 60.08 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Collinsella videlitio sp. nov.

Candidatus Collinsella videlitio (NL. fem. n. *videlitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Collinsella sp900551195*. The type genome for the species is the GenBank assembly GCA_900551195.1. The GC content of the type genome is 60.25 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Collinsella viripitica sp. nov.

Candidatus Collinsella viripitica (NL. fem. n. *viripitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp003466125*. The type genome for the species is the GenBank assembly RS_GCF_003438275.1. The GC content of the type genome is 59.83 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Collinsella visibifica sp. nov.

Candidatus Collinsella visibifica (NL. fem. n. *visibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757205*. The type genome for the species is the GenBank assembly GCA_900757205.1. The GC content of the type genome is 59.79 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Collinsella visifitas sp. nov.

Candidatus Collinsella visifitas (NL. fem. n. *visifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900544135*. The type genome for the species is the GenBank assembly GCA_008680765.1. The GC content of the type genome is 60.05 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Collinsella vocamitoga sp. nov.

Candidatus Collinsella vocamitoga (NL. fem. n. *vocamitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900545905*. The type genome for the species is the GenBank assembly GCA_900545905.1. The GC content of the type genome is 60.12 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Collinsella vocifimonas sp. nov.

Candidatus Collinsella vocifimonas (NL. fem. n. *vocifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757185*. The type genome for the species is the GenBank assembly GCA_900757565.1. The GC content of the type genome is 59.79 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Collinsella xenoditia sp. nov.

Candidatus Collinsella xenoditia (NL. fem. n. *xenoditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900548565*. The type genome for the species is the GenBank assembly GCA_900548565.1. The GC content of the type genome is 60.09 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Collinsella xeramousia sp. nov.

Candidatus Collinsella xeramousia (NL. fem. n. *xeramousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Collinsella sp900757235*. The type genome for the species is the GenBank assembly GCA_900757235.1. The GC content of the type genome is 60.13 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Colopana carucago sp. nov.

Candidatus Colopana carucago (NL. fem. n. *carucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDZI01 sp902812405*. The type genome for the species is the GenBank assembly RS_GCF_902812325.1. The GC content of the type genome is 65.35 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Colopana gen. nov.

Candidatus Colopana (NL. fem. n. *Colopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDZI01*. The type species for the genus is *Candidatus* Colopana carucago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Coloparia funamax sp. nov.

Candidatus Coloparia funamax (NL. fem. n. *funamax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-35-15 sp001784585*. The type genome for the species is the GenBank assembly GCA_001786505.1. The GC content of the type genome is 34.67 % and the genome length is 2.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Coloparia gen. nov.

Candidatus Coloparia (NL. fem. n. *Coloparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-35-15*. The type species for the genus is *Candidatus* Coloparia funamax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-35-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colopariaceae.

Description of *Candidatus* Colopariaceae fam. nov.

Candidatus Colopariaceae (NL. fem. n. *Colopariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-35-15.* The type genus for the taxon is *Candidatus* Coloparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-35-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colopariales.

Description of *Candidatus* Colopariales ord. nov.

Candidatus Colopariales (NL. fem. n. *Colopariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-35-15.* The type genus for the taxon is *Candidatus* Coloparia .

According to the GTDB R06-RS202, this order belongs to the class *Vampirovibrionia*.

Description of *Candidatus* Colopella documimonas sp. nov.

Candidatus Colopella documimonas (NL. fem. n. *documimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B33-G16 sp013375335*. The type genome for the species is the GenBank assembly GCA_013375335.1. The GC content of the type genome is 49.22 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Colopella gen. nov.

Candidatus Colopella (NL. fem. n. *Colopella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B33-G16*. The type species for the genus is *Candidatus* Colopella documimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B25-G16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicodulaceae.

Description of *Candidatus* Colopella dupunivita sp. nov.

Candidatus Colopella dupunivita (NL. fem. n. *dupunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B33-G16 sp003646875*. The type genome for the species is the GenBank assembly GCA_011040805.1. The GC content of the type genome is 41.69 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Colopella obtenimonas sp. nov.

Candidatus Colopella obtenimonas (NL. fem. n. *obtenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B33-G16 sp013375385*. The type genome for the species is the GenBank assembly GCA_013375385.1. The GC content of the type genome is 48.05 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Colopia subinibra sp. nov.

Candidatus Colopia subinibra (NL. fem. n. *subinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDEE01 sp013287205*. The type genome for the species is the GenBank assembly GCA_013287615.1. The GC content of the type genome is 48.67 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Colopia gen. nov.

Candidatus Colopia (NL. fem. n. *Colopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDEE01*. The type species for the genus is *Candidatus* Colopia subinibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9655*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilellaceae.

Description of *Candidatus* Colopida pavicitas sp. nov.

Candidatus Colopida pavicitas (NL. fem. n. *pavicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10108 sp003545435*. The type genome for the species is the GenBank assembly GCA_003545435.1. The GC content of the type genome is 42.71 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Colopida gen. nov.

Candidatus Colopida (NL. fem. n. *Colopida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10108*. The type species for the genus is *Candidatus* Colopida pavicitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA927*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigellaceae.

Description of *Candidatus* Coloposa denorilega sp. nov.

Candidatus Coloposa denorilega (NL. fem. n. *denorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXGF01 sp012267605*. The type genome for the species is the GenBank assembly GCA_012267605.1. The GC content of the type genome is 56.08 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Coloposa gen. nov.

Candidatus Coloposa (NL. fem. n. *Coloposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXGF01*. The type species for the genus is *Candidatus* Coloposa denorilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAXGF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coloposaceae.

Description of *Candidatus* Coloposaceae fam. nov.

Candidatus Coloposaceae (NL. fem. n. *Coloposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXGF01.* The type genus for the taxon is *Candidatus* Coloposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAXGF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Coloposales.

Description of *Candidatus* Coloposales ord. nov.

Candidatus Coloposales (NL. fem. n. *Coloposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXGF01.* The type genus for the taxon is *Candidatus* Coloposa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Colopula conopivita sp. nov.

Candidatus Colopula conopivita (NL. fem. n. *conopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOZY01 sp903862935*. The type genome for the species is the GenBank assembly GCA_903854295.1. The GC content of the type genome is 65.89 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Colopula gen. nov.

Candidatus Colopula (NL. fem. n. *Colopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOZY01*. The type species for the genus is *Candidatus* Colopula conopivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Colopula tirunitia sp. nov.

Candidatus Colopula tirunitia (NL. fem. n. *tirunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOZY01 sp903834135*. The type genome for the species is the GenBank assembly GCA_903847815.1. The GC content of the type genome is 42.37 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Colubana cerebitoga sp. nov.

Candidatus Colubana cerebitoga (NL. fem. n. *cerebitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2165 sp002327565*. The type genome for the species is the GenBank assembly GCA_002327565.1. The GC content of the type genome is 50.58 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Colubana gen. nov.

Candidatus Colubana (NL. fem. n. *Colubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2165*. The type species for the genus is *Candidatus* Colubana cerebitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubanaceae.

Description of *Candidatus* Colubanaceae fam. nov.

Candidatus Colubanaceae (NL. fem. n. *Colubanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2165.* The type genus for the taxon is *Candidatus* Colubana .

According to GTDB R06-RS202, this family belongs to the order *Rhodospirillales*.

Description of *Candidatus* Colubaria detenilega sp. nov.

Candidatus Colubaria detenilega (NL. fem. n. *detenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-38-24 sp002792535*. The type genome for the species is the GenBank assembly GCA_002792535.1. The GC content of the type genome is 37.6 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Colubaria gen. nov.

Candidatus Colubaria (NL. fem. n. *Colubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-38-24*. The type species for the genus is *Candidatus* Colubaria detenilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LOWO2-01-FULL-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifanaceae.

Description of *Candidatus* Colubella hemitimonas sp. nov.

Candidatus Colubella hemitimonas (NL. fem. n. *hemitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLA4 sp011525745*. The type genome for the species is the GenBank assembly GCA_011525745.1. The GC content of the type genome is 65.27 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Colubella gen. nov.

Candidatus Colubella (NL. fem. n. *Colubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PLA4*. The type species for the genus is *Candidatus* Colubella hemitimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UTPLA1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumidaceae.

Description of *Candidatus* Colubia cicilitoga sp. nov.

Candidatus Colubia cicilitoga (NL. fem. n. *cicilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILUI01 sp903837355*. The type genome for the species is the GenBank assembly GCA_903837355.1. The GC content of the type genome is 67.51 % and the genome length is 9.6 Mbp.

Description of *Candidatus* Colubia gen. nov.

Candidatus Colubia (NL. fem. n. *Colubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILUI01*. The type species for the genus is *Candidatus* Colubia cicilitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Lenti-02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicinosaceae.

Description of *Candidatus* Colubia lenunitas sp. nov.

Candidatus Colubia lenunitas (NL. fem. n. *lenunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILUI01 sp903834675*. The type genome for the species is the GenBank assembly GCA_903961625.1. The GC content of the type genome is 66.13 % and the genome length is 8.04 Mbp.

Description of *Candidatus* Colubida detunibula sp. nov.

Candidatus Colubida detunibula (NL. fem. n. *detunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C00003060 sp001751085*. The type genome for the species is the GenBank assembly GCA_001751085.1. The GC content of the type genome is 48.93 % and the genome length is 2.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "combined push core samples #3730; #5133; and #5579 collected at Hydrate Ridge".

Description of *Candidatus* Colubida gen. nov.

Candidatus Colubida (NL. fem. n. *Colubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C00003060*. The type species for the genus is *Candidatus* Colubida detunibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *C00003060*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubidaceae.

Description of *Candidatus* Colubidaceae fam. nov.

Candidatus Colubidaceae (NL. fem. n. *Colubidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *C00003060.* The type genus for the taxon is *Candidatus* Colubida .

According to the original version of GTDB R06-RS202, this family belongs to the order *C00003060*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colubidales.

Description of *Candidatus* Colubidales ord. nov.

Candidatus Colubidales (NL. fem. n. *Colubidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *C00003060.* The type genus for the taxon is *Candidatus* Colubida .

According to the GTDB R06-RS202, this order belongs to the class *Desulfobacteria*.

Description of *Candidatus* Colubosa fidenicella sp. nov.

Candidatus Colubosa fidenicella (NL. fem. n. *fidenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5905 sp900763035*. The type genome for the species is the GenBank assembly RS_GCF_900763035.1. The GC content of the type genome is 64.4 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Colubosa gen. nov.

Candidatus Colubosa (NL. fem. n. *Colubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5905*. The type species for the genus is *Candidatus* Colubosa fidenicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Colubosa minagitudo sp. nov.

Candidatus Colubosa minagitudo (NL. fem. n. *minagitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5905 sp900764115*. The type genome for the species is the GenBank assembly RS_GCF_900764115.1. The GC content of the type genome is 59.15 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Colubosa minurousia sp. nov.

Candidatus Colubosa minurousia (NL. fem. n. *minurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5905 sp900549155*. The type genome for the species is the GenBank assembly RS_GCF_900755075.1. The GC content of the type genome is 57.3 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Colubosa resupugo sp. nov.

Candidatus Colubosa resupugo (NL. fem. n. *resupugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5905 sp002431285*. The type genome for the species is the GenBank assembly GCA_002431285.1. The GC content of the type genome is 60.0 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Colubosa taraxatio sp. nov.

Candidatus Colubosa taraxatio (NL. fem. n. *taraxatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5905 sp004558485*. The type genome for the species is the GenBank assembly RS_GCF_900763165.1. The GC content of the type genome is 57.42 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Colubosa telegitio sp. nov.

Candidatus Colubosa telegitio (NL. fem. n. *telegitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5905 sp002437905*. The type genome for the species is the GenBank assembly GCA_002437905.1. The GC content of the type genome is 59.23 %

and the genome length is 2.28 Mbp.

Description of *Candidatus* Colubula vehicigena sp. nov.

Candidatus Colubula vehicigena (NL. fem. n. *vehicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B4-G1 sp003648025*. The type genome for the species is the GenBank assembly GCA_011192155.1. The GC content of the type genome is 59.5 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Colubula gen. nov.

Candidatus Colubula (NL. fem. n. *Colubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B4-G1*. The type species for the genus is *Candidatus* Colubula vehicigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B4-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubulaceae.

Description of *Candidatus* Colubulaceae fam. nov.

Candidatus Colubulaceae (NL. fem. n. *Colubulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B4-G1*. The type genus for the taxon is *Candidatus* Colubula .

According to the original version of GTDB R06-RS202, this family belongs to the order *B4-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colubulales.

Description of *Candidatus* Colubulales ord. nov.

Candidatus Colubulales (NL. fem. n. *Colubulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B4-G1*. The type genus for the taxon is *Candidatus* Colubula .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Colubula viburessa sp. nov.

Candidatus Colubula viburessa (NL. fem. n. *viburessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B4-G1 sp003648125*. The type genome for the species is the GenBank assembly GCA_003648125.1. The GC content of the type genome is 60.08 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Colutana albogimonia sp. nov.

Candidatus Colutana albogimonia (NL. fem. n. *albogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp014379455*. The type genome for the species is the GenBank assembly GCA_014379455.1. The GC content of the type genome is 55.68 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Colutana gen. nov.

Candidatus Colutana (NL. fem. n. *Colutana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1315*. The type species for the genus is *Candidatus* Colutana albogimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Colutana antegitica sp. nov.

Candidatus Colutana antegitica (NL. fem. n. *antegitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp011391455*. The type genome for the species is the GenBank assembly GCA_011391455.1. The GC content of the type genome is 56.19 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Colutana apsuritrix sp. nov.

Candidatus Colutana apsuritrix (NL. fem. n. *apsuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp005800255*. The type genome for the species is the GenBank assembly GCA_005800255.1. The GC content of the type genome is 59.34 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Colutana benevetta sp. nov.

Candidatus Colutana benevetta (NL. fem. n. *benevetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp005877535*. The type genome for the species is the GenBank assembly GCA_005877535.1. The GC content of the type genome is 56.32 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Colutana catagilega sp. nov.

Candidatus Colutana catagilega (NL. fem. n. *catagilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp013141215*. The type genome for the species is the GenBank assembly GCA_013141215.1. The GC content of the type genome is 56.73 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Colutana ceruciforma sp. nov.

Candidatus Colutana ceruciforma (NL. fem. n. *ceruciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp005116945*. The type genome for the species is the GenBank assembly GCA_005116945.1. The GC content of the type genome is 55.49 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Colutana cibaritas sp. nov.

Candidatus Colutana cibaritas (NL. fem. n. *cibaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Palsa-1315 sp002869885*. The type genome for the species is the GenBank assembly GCA_002869885.2. The GC content of the type genome is 56.12 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Colutana decamax sp. nov.

Candidatus Colutana decamax (NL. fem. n. *decamax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp005239475*. The type genome for the species is the GenBank assembly GCA_005239475.1. The GC content of the type genome is 57.07 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Colutana decatiforma sp. nov.

Candidatus Colutana decatiforma (NL. fem. n. *decatiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp005116885*. The type genome for the species is the GenBank assembly GCA_005116885.1. The GC content of the type genome is 55.43 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Colutana duponitio sp. nov.

Candidatus Colutana duponitio (NL. fem. n. *duponitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp005116815*. The type genome for the species is the GenBank assembly GCA_005116815.1. The GC content of the type genome is 57.33 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Colutana impavatica sp. nov.

Candidatus Colutana impavatica (NL. fem. n. *impavatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp013140715*. The type genome for the species is the GenBank assembly GCA_013140715.1. The GC content of the type genome is 55.46 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Colutana impuditio sp. nov.

Candidatus Colutana impuditio (NL. fem. n. *impuditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp009885705*. The type genome for the species is the GenBank assembly GCA_009885705.1. The GC content of the type genome is 57.25 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Colutana lapicimonia sp. nov.

Candidatus Colutana lapicimonia (NL. fem. n. *lapicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp002737345*. The type genome for the species is the GenBank assembly GCA_003569385.1. The GC content of the type genome is 57.56 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Colutana nivomitudo sp. nov.

Candidatus Colutana nivomitudo (NL. fem. n. *nivomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp013388555*. The type genome for the species is the GenBank assembly GCA_013388555.1. The GC content of the type genome is 56.02 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Colutana omnivisca sp. nov.

Candidatus Colutana omnivisca (NL. fem. n. *omnivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp002869895*. The type genome for the species is the GenBank assembly GCA_002869895.2. The GC content of the type genome is 55.84 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Colutana pinacivita sp. nov.

Candidatus Colutana pinacivita (NL. fem. n. *pinacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp005887945*. The type genome for the species is the GenBank assembly GCA_005887945.1. The GC content of the type genome is 56.73 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Colutana recocastra sp. nov.

Candidatus Colutana recocastra (NL. fem. n. *recocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp003135435*. The type genome for the species is the GenBank assembly GCA_003135435.1. The GC content of the type genome is 56.94 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Colutana solacivita sp. nov.

Candidatus Colutana solacivita (NL. fem. n. *solacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp005116775*. The type genome for the species is the GenBank assembly GCA_005116775.1. The GC content of the type genome is 55.75 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Colutana utpotimonia sp. nov.

Candidatus Colutana utpotimonia (NL. fem. n. *utpotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1315 sp002869925*. The type genome for the species is the GenBank assembly GCA_002869925.2. The GC content of the type genome is 55.68 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Colutana vicaticella sp. nov.

Candidatus Colutana vicaticella (NL. fem. n. *vicaticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Palsa-1315 sp005116835*. The type genome for the species is the GenBank assembly GCA_005116835.1. The GC content of the type genome is 55.56 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Colutaria vavasilega sp. nov.

Candidatus Colutaria vavasilega (NL. fem. n. *vavasilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UC5-1-2E3 sp001304875*. The type genome for the species is the GenBank assembly GCA_001304875.1. The GC content of the type genome is 54.61 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Colutaria gen. nov.

Candidatus Colutaria (NL. fem. n. *Colutaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UC5-1-2E3*. The type species for the genus is *Candidatus* Colutaria vavasilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Colutella cocodatio sp. nov.

Candidatus Colutella cocodatio (NL. fem. n. *cocodatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-510 sp900551115*. The type genome for the species is the GenBank assembly GCA_900551115.1. The GC content of the type genome is 43.75 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Colutella gen. nov.

Candidatus Colutella (NL. fem. n. *Colutella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-510*. The type species for the genus is *Candidatus* Colutella cocodatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Colutella corocilega sp. nov.

Candidatus Colutella corocilega (NL. fem. n. *corocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-510 sp002432425*. The type genome for the species is the GenBank assembly GCA_002477915.1. The GC content of the type genome is 46.82 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Colutella detenitia sp. nov.

Candidatus Colutella detenitia (NL. fem. n. *detenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-510 sp000434615*. The type genome for the species is the GenBank assembly GCA_000434615.1. The GC content of the type genome is 46.09 % and the genome length is 2.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Colutella gerunetta sp. nov.

Candidatus Colutella gerunetta (NL. fem. n. *gerunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-510 sp900550475*. The type genome for the species is the GenBank assembly RS_GCF_900753765.1. The GC content of the type genome is 51.27 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Colutella pacifivita sp. nov.

Candidatus Colutella pacifivita (NL. fem. n. *pacifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-510 sp003979355*. The type genome for the species is the GenBank assembly GCA_003979355.1. The GC content of the type genome is 47.54 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Colutida xenopisca sp. nov.

Candidatus Colutida xenopisca (NL. fem. n. *xenopisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2364 sp002344075*. The type genome for the species is the GenBank assembly GCA_002344075.1. The GC content of the type genome is 46.08 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Colutida gen. nov.

Candidatus Colutida (NL. fem. n. *Colutida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2364*. The type species for the genus is *Candidatus* Colutida xenopisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2364*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colutidaceae.

Description of *Candidatus* Colutidaceae fam. nov.

Candidatus Colutidaceae (NL. fem. n. *Colutidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2364.* The type genus for the taxon is *Candidatus* Colutida .

According to GTDB R06-RS202, this family belongs to the order *Rhodothermales*.

Description of *Candidatus* Colutula semimousia sp. nov.

Candidatus Colutula semimousia (NL. fem. n. *semimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1337 sp003151615*. The type genome for the species is the GenBank assembly GCA_003151615.1. The GC content of the type genome is 47.23 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Colutula gen. nov.

Candidatus Colutula (NL. fem. n. *Colutula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1337*. The type species for the genus is *Candidatus* Colutula semimousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-1337*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colutulaceae.

Description of *Candidatus* Colutulaceae fam. nov.

Candidatus Colutulaceae (NL. fem. n. *Colutulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PALSA-1337*. The type genus for the taxon is *Candidatus* Colutula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Colutula tenebitura sp. nov.

Candidatus Colutula tenebitura (NL. fem. n. *tenebitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1337 sp903893855*. The type genome for the species is the GenBank assembly GCA_903831125.1. The GC content of the type genome is 42.76 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Colwellia aruspilenta sp. nov.

Candidatus Colwellia aruspilenta (NL. fem. n. *aruspilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp002836255*. The type genome for the species is the GenBank assembly RS_GCF_002836255.1. The GC content of the type genome is 37.82 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Colwellia catobitura sp. nov.

Candidatus Colwellia catobitura (NL. fem. n. *catobitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp001440345*. The type genome for the species is the GenBank assembly RS_GCF_001440345.1. The GC content of the type genome is 39.53 % and the genome length is 4.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sediment".

Description of *Candidatus* Colwellia decapitia sp. nov.

Candidatus Colwellia decapitia (NL. fem. n. *decapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp002733765*. The type genome for the species is the GenBank assembly GCA_002401605.1. The GC content of the type genome is 36.9 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Colwellia decunedo sp. nov.

Candidatus Colwellia decunedo (NL. fem. n. *decunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp003545415*. The type genome for the species is the GenBank assembly GCA_003545415.1. The GC content of the type genome is 36.58 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Colwellia genuficula sp. nov.

Candidatus Colwellia genuficula (NL. fem. n. *genuficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp009832865*. The type genome for the species is the GenBank assembly RS_GCF_009832865.1. The GC content of the type genome is 36.49 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Colwellia oblivicella sp. nov.

Candidatus Colwellia oblivicella (NL. fem. n. *oblivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp013215465*. The type genome for the species is the GenBank assembly GCA_013215465.1. The GC content of the type genome is 37.64 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Colwellia optabitas sp. nov.

Candidatus Colwellia optabitas (NL. fem. n. *optabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp002162675*. The type genome for the species is the GenBank assembly GCA_002162675.1. The GC content of the type genome is 38.62 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Colwellia redunilenta sp. nov.

Candidatus Colwellia redunilenta (NL. fem. n. *redunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp003521815*. The type genome for the species is the GenBank assembly GCA_003521815.1. The GC content of the type genome is 37.3 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Colwellia senipitica sp. nov.

Candidatus Colwellia senipitica (NL. fem. n. *senipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp013214175*. The type genome for the species is the GenBank assembly GCA_013214175.1. The GC content of the type genome is 38.87 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Colwellia visocousia sp. nov.

Candidatus Colwellia visocousia (NL. fem. n. *visocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia sp002836775*. The type genome for the species is the GenBank assembly RS_GCF_002836775.1. The GC content of the type genome is 37.88 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Colwellia cotenibra sp. nov.

Candidatus Colwellia cotenibra (NL. fem. n. *cotenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia_A sp001767295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014077515.1. The GC content of the type genome is 37.75 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Colwellia maligentia sp. nov.

Candidatus Colwellia maligentia (NL. fem. n. *maligentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia_A sp013215295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013215295.1. The GC content of the type genome is 37.0 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Colwellia manupitudo sp. nov.

Candidatus Colwellia manupitudo (NL. fem. n. *manupitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia_A sp014076845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014076905.1. The GC content of the type genome is 37.33 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Colwellia novilitas sp. nov.

Candidatus Colwellia novilitas (NL. fem. n. *novilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia_A sp013215385*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013215385.1. The GC content of the type genome is 37.42 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Colwellia stercentia sp. nov.

Candidatus Colwellia stercentia (NL. fem. n. *stercentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Colwellia_A sp013215655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013215655.1. The GC content of the type genome is 36.71 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Comamonas agricastra sp. nov.

Candidatus Comamonas agricastra (NL. fem. n. *agricastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas sp013363755*. The type genome for the species is the GenBank assembly RS_GCF_013363755.1. The GC content of the type genome is 66.31 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Comamonas attemitas sp. nov.

Candidatus Comamonas attemitas (NL. fem. n. *attemitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas sp002754475*. The type genome for the species is the GenBank assembly RS_GCF_002754475.1. The GC content of the type genome is 58.59 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Comamonas cerucimonas sp. nov.

Candidatus Comamonas cerucimonas (NL. fem. n. *cerucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas sp012844455*. The type genome for the species is the

GenBank assembly RS_GCF_012844455.1. The GC content of the type genome is 58.9 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Comamonas cuferitudo sp. nov.

Candidatus Comamonas cuferitudo (NL. fem. n. *cuferitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas sp002472915*. The type genome for the species is the GenBank assembly GCA_002358635.1. The GC content of the type genome is 63.95 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Comamonas defulicula sp. nov.

Candidatus Comamonas defulicula (NL. fem. n. *defulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas sp902706035*. The type genome for the species is the GenBank assembly RS_GCF_902706035.1. The GC content of the type genome is 65.42 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Comamonas inoffugo sp. nov.

Candidatus Comamonas inoffugo (NL. fem. n. *inoffugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas sp900564145*. The type genome for the species is the GenBank assembly RS_GCF_900564145.1. The GC content of the type genome is 60.9 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Comamonas obnunimonia sp. nov.

Candidatus Comamonas obnunimonia (NL. fem. n. *obnunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas sp009360615*. The type genome for the species is the GenBank assembly GCA_009360615.1. The GC content of the type genome is 61.7 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Comamonas progrimonas sp. nov.

Candidatus Comamonas progrimonas (NL. fem. n. *progrimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas sp004364775*. The type genome for the species is the GenBank assembly RS_GCF_004364775.1. The GC content of the type genome is 63.07 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Comamonas alcibibra sp. nov.

Candidatus Comamonas alcibibra (NL. fem. n. *alcibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas_C sp001724135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001724135.1. The GC content of the type genome is 65.2 % and the genome length is 3.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Comamonas cotenax sp. nov.

Candidatus Comamonas cotenax (NL. fem. n. *cotenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas_C sp001725255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001898655.1. The GC content of the type genome is 66.44 % and the genome length is 3.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Comamonas navicitudo sp. nov.

Candidatus Comamonas navicitudo (NL. fem. n. *navicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas_C sp007954405*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007954405.1. The GC content of the type genome is 67.79 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Comamonas oblivisca sp. nov.

Candidatus Comamonas oblivisca (NL. fem. n. *oblivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Comamonas_C sp002894305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002894305.1. The GC content of the type genome is 67.15 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Commensalibacter cenotessa sp. nov.

Candidatus Commensalibacter cenotessa (NL. fem. n. *cenotessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Commensalibacter sp000527695*. The type genome for the species is the GenBank assembly RS_GCF_000527695.1. The GC content of the type genome is 36.66 % and the genome length is 2.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gut of an overwintering female monarch butterfly".

Description of *Candidatus* Commensalibacter desoritas sp. nov.

Candidatus Commensalibacter desoritas (NL. fem. n. *desoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Commensalibacter sp003202795*. The type genome for the species is the GenBank assembly RS_GCF_009725775.1. The GC content of the type genome is 37.64 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Companilactobacillus defarastra sp. nov.

Candidatus Companilactobacillus defarastra (NL. fem. n. *defarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Companilactobacillus sp003946205*. The type genome for the species is the GenBank assembly RS_GCF_003946205.1. The GC content of the type genome is 35.56 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Companilactobacillus feditiforma sp. nov.

Candidatus Companilactobacillus feditiforma (NL. fem. n. *feditiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Companilactobacillus sp003946555*. The type genome for the species is the GenBank assembly RS_GCF_003946555.1. The GC content of the type genome is 36.71 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Companilactobacillus infinessa sp. nov.

Candidatus Companilactobacillus infinessa (NL. fem. n. *infinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Companilactobacillus sp005404815*. The type genome for the species is the GenBank assembly RS_GCF_005404815.1. The GC content of the type genome is 36.42 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Companilactobacillus minagivita sp. nov.

Candidatus Companilactobacillus minagivita (NL. fem. n. *minagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Companilactobacillus sp003946575*. The type genome for the species is the GenBank assembly RS_GCF_003946575.1. The GC content of the type genome is 36.52 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Companilactobacillus navifimonia sp. nov.

Candidatus Companilactobacillus navifimonia (NL. fem. n. *navifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Companilactobacillus sp003946605*. The type genome for the species is the GenBank assembly RS_GCF_003946605.1. The GC content of the type genome is 34.57 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Companilactobacillus tresvedo sp. nov.

Candidatus Companilactobacillus tresvedo (NL. fem. n. *tresvedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Companilactobacillus sp003946625*. The type genome for the species is the GenBank assembly RS_GCF_003946625.1. The GC content of the type genome is 36.16 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Companilactobacillus volubitoga sp. nov.

Candidatus Companilactobacillus volubitoga (NL. fem. n. *volubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Companilactobacillus sp003946515*. The type genome for the species is the GenBank assembly RS_GCF_003946515.1. The GC content of the type genome is 39.36 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Competibacter abluvisca sp. nov.

Candidatus Competibacter abluvisca (NL. fem. n. *abluvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Competibacter_A sp002352125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002352125.1. The GC content of the type genome is 59.87 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Competibacter capucivita sp. nov.

Candidatus Competibacter capucivita (NL. fem. n. *capucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Competibacter_A sp002391525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012840695.1. The GC content of the type genome is 63.51 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Competibacter enuntitica sp. nov.

Candidatus Competibacter enuntitica (NL. fem. n. *enuntitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Competibacter_A sp003527885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003527885.1. The GC content of the type genome is 62.53 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Competibacter indubatica sp. nov.

Candidatus Competibacter indubatica (NL. fem. n. *indubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Competibacter_A sp903882995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903882995.1. The GC content of the type genome is 42.24 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Competibacter melilitoga sp. nov.

Candidatus Competibacter melilitoga (NL. fem. n. *melilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Competibacter_A sp002433805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003455755.1. The GC content of the type genome is 61.96 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Conabana abambibra sp. nov.

Candidatus Conabana abambibra (NL. fem. n. *abambibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSP1-6 sp001443385*. The type genome for the species is the

GenBank assembly GCA_001443385.1. The GC content of the type genome is 68.37 % and the genome length is 2.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment at 5m depth".

Description of *Candidatus* Conabana gen. nov.

Candidatus Conabana (NL. fem. n. *Conabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSP1-6*. The type species for the genus is *Candidatus* Conabana abambibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conabanaceae.

Description of *Candidatus* Conabanaceae fam. nov.

Candidatus Conabanaceae (NL. fem. n. *Conabanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSP1-6.* The type genus for the taxon is *Candidatus* Conabana .

According to GTDB R06-RS202, this family belongs to the order *Rokubacteriales*.

Description of *Candidatus* Conabaria xeramicella sp. nov.

Candidatus Conabaria xeramicella (NL. fem. n. *xeramicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-3-62-11 sp001914955*. The type genome for the species is the GenBank assembly GCA_001918075.1. The GC content of the type genome is 61.79 % and the genome length is 1.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; 2 days after first rain event (91mm)".

Description of *Candidatus* Conabaria gen. nov.

Candidatus Conabaria (NL. fem. n. *Conabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40CM-3-62-11*. The type species for the genus is *Candidatus* Conabaria

xeramicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conabida dicabitura sp. nov.

Candidatus Conabida dicabitura (NL. fem. n. *dicabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGR01 sp013285985*. The type genome for the species is the GenBank assembly GCA_013285985.1. The GC content of the type genome is 59.5 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Conabida gen. nov.

Candidatus Conabida (NL. fem. n. *Conabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDGR01*. The type species for the genus is *Candidatus* Conabida dicabitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDGR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conabidaceae.

Description of *Candidatus* Conabidaceae fam. nov.

Candidatus Conabidaceae (NL. fem. n. *Conabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDGR01*. The type genus for the taxon is *Candidatus* Conabida .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Conabosa abasciforma sp. nov.

Candidatus Conabosa abasciforma (NL. fem. n. *abasciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900769835*. The type genome for the species is the GenBank assembly GCA_900769835.1. The GC content of the type genome is 53.21 %

and the genome length is 1.24 Mbp.

Description of *Candidatus* Conabosa gen. nov.

Candidatus Conabosa (NL. fem. n. *Conabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-110*. The type species for the genus is *Candidatus* Conabosa abasciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conabosa acculitura sp. nov.

Candidatus Conabosa acculitura (NL. fem. n. *acculitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900548795*. The type genome for the species is the GenBank assembly GCA_900548795.1. The GC content of the type genome is 61.22 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Conabosa admorastra sp. nov.

Candidatus Conabosa admorastra (NL. fem. n. *admorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900554625*. The type genome for the species is the GenBank assembly GCA_900554625.1. The GC content of the type genome is 53.45 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Conabosa cacomatica sp. nov.

Candidatus Conabosa cacomatica (NL. fem. n. *cacomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900752285*. The type genome for the species is the GenBank assembly GCA_900752285.1. The GC content of the type genome is 57.06 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Conabosa capucedo sp. nov.

Candidatus Conabosa capucedo (NL. fem. n. *capucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp004556205*. The type genome for the species is the GenBank assembly GCA_004556205.1. The GC content of the type genome is 55.54 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Conabosa catafimonia sp. nov.

Candidatus Conabosa catafimonia (NL. fem. n. *catafimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp002493965*. The type genome for the species is the GenBank assembly GCA_002361975.1. The GC content of the type genome is 55.27 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Conabosa cetaredo sp. nov.

Candidatus Conabosa cetaredo (NL. fem. n. *cetaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900544975*. The type genome for the species is the GenBank assembly GCA_900544975.1. The GC content of the type genome is 57.3 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Conabosa cilicastra sp. nov.

Candidatus Conabosa cilicastra (NL. fem. n. *cilicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900544405*. The type genome for the species is the GenBank assembly GCA_900763335.1. The GC content of the type genome is 58.58 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Conabosa cimelentia sp. nov.

Candidatus Conabosa cimelentia (NL. fem. n. *cimelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp002362145*. The type genome for the species is the GenBank assembly GCA_002491025.1. The GC content of the type genome is 58.92 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Conabosa conifivita sp. nov.

Candidatus Conabosa conifivita (NL. fem. n. *conifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900770015*. The type genome for the species is the GenBank assembly GCA_900770015.1. The GC content of the type genome is 56.3 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Conabosa coticitas sp. nov.

Candidatus Conabosa coticitas (NL. fem. n. *coticitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp000435995*. The type genome for the species is the GenBank assembly GCA_000435995.1. The GC content of the type genome is 56.92 % and the genome length is 2.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Conabosa decacicula sp. nov.

Candidatus Conabosa decacicula (NL. fem. n. *decacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900554705*. The type genome for the species is the GenBank assembly GCA_900554705.1. The GC content of the type genome is 59.13 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Conabosa defenitudo sp. nov.

Candidatus Conabosa defenitudo (NL. fem. n. *defenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp000434635*. The type genome for the species is the

GenBank assembly GCA_900538815.1. The GC content of the type genome is 56.17 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Conabosa denomitica sp. nov.

Candidatus Conabosa denomitica (NL. fem. n. *denomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900553805*. The type genome for the species is the GenBank assembly GCA_900553805.1. The GC content of the type genome is 59.57 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Conabosa hexapugo sp. nov.

Candidatus Conabosa hexapugo (NL. fem. n. *hexapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900546415*. The type genome for the species is the GenBank assembly GCA_900546415.1. The GC content of the type genome is 60.46 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Conabosa homagugo sp. nov.

Candidatus Conabosa homagugo (NL. fem. n. *homagugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900546915*. The type genome for the species is the GenBank assembly GCA_900771735.1. The GC content of the type genome is 56.88 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Conabosa immodessa sp. nov.

Candidatus Conabosa immodessa (NL. fem. n. *immodessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp002372735*. The type genome for the species is the GenBank assembly GCA_002372735.1. The GC content of the type genome is 62.51 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Conabosa indecitio sp. nov.

Candidatus Conabosa indecitio (NL. fem. n. *indecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900762935*. The type genome for the species is the GenBank assembly GCA_900762935.1. The GC content of the type genome is 62.45 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Conabosa infabimonas sp. nov.

Candidatus Conabosa infabimonas (NL. fem. n. *infabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp004562395*. The type genome for the species is the GenBank assembly GCA_004562395.1. The GC content of the type genome is 58.57 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Conabosa lametatio sp. nov.

Candidatus Conabosa lametatio (NL. fem. n. *lametatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp002437585*. The type genome for the species is the GenBank assembly GCA_002405885.1. The GC content of the type genome is 58.16 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Conabosa lametitoga sp. nov.

Candidatus Conabosa lametitoga (NL. fem. n. *lametitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900549495*. The type genome for the species is the GenBank assembly GCA_900549495.1. The GC content of the type genome is 56.85 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Conabosa malivitura sp. nov.

Candidatus Conabosa malivitura (NL. fem. n. *malivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900544705*. The type genome for the species is the GenBank assembly GCA_900756625.1. The GC content of the type genome is 57.78 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Conabosa malogugo sp. nov.

Candidatus Conabosa malogugo (NL. fem. n. *malogugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900547405*. The type genome for the species is the GenBank assembly GCA_900547405.1. The GC content of the type genome is 56.78 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Conabosa megalisca sp. nov.

Candidatus Conabosa megalisca (NL. fem. n. *megalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900763965*. The type genome for the species is the GenBank assembly GCA_900763965.1. The GC content of the type genome is 55.8 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Conabosa miracitas sp. nov.

Candidatus Conabosa miracitas (NL. fem. n. *miracitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900546075*. The type genome for the species is the GenBank assembly GCA_900768955.1. The GC content of the type genome is 57.61 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Conabosa necubitoga sp. nov.

Candidatus Conabosa necubitoga (NL. fem. n. *necubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900544945*. The type genome for the species is the GenBank assembly GCA_900544945.1. The GC content of the type genome is 57.48 %

and the genome length is 2.13 Mbp.

Description of *Candidatus* Conabosa negotitio sp. nov.

Candidatus Conabosa negotitio (NL. fem. n. *negotitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900315595*. The type genome for the species is the GenBank assembly GCA_002363535.1. The GC content of the type genome is 61.5 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Conabosa nocenitica sp. nov.

Candidatus Conabosa nocenitica (NL. fem. n. *nocenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp004555705*. The type genome for the species is the GenBank assembly GCA_004555705.1. The GC content of the type genome is 58.64 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Conabosa odontax sp. nov.

Candidatus Conabosa odontax (NL. fem. n. *odontax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp002362625*. The type genome for the species is the GenBank assembly GCA_002362625.1. The GC content of the type genome is 55.47 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Conabosa onocritoga sp. nov.

Candidatus Conabosa onocritoga (NL. fem. n. *onocritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900762245*. The type genome for the species is the GenBank assembly GCA_900762245.1. The GC content of the type genome is 53.74 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Conabosa penicitoga sp. nov.

Candidatus Conabosa penicitoga (NL. fem. n. *penicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900540635*. The type genome for the species is the GenBank assembly GCA_900540635.1. The GC content of the type genome is 56.38 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Conabosa proclimonia sp. nov.

Candidatus Conabosa proclimonia (NL. fem. n. *proclimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900556935*. The type genome for the species is the GenBank assembly GCA_900556935.1. The GC content of the type genome is 56.8 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Conabosa remulisca sp. nov.

Candidatus Conabosa remulisca (NL. fem. n. *remulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900549705*. The type genome for the species is the GenBank assembly GCA_900549705.1. The GC content of the type genome is 55.14 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Conabosa rorifitio sp. nov.

Candidatus Conabosa rorifitio (NL. fem. n. *rorifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp002436765*. The type genome for the species is the GenBank assembly GCA_002436765.1. The GC content of the type genome is 58.49 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Conabosa rubefitas sp. nov.

Candidatus Conabosa rubefitas (NL. fem. n. *rubefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900769995*. The type genome for the species is the GenBank assembly GCA_900769995.1. The GC content of the type genome is 54.42 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Conabosa rubigimonia sp. nov.

Candidatus Conabosa rubigimonia (NL. fem. n. *rubigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900551495*. The type genome for the species is the GenBank assembly GCA_900758445.1. The GC content of the type genome is 58.49 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Conabosa subabatio sp. nov.

Candidatus Conabosa subabatio (NL. fem. n. *subabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp003525905*. The type genome for the species is the GenBank assembly GCA_900751905.1. The GC content of the type genome is 61.19 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Conabosa undevibula sp. nov.

Candidatus Conabosa undevibula (NL. fem. n. *undevibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900769845*. The type genome for the species is the GenBank assembly GCA_900769845.1. The GC content of the type genome is 52.78 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Conabosa utralitica sp. nov.

Candidatus Conabosa utralitica (NL. fem. n. *utralitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900762005*. The type genome for the species is the GenBank assembly GCA_900762005.1. The GC content of the type genome is 55.29 %

and the genome length is 2.14 Mbp.

Description of *Candidatus* Conabosa vitupentia sp. nov.

Candidatus Conabosa vitupentia (NL. fem. n. *vitupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-110 sp900316335*. The type genome for the species is the GenBank assembly GCA_002349985.1. The GC content of the type genome is 59.92 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Conabula hexapitia sp. nov.

Candidatus Conabula hexapitia (NL. fem. n. *hexapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1388 sp003170575*. The type genome for the species is the GenBank assembly GCA_003170575.1. The GC content of the type genome is 43.34 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Conabula gen. nov.

Candidatus Conabula (NL. fem. n. *Conabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1388*. The type species for the genus is *Candidatus* Conabula hexapitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1388*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conabulaceae.

Description of *Candidatus* Conabulaceae fam. nov.

Candidatus Conabulaceae (NL. fem. n. *Conabulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-1388.* The type genus for the taxon is *Candidatus* Conabula .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Conamana facunatio sp. nov.

Candidatus Conamana facunatio (NL. fem. n. *facunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1537 sp900552695*. The type genome for the species is the GenBank assembly GCA_900552695.1. The GC content of the type genome is 43.26 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Conamana gen. nov.

Candidatus Conamana (NL. fem. n. *Conamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1537*. The type species for the genus is *Candidatus* Conamana facunatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1255*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Butubariaceae.

Description of *Candidatus* Conamana malifitia sp. nov.

Candidatus Conamana malifitia (NL. fem. n. *malifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1537 sp900761045*. The type genome for the species is the GenBank assembly RS_GCF_900761045.1. The GC content of the type genome is 50.17 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Conamana tetenicula sp. nov.

Candidatus Conamana tetenicula (NL. fem. n. *tetenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1537 sp900543695*. The type genome for the species is the GenBank assembly GCA_003343475.1. The GC content of the type genome is 49.77 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Conamaria defanigena sp. nov.

Candidatus Conamaria defanigena (NL. fem. n. *defanigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6940 sp002450655*. The type genome for the species is the GenBank assembly GCA_002450655.1. The GC content of the type genome is 39.99 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Conamaria gen. nov.

Candidatus Conamaria (NL. fem. n. *Conamaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6940*. The type species for the genus is *Candidatus* Conamaria defanigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6940*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conamariaceae.

Description of *Candidatus* Conamariaceae fam. nov.

Candidatus Conamariaceae (NL. fem. n. *Conamariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6940.* The type genus for the taxon is *Candidatus* Conamaria .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Conamella conopago sp. nov.

Candidatus Conamella conopago (NL. fem. n. *conopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-16 sp007131845*. The type genome for the species is the GenBank assembly GCA_007131845.1. The GC content of the type genome is 55.22 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Conamella gen. nov.

Candidatus Conamella (NL. fem. n. *Conamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1SED10-16*. The type species for the genus is *Candidatus* Conamella conopago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarulaceae.

Description of *Candidatus* Conamella dimidatica sp. nov.

Candidatus Conamella dimidatica (NL. fem. n. *dimidatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-16 sp011389515*. The type genome for the species is the GenBank assembly GCA_011389515.1. The GC content of the type genome is 51.58 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Conamella epitrago sp. nov.

Candidatus Conamella epitrago (NL. fem. n. *epitrago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-16 sp007135795*. The type genome for the species is the GenBank assembly GCA_007135795.1. The GC content of the type genome is 48.63 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Conamella inexsedo sp. nov.

Candidatus Conamella inexsedo (NL. fem. n. *inexsedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-16 sp011389935*. The type genome for the species is the GenBank assembly GCA_011389935.1. The GC content of the type genome is 54.41 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Conamella inhumimonas sp. nov.

Candidatus Conamella inhumimonas (NL. fem. n. *inhumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-16 sp007136525*. The type genome for the species is the GenBank assembly GCA_007136525.1. The GC content of the type genome is 53.87 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Conamella insufessa sp. nov.

Candidatus Conamella insufessa (NL. fem. n. *insufessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-16 sp007134875*. The type genome for the species is the GenBank assembly GCA_007134875.1. The GC content of the type genome is 55.67 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Conamella obtesatio sp. nov.

Candidatus Conamella obtesatio (NL. fem. n. *obtesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-16 sp003551985*. The type genome for the species is the GenBank assembly GCA_003551985.1. The GC content of the type genome is 54.15 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Conamella vehicilenta sp. nov.

Candidatus Conamella vehicilenta (NL. fem. n. *vehicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-16 sp007127175*. The type genome for the species is the GenBank assembly GCA_007118435.1. The GC content of the type genome is 54.93 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Conamia genufatica sp. nov.

Candidatus Conamia genufatica (NL. fem. n. *genufatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4615 sp903898725*. The type genome for the species is the GenBank assembly GCA_903898725.1. The GC content of the type genome is 71.89 %

and the genome length is 4.99 Mbp.

Description of *Candidatus* Conamia gen. nov.

Candidatus Conamia (NL. fem. n. *Conamia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4615*. The type species for the genus is *Candidatus* Conamia genufatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conamia inmoligena sp. nov.

Candidatus Conamia inmoligena (NL. fem. n. *inmoligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4615 sp003818495*. The type genome for the species is the GenBank assembly GCA_003818495.1. The GC content of the type genome is 70.37 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Conamia noninastra sp. nov.

Candidatus Conamia noninastra (NL. fem. n. *noninastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4615 sp903923345*. The type genome for the species is the GenBank assembly GCA_903923345.1. The GC content of the type genome is 63.39 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Conamia reduvatica sp. nov.

Candidatus Conamia reduvatica (NL. fem. n. *reduvatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4615 sp903903975*. The type genome for the species is the GenBank assembly GCA_903876585.1. The GC content of the type genome is 63.44 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Conamia selecitica sp. nov.

Candidatus Conamia selecitica (NL. fem. n. *selecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4615 sp002386465*. The type genome for the species is the GenBank assembly GCA_002386465.1. The GC content of the type genome is 63.51 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Conamia venabousia sp. nov.

Candidatus Conamia venabousia (NL. fem. n. *venabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4615 sp903831925*. The type genome for the species is the GenBank assembly GCA_903831925.1. The GC content of the type genome is 63.95 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Conamida adrecicula sp. nov.

Candidatus Conamida adrecicula (NL. fem. n. *adrecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120802 sp009924185*. The type genome for the species is the GenBank assembly GCA_009924185.1. The GC content of the type genome is 47.15 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Conamida gen. nov.

Candidatus Conamida (NL. fem. n. *Conamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MAG-120802*. The type species for the genus is *Candidatus* Conamida adrecicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conamida buxifisca sp. nov.

Candidatus Conamida buxifisca (NL. fem. n. *buxifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120802 sp010032085*. The type genome for the species is the GenBank assembly GCA_010029675.1. The GC content of the type genome is 45.9 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Conamida casabimonia sp. nov.

Candidatus Conamida casabimonia (NL. fem. n. *casabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120802 sp010023045*. The type genome for the species is the GenBank assembly GCA_010022285.1. The GC content of the type genome is 47.87 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Conamida manupitoga sp. nov.

Candidatus Conamida manupitoga (NL. fem. n. *manupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120802 sp005777515*. The type genome for the species is the GenBank assembly GCA_005777515.1. The GC content of the type genome is 44.85 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Conamida modifivita sp. nov.

Candidatus Conamida modifivita (NL. fem. n. *modifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120802 sp002347935*. The type genome for the species is the GenBank assembly GCA_010021875.1. The GC content of the type genome is 44.6 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Conamida nicomatio sp. nov.

Candidatus Conamida nicomatio (NL. fem. n. *nicomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120802 sp009927705*. The type genome for the species is the GenBank assembly GCA_009927705.1. The GC content of the type genome is 48.32 %

and the genome length is 1.12 Mbp.

Description of *Candidatus* Conamida sacomugo sp. nov.

Candidatus Conamida sacomugo (NL. fem. n. *sacomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120802 sp003569145*. The type genome for the species is the GenBank assembly GCA_014189935.1. The GC content of the type genome is 44.24 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Conamida vaniditas sp. nov.

Candidatus Conamida vaniditas (NL. fem. n. *vaniditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120802 sp010032125*. The type genome for the species is the GenBank assembly GCA_010032125.1. The GC content of the type genome is 48.33 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Conamosa nutamibra sp. nov.

Candidatus Conamosa nutamibra (NL. fem. n. *nutamibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMY01 sp003567855*. The type genome for the species is the GenBank assembly GCA_003560115.1. The GC content of the type genome is 67.24 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Conamosa gen. nov.

Candidatus Conamosa (NL. fem. n. *Conamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWMY01*. The type species for the genus is *Candidatus* Conamosa nutamibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWYM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisalellaceae.

Description of *Candidatus* Conamula carunibula sp. nov.

Candidatus Conamula carunibula (NL. fem. n. *carunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-42-14 sp000998135*. The type genome for the species is the GenBank assembly GCA_001822305.1. The GC content of the type genome is 40.95 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Conamula gen. nov.

Candidatus Conamula (NL. fem. n. *Conamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-42-14*. The type species for the genus is *Candidatus* Conamula carunibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-42-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conamulaceae.

Description of *Candidatus* Conamulaceae fam. nov.

Candidatus Conamulaceae (NL. fem. n. *Conamulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-42-14.* The type genus for the taxon is *Candidatus* Conamula .

According to GTDB R06-RS202, this family belongs to the order *Sungbacterales*.

Description of *Candidatus* Conarana caduritura sp. nov.

Candidatus Conarana caduritura (NL. fem. n. *caduritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-69-89 sp001724855*. The type genome for the species is the GenBank assembly GCA_001724855.1. The GC content of the type genome is 69.04 % and the genome length is 3.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Conarana gen. nov.

Candidatus Conarana (NL. fem. n. *Conarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCN-69-89*. The type species for the genus is *Candidatus* Conarana caduritura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conarana cicatitio sp. nov.

Candidatus Conarana cicatitio (NL. fem. n. *cicatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-69-89 sp003577305*. The type genome for the species is the GenBank assembly GCA_003577305.1. The GC content of the type genome is 69.36 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Conarana exsufentia sp. nov.

Candidatus Conarana exsufentia (NL. fem. n. *exsufentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-69-89 sp003576795*. The type genome for the species is the GenBank assembly GCA_003576795.1. The GC content of the type genome is 70.12 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Conarana indipessa sp. nov.

Candidatus Conarana indipessa (NL. fem. n. *indipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-69-89 sp012513825*. The type genome for the species is the GenBank assembly GCA_012513825.1. The GC content of the type genome is 68.98 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Conarana indupivita sp. nov.

Candidatus Conarana indupivita (NL. fem. n. *indupivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-69-89 sp008039575*. The type genome for the species is the GenBank assembly RS_GCF_008039575.1. The GC content of the type genome is 69.98 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Conarana lavacivita sp. nov.

Candidatus Conarana lavacivita (NL. fem. n. *lavacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-69-89 sp001898645*. The type genome for the species is the GenBank assembly GCA_001898645.1. The GC content of the type genome is 69.82 % and the genome length is 4.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Conarana obnunigena sp. nov.

Candidatus Conarana obnunigena (NL. fem. n. *obnunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-69-89 sp001724315*. The type genome for the species is the GenBank assembly GCA_001724315.1. The GC content of the type genome is 69.94 % and the genome length is 2.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Conararia lenocessa sp. nov.

Candidatus Conararia lenocessa (NL. fem. n. *lenocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHXO01 sp009693245*. The type genome for the species is the GenBank assembly GCA_009693245.1. The GC content of the type genome is 59.78 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Conararia gen. nov.

Candidatus Conararia (NL. fem. n. *Conararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHXO01*. The type species for the genus is *Candidatus* Conararia lenocessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHXO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conarariaceae.

Description of *Candidatus* Conarariaceae fam. nov.

Candidatus Conarariaceae (NL. fem. n. *Conarariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHXO01*. The type genus for the taxon is *Candidatus* Conararia .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Conarella gen. nov.

Candidatus Conarella (NL. fem. n. *Conarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1417*. The type species for the genus is *Candidatus* Conarella bromii_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conarella camilitrix sp. nov.

Candidatus Conarella camilitrix (NL. fem. n. *camilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1417 sp900552925*. The type genome for the species is the GenBank assembly GCA_900552925.1. The GC content of the type genome is 61.33 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Conarella cotenivita sp. nov.

Candidatus Conarella cotenivita (NL. fem. n. *cotenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1417 sp002305575*. The type genome for the species is the GenBank assembly GCA_002305575.1. The GC content of the type genome is 56.2 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Conarella rudecibula sp. nov.

Candidatus Conarella rudecibula (NL. fem. n. *rudecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1417 sp003531055*. The type genome for the species is the GenBank assembly GCA_008681155.1. The GC content of the type genome is 52.13 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Conarella saxopigena sp. nov.

Candidatus Conarella saxopigena (NL. fem. n. *saxopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1417 sp900549945*. The type genome for the species is the GenBank assembly RS_GCF_900765145.1. The GC content of the type genome is 61.12 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Conaria addivugo sp. nov.

Candidatus Conaria addivugo (NL. fem. n. *addivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED96 sp902593075*. The type genome for the species is the GenBank assembly GCA_902593075.1. The GC content of the type genome is 30.85 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Conaria gen. nov.

Candidatus Conaria (NL. fem. n. *Conaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED96*. The type species for the genus is *Candidatus* Conaria addivugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conaria anxifetta sp. nov.

Candidatus Conaria anxifetta (NL. fem. n. *anxifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED96 sp902628605*. The type genome for the species is the GenBank assembly GCA_902628605.1. The GC content of the type genome is 31.57 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Conaria bipenitia sp. nov.

Candidatus Conaria bipenitia (NL. fem. n. *bipenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED96 sp002728075*. The type genome for the species is the GenBank assembly GCA_002728075.1. The GC content of the type genome is 30.68 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Conaria cosigitudo sp. nov.

Candidatus Conaria cosigitudo (NL. fem. n. *cosigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED96 sp902598305*. The type genome for the species is the GenBank assembly GCA_902598305.1. The GC content of the type genome is 31.01 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Conaria dibucimonia sp. nov.

Candidatus Conaria dibucimonia (NL. fem. n. *dibucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED96 sp902635965*. The type genome for the species is the GenBank assembly GCA_902618725.1. The GC content of the type genome is 31.22 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Conaria laculilenta sp. nov.

Candidatus Conaria laculilenta (NL. fem. n. *laculilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED96 sp902595825*. The type genome for the species is the GenBank assembly GCA_902595825.1. The GC content of the type genome is 31.2 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Conaria perabetta sp. nov.

Candidatus Conaria perabetta (NL. fem. n. *perabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED96 sp902582405*. The type genome for the species is the GenBank assembly GCA_902582405.1. The GC content of the type genome is 31.12 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Conaria podagatio sp. nov.

Candidatus Conaria podagatio (NL. fem. n. *podagatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED96 sp002171475*. The type genome for the species is the GenBank assembly GCA_004214315.1. The GC content of the type genome is 30.56 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Conarida cerebatica sp. nov.

Candidatus Conarida cerebatica (NL. fem. n. *cerebatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B36-G15 sp003645615*. The type genome for the species is the GenBank assembly GCA_003645615.1. The GC content of the type genome is 51.27 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Conarida gen. nov.

Candidatus Conarida (NL. fem. n. *Conarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B36-G15*. The type species for the genus is *Candidatus* Conarida

cerebatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B36-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conaridaceae.

Description of *Candidatus* Conaridaceae fam. nov.

Candidatus Conaridaceae (NL. fem. n. *Conaridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B36-G15.* The type genus for the taxon is *Candidatus* Conarida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-42*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labeciales.

Description of *Candidatus* Conarosa domabedo sp. nov.

Candidatus Conarosa domabedo (NL. fem. n. *domabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2717565 sp002717565*. The type genome for the species is the GenBank assembly GCA_002717565.1. The GC content of the type genome is 46.89 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Conarosa gen. nov.

Candidatus Conarosa (NL. fem. n. *Conarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2717565*. The type species for the genus is *Candidatus* Conarosa domabedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2717565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conarosaceae.

Description of *Candidatus* Conarosaceae fam. nov.

Candidatus Conarosaceae (NL. fem. n. *Conarosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2717565.* The type genus for the taxon is *Candidatus* Conarosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2717565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Conarosales.

Description of *Candidatus* Conarosales ord. nov.

Candidatus Conarosales (NL. fem. n. *Conarosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2717565.* The type genus for the taxon is *Candidatus* Conarosa .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Conarula denaventia sp. nov.

Candidatus Conarula denaventia (NL. fem. n. *denaventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-1174 sp011046015*. The type genome for the species is the GenBank assembly GCA_011046015.1. The GC content of the type genome is 66.78 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Conarula gen. nov.

Candidatus Conarula (NL. fem. n. *Conarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-1174*. The type species for the genus is *Candidatus* Conarula denaventia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-1174*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conarulaceae.

Description of *Candidatus* Conarulaceae fam. nov.

Candidatus Conarulaceae (NL. fem. n. *Conarulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *SpSt-1174.* The type genus for the taxon is *Candidatus* Conarula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-1174*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Conarulales.

Description of *Candidatus* Conarulales ord. nov.

Candidatus Conarulales (NL. fem. n. *Conarulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-1174.* The type genus for the taxon is *Candidatus* Conarula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Conexibacter admulibra sp. nov.

Candidatus Conexibacter admulibra (NL. fem. n. *admulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Conexibacter_A sp000688095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000688095.1. The GC content of the type genome is 72.36 % and the genome length is 6.57 Mbp.

Description of *Candidatus* Confluentibacter nubigiforma sp. nov.

Candidatus Confluentibacter nubigiforma (NL. fem. n. *nubigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Confluentibacter sp002280395*. The type genome for the species is the GenBank assembly GCA_002280395.1. The GC content of the type genome is 35.11 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Confluentibacter viginetta sp. nov.

Candidatus Confluentibacter viginetta (NL. fem. n. *viginetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Confluentibacter sp003258355*. The type genome for the species is the GenBank assembly RS_GCF_003258355.1. The GC content of the type genome is 33.31 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Congregibacter adobratio sp. nov.

Candidatus Congregibacter adobratio (NL. fem. n. *adobratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Congregibacter sp000158155*. The type genome for the species is the GenBank assembly RS_GCF_000158155.1. The GC content of the type genome is 56.34 % and the genome length is 4.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "top oxic layer of a muddy sediment core".

Description of *Candidatus* Congregibacter defacitoga sp. nov.

Candidatus Congregibacter defacitoga (NL. fem. n. *defacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Congregibacter sp002428935*. The type genome for the species is the GenBank assembly GCA_002428935.1. The GC content of the type genome is 58.34 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Conibana domipago sp. nov.

Candidatus Conibana domipago (NL. fem. n. *domipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCYS01 sp013290085*. The type genome for the species is the GenBank assembly GCA_013290085.1. The GC content of the type genome is 41.57 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Conibana gen. nov.

Candidatus Conibana (NL. fem. n. *Conibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCYS01*. The type species for the genus is *Candidatus* Conibana domipago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABCYS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conibanaceae.

Description of *Candidatus* Conibanaceae fam. nov.

Candidatus Conibanaceae (NL. fem. n. *Conibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABCYS01*. The type genus for the taxon is *Candidatus* Conibana .

According to GTDB R06-RS202, this family belongs to the order *Babeliales*.

Description of *Candidatus* Conibaria conubitio sp. nov.

Candidatus Conibaria conubitio (NL. fem. n. *conubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1474 sp900547105*. The type genome for the species is the GenBank assembly RS_GCF_900757275.1. The GC content of the type genome is 56.69 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Conibaria gen. nov.

Candidatus Conibaria (NL. fem. n. *Conibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1474*. The type species for the genus is *Candidatus* Conibaria conubitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conibaria rurigitoga sp. nov.

Candidatus Conibaria rurigitoga (NL. fem. n. *rurigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1474 sp900552115*. The type genome for the species is the GenBank assembly GCA_900552115.1. The GC content of the type genome is 54.97 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Conibella celamatio sp. nov.

Candidatus Conibella celamatio (NL. fem. n. *celamatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9216 sp003245835*. The type genome for the species is the GenBank assembly GCA_003245835.1. The GC content of the type genome is 46.62 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Conibella gen. nov.

Candidatus Conibella (NL. fem. n. *Conibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9216*. The type species for the genus is *Candidatus* Conibella celamatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9216*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conibellaceae.

Description of *Candidatus* Conibellaceae fam. nov.

Candidatus Conibellaceae (NL. fem. n. *Conibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9216.* The type genus for the taxon is *Candidatus* Conibella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JC444*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decatariales.

Description of *Candidatus* Conibella curacivita sp. nov.

Candidatus Conibella curacivita (NL. fem. n. *curacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9216 sp003454605*. The type genome for the species is the GenBank assembly GCA_003454605.1. The GC content of the type genome is 44.3 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Conibia semilitas sp. nov.

Candidatus Conibia semilitas (NL. fem. n. *semilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-24 sp003554185*. The type genome for the species is the GenBank assembly GCA_003554185.1. The GC content of the type genome is 36.16 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Conibia gen. nov.

Candidatus Conibia (NL. fem. n. *Conibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1SED10-24*. The type species for the genus is *Candidatus* Conibia semilitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *T1SED10-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conibiaceae.

Description of *Candidatus* Conibiaceae fam. nov.

Candidatus Conibiaceae (NL. fem. n. *Conibiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T1SED10-24.* The type genus for the taxon is *Candidatus* Conibia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipenellales.

Description of *Candidatus* Conibida forinitia sp. nov.

Candidatus Conibida forinitia (NL. fem. n. *forinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13583 sp902790595*. The type genome for the species is the GenBank assembly GCA_902790595.1. The GC content of the type genome is 48.61 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Conibida gen. nov.

Candidatus Conibida (NL. fem. n. *Conibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13583*. The type species for the genus is *Candidatus* Conibida forinitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-534*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomogariaceae.

Description of *Candidatus* Conibula affunugo sp. nov.

Candidatus Conibula affunugo (NL. fem. n. *affunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9076 sp012513225*. The type genome for the species is the GenBank assembly GCA_012513225.1. The GC content of the type genome is 28.06 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Conibula gen. nov.

Candidatus Conibula (NL. fem. n. *Conibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9076*. The type species for the genus is *Candidatus* Conibula affunugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conibula domipitoga sp. nov.

Candidatus Conibula domipitoga (NL. fem. n. *domipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9076 sp003537975*. The type genome for the species is the GenBank assembly GCA_012523895.1. The GC content of the type genome is 27.76 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Conifana acontitoga sp. nov.

Candidatus Conifana acontitoga (NL. fem. n. *acontitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp005789005*. The type genome for the species is the GenBank assembly GCA_005789005.1. The GC content of the type genome is 53.71 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Conifana gen. nov.

Candidatus Conifana (NL. fem. n. *Conifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYAC01*. The type species for the genus is *Candidatus* Conifana acontitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Conifana apoplatica sp. nov.

Candidatus Conifana apoplatica (NL. fem. n. *apoplatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp903831295*. The type genome for the species is the GenBank assembly GCA_903831295.1. The GC content of the type genome is 53.16 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Conifana cucuritas sp. nov.

Candidatus Conifana cucuritas (NL. fem. n. *cucuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp903938205*. The type genome for the species is the GenBank assembly GCA_903938205.1. The GC content of the type genome is 52.76 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Conifana disidimonas sp. nov.

Candidatus Conifana disidimonas (NL. fem. n. *disidimonas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp903861235*. The type genome for the species is the GenBank assembly GCA_903861235.1. The GC content of the type genome is 69.58 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Conifana expasigena sp. nov.

Candidatus Conifana expasigena (NL. fem. n. *expasigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp903867275*. The type genome for the species is the GenBank assembly GCA_903867275.1. The GC content of the type genome is 67.26 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Conifana gabinitudo sp. nov.

Candidatus Conifana gabinitudo (NL. fem. n. *gabinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp005787685*. The type genome for the species is the GenBank assembly GCA_005787685.1. The GC content of the type genome is 53.34 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Conifana panopedo sp. nov.

Candidatus Conifana panopedo (NL. fem. n. *panopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp009926815*. The type genome for the species is the GenBank assembly GCA_009926815.1. The GC content of the type genome is 69.54 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Conifana semiditia sp. nov.

Candidatus Conifana semiditia (NL. fem. n. *semiditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp009691785*. The type genome for the species is the GenBank assembly GCA_009691785.1. The GC content of the type genome is 53.47 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Conifana semiditudo sp. nov.

Candidatus Conifana semiditudo (NL. fem. n. *semiditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp903898755*. The type genome for the species is the GenBank assembly GCA_903835615.1. The GC content of the type genome is 52.91 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Conifana tametitas sp. nov.

Candidatus Conifana tametitas (NL. fem. n. *tametitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp903914045*. The type genome for the species is the GenBank assembly GCA_903914045.1. The GC content of the type genome is 53.33 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Conifana utricitrix sp. nov.

Candidatus Conifana utricitrix (NL. fem. n. *utricitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAC01 sp009924765*. The type genome for the species is the GenBank assembly GCA_009924765.1. The GC content of the type genome is 66.86 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Conifaria levifessa sp. nov.

Candidatus Conifaria levifessa (NL. fem. n. *levifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2170 sp002772815*. The type genome for the species is the GenBank assembly GCA_002772815.1. The GC content of the type genome is 42.34 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Conifaria gen. nov.

Candidatus Conifaria (NL. fem. n. *Conifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2170*. The type species for the genus is *Candidatus* Conifaria levifessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conifaria novilitura sp. nov.

Candidatus Conifaria novilitura (NL. fem. n. *novilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2170 sp002436205*. The type genome for the species is the GenBank assembly GCA_002687155.1. The GC content of the type genome is 44.37 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Conifella vivificella sp. nov.

Candidatus Conifella vivificella (NL. fem. n. *vivificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1144 sp002311855*. The type genome for the species is the GenBank assembly GCA_002311855.1. The GC content of the type genome is 33.27 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Conifella gen. nov.

Candidatus Conifella (NL. fem. n. *Conifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1144*. The type species for the genus is *Candidatus* Conifella vivificella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1144*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conifellaceae.

Description of *Candidatus* Conifellaceae fam. nov.

Candidatus Conifellaceae (NL. fem. n. *Conifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1144.* The type genus for the taxon is *Candidatus* Conifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1144*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Conifellales.

Description of *Candidatus* Conifellales ord. nov.

Candidatus Conifellales (NL. fem. n. *Conifellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1144.* The type genus for the taxon is *Candidatus* Conifella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1144*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Conifellae.

Description of *Candidatus* Conifellae class. nov.

Candidatus Conifellae (NL. fem. n. *c__Conifellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1144.* The type genus for the taxon is *Candidatus* Conifella .

According to GTDB R06-RS202, this class belongs to the phylum *Desulfobacterota_D*.

Description of *Candidatus* Conifia latibessa sp. nov.

Candidatus Conifia latibessa (NL. fem. n. *latibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJKY01 sp903821365*. The type genome for the species is the GenBank assembly GCA_903829825.1. The GC content of the type genome is 48.69 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Conifia gen. nov.

Candidatus Conifia (NL. fem. n. *Conifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJKY01*. The type species for the genus is *Candidatus* Conifia latibessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conifida delucatio sp. nov.

Candidatus Conifida delucatio (NL. fem. n. *delucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS403 sp900541565*. The type genome for the species is the GenBank assembly GCA_900541565.1. The GC content of the type genome is 46.69 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Conifida gen. nov.

Candidatus Conifida (NL. fem. n. *Conifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS403*. The type species for the genus is *Candidatus* Conifida delucatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conifida domabibula sp. nov.

Candidatus Conifida domabibula (NL. fem. n. *domabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS403 sp900540275*. The type genome for the species is the GenBank assembly RS_GCF_900762485.1. The GC content of the type genome is 50.36 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Conifida scorbugo sp. nov.

Candidatus Conifida scorbugo (NL. fem. n. *scorbugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UMGS403 sp900541975*. The type genome for the species is the GenBank assembly GCA_900541975.1. The GC content of the type genome is 45.84 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Conifida verecessa sp. nov.

Candidatus Conifida verecessa (NL. fem. n. *verecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS403 sp900540865*. The type genome for the species is the GenBank assembly GCA_902384005.1. The GC content of the type genome is 50.59 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Conifosa annicimonas sp. nov.

Candidatus Conifosa annicimonas (NL. fem. n. *annicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1450 sp002796045*. The type genome for the species is the GenBank assembly GCA_002796045.1. The GC content of the type genome is 36.09 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Conifosa gen. nov.

Candidatus Conifosa (NL. fem. n. *Conifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1450*. The type species for the genus is *Candidatus* Conifosa annicimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Conifosa inaspitio sp. nov.

Candidatus Conifosa inaspitio (NL. fem. n. *inaspitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1450 sp002329205*. The type genome for the species is the

GenBank assembly GCA_002329205.1. The GC content of the type genome is 41.04 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Conifosa lenunicella sp. nov.

Candidatus Conifosa lenunicella (NL. fem. n. *lenunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1450 sp000990445*. The type genome for the species is the GenBank assembly GCA_000990445.1. The GC content of the type genome is 37.33 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Conifosa ossarivita sp. nov.

Candidatus Conifosa ossarivita (NL. fem. n. *ossarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1450 sp002792315*. The type genome for the species is the GenBank assembly GCA_002792315.1. The GC content of the type genome is 38.79 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Conifosa rarefimonia sp. nov.

Candidatus Conifosa rarefimonia (NL. fem. n. *rarefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1450 sp001789555*. The type genome for the species is the GenBank assembly GCA_001789555.1. The GC content of the type genome is 37.51 % and the genome length is 1.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Conifosa rosacago sp. nov.

Candidatus Conifosa rosacago (NL. fem. n. *rosacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1450 sp002788865*. The type genome for the species is the GenBank assembly GCA_002792335.1. The GC content of the type genome is 38.76 %

and the genome length is 1.09 Mbp.

Description of *Candidatus* Conifula xenodimonas sp. nov.

Candidatus Conifula xenodimonas (NL. fem. n. *xenodimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTYK01 sp012961925*. The type genome for the species is the GenBank assembly GCA_012961925.1. The GC content of the type genome is 51.39 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Conifula gen. nov.

Candidatus Conifula (NL. fem. n. *Conifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTYK01*. The type species for the genus is *Candidatus* Conifula xenodimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTYK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conifulaceae.

Description of *Candidatus* Conifulaceae fam. nov.

Candidatus Conifulaceae (NL. fem. n. *Conifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTYK01.* The type genus for the taxon is *Candidatus* Conifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *MVCY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipenidales.

Description of *Candidatus* Conigana abhinedo sp. nov.

Candidatus Conigana abhinedo (NL. fem. n. *abhinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2156 sp011049715*. The type genome for the species is the GenBank assembly GCA_011049715.1. The GC content of the type genome is 45.65 %

and the genome length is 5.38 Mbp.

Description of *Candidatus* Conigana gen. nov.

Candidatus Conigana (NL. fem. n. *Conigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2156*. The type species for the genus is *Candidatus* Conigana abhinedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2156*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coniganaceae.

Description of *Candidatus* Coniganaceae fam. nov.

Candidatus Coniganaceae (NL. fem. n. *Coniganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2156.* The type genus for the taxon is *Candidatus* Conigana .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Conigana revulimonia sp. nov.

Candidatus Conigana revulimonia (NL. fem. n. *revulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2156 sp002328165*. The type genome for the species is the GenBank assembly GCA_002420525.1. The GC content of the type genome is 45.84 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Conigaria peribitia sp. nov.

Candidatus Conigaria peribitia (NL. fem. n. *peribitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-42-19 sp000994805*. The type genome for the species is the GenBank assembly GCA_001774195.1. The GC content of the type genome is 41.06 % and the genome length is 0.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1

micron filter at time point D".

Description of *Candidatus* Conigaria gen. nov.

Candidatus Conigaria (NL. fem. n. *Conigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-42-19*. The type species for the genus is *Candidatus* Conigaria peribitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10092*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monimellaceae.

Description of *Candidatus* Conigella cerevitura sp. nov.

Candidatus Conigella cerevitura (NL. fem. n. *cerevitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1103 sp004136275*. The type genome for the species is the GenBank assembly GCA_004136275.1. The GC content of the type genome is 47.56 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Conigella gen. nov.

Candidatus Conigella (NL. fem. n. *Conigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1103*. The type species for the genus is *Candidatus* Conigella cerevitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conigella famelitica sp. nov.

Candidatus Conigella famelitica (NL. fem. n. *famelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1103 sp004138455*. The type genome for the species is the GenBank assembly RS_GCF_004138455.1. The GC content of the type genome is 50.8 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Conigella ignobiforma sp. nov.

Candidatus Conigella ignobiforma (NL. fem. n. *ignobiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1103 sp013333515*. The type genome for the species is the GenBank assembly GCA_013333515.2. The GC content of the type genome is 50.54 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Conigella veriditrix sp. nov.

Candidatus Conigella veriditrix (NL. fem. n. *veriditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1103 sp002313515*. The type genome for the species is the GenBank assembly GCA_002313515.1. The GC content of the type genome is 47.24 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Conigia panifentia sp. nov.

Candidatus Conigia panifentia (NL. fem. n. *panifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVRH01 sp903908285*. The type genome for the species is the GenBank assembly GCA_903837615.1. The GC content of the type genome is 45.26 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Conigia gen. nov.

Candidatus Conigia (NL. fem. n. *Conigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVRH01*. The type species for the genus is *Candidatus* Conigia panifentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depecosaceae.

Description of *Candidatus* Conigida subinibula sp. nov.

Candidatus Conigida subinibula (NL. fem. n. *subinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJAUT01 sp903945195*. The type genome for the species is the GenBank assembly GCA_903821655.1. The GC content of the type genome is 42.06 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Conigida gen. nov.

Candidatus Conigida (NL. fem. n. *Conigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJAUT01*. The type species for the genus is *Candidatus* Conigida subinibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12108*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ranunidaceae.

Description of *Candidatus* Conigosa attolicula sp. nov.

Candidatus Conigosa attolicula (NL. fem. n. *attolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B30-G16 sp003645115*. The type genome for the species is the GenBank assembly GCA_003645115.1. The GC content of the type genome is 41.29 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Conigosa gen. nov.

Candidatus Conigosa (NL. fem. n. *Conigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B30-G16*. The type species for the genus is *Candidatus* Conigosa attolicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B30-G16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conigosaceae.

Description of *Candidatus* Conigosaceae fam. nov.

Candidatus Conigosaceae (NL. fem. n. *Conigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B30-G16.* The type genus for the taxon is *Candidatus* Conigosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6098*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vehemidales.

Description of *Candidatus* Conigula ecligatio sp. nov.

Candidatus Conigula ecligatio (NL. fem. n. *ecligatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-0-10-42-9 sp002773845*. The type genome for the species is the GenBank assembly GCA_002773845.1. The GC content of the type genome is 41.56 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Conigula gen. nov.

Candidatus Conigula (NL. fem. n. *Conigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-0-10-42-9*. The type species for the genus is *Candidatus* Conigula ecligatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *21-14-0-10-42-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conigulaceae.

Description of *Candidatus* Conigulaceae fam. nov.

Candidatus Conigulaceae (NL. fem. n. *Conigulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *21-14-0-10-42-9.* The type genus for the taxon is *Candidatus* Conigula .

According to GTDB R06-RS202, this family belongs to the order *Buchananbacterales*.

Description of *Candidatus* Coninana disidivita sp. nov.

Candidatus Coninana disidivita (NL. fem. n. *disidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB2-FULL-45-9 sp001771575*. The type genome for the species is the GenBank assembly GCA_001771425.1. The GC content of the type genome is 51.81 % and the genome length is 1.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Coninana gen. nov.

Candidatus Coninana (NL. fem. n. *Coninana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB2-FULL-45-9*. The type species for the genus is *Candidatus* Coninana disidivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYB2-FULL-48-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomogiaceae.

Description of *Candidatus* Coninaria buxifilega sp. nov.

Candidatus Coninaria buxifilega (NL. fem. n. *buxifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL27 sp013204455*. The type genome for the species is the GenBank assembly GCA_013204455.1. The GC content of the type genome is 50.22 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Coninaria gen. nov.

Candidatus Coninaria (NL. fem. n. *Coninaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BACL27*. The type species for the genus is *Candidatus* Coninaria buxifilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Coninaria catilessa sp. nov.

Candidatus Coninaria catilessa (NL. fem. n. *catilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL27 sp014190295*. The type genome for the species is the GenBank assembly GCA_014190295.1. The GC content of the type genome is 48.71 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Coninaria cenacibra sp. nov.

Candidatus Coninaria cenacibra (NL. fem. n. *cenacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL27 sp003535455*. The type genome for the species is the GenBank assembly GCA_010021325.1. The GC content of the type genome is 51.66 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Coninaria conibitica sp. nov.

Candidatus Coninaria conibitica (NL. fem. n. *conibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL27 sp009927565*. The type genome for the species is the GenBank assembly GCA_009927565.1. The GC content of the type genome is 50.45 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Coninaria conipicella sp. nov.

Candidatus Coninaria conipicella (NL. fem. n. *conipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL27 sp009923685*. The type genome for the species is the GenBank assembly GCA_009923685.1. The GC content of the type genome is 51.55 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Coninaria curabastra sp. nov.

Candidatus Coninaria curabastra (NL. fem. n. *curabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL27 sp003569125*. The type genome for the species is the GenBank assembly GCA_003569125.1. The GC content of the type genome is 49.77 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Coninaria insufiforma sp. nov.

Candidatus Coninaria insufiforma (NL. fem. n. *insufiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL27 sp014190055*. The type genome for the species is the GenBank assembly GCA_014190055.1. The GC content of the type genome is 50.36 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Coninaria lupanago sp. nov.

Candidatus Coninaria lupanago (NL. fem. n. *lupanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL27 sp005805045*. The type genome for the species is the GenBank assembly GCA_005788095.1. The GC content of the type genome is 52.42 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Coninaria omnipitas sp. nov.

Candidatus Coninaria omnipitas (NL. fem. n. *omnipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL27 sp002737635*. The type genome for the species is the GenBank assembly GCA_002737635.1. The GC content of the type genome is 51.36 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Coninaria refulitio sp. nov.

Candidatus Coninaria refulitio (NL. fem. n. *refulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *BACL27 sp009703975*. The type genome for the species is the GenBank assembly GCA_009700945.1. The GC content of the type genome is 47.32 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Coninella canacastra sp. nov.

Candidatus Coninella canacastra (NL. fem. n. *canacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HB2-32-21 sp002431545*. The type genome for the species is the GenBank assembly GCA_003497255.1. The GC content of the type genome is 55.77 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Coninella gen. nov.

Candidatus Coninella (NL. fem. n. *Coninella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HB2-32-21*. The type species for the genus is *Candidatus* Coninella canacastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Coninella munimilega sp. nov.

Candidatus Coninella munimilega (NL. fem. n. *munimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HB2-32-21 sp003448675*. The type genome for the species is the GenBank assembly GCA_003448675.1. The GC content of the type genome is 54.91 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Coninella volunentia sp. nov.

Candidatus Coninella volunentia (NL. fem. n. *volunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HB2-32-21 sp003645535*. The type genome for the species is the GenBank assembly GCA_003646365.1. The GC content of the type genome is 48.5 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Coninia horomitrix sp. nov.

Candidatus Coninia horomitrix (NL. fem. n. *horomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBC034 sp902826835*. The type genome for the species is the GenBank assembly GCA_902826835.1. The GC content of the type genome is 64.18 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Coninia gen. nov.

Candidatus Coninia (NL. fem. n. *Coninia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBC034*. The type species for the genus is *Candidatus* Coninia horomitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002687715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobellaceae.

Description of *Candidatus* Coninida necopentia sp. nov.

Candidatus Coninida necopentia (NL. fem. n. *necopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QIAW01 sp003225655*. The type genome for the species is the GenBank assembly GCA_003225655.1. The GC content of the type genome is 56.26 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Coninida gen. nov.

Candidatus Coninida (NL. fem. n. *Coninida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QIAW01*. The type species for the genus is *Candidatus* Coninida necopentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QIAW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coninidaceae.

Description of *Candidatus* Coninidaceae fam. nov.

Candidatus Coninidaceae (NL. fem. n. *Coninidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QIAW01*. The type genus for the taxon is *Candidatus* Coninida .

According to GTDB R06-RS202, this family belongs to the order *Acidobacteriales*.

Description of *Candidatus* Coninosa mimogitoga sp. nov.

Candidatus Coninosa mimogitoga (NL. fem. n. *mimogitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-39-17 sp001817425*. The type genome for the species is the GenBank assembly GCA_001817425.1. The GC content of the type genome is 38.98 % and the genome length is 1.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Coninosa gen. nov.

Candidatus Coninosa (NL. fem. n. *Coninosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-39-17*. The type species for the genus is *Candidatus* Coninosa mimogitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecariaceae.

Description of *Candidatus* Coninula panifisca sp. nov.

Candidatus Coninula panifisca (NL. fem. n. *panifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2709665 sp002709665*. The type genome for the species is the GenBank assembly GCA_002346505.1. The GC content of the type genome is 53.07 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Coninula gen. nov.

Candidatus Coninula (NL. fem. n. *Coninula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2709665*. The type species for the genus is *Candidatus* Coninula panifisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2709665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coninulaceae.

Description of *Candidatus* Coninulaceae fam. nov.

Candidatus Coninulaceae (NL. fem. n. *Coninulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2709665.* The type genus for the taxon is *Candidatus* Coninula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Medimellales.

Description of *Candidatus* Conipana obsuredo sp. nov.

Candidatus Conipana obsuredo (NL. fem. n. *obsuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQX01 sp013203085*. The type genome for the species is the GenBank assembly GCA_013203085.1. The GC content of the type genome is 56.28 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Conipana gen. nov.

Candidatus Conipana (NL. fem. n. *Conipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQX01*. The type species for the genus is *Candidatus* Conipana obsuredo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMQX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Conipanaceae.

Description of *Candidatus* Conipanaceae fam. nov.

Candidatus Conipanaceae (NL. fem. n. *Conipanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQX01.* The type genus for the taxon is *Candidatus* Conipana .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMQX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Conipanales.

Description of *Candidatus* Conipanales ord. nov.

Candidatus Conipanales (NL. fem. n. *Conipanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQX01.* The type genus for the taxon is *Candidatus* Conipana .

According to the original version of GTDB R06-RS202, this family belongs to the class *JABMQX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Conipanae.

Description of *Candidatus* Conipanae class. nov.

Candidatus Conipanae (NL. fem. n. *c__Conipanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQX01.* The type genus for the taxon is *Candidatus* Conipana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *JABMQX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Conipanota.

Description of *Candidatus* Conipanota phyl. nov.

Candidatus Conipanota (NL. fem. n. *Conipanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQX01.* The type genus for the taxon is *Candidatus* Conipana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Coniparia ininnimonas sp. nov.

Candidatus Coniparia ininnimonas (NL. fem. n. *ininnimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3002 sp002697725*. The type genome for the species is the GenBank assembly GCA_002697725.1. The GC content of the type genome is 51.63 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Coniparia gen. nov.

Candidatus Coniparia (NL. fem. n. *Coniparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3002*. The type species for the genus is *Candidatus* Coniparia ininnimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipariaceae.

Description of *Candidatus* Conipariaceae fam. nov.

Candidatus Conipariaceae (NL. fem. n. *Conipariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3002.* The type genus for the taxon is *Candidatus* Coniparia .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Coniparia turibetta sp. nov.

Candidatus Coniparia turibetta (NL. fem. n. *turibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3002 sp002346425*. The type genome for the species is the GenBank assembly GCA_002346425.1. The GC content of the type genome is 52.38 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Conipella adcubastra sp. nov.

Candidatus Conipella adcubastra (NL. fem. n. *adcubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXIE01 sp012270525*. The type genome for the species is the GenBank assembly GCA_012270525.1. The GC content of the type genome is 61.9 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Conipella gen. nov.

Candidatus Conipella (NL. fem. n. *Conipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXIE01*. The type species for the genus is *Candidatus* Conipella adcubastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAXIE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipellaceae.

Description of *Candidatus* Conipellaceae fam. nov.

Candidatus Conipellaceae (NL. fem. n. *Conipellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXIE01.* The type genus for the taxon is *Candidatus* Conipella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bicipellales.

Description of *Candidatus* Conipia cilotimonia sp. nov.

Candidatus Conipia cilotimonia (NL. fem. n. *cilotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002707645 sp002693365*. The type genome for the species is the GenBank assembly GCA_002693365.1. The GC content of the type genome is 27.78 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Conipia gen. nov.

Candidatus Conipia (NL. fem. n. *Conipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002707645*. The type species for the genus is *Candidatus* Conipia cilotimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002707645*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipiaceae.

Description of *Candidatus* Conipiaceae fam. nov.

Candidatus Conipiaceae (NL. fem. n. *Conipiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002707645.* The type genus for the taxon is *Candidatus* Conipia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Conipia inlecibra sp. nov.

Candidatus Conipia inlecibra (NL. fem. n. *inlecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002707645 sp002704685*. The type genome for the species is the GenBank assembly GCA_002704685.1. The GC content of the type genome is 27.62 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Conipia irrevitura sp. nov.

Candidatus Conipia irrevitura (NL. fem. n. *irrevitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002707645 sp002707645*. The type genome for the species is the GenBank assembly GCA_002707645.1. The GC content of the type genome is 28.02 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Conipia seposimonas sp. nov.

Candidatus Conipia seposimonas (NL. fem. n. *seposimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002707645 sp002705605*. The type genome for the species is the GenBank assembly GCA_002705605.1. The GC content of the type genome is 28.3 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Conipida remulivita sp. nov.

Candidatus Conipida remulivita (NL. fem. n. *remulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZJ141 sp011038965*. The type genome for the species is the GenBank assembly RS_GCF_011038965.1. The GC content of the type genome is 55.08 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Conipida gen. nov.

Candidatus Conipida (NL. fem. n. *Conipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZJ141*. The type species for the genus is *Candidatus* Conipida remulivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Coniposa conifatio sp. nov.

Candidatus Coniposa conifatio (NL. fem. n. *conifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUPE01 sp903877935*. The type genome for the species is the GenBank assembly GCA_903897945.1. The GC content of the type genome is 53.13 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Coniposa gen. nov.

Candidatus Coniposa (NL. fem. n. *Coniposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUPE01*. The type species for the genus is *Candidatus* Coniposa conifatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Coniposa desurilenta sp. nov.

Candidatus Coniposa desurilenta (NL. fem. n. *desurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUPE01 sp903900975*. The type genome for the species is the GenBank assembly GCA_903900975.1. The GC content of the type genome is 54.75 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Coniposa fetificula sp. nov.

Candidatus Coniposa fetificula (NL. fem. n. *fetificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUPE01 sp009921785*. The type genome for the species is the GenBank assembly GCA_009921785.1. The GC content of the type genome is 52.85 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Coniposa semimibula sp. nov.

Candidatus Coniposa semimibula (NL. fem. n. *semimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUPE01 sp009920595*. The type genome for the species is the GenBank assembly GCA_009920595.1. The GC content of the type genome is 52.3 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Conipula cerofimonia sp. nov.

Candidatus Conipula cerofimonia (NL. fem. n. *cerofimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2400775 sp013151045*. The type genome for the species is the GenBank assembly GCA_013151045.1. The GC content of the type genome is 44.6 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Conipula gen. nov.

Candidatus Conipula (NL. fem. n. *Conipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2400775*. The type species for the genus is *Candidatus* Conipula cerofimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2400775*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipulaceae.

Description of *Candidatus* Conipulaceae fam. nov.

Candidatus Conipulaceae (NL. fem. n. *Conipulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2400775.* The type genus for the taxon is *Candidatus* Conipula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2400775*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Conipulales.

Description of *Candidatus* Conipulales ord. nov.

Candidatus Conipulales (NL. fem. n. *Conipulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2400775.* The type genus for the taxon is *Candidatus* Conipula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Conipula direcago sp. nov.

Candidatus Conipula direcago (NL. fem. n. *direcago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2400775 sp002400775*. The type genome for the species is the GenBank assembly GCA_002400775.1. The GC content of the type genome is 46.59 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Conopana brabrigena sp. nov.

Candidatus Conopana brabrigena (NL. fem. n. *brabrigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp003557805*. The type genome for the species is the GenBank assembly GCA_003557805.1. The GC content of the type genome is 46.76 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Conopana gen. nov.

Candidatus Conopana (NL. fem. n. *Conopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUPG01*. The type species for the genus is *Candidatus* Conopana brabrigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Conopana calipugo sp. nov.

Candidatus Conopana calipugo (NL. fem. n. *calipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp003567205*. The type genome for the species is the GenBank assembly GCA_003567205.1. The GC content of the type genome is 47.73 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Conopana caravitudo sp. nov.

Candidatus Conopana caravitudo (NL. fem. n. *caravitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp007124575*. The type genome for the species is the

GenBank assembly GCA_007118715.1. The GC content of the type genome is 47.78 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Conopana citivedo sp. nov.

Candidatus Conopana citivedo (NL. fem. n. *citivedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp003553005*. The type genome for the species is the GenBank assembly GCA_003553005.1. The GC content of the type genome is 52.01 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Conopana dapifitura sp. nov.

Candidatus Conopana dapifitura (NL. fem. n. *dapifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp007134525*. The type genome for the species is the GenBank assembly GCA_007134525.1. The GC content of the type genome is 46.23 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Conopana decinugo sp. nov.

Candidatus Conopana decinugo (NL. fem. n. *decinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp003556325*. The type genome for the species is the GenBank assembly GCA_003556325.1. The GC content of the type genome is 49.32 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Conopana defarentia sp. nov.

Candidatus Conopana defarentia (NL. fem. n. *defarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp003557765*. The type genome for the species is the GenBank assembly GCA_003557765.1. The GC content of the type genome is 48.45 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Conopana desupessa sp. nov.

Candidatus Conopana desupessa (NL. fem. n. *desupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp007125585*. The type genome for the species is the GenBank assembly GCA_007123355.1. The GC content of the type genome is 50.48 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Conopana dicibessa sp. nov.

Candidatus Conopana dicibessa (NL. fem. n. *dicibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp003557385*. The type genome for the species is the GenBank assembly GCA_003566175.1. The GC content of the type genome is 49.4 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Conopana divulivita sp. nov.

Candidatus Conopana divulivita (NL. fem. n. *divulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp007120675*. The type genome for the species is the GenBank assembly GCA_007131985.1. The GC content of the type genome is 55.67 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Conopana feditítudo sp. nov.

Candidatus Conopana feditítudo (NL. fem. n. *feditítudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp007122505*. The type genome for the species is the GenBank assembly GCA_007122505.1. The GC content of the type genome is 45.73 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Conopana genocitas sp. nov.

Candidatus Conopana genocitas (NL. fem. n. *genocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp003552075*. The type genome for the species is the GenBank assembly GCA_003552075.1. The GC content of the type genome is 50.12 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Conopana immurivita sp. nov.

Candidatus Conopana immurivita (NL. fem. n. *immurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp007695305*. The type genome for the species is the GenBank assembly GCA_007695305.1. The GC content of the type genome is 46.24 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Conopana viginimonia sp. nov.

Candidatus Conopana viginimonia (NL. fem. n. *viginimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPG01 sp003559735*. The type genome for the species is the GenBank assembly GCA_003559735.1. The GC content of the type genome is 47.9 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Conopella derecibula sp. nov.

Candidatus Conopella derecibula (NL. fem. n. *derecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-37-7b sp001788095*. The type genome for the species is the GenBank assembly GCA_001788095.1. The GC content of the type genome is 37.6 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Conopella gen. nov.

Candidatus Conopella (NL. fem. n. *Conopella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-37-7b*. The type species for the genus is *Candidatus*

Conopella derecibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-37-13b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifidaceae.

Description of *Candidatus* Conopida maxumigena sp. nov.

Candidatus Conopida maxumigena (NL. fem. n. *maxumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8363 sp013349385*. The type genome for the species is the GenBank assembly GCA_013349385.1. The GC content of the type genome is 52.41 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Conopida gen. nov.

Candidatus Conopida (NL. fem. n. *Conopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8363*. The type species for the genus is *Candidatus* Conopida maxumigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8363*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conopidaceae.

Description of *Candidatus* Conopidaceae fam. nov.

Candidatus Conopidaceae (NL. fem. n. *Conopidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8363.* The type genus for the taxon is *Candidatus* Conopida .

According to GTDB R06-RS202, this family belongs to the order *Magnetococcales*.

Description of *Candidatus* Conopida papilatica sp. nov.

Candidatus Conopida papilatica (NL. fem. n. *papilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA8363 sp002753615*. The type genome for the species is the GenBank assembly GCA_002753615.1. The GC content of the type genome is 51.85 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Conopida peropastra sp. nov.

Candidatus Conopida peropastra (NL. fem. n. *peropastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8363 sp002753735*. The type genome for the species is the GenBank assembly GCA_002753215.1. The GC content of the type genome is 54.3 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Conopida sitelentia sp. nov.

Candidatus Conopida sitelentia (NL. fem. n. *sitelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8363 sp002753515*. The type genome for the species is the GenBank assembly GCA_002753595.1. The GC content of the type genome is 53.21 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Conopula lucifimonas sp. nov.

Candidatus Conopula lucifimonas (NL. fem. n. *lucifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGVZ01 sp010029825*. The type genome for the species is the GenBank assembly GCA_010029825.1. The GC content of the type genome is 58.38 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Conopula gen. nov.

Candidatus Conopula (NL. fem. n. *Conopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGVZ01*. The type species for the genus is *Candidatus* Conopula lucifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RGVZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Conopulaceae.

Description of *Candidatus* Conopulaceae fam. nov.

Candidatus Conopulaceae (NL. fem. n. *Conopulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RGVZ01.* The type genus for the taxon is *Candidatus* Conopula .

According to GTDB R06-RS202, this family belongs to the order *Oligoflexales*.

Description of *Candidatus* Contendobacter apsocitas sp. nov.

Candidatus Contendobacter apsocitas (NL. fem. n. *apsocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Contendobacter sp012031845*. The type genome for the species is the GenBank assembly GCA_012031845.1. The GC content of the type genome is 57.21 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Contendobacter immobibra sp. nov.

Candidatus Contendobacter immobibra (NL. fem. n. *immobibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Contendobacter sp008933795*. The type genome for the species is the GenBank assembly GCA_008933795.1. The GC content of the type genome is 62.73 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Contendobacter labecilenta sp. nov.

Candidatus Contendobacter labecilenta (NL. fem. n. *labecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Contendobacter sp002352185*. The type genome for the species is the GenBank assembly GCA_002352185.1. The GC content of the type genome is 60.6 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Conubana socagitudo sp. nov.

Candidatus Conubana socagitudo (NL. fem. n. *socagitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXPW01 sp009839325*. The type genome for the species is the GenBank assembly GCA_009835595.1. The GC content of the type genome is 65.62 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Conubana gen. nov.

Candidatus Conubana (NL. fem. n. *Conubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXPW01*. The type species for the genus is *Candidatus* Conubana socagitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VXPW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conubanaceae.

Description of *Candidatus* Conubanaceae fam. nov.

Candidatus Conubanaceae (NL. fem. n. *Conubanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXPW01.* The type genus for the taxon is *Candidatus* Conubana .

According to the original version of GTDB R06-RS202, this family belongs to the order *VXPW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Conubanales.

Description of *Candidatus* Conubanales ord. nov.

Candidatus Conubanales (NL. fem. n. *Conubanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXPW01.* The type genus for the taxon is *Candidatus* Conubana .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Conubaria tetenimonas sp. nov.

Candidatus Conubaria tetenimonas (NL. fem. n. *tetenimonas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NSJ-63 sp014384805*. The type genome for the species is the GenBank assembly GCA_014384805.1. The GC content of the type genome is 53.27 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Conubaria gen. nov.

Candidatus Conubaria (NL. fem. n. *Conubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NSJ-63*. The type species for the genus is *Candidatus* Conubaria tetenimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conubella proscedo sp. nov.

Candidatus Conubella proscedo (NL. fem. n. *proscedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1752 sp902783535*. The type genome for the species is the GenBank assembly GCA_902783535.1. The GC content of the type genome is 56.36 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Conubella gen. nov.

Candidatus Conubella (NL. fem. n. *Conubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1752*. The type species for the genus is *Candidatus* Conubella proscedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Conubella utricivita sp. nov.

Candidatus Conubella utricivita (NL. fem. n. *utricivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1752 sp002314835*. The type genome for the species is the GenBank assembly GCA_002314835.1. The GC content of the type genome is 49.89 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Conubella vacilousia sp. nov.

Candidatus Conubella vacilousia (NL. fem. n. *vacilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1752 sp900554405*. The type genome for the species is the GenBank assembly GCA_900554405.1. The GC content of the type genome is 53.89 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Conubida peradentia sp. nov.

Candidatus Conubida peradentia (NL. fem. n. *peradentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-45-10 sp001783035*. The type genome for the species is the GenBank assembly GCA_001783035.1. The GC content of the type genome is 44.61 % and the genome length is 0.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Conubida gen. nov.

Candidatus Conubida (NL. fem. n. *Conubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-45-10*. The type species for the genus is *Candidatus* Conubida peradentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-37-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocariaceae.

Description of *Candidatus* Conubosa bicipibra sp. nov.

Candidatus Conubosa bicipibra (NL. fem. n. *bicipibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0040 sp000318095*. The type genome for the species is the GenBank assembly RS_GCF_000318095.2. The GC content of the type genome is 46.13 % and the genome length is 2.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity".

Description of *Candidatus* Conubosa gen. nov.

Candidatus Conubosa (NL. fem. n. *Conubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F0040*. The type species for the genus is *Candidatus* Conubosa bicipibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Conubosa capilessa sp. nov.

Candidatus Conubosa capilessa (NL. fem. n. *capilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0040 sp900095835*. The type genome for the species is the GenBank assembly RS_GCF_900095835.1. The GC content of the type genome is 47.35 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Conubosa ceracitas sp. nov.

Candidatus Conubosa ceracitas (NL. fem. n. *ceracitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0040 sp002314875*. The type genome for the species is the GenBank assembly GCA_002314875.1. The GC content of the type genome is 46.88 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Conubosa cuferetta sp. nov.

Candidatus Conubosa cuferetta (NL. fem. n. *cuferetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0040 sp003639005*. The type genome for the species is the GenBank assembly GCA_003639005.1. The GC content of the type genome is 54.95 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Conubosa inarditrix sp. nov.

Candidatus Conubosa inarditrix (NL. fem. n. *inarditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0040 sp003859795*. The type genome for the species is the GenBank assembly RS_GCF_003859795.1. The GC content of the type genome is 49.75 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Conubosa solivugo sp. nov.

Candidatus Conubosa solivugo (NL. fem. n. *solivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0040 sp004555055*. The type genome for the species is the GenBank assembly GCA_004555055.1. The GC content of the type genome is 54.22 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Conubula benifimonas sp. nov.

Candidatus Conubula benifimonas (NL. fem. n. *benifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6899 sp001821395*. The type genome for the species is the GenBank assembly GCA_001821395.1. The GC content of the type genome is 49.16 % and the genome length is 1.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Conubula gen. nov.

Candidatus Conubula (NL. fem. n. *Conubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6899*. The type species for the genus is *Candidatus* Conubula

benifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6899*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conubulaceae.

Description of *Candidatus* Conubulaceae fam. nov.

Candidatus Conubulaceae (NL. fem. n. *Conubulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6899.* The type genus for the taxon is *Candidatus* Conubula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Conubula lupanilenta sp. nov.

Candidatus Conubula lupanilenta (NL. fem. n. *lupanilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6899 sp002451235*. The type genome for the species is the GenBank assembly GCA_002451235.1. The GC content of the type genome is 53.91 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Conubula nimirigena sp. nov.

Candidatus Conubula nimirigena (NL. fem. n. *nimirigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6899 sp001819095*. The type genome for the species is the GenBank assembly GCA_001819095.1. The GC content of the type genome is 54.32 % and the genome length is 1.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Conubula paracastra sp. nov.

Candidatus Conubula paracastra (NL. fem. n. *paracastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6899 sp001821435*. The type genome for the species is the GenBank assembly GCA_001821385.1. The GC content of the type genome is 50.2 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Conubula serotastra sp. nov.

Candidatus Conubula serotastra (NL. fem. n. *serotastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6899 sp002429425*. The type genome for the species is the GenBank assembly GCA_002429425.1. The GC content of the type genome is 42.59 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Conubula tenilatio sp. nov.

Candidatus Conubula tenilatio (NL. fem. n. *tenilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6899 sp000999395*. The type genome for the species is the GenBank assembly GCA_000999395.1. The GC content of the type genome is 46.42 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Coprobacter desupibula sp. nov.

Candidatus Coprobacter desupibula (NL. fem. n. *desupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprobacter sp900545915*. The type genome for the species is the GenBank assembly GCA_900545915.1. The GC content of the type genome is 38.33 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Coprobacter lenimitoga sp. nov.

Candidatus Coprobacter lenimitoga (NL. fem. n. *lenimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprobacter sp900555475*. The type genome for the species is the GenBank assembly GCA_900555475.1. The GC content of the type genome is 37.68 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Coprococcus alsidastra sp. nov.

Candidatus Coprococcus alsidastra (NL. fem. n. *alsidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus sp002437435*. The type genome for the species is the GenBank assembly GCA_002437435.1. The GC content of the type genome is 40.95 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Coprococcus arcebicella sp. nov.

Candidatus Coprococcus arcebicella (NL. fem. n. *arcebicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus sp900548315*. The type genome for the species is the GenBank assembly GCA_900548315.1. The GC content of the type genome is 43.26 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Coprococcus casigicula sp. nov.

Candidatus Coprococcus casigicula (NL. fem. n. *casigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus sp900761435*. The type genome for the species is the GenBank assembly GCA_900761435.1. The GC content of the type genome is 41.01 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Coprococcus cocoditia sp. nov.

Candidatus Coprococcus cocoditia (NL. fem. n. *cocoditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus sp000433075*. The type genome for the species is the GenBank assembly GCA_000433075.1. The GC content of the type genome is 41.93 % and the genome length is 2.33 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Coprococcus favonigena sp. nov.

Candidatus Coprococcus favonigena (NL. fem. n. *favonigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus sp000154245*. The type genome for the species is the GenBank assembly RS_GCF_009874105.1. The GC content of the type genome is 41.35 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Coprococcus lenocimonas sp. nov.

Candidatus Coprococcus lenocimonas (NL. fem. n. *lenocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus sp900066115*. The type genome for the species is the GenBank assembly RS_GCF_014287735.1. The GC content of the type genome is 41.24 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Coprococcus ludimago sp. nov.

Candidatus Coprococcus ludimago (NL. fem. n. *ludimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus sp900548215*. The type genome for the species is the GenBank assembly GCA_900752035.1. The GC content of the type genome is 42.77 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Coprococcus monocitrix sp. nov.

Candidatus Coprococcus monocitrix (NL. fem. n. *monocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus sp900767685*. The type genome for the species is the GenBank assembly GCA_900767685.1. The GC content of the type genome is 42.98 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Coprococcus utputicella sp. nov.

Candidatus Coprococcus utputicella (NL. fem. n. *utputicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus sp900557435*. The type genome for the species is the GenBank assembly GCA_900557435.1. The GC content of the type genome is 42.95 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Coprococcus rorifessa sp. nov.

Candidatus Coprococcus rorifessa (NL. fem. n. *rorifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprococcus_A sp900548825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900548825.1. The GC content of the type genome is 43.74 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Coprothermobacter accumimonas sp. nov.

Candidatus Coprothermobacter accumimonas (NL. fem. n. *accumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprothermobacter sp003476705*. The type genome for the species is the GenBank assembly GCA_003476705.1. The GC content of the type genome is 44.53 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Coprothermobacter errabilenta sp. nov.

Candidatus Coprothermobacter errabilenta (NL. fem. n. *errabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coprothermobacter sp012842545*. The type genome for the species is the GenBank assembly GCA_012842545.1. The GC content of the type genome is 45.49 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Coraliomargarita vavasigena sp. nov.

Candidatus Coraliomargarita vavasigena (NL. fem. n. *vavasigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coraliomargarita sp002469895*. The type genome for the species is the GenBank assembly GCA_002338405.1. The GC content of the type genome is 51.94 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Corallococcus assibax sp. nov.

Candidatus Corallococcus assibax (NL. fem. n. *assibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corallococcus sp003611675*. The type genome for the species is the GenBank assembly RS_GCF_003611675.1. The GC content of the type genome is 70.15 % and the genome length is 10.5 Mbp.

Description of *Candidatus* Corallococcus hexamugo sp. nov.

Candidatus Corallococcus hexamugo (NL. fem. n. *hexamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corallococcus sp003600865*. The type genome for the species is the GenBank assembly RS_GCF_003600865.1. The GC content of the type genome is 69.51 % and the genome length is 9.07 Mbp.

Description of *Candidatus* Corallococcus lenunilenta sp. nov.

Candidatus Corallococcus lenunilenta (NL. fem. n. *lenunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corallococcus sp004173515*. The type genome for the species is the GenBank assembly GCA_004173515.1. The GC content of the type genome is 69.88 % and the genome length is 10.2 Mbp.

Description of *Candidatus* Corallococcus necubastra sp. nov.

Candidatus Corallococcus necubastra (NL. fem. n. *necubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Corallococcus sp009909145*. The type genome for the species is the GenBank assembly RS_GCF_009909145.1. The GC content of the type genome is 70.69 % and the genome length is 9.23 Mbp.

Description of *Candidatus* Corallococcus vinacastra sp. nov.

Candidatus Corallococcus vinacastra (NL. fem. n. *vinacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corallococcus sp003612115*. The type genome for the species is the GenBank assembly RS_GCF_003612115.1. The GC content of the type genome is 69.91 % and the genome length is 10.23 Mbp.

Description of *Candidatus* Corocana futatitica sp. nov.

Candidatus Corocana futatitica (NL. fem. n. *futatitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS416 sp900542005*. The type genome for the species is the GenBank assembly GCA_900542005.1. The GC content of the type genome is 60.27 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Corocana gen. nov.

Candidatus Corocana (NL. fem. n. *Corocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS416*. The type species for the genus is *Candidatus* Corocana futatitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Corocanaceae.

Description of *Candidatus* Corocanaceae fam. nov.

Candidatus Corocanaceae (NL. fem. n. *Corocanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS416.* The type genus for the taxon is *Candidatus* Corocana .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Corocaria laxiticula sp. nov.

Candidatus Corocaria laxiticula (NL. fem. n. *laxiticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM004 sp002868955*. The type genome for the species is the GenBank assembly GCA_002868955.1. The GC content of the type genome is 47.45 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Corocaria gen. nov.

Candidatus Corocaria (NL. fem. n. *Corocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM004*. The type species for the genus is *Candidatus* Corocaria laxiticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM004*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Corocariaceae.

Description of *Candidatus* Corocariaceae fam. nov.

Candidatus Corocariaceae (NL. fem. n. *Corocariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM004.* The type genus for the taxon is *Candidatus* Corocaria .

According to GTDB R06-RS202, this family belongs to the order *Desulfobulbales*.

Description of *Candidatus* Corocaria monogibra sp. nov.

Candidatus Corocaria monogibra (NL. fem. n. *monogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM004 sp012974315*. The type genome for the species is the GenBank assembly GCA_013139195.1. The GC content of the type genome is 45.08 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Corocella necubedo sp. nov.

Candidatus Corocella necubedo (NL. fem. n. *necubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1201 sp900319565*. The type genome for the species is the GenBank assembly GCA_902759835.1. The GC content of the type genome is 51.59 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Corocella gen. nov.

Candidatus Corocella (NL. fem. n. *Corocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1201*. The type species for the genus is *Candidatus* Corocella necubedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Corocella uberribra sp. nov.

Candidatus Corocella uberribra (NL. fem. n. *uberribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1201 sp002309675*. The type genome for the species is the GenBank assembly GCA_002309675.1. The GC content of the type genome is 51.48 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Corocia advorentia sp. nov.

Candidatus Corocia advorentia (NL. fem. n. *advorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGGB01 sp007117235*. The type genome for the species is the GenBank assembly GCA_007117235.1. The GC content of the type genome is 41.47 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Corocia gen. nov.

Candidatus Corocia (NL. fem. n. *Corocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QGGB01*. The type species for the genus is *Candidatus* Corocia advorentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Corocia chernedo sp. nov.

Candidatus Corocia chernedo (NL. fem. n. *chernedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGGB01 sp007118525*. The type genome for the species is the GenBank assembly GCA_007118525.1. The GC content of the type genome is 44.39 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Corocia demigousia sp. nov.

Candidatus Corocia demigousia (NL. fem. n. *demigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGGB01 sp007693295*. The type genome for the species is the GenBank assembly GCA_007693295.1. The GC content of the type genome is 45.24 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Corocia denavetta sp. nov.

Candidatus Corocia denavetta (NL. fem. n. *denavetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGGB01 sp003150675*. The type genome for the species is the GenBank assembly RS_GCF_003150675.1. The GC content of the type genome is 47.72 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Corocia lucubitas sp. nov.

Candidatus Corocia lucubitas (NL. fem. n. *lucubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGGB01 sp003561515*. The type genome for the species is the

GenBank assembly GCA_003564615.1. The GC content of the type genome is 47.49 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Corocida categitura sp. nov.

Candidatus Corocida categitura (NL. fem. n. *categitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-41-14 sp002788755*. The type genome for the species is the GenBank assembly GCA_002788755.1. The GC content of the type genome is 41.02 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Corocida gen. nov.

Candidatus Corocida (NL. fem. n. *Corocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-41-14*. The type species for the genus is *Candidatus* Corocida categitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-41-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Corocidaceae.

Description of *Candidatus* Corocidaceae fam. nov.

Candidatus Corocidaceae (NL. fem. n. *Corocidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-41-14.* The type genus for the taxon is *Candidatus* Corocida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Corocosa cnesticella sp. nov.

Candidatus Corocosa cnesticella (NL. fem. n. *cnesticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SZUA-161 sp004376205*. The type genome for the species is the GenBank assembly GCA_004376205.1. The GC content of the type genome is 54.37 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Corocosa gen. nov.

Candidatus Corocosa (NL. fem. n. *Corocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-161*. The type species for the genus is *Candidatus* Corocosa cnesticella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Corocosaceae.

Description of *Candidatus* Corocosaceae fam. nov.

Candidatus Corocosaceae (NL. fem. n. *Corocosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-161.* The type genus for the taxon is *Candidatus* Corocosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Corocosales.

Description of *Candidatus* Corocosales ord. nov.

Candidatus Corocosales (NL. fem. n. *Corocosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-161.* The type genus for the taxon is *Candidatus* Corocosa .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Corocosa indiritica sp. nov.

Candidatus Corocosa indiritica (NL. fem. n. *indiritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-161 sp003229915*. The type genome for the species is the

GenBank assembly GCA_003229915.1. The GC content of the type genome is 54.07 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Corocula turifimonia sp. nov.

Candidatus Corocula turifimonia (NL. fem. n. *turifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED88 sp002171515*. The type genome for the species is the GenBank assembly GCA_002692125.1. The GC content of the type genome is 58.29 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Corocula gen. nov.

Candidatus Corocula (NL. fem. n. *Corocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED88*. The type species for the genus is *Candidatus* Corocula turifimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4427*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapiaceae.

Description of *Candidatus* Corticibacterium apoplimonas sp. nov.

Candidatus Corticibacterium apoplimonas (NL. fem. n. *apoplimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corticibacterium sp002316345*. The type genome for the species is the GenBank assembly GCA_002316345.1. The GC content of the type genome is 61.26 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Corynebacterium absoritia sp. nov.

Candidatus Corynebacterium absoritia (NL. fem. n. *absoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp009734425*. The type genome for the species is the GenBank assembly RS_GCF_009734425.1. The GC content of the type genome is 62.66

% and the genome length is 3.22 Mbp.

Description of *Candidatus* Corynebacterium adcogago sp. nov.

Candidatus Corynebacterium adcogago (NL. fem. n. *adcogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001812805*. The type genome for the species is the GenBank assembly RS_GCF_001812805.1. The GC content of the type genome is 59.8 % and the genome length is 2.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "urine".

Description of *Candidatus* Corynebacterium adpinilega sp. nov.

Candidatus Corynebacterium adpinilega (NL. fem. n. *adpinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp900618065*. The type genome for the species is the GenBank assembly GCA_900618065.1. The GC content of the type genome is 62.4 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Corynebacterium ammigousia sp. nov.

Candidatus Corynebacterium ammigousia (NL. fem. n. *ammigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp003955685*. The type genome for the species is the GenBank assembly RS_GCF_003955685.1. The GC content of the type genome is 66.37 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Corynebacterium annicilenta sp. nov.

Candidatus Corynebacterium annicilenta (NL. fem. n. *annicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp009734385*. The type genome for the species is the GenBank assembly RS_GCF_009734385.1. The GC content of the type genome is 58.55 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Corynebacterium aprugigena sp. nov.

Candidatus Corynebacterium aprugigena (NL. fem. n. *aprugigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp012837295*. The type genome for the species is the GenBank assembly GCA_012837295.1. The GC content of the type genome is 69.79 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Corynebacterium artilago sp. nov.

Candidatus Corynebacterium artilago (NL. fem. n. *artilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp009026825*. The type genome for the species is the GenBank assembly RS_GCF_009026825.1. The GC content of the type genome is 59.95 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Corynebacterium astipitas sp. nov.

Candidatus Corynebacterium astipitas (NL. fem. n. *astipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001815935*. The type genome for the species is the GenBank assembly RS_GCF_001815935.1. The GC content of the type genome is 65.41 % and the genome length is 2.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Urinary Tract".

Description of *Candidatus* Corynebacterium cacalimonas sp. nov.

Candidatus Corynebacterium cacalimonas (NL. fem. n. *cacalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001807485*. The type genome for the species is the GenBank assembly RS_GCF_000738355.1. The GC content of the type genome is 62.98 % and the genome length is 2.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vertebral disk space".

Description of *Candidatus* Corynebacterium canacousia sp. nov.

Candidatus Corynebacterium canacousia (NL. fem. n. *canacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp009734405*. The type genome for the species is the GenBank assembly RS_GCF_009734405.1. The GC content of the type genome is 66.3 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Corynebacterium catapousia sp. nov.

Candidatus Corynebacterium catapousia (NL. fem. n. *catapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001815985*. The type genome for the species is the GenBank assembly RS_GCF_008180085.1. The GC content of the type genome is 65.06 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Corynebacterium catecitrix sp. nov.

Candidatus Corynebacterium catecitrix (NL. fem. n. *catecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp014490555*. The type genome for the species is the GenBank assembly RS_GCF_013051085.1. The GC content of the type genome is 64.53 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Corynebacterium cisalitia sp. nov.

Candidatus Corynebacterium cisalitia (NL. fem. n. *cisalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp003065405*. The type genome for the species is the GenBank assembly RS_GCF_003065405.1. The GC content of the type genome is 64.93 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Corynebacterium cisalitudo sp. nov.

Candidatus Corynebacterium cisalitudo (NL. fem. n. *cisalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Corynebacterium sp001767255*. The type genome for the species is the GenBank assembly RS_GCF_001807505.1. The GC content of the type genome is 60.73 % and the genome length is 2.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Urinary Tract".

Description of *Candidatus* Corynebacterium cohorilega sp. nov.

Candidatus Corynebacterium cohorilega (NL. fem. n. *cohorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp003070865*. The type genome for the species is the GenBank assembly RS_GCF_003113375.1. The GC content of the type genome is 66.22 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Corynebacterium colapisca sp. nov.

Candidatus Corynebacterium colapisca (NL. fem. n. *colapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001807265*. The type genome for the species is the GenBank assembly RS_GCF_001838175.1. The GC content of the type genome is 65.38 % and the genome length is 2.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "urine cvs".

Description of *Candidatus* Corynebacterium culigisca sp. nov.

Candidatus Corynebacterium culigisca (NL. fem. n. *culigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp000478175*. The type genome for the species is the GenBank assembly RS_GCF_000478075.1. The GC content of the type genome is 59.02 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Corynebacterium curabigena sp. nov.

Candidatus Corynebacterium curabigena (NL. fem. n. *curabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001831515*. The type genome for the species is the GenBank assembly RS_GCF_001814825.1. The GC content of the type genome is 64.38

% and the genome length is 2.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "urine".

Description of *Candidatus* Corynebacterium debucicella sp. nov.

Candidatus Corynebacterium debucicella (NL. fem. n. *debucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp014262665*. The type genome for the species is the GenBank assembly RS_GCF_014235805.1. The GC content of the type genome is 55.21 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Corynebacterium decenitia sp. nov.

Candidatus Corynebacterium decenitia (NL. fem. n. *decenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001806875*. The type genome for the species is the GenBank assembly RS_GCF_001806875.1. The GC content of the type genome is 60.06 % and the genome length is 2.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Urinary Tract".

Description of *Candidatus* Corynebacterium delecivita sp. nov.

Candidatus Corynebacterium delecivita (NL. fem. n. *delecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp014490595*. The type genome for the species is the GenBank assembly RS_GCF_013601105.1. The GC content of the type genome is 64.73 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Corynebacterium denorago sp. nov.

Candidatus Corynebacterium denorago (NL. fem. n. *denorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp007904105*. The type genome for the species is the GenBank assembly RS_GCF_007904105.1. The GC content of the type genome is 47.55 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Corynebacterium dibapivita sp. nov.

Candidatus Corynebacterium dibapivita (NL. fem. n. *dibapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp002967075*. The type genome for the species is the GenBank assembly RS_GCF_002967075.1. The GC content of the type genome is 54.89 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Corynebacterium ensicitio sp. nov.

Candidatus Corynebacterium ensicitio (NL. fem. n. *ensicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001942345*. The type genome for the species is the GenBank assembly RS_GCF_001942345.1. The GC content of the type genome is 65.23 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Corynebacterium excocitio sp. nov.

Candidatus Corynebacterium excocitio (NL. fem. n. *excocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001875665*. The type genome for the species is the GenBank assembly RS_GCF_001875665.1. The GC content of the type genome is 60.14 % and the genome length is 2.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "urine".

Description of *Candidatus* Corynebacterium exorcisca sp. nov.

Candidatus Corynebacterium exorcisca (NL. fem. n. *exorcisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp902782855*. The type genome for the species is the GenBank assembly GCA_902782855.1. The GC content of the type genome is 68.22 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Corynebacterium foricatio sp. nov.

Candidatus Corynebacterium foricatio (NL. fem. n. *foricatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp013978595*. The type genome for the species is the GenBank assembly RS_GCF_013978595.1. The GC content of the type genome is 65.28 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Corynebacterium fumacitudo sp. nov.

Candidatus Corynebacterium fumacitudo (NL. fem. n. *fumacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp014490575*. The type genome for the species is the GenBank assembly RS_GCF_008830655.1. The GC content of the type genome is 61.27 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Corynebacterium gasomibula sp. nov.

Candidatus Corynebacterium gasomibula (NL. fem. n. *gasomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp014117265*. The type genome for the species is the GenBank assembly RS_GCF_014117265.1. The GC content of the type genome is 58.81 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Corynebacterium hemititura sp. nov.

Candidatus Corynebacterium hemititura (NL. fem. n. *hemititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp002994655*. The type genome for the species is the GenBank assembly RS_GCF_002994655.1. The GC content of the type genome is 67.24 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Corynebacterium humecax sp. nov.

Candidatus Corynebacterium humecax (NL. fem. n. *humecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp014267345*. The type genome for the species is the GenBank assembly RS_GCF_014267345.1. The GC content of the type genome is 66.0 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Corynebacterium lucubitura sp. nov.

Candidatus Corynebacterium lucubitura (NL. fem. n. *lucubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp014522205*. The type genome for the species is the GenBank assembly RS_GCF_014522205.1. The GC content of the type genome is 52.55 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Corynebacterium lugubetta sp. nov.

Candidatus Corynebacterium lugubetta (NL. fem. n. *lugubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp900539985*. The type genome for the species is the GenBank assembly GCA_900539985.1. The GC content of the type genome is 60.02 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Corynebacterium meliletta sp. nov.

Candidatus Corynebacterium meliletta (NL. fem. n. *meliletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp008930665*. The type genome for the species is the GenBank assembly RS_GCF_008930855.1. The GC content of the type genome is 62.88 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Corynebacterium milipitudo sp. nov.

Candidatus Corynebacterium milipitudo (NL. fem. n. *milipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp014217255*. The type genome for the species is the GenBank assembly RS_GCF_014217255.1. The GC content of the type genome is 62.44 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Corynebacterium modifilenta sp. nov.

Candidatus Corynebacterium modifilenta (NL. fem. n. *modifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001807205*. The type genome for the species is the GenBank assembly RS_GCF_001807205.1. The GC content of the type genome is 60.64 % and the genome length is 2.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Urinary Tract".

Description of *Candidatus* Corynebacterium monacatio sp. nov.

Candidatus Corynebacterium monacatio (NL. fem. n. *monacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp002363255*. The type genome for the species is the GenBank assembly GCA_002363255.1. The GC content of the type genome is 65.98 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Corynebacterium nidifitia sp. nov.

Candidatus Corynebacterium nidifitia (NL. fem. n. *nidifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp003716585*. The type genome for the species is the GenBank assembly RS_GCF_003716585.1. The GC content of the type genome is 57.05 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Corynebacterium nocenisca sp. nov.

Candidatus Corynebacterium nocenisca (NL. fem. n. *nocenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001836165*. The type genome for the species is the GenBank assembly RS_GCF_001808885.1. The GC content of the type genome is 60.85 % and the genome length is 2.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "urine".

Description of *Candidatus* Corynebacterium oblanugo sp. nov.

Candidatus Corynebacterium oblanugo (NL. fem. n. *oblanugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp012838985*. The type genome for the species is the GenBank assembly GCA_012838985.1. The GC content of the type genome is 68.71 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Corynebacterium ornitilega sp. nov.

Candidatus Corynebacterium ornitilega (NL. fem. n. *ornitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp902373425*. The type genome for the species is the GenBank assembly GCA_902373425.1. The GC content of the type genome is 56.15 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Corynebacterium panopastra sp. nov.

Candidatus Corynebacterium panopastra (NL. fem. n. *panopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp011038735*. The type genome for the species is the GenBank assembly RS_GCF_011038655.1. The GC content of the type genome is 61.59 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Corynebacterium redacisca sp. nov.

Candidatus Corynebacterium redacisca (NL. fem. n. *redacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001764565*. The type genome for the species is the GenBank assembly RS_GCF_001764565.1. The GC content of the type genome is 61.95 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Corynebacterium saburimonia sp. nov.

Candidatus Corynebacterium saburimonia (NL. fem. n. *saburimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp001875725*. The type genome for the species is the GenBank assembly RS_GCF_001875725.1. The GC content of the type genome is 60.63 % and the genome length is 2.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "urine".

Description of *Candidatus* Corynebacterium sifunibula sp. nov.

Candidatus Corynebacterium sifunibula (NL. fem. n. *sifunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp002339505*. The type genome for the species is the GenBank assembly GCA_002339505.1. The GC content of the type genome is 68.26 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Corynebacterium siticicula sp. nov.

Candidatus Corynebacterium siticicula (NL. fem. n. *siticicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp012838715*. The type genome for the species is the GenBank assembly GCA_012838715.1. The GC content of the type genome is 69.96 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Corynebacterium susicetta sp. nov.

Candidatus Corynebacterium susicetta (NL. fem. n. *susicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Corynebacterium sp011038645*. The type genome for the species is the GenBank assembly RS_GCF_011038635.1. The GC content of the type genome is 64.79 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Cosidana ficedimonas sp. nov.

Candidatus Cosidana ficedimonas (NL. fem. n. *ficedimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13615 sp902790905*. The type genome for the species is the

GenBank assembly GCA_902787875.1. The GC content of the type genome is 57.28 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Cosidana gen. nov.

Candidatus Cosidana (NL. fem. n. *Cosidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13615*. The type species for the genus is *Candidatus* Cosidana ficedimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cosidaria exheditoga sp. nov.

Candidatus Cosidaria exheditoga (NL. fem. n. *exheditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZP01 sp007127275*. The type genome for the species is the GenBank assembly GCA_007127275.1. The GC content of the type genome is 65.12 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Cosidaria gen. nov.

Candidatus Cosidaria (NL. fem. n. *Cosidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKZP01*. The type species for the genus is *Candidatus* Cosidaria exheditoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKZP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosidariaceae.

Description of *Candidatus* Cosidariaceae fam. nov.

Candidatus Cosidariaceae (NL. fem. n. *Cosidariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKZP01.* The type genus for the taxon is *Candidatus* Cosidaria .

According to the original version of GTDB R06-RS202, this family belongs to the order

SKZP01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cosidariales.

Description of *Candidatus* Cosidariales ord. nov.

Candidatus Cosidariales (NL. fem. n. *Cosidariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKZP01*. The type genus for the taxon is *Candidatus* Cosidaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8742*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Pavicidae.

Description of *Candidatus* Cosidella xeramedo sp. nov.

Candidatus Cosidella xeramedo (NL. fem. n. *xeramedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *02-FULL-45-11b sp001817615*. The type genome for the species is the GenBank assembly GCA_001817465.1. The GC content of the type genome is 44.82 % and the genome length is 0.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Cosidella gen. nov.

Candidatus Cosidella (NL. fem. n. *Cosidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *02-FULL-45-11b*. The type species for the genus is *Candidatus* Cosidella xeramedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecariaceae.

Description of *Candidatus* Cosidia dinupousia sp. nov.

Candidatus Cosidia dinupousia (NL. fem. n. *dinupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-47-13 sp002789675*. The type genome for the species is the GenBank assembly GCA_002789675.1. The GC content of the type genome is 46.69 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Cosidia gen. nov.

Candidatus Cosidia (NL. fem. n. *Cosidia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-47-13*. The type species for the genus is *Candidatus* Cosidia dinupousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cosidia obsurastra sp. nov.

Candidatus Cosidia obsurastra (NL. fem. n. *obsurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-47-13 sp012960155*. The type genome for the species is the GenBank assembly GCA_012960155.1. The GC content of the type genome is 48.14 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Cosidia rinocilenta sp. nov.

Candidatus Cosidia rinocilenta (NL. fem. n. *rinocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-47-13 sp007117665*. The type genome for the species is the GenBank assembly GCA_007117665.1. The GC content of the type genome is 53.36 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Cosidida regifitas sp. nov.

Candidatus Cosidida regifitas (NL. fem. n. *regifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXVQ01 sp013335425*. The type genome for the species is the

GenBank assembly GCA_013335425.1. The GC content of the type genome is 56.05 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Cosidida gen. nov.

Candidatus Cosidida (NL. fem. n. *Cosidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXVQ01*. The type species for the genus is *Candidatus* Cosidida regifitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAXVQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosididaceae.

Description of *Candidatus* Cosididaceae fam. nov.

Candidatus Cosididaceae (NL. fem. n. *Cosididaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXVQ01.* The type genus for the taxon is *Candidatus* Cosidida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAXVQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cosididales.

Description of *Candidatus* Cosididales ord. nov.

Candidatus Cosididales (NL. fem. n. *Cosididales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXVQ01.* The type genus for the taxon is *Candidatus* Cosidida .

According to the original version of GTDB R06-RS202, this family belongs to the class *JAAXVQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cosididae.

Description of *Candidatus* Cosididae class. nov.

Candidatus Cosididae (NL. fem. n. *c__Cosididae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXVQ01.* The type genus for the taxon is *Candidatus* Cosidida .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *FCPU426*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Denecariota.

Description of *Candidatus* Cosidosa dilemivita sp. nov.

Candidatus Cosidosa dilemivita (NL. fem. n. *dilemivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1877 sp002352945*. The type genome for the species is the GenBank assembly GCA_002352945.1. The GC content of the type genome is 37.18 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Cosidosa gen. nov.

Candidatus Cosidosa (NL. fem. n. *Cosidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1877*. The type species for the genus is *Candidatus* Cosidosa dilemivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1877*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosidosaceae.

Description of *Candidatus* Cosidosaceae fam. nov.

Candidatus Cosidosaceae (NL. fem. n. *Cosidosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1877.* The type genus for the taxon is *Candidatus* Cosidosa .

According to GTDB R06-RS202, this family belongs to the order *Campylobacterales*.

Description of *Candidatus* Cosidula cinefatica sp. nov.

Candidatus Cosidula cinefatica (NL. fem. n. *cinefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMLA01 sp903842085*. The type genome for the species is the

GenBank assembly GCA_903842085.1. The GC content of the type genome is 39.89 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Cosidula gen. nov.

Candidatus Cosidula (NL. fem. n. *Cosidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMLA01*. The type species for the genus is *Candidatus* Cosidula cinefatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIMLA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosidulaceae.

Description of *Candidatus* Cosidulaceae fam. nov.

Candidatus Cosidulaceae (NL. fem. n. *Cosidulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIMLA01.* The type genus for the taxon is *Candidatus* Cosidula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1875*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tubicidales.

Description of *Candidatus* Cosigana thessilega sp. nov.

Candidatus Cosigana thessilega (NL. fem. n. *thessilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch109 sp013178275*. The type genome for the species is the GenBank assembly GCA_013178275.1. The GC content of the type genome is 55.84 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Cosigana gen. nov.

Candidatus Cosigana (NL. fem. n. *Cosigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch109*. The type species for the genus is *Candidatus* Cosigana thessilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosiganaceae.

Description of *Candidatus* Cosiganaceae fam. nov.

Candidatus Cosiganaceae (NL. fem. n. *Cosiganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch109.* The type genus for the taxon is *Candidatus* Cosigana .

According to the original version of GTDB R06-RS202, this family belongs to the order *Ch66*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cucurellales.

Description of *Candidatus* Cosigaria selecentia sp. nov.

Candidatus Cosigaria selecentia (NL. fem. n. *selecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-38-335 sp001769535*. The type genome for the species is the GenBank assembly GCA_001769705.1. The GC content of the type genome is 37.88 % and the genome length is 5.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Cosigaria gen. nov.

Candidatus Cosigaria (NL. fem. n. *Cosigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-38-335*. The type species for the genus is *Candidatus* Cosigaria selecentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-38-335*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosigariaceae.

Description of *Candidatus* Cosigariaceae fam. nov.

Candidatus Cosigariaceae (NL. fem. n. *Cosigariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-38-335.* The type genus for the taxon is *Candidatus* Cosigaria .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Cosigella obnupimonas sp. nov.

Candidatus Cosigella obnupimonas (NL. fem. n. *obnupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGC01 sp011338245*. The type genome for the species is the GenBank assembly GCA_011338245.1. The GC content of the type genome is 45.68 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Cosigella gen. nov.

Candidatus Cosigella (NL. fem. n. *Cosigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTGC01*. The type species for the genus is *Candidatus* Cosigella obnupimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTGC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosigellaceae.

Description of *Candidatus* Cosigellaceae fam. nov.

Candidatus Cosigellaceae (NL. fem. n. *Cosigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTGC01.* The type genus for the taxon is *Candidatus* Cosigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *PHAN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vavasidales.

Description of *Candidatus* Cosigida colapitoga sp. nov.

Candidatus Cosigida colapitoga (NL. fem. n. *colapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1340 sp003142075*. The type genome for the species is the GenBank assembly GCA_003142075.1. The GC content of the type genome is 35.34 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Cosigida gen. nov.

Candidatus Cosigida (NL. fem. n. *Cosigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-1340*. The type species for the genus is *Candidatus* Cosigida colapitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA1-40-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunariaceae.

Description of *Candidatus* Cosigida depacitoga sp. nov.

Candidatus Cosigida depacitoga (NL. fem. n. *depacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1340 sp903823865*. The type genome for the species is the GenBank assembly GCA_903823865.1. The GC content of the type genome is 33.04 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Cosigida dilogibula sp. nov.

Candidatus Cosigida dilogibula (NL. fem. n. *dilogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1340 sp903831595*. The type genome for the species is the GenBank assembly GCA_903954215.1. The GC content of the type genome is 32.9 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Cosigida hemitifica sp. nov.

Candidatus Cosigida hemitifica (NL. fem. n. *hemitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1340 sp903850545*. The type genome for the species is the GenBank assembly GCA_903850545.1. The GC content of the type genome is 33.07 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Cosigosa daducimonia sp. nov.

Candidatus Cosigosa daducimonia (NL. fem. n. *daducimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-128 sp002084355*. The type genome for the species is the GenBank assembly GCA_002084355.1. The GC content of the type genome is 23.17 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Cosigosa gen. nov.

Candidatus Cosigosa (NL. fem. n. *Cosigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4572-128*. The type species for the genus is *Candidatus* Cosigosa daducimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4572-128*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosigosaceae.

Description of *Candidatus* Cosigosaceae fam. nov.

Candidatus Cosigosaceae (NL. fem. n. *Cosigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4572-128.* The type genus for the taxon is *Candidatus* Cosigosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Cosigula depicicella sp. nov.

Candidatus Cosigula depicicella (NL. fem. n. *depicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002721295 sp002937995*. The type genome for the species is the

GenBank assembly GCA_002694925.1. The GC content of the type genome is 39.71 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Cosigula gen. nov.

Candidatus Cosigula (NL. fem. n. *Cosigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002721295*. The type species for the genus is *Candidatus* Cosigula depicicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubanaceae.

Description of *Candidatus* Cotenana ascelifica sp. nov.

Candidatus Cotenana ascelifica (NL. fem. n. *ascelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-28 sp001794015*. The type genome for the species is the GenBank assembly GCA_001794015.1. The GC content of the type genome is 38.91 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cotenana gen. nov.

Candidatus Cotenana (NL. fem. n. *Cotenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-28*. The type species for the genus is *Candidatus* Cotenana ascelifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Cotenana conifitica sp. nov.

Candidatus Cotenana conifitica (NL. fem. n. *conifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-28 sp001794635*. The type genome for the species is the GenBank assembly GCA_001793985.1. The GC content of the type genome is 39.13 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cotenana totidiforma sp. nov.

Candidatus Cotenana totidiforma (NL. fem. n. *totidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-28 sp001795735*. The type genome for the species is the GenBank assembly GCA_001794095.1. The GC content of the type genome is 40.78 % and the genome length is 1.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Cotenaria mahemax sp. nov.

Candidatus Cotenaria mahemax (NL. fem. n. *mahemax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5533 sp002426855*. The type genome for the species is the GenBank assembly GCA_002426855.1. The GC content of the type genome is 63.79 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Cotenaria gen. nov.

Candidatus Cotenaria (NL. fem. n. *Cotenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5533*. The type species for the genus is *Candidatus* Cotenaria mahemax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cotenella adgubilenta sp. nov.

Candidatus Cotenella adgubilenta (NL. fem. n. *adgubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902540805*. The type genome for the species is the GenBank assembly GCA_902540805.1. The GC content of the type genome is 29.8 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Cotenella gen. nov.

Candidatus Cotenella (NL. fem. n. *Cotenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2691245*. The type species for the genus is *Candidatus* Cotenella adgubilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Cotenella bacifessa sp. nov.

Candidatus Cotenella bacifessa (NL. fem. n. *bacifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902613995*. The type genome for the species is the GenBank assembly GCA_902613995.1. The GC content of the type genome is 30.15 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Cotenella desacugo sp. nov.

Candidatus Cotenella desacugo (NL. fem. n. *desacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp002167215*. The type genome for the species is the GenBank assembly GCA_002167215.1. The GC content of the type genome is 30.0 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Cotenella domigetta sp. nov.

Candidatus Cotenella domigetta (NL. fem. n. *domigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902563305*. The type genome for the species is the GenBank assembly GCA_902563305.1. The GC content of the type genome is 29.64 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Cotenella epogdetta sp. nov.

Candidatus Cotenella epogdetta (NL. fem. n. *epogdetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902625895*. The type genome for the species is the GenBank assembly GCA_902625895.1. The GC content of the type genome is 30.35 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Cotenella excorax sp. nov.

Candidatus Cotenella excorax (NL. fem. n. *excorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902579395*. The type genome for the species is the GenBank assembly GCA_902579395.1. The GC content of the type genome is 29.73 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Cotenella favonago sp. nov.

Candidatus Cotenella favonago (NL. fem. n. *favonago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902530985*. The type genome for the species is the GenBank assembly GCA_902530985.1. The GC content of the type genome is 29.27 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Cotenella homulastra sp. nov.

Candidatus Cotenella homulastra (NL. fem. n. *homulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902526865*. The type genome for the species is the GenBank assembly GCA_902526865.1. The GC content of the type genome is 30.05 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Cotenella impiritas sp. nov.

Candidatus Cotenella impiritas (NL. fem. n. *impiritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902617375*. The type genome for the species is the GenBank assembly GCA_902617375.1. The GC content of the type genome is 30.22 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Cotenella peridifica sp. nov.

Candidatus Cotenella peridifica (NL. fem. n. *peridifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902536655*. The type genome for the species is the GenBank assembly GCA_902536655.1. The GC content of the type genome is 30.07 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Cotenella socagetta sp. nov.

Candidatus Cotenella socagetta (NL. fem. n. *socagetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902522465*. The type genome for the species is the GenBank assembly GCA_902533395.1. The GC content of the type genome is 29.77 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Cotenella sonipitia sp. nov.

Candidatus Cotenella sonipitia (NL. fem. n. *sonipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902569095*. The type genome for the species is the GenBank assembly GCA_902569095.1. The GC content of the type genome is 30.42 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Cotenella tibicitica sp. nov.

Candidatus Cotenella tibicitica (NL. fem. n. *tibicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902550225*. The type genome for the species is the GenBank assembly GCA_902550225.1. The GC content of the type genome is 30.19 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Cotenella tigurentia sp. nov.

Candidatus Cotenella tigurentia (NL. fem. n. *tigurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902567145*. The type genome for the species is the GenBank assembly GCA_902567145.1. The GC content of the type genome is 29.75 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Cotenella vitupicella sp. nov.

Candidatus Cotenella vitupicella (NL. fem. n. *vitupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691245 sp902567115*. The type genome for the species is the GenBank assembly GCA_902567115.1. The GC content of the type genome is 30.36 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Cotenia inhabimonas sp. nov.

Candidatus Cotenia inhabimonas (NL. fem. n. *inhabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5352 sp012522765*. The type genome for the species is the GenBank assembly GCA_012522765.1. The GC content of the type genome is 65.39 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Cotenia gen. nov.

Candidatus Cotenia (NL. fem. n. *Cotenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5352*. The type species for the genus is *Candidatus* Cotenia

inhabimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5352*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coteniaceae.

Description of *Candidatus* Coteniaceae fam. nov.

Candidatus Coteniaceae (NL. fem. n. *Coteniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5352.* The type genus for the taxon is *Candidatus* Cotenia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5377*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Latibosales.

Description of *Candidatus* Cotenia reduvitura sp. nov.

Candidatus Cotenia reduvitura (NL. fem. n. *reduvitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5352 sp002411015*. The type genome for the species is the GenBank assembly GCA_002411015.1. The GC content of the type genome is 67.08 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Cotenia tenilitudo sp. nov.

Candidatus Cotenia tenilitudo (NL. fem. n. *tenilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5352 sp003566775*. The type genome for the species is the GenBank assembly GCA_003566775.1. The GC content of the type genome is 61.85 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Cotenida conifilenta sp. nov.

Candidatus Cotenida conifilenta (NL. fem. n. *conifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SXHM01 sp005773695*. The type genome for the species is the GenBank assembly GCA_005773695.1. The GC content of the type genome is 39.28 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Cotenida gen. nov.

Candidatus Cotenida (NL. fem. n. *Cotenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXHM01*. The type species for the genus is *Candidatus* Cotenida conifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXHM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cotenidaceae.

Description of *Candidatus* Cotenidaceae fam. nov.

Candidatus Cotenidaceae (NL. fem. n. *Cotenidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SXHM01.* The type genus for the taxon is *Candidatus* Cotenida .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacosales.

Description of *Candidatus* Cotenosa hexapivita sp. nov.

Candidatus Cotenosa hexapivita (NL. fem. n. *hexapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6534 sp002687905*. The type genome for the species is the GenBank assembly GCA_002434765.1. The GC content of the type genome is 41.03 % and the genome length is 0.45 Mbp.

Description of *Candidatus* Cotenosa gen. nov.

Candidatus Cotenosa (NL. fem. n. *Cotenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6534*. The type species for the genus is *Candidatus* Cotenosa

hexapivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Cotenula dibapastra sp. nov.

Candidatus Cotenula dibapastra (NL. fem. n. *dibapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2965 sp002348385*. The type genome for the species is the GenBank assembly GCA_002717125.1. The GC content of the type genome is 61.27 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Cotenula gen. nov.

Candidatus Cotenula (NL. fem. n. *Cotenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2965*. The type species for the genus is *Candidatus* Cotenula dibapastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Cotenula utrinatica sp. nov.

Candidatus Cotenula utrinatica (NL. fem. n. *utrinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2965 sp002707325*. The type genome for the species is the GenBank assembly GCA_002707325.1. The GC content of the type genome is 43.77 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Coticana baropousia sp. nov.

Candidatus Coticana baropousia (NL. fem. n. *baropousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFTU01 sp009923315*. The type genome for the species is the GenBank assembly GCA_009921965.1. The GC content of the type genome is 64.94 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Coticana gen. nov.

Candidatus Coticana (NL. fem. n. *Coticana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFTU01*. The type species for the genus is *Candidatus* Coticana baropousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Coticana cadavago sp. nov.

Candidatus Coticana cadavago (NL. fem. n. *cadavago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFTU01 sp009918225*. The type genome for the species is the GenBank assembly GCA_009918225.1. The GC content of the type genome is 65.34 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Coticana denecax sp. nov.

Candidatus Coticana denecax (NL. fem. n. *denecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFTU01 sp009925955*. The type genome for the species is the GenBank assembly GCA_009925955.1. The GC content of the type genome is 65.03 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Coticaria conipessa sp. nov.

Candidatus Coticaria conipessa (NL. fem. n. *conipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12395 sp001000065*. The type genome for the species is the GenBank assembly GCA_001000065.1. The GC content of the type genome is 42.29 %

and the genome length is 1.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Coticaria gen. nov.

Candidatus Coticaria (NL. fem. n. *Coticaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12395*. The type species for the genus is *Candidatus* Coticaria conipessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Coticaria levifitoga sp. nov.

Candidatus Coticaria levifitoga (NL. fem. n. *levifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12395 sp000996275*. The type genome for the species is the GenBank assembly GCA_000996275.1. The GC content of the type genome is 41.76 % and the genome length is 1.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Coticella apsorivita sp. nov.

Candidatus Coticella apsorivita (NL. fem. n. *apsorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp011390785*. The type genome for the species is the GenBank assembly GCA_011390785.1. The GC content of the type genome is 39.88 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Coticella gen. nov.

Candidatus Coticella (NL. fem. n. *Coticella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKVR01*. The type species for the genus is *Candidatus* Coticella apsorivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Detotosaceae.

Description of *Candidatus* Coticella ceraciforma sp. nov.

Candidatus Coticella ceraciforma (NL. fem. n. *ceraciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp007118135*. The type genome for the species is the GenBank assembly GCA_007118135.1. The GC content of the type genome is 40.19 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Coticella defasicella sp. nov.

Candidatus Coticella defasicella (NL. fem. n. *defasicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp007135645*. The type genome for the species is the GenBank assembly GCA_007120525.1. The GC content of the type genome is 44.29 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Coticella delucilega sp. nov.

Candidatus Coticella delucilega (NL. fem. n. *delucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp007129355*. The type genome for the species is the GenBank assembly GCA_007129355.1. The GC content of the type genome is 40.96 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Coticella domicisca sp. nov.

Candidatus Coticella domicisca (NL. fem. n. *domicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp007132395*. The type genome for the species is the GenBank assembly GCA_007132395.1. The GC content of the type genome is 45.03 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Coticella inresivita sp. nov.

Candidatus Coticella inresivita (NL. fem. n. *inresivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp007131245*. The type genome for the species is the GenBank assembly GCA_007131245.1. The GC content of the type genome is 43.17 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Coticella lanigibula sp. nov.

Candidatus Coticella lanigibula (NL. fem. n. *lanigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp007693555*. The type genome for the species is the GenBank assembly GCA_007693555.1. The GC content of the type genome is 40.51 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Coticella lucelax sp. nov.

Candidatus Coticella lucelax (NL. fem. n. *lucelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp011390575*. The type genome for the species is the GenBank assembly GCA_011390575.1. The GC content of the type genome is 43.23 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Coticella metapetta sp. nov.

Candidatus Coticella metapetta (NL. fem. n. *metapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp007131895*. The type genome for the species is the GenBank assembly GCA_007131895.1. The GC content of the type genome is 43.65 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Coticella tabititio sp. nov.

Candidatus Coticella tabititio (NL. fem. n. *tabititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp007132585*. The type genome for the species is the GenBank assembly GCA_007128355.1. The GC content of the type genome is 40.03 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Coticella tenemimonas sp. nov.

Candidatus Coticella tenemimonas (NL. fem. n. *tenemimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVR01 sp007694165*. The type genome for the species is the GenBank assembly GCA_007694165.1. The GC content of the type genome is 43.76 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Coticia cosidigena sp. nov.

Candidatus Coticia cosidigena (NL. fem. n. *cosidigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXFI01 sp007121435*. The type genome for the species is the GenBank assembly GCA_007121435.1. The GC content of the type genome is 65.7 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Coticia gen. nov.

Candidatus Coticia (NL. fem. n. *Coticia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXFI01*. The type species for the genus is *Candidatus* Coticia cosidigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Coticia obrigivita sp. nov.

Candidatus Coticia obrigivita (NL. fem. n. *obrigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXFI01 sp003564295*. The type genome for the species is the GenBank assembly GCA_003564295.1. The GC content of the type genome is 65.2 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Coticida adcucax sp. nov.

Candidatus Coticida adcucax (NL. fem. n. *adcucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp003331365*. The type genome for the species is the GenBank assembly GCA_003331365.1. The GC content of the type genome is 35.75 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Coticida gen. nov.

Candidatus Coticida (NL. fem. n. *Coticida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA952*. The type species for the genus is *Candidatus* Coticida adcucax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Coticida adinvimonia sp. nov.

Candidatus Coticida adinvimonia (NL. fem. n. *adinvimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp002683585*. The type genome for the species is the GenBank assembly GCA_002683585.1. The GC content of the type genome is 38.27 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Coticida adtolicula sp. nov.

Candidatus Coticida adtolicula (NL. fem. n. *adtolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp903901805*. The type genome for the species is the GenBank assembly GCA_903901805.1. The GC content of the type genome is 35.33 %

and the genome length is 2.87 Mbp.

Description of *Candidatus* Coticida benemilega sp. nov.

Candidatus Coticida benemilega (NL. fem. n. *benemilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp002293045*. The type genome for the species is the GenBank assembly GCA_002293045.1. The GC content of the type genome is 41.92 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Coticida bigemessa sp. nov.

Candidatus Coticida bigemessa (NL. fem. n. *bigemessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp004295165*. The type genome for the species is the GenBank assembly GCA_004295165.1. The GC content of the type genome is 45.15 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Coticida bugilentia sp. nov.

Candidatus Coticida bugilentia (NL. fem. n. *bugilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp003512365*. The type genome for the species is the GenBank assembly GCA_009923545.1. The GC content of the type genome is 36.06 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Coticida decacibula sp. nov.

Candidatus Coticida decacibula (NL. fem. n. *decacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp011522905*. The type genome for the species is the GenBank assembly GCA_011522905.1. The GC content of the type genome is 36.21 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Coticida decatitio sp. nov.

Candidatus Coticida decatitio (NL. fem. n. *decatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp903939755*. The type genome for the species is the GenBank assembly GCA_903922305.1. The GC content of the type genome is 36.66 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Coticida decititia sp. nov.

Candidatus Coticida decititia (NL. fem. n. *decititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp002478565*. The type genome for the species is the GenBank assembly GCA_002454235.1. The GC content of the type genome is 41.48 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Coticida demigilega sp. nov.

Candidatus Coticida demigilega (NL. fem. n. *demigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp002480215*. The type genome for the species is the GenBank assembly GCA_002380545.1. The GC content of the type genome is 37.55 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Coticida derelibula sp. nov.

Candidatus Coticida derelibula (NL. fem. n. *derelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp009925805*. The type genome for the species is the GenBank assembly GCA_009925805.1. The GC content of the type genome is 43.84 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Coticida derunimonia sp. nov.

Candidatus Coticida derunimonia (NL. fem. n. *derunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp903860985*. The type genome for the species is the GenBank assembly GCA_903860985.1. The GC content of the type genome is 39.79 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Coticida eviscitas sp. nov.

Candidatus Coticida eviscitas (NL. fem. n. *eviscitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp009923965*. The type genome for the species is the GenBank assembly GCA_009923965.1. The GC content of the type genome is 34.09 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Coticida ficulugo sp. nov.

Candidatus Coticida ficulugo (NL. fem. n. *ficulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp009924735*. The type genome for the species is the GenBank assembly GCA_009927525.1. The GC content of the type genome is 41.02 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Coticida gasifilega sp. nov.

Candidatus Coticida gasifilega (NL. fem. n. *gasifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp903879765*. The type genome for the species is the GenBank assembly GCA_903879765.1. The GC content of the type genome is 38.59 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Coticida indomitura sp. nov.

Candidatus Coticida indomitura (NL. fem. n. *indomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp009926905*. The type genome for the species is the GenBank assembly GCA_009926905.1. The GC content of the type genome is 35.31 %

and the genome length is 2.88 Mbp.

Description of *Candidatus* Coticida inmitago sp. nov.

Candidatus Coticida inmitago (NL. fem. n. *inmitago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp002167775*. The type genome for the species is the GenBank assembly GCA_002167775.1. The GC content of the type genome is 38.01 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Coticida letifax sp. nov.

Candidatus Coticida letifax (NL. fem. n. *letifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp009926125*. The type genome for the species is the GenBank assembly GCA_009926125.1. The GC content of the type genome is 33.72 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Coticida monimilenta sp. nov.

Candidatus Coticida monimilenta (NL. fem. n. *monimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp903823565*. The type genome for the species is the GenBank assembly GCA_903823565.1. The GC content of the type genome is 41.87 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Coticida nubecivita sp. nov.

Candidatus Coticida nubecivita (NL. fem. n. *nubecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp903935095*. The type genome for the species is the GenBank assembly GCA_903935095.1. The GC content of the type genome is 39.51 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Coticida oratritrix sp. nov.

Candidatus Coticida oratritrix (NL. fem. n. *oratritrix* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp005798205*. The type genome for the species is the GenBank assembly GCA_005798205.1. The GC content of the type genome is 33.41 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Coticida smegmimonia sp. nov.

Candidatus Coticida smegmimonia (NL. fem. n. *smegmimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp002696025*. The type genome for the species is the GenBank assembly GCA_002696025.1. The GC content of the type genome is 31.37 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Coticida tametentia sp. nov.

Candidatus Coticida tametentia (NL. fem. n. *tametentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA952 sp002293185*. The type genome for the species is the GenBank assembly GCA_002293185.1. The GC content of the type genome is 42.27 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Coticosa patibitio sp. nov.

Candidatus Coticosa patibitio (NL. fem. n. *patibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12044 sp000989675*. The type genome for the species is the GenBank assembly GCA_000990085.1. The GC content of the type genome is 32.87 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Coticosa gen. nov.

Candidatus Coticosa (NL. fem. n. *Coticosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12044*. The type species for the genus is *Candidatus* Coticosa patibitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Coturana rudecifica sp. nov.

Candidatus Coturana rudecifica (NL. fem. n. *rudecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA816 sp002313635*. The type genome for the species is the GenBank assembly GCA_003519105.1. The GC content of the type genome is 33.27 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Coturana gen. nov.

Candidatus Coturana (NL. fem. n. *Coturana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA816*. The type species for the genus is *Candidatus* Coturana rudecifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA816*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coturanaceae.

Description of *Candidatus* Coturanaceae fam. nov.

Candidatus Coturanaceae (NL. fem. n. *Coturanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA816.* The type genus for the taxon is *Candidatus* Coturana .

According to the original version of GTDB R06-RS202, this family belongs to the order *Bac17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malagariales.

Description of *Candidatus* Coturaria incenitas sp. nov.

Candidatus Coturaria incenitas (NL. fem. n. *incenitas* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACZYB01 sp902785275*. The type genome for the species is the GenBank assembly GCA_902785275.1. The GC content of the type genome is 31.9 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Coturaria gen. nov.

Candidatus Coturaria (NL. fem. n. *Coturaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACZYB01*. The type species for the genus is *Candidatus* Coturaria incenitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACZYB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coturariaceae.

Description of *Candidatus* Coturariaceae fam. nov.

Candidatus Coturariaceae (NL. fem. n. *Coturariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACZYB01.* The type genus for the taxon is *Candidatus* Coturaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *Rs-D84*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delapiales.

Description of *Candidatus* Coturella dibapax sp. nov.

Candidatus Coturella dibapax (NL. fem. n. *dibapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9506 sp003506415*. The type genome for the species is the GenBank assembly GCA_900540615.1. The GC content of the type genome is 45.36 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Coturella gen. nov.

Candidatus Coturella (NL. fem. n. *Coturella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9506*. The type species for the genus is *Candidatus* Coturella dibapax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9506*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coturellaceae.

Description of *Candidatus* Coturellaceae fam. nov.

Candidatus Coturellaceae (NL. fem. n. *Coturellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9506.* The type genus for the taxon is *Candidatus* Coturella .

According to GTDB R06-RS202, this family belongs to the order *Monoglobales_A*.

Description of *Candidatus* Coturia paracessa sp. nov.

Candidatus Coturia paracessa (NL. fem. n. *paracessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BLZN01 sp014132315*. The type genome for the species is the GenBank assembly GCA_014132315.1. The GC content of the type genome is 41.08 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Coturia gen. nov.

Candidatus Coturia (NL. fem. n. *Coturia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BLZN01*. The type species for the genus is *Candidatus* Coturia paracessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BLZN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coturiaceae.

Description of *Candidatus* Coturiaceae fam. nov.

Candidatus Coturiaceae (NL. fem. n. *Coturiaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BLZN01*. The type genus for the taxon is *Candidatus* Coturia .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Coturida megalax sp. nov.

Candidatus Coturida megalax (NL. fem. n. *megalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2013Ark19i sp001460935*. The type genome for the species is the GenBank assembly RS_GCF_900078725.1. The GC content of the type genome is 35.37 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Coturida gen. nov.

Candidatus Coturida (NL. fem. n. *Coturida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2013Ark19i*. The type species for the genus is *Candidatus* Coturida megalax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2013Ark19i*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coturidaceae.

Description of *Candidatus* Coturidaceae fam. nov.

Candidatus Coturidaceae (NL. fem. n. *Coturidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2013Ark19i.* The type genus for the taxon is *Candidatus* Coturida .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Coturida socagessa sp. nov.

Candidatus Coturida socagessa (NL. fem. n. *socagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2013Ark19i sp900078745*. The type genome for the species is the GenBank assembly RS_GCF_900078745.1. The GC content of the type genome is 38.5 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Coturosa malifitica sp. nov.

Candidatus Coturosa malifitica (NL. fem. n. *malifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1279 sp900550315*. The type genome for the species is the GenBank assembly GCA_900550315.1. The GC content of the type genome is 49.31 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Coturosa gen. nov.

Candidatus Coturosa (NL. fem. n. *Coturosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1279*. The type species for the genus is *Candidatus* Coturosa malifitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Coturosa viburitrix sp. nov.

Candidatus Coturosa viburitrix (NL. fem. n. *viburitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1279 sp900761625*. The type genome for the species is the GenBank assembly RS_GCF_900761625.1. The GC content of the type genome is 45.74 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Coturula cohonatio sp. nov.

Candidatus Coturula cohonatio (NL. fem. n. *cohonatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QOAS01 sp012962155*. The type genome for the species is the

GenBank assembly GCA_012962155.1. The GC content of the type genome is 42.7 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Coturula gen. nov.

Candidatus Coturula (NL. fem. n. *Coturula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QOAS01*. The type species for the genus is *Candidatus* Coturula cohonatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QOAS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coturulaceae.

Description of *Candidatus* Coturulaceae fam. nov.

Candidatus Coturulaceae (NL. fem. n. *Coturulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QOAS01.* The type genus for the taxon is *Candidatus* Coturula .

According to GTDB R06-RS202, this family belongs to the order *Aquificales*.

Description of *Candidatus* Coturula divulimonia sp. nov.

Candidatus Coturula divulimonia (NL. fem. n. *divulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QOAS01 sp013153315*. The type genome for the species is the GenBank assembly GCA_013153315.1. The GC content of the type genome is 41.59 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Coturula homicitia sp. nov.

Candidatus Coturula homicitia (NL. fem. n. *homicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QOAS01 sp013154305*. The type genome for the species is the GenBank assembly GCA_013154305.1. The GC content of the type genome is 56.53 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Coturula velivimonia sp. nov.

Candidatus Coturula velivimonia (NL. fem. n. *velivimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QOAS01 sp003972855*. The type genome for the species is the GenBank assembly GCA_003972855.1. The GC content of the type genome is 42.72 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Coxiella celamimonas sp. nov.

Candidatus Coxiella celamimonas (NL. fem. n. *celamimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coxiella sp000815025*. The type genome for the species is the GenBank assembly RS_GCF_000815025.1. The GC content of the type genome is 34.59 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Coxiella docibatio sp. nov.

Candidatus Coxiella docibatio (NL. fem. n. *docibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coxiella sp002871095*. The type genome for the species is the GenBank assembly RS_GCF_002871095.1. The GC content of the type genome is 32.65 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Coxiella episcax sp. nov.

Candidatus Coxiella episcax (NL. fem. n. *episcax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Coxiella sp009883795*. The type genome for the species is the GenBank assembly RS_GCF_009883795.1. The GC content of the type genome is 38.08 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Crabraria inadfilega sp. nov.

Candidatus Crabraria inadfilega (NL. fem. n. *inadfilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VAWY01 sp005888335*. The type genome for the species is the GenBank assembly GCA_005888335.1. The GC content of the type genome is 73.12 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Crabraria gen. nov.

Candidatus Crabraria (NL. fem. n. *Crabraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VAWY01*. The type species for the genus is *Candidatus* Crabraria inadfilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Crabrida ossicitio sp. nov.

Candidatus Crabrida ossicitio (NL. fem. n. *ossicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PBBK01 sp002717685*. The type genome for the species is the GenBank assembly GCA_002717685.1. The GC content of the type genome is 35.44 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Crabrida gen. nov.

Candidatus Crabrida (NL. fem. n. *Crabrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PBBK01*. The type species for the genus is *Candidatus* Crabrida ossicitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Crabrosa octopugo sp. nov.

Candidatus Crabrosa octopugo (NL. fem. n. *octopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-16 sp005884575*. The type genome for the species is the GenBank assembly GCA_005884575.1. The GC content of the type genome is 70.17 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Crabrosa gen. nov.

Candidatus Crabrosa (NL. fem. n. *Crabrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-16*. The type species for the genus is *Candidatus* Crabrosa octopugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Crabrula aspilitio sp. nov.

Candidatus Crabrula aspilitio (NL. fem. n. *aspilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRJJ01 sp011052255*. The type genome for the species is the GenBank assembly GCA_011052255.1. The GC content of the type genome is 49.45 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Crabrula gen. nov.

Candidatus Crabrula (NL. fem. n. *Crabrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRJJ01*. The type species for the genus is *Candidatus* Crabrula aspilitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinipulaceae.

Description of *Candidatus* Crastana inpuressa sp. nov.

Candidatus Crastana inpuressa (NL. fem. n. *inpuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *BM501 sp002868845*. The type genome for the species is the GenBank assembly GCA_002868845.1. The GC content of the type genome is 62.33 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Crastana gen. nov.

Candidatus Crastana (NL. fem. n. *Crastana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM501*. The type species for the genus is *Candidatus* Crastana inpuressa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Crastaria deculibra sp. nov.

Candidatus Crastaria deculibra (NL. fem. n. *deculibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBQ01 sp012730035*. The type genome for the species is the GenBank assembly GCA_012730035.1. The GC content of the type genome is 44.89 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Crastaria gen. nov.

Candidatus Crastaria (NL. fem. n. *Crastaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBQ01*. The type species for the genus is *Candidatus* Crastaria deculibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5550*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velivanaceae.

Description of *Candidatus* Crastella albogilega sp. nov.

Candidatus Crastella albogilega (NL. fem. n. *albogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2726415 sp002726415*. The type genome for the species is the

GenBank assembly GCA_002726415.1. The GC content of the type genome is 55.94 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Crastella gen. nov.

Candidatus Crastella (NL. fem. n. *Crastella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2726415*. The type species for the genus is *Candidatus* Crastella albogilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA868*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotanaceae.

Description of *Candidatus* Crastella chalbago sp. nov.

Candidatus Crastella chalbago (NL. fem. n. *chalbago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2726415 sp014239255*. The type genome for the species is the GenBank assembly GCA_014239255.1. The GC content of the type genome is 53.03 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Crastella illuvitura sp. nov.

Candidatus Crastella illuvitura (NL. fem. n. *illuvitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2726415 sp014239575*. The type genome for the species is the GenBank assembly GCA_014239575.1. The GC content of the type genome is 54.39 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Crastida ellipetta sp. nov.

Candidatus Crastida ellipetta (NL. fem. n. *ellipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pla163 sp007750655*. The type genome for the species is the GenBank assembly RS_GCF_007750655.1. The GC content of the type genome is 70.52 % and the

genome length is 4.95 Mbp.

Description of *Candidatus* Crastida gen. nov.

Candidatus Crastida (NL. fem. n. *Crastida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pla163*. The type species for the genus is *Candidatus* Crastida ellipetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Crastosa armigentia sp. nov.

Candidatus Crastosa armigentia (NL. fem. n. *armigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPQJ01 sp012026925*. The type genome for the species is the GenBank assembly GCA_012026925.1. The GC content of the type genome is 68.8 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Crastosa gen. nov.

Candidatus Crastosa (NL. fem. n. *Crastosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPQJ01*. The type species for the genus is *Candidatus* Crastosa armigentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Crastosa cohurago sp. nov.

Candidatus Crastosa cohurago (NL. fem. n. *cohurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPQJ01 sp003819815*. The type genome for the species is the GenBank assembly GCA_003819815.1. The GC content of the type genome is 70.53 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Crastosa inordilega sp. nov.

Candidatus Crastosa inordilega (NL. fem. n. *inordilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPQJ01 sp011391405*. The type genome for the species is the GenBank assembly GCA_011391405.1. The GC content of the type genome is 65.83 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Crastula inrelitrix sp. nov.

Candidatus Crastula inrelitrix (NL. fem. n. *inrelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2702065 sp002702065*. The type genome for the species is the GenBank assembly GCA_002702065.1. The GC content of the type genome is 57.06 % and the genome length is 6.77 Mbp.

Description of *Candidatus* Crastula gen. nov.

Candidatus Crastula (NL. fem. n. *Crastula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2702065*. The type species for the genus is *Candidatus* Crastula inrelitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Crateriforma paracatio sp. nov.

Candidatus Crateriforma paracatio (NL. fem. n. *paracatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Crateriforma sp007860215*. The type genome for the species is the GenBank assembly RS_GCF_007860215.1. The GC content of the type genome is 57.72 % and the genome length is 7.23 Mbp.

Description of *Candidatus* Crenothrix munimetta sp. nov.

Candidatus Crenothrix munimetta (NL. fem. n. *munimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Crenothrix sp005239965*. The type genome for the species is the GenBank assembly GCA_005239965.1. The GC content of the type genome is 45.97 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Croceibacterium acrififica sp. nov.

Candidatus Croceibacterium acrififica (NL. fem. n. *acrififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceibacterium sp001683845*. The type genome for the species is the GenBank assembly GCA_001683845.1. The GC content of the type genome is 66.62 % and the genome length is 2.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Antarctic Hypolithon".

Description of *Candidatus* Croceibacterium bulapibra sp. nov.

Candidatus Croceibacterium bulapibra (NL. fem. n. *bulapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceibacterium sp002279825*. The type genome for the species is the GenBank assembly GCA_002279825.1. The GC content of the type genome is 67.93 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Croceibacterium dehisitia sp. nov.

Candidatus Croceibacterium dehisitia (NL. fem. n. *dehisitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceibacterium sp001427865*. The type genome for the species is the GenBank assembly RS_GCF_001427865.1. The GC content of the type genome is 63.9 % and the genome length is 3.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Croceibacterium inhericella sp. nov.

Candidatus Croceibacterium inhericella (NL. fem. n. *inhericella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceibacterium sp011320115*. The type genome for the species is the GenBank assembly RS_GCF_011320115.1. The GC content of the type genome is 66.33 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Croceibacterium inurbentia sp. nov.

Candidatus Croceibacterium inurbentia (NL. fem. n. *inurbentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceibacterium sp014359685*. The type genome for the species is the GenBank assembly GCA_014359685.1. The GC content of the type genome is 70.08 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Croceibacterium lapilitio sp. nov.

Candidatus Croceibacterium lapilitio (NL. fem. n. *lapilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceibacterium sp001897135*. The type genome for the species is the GenBank assembly GCA_001897135.1. The GC content of the type genome is 66.4 % and the genome length is 2.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Croceibacterium obmutugo sp. nov.

Candidatus Croceibacterium obmutugo (NL. fem. n. *obmutugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceibacterium sp003569745*. The type genome for the species is the GenBank assembly RS_GCF_003569745.1. The GC content of the type genome is 65.43 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Croceicoccus devecibula sp. nov.

Candidatus Croceicoccus devecibula (NL. fem. n. *devecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceicoccus sp002694745*. The type genome for the species is the GenBank assembly GCA_002694745.1. The GC content of the type genome is 63.83 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Croceicoccus inhoritudo sp. nov.

Candidatus Croceicoccus inhoritudo (NL. fem. n. *inhoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceicoccus sp001634625*. The type genome for the species is the GenBank assembly RS_GCF_001634625.1. The GC content of the type genome is 62.76 % and the genome length is 3.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Croceitalea fatilimonas sp. nov.

Candidatus Croceitalea fatilimonas (NL. fem. n. *fatilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceitalea sp013001145*. The type genome for the species is the GenBank assembly GCA_013043865.1. The GC content of the type genome is 39.78 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Croceivirga fetifitas sp. nov.

Candidatus Croceivirga fetifitas (NL. fem. n. *fetifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceivirga sp005144745*. The type genome for the species is the GenBank assembly RS_GCF_011882165.1. The GC content of the type genome is 36.9 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Croceivirga fumifimonia sp. nov.

Candidatus Croceivirga fumifimonia (NL. fem. n. *fumifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceivirga sp009797885*. The type genome for the species is the GenBank assembly RS_GCF_009797885.1. The GC content of the type genome is 43.18

% and the genome length is 5.28 Mbp.

Description of *Candidatus* Croceivirga inbecilega sp. nov.

Candidatus Croceivirga inbecilega (NL. fem. n. *inbecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Croceivirga sp012272815*. The type genome for the species is the GenBank assembly RS_GCF_012272815.1. The GC content of the type genome is 38.66 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Crocinitomix cisalatica sp. nov.

Candidatus Crocinitomix cisalatica (NL. fem. n. *cisalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Crocinitomix sp013138735*. The type genome for the species is the GenBank assembly GCA_013138735.1. The GC content of the type genome is 36.12 % and the genome length is 6.84 Mbp.

Description of *Candidatus* Crocosphaera desomago sp. nov.

Candidatus Crocosphaera desomago (NL. fem. n. *desomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Crocosphaera sp002172675*. The type genome for the species is the GenBank assembly RS_GCF_002172675.1. The GC content of the type genome is 36.85 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Crocosphaera malifessa sp. nov.

Candidatus Crocosphaera malifessa (NL. fem. n. *malifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Crocosphaera sp003013815*. The type genome for the species is the GenBank assembly RS_GCF_003013815.1. The GC content of the type genome is 38.22 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Cruppana cepulisca sp. nov.

Candidatus Cruppana cepulisca (NL. fem. n. *cepulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVRM01 sp014534415*. The type genome for the species is the GenBank assembly GCA_014534415.1. The GC content of the type genome is 71.19 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Cruppana gen. nov.

Candidatus Cruppana (NL. fem. n. *Cruppana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACVRM01*. The type species for the genus is *Candidatus* Cruppana cepulisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cruppella aspilatica sp. nov.

Candidatus Cruppella aspilatica (NL. fem. n. *aspilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDYU01 sp902810705*. The type genome for the species is the GenBank assembly RS_GCF_902810705.1. The GC content of the type genome is 60.02 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Cruppella gen. nov.

Candidatus Cruppella (NL. fem. n. *Cruppella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDYU01*. The type species for the genus is *Candidatus* Cruppella aspilatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cruppia insicitio sp. nov.

Candidatus Cruppia insicitio (NL. fem. n. *insicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXZE01 sp012720075*. The type genome for the species is the GenBank assembly GCA_012720075.1. The GC content of the type genome is 40.25 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Cruppia gen. nov.

Candidatus Cruppia (NL. fem. n. *Cruppia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXZE01*. The type species for the genus is *Candidatus* Cruppia insicitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BICA1-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Novilosaceae.

Description of *Candidatus* Cruppida xenopatio sp. nov.

Candidatus Cruppida xenopatio (NL. fem. n. *xenopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNP01 sp009776515*. The type genome for the species is the GenBank assembly GCA_009776515.1. The GC content of the type genome is 53.05 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Cruppida gen. nov.

Candidatus Cruppida (NL. fem. n. *Cruppida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRNP01*. The type species for the genus is *Candidatus* Cruppida xenopatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1222*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resacidaceae.

Description of *Candidatus* Crupposa adfanibula sp. nov.

Candidatus Crupposa adfanibula (NL. fem. n. *adfanibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTR01 sp011389755*. The type genome for the species is the GenBank assembly GCA_011389755.1. The GC content of the type genome is 61.83 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Crupposa gen. nov.

Candidatus Crupposa (NL. fem. n. *Crupposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABTR01*. The type species for the genus is *Candidatus* Crupposa adfanibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYKL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulellaceae.

Description of *Candidatus* Cruppula smegmitio sp. nov.

Candidatus Cruppula smegmitio (NL. fem. n. *smegmitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M1803 sp006226595*. The type genome for the species is the GenBank assembly GCA_006226595.1. The GC content of the type genome is 69.79 % and the genome length is 7.23 Mbp.

Description of *Candidatus* Cruppula gen. nov.

Candidatus Cruppula (NL. fem. n. *Cruppula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M1803*. The type species for the genus is *Candidatus* Cruppula smegmitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2862545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tolutanaceae.

Description of *Candidatus* Crusmana telefiforma sp. nov.

Candidatus Crusmana telefiforma (NL. fem. n. *telefiforma* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11788 sp902772675*. The type genome for the species is the GenBank assembly GCA_902772675.1. The GC content of the type genome is 25.71 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Crusmana gen. nov.

Candidatus Crusmana (NL. fem. n. *Crusmana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11788*. The type species for the genus is *Candidatus* Crusmana telefiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Crusmaria assicibula sp. nov.

Candidatus Crusmaria assicibula (NL. fem. n. *assicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6103 sp002423545*. The type genome for the species is the GenBank assembly GCA_002423545.1. The GC content of the type genome is 69.46 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Crusmaria gen. nov.

Candidatus Crusmaria (NL. fem. n. *Crusmaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6103*. The type species for the genus is *Candidatus* Crusmaria assicibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2241*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocariaceae.

Description of *Candidatus* Crusmella absoratica sp. nov.

Candidatus Crusmella absoratica (NL. fem. n. *absoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3210 sp900755065*. The type genome for the species is the GenBank assembly RS_GCF_900755065.1. The GC content of the type genome is 47.73 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Crusmella gen. nov.

Candidatus Crusmella (NL. fem. n. *Crusmella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3210*. The type species for the genus is *Candidatus* Crusmella absoratica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-449*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resacariaceae.

Description of *Candidatus* Crusmella rorarago sp. nov.

Candidatus Crusmella rorarago (NL. fem. n. *rorarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3210 sp002363635*. The type genome for the species is the GenBank assembly GCA_002363635.1. The GC content of the type genome is 29.94 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Crusmia innabilega sp. nov.

Candidatus Crusmia innabilega (NL. fem. n. *innabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAB01 sp012719595*. The type genome for the species is the GenBank assembly GCA_012719595.1. The GC content of the type genome is 57.7 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Crusmia gen. nov.

Candidatus Crusmia (NL. fem. n. *Crusmia* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAB01*. The type species for the genus is *Candidatus* Crusmia innabilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU014*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugividaceae.

Description of *Candidatus* Crusmosa acricilega sp. nov.

Candidatus Crusmosa acricilega (NL. fem. n. *acricilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYDC01 sp009843585*. The type genome for the species is the GenBank assembly GCA_009843585.1. The GC content of the type genome is 73.36 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Crusmosa gen. nov.

Candidatus Crusmosa (NL. fem. n. *Crusmosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VYDC01*. The type species for the genus is *Candidatus* Crusmosa acricilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Crusmula dehisastra sp. nov.

Candidatus Crusmula dehisastra (NL. fem. n. *dehisastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCTQ01 sp902805615*. The type genome for the species is the GenBank assembly GCA_902805615.1. The GC content of the type genome is 60.42 % and the genome length is 8.77 Mbp.

Description of *Candidatus* Crusmula gen. nov.

Candidatus Crusmula (NL. fem. n. *Crusmula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCTQ01*. The type species for the genus is *Candidatus* Crusmula dehisastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *172606-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Horomosaceae.

Description of *Candidatus* Cryobacterium adgenitia sp. nov.

Candidatus Cryobacterium adgenitia (NL. fem. n. *adgenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004403395*. The type genome for the species is the GenBank assembly RS_GCF_004403395.1. The GC content of the type genome is 67.75 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Cryobacterium adnaritica sp. nov.

Candidatus Cryobacterium adnaritica (NL. fem. n. *adnaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp014376815*. The type genome for the species is the GenBank assembly GCA_014376815.1. The GC content of the type genome is 68.8 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Cryobacterium adpecitio sp. nov.

Candidatus Cryobacterium adpecitio (NL. fem. n. *adpecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004402215*. The type genome for the species is the GenBank assembly RS_GCF_004402215.1. The GC content of the type genome is 68.28 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Cryobacterium bicoribra sp. nov.

Candidatus Cryobacterium bicoribra (NL. fem. n. *bicoribra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004403945*. The type genome for the species is the GenBank assembly RS_GCF_004403945.1. The GC content of the type genome is 67.55 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Cryobacterium bimotibra sp. nov.

Candidatus Cryobacterium bimotibra (NL. fem. n. *bimotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004402485*. The type genome for the species is the GenBank assembly RS_GCF_004402485.1. The GC content of the type genome is 67.9 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Cryobacterium bipaledo sp. nov.

Candidatus Cryobacterium bipaledo (NL. fem. n. *bipaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004402535*. The type genome for the species is the GenBank assembly RS_GCF_004402535.1. The GC content of the type genome is 65.39 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Cryobacterium celumilenta sp. nov.

Candidatus Cryobacterium celumilenta (NL. fem. n. *celumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004402495*. The type genome for the species is the GenBank assembly RS_GCF_004402495.1. The GC content of the type genome is 68.46 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Cryobacterium cemenessa sp. nov.

Candidatus Cryobacterium cemenessa (NL. fem. n. *cemenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004403185*. The type genome for the species is the GenBank assembly RS_GCF_004403185.1. The GC content of the type genome is 64.05 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Cryobacterium debucitudo sp. nov.

Candidatus Cryobacterium debucitudo (NL. fem. n. *debucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp002929825*. The type genome for the species is the GenBank assembly RS_GCF_004403345.1. The GC content of the type genome is 63.51 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Cryobacterium decamibra sp. nov.

Candidatus Cryobacterium decamibra (NL. fem. n. *decamibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004403305*. The type genome for the species is the GenBank assembly RS_GCF_004403305.1. The GC content of the type genome is 66.74 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Cryobacterium defenisca sp. nov.

Candidatus Cryobacterium defenisca (NL. fem. n. *defenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp002929495*. The type genome for the species is the GenBank assembly RS_GCF_004404025.1. The GC content of the type genome is 63.79 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Cryobacterium dehonitrix sp. nov.

Candidatus Cryobacterium dehonitrix (NL. fem. n. *dehonitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp002929845*. The type genome for the species is the GenBank assembly RS_GCF_004402575.1. The GC content of the type genome is 66.79 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Cryobacterium denigitudo sp. nov.

Candidatus Cryobacterium denigitudo (NL. fem. n. *denigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004403465*. The type genome for the species is the GenBank assembly RS_GCF_004403465.1. The GC content of the type genome is 67.2 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Cryobacterium detotilega sp. nov.

Candidatus Cryobacterium detotilega (NL. fem. n. *detotilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004403065*. The type genome for the species is the GenBank assembly RS_GCF_004403065.1. The GC content of the type genome is 67.76 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Cryobacterium direcitudo sp. nov.

Candidatus Cryobacterium direcitudo (NL. fem. n. *direcitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp002929555*. The type genome for the species is the GenBank assembly RS_GCF_002929555.1. The GC content of the type genome is 68.32 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Cryobacterium funivousia sp. nov.

Candidatus Cryobacterium funivousia (NL. fem. n. *funivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004402595*. The type genome for the species is the GenBank assembly RS_GCF_004402595.1. The GC content of the type genome is 68.14 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Cryobacterium maligetta sp. nov.

Candidatus Cryobacterium maligetta (NL. fem. n. *maligetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp000738085*. The type genome for the species is the GenBank assembly RS_GCF_000738085.1. The GC content of the type genome is 64.88 % and the genome length is 4.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Arctic: Vestre Broggerbreen (VB) glacier; Svalbard".

Description of *Candidatus* Cryobacterium mavorisca sp. nov.

Candidatus Cryobacterium mavorisca (NL. fem. n. *mavorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004402785*. The type genome for the species is the GenBank assembly RS_GCF_004402785.1. The GC content of the type genome is 67.01 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Cryobacterium monacimonia sp. nov.

Candidatus Cryobacterium monacimonia (NL. fem. n. *monacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004210215*. The type genome for the species is the GenBank assembly RS_GCF_004210215.1. The GC content of the type genome is 67.55 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Cryobacterium musulitica sp. nov.

Candidatus Cryobacterium musulitica (NL. fem. n. *musulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp002929505*. The type genome for the species is the GenBank assembly RS_GCF_002929505.1. The GC content of the type genome is 63.17 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Cryobacterium obnupousia sp. nov.

Candidatus Cryobacterium obnupousia (NL. fem. n. *obnupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004402695*. The type genome for the species is the GenBank assembly RS_GCF_004402695.1. The GC content of the type genome is 67.61 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Cryobacterium obtesitura sp. nov.

Candidatus Cryobacterium obtesitura (NL. fem. n. *obtesitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004403515*. The type genome for the species is the GenBank assembly RS_GCF_004403515.1. The GC content of the type genome is 68.04 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Cryobacterium pepenastra sp. nov.

Candidatus Cryobacterium pepenastra (NL. fem. n. *pepenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004402235*. The type genome for the species is the GenBank assembly RS_GCF_004402235.1. The GC content of the type genome is 67.68 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Cryobacterium redunax sp. nov.

Candidatus Cryobacterium redunax (NL. fem. n. *redunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp002929805*. The type genome for the species is the GenBank assembly RS_GCF_002929805.1. The GC content of the type genome is 63.22 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Cryobacterium rosaratio sp. nov.

Candidatus Cryobacterium rosaratio (NL. fem. n. *rosaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp003602235*. The type genome for the species is the GenBank assembly RS_GCF_003602235.1. The GC content of the type genome is 66.85

% and the genome length is 4.71 Mbp.

Description of *Candidatus* Cryobacterium secunitudo sp. nov.

Candidatus Cryobacterium secunitudo (NL. fem. n. *secunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp004403985*. The type genome for the species is the GenBank assembly RS_GCF_004402825.1. The GC content of the type genome is 64.43 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Cryobacterium solifitura sp. nov.

Candidatus Cryobacterium solifitura (NL. fem. n. *solifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp002404115*. The type genome for the species is the GenBank assembly GCA_002404115.1. The GC content of the type genome is 68.54 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Cryobacterium xenodimonia sp. nov.

Candidatus Cryobacterium xenodimonia (NL. fem. n. *xenodimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium sp002929535*. The type genome for the species is the GenBank assembly RS_GCF_002929535.1. The GC content of the type genome is 63.26 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Cryobacterium advigigena sp. nov.

Candidatus Cryobacterium advigigena (NL. fem. n. *advigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryobacterium_B sp012274275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012274275.1. The GC content of the type genome is 66.98 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Cryosericum arvecifica sp. nov.

Candidatus Cryosericum arvecifica (NL. fem. n. *arvecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryosericum sp013824685*. The type genome for the species is the GenBank assembly GCA_013824685.1. The GC content of the type genome is 59.29 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Cryosericum devecatica sp. nov.

Candidatus Cryosericum devecatica (NL. fem. n. *devecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryosericum sp903871855*. The type genome for the species is the GenBank assembly GCA_903870465.1. The GC content of the type genome is 57.48 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Cryosericum maligugo sp. nov.

Candidatus Cryosericum maligugo (NL. fem. n. *maligugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cryosericum sp002402295*. The type genome for the species is the GenBank assembly GCA_002402295.1. The GC content of the type genome is 57.69 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Cucurana gasomimonas sp. nov.

Candidatus Cucurana gasomimonas (NL. fem. n. *gasomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU067 sp012841865*. The type genome for the species is the GenBank assembly GCA_012841865.1. The GC content of the type genome is 36.2 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Cucurana gen. nov.

Candidatus Cucurana (NL. fem. n. *Cucurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU067*. The type species for the genus is *Candidatus* Cucurana gasomimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Cucurana hexagago sp. nov.

Candidatus Cucurana hexagago (NL. fem. n. *hexagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU067 sp001512995*. The type genome for the species is the GenBank assembly GCA_012516595.1. The GC content of the type genome is 47.26 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Cucuraria defanimonia sp. nov.

Candidatus Cucuraria defanimonia (NL. fem. n. *defanimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1398 sp002305165*. The type genome for the species is the GenBank assembly GCA_012522675.1. The GC content of the type genome is 66.74 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Cucuraria gen. nov.

Candidatus Cucuraria (NL. fem. n. *Cucuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1398*. The type species for the genus is *Candidatus* Cucuraria defanimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1398*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cucurariaceae.

Description of *Candidatus* Cucurariaceae fam. nov.

Candidatus Cucurariaceae (NL. fem. n. *Cucurariaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1398.* The type genus for the taxon is *Candidatus* Cucuraria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1398*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cucurariales.

Description of *Candidatus* Cucurariales ord. nov.

Candidatus Cucurariales (NL. fem. n. *Cucurariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1398.* The type genus for the taxon is *Candidatus* Cucuraria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA5377*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Latibosae.

Description of *Candidatus* Cucurella assicilega sp. nov.

Candidatus Cucurella assicilega (NL. fem. n. *assicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch66 sp013178045*. The type genome for the species is the GenBank assembly GCA_013178045.1. The GC content of the type genome is 50.23 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Cucurella gen. nov.

Candidatus Cucurella (NL. fem. n. *Cucurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch66*. The type species for the genus is *Candidatus* Cucurella assicilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch66*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cucurellaceae.

Description of *Candidatus* Cucurellaceae fam. nov.

Candidatus Cucurellaceae (NL. fem. n. *Cucurellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch66.* The type genus for the taxon is *Candidatus* Cucurella .

According to the original version of GTDB R06-RS202, this family belongs to the order *Ch66*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cucurellales.

Description of *Candidatus* Cucurellales ord. nov.

Candidatus Cucurellales (NL. fem. n. *Cucurellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch66.* The type genus for the taxon is *Candidatus* Cucurella .

According to the GTDB R06-RS202, this order belongs to the class *Syntrophomonadia*.

Description of *Candidatus* Cucuria solipitas sp. nov.

Candidatus Cucuria solipitas (NL. fem. n. *solipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-532 sp003164955*. The type genome for the species is the GenBank assembly GCA_003164955.1. The GC content of the type genome is 70.22 % and the genome length is 7.04 Mbp.

Description of *Candidatus* Cucuria gen. nov.

Candidatus Cucuria (NL. fem. n. *Cucuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-532*. The type species for the genus is *Candidatus* Cucuria solipitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cucurida sicubitrix sp. nov.

Candidatus Cucurida sicubitrix (NL. fem. n. *sicubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMPR01 sp900313015*. The type genome for the species is the GenBank assembly RS_GCF_003318155.1. The GC content of the type genome is 54.79 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Cucurida gen. nov.

Candidatus Cucurida (NL. fem. n. *Cucurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OMPR01*. The type species for the genus is *Candidatus* Cucurida sicubitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cucurosa butubentia sp. nov.

Candidatus Cucurosa butubentia (NL. fem. n. *butubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRSR01 sp903881315*. The type genome for the species is the GenBank assembly GCA_903881315.1. The GC content of the type genome is 54.87 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Cucurosa gen. nov.

Candidatus Cucurosa (NL. fem. n. *Cucurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRSR01*. The type species for the genus is *Candidatus* Cucurosa butubentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIRSR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cucurosaceae.

Description of *Candidatus* Cucurosaceae fam. nov.

Candidatus Cucurosaceae (NL. fem. n. *Cucurosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CAIRSR01*. The type genus for the taxon is *Candidatus* Cucurosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIRSR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cucurosales.

Description of *Candidatus* Cucurosales ord. nov.

Candidatus Cucurosales (NL. fem. n. *Cucurosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIRSR01*. The type genus for the taxon is *Candidatus* Cucurosa .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Cucurosa lucelitrix sp. nov.

Candidatus Cucurosa lucelitrix (NL. fem. n. *lucelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRSR01 sp903824965*. The type genome for the species is the GenBank assembly GCA_903824965.1. The GC content of the type genome is 53.28 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Cucurula direpivita sp. nov.

Candidatus Cucurula direpivita (NL. fem. n. *direpivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-67-57 sp001766965*. The type genome for the species is the GenBank assembly GCA_001766975.1. The GC content of the type genome is 67.47 % and the genome length is 1.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Cucurula gen. nov.

Candidatus Cucurula (NL. fem. n. *Cucurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *2-02-FULL-67-57*. The type species for the genus is *Candidatus* Cucurula direpivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-67-57*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cucurulaceae.

Description of *Candidatus* Cucurulaceae fam. nov.

Candidatus Cucurulaceae (NL. fem. n. *Cucurulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-67-57.* The type genus for the taxon is *Candidatus* Cucurula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dilicellales.

Description of *Candidatus* Cucurula morigitica sp. nov.

Candidatus Cucurula morigitica (NL. fem. n. *morigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-67-57 sp011055645*. The type genome for the species is the GenBank assembly GCA_011055645.1. The GC content of the type genome is 68.15 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Cuferana bucelentia sp. nov.

Candidatus Cuferana bucelentia (NL. fem. n. *bucelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin76 sp012270885*. The type genome for the species is the GenBank assembly GCA_012270885.1. The GC content of the type genome is 63.76 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Cuferana gen. nov.

Candidatus Cuferana (NL. fem. n. *Cuferana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin76*. The type species for the genus is *Candidatus* Cuferana bucelentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin76*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuferanaceae.

Description of *Candidatus* Cuferanaceae fam. nov.

Candidatus Cuferanaceae (NL. fem. n. *Cuferanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin76.* The type genus for the taxon is *Candidatus* Cuferana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rudicellales.

Description of *Candidatus* Cuferana buxanatio sp. nov.

Candidatus Cuferana buxanatio (NL. fem. n. *buxanatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin76 sp009837815*. The type genome for the species is the GenBank assembly GCA_009838695.1. The GC content of the type genome is 64.42 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Cuferana octacugo sp. nov.

Candidatus Cuferana octacugo (NL. fem. n. *octacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin76 sp002238785*. The type genome for the species is the GenBank assembly GCA_002238785.1. The GC content of the type genome is 61.59 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Cuferaria irregessa sp. nov.

Candidatus Cuferaria irregessa (NL. fem. n. *irregessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5368 sp002407865*. The type genome for the species is the GenBank assembly GCA_002407865.1. The GC content of the type genome is 51.3 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Cuferaria gen. nov.

Candidatus Cuferaria (NL. fem. n. *Cuferaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5368*. The type species for the genus is *Candidatus* Cuferaria irregessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5368*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuferariaceae.

Description of *Candidatus* Cuferariaceae fam. nov.

Candidatus Cuferariaceae (NL. fem. n. *Cuferariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5368.* The type genus for the taxon is *Candidatus* Cuferaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4802*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curabanales.

Description of *Candidatus* Cuferella benifago sp. nov.

Candidatus Cuferella benifago (NL. fem. n. *benifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AEGEAN-183 sp001628005*. The type genome for the species is the GenBank assembly GCA_001628185.1. The GC content of the type genome is 37.0 % and the genome length is 1.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 192 - depth 500m".

Description of *Candidatus* Cuferella gen. nov.

Candidatus Cuferella (NL. fem. n. *Cuferella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AEGEAN-183*. The type species for the genus is *Candidatus* Cuferella benifago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SAR86*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludimulaceae.

Description of *Candidatus* Cuferella vinacitura sp. nov.

Candidatus Cuferella vinacitura (NL. fem. n. *vinacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AEGEAN-183 sp012965075*. The type genome for the species is the GenBank assembly GCA_012960705.1. The GC content of the type genome is 37.15 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Cuferia hirunibra sp. nov.

Candidatus Cuferia hirunibra (NL. fem. n. *hirunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-260 sp003566815*. The type genome for the species is the GenBank assembly GCA_007131135.1. The GC content of the type genome is 40.25 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Cuferia gen. nov.

Candidatus Cuferia (NL. fem. n. *Cuferia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3SED10-260*. The type species for the genus is *Candidatus* Cuferia hirunibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6126*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigemiaceae.

Description of *Candidatus* Cuferida vinulessa sp. nov.

Candidatus Cuferida vinulessa (NL. fem. n. *vinulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J094 sp003695005*. The type genome for the species is the GenBank assembly GCA_003695005.1. The GC content of the type genome is 38.24 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Cuferida gen. nov.

Candidatus Cuferida (NL. fem. n. *Cuferida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J094*. The type species for the genus is *Candidatus* Cuferida vinulessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J094*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuferidaceae.

Description of *Candidatus* Cuferidaceae fam. nov.

Candidatus Cuferidaceae (NL. fem. n. *Cuferidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J094.* The type genus for the taxon is *Candidatus* Cuferida .

According to GTDB R06-RS202, this family belongs to the order *Turneriellales*.

Description of *Candidatus* Cuferosa rumifibra sp. nov.

Candidatus Cuferosa rumifibra (NL. fem. n. *rumifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-914 sp000437895*. The type genome for the species is the GenBank assembly GCA_900544005.1. The GC content of the type genome is 25.81 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Cuferosa gen. nov.

Candidatus Cuferosa (NL. fem. n. *Cuferosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-914*. The type species for the genus is *Candidatus* Cuferosa rumifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Cuferula bisacitio sp. nov.

Candidatus Cuferula bisacitio (NL. fem. n. *bisacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHAN690 sp002389645*. The type genome for the species is the GenBank assembly GCA_002389645.1. The GC content of the type genome is 39.76 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Cuferula gen. nov.

Candidatus Cuferula (NL. fem. n. *Cuferula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHAN690*. The type species for the genus is *Candidatus* Cuferula bisacitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cuferula inpenitia sp. nov.

Candidatus Cuferula inpenitia (NL. fem. n. *inpenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHAN690 sp013204105*. The type genome for the species is the GenBank assembly GCA_013204105.1. The GC content of the type genome is 48.21 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Cuferula pabilibra sp. nov.

Candidatus Cuferula pabilibra (NL. fem. n. *pabilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHAN690 sp009937235*. The type genome for the species is the GenBank assembly GCA_009937235.1. The GC content of the type genome is 43.77 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Cuferula satacetta sp. nov.

Candidatus Cuferula satacetta (NL. fem. n. *satacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHAN690 sp002336485*. The type genome for the species is the GenBank assembly GCA_002389565.1. The GC content of the type genome is 43.71 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Cuferula vanitisca sp. nov.

Candidatus Cuferula vanitisca (NL. fem. n. *vanitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHAN690 sp002390775*. The type genome for the species is the GenBank assembly GCA_002336185.1. The GC content of the type genome is 39.43 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Culibana inresentia sp. nov.

Candidatus Culibana inresentia (NL. fem. n. *inresentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRBW01 sp011042705*. The type genome for the species is the GenBank assembly GCA_011042705.1. The GC content of the type genome is 53.37 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Culibana gen. nov.

Candidatus Culibana (NL. fem. n. *Culibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRBW01*. The type species for the genus is *Candidatus* Culibana inresentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRBW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibanaceae.

Description of *Candidatus* Culibanaceae fam. nov.

Candidatus Culibanaceae (NL. fem. n. *Culibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRBW01.* The type genus for the taxon is *Candidatus* Culibana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1063*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homicosales.

Description of *Candidatus* Culibaria hexagentia sp. nov.

Candidatus Culibaria hexagentia (NL. fem. n. *hexagentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-504 sp003161205*. The type genome for the species is the GenBank assembly GCA_003161205.1. The GC content of the type genome is 69.61 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Culibaria gen. nov.

Candidatus Culibaria (NL. fem. n. *Culibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-504*. The type species for the genus is *Candidatus* Culibaria hexagentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Culibaria invesago sp. nov.

Candidatus Culibaria invesago (NL. fem. n. *invesago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-504 sp003168295*. The type genome for the species is the

GenBank assembly GCA_003168295.1. The GC content of the type genome is 69.31 % and the genome length is 8.2 Mbp.

Description of *Candidatus* Culibaria penecimonia sp. nov.

Candidatus Culibaria penecimonia (NL. fem. n. *penecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-504 sp003140115*. The type genome for the species is the GenBank assembly GCA_003140115.1. The GC content of the type genome is 69.99 % and the genome length is 7.58 Mbp.

Description of *Candidatus* Culibella vatililega sp. nov.

Candidatus Culibella vatililega (NL. fem. n. *vatililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6906 sp002451155*. The type genome for the species is the GenBank assembly GCA_002451155.1. The GC content of the type genome is 57.76 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Culibella gen. nov.

Candidatus Culibella (NL. fem. n. *Culibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6906*. The type species for the genus is *Candidatus* Culibella vatililega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6906*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibellaceae.

Description of *Candidatus* Culibellaceae fam. nov.

Candidatus Culibellaceae (NL. fem. n. *Culibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6906.* The type genus for the taxon is *Candidatus* Culibella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Vagabanales.

Description of *Candidatus* Culibia adlecilenta sp. nov.

Candidatus Culibia adlecilenta (NL. fem. n. *adlecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *14-2 sp011960065*. The type genome for the species is the GenBank assembly RS_GCF_011960065.1. The GC content of the type genome is 44.61 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Culibia gen. nov.

Candidatus Culibia (NL. fem. n. *Culibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *14-2*. The type species for the genus is *Candidatus* Culibia adlecilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Culibia aggubedo sp. nov.

Candidatus Culibia aggubedo (NL. fem. n. *aggubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *14-2 sp000403255*. The type genome for the species is the GenBank assembly RS_GCF_000403255.1. The GC content of the type genome is 42.35 % and the genome length is 5.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Culibia agnicicella sp. nov.

Candidatus Culibia agnicicella (NL. fem. n. *agnicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *14-2 sp009911185*. The type genome for the species is the GenBank assembly RS_GCF_009911185.1. The GC content of the type genome is 43.69 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Culibia annicitica sp. nov.

Candidatus Culibia annicitica (NL. fem. n. *annicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *14-2 sp004793545*. The type genome for the species is the GenBank assembly RS_GCF_004793545.1. The GC content of the type genome is 43.98 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Culibia defasatica sp. nov.

Candidatus Culibia defasatica (NL. fem. n. *defasatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *14-2 sp000403845*. The type genome for the species is the GenBank assembly RS_GCF_000403845.2. The GC content of the type genome is 45.09 % and the genome length is 4.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Culibia defulitura sp. nov.

Candidatus Culibia defulitura (NL. fem. n. *defulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *14-2 sp000403315*. The type genome for the species is the GenBank assembly GCA_009774495.1. The GC content of the type genome is 48.24 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Culibia demadatica sp. nov.

Candidatus Culibia demadatica (NL. fem. n. *demadatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *14-2 sp012519695*. The type genome for the species is the GenBank assembly GCA_012519695.1. The GC content of the type genome is 37.39 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Culibia exaspibra sp. nov.

Candidatus Culibia exaspibra (NL. fem. n. *exaspibra* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *14-2 sp001940225*. The type genome for the species is the GenBank assembly RS_GCF_001940225.1. The GC content of the type genome is 38.19 % and the genome length is 3.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces".

Description of *Candidatus* Culibia habacousia sp. nov.

Candidatus Culibia habacousia (NL. fem. n. *habacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *14-2 sp009774455*. The type genome for the species is the GenBank assembly GCA_009774455.1. The GC content of the type genome is 45.85 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Culibida acertitica sp. nov.

Candidatus Culibida acertitica (NL. fem. n. *acertitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B119-G9 sp003646715*. The type genome for the species is the GenBank assembly GCA_003646715.1. The GC content of the type genome is 43.47 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Culibida gen. nov.

Candidatus Culibida (NL. fem. n. *Culibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B119-G9*. The type species for the genus is *Candidatus* Culibida acertitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B119-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibidaceae.

Description of *Candidatus* Culibidaceae fam. nov.

Candidatus Culibidaceae (NL. fem. n. *Culibidaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B119-G9.* The type genus for the taxon is *Candidatus* Culibida .

According to the original version of GTDB R06-RS202, this family belongs to the order *B119-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Culibidales.

Description of *Candidatus* Culibidales ord. nov.

Candidatus Culibidales (NL. fem. n. *Culibidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B119-G9.* The type genus for the taxon is *Candidatus* Culibida .

According to the GTDB R06-RS202, this order belongs to the class *Syntrophobacteria*.

Description of *Candidatus* Culibosa adsibitia sp. nov.

Candidatus Culibosa adsibitia (NL. fem. n. *adsibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp900299045*. The type genome for the species is the GenBank assembly GCA_900299045.1. The GC content of the type genome is 41.41 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Culibosa gen. nov.

Candidatus Culibosa (NL. fem. n. *Culibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10906*. The type species for the genus is *Candidatus* Culibosa adsibitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Culibosa bicalessa sp. nov.

Candidatus Culibosa bicalessa (NL. fem. n. *bicalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903847275*. The type genome for the species is the GenBank assembly GCA_903885925.1. The GC content of the type genome is 39.68 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Culibosa cibicitia sp. nov.

Candidatus Culibosa cibicitia (NL. fem. n. *cibicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903904275*. The type genome for the species is the GenBank assembly GCA_903904275.1. The GC content of the type genome is 39.37 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Culibosa decatibula sp. nov.

Candidatus Culibosa decatibula (NL. fem. n. *decatibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903867225*. The type genome for the species is the GenBank assembly GCA_903926885.1. The GC content of the type genome is 40.3 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Culibosa defosessa sp. nov.

Candidatus Culibosa defosessa (NL. fem. n. *defosessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903889445*. The type genome for the species is the GenBank assembly GCA_903889445.1. The GC content of the type genome is 42.96 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Culibosa depasentia sp. nov.

Candidatus Culibosa depasentia (NL. fem. n. *depasentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903876445*. The type genome for the species is the GenBank assembly GCA_903876445.1. The GC content of the type genome is 39.42 %

and the genome length is 2.81 Mbp.

Description of *Candidatus* Culibosa diminivita sp. nov.

Candidatus Culibosa diminivita (NL. fem. n. *diminivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903848905*. The type genome for the species is the GenBank assembly GCA_903833635.1. The GC content of the type genome is 40.03 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Culibosa echiditio sp. nov.

Candidatus Culibosa echiditio (NL. fem. n. *echiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp003542275*. The type genome for the species is the GenBank assembly GCA_003542275.1. The GC content of the type genome is 45.4 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Culibosa galacibra sp. nov.

Candidatus Culibosa galacibra (NL. fem. n. *galacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903834465*. The type genome for the species is the GenBank assembly GCA_903834465.1. The GC content of the type genome is 41.26 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Culibosa infenifica sp. nov.

Candidatus Culibosa infenifica (NL. fem. n. *infenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903877065*. The type genome for the species is the GenBank assembly GCA_903877065.1. The GC content of the type genome is 40.28 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Culibosa lavacimonas sp. nov.

Candidatus Culibosa lavacimonas (NL. fem. n. *lavacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903953455*. The type genome for the species is the GenBank assembly GCA_903897525.1. The GC content of the type genome is 39.92 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Culibosa lucifetta sp. nov.

Candidatus Culibosa lucifetta (NL. fem. n. *lucifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903870545*. The type genome for the species is the GenBank assembly GCA_903878585.1. The GC content of the type genome is 43.18 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Culibosa monacentia sp. nov.

Candidatus Culibosa monacentia (NL. fem. n. *monacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp014191975*. The type genome for the species is the GenBank assembly GCA_014191975.1. The GC content of the type genome is 39.7 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Culibosa peridimonia sp. nov.

Candidatus Culibosa peridimonia (NL. fem. n. *peridimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10906 sp903848935*. The type genome for the species is the GenBank assembly GCA_903849505.1. The GC content of the type genome is 42.46 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Culibula rubecatio sp. nov.

Candidatus Culibula rubecatio (NL. fem. n. *rubecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3088 sp002367275*. The type genome for the species is the GenBank assembly GCA_002352625.1. The GC content of the type genome is 49.38 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Culibula gen. nov.

Candidatus Culibula (NL. fem. n. *Culibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3088*. The type species for the genus is *Candidatus* Culibula rubecatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibulaceae.

Description of *Candidatus* Culibulaceae fam. nov.

Candidatus Culibulaceae (NL. fem. n. *Culibulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3088.* The type genus for the taxon is *Candidatus* Culibula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Culibulales.

Description of *Candidatus* Culibulales ord. nov.

Candidatus Culibulales (NL. fem. n. *Culibulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3088.* The type genus for the taxon is *Candidatus* Culibula .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Culigana adessilenta sp. nov.

Candidatus Culigana adessilenta (NL. fem. n. *adessilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-07 sp900770145*. The type genome for the species is the GenBank assembly RS_GCF_900770145.1. The GC content of the type genome is 56.26 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Culigana gen. nov.

Candidatus Culigana (NL. fem. n. *Culigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Firm-07*. The type species for the genus is *Candidatus* Culigana adessilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Culigana gasifetta sp. nov.

Candidatus Culigana gasifetta (NL. fem. n. *gasifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-07 sp900548735*. The type genome for the species is the GenBank assembly GCA_900548735.1. The GC content of the type genome is 55.96 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Culigana omnifibra sp. nov.

Candidatus Culigana omnifibra (NL. fem. n. *omnifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-07 sp001604005*. The type genome for the species is the GenBank assembly GCA_001604005.1. The GC content of the type genome is 55.49 % and the genome length is 1.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Culigaria bipenax sp. nov.

Candidatus Culigaria bipenax (NL. fem. n. *bipenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCUS01 sp903845045*. The type genome for the species is the GenBank assembly GCA_903913725.1. The GC content of the type genome is 72.42 % and the genome length is 8.2 Mbp.

Description of *Candidatus* Culigaria gen. nov.

Candidatus Culigaria (NL. fem. n. *Culigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCUS01*. The type species for the genus is *Candidatus* Culigaria bipenax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musuliaceae.

Description of *Candidatus* Culigaria nicomousia sp. nov.

Candidatus Culigaria nicomousia (NL. fem. n. *nicomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCUS01 sp004297725*. The type genome for the species is the GenBank assembly GCA_004297725.1. The GC content of the type genome is 72.43 % and the genome length is 9.39 Mbp.

Description of *Candidatus* Culigella videlousia sp. nov.

Candidatus Culigella videlousia (NL. fem. n. *videlousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *12-FULL-44-12b sp001823695*. The type genome for the species is the GenBank assembly GCA_001823895.1. The GC content of the type genome is 43.69 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Culigella gen. nov.

Candidatus Culigella (NL. fem. n. *Culigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *12-FULL-44-12b*. The type species for the genus is *Candidatus* Culigella videlousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Culigia decucousia sp. nov.

Candidatus Culigia decucousia (NL. fem. n. *decucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8498 sp000996895*. The type genome for the species is the GenBank assembly GCA_000995715.1. The GC content of the type genome is 41.58 % and the genome length is 0.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Culigia gen. nov.

Candidatus Culigia (NL. fem. n. *Culigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8498*. The type species for the genus is *Candidatus* Culigia decucousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Culigia letifitrix sp. nov.

Candidatus Culigia letifitrix (NL. fem. n. *letifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8498 sp001773135*. The type genome for the species is the GenBank assembly GCA_001773135.1. The GC content of the type genome is 41.56 % and the genome length is 0.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Culigia munifimonas sp. nov.

Candidatus Culigia munifimonas (NL. fem. n. *munifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8498 sp000503835*. The type genome for the species is the GenBank assembly GCA_000503835.1. The GC content of the type genome is 43.15 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Culigia paraligena sp. nov.

Candidatus Culigia paraligena (NL. fem. n. *paraligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8498 sp001773255*. The type genome for the species is the GenBank assembly GCA_001772795.1. The GC content of the type genome is 42.69 % and the genome length is 0.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Culigia remedimonas sp. nov.

Candidatus Culigia remedimonas (NL. fem. n. *remedimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8498 sp001773385*. The type genome for the species is the GenBank assembly GCA_000997745.1. The GC content of the type genome is 42.38 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Culigida locupessa sp. nov.

Candidatus Culigida locupessa (NL. fem. n. *locupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-42-19 sp002774705*. The type genome for the species is the GenBank assembly GCA_002774705.1. The GC content of the type genome is 41.99 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Culigida gen. nov.

Candidatus Culigida (NL. fem. n. *Culigida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-42-19*. The type species for the genus is *Candidatus* Culigida locupessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-10-42-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culigidaceae.

Description of *Candidatus* Culigidaceae fam. nov.

Candidatus Culigidaceae (NL. fem. n. *Culigidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-10-42-19.* The type genus for the taxon is *Candidatus* Culigida .

According to the original version of GTDB R06-RS202, this family belongs to the order *WO2-41-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Refulariales.

Description of *Candidatus* Culigosa caselivita sp. nov.

Candidatus Culigosa caselivita (NL. fem. n. *caselivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-877 sp003135035*. The type genome for the species is the GenBank assembly GCA_003135035.1. The GC content of the type genome is 65.76 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Culigosa gen. nov.

Candidatus Culigosa (NL. fem. n. *Culigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-877*. The type species for the genus is *Candidatus* Culigosa caselivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bog-877*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culigosaceae.

Description of *Candidatus* Culigosaceae fam. nov.

Candidatus Culigosaceae (NL. fem. n. *Culigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bog-877.* The type genus for the taxon is *Candidatus* Culigosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Visibiales.

Description of *Candidatus* Culigosa catagimonas sp. nov.

Candidatus Culigosa catagimonas (NL. fem. n. *catagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-877 sp003133485*. The type genome for the species is the GenBank assembly GCA_003133485.1. The GC content of the type genome is 65.35 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Culigosa catalimonas sp. nov.

Candidatus Culigosa catalimonas (NL. fem. n. *catalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-877 sp003132265*. The type genome for the species is the GenBank assembly GCA_003132785.1. The GC content of the type genome is 67.85 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Culigosa conibifica sp. nov.

Candidatus Culigosa conibifica (NL. fem. n. *conibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-877 sp003164475*. The type genome for the species is the GenBank assembly GCA_003164475.1. The GC content of the type genome is 68.51 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Culigula ignomatio sp. nov.

Candidatus Culigula ignomatio (NL. fem. n. *ignomatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-47-16 sp002796325*. The type genome for the species is the GenBank assembly GCA_002796325.1. The GC content of the type genome is 47.29 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Culigula gen. nov.

Candidatus Culigula (NL. fem. n. *Culigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-47-16*. The type species for the genus is *Candidatus* Culigula ignomatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-20-47-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culigulaceae.

Description of *Candidatus* Culigulaceae fam. nov.

Candidatus Culigulaceae (NL. fem. n. *Culigulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-20-47-16.* The type genus for the taxon is *Candidatus* Culigula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-002796325*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Taraxanales.

Description of *Candidatus* Culilaria cepulitrix sp. nov.

Candidatus Culilaria cepulitrix (NL. fem. n. *cepulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8481 sp002780065*. The type genome for the species is the GenBank assembly GCA_001871695.1. The GC content of the type genome is 42.22 % and the genome length is 2.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Culilaria gen. nov.

Candidatus Culilaria (NL. fem. n. *Culilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8481*. The type species for the genus is *Candidatus* Culilaria cepulitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8481*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culilariaceae.

Description of *Candidatus* Culilariaceae fam. nov.

Candidatus Culilariaceae (NL. fem. n. *Culilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8481.* The type genus for the taxon is *Candidatus* Culilaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8481*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Culilariales.

Description of *Candidatus* Culilariales ord. nov.

Candidatus Culilariales (NL. fem. n. *Culilariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8481.* The type genus for the taxon is *Candidatus* Culilaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8481*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Culilariae.

Description of *Candidatus* Culilariae class. nov.

Candidatus Culilariae (NL. fem. n. *c__Culilariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8481.* The type genus for the taxon is *Candidatus* Culilaria .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBA8481*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the phylum *Candidatus* Culilariota.

Description of *Candidatus* Culilariota phyl. nov.

Candidatus Culilariota (NL. fem. n. *Culilariota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8481.* The type genus for the taxon is *Candidatus* Culilaria .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Culilella bulapitudo sp. nov.

Candidatus Culilella bulapitudo (NL. fem. n. *bulapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1396 sp002305195*. The type genome for the species is the GenBank assembly GCA_002305195.1. The GC content of the type genome is 40.24 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Culilella gen. nov.

Candidatus Culilella (NL. fem. n. *Culilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1396*. The type species for the genus is *Candidatus* Culilella bulapitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1396*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culilellaceae.

Description of *Candidatus* Culilellaceae fam. nov.

Candidatus Culilellaceae (NL. fem. n. *Culilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1396.* The type genus for the taxon is *Candidatus* Culilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Culilia tomacetta sp. nov.

Candidatus Culilia tomacetta (NL. fem. n. *tomacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp6-AA56 sp003222395*. The type genome for the species is the GenBank assembly GCA_003222395.1. The GC content of the type genome is 65.11 % and the genome length is 7.74 Mbp.

Description of *Candidatus* Culilia gen. nov.

Candidatus Culilia (NL. fem. n. *Culilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp6-AA56*. The type species for the genus is *Candidatus* Culilia tomacetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Culilida vitifugo sp. nov.

Candidatus Culilida vitifugo (NL. fem. n. *vitifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YD0425bin51 sp002753225*. The type genome for the species is the GenBank assembly GCA_002753225.1. The GC content of the type genome is 32.23 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Culilida gen. nov.

Candidatus Culilida (NL. fem. n. *Culilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YD0425bin51*. The type species for the genus is *Candidatus* Culilida vitifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *YD0425bin51*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culilidaceae.

Description of *Candidatus* Culilidaceae fam. nov.

Candidatus Culilidaceae (NL. fem. n. *Culilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *YD0425bin51.* The type genus for the taxon is *Candidatus* Culilida .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Culilosa adtoratio sp. nov.

Candidatus Culilosa adtoratio (NL. fem. n. *adtoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8522 sp003524335*. The type genome for the species is the GenBank assembly GCA_003524335.1. The GC content of the type genome is 58.43 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Culilosa gen. nov.

Candidatus Culilosa (NL. fem. n. *Culilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8522*. The type species for the genus is *Candidatus* Culilosa adtoratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8522*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culilosaceae.

Description of *Candidatus* Culilosaceae fam. nov.

Candidatus Culilosaceae (NL. fem. n. *Culilosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8522.* The type genus for the taxon is *Candidatus* Culilosa .

According to GTDB R06-RS202, this family belongs to the order *Aminicenantales*.

Description of *Candidatus* Culilula codificula sp. nov.

Candidatus Culilula codificula (NL. fem. n. *codificula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG420 sp900317985*. The type genome for the species is the GenBank assembly GCA_900320945.1. The GC content of the type genome is 58.35 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Culilula gen. nov.

Candidatus Culilula (NL. fem. n. *Culilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG420*. The type species for the genus is *Candidatus* Culilula codificula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Culilula genocicella sp. nov.

Candidatus Culilula genocicella (NL. fem. n. *genocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG420 sp900317085*. The type genome for the species is the GenBank assembly GCA_900317135.1. The GC content of the type genome is 58.13 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Culilula maxumatio sp. nov.

Candidatus Culilula maxumatio (NL. fem. n. *maxumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG420 sp900315285*. The type genome for the species is the GenBank assembly GCA_002350695.1. The GC content of the type genome is 53.51 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Culilula refulatio sp. nov.

Candidatus Culilula refulatio (NL. fem. n. *refulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG420 sp900542575*. The type genome for the species is the GenBank assembly GCA_900542575.1. The GC content of the type genome is 54.29 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Culilula semimitas sp. nov.

Candidatus Culilula semimitas (NL. fem. n. *semimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG420 sp900318715*. The type genome for the species is the GenBank assembly GCA_900318715.1. The GC content of the type genome is 57.87 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Culilula tirunitica sp. nov.

Candidatus Culilula tirunitica (NL. fem. n. *tirunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG420 sp900771085*. The type genome for the species is the GenBank assembly RS_GCF_900771085.1. The GC content of the type genome is 44.1 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Cululana intesatica sp. nov.

Candidatus Cululana intesatica (NL. fem. n. *intesatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5301 sp002408345*. The type genome for the species is the GenBank assembly GCA_002408345.1. The GC content of the type genome is 44.83 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Cululana gen. nov.

Candidatus Cululana (NL. fem. n. *Cululana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5301*. The type species for the genus is *Candidatus* Cululana intesatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA5301. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cululanaceae.

Description of *Candidatus* Cululanaceae fam. nov.

Candidatus Cululanaceae (NL. fem. n. *Cululanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5301*. The type genus for the taxon is *Candidatus* Cululana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5301*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cululanales.

Description of *Candidatus* Cululanales ord. nov.

Candidatus Cululanales (NL. fem. n. *Cululanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5301*. The type genus for the taxon is *Candidatus* Cululana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA5301*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cululanae.

Description of *Candidatus* Cululanae class. nov.

Candidatus Cululanae (NL. fem. n. *c__Cululanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5301*. The type genus for the taxon is *Candidatus* Cululana .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_G*.

Description of *Candidatus* Culularia aprugitudo sp. nov.

Candidatus Culularia aprugitudo (NL. fem. n. *aprugitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHND01 sp004295045*. The type genome for the species is the GenBank assembly GCA_004295045.1. The GC content of the type genome is 53.67 %

and the genome length is 4.95 Mbp.

Description of *Candidatus* Culularia gen. nov.

Candidatus Culularia (NL. fem. n. *Culularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHND01*. The type species for the genus is *Candidatus* Culularia aprugitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHND01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culularia ceae.

Description of *Candidatus* Culularia ceae fam. nov.

Candidatus Culularia ceae (NL. fem. n. *Culularia ceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHND01.* The type genus for the taxon is *Candidatus* Culularia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4142*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenobellales.

Description of *Candidatus* Cululella arcatisca sp. nov.

Candidatus Cululella arcatisca (NL. fem. n. *arcatisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIXR01 sp014360495*. The type genome for the species is the GenBank assembly GCA_014360495.1. The GC content of the type genome is 45.96 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Cululella gen. nov.

Candidatus Cululella (NL. fem. n. *Cululella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIXR01*. The type species for the genus is *Candidatus* Cululella arcatisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACIXR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cululellaceae.

Description of *Candidatus* Cululellaceae fam. nov.

Candidatus Cululellaceae (NL. fem. n. *Cululellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIXR01*. The type genus for the taxon is *Candidatus* Cululella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACIXR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cululellales.

Description of *Candidatus* Cululellales ord. nov.

Candidatus Cululellales (NL. fem. n. *Cululellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIXR01*. The type genus for the taxon is *Candidatus* Cululella .

According to the original version of GTDB R06-RS202, this family belongs to the class *JACIXR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cululellae.

Description of *Candidatus* Cululellae class. nov.

Candidatus Cululellae (NL. fem. n. *c__Cululellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIXR01*. The type genus for the taxon is *Candidatus* Cululella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *JACIXR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Cululellota.

Description of *Candidatus* Cululellota phyl. nov.

Candidatus Cululellota (NL. fem. n. *Cululellota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *JACIXR01*. The type genus for the taxon is *Candidatus* Cululella .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Cululella incivitrix sp. nov.

Candidatus Cululella incivitrix (NL. fem. n. *incivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIXR01 sp014360465*. The type genome for the species is the GenBank assembly GCA_014360465.1. The GC content of the type genome is 44.87 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Cululia dehinibra sp. nov.

Candidatus Cululia dehinibra (NL. fem. n. *dehinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2942 sp900321525*. The type genome for the species is the GenBank assembly GCA_900321525.1. The GC content of the type genome is 44.9 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Cululia gen. nov.

Candidatus Cululia (NL. fem. n. *Cululia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2942*. The type species for the genus is *Candidatus* Cululia dehinibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cululida nefaricella sp. nov.

Candidatus Cululida nefaricella (NL. fem. n. *nefaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQVD01 sp003388555*. The type genome for the species is the GenBank assembly GCA_003385675.1. The GC content of the type genome is 70.54 % and the genome length is 6.72 Mbp.

Description of *Candidatus* Cululida gen. nov.

Candidatus Cululida (NL. fem. n. *Cululida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QQVD01*. The type species for the genus is *Candidatus* Cululida nefaricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QQVD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cululidaceae.

Description of *Candidatus* Cululidaceae fam. nov.

Candidatus Cululidaceae (NL. fem. n. *Cululidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QQVD01.* The type genus for the taxon is *Candidatus* Cululida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5704*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Holovidales.

Description of *Candidatus* Cululosa inturetta sp. nov.

Candidatus Cululosa inturetta (NL. fem. n. *inturetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1099 sp003170555*. The type genome for the species is the GenBank assembly GCA_003170555.1. The GC content of the type genome is 62.89 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Cululosa gen. nov.

Candidatus Cululosa (NL. fem. n. *Cululosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1099*. The type species for the genus is *Candidatus* Cululosa inturetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1099*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Cululosaceae.

Description of *Candidatus* Cululosaceae fam. nov.

Candidatus Cululosaceae (NL. fem. n. *Cululosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-1099.* The type genus for the taxon is *Candidatus* Cululosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *FEN-1099*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cululosales.

Description of *Candidatus* Cululosales ord. nov.

Candidatus Cululosales (NL. fem. n. *Cululosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-1099.* The type genus for the taxon is *Candidatus* Cululosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *FEN-1099*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cululosae.

Description of *Candidatus* Cululosae class. nov.

Candidatus Cululosae (NL. fem. n. *c__Cululosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-1099.* The type genus for the taxon is *Candidatus* Cululosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *FEN-1099*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Cululosota.

Description of *Candidatus* Cululosota phyl. nov.

Candidatus Cululosota (NL. fem. n. *Cululosota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-1099.* The type genus for the taxon is *Candidatus* Cululosa .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Culululla fecunitia sp. nov.

Candidatus Culululla fecunitia (NL. fem. n. *fecunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401445 sp002401445*. The type genome for the species is the GenBank assembly GCA_002401445.1. The GC content of the type genome is 39.84 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Culululla gen. nov.

Candidatus Culululla (NL. fem. n. *Culululla* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2401445*. The type species for the genus is *Candidatus* Culululla fecunitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2401445*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culululaceae.

Description of *Candidatus* Culululaceae fam. nov.

Candidatus Culululaceae (NL. fem. n. *Culululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2401445.* The type genus for the taxon is *Candidatus* Culululla .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Cumulibacter celamitio sp. nov.

Candidatus Cumulibacter celamitio (NL. fem. n. *celamitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cumulibacter sp900292035*. The type genome for the species is the

GenBank assembly RS_GCF_900292035.1. The GC content of the type genome is 68.63 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Cunabana adcubibra sp. nov.

Candidatus Cunabana adcubibra (NL. fem. n. *adcubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12045 sp900770325*. The type genome for the species is the GenBank assembly RS_GCF_900770325.1. The GC content of the type genome is 47.4 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Cunabana gen. nov.

Candidatus Cunabana (NL. fem. n. *Cunabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12045*. The type species for the genus is *Candidatus* Cunabana adcubibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Cunabana bucolilega sp. nov.

Candidatus Cunabana bucolilega (NL. fem. n. *bucolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12045 sp902775185*. The type genome for the species is the GenBank assembly GCA_902775185.1. The GC content of the type genome is 47.04 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Cunabana siticentia sp. nov.

Candidatus Cunabana siticentia (NL. fem. n. *siticentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12045 sp902778245*. The type genome for the species is the GenBank assembly GCA_902778245.1. The GC content of the type genome is 47.01 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Cunabana timefitia sp. nov.

Candidatus Cunabana timefitia (NL. fem. n. *timefitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12045 sp902802515*. The type genome for the species is the GenBank assembly GCA_902802515.1. The GC content of the type genome is 47.36 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Cunabaria adfanousia sp. nov.

Candidatus Cunabaria adfanousia (NL. fem. n. *adfanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUSP01 sp012842575*. The type genome for the species is the GenBank assembly GCA_012842575.1. The GC content of the type genome is 55.04 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Cunabaria gen. nov.

Candidatus Cunabaria (NL. fem. n. *Cunabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUSP01*. The type species for the genus is *Candidatus* Cunabaria adfanousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUSP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cunabariaceae.

Description of *Candidatus* Cunabariaceae fam. nov.

Candidatus Cunabariaceae (NL. fem. n. *Cunabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUSP01.* The type genus for the taxon is *Candidatus* Cunabaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DUSP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cunabariales.

Description of *Candidatus* Cunabariales ord. nov.

Candidatus Cunabariales (NL. fem. n. *Cunabariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUSP01*. The type genus for the taxon is *Candidatus* Cunabaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetariae.

Description of *Candidatus* Cunabella cenodigena sp. nov.

Candidatus Cunabella cenodigena (NL. fem. n. *cenodigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMUM01 sp903929005*. The type genome for the species is the GenBank assembly GCA_903929005.1. The GC content of the type genome is 52.57 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Cunabella gen. nov.

Candidatus Cunabella (NL. fem. n. *Cunabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMUM01*. The type species for the genus is *Candidatus* Cunabella cenodigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5629*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deneciaceae.

Description of *Candidatus* Cunabella viripitia sp. nov.

Candidatus Cunabella viripitia (NL. fem. n. *viripitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMUM01 sp903844685*. The type genome for the species is the GenBank assembly GCA_903844685.1. The GC content of the type genome is 53.14 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Cunabia defetentia sp. nov.

Candidatus Cunabia defetentia (NL. fem. n. *defetentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLKG01 sp007134735*. The type genome for the species is the GenBank assembly GCA_007134735.1. The GC content of the type genome is 58.11 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Cunabia gen. nov.

Candidatus Cunabia (NL. fem. n. *Cunabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLKG01*. The type species for the genus is *Candidatus* Cunabia defetentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reveculaceae.

Description of *Candidatus* Cunabida adtolibula sp. nov.

Candidatus Cunabida adtolibula (NL. fem. n. *adtolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DC0425bin3 sp002753665*. The type genome for the species is the GenBank assembly GCA_002753665.1. The GC content of the type genome is 65.4 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Cunabida gen. nov.

Candidatus Cunabida (NL. fem. n. *Cunabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DC0425bin3*. The type species for the genus is *Candidatus* Cunabida adtolibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DC0425bin3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cunabidaceae.

Description of *Candidatus* Cunabidaceae fam. nov.

Candidatus Cunabidaceae (NL. fem. n. *Cunabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DC0425bin3.* The type genus for the taxon is *Candidatus* Cunabida .

According to GTDB R06-RS202, this family belongs to the order *Magnetococcales*.

Description of *Candidatus* Cunabosa attelitura sp. nov.

Candidatus Cunabosa attelitura (NL. fem. n. *attelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G82 sp002172535*. The type genome for the species is the GenBank assembly GCA_002172535.2. The GC content of the type genome is 35.95 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Cunabosa gen. nov.

Candidatus Cunabosa (NL. fem. n. *Cunabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G82*. The type species for the genus is *Candidatus* Cunabosa attelitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Cunabosa cohuressa sp. nov.

Candidatus Cunabosa cohuressa (NL. fem. n. *cohuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G82 sp902601475*. The type genome for the species is the GenBank assembly GCA_011525285.1. The GC content of the type genome is 35.99 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Cunabosa curacicella sp. nov.

Candidatus Cunabosa curacicella (NL. fem. n. *curacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G82 sp902628925*. The type genome for the species is the GenBank assembly GCA_902628925.1. The GC content of the type genome is 35.76 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Cunabosa omnipigena sp. nov.

Candidatus Cunabosa omnipigena (NL. fem. n. *omnipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G82 sp003331565*. The type genome for the species is the GenBank assembly GCA_003331565.1. The GC content of the type genome is 35.25 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Cunabosa remulifica sp. nov.

Candidatus Cunabosa remulifica (NL. fem. n. *remulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G82 sp902600705*. The type genome for the species is the GenBank assembly GCA_902544465.1. The GC content of the type genome is 33.9 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Cunabosa tolutimonas sp. nov.

Candidatus Cunabosa tolutimonas (NL. fem. n. *tolutimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G82 sp902623535*. The type genome for the species is the GenBank assembly GCA_902623535.1. The GC content of the type genome is 35.57 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Cunabosa venabifica sp. nov.

Candidatus Cunabosa venabifica (NL. fem. n. *venabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G82 sp902594515*. The type genome for the species is the GenBank assembly GCA_902594515.1. The GC content of the type genome is 35.8 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Cupriavidus amnigibula sp. nov.

Candidatus Cupriavidus amnigibula (NL. fem. n. *amnigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp000379565*. The type genome for the species is the GenBank assembly RS_GCF_000379565.1. The GC content of the type genome is 65.25 % and the genome length is 7.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Native forest; Artigas; Uruguay".

Description of *Candidatus* Cupriavidus attelimonas sp. nov.

Candidatus Cupriavidus attelimonas (NL. fem. n. *attelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp001725945*. The type genome for the species is the GenBank assembly GCA_001725945.1. The GC content of the type genome is 64.06 % and the genome length is 8.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "nodules".

Description of *Candidatus* Cupriavidus conarastra sp. nov.

Candidatus Cupriavidus conarastra (NL. fem. n. *conarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp000292345*. The type genome for the species is the GenBank assembly RS_GCF_000292345.1. The GC content of the type genome is 63.85 % and the genome length is 5.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Cupriavidus cosigatica sp. nov.

Candidatus Cupriavidus cosigatica (NL. fem. n. *cosigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp000426345*. The type genome for the species is the GenBank assembly RS_GCF_000426345.1. The GC content of the type genome is 65.48 % and the genome length is 7.58 Mbp.

Description of *Candidatus* Cupriavidus dicanitudo sp. nov.

Candidatus Cupriavidus dicanitudo (NL. fem. n. *dicanitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp003402535*. The type genome for the species is the GenBank assembly RS_GCF_003402535.1. The GC content of the type genome is 65.34 % and the genome length is 8.98 Mbp.

Description of *Candidatus* Cupriavidus excucax sp. nov.

Candidatus Cupriavidus excucax (NL. fem. n. *excucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp900104095*. The type genome for the species is the GenBank assembly RS_GCF_900104095.1. The GC content of the type genome is 65.59 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Cupriavidus lenunitia sp. nov.

Candidatus Cupriavidus lenunitia (NL. fem. n. *lenunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp001652915*. The type genome for the species is the GenBank assembly RS_GCF_001652915.1. The GC content of the type genome is 64.95 % and the genome length is 6.84 Mbp.

Description of *Candidatus* Cupriavidus ludibedo sp. nov.

Candidatus Cupriavidus ludibedo (NL. fem. n. *ludibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp900101625*. The type genome for the species is the GenBank assembly RS_GCF_900101625.1. The GC content of the type genome is 64.81 % and the genome length is 6.96 Mbp.

Description of *Candidatus* Cupriavidus mavorago sp. nov.

Candidatus Cupriavidus mavorago (NL. fem. n. *mavorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp004217045*. The type genome for the species is the GenBank assembly RS_GCF_004217045.1. The GC content of the type genome is 66.63 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Cupriavidus mutabifica sp. nov.

Candidatus Cupriavidus mutabifica (NL. fem. n. *mutabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp000812465*. The type genome for the species is the GenBank assembly RS_GCF_000812465.1. The GC content of the type genome is 64.58 % and the genome length is 7.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil near the ocean".

Description of *Candidatus* Cupriavidus refocentia sp. nov.

Candidatus Cupriavidus refocentia (NL. fem. n. *refocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp000955785*. The type genome for the species is the GenBank assembly RS_GCF_000611145.1. The GC content of the type genome is 65.02 % and the genome length is 7.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "PCB-contaminated tertiary lagoon sludge".

Description of *Candidatus* Cupriavidus resupentia sp. nov.

Candidatus Cupriavidus resupentia (NL. fem. n. *resupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp005503625*. The type genome for the species is the GenBank assembly RS_GCF_005503625.1. The GC content of the type genome is 63.05 % and the genome length is 6.98 Mbp.

Description of *Candidatus* Cupriavidus volunitoga sp. nov.

Candidatus Cupriavidus volunitoga (NL. fem. n. *volunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cupriavidus sp013361545*. The type genome for the species is the GenBank assembly GCA_013362725.1. The GC content of the type genome is 68.03 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Curabana infelisca sp. nov.

Candidatus Curabana infelisca (NL. fem. n. *infelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4802 sp011332585*. The type genome for the species is the GenBank assembly GCA_011332585.1. The GC content of the type genome is 37.04 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Curabana gen. nov.

Candidatus Curabana (NL. fem. n. *Curabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4802*. The type species for the genus is *Candidatus* Curabana infelisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UB4802*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penicariaceae.

Description of *Candidatus* Curabanales ord. nov.

Candidatus Curabanales (NL. fem. n. *Curabanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4802.* The type genus for the taxon is *Candidatus* Curabana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4802*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Curabanae.

Description of *Candidatus* Curabanae class. nov.

Candidatus Curabanae (NL. fem. n. *c__Curabanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4802.* The type genus for the taxon is *Candidatus* Curabana .

According to GTDB R06-RS202, this class belongs to the phylum *Spirochaetota*.

Description of *Candidatus* Curabana siticitica sp. nov.

Candidatus Curabana siticitica (NL. fem. n. *siticitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4802 sp002328585*. The type genome for the species is the GenBank assembly GCA_002402695.1. The GC content of the type genome is 36.77 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Curabaria bucelousia sp. nov.

Candidatus Curabaria bucelousia (NL. fem. n. *bucelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCZS01 sp013289545*. The type genome for the species is the GenBank assembly GCA_013289545.1. The GC content of the type genome is 37.93 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Curabaria gen. nov.

Candidatus Curabaria (NL. fem. n. *Curabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCZS01*. The type species for the genus is *Candidatus* Curabaria bucelousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABCZS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curabariaceae.

Description of *Candidatus* Curabariaceae fam. nov.

Candidatus Curabariaceae (NL. fem. n. *Curabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABCZS01*. The type genus for the taxon is *Candidatus* Curabaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABCZS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curabariales.

Description of *Candidatus* Curabariales ord. nov.

Candidatus Curabariales (NL. fem. n. *Curabariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABCZS01*. The type genus for the taxon is *Candidatus* Curabaria .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Curabaria figilitia sp. nov.

Candidatus Curabaria figilitia (NL. fem. n. *figilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCZS01 sp013289605*. The type genome for the species is the GenBank assembly GCA_013289605.1. The GC content of the type genome is 42.32 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Curabaria vaciligena sp. nov.

Candidatus Curabaria vaciligena (NL. fem. n. *vaciligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCZS01 sp013289085*. The type genome for the species is the GenBank assembly GCA_013289085.1. The GC content of the type genome is 38.12 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Curabella conipentia sp. nov.

Candidatus Curabella conipentia (NL. fem. n. *conipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2017 sp002335425*. The type genome for the species is the GenBank assembly GCA_002425055.1. The GC content of the type genome is 58.8 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Curabella gen. nov.

Candidatus Curabella (NL. fem. n. *Curabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2017*. The type species for the genus is *Candidatus* Curabella conipentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Curabia ridibitio sp. nov.

Candidatus Curabia ridibitio (NL. fem. n. *ridibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002785045 sp002781185*. The type genome for the species is the GenBank assembly GCA_002781185.1. The GC content of the type genome is 38.45 % and the genome length is 0.55 Mbp.

Description of *Candidatus* Curabia gen. nov.

Candidatus Curabia (NL. fem. n. *Curabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002785045*. The type species for the genus is *Candidatus* Curabia ridibitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002785045*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curabiaceae.

Description of *Candidatus* Curabiaceae fam. nov.

Candidatus Curabiaceae (NL. fem. n. *Curabiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002785045.* The type genus for the taxon is *Candidatus* Curabia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Curabida adcubiforma sp. nov.

Candidatus Curabida adcubiforma (NL. fem. n. *adcubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp007117575*. The type genome for the species is the GenBank assembly GCA_007117575.1. The GC content of the type genome is 39.81 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Curabida gen. nov.

Candidatus Curabida (NL. fem. n. *Curabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB19*. The type species for the genus is *Candidatus* Curabida adcubiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Curabida alticibra sp. nov.

Candidatus Curabida alticibra (NL. fem. n. *alticibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp001783565*. The type genome for the species is the GenBank assembly GCA_001783565.1. The GC content of the type genome is 41.86 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Curabida cisoratica sp. nov.

Candidatus Curabida cisoratica (NL. fem. n. *cisoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp001567365*. The type genome for the species is the GenBank assembly GCA_001567365.1. The GC content of the type genome is 37.88 % and the genome length is 0.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Curabida dececimonia sp. nov.

Candidatus Curabida dececimonia (NL. fem. n. *dececimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp002710785*. The type genome for the species is the GenBank assembly GCA_002331125.1. The GC content of the type genome is 52.4 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Curabida dicimifica sp. nov.

Candidatus Curabida dicimifica (NL. fem. n. *dicimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp002299465*. The type genome for the species is the GenBank assembly GCA_002299465.1. The GC content of the type genome is 45.38 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Curabida docibessa sp. nov.

Candidatus Curabida docibessa (NL. fem. n. *docibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp007116965*. The type genome for the species is the GenBank assembly GCA_007116965.1. The GC content of the type genome is 49.82 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Curabida encepitica sp. nov.

Candidatus Curabida encepitica (NL. fem. n. *encepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp009995385*. The type genome for the species is the GenBank assembly GCA_009995385.1. The GC content of the type genome is 43.4 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Curabida enharugo sp. nov.

Candidatus Curabida enharugo (NL. fem. n. *enharugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp903839715*. The type genome for the species is the GenBank assembly GCA_903839715.1. The GC content of the type genome is 43.35 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Curabida fecunetta sp. nov.

Candidatus Curabida fecunetta (NL. fem. n. *fecunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp001781415*. The type genome for the species is the GenBank assembly GCA_001781415.1. The GC content of the type genome is 45.09 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Curabida pavicastra sp. nov.

Candidatus Curabida pavicastra (NL. fem. n. *pavicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp002477545*. The type genome for the species is the GenBank assembly GCA_002477545.1. The GC content of the type genome is 42.05 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Curabida repuricella sp. nov.

Candidatus Curabida repuricella (NL. fem. n. *repuricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp002378195*. The type genome for the species is the GenBank

assembly GCA_002320355.1. The GC content of the type genome is 44.47 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Curabida troclitio sp. nov.

Candidatus Curabida troclitio (NL. fem. n. *troclitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp002377025*. The type genome for the species is the GenBank assembly GCA_002377025.1. The GC content of the type genome is 43.94 % and the genome length is 0.55 Mbp.

Description of *Candidatus* Curabida vinacedo sp. nov.

Candidatus Curabida vinacedo (NL. fem. n. *vinacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB19 sp003245875*. The type genome for the species is the GenBank assembly GCA_003245875.1. The GC content of the type genome is 47.4 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Curabosa ducilivita sp. nov.

Candidatus Curabosa ducilivita (NL. fem. n. *ducilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9715 sp002371495*. The type genome for the species is the GenBank assembly GCA_002371495.1. The GC content of the type genome is 59.5 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Curabosa gen. nov.

Candidatus Curabosa (NL. fem. n. *Curabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9715*. The type species for the genus is *Candidatus* Curabosa ducilivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Curabosa lenimilenta sp. nov.

Candidatus Curabosa lenimilenta (NL. fem. n. *lenimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9715 sp902788545*. The type genome for the species is the GenBank assembly GCA_902788545.1. The GC content of the type genome is 61.31 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Curabosa omnipedo sp. nov.

Candidatus Curabosa omnipedo (NL. fem. n. *omnipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9715 sp902781245*. The type genome for the species is the GenBank assembly GCA_902781245.1. The GC content of the type genome is 57.14 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Curabosa oppanatio sp. nov.

Candidatus Curabosa oppanatio (NL. fem. n. *oppanatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9715 sp902796815*. The type genome for the species is the GenBank assembly GCA_902796815.1. The GC content of the type genome is 56.67 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Curabosa pedifibula sp. nov.

Candidatus Curabosa pedifibula (NL. fem. n. *pedifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9715 sp003452695*. The type genome for the species is the GenBank assembly GCA_003452695.1. The GC content of the type genome is 61.54 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Curabosa stercimonia sp. nov.

Candidatus Curabosa stercimonia (NL. fem. n. *stercimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9715 sp902764575*. The type genome for the species is the GenBank assembly GCA_902764575.1. The GC content of the type genome is 63.03 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Curabosa xenoditas sp. nov.

Candidatus Curabosa xenoditas (NL. fem. n. *xenoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9715 sp902779135*. The type genome for the species is the GenBank assembly GCA_902780685.1. The GC content of the type genome is 57.46 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Curabula recoritia sp. nov.

Candidatus Curabula recoritia (NL. fem. n. *recoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3747 sp002394025*. The type genome for the species is the GenBank assembly GCA_003520485.1. The GC content of the type genome is 46.41 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Curabula gen. nov.

Candidatus Curabula (NL. fem. n. *Curabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3747*. The type species for the genus is *Candidatus* Curabula recoritia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Curacana bulapilenta sp. nov.

Candidatus Curacana bulapilenta (NL. fem. n. *bulapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CADDZG01 sp902812355*. The type genome for the species is the GenBank assembly RS_GCF_902812355.1. The GC content of the type genome is 70.69 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Curacana gen. nov.

Candidatus Curacana (NL. fem. n. *Curacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDZG01*. The type species for the genus is *Candidatus* Curacana bulapilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADDZG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacanaceae.

Description of *Candidatus* Curacanaceae fam. nov.

Candidatus Curacanaceae (NL. fem. n. *Curacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADDZG01.* The type genus for the taxon is *Candidatus* Curacana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CADDZG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curacanales.

Description of *Candidatus* Curacanales ord. nov.

Candidatus Curacanales (NL. fem. n. *Curacanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADDZG01.* The type genus for the taxon is *Candidatus* Curacana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bisacosae.

Description of *Candidatus* Curacaria cocodisca sp. nov.

Candidatus Curacaria cocodisca (NL. fem. n. *cocodisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900066495 sp902362365*. The type genome for the species is the GenBank assembly RS_GCF_902362365.1. The GC content of the type genome is 28.26 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Curacaria gen. nov.

Candidatus Curacaria (NL. fem. n. *Curacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-900066495*. The type species for the genus is *Candidatus* Curacaria cocodisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Curacaria saburisca sp. nov.

Candidatus Curacaria saburisca (NL. fem. n. *saburisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900066495 sp900545985*. The type genome for the species is the GenBank assembly GCA_900545985.1. The GC content of the type genome is 27.53 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Curacaria semapiforma sp. nov.

Candidatus Curacaria semapiforma (NL. fem. n. *semapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900066495 sp900066495*. The type genome for the species is the GenBank assembly GCA_900604495.1. The GC content of the type genome is 27.72 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Curacella buxifica sp. nov.

Candidatus Curacella buxifica (NL. fem. n. *buxifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGW-17 sp002841905*. The type genome for the species is the GenBank assembly GCA_002841905.1. The GC content of the type genome is 64.97 %

and the genome length is 3.06 Mbp.

Description of *Candidatus* Curacella gen. nov.

Candidatus Curacella (NL. fem. n. *Curacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGW-17*. The type species for the genus is *Candidatus* Curacella buxifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGW-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacellaceae.

Description of *Candidatus* Curacellaceae fam. nov.

Candidatus Curacellaceae (NL. fem. n. *Curacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HGW-17.* The type genus for the taxon is *Candidatus* Curacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *HGW-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curacellales.

Description of *Candidatus* Curacellales ord. nov.

Candidatus Curacellales (NL. fem. n. *Curacellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HGW-17.* The type genus for the taxon is *Candidatus* Curacella .

According to the GTDB R06-RS202, this order belongs to the class *Polyangia*.

Description of *Candidatus* Curacella echogicula sp. nov.

Candidatus Curacella echogicula (NL. fem. n. *echogicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGW-17 sp002841825*. The type genome for the species is the GenBank assembly GCA_002841825.1. The GC content of the type genome is 63.88 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Curacia homilivita sp. nov.

Candidatus Curacia homilivita (NL. fem. n. *homilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-66-41 sp002779825*. The type genome for the species is the GenBank assembly GCA_002779825.1. The GC content of the type genome is 66.09 % and the genome length is 8.29 Mbp.

Description of *Candidatus* Curacia gen. nov.

Candidatus Curacia (NL. fem. n. *Curacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-66-41*. The type species for the genus is *Candidatus* Curacia homilivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-66-41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curaciaceae.

Description of *Candidatus* Curaciaceae fam. nov.

Candidatus Curaciaceae (NL. fem. n. *Curaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-66-41.* The type genus for the taxon is *Candidatus* Curacia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-59-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Verecellales.

Description of *Candidatus* Curacida illunitio sp. nov.

Candidatus Curacida illunitio (NL. fem. n. *illunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *54-19 sp902812345*. The type genome for the species is the GenBank assembly RS_GCF_902812345.1. The GC content of the type genome is 53.88 % and the genome length is 6.72 Mbp.

Description of *Candidatus* Curacida gen. nov.

Candidatus Curacida (NL. fem. n. *Curacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *54-19*. The type species for the genus is *Candidatus* Curacida illunitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *54-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacidaceae.

Description of *Candidatus* Curacidaceae fam. nov.

Candidatus Curacidaceae (NL. fem. n. *Curacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *54-19.* The type genus for the taxon is *Candidatus* Curacida .

According to the original version of GTDB R06-RS202, this family belongs to the order *54-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curacidales.

Description of *Candidatus* Curacidales ord. nov.

Candidatus Curacidales (NL. fem. n. *Curacidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *54-19.* The type genus for the taxon is *Candidatus* Curacida .

According to the GTDB R06-RS202, this order belongs to the class *Chloroflexia*.

Description of *Candidatus* Curacida mutabentia sp. nov.

Candidatus Curacida mutabentia (NL. fem. n. *mutabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *54-19 sp001898225*. The type genome for the species is the GenBank assembly GCA_001898225.1. The GC content of the type genome is 53.72 % and the genome length is 9.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Curacosa totidatica sp. nov.

Candidatus Curacosa totidatica (NL. fem. n. *totidatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2169 sp002687895*. The type genome for the species is the GenBank assembly GCA_002434745.1. The GC content of the type genome is 39.28 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Curacosa gen. nov.

Candidatus Curacosa (NL. fem. n. *Curacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2169*. The type species for the genus is *Candidatus* Curacosa totidatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2169*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacosaceae.

Description of *Candidatus* Curacosaceae fam. nov.

Candidatus Curacosaceae (NL. fem. n. *Curacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2169.* The type genus for the taxon is *Candidatus* Curacosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2169*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curacosales.

Description of *Candidatus* Curacosales ord. nov.

Candidatus Curacosales (NL. fem. n. *Curacosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2169.* The type genus for the taxon is *Candidatus* Curacosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Curacula deparifica sp. nov.

Candidatus Curacula deparifica (NL. fem. n. *deparifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED23 sp012960465*. The type genome for the species is the GenBank assembly GCA_012960465.1. The GC content of the type genome is 41.52 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Curacula gen. nov.

Candidatus Curacula (NL. fem. n. *Curacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED23*. The type species for the genus is *Candidatus* Curacula deparifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubanaceae.

Description of *Candidatus* Curacula remuligena sp. nov.

Candidatus Curacula remuligena (NL. fem. n. *remuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED23 sp002168115*. The type genome for the species is the GenBank assembly GCA_002704405.1. The GC content of the type genome is 37.82 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Curotana cucuribula sp. nov.

Candidatus Curotana cucuribula (NL. fem. n. *cucuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYFD01 sp903925425*. The type genome for the species is the GenBank assembly GCA_903929255.1. The GC content of the type genome is 66.01 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Curotana gen. nov.

Candidatus Curotana (NL. fem. n. *Curotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYFD01*. The type species for the genus is *Candidatus* Curotana cucuribula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Curotana exsupilenta sp. nov.

Candidatus Curotana exsupilenta (NL. fem. n. *exsupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYFD01 sp900299415*. The type genome for the species is the GenBank assembly GCA_900299415.1. The GC content of the type genome is 67.21 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Curotaria fatificella sp. nov.

Candidatus Curotaria fatificella (NL. fem. n. *fatificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *70-18 sp001899585*. The type genome for the species is the GenBank assembly GCA_001899585.1. The GC content of the type genome is 70.07 % and the genome length is 5.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Curotaria gen. nov.

Candidatus Curotaria (NL. fem. n. *Curotaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *70-18*. The type species for the genus is *Candidatus* Curotaria fatificella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Curotella catocitrix sp. nov.

Candidatus Curotella catocitrix (NL. fem. n. *catocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-50-142 sp001871795*. The type genome for the species is the GenBank assembly GCA_002782845.1. The GC content of the type genome is 50.2 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Curotella gen. nov.

Candidatus Curotella (NL. fem. n. *Curotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-50-142*. The type species for the genus is *Candidatus* Curotella catocitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solifidaceae.

Description of *Candidatus* Curotia inobsitoga sp. nov.

Candidatus Curotia inobsitoga (NL. fem. n. *inobsitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-140 sp003230085*. The type genome for the species is the GenBank assembly GCA_003230085.1. The GC content of the type genome is 48.01 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Curotia gen. nov.

Candidatus Curotia (NL. fem. n. *Curotia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-140*. The type species for the genus is *Candidatus* Curotia inobsitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-140*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotiaceae.

Description of *Candidatus* Curotiaceae fam. nov.

Candidatus Curotiaceae (NL. fem. n. *Curotiaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-140.* The type genus for the taxon is *Candidatus* Curotia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-140*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curotiales.

Description of *Candidatus* Curotiales ord. nov.

Candidatus Curotiales (NL. fem. n. *Curotiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-140.* The type genus for the taxon is *Candidatus* Curotia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Curotida ambecibra sp. nov.

Candidatus Curotida ambecibra (NL. fem. n. *ambecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp005789825*. The type genome for the species is the GenBank assembly GCA_005789825.1. The GC content of the type genome is 54.52 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Curotida gen. nov.

Candidatus Curotida (NL. fem. n. *Curotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINMN01*. The type species for the genus is *Candidatus* Curotida ambecibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Curotida apercitudo sp. nov.

Candidatus Curotida apercitudo (NL. fem. n. *apercitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp009921465*. The type genome for the species is the GenBank assembly GCA_009921465.1. The GC content of the type genome is 56.52 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Curotida benemedo sp. nov.

Candidatus Curotida benemedo (NL. fem. n. *benemedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903887325*. The type genome for the species is the GenBank assembly GCA_903860555.1. The GC content of the type genome is 55.41 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Curotida benemitura sp. nov.

Candidatus Curotida benemitura (NL. fem. n. *benemitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903861115*. The type genome for the species is the GenBank assembly GCA_903920235.1. The GC content of the type genome is 51.89 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Curotida bigemimonia sp. nov.

Candidatus Curotida bigemimonia (NL. fem. n. *bigemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903865035*. The type genome for the species is the GenBank assembly GCA_903865035.1. The GC content of the type genome is 50.75 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Curotida catafilega sp. nov.

Candidatus Curotida catafilega (NL. fem. n. *catafilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp009927495*. The type genome for the species is the GenBank assembly GCA_009921935.1. The GC content of the type genome is 53.0 %

and the genome length is 2.11 Mbp.

Description of *Candidatus* Curotida cimitigena sp. nov.

Candidatus Curotida cimitigena (NL. fem. n. *cimitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903864315*. The type genome for the species is the GenBank assembly GCA_903864315.1. The GC content of the type genome is 52.98 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Curotida citipibula sp. nov.

Candidatus Curotida citipibula (NL. fem. n. *citipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903828695*. The type genome for the species is the GenBank assembly GCA_903826115.1. The GC content of the type genome is 47.19 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Curotida colutastra sp. nov.

Candidatus Curotida colutastra (NL. fem. n. *colutastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903933115*. The type genome for the species is the GenBank assembly GCA_903896695.1. The GC content of the type genome is 52.25 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Curotida dapificella sp. nov.

Candidatus Curotida dapificella (NL. fem. n. *dapificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp009919175*. The type genome for the species is the GenBank assembly GCA_009918305.1. The GC content of the type genome is 60.67 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Curotida dimadimonia sp. nov.

Candidatus Curotida dimadimonia (NL. fem. n. *dimadimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903850735*. The type genome for the species is the GenBank assembly GCA_903850735.1. The GC content of the type genome is 60.42 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Curotida doxoliforma sp. nov.

Candidatus Curotida doxoliforma (NL. fem. n. *doxoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903871545*. The type genome for the species is the GenBank assembly GCA_903871545.1. The GC content of the type genome is 45.19 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Curotida expanax sp. nov.

Candidatus Curotida expanax (NL. fem. n. *expanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp009925585*. The type genome for the species is the GenBank assembly GCA_009925585.1. The GC content of the type genome is 54.51 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Curotida inhabastra sp. nov.

Candidatus Curotida inhabastra (NL. fem. n. *inhabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903876885*. The type genome for the species is the GenBank assembly GCA_903876885.1. The GC content of the type genome is 43.94 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Curotida intolisca sp. nov.

Candidatus Curotida intolisca (NL. fem. n. *intolisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903831655*. The type genome for the species is the GenBank assembly GCA_903831655.1. The GC content of the type genome is 48.6 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Curotida lanugatica sp. nov.

Candidatus Curotida lanugatica (NL. fem. n. *lanugatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903830725*. The type genome for the species is the GenBank assembly GCA_903830725.1. The GC content of the type genome is 45.11 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Curotida notabugo sp. nov.

Candidatus Curotida notabugo (NL. fem. n. *notabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903842945*. The type genome for the species is the GenBank assembly GCA_903842945.1. The GC content of the type genome is 49.05 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Curotida pacifilega sp. nov.

Candidatus Curotida pacifilega (NL. fem. n. *pacifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903949285*. The type genome for the species is the GenBank assembly GCA_903829115.1. The GC content of the type genome is 46.86 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Curotida patibibula sp. nov.

Candidatus Curotida patibibula (NL. fem. n. *patibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903838355*. The type genome for the species is the GenBank assembly GCA_903880305.1. The GC content of the type genome is 53.94 %

and the genome length is 3.44 Mbp.

Description of *Candidatus* Curotida perexastra sp. nov.

Candidatus Curotida perexastra (NL. fem. n. *perexastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903844385*. The type genome for the species is the GenBank assembly GCA_903844385.1. The GC content of the type genome is 54.69 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Curotida perexivita sp. nov.

Candidatus Curotida perexivita (NL. fem. n. *perexivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903896615*. The type genome for the species is the GenBank assembly GCA_903896725.1. The GC content of the type genome is 44.43 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Curotida pinigitas sp. nov.

Candidatus Curotida pinigitas (NL. fem. n. *pinigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp009927195*. The type genome for the species is the GenBank assembly GCA_009927195.1. The GC content of the type genome is 57.58 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Curotida repecibula sp. nov.

Candidatus Curotida repecibula (NL. fem. n. *repecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903887655*. The type genome for the species is the GenBank assembly GCA_903857475.1. The GC content of the type genome is 54.92 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Curotida rudecimonia sp. nov.

Candidatus Curotida rudecimonia (NL. fem. n. *rudecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp009693305*. The type genome for the species is the GenBank assembly GCA_009693305.1. The GC content of the type genome is 46.75 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Curotida sotulitia sp. nov.

Candidatus Curotida sotulitia (NL. fem. n. *sotulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp009921265*. The type genome for the species is the GenBank assembly GCA_009927155.1. The GC content of the type genome is 45.97 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Curotida sugiletta sp. nov.

Candidatus Curotida sugiletta (NL. fem. n. *sugiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903956845*. The type genome for the species is the GenBank assembly GCA_903956845.1. The GC content of the type genome is 57.03 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Curotida tegumitudo sp. nov.

Candidatus Curotida tegumitudo (NL. fem. n. *tegumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp013205525*. The type genome for the species is the GenBank assembly GCA_013205525.1. The GC content of the type genome is 54.02 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Curotida tenilitrix sp. nov.

Candidatus Curotida tenilitrix (NL. fem. n. *tenilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp009923505*. The type genome for the species is the GenBank assembly GCA_009923505.1. The GC content of the type genome is 60.92 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Curotida virecibra sp. nov.

Candidatus Curotida virecibra (NL. fem. n. *virecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp009693225*. The type genome for the species is the GenBank assembly GCA_009693225.1. The GC content of the type genome is 56.92 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Curotida vocifastra sp. nov.

Candidatus Curotida vocifastra (NL. fem. n. *vocifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMN01 sp903910745*. The type genome for the species is the GenBank assembly GCA_903859985.1. The GC content of the type genome is 43.23 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Curotula lavabibra sp. nov.

Candidatus Curotula lavabibra (NL. fem. n. *lavabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6264 sp002452615*. The type genome for the species is the GenBank assembly GCA_002452615.1. The GC content of the type genome is 32.08 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Curotula gen. nov.

Candidatus Curotula (NL. fem. n. *Curotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6264*. The type species for the genus is *Candidatus* Curotula lavabibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6264*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotulaceae.

Description of *Candidatus* Curotulaceae fam. nov.

Candidatus Curotulaceae (NL. fem. n. *Curotulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6264.* The type genus for the taxon is *Candidatus* Curotula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2591*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peribosales.

Description of *Candidatus* Curtobacterium abnocago sp. nov.

Candidatus Curtobacterium abnocago (NL. fem. n. *abnocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003989515*. The type genome for the species is the GenBank assembly RS_GCF_003989515.1. The GC content of the type genome is 71.55 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Curtobacterium abverastra sp. nov.

Candidatus Curtobacterium abverastra (NL. fem. n. *abverastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp001865065*. The type genome for the species is the GenBank assembly RS_GCF_001865065.1. The GC content of the type genome is 71.18 % and the genome length is 4.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Leaf Litter".

Description of *Candidatus* Curtobacterium annicitudo sp. nov.

Candidatus Curtobacterium annicitudo (NL. fem. n. *annicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Curtobacterium sp000772085*. The type genome for the species is the GenBank assembly RS_GCF_000772085.1. The GC content of the type genome is 71.95 % and the genome length is 3.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil".

Description of *Candidatus* Curtobacterium carunimonia sp. nov.

Candidatus Curtobacterium carunimonia (NL. fem. n. *carunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp900086645*. The type genome for the species is the GenBank assembly GCA_900086645.1. The GC content of the type genome is 70.57 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Curtobacterium curacitio sp. nov.

Candidatus Curtobacterium curacitio (NL. fem. n. *curacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp001422205*. The type genome for the species is the GenBank assembly RS_GCF_001422205.1. The GC content of the type genome is 70.54 % and the genome length is 3.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Curtobacterium defetitas sp. nov.

Candidatus Curtobacterium defetitas (NL. fem. n. *defetitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003755065*. The type genome for the species is the GenBank assembly RS_GCF_003755065.1. The GC content of the type genome is 70.95 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Curtobacterium detumitudo sp. nov.

Candidatus Curtobacterium detumitudo (NL. fem. n. *detumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003234265*. The type genome for the species is the GenBank assembly RS_GCF_003234265.1. The GC content of the type genome is 71.32

% and the genome length is 3.31 Mbp.

Description of *Candidatus* Curtobacterium extinibra sp. nov.

Candidatus Curtobacterium extinibra (NL. fem. n. *extinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003752025*. The type genome for the species is the GenBank assembly RS_GCF_003752025.1. The GC content of the type genome is 70.94 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Curtobacterium faticitrix sp. nov.

Candidatus Curtobacterium faticitrix (NL. fem. n. *faticitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp001864835*. The type genome for the species is the GenBank assembly RS_GCF_001864835.1. The GC content of the type genome is 71.09 % and the genome length is 3.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Leaf Litter".

Description of *Candidatus* Curtobacterium fibicousia sp. nov.

Candidatus Curtobacterium fibicousia (NL. fem. n. *fibicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003224335*. The type genome for the species is the GenBank assembly RS_GCF_003224375.1. The GC content of the type genome is 71.72 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Curtobacterium illibousia sp. nov.

Candidatus Curtobacterium illibousia (NL. fem. n. *illibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003234115*. The type genome for the species is the GenBank assembly RS_GCF_003234115.1. The GC content of the type genome is 71.09 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Curtobacterium inrelatica sp. nov.

Candidatus Curtobacterium inrelatica (NL. fem. n. *inrelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003234795*. The type genome for the species is the GenBank assembly RS_GCF_003234795.1. The GC content of the type genome is 71.04 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Curtobacterium lenimessa sp. nov.

Candidatus Curtobacterium lenimessa (NL. fem. n. *lenimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp007673775*. The type genome for the species is the GenBank assembly RS_GCF_007673775.1. The GC content of the type genome is 71.35 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Curtobacterium lenimibra sp. nov.

Candidatus Curtobacterium lenimibra (NL. fem. n. *lenimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp001742745*. The type genome for the species is the GenBank assembly RS_GCF_001742745.1. The GC content of the type genome is 72.21 % and the genome length is 3.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "endophytic".

Description of *Candidatus* Curtobacterium ludibitio sp. nov.

Candidatus Curtobacterium ludibitio (NL. fem. n. *ludibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003234855*. The type genome for the species is the GenBank assembly RS_GCF_003234855.1. The GC content of the type genome is 71.76 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Curtobacterium melopicula sp. nov.

Candidatus Curtobacterium melopicula (NL. fem. n. *melopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp900101675*. The type genome for the species is the GenBank assembly RS_GCF_900101675.1. The GC content of the type genome is 71.15 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Curtobacterium monocicella sp. nov.

Candidatus Curtobacterium monocicella (NL. fem. n. *monocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp001705035*. The type genome for the species is the GenBank assembly RS_GCF_001864935.1. The GC content of the type genome is 72.26 % and the genome length is 3.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Leaf Litter".

Description of *Candidatus* Curtobacterium mutabivita sp. nov.

Candidatus Curtobacterium mutabivita (NL. fem. n. *mutabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003234365*. The type genome for the species is the GenBank assembly RS_GCF_003751685.1. The GC content of the type genome is 70.63 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Curtobacterium nivomedo sp. nov.

Candidatus Curtobacterium nivomedo (NL. fem. n. *nivomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003234185*. The type genome for the species is the GenBank assembly RS_GCF_003234185.1. The GC content of the type genome is 71.75 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Curtobacterium octobitio sp. nov.

Candidatus Curtobacterium octobitio (NL. fem. n. *octobitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp002412165*. The type genome for the species is the

GenBank assembly RS_GCF_002412165.1. The GC content of the type genome is 71.58 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Curtobacterium pimenicula sp. nov.

Candidatus Curtobacterium pimenicula (NL. fem. n. *pimenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003234565*. The type genome for the species is the GenBank assembly RS_GCF_003234555.1. The GC content of the type genome is 71.78 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Curtobacterium remulimonas sp. nov.

Candidatus Curtobacterium remulimonas (NL. fem. n. *remulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp001865015*. The type genome for the species is the GenBank assembly RS_GCF_001865015.1. The GC content of the type genome is 71.3 % and the genome length is 3.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Leaf Litter".

Description of *Candidatus* Curtobacterium resupatica sp. nov.

Candidatus Curtobacterium resupatica (NL. fem. n. *resupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003234085*. The type genome for the species is the GenBank assembly RS_GCF_003234035.1. The GC content of the type genome is 70.89 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Curtobacterium revuliforma sp. nov.

Candidatus Curtobacterium revuliforma (NL. fem. n. *revuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp001864895*. The type genome for the species is the GenBank assembly RS_GCF_001864845.1. The GC content of the type genome is 72.0 % and the genome length is 3.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Leaf Litter".

Description of *Candidatus* Curtobacterium rorifago sp. nov.

Candidatus Curtobacterium rorifago (NL. fem. n. *rorifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp001424385*. The type genome for the species is the GenBank assembly RS_GCF_001424385.1. The GC content of the type genome is 71.28 % and the genome length is 3.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Curtobacterium selecibula sp. nov.

Candidatus Curtobacterium selecibula (NL. fem. n. *selecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003234175*. The type genome for the species is the GenBank assembly RS_GCF_003234175.1. The GC content of the type genome is 71.69 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Curtobacterium siligentia sp. nov.

Candidatus Curtobacterium siligentia (NL. fem. n. *siligentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp001806325*. The type genome for the species is the GenBank assembly RS_GCF_001865095.1. The GC content of the type genome is 71.45 % and the genome length is 3.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Leaf Litter".

Description of *Candidatus* Curtobacterium valefentia sp. nov.

Candidatus Curtobacterium valefentia (NL. fem. n. *valefentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp000333375*. The type genome for the species is the GenBank assembly RS_GCF_000333375.1. The GC content of the type genome is 71.44 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Curtobacterium vocamilenta sp. nov.

Candidatus Curtobacterium vocamilenta (NL. fem. n. *vocamilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curtobacterium sp003762905*. The type genome for the species is the GenBank assembly RS_GCF_003755165.1. The GC content of the type genome is 70.85 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Curvibacter macilousia sp. nov.

Candidatus Curvibacter macilousia (NL. fem. n. *macilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curvibacter sp903834975*. The type genome for the species is the GenBank assembly GCA_903834975.1. The GC content of the type genome is 56.72 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Curvibacter menapicula sp. nov.

Candidatus Curvibacter menapicula (NL. fem. n. *menapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curvibacter sp903902035*. The type genome for the species is the GenBank assembly GCA_903945445.1. The GC content of the type genome is 59.31 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Curvibacter nehalessa sp. nov.

Candidatus Curvibacter nehalessa (NL. fem. n. *nehalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curvibacter sp003987795*. The type genome for the species is the GenBank assembly GCA_003987795.1. The GC content of the type genome is 64.51 % and the genome length is 6.24 Mbp.

Description of *Candidatus* Curvibacter viginax sp. nov.

Candidatus Curvibacter viginax (NL. fem. n. *viginax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Curvibacter sp903828535*. The type genome for the species is the GenBank assembly GCA_903868085.1. The GC content of the type genome is 56.75 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Cutibacterium asporigena sp. nov.

Candidatus Cutibacterium asporigena (NL. fem. n. *asporigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cutibacterium sp009696315*. The type genome for the species is the GenBank assembly RS_GCF_009696315.1. The GC content of the type genome is 59.32 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Cuticana parocitio sp. nov.

Candidatus Cuticana parocitio (NL. fem. n. *parocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002780085 sp002791435*. The type genome for the species is the GenBank assembly GCA_002780085.1. The GC content of the type genome is 42.29 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Cuticana gen. nov.

Candidatus Cuticana (NL. fem. n. *Cuticana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002780085*. The type species for the genus is *Candidatus* Cuticana parocitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002780085*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticanaceae.

Description of *Candidatus* Cuticanaceae fam. nov.

Candidatus Cuticanaceae (NL. fem. n. *Cuticanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *GCA-002780085.* The type genus for the taxon is *Candidatus* Cuticana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CPR3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tolutellales.

Description of *Candidatus* Cuticaria arcatentia sp. nov.

Candidatus Cuticaria arcatentia (NL. fem. n. *arcatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10450 sp003219995*. The type genome for the species is the GenBank assembly GCA_003219995.1. The GC content of the type genome is 55.32 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Cuticaria gen. nov.

Candidatus Cuticaria (NL. fem. n. *Cuticaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10450*. The type species for the genus is *Candidatus* Cuticaria arcatentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Cuticariaceae fam. nov.

Candidatus Cuticariaceae (NL. fem. n. *Cuticariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10450.* The type genus for the taxon is *Candidatus* Cuticaria .

According to GTDB R06-RS202, this family belongs to the order *Chthoniobacterales*.

Description of *Candidatus* Cuticaria recogetta sp. nov.

Candidatus Cuticaria recogetta (NL. fem. n. *recogetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA10450 sp003219195*. The type genome for the species is the GenBank assembly GCA_003221255.1. The GC content of the type genome is 55.7 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Cuticaria tomogentia sp. nov.

Candidatus Cuticaria tomogentia (NL. fem. n. *tomogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10450 sp003445855*. The type genome for the species is the GenBank assembly GCA_003445855.1. The GC content of the type genome is 55.85 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Cuticella repuressa sp. nov.

Candidatus Cuticella repuressa (NL. fem. n. *repuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-39-14 sp000996245*. The type genome for the species is the GenBank assembly GCA_000993485.1. The GC content of the type genome is 39.22 % and the genome length is 1.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Cuticella gen. nov.

Candidatus Cuticella (NL. fem. n. *Cuticella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-39-14*. The type species for the genus is *Candidatus* Cuticella repuressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11705*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenanaceae.

Description of *Candidatus* Cuticia oblanitica sp. nov.

Candidatus Cuticia oblanitica (NL. fem. n. *oblanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JACMRI01 sp014376525*. The type genome for the species is the GenBank assembly GCA_014376525.1. The GC content of the type genome is 35.38 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Cuticia gen. nov.

Candidatus Cuticia (NL. fem. n. *Cuticia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMRI01*. The type species for the genus is *Candidatus* Cuticia oblanitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACMRI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticiaceae.

Description of *Candidatus* Cuticiaceae fam. nov.

Candidatus Cuticiaceae (NL. fem. n. *Cuticiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACMRI01.* The type genus for the taxon is *Candidatus* Cuticia .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacosales.

Description of *Candidatus* Cuticida casigitrix sp. nov.

Candidatus Cuticida casigitrix (NL. fem. n. *casigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-47 sp003231925*. The type genome for the species is the GenBank assembly GCA_003231925.1. The GC content of the type genome is 38.13 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Cuticida gen. nov.

Candidatus Cuticida (NL. fem. n. *Cuticida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-47*. The type species for the genus is *Candidatus* Cuticida

casigitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-47*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticidaceae.

Description of *Candidatus* Cuticidaceae fam. nov.

Candidatus Cuticidaceae (NL. fem. n. *Cuticidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-47.* The type genus for the taxon is *Candidatus* Cuticida .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Cuticosa bicodetta sp. nov.

Candidatus Cuticosa bicodetta (NL. fem. n. *bicodetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-33-10 sp001788835*. The type genome for the species is the GenBank assembly GCA_000989585.1. The GC content of the type genome is 33.15 % and the genome length is 1.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Cuticosa gen. nov.

Candidatus Cuticosa (NL. fem. n. *Cuticosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-33-10*. The type species for the genus is *Candidatus* Cuticosa bicodetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-33-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticosaceae.

Description of *Candidatus* Cuticosaceae fam. nov.

Candidatus Cuticosaceae (NL. fem. n. *Cuticosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *GWF2-33-10.* The type genus for the taxon is *Candidatus* Cuticosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Cyanobacterium acistugo sp. nov.

Candidatus Cyanobacterium acistugo (NL. fem. n. *acistugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobacterium sp003566215*. The type genome for the species is the GenBank assembly GCA_003566215.1. The GC content of the type genome is 36.01 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Cyanobacterium cicatitudo sp. nov.

Candidatus Cyanobacterium cicatitudo (NL. fem. n. *cicatitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobacterium sp002813895*. The type genome for the species is the GenBank assembly GCA_002813895.1. The GC content of the type genome is 37.66 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Cyanobium alsisifica sp. nov.

Candidatus Cyanobium alsisifica (NL. fem. n. *alsisifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp002252675*. The type genome for the species is the GenBank assembly RS_GCF_002252675.1. The GC content of the type genome is 69.16 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Cyanobium celumigena sp. nov.

Candidatus Cyanobium celumigena (NL. fem. n. *celumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp903935205*. The type genome for the species is the

GenBank assembly GCA_903935205.1. The GC content of the type genome is 66.84 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Cyanobium cepulastra sp. nov.

Candidatus Cyanobium cepulastra (NL. fem. n. *cepulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp903823115*. The type genome for the species is the GenBank assembly GCA_903823115.1. The GC content of the type genome is 65.32 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Cyanobium ceracax sp. nov.

Candidatus Cyanobium ceracax (NL. fem. n. *ceracax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp903882285*. The type genome for the species is the GenBank assembly GCA_903882285.1. The GC content of the type genome is 68.67 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Cyanobium cunabivita sp. nov.

Candidatus Cyanobium cunabivita (NL. fem. n. *cunabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp903907855*. The type genome for the species is the GenBank assembly GCA_903907855.1. The GC content of the type genome is 68.9 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Cyanobium demulicella sp. nov.

Candidatus Cyanobium demulicella (NL. fem. n. *demulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp903934745*. The type genome for the species is the GenBank assembly GCA_903934745.1. The GC content of the type genome is 65.7 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Cyanobium domicugo sp. nov.

Candidatus Cyanobium domicugo (NL. fem. n. *domicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp903831165*. The type genome for the species is the GenBank assembly GCA_903845285.1. The GC content of the type genome is 66.43 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Cyanobium lapilimonia sp. nov.

Candidatus Cyanobium lapilimonia (NL. fem. n. *lapilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp014191755*. The type genome for the species is the GenBank assembly GCA_014191755.1. The GC content of the type genome is 65.85 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Cyanobium turibitica sp. nov.

Candidatus Cyanobium turibitica (NL. fem. n. *turibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp903856805*. The type genome for the species is the GenBank assembly GCA_903928665.1. The GC content of the type genome is 65.0 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Cyanobium utrolilega sp. nov.

Candidatus Cyanobium utrolilega (NL. fem. n. *utrolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp000708525*. The type genome for the species is the GenBank assembly GCA_000708525.1. The GC content of the type genome is 68.56 % and the genome length is 3.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "5 liters of water from the Tucurui Power Plant Reservoir; point M5 collected 50cm beneath the lake surface; then filtered by negative pressure for posterior culture in BG-11 medium".

Description of *Candidatus* Cyanobium venucugo sp. nov.

Candidatus Cyanobium venucugo (NL. fem. n. *venucugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp903917565*. The type genome for the species is the GenBank assembly GCA_903853865.1. The GC content of the type genome is 67.67 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Cyanobium vilititas sp. nov.

Candidatus Cyanobium vilititas (NL. fem. n. *vilititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium sp903858015*. The type genome for the species is the GenBank assembly GCA_903858015.1. The GC content of the type genome is 64.31 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Cyanobium hexapilega sp. nov.

Candidatus Cyanobium hexapilega (NL. fem. n. *hexapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium_A sp002252665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002252665.1. The GC content of the type genome is 65.83 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Cyanobium incenitia sp. nov.

Candidatus Cyanobium incenitia (NL. fem. n. *incenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium_A sp903928835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903928835.1. The GC content of the type genome is 62.96 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Cyanobium indupago sp. nov.

Candidatus Cyanobium indupago (NL. fem. n. *indupago* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanobium_A sp013205255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013205255.1. The GC content of the type genome is 64.56 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Cyanothece defetitoga sp. nov.

Candidatus Cyanothece defetitoga (NL. fem. n. *defetitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyanothece sp000022045*. The type genome for the species is the GenBank assembly RS_GCF_000022045.1. The GC content of the type genome is 50.65 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Cybelea pinacigena sp. nov.

Candidatus Cybelea pinacigena (NL. fem. n. *pinacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cybelea sp013289785*. The type genome for the species is the GenBank assembly GCA_013289785.1. The GC content of the type genome is 62.82 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Cyclobacterium adnulitica sp. nov.

Candidatus Cyclobacterium adnulitica (NL. fem. n. *adnulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyclobacterium sp010993705*. The type genome for the species is the GenBank assembly RS_GCF_010993705.1. The GC content of the type genome is 43.73 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Cyclobacterium didacicella sp. nov.

Candidatus Cyclobacterium didacicella (NL. fem. n. *didacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyclobacterium sp010119245*. The type genome for the species is the GenBank assembly RS_GCF_010119245.1. The GC content of the type genome is 44.87 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Cyclobacterium purulessa sp. nov.

Candidatus Cyclobacterium purulessa (NL. fem. n. *purulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyclobacterium sp010119225*. The type genome for the species is the GenBank assembly RS_GCF_010119225.1. The GC content of the type genome is 44.98 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Cycloclasticus abnoritio sp. nov.

Candidatus Cycloclasticus abnoritio (NL. fem. n. *abnoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp002401365*. The type genome for the species is the GenBank assembly GCA_002401365.1. The GC content of the type genome is 41.64 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Cycloclasticus adgenitoga sp. nov.

Candidatus Cycloclasticus adgenitoga (NL. fem. n. *adgenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp012960055*. The type genome for the species is the GenBank assembly GCA_012960055.1. The GC content of the type genome is 44.51 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Cycloclasticus adperessa sp. nov.

Candidatus Cycloclasticus adperessa (NL. fem. n. *adperessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp002162705*. The type genome for the species is the GenBank assembly GCA_002162705.1. The GC content of the type genome is 43.58 %

and the genome length is 1.8 Mbp.

Description of *Candidatus* Cycloclasticus cerucilenta sp. nov.

Candidatus Cycloclasticus cerucilenta (NL. fem. n. *cerucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp002292375*. The type genome for the species is the GenBank assembly GCA_002292375.1. The GC content of the type genome is 44.76 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Cycloclasticus domipigena sp. nov.

Candidatus Cycloclasticus domipigena (NL. fem. n. *domipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp002733135*. The type genome for the species is the GenBank assembly GCA_002733135.1. The GC content of the type genome is 42.22 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Cycloclasticus eccilago sp. nov.

Candidatus Cycloclasticus eccilago (NL. fem. n. *eccilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp001566825*. The type genome for the species is the GenBank assembly GCA_001566825.1. The GC content of the type genome is 42.36 % and the genome length is 1.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water sample from Deepwater horizon oil spill sea surface treated with treated with phenanthrene in a stable-isotope probing (SIP) experiment".

Description of *Candidatus* Cycloclasticus encolitica sp. nov.

Candidatus Cycloclasticus encolitica (NL. fem. n. *encolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp002101225*. The type genome for the species is the GenBank assembly GCA_002101225.1. The GC content of the type genome is 43.72 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Cycloclasticus hibisugo sp. nov.

Candidatus Cycloclasticus hibisugo (NL. fem. n. *hibisugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp002162695*. The type genome for the species is the GenBank assembly GCA_002163215.1. The GC content of the type genome is 46.37 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Cycloclasticus lavacetta sp. nov.

Candidatus Cycloclasticus lavacetta (NL. fem. n. *lavacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp002700385*. The type genome for the species is the GenBank assembly GCA_002700385.1. The GC content of the type genome is 43.4 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Cycloclasticus peradatica sp. nov.

Candidatus Cycloclasticus peradatica (NL. fem. n. *peradatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp012959695*. The type genome for the species is the GenBank assembly GCA_012959695.1. The GC content of the type genome is 43.4 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Cycloclasticus peradicella sp. nov.

Candidatus Cycloclasticus peradicella (NL. fem. n. *peradicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp002101205*. The type genome for the species is the GenBank assembly GCA_002101205.1. The GC content of the type genome is 42.74 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Cycloclasticus tibicicula sp. nov.

Candidatus Cycloclasticus tibicicula (NL. fem. n. *tibicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cycloclasticus sp002101235*. The type genome for the species is the GenBank assembly GCA_002101235.1. The GC content of the type genome is 42.21 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Cyclonatronum homicilenta sp. nov.

Candidatus Cyclonatronum homicilenta (NL. fem. n. *homicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyclonatronum sp003566395*. The type genome for the species is the GenBank assembly GCA_003566395.1. The GC content of the type genome is 48.92 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Cyclonatronum xenopastra sp. nov.

Candidatus Cyclonatronum xenopastra (NL. fem. n. *xenopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cyclonatronum sp003555145*. The type genome for the species is the GenBank assembly GCA_003567795.1. The GC content of the type genome is 47.27 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Cylindrospermum triclibra sp. nov.

Candidatus Cylindrospermum triclibra (NL. fem. n. *triclibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cylindrospermum sp003994795*. The type genome for the species is the GenBank assembly GCA_003994795.1. The GC content of the type genome is 42.02 % and the genome length is 7.7 Mbp.

Description of *Candidatus* Cypionkella catocisca sp. nov.

Candidatus Cypionkella catocisca (NL. fem. n. *catocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Cypionkella sp001828855*. The type genome for the species is the GenBank assembly GCA_001828855.1. The GC content of the type genome is 62.11 % and the genome length is 4.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Cypionkella culibilega sp. nov.

Candidatus Cypionkella culibilega (NL. fem. n. *culibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cypionkella sp009773375*. The type genome for the species is the GenBank assembly GCA_009773375.1. The GC content of the type genome is 62.43 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Cypionkella ermelugo sp. nov.

Candidatus Cypionkella ermelugo (NL. fem. n. *ermelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cypionkella sp002256245*. The type genome for the species is the GenBank assembly GCA_002256245.1. The GC content of the type genome is 61.8 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Cysteiniphilum illepitrix sp. nov.

Candidatus Cysteiniphilum illepitrix (NL. fem. n. *illepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cysteiniphilum sp008711525*. The type genome for the species is the GenBank assembly RS_GCF_008711525.1. The GC content of the type genome is 38.75 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Cysteiniphilum peracedo sp. nov.

Candidatus Cysteiniphilum peracedo (NL. fem. n. *peracedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cysteiniphilum sp003574425*. The type genome for the species is the GenBank assembly RS_GCF_003574425.1. The GC content of the type genome is 37.59

% and the genome length is 2.44 Mbp.

Description of *Candidatus* Cytobacillus altipax sp. nov.

Candidatus Cytobacillus altipax (NL. fem. n. *altipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cytobacillus sp009849585*. The type genome for the species is the GenBank assembly RS_GCF_009849585.1. The GC content of the type genome is 41.17 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Cytobacillus bisacimonia sp. nov.

Candidatus Cytobacillus bisacimonia (NL. fem. n. *bisacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cytobacillus sp000518885*. The type genome for the species is the GenBank assembly RS_GCF_000518885.1. The GC content of the type genome is 40.63 % and the genome length is 5.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Cytobacillus denicax sp. nov.

Candidatus Cytobacillus denicax (NL. fem. n. *denicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cytobacillus sp001509555*. The type genome for the species is the GenBank assembly RS_GCF_001509555.1. The GC content of the type genome is 38.28 % and the genome length is 4.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Cytobacillus epogdigena sp. nov.

Candidatus Cytobacillus epogdigena (NL. fem. n. *epogdigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cytobacillus sp001956215*. The type genome for the species is the GenBank assembly RS_GCF_001956215.1. The GC content of the type genome is 41.96 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Cytobacillus opercisca sp. nov.

Candidatus Cytobacillus opercisca (NL. fem. n. *opercisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Cytobacillus sp002272225*. The type genome for the species is the GenBank assembly RS_GCF_002272225.1. The GC content of the type genome is 42.02 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Daducana deforitia sp. nov.

Candidatus Daducana deforitia (NL. fem. n. *deforitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSZL01 sp011367125*. The type genome for the species is the GenBank assembly GCA_011364045.1. The GC content of the type genome is 51.31 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Daducana gen. nov.

Candidatus Daducana (NL. fem. n. *Daducana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSZL01*. The type species for the genus is *Candidatus* Daducana deforitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B13-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panifiaceae.

Description of *Candidatus* Daducaria benemilenta sp. nov.

Candidatus Daducaria benemilenta (NL. fem. n. *benemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-119 sp007117675*. The type genome for the species is the GenBank assembly GCA_007117675.1. The GC content of the type genome is 37.41 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Daducaria gen. nov.

Candidatus Daducaria (NL. fem. n. *Daducaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBR16-119*. The type species for the genus is *Candidatus* Daducaria benemilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSBR16-119*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Daducariaceae.

Description of *Candidatus* Daducariaceae fam. nov.

Candidatus Daducariaceae (NL. fem. n. *Daducariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSBR16-119.* The type genus for the taxon is *Candidatus* Daducaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Daducella culibentia sp. nov.

Candidatus Daducella culibentia (NL. fem. n. *culibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PeH17 sp000435055*. The type genome for the species is the GenBank assembly GCA_008667735.1. The GC content of the type genome is 49.37 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Daducella gen. nov.

Candidatus Daducella (NL. fem. n. *Daducella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PeH17*. The type species for the genus is *Candidatus* Daducella culibentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Daducella delucitura sp. nov.

Candidatus Daducella delucitura (NL. fem. n. *delucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PeH17 sp900542285*. The type genome for the species is the GenBank assembly GCA_004557415.1. The GC content of the type genome is 49.85 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Daducella depecilega sp. nov.

Candidatus Daducella depecilega (NL. fem. n. *depecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PeH17 sp004556165*. The type genome for the species is the GenBank assembly GCA_004563475.1. The GC content of the type genome is 50.73 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Daducella depicedo sp. nov.

Candidatus Daducella depicedo (NL. fem. n. *depicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PeH17 sp002309375*. The type genome for the species is the GenBank assembly GCA_002309375.1. The GC content of the type genome is 56.43 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Daducella insurimonas sp. nov.

Candidatus Daducella insurimonas (NL. fem. n. *insurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PeH17 sp001940845*. The type genome for the species is the GenBank assembly GCA_001940845.1. The GC content of the type genome is 46.21 % and the genome length is 2.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Phil the wombat".

Description of *Candidatus* Daducella xeropatio sp. nov.

Candidatus Daducella xeropatio (NL. fem. n. *xeropatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PeH17 sp902794055*. The type genome for the species is the GenBank assembly GCA_902794055.1. The GC content of the type genome is 52.9 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Daducia nivomimonia sp. nov.

Candidatus Daducia nivomimonia (NL. fem. n. *nivomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2365 sp002344345*. The type genome for the species is the GenBank assembly GCA_002344345.1. The GC content of the type genome is 39.12 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Daducia gen. nov.

Candidatus Daducia (NL. fem. n. *Daducia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2365*. The type species for the genus is *Candidatus* Daducia nivomimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Daducida adtubilenta sp. nov.

Candidatus Daducida adtubilenta (NL. fem. n. *adtubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFLK01 sp009885085*. The type genome for the species is the GenBank assembly GCA_009885085.1. The GC content of the type genome is 34.44 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Daducida gen. nov.

Candidatus Daducida (NL. fem. n. *Daducida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *VFLK01*. The type species for the genus is *Candidatus* Daducida adtubilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Daducida bonitago sp. nov.

Candidatus Daducida bonitago (NL. fem. n. *bonitago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFLK01 sp002783105*. The type genome for the species is the GenBank assembly GCA_009992315.1. The GC content of the type genome is 34.04 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Daducosa famelentia sp. nov.

Candidatus Daducosa famelentia (NL. fem. n. *famelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBW01 sp009784345*. The type genome for the species is the GenBank assembly GCA_009784345.1. The GC content of the type genome is 53.31 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Daducosa gen. nov.

Candidatus Daducosa (NL. fem. n. *Daducosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBW01*. The type species for the genus is *Candidatus* Daducosa famelentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WQUG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecidaceae.

Description of *Candidatus* Daducosa giganitrix sp. nov.

Candidatus Daducosa giganitrix (NL. fem. n. *giganitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBW01 sp009785705*. The type genome for the species is the GenBank assembly GCA_009785705.1. The GC content of the type genome is 46.9 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Daducosa maxilitia sp. nov.

Candidatus Daducosa maxilitia (NL. fem. n. *maxilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBW01 sp009779855*. The type genome for the species is the GenBank assembly GCA_009779855.1. The GC content of the type genome is 46.74 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Daducula defesicula sp. nov.

Candidatus Daducula defesicula (NL. fem. n. *defesicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-43-63 sp001769275*. The type genome for the species is the GenBank assembly GCA_001769115.1. The GC content of the type genome is 42.62 % and the genome length is 3.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 5 / E; 5m depth; 0.2 filter".

Description of *Candidatus* Daducula gen. nov.

Candidatus Daducula (NL. fem. n. *Daducula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-43-63*. The type species for the genus is *Candidatus* Daducula defesicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domipanaceae.

Description of *Candidatus* Daducula masocibula sp. nov.

Candidatus Daducula masocibula (NL. fem. n. *masocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-43-63 sp012520175*. The type genome for the species is the GenBank assembly GCA_012520175.1. The GC content of the type genome is 32.54 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Daducula ocissibra sp. nov.

Candidatus Daducula ocissibra (NL. fem. n. *ocissibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-43-63 sp002842495*. The type genome for the species is the GenBank assembly GCA_002842495.1. The GC content of the type genome is 40.8 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Daejeonella divoritoga sp. nov.

Candidatus Daejeonella divoritoga (NL. fem. n. *divoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Daejeonella sp014378705*. The type genome for the species is the GenBank assembly GCA_014378705.1. The GC content of the type genome is 37.64 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Daejeonella luxuricula sp. nov.

Candidatus Daejeonella luxuricula (NL. fem. n. *luxuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Daejeonella sp002257025*. The type genome for the species is the GenBank assembly GCA_002257025.1. The GC content of the type genome is 39.37 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Daejeonella selibitudo sp. nov.

Candidatus Daejeonella selibitudo (NL. fem. n. *selibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Daejeonella sp903821625*. The type genome for the species is the GenBank assembly GCA_903821625.1. The GC content of the type genome is 37.42 %

and the genome length is 2.77 Mbp.

Description of *Candidatus* Dapifana vehicax sp. nov.

Candidatus Dapifana vehicax (NL. fem. n. *vehicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVWN01 sp011773985*. The type genome for the species is the GenBank assembly GCA_011773985.1. The GC content of the type genome is 62.36 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Dapifana gen. nov.

Candidatus Dapifana (NL. fem. n. *Dapifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVWN01*. The type species for the genus is *Candidatus* Dapifana vehicax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WVWN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifanaceae.

Description of *Candidatus* Dapifanaceae fam. nov.

Candidatus Dapifanaceae (NL. fem. n. *Dapifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WVWN01.* The type genus for the taxon is *Candidatus* Dapifana .

According to the original version of GTDB R06-RS202, this family belongs to the order *WVWN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dapifanales.

Description of *Candidatus* Dapifanales ord. nov.

Candidatus Dapifanales (NL. fem. n. *Dapifanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WVWN01.* The type genus for the taxon is *Candidatus* Dapifana .

According to the original version of GTDB R06-RS202, this family belongs to the class

B26-G2. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Fuligosae.

Description of *Candidatus* Dapifaria denigedo sp. nov.

Candidatus Dapifaria denigedo (NL. fem. n. *denigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-48-12 sp001819875*. The type genome for the species is the GenBank assembly GCA_001819875.1. The GC content of the type genome is 48.32 % and the genome length is 0.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Dapifaria gen. nov.

Candidatus Dapifaria (NL. fem. n. *Dapifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-48-12*. The type species for the genus is *Candidatus* Dapifaria denigedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-48-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifariaceae.

Description of *Candidatus* Dapifariaceae fam. nov.

Candidatus Dapifariaceae (NL. fem. n. *Dapifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-48-12.* The type genus for the taxon is *Candidatus* Dapifaria .

According to GTDB R06-RS202, this family belongs to the order *Ryanbacterales*.

Description of *Candidatus* Dapifella cenodibula sp. nov.

Candidatus Dapifella cenodibula (NL. fem. n. *cenodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QANG01 sp003150145*. The type genome for the species is the GenBank assembly GCA_003150145.1. The GC content of the type genome is 49.62 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Dapifella gen. nov.

Candidatus Dapifella (NL. fem. n. *Dapifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QANG01*. The type species for the genus is *Candidatus* Dapifella cenodibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dapifia fefelitura sp. nov.

Candidatus Dapifia fefelitura (NL. fem. n. *fefelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQQB01 sp903873805*. The type genome for the species is the GenBank assembly GCA_903873805.1. The GC content of the type genome is 66.11 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Dapifia gen. nov.

Candidatus Dapifia (NL. fem. n. *Dapifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQQB01*. The type species for the genus is *Candidatus* Dapifia fefelitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dapifida cicatedo sp. nov.

Candidatus Dapifida cicatedo (NL. fem. n. *cicatedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AK92 sp003399765*. The type genome for the species is the GenBank assembly RS_GCF_003399715.1. The GC content of the type genome is 58.58 % and the

genome length is 4.84 Mbp.

Description of *Candidatus* Dapifida gen. nov.

Candidatus Dapifida (NL. fem. n. *Dapifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AK92*. The type species for the genus is *Candidatus* Dapifida cicatedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AK92*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifidaceae.

Description of *Candidatus* Dapifidaceae fam. nov.

Candidatus Dapifidaceae (NL. fem. n. *Dapifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AK92.* The type genus for the taxon is *Candidatus* Dapifida .

According to GTDB R06-RS202, this family belongs to the order *Nitrococcales*.

Description of *Candidatus* Dapifosa caraviforma sp. nov.

Candidatus Dapifosa caraviforma (NL. fem. n. *caraviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5453 sp002427375*. The type genome for the species is the GenBank assembly GCA_002427375.1. The GC content of the type genome is 31.11 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Dapifosa gen. nov.

Candidatus Dapifosa (NL. fem. n. *Dapifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5453*. The type species for the genus is *Candidatus* Dapifosa caraviforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5453*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifosaceae.

Description of *Candidatus* Dapifosaceae fam. nov.

Candidatus Dapifosaceae (NL. fem. n. *Dapifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5453.* The type genus for the taxon is *Candidatus* Dapifosa .

According to GTDB R06-RS202, this family belongs to the order *Acholeplasmatales*.

Description of *Candidatus* Dapifosa coturessa sp. nov.

Candidatus Dapifosa coturessa (NL. fem. n. *coturessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5453 sp012522345*. The type genome for the species is the GenBank assembly GCA_012522345.1. The GC content of the type genome is 32.7 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Dapifula lugubicella sp. nov.

Candidatus Dapifula lugubicella (NL. fem. n. *lugubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGW-15 sp002840535*. The type genome for the species is the GenBank assembly GCA_002840495.1. The GC content of the type genome is 54.49 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Dapifula gen. nov.

Candidatus Dapifula (NL. fem. n. *Dapifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGW-15*. The type species for the genus is *Candidatus* Dapifula lugubicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGW-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifulaceae.

Description of *Candidatus* Dapifulaceae fam. nov.

Candidatus Dapifulaceae (NL. fem. n. *Dapifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HGW-15.* The type genus for the taxon is *Candidatus* Dapifula .

According to GTDB R06-RS202, this family belongs to the order *Desulfatiglandales*.

Description of *Candidatus* Debucana camiliforma sp. nov.

Candidatus Debucana camiliforma (NL. fem. n. *camiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BAIKAL-G1-2R sp903877395*. The type genome for the species is the GenBank assembly GCA_903877395.1. The GC content of the type genome is 59.27 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Debucana gen. nov.

Candidatus Debucana (NL. fem. n. *Debucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BAIKAL-G1-2R*. The type species for the genus is *Candidatus* Debucana camiliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subinellaceae.

Description of *Candidatus* Debucana desomitura sp. nov.

Candidatus Debucana desomitura (NL. fem. n. *desomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BAIKAL-G1-2R sp002737405*. The type genome for the species is the GenBank assembly GCA_002737405.1. The GC content of the type genome is 57.49 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Debucana ignomitrix sp. nov.

Candidatus Debucana ignomitrix (NL. fem. n. *ignomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BAIKAL-G1-2R sp003670865*. The type genome for the species is the GenBank assembly GCA_003670865.1. The GC content of the type genome is 56.81 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Debucana rarefitudo sp. nov.

Candidatus Debucana rarefitudo (NL. fem. n. *rarefitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BAIKAL-G1-2R sp003670915*. The type genome for the species is the GenBank assembly GCA_003670915.1. The GC content of the type genome is 59.42 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Debucaria carunitio sp. nov.

Candidatus Debucaria carunitio (NL. fem. n. *carunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDH01 sp007693585*. The type genome for the species is the GenBank assembly GCA_007693585.1. The GC content of the type genome is 69.74 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Debucaria gen. nov.

Candidatus Debucaria (NL. fem. n. *Debucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REDH01*. The type species for the genus is *Candidatus* Debucaria carunitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *REDH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Debucariaceae.

Description of *Candidatus* Debucariaceae fam. nov.

Candidatus Debucariaceae (NL. fem. n. *Debucariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *REDH01.* The type genus for the taxon is *Candidatus* Debucaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *REDH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Debucariales.

Description of *Candidatus* Debucariales ord. nov.

Candidatus Debucariales (NL. fem. n. *Debucariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *REDH01.* The type genus for the taxon is *Candidatus* Debucaria .

According to the GTDB R06-RS202, this order belongs to the class *Bradymonadia*.

Description of *Candidatus* Debucia adtubivita sp. nov.

Candidatus Debucia adtubivita (NL. fem. n. *adtubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKVZ01 sp903844215*. The type genome for the species is the GenBank assembly GCA_903844215.1. The GC content of the type genome is 63.95 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Debucia gen. nov.

Candidatus Debucia (NL. fem. n. *Debucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKVZ01*. The type species for the genus is *Candidatus* Debucia adtubivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Debucia desuritas sp. nov.

Candidatus Debucia desuritas (NL. fem. n. *desuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKVZ01 sp903909815*. The type genome for the species is the

GenBank assembly GCA_903873745.1. The GC content of the type genome is 61.51 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Debucia homagastra sp. nov.

Candidatus Debucia homagastra (NL. fem. n. *homagastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKVZ01 sp903832285*. The type genome for the species is the GenBank assembly GCA_903911775.1. The GC content of the type genome is 60.97 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Debucia lutulicella sp. nov.

Candidatus Debucia lutulicella (NL. fem. n. *lutulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKVZ01 sp903838565*. The type genome for the species is the GenBank assembly GCA_903938435.1. The GC content of the type genome is 63.86 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Debucia mirabilenta sp. nov.

Candidatus Debucia mirabilenta (NL. fem. n. *mirabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKVZ01 sp903830985*. The type genome for the species is the GenBank assembly GCA_903830985.1. The GC content of the type genome is 63.45 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Debucida divorugo sp. nov.

Candidatus Debucida divorugo (NL. fem. n. *divorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1362 sp002306085*. The type genome for the species is the GenBank assembly GCA_012797475.1. The GC content of the type genome is 40.96 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Debucida gen. nov.

Candidatus Debucida (NL. fem. n. *Debucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1362*. The type species for the genus is *Candidatus* Debucida divorugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Camilariaceae.

Description of *Candidatus* Debucosa pulegousia sp. nov.

Candidatus Debucosa pulegousia (NL. fem. n. *pulegousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11612 sp002712165*. The type genome for the species is the GenBank assembly GCA_002712165.1. The GC content of the type genome is 43.62 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Debucosa gen. nov.

Candidatus Debucosa (NL. fem. n. *Debucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11612*. The type species for the genus is *Candidatus* Debucosa pulegousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Debucula colepicella sp. nov.

Candidatus Debucula colepicella (NL. fem. n. *colepicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRNR01 sp903879985*. The type genome for the species is the GenBank assembly GCA_903822705.1. The GC content of the type genome is 37.45 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Debucula gen. nov.

Candidatus Debucula (NL. fem. n. *Debucula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRNR01*. The type species for the genus is *Candidatus* Debucula colepicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Decacana galacentia sp. nov.

Candidatus Decacana galacentia (NL. fem. n. *galacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUXX01 sp009659895*. The type genome for the species is the GenBank assembly GCA_009659895.1. The GC content of the type genome is 48.96 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Decacana gen. nov.

Candidatus Decacana (NL. fem. n. *Decacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUXX01*. The type species for the genus is *Candidatus* Decacana galacentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decacaria murilitoga sp. nov.

Candidatus Decacaria murilitoga (NL. fem. n. *murilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPBP01 sp004525935*. The type genome for the species is the GenBank assembly GCA_004525935.1. The GC content of the type genome is 56.04 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Decacaria gen. nov.

Candidatus Decacaria (NL. fem. n. *Decacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPBP01*. The type species for the genus is *Candidatus* Decacaria murilitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SPBP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decacariaceae.

Description of *Candidatus* Decacariaceae fam. nov.

Candidatus Decacariaceae (NL. fem. n. *Decacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SPBP01.* The type genus for the taxon is *Candidatus* Decacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8416_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Loraridales.

Description of *Candidatus* Decacella antegimonia sp. nov.

Candidatus Decacella antegimonia (NL. fem. n. *antegimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UphvI-Ar2 sp002162075*. The type genome for the species is the GenBank assembly RS_GCF_002162075.1. The GC content of the type genome is 52.48 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Decacella gen. nov.

Candidatus Decacella (NL. fem. n. *Decacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UphvI-Ar2*. The type species for the genus is *Candidatus* Decacella antegimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decacella effinimonas sp. nov.

Candidatus Decacella effinimonas (NL. fem. n. *effinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UphvI-Ar2 sp013823945*. The type genome for the species is the GenBank assembly GCA_013823945.1. The GC content of the type genome is 52.01 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Decacella famelessa sp. nov.

Candidatus Decacella famelessa (NL. fem. n. *famelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UphvI-Ar2 sp002162095*. The type genome for the species is the GenBank assembly RS_GCF_002162095.1. The GC content of the type genome is 62.07 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Decacella tomaciforma sp. nov.

Candidatus Decacella tomaciforma (NL. fem. n. *tomaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UphvI-Ar2 sp002352215*. The type genome for the species is the GenBank assembly GCA_002455365.1. The GC content of the type genome is 62.33 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Decacia armipago sp. nov.

Candidatus Decacia armipago (NL. fem. n. *armipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA941 sp002293365*. The type genome for the species is the GenBank assembly GCA_002293365.1. The GC content of the type genome is 52.36 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Decacia gen. nov.

Candidatus Decacia (NL. fem. n. *Decacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA941*. The type species for the genus is *Candidatus* Decacia

armipago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA941*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decaciaceae.

Description of *Candidatus* Decaciaceae fam. nov.

Candidatus Decaciaceae (NL. fem. n. *Decaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA941.* The type genus for the taxon is *Candidatus* Decacia .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Decacida infucago sp. nov.

Candidatus Decacida infucago (NL. fem. n. *infucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1388 sp900551345*. The type genome for the species is the GenBank assembly GCA_900551345.1. The GC content of the type genome is 39.51 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Decacida gen. nov.

Candidatus Decacida (NL. fem. n. *Decacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1388*. The type species for the genus is *Candidatus* Decacida infucago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1388*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decacidaceae.

Description of *Candidatus* Decacidaceae fam. nov.

Candidatus Decacidaceae (NL. fem. n. *Decacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1388.* The type genus for the taxon is *Candidatus* Decacida .

According to GTDB R06-RS202, this family belongs to the order *Monoglobales*.

Description of *Candidatus* Decacosa semivousia sp. nov.

Candidatus Decacosa semivousia (NL. fem. n. *semivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747255 sp002747255*. The type genome for the species is the GenBank assembly GCA_002747255.1. The GC content of the type genome is 46.46 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Decacosa gen. nov.

Candidatus Decacosa (NL. fem. n. *Decacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2747255*. The type species for the genus is *Candidatus* Decacosa semivousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2747255*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decacosaceae.

Description of *Candidatus* Decacosaceae fam. nov.

Candidatus Decacosaceae (NL. fem. n. *Decacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2747255.* The type genus for the taxon is *Candidatus* Decacosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2747255*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decacosales.

Description of *Candidatus* Decacosales ord. nov.

Candidatus Decacosales (NL. fem. n. *Decacosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2747255.* The type genus for the taxon is *Candidatus* Decacosa .

According to the GTDB R06-RS202, this order belongs to the class *Holophagae*.

Description of *Candidatus* Decacula conopetta sp. nov.

Candidatus Decacula conopetta (NL. fem. n. *conopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-50-93 sp001804815*. The type genome for the species is the GenBank assembly GCA_003516325.1. The GC content of the type genome is 50.15 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Decacula gen. nov.

Candidatus Decacula (NL. fem. n. *Decacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-50-93*. The type species for the genus is *Candidatus* Decacula conopetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-50-93*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decaculaceae.

Description of *Candidatus* Decaculaceae fam. nov.

Candidatus Decaculaceae (NL. fem. n. *Decaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-50-93.* The type genus for the taxon is *Candidatus* Decacula .

According to GTDB R06-RS202, this family belongs to the order *Victivallales*.

Description of *Candidatus* Decacula palifousia sp. nov.

Candidatus Decacula palifousia (NL. fem. n. *palifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-50-93 sp001804805*. The type genome for the species is the GenBank assembly GCA_001804805.1. The GC content of the type genome is 49.12 % and the genome length is 5.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Decamana cosidatica sp. nov.

Candidatus Decamana cosidatica (NL. fem. n. *cosidatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFY01 sp903824505*. The type genome for the species is the GenBank assembly GCA_903862515.1. The GC content of the type genome is 53.76 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Decamana gen. nov.

Candidatus Decamana (NL. fem. n. *Decamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDFY01*. The type species for the genus is *Candidatus* Decamana cosidatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9219*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luticidaceae.

Description of *Candidatus* Decamana evisciforma sp. nov.

Candidatus Decamana evisciforma (NL. fem. n. *evisciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFY01 sp013286365*. The type genome for the species is the GenBank assembly GCA_013286365.1. The GC content of the type genome is 47.94 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Decamana locupitura sp. nov.

Candidatus Decamana locupitura (NL. fem. n. *locupitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFY01 sp013289265*. The type genome for the species is the GenBank assembly GCA_013289265.1. The GC content of the type genome is 50.72 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Decamana manufitio sp. nov.

Candidatus Decamana manufitio (NL. fem. n. *manufitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFY01 sp903920205*. The type genome for the species is the GenBank assembly GCA_903920205.1. The GC content of the type genome is 53.44 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Decamana meriditio sp. nov.

Candidatus Decamana meriditio (NL. fem. n. *meriditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFY01 sp009779745*. The type genome for the species is the GenBank assembly GCA_009779165.1. The GC content of the type genome is 43.43 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Decamana tetenastra sp. nov.

Candidatus Decamana tetenastra (NL. fem. n. *tetenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFY01 sp903875345*. The type genome for the species is the GenBank assembly GCA_903875345.1. The GC content of the type genome is 54.87 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Decamaria encomibula sp. nov.

Candidatus Decamaria encomibula (NL. fem. n. *encomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEGL01 sp902826885*. The type genome for the species is the GenBank assembly GCA_902826885.1. The GC content of the type genome is 65.23 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Decamaria gen. nov.

Candidatus Decamaria (NL. fem. n. *Decamaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEGL01*. The type species for the genus is *Candidatus* Decamaria encomibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADEGL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decamariaceae.

Description of *Candidatus* Decamariaceae fam. nov.

Candidatus Decamariaceae (NL. fem. n. *Decamariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADEGL01*. The type genus for the taxon is *Candidatus* Decamaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *CADEGL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decamariales.

Description of *Candidatus* Decamariales ord. nov.

Candidatus Decamariales (NL. fem. n. *Decamariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADEGL01*. The type genus for the taxon is *Candidatus* Decamaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Decamia dehonicella sp. nov.

Candidatus Decamia dehonicella (NL. fem. n. *dehonicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-513 sp003138355*. The type genome for the species is the GenBank assembly GCA_003138355.1. The GC content of the type genome is 68.88 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Decamia gen. nov.

Candidatus Decamia (NL. fem. n. *Decamia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Palsa-513*. The type species for the genus is *Candidatus* Decamia dehonicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decamia documax sp. nov.

Candidatus Decamia documax (NL. fem. n. *documax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-513 sp003132505*. The type genome for the species is the GenBank assembly GCA_003132565.1. The GC content of the type genome is 68.14 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Decamia turifedo sp. nov.

Candidatus Decamia turifedo (NL. fem. n. *turifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-513 sp003133565*. The type genome for the species is the GenBank assembly GCA_003156915.1. The GC content of the type genome is 67.53 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Decamia vehemago sp. nov.

Candidatus Decamia vehemago (NL. fem. n. *vehemago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-513 sp003157595*. The type genome for the species is the GenBank assembly GCA_003157595.1. The GC content of the type genome is 69.76 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Decamida adtesilenta sp. nov.

Candidatus Decamida adtesilenta (NL. fem. n. *adtesilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1975 sp900556815*. The type genome for the species is the GenBank assembly GCA_900556815.1. The GC content of the type genome is 50.61 %

and the genome length is 0.91 Mbp.

Description of *Candidatus* Decamida gen. nov.

Candidatus Decamida (NL. fem. n. *Decamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1975*. The type species for the genus is *Candidatus* Decamida adtesilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QAND01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dinupanaceae.

Description of *Candidatus* Decamida cinipedo sp. nov.

Candidatus Decamida cinipedo (NL. fem. n. *cinipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1975 sp900751745*. The type genome for the species is the GenBank assembly RS_GCF_900751745.1. The GC content of the type genome is 51.72 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Decamida navifilenta sp. nov.

Candidatus Decamida navifilenta (NL. fem. n. *navifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1975 sp900546685*. The type genome for the species is the GenBank assembly GCA_900546685.1. The GC content of the type genome is 52.31 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Decamosa ranunedo sp. nov.

Candidatus Decamosa ranunedo (NL. fem. n. *ranunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSP01 sp007130345*. The type genome for the species is the GenBank assembly GCA_007119705.1. The GC content of the type genome is 61.71 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Decamosa gen. nov.

Candidatus Decamosa (NL. fem. n. *Decamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLSP01*. The type species for the genus is *Candidatus* Decamosa ranunedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLSP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decamosaceae.

Description of *Candidatus* Decamosaceae fam. nov.

Candidatus Decamosaceae (NL. fem. n. *Decamosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLSP01*. The type genus for the taxon is *Candidatus* Decamosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *B4-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colubulales.

Description of *Candidatus* Decamula repagivita sp. nov.

Candidatus Decamula repagivita (NL. fem. n. *repagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYZJ01 sp903930675*. The type genome for the species is the GenBank assembly GCA_903930675.1. The GC content of the type genome is 58.47 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Decamula gen. nov.

Candidatus Decamula (NL. fem. n. *Decamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYZJ01*. The type species for the genus is *Candidatus* Decamula repagivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decamula tomacitas sp. nov.

Candidatus Decamula tomacitas (NL. fem. n. *tomacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYZJ01 sp903824185*. The type genome for the species is the GenBank assembly GCA_903876495.1. The GC content of the type genome is 54.62 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Decapana offunigena sp. nov.

Candidatus Decapana offunigena (NL. fem. n. *offunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DREG01 sp011040895*. The type genome for the species is the GenBank assembly GCA_011040895.1. The GC content of the type genome is 44.14 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Decapana gen. nov.

Candidatus Decapana (NL. fem. n. *Decapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DREG01*. The type species for the genus is *Candidatus* Decapana offunigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DREG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decapanaceae.

Description of *Candidatus* Decapanaceae fam. nov.

Candidatus Decapanaceae (NL. fem. n. *Decapanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DREG01.* The type genus for the taxon is *Candidatus* Decapana .

According to the original version of GTDB R06-RS202, this family belongs to the order *JdFR-76*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogidales.

Description of *Candidatus* Decaparia homulago sp. nov.

Candidatus Decaparia homulago (NL. fem. n. *homulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC34051 sp003605175*. The type genome for the species is the GenBank assembly RS_GCF_003605175.1. The GC content of the type genome is 67.58 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Decaparia gen. nov.

Candidatus Decaparia (NL. fem. n. *Decaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IMCC34051*. The type species for the genus is *Candidatus* Decaparia homulago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decaparia indificella sp. nov.

Candidatus Decaparia indificella (NL. fem. n. *indificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC34051 sp013003075*. The type genome for the species is the GenBank assembly GCA_013003075.1. The GC content of the type genome is 63.68 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Decaparia vitigetta sp. nov.

Candidatus Decaparia vitigetta (NL. fem. n. *vitigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC34051 sp013042605*. The type genome for the species is the GenBank assembly GCA_013042605.1. The GC content of the type genome is 62.6 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Decapella lanifedo sp. nov.

Candidatus Decapella lanifedo (NL. fem. n. *lanifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOGI01 sp903857825*. The type genome for the species is the GenBank assembly GCA_903939045.1. The GC content of the type genome is 35.86 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Decapella gen. nov.

Candidatus Decapella (NL. fem. n. *Decapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOGI01*. The type species for the genus is *Candidatus* Decapella lanifedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-1337*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colutulaceae.

Description of *Candidatus* Decapella sugilitudo sp. nov.

Candidatus Decapella sugilitudo (NL. fem. n. *sugilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOGI01 sp903839695*. The type genome for the species is the GenBank assembly GCA_903839695.1. The GC content of the type genome is 32.95 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Decapia favonessa sp. nov.

Candidatus Decapia favonessa (NL. fem. n. *favonessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1997 sp002335845*. The type genome for the species is the GenBank assembly GCA_002335845.1. The GC content of the type genome is 32.76 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Decapia gen. nov.

Candidatus Decapia (NL. fem. n. *Decapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1997*. The type species for the genus is *Candidatus* Decapia favonessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1997*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decapiaceae.

Description of *Candidatus* Decapiaceae fam. nov.

Candidatus Decapiaceae (NL. fem. n. *Decapiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1997*. The type genus for the taxon is *Candidatus* Decapia .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Decapida furibivita sp. nov.

Candidatus Decapida furibivita (NL. fem. n. *furibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYC01 sp009693005*. The type genome for the species is the GenBank assembly GCA_009693005.1. The GC content of the type genome is 54.09 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Decapida gen. nov.

Candidatus Decapida (NL. fem. n. *Decapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYC01*. The type species for the genus is *Candidatus* Decapida furibivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decapidaceae.

Description of *Candidatus* Decapidaceae fam. nov.

Candidatus Decapidaceae (NL. fem. n. *Decapidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYC01*. The type genus for the taxon is *Candidatus* Decapida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHYD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Manomiales.

Description of *Candidatus* Decaposa cituvimonas sp. nov.

Candidatus Decaposa cituvimonas (NL. fem. n. *cituvimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VULX01 sp009696465*. The type genome for the species is the GenBank assembly RS_GCF_009696465.1. The GC content of the type genome is 31.42 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Decaposa gen. nov.

Candidatus Decaposa (NL. fem. n. *Decaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VULX01*. The type species for the genus is *Candidatus* Decaposa cituvimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decapula adrenitudo sp. nov.

Candidatus Decapula adrenitudo (NL. fem. n. *adrenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-13 sp003599485*. The type genome for the species is the GenBank assembly GCA_003599485.1. The GC content of the type genome is 61.5 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Decapula gen. nov.

Candidatus Decapula (NL. fem. n. *Decapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-13*. The type species for the genus is *Candidatus* Decapula

adrenitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decapulaceae.

Description of *Candidatus* Decapulaceae fam. nov.

Candidatus Decapulaceae (NL. fem. n. *Decapulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-13.* The type genus for the taxon is *Candidatus* Decapula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SURF-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decapulales.

Description of *Candidatus* Decapulales ord. nov.

Candidatus Decapulales (NL. fem. n. *Decapulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-13.* The type genus for the taxon is *Candidatus* Decapula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Decatana verifatica sp. nov.

Candidatus Decatana verifatica (NL. fem. n. *verifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLDG01 sp007125355*. The type genome for the species is the GenBank assembly GCA_003566645.1. The GC content of the type genome is 42.47 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Decatana gen. nov.

Candidatus Decatana (NL. fem. n. *Decatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLDG01*. The type species for the genus is *Candidatus* Decatana

verifatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PXAI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapicellaceae.

Description of *Candidatus* Decatella dececigena sp. nov.

Candidatus Decatella dececigena (NL. fem. n. *dececigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs023 sp005773635*. The type genome for the species is the GenBank assembly GCA_005798085.1. The GC content of the type genome is 58.81 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Decatella gen. nov.

Candidatus Decatella (NL. fem. n. *Decatella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-120-MAGs023*. The type species for the genus is *Candidatus* Decatella dececigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-610*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpellaceae.

Description of *Candidatus* Decatia adrenugo sp. nov.

Candidatus Decatia adrenugo (NL. fem. n. *adrenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-343 sp003131625*. The type genome for the species is the GenBank assembly GCA_003131625.1. The GC content of the type genome is 61.85 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Decatia gen. nov.

Candidatus Decatia (NL. fem. n. *Decatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Palsa-343*. The type species for the genus is *Candidatus* Decatia adrenugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decatia apsoritudo sp. nov.

Candidatus Decatia apsoritudo (NL. fem. n. *apsoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-343 sp003152595*. The type genome for the species is the GenBank assembly GCA_003152595.1. The GC content of the type genome is 61.77 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Decatia cohurousia sp. nov.

Candidatus Decatia cohurousia (NL. fem. n. *cohurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-343 sp003166955*. The type genome for the species is the GenBank assembly GCA_003140775.1. The GC content of the type genome is 61.66 % and the genome length is 5.43 Mbp.

Description of *Candidatus* Decatia conifatica sp. nov.

Candidatus Decatia conifatica (NL. fem. n. *conifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-343 sp003167515*. The type genome for the species is the GenBank assembly GCA_003167515.1. The GC content of the type genome is 60.74 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Decatia inordicula sp. nov.

Candidatus Decatia inordicula (NL. fem. n. *inordicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-343 sp003428625*. The type genome for the species is the GenBank assembly RS_GCF_003428625.1. The GC content of the type genome is 60.47

% and the genome length is 5.0 Mbp.

Description of *Candidatus* Decatia maciligena sp. nov.

Candidatus Decatia maciligena (NL. fem. n. *maciligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-343 sp003152415*. The type genome for the species is the GenBank assembly GCA_003140635.1. The GC content of the type genome is 62.23 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Decatida effemetta sp. nov.

Candidatus Decatida effemetta (NL. fem. n. *effemetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B39-G9 sp003648455*. The type genome for the species is the GenBank assembly GCA_003648455.1. The GC content of the type genome is 30.23 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Decatida gen. nov.

Candidatus Decatida (NL. fem. n. *Decatida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B39-G9*. The type species for the genus is *Candidatus* Decatida effemetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B39-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decatidaceae.

Description of *Candidatus* Decatidaceae fam. nov.

Candidatus Decatidaceae (NL. fem. n. *Decatidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B39-G9.* The type genus for the taxon is *Candidatus* Decatida .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Decatosa atricitrix sp. nov.

Candidatus Decatosa atricitrix (NL. fem. n. *atricitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYLY01 sp902825945*. The type genome for the species is the GenBank assembly GCA_902825945.1. The GC content of the type genome is 62.95 % and the genome length is 10.15 Mbp.

Description of *Candidatus* Decatosa gen. nov.

Candidatus Decatosa (NL. fem. n. *Decatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYLY01*. The type species for the genus is *Candidatus* Decatosa atricitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decatosa pulegessa sp. nov.

Candidatus Decatosa pulegessa (NL. fem. n. *pulegessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYLY01 sp005808475*. The type genome for the species is the GenBank assembly GCA_005777455.1. The GC content of the type genome is 65.35 % and the genome length is 7.75 Mbp.

Description of *Candidatus* Decatula impinicella sp. nov.

Candidatus Decatula impinicella (NL. fem. n. *impinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW-6-46-9 sp003022255*. The type genome for the species is the GenBank assembly GCA_003022255.1. The GC content of the type genome is 46.46 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Decatula gen. nov.

Candidatus Decatula (NL. fem. n. *Decatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SW-6-46-9*. The type species for the genus is *Candidatus* Decatula impinicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SW-6-46-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decatulaceae.

Description of *Candidatus* Decatulaceae fam. nov.

Candidatus Decatulaceae (NL. fem. n. *Decatulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SW-6-46-9.* The type genus for the taxon is *Candidatus* Decatula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Dececana artilitio sp. nov.

Candidatus Dececana artilitio (NL. fem. n. *artilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXOZ01 sp012270555*. The type genome for the species is the GenBank assembly GCA_012270555.1. The GC content of the type genome is 59.93 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Dececana gen. nov.

Candidatus Dececana (NL. fem. n. *Dececana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXOZ01*. The type species for the genus is *Candidatus* Dececana artilitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VXOZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dececanaceae.

Description of *Candidatus* Dececanaceae fam. nov.

Candidatus Dececanaceae (NL. fem. n. *Dececanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXOZ01*. The type genus for the taxon is *Candidatus* Dececana .

According to the original version of GTDB R06-RS202, this family belongs to the order *VXOZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dececanales.

Description of *Candidatus* Dececanales ord. nov.

Candidatus Dececanales (NL. fem. n. *Dececanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXOZ01*. The type genus for the taxon is *Candidatus* Dececana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA11872*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rosacidae.

Description of *Candidatus* Dececana senacetta sp. nov.

Candidatus Dececana senacetta (NL. fem. n. *senacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXOZ01 sp009839775*. The type genome for the species is the GenBank assembly GCA_009839775.1. The GC content of the type genome is 59.57 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Dececaria ridibentia sp. nov.

Candidatus Dececaria ridibentia (NL. fem. n. *ridibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-43-52 sp001805445*. The type genome for the species is the GenBank assembly GCA_001804385.1. The GC content of the type genome is 43.82 % and the genome length is 1.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Dececaria gen. nov.

Candidatus Dececaria (NL. fem. n. *Dececaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-43-52*. The type species for the genus is *Candidatus* Dececaria ridibentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12090*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabellaceae.

Description of *Candidatus* Dececella subucentia sp. nov.

Candidatus Dececella subucentia (NL. fem. n. *subucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-40-25 sp001872305*. The type genome for the species is the GenBank assembly GCA_001872305.1. The GC content of the type genome is 39.51 % and the genome length is 0.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Dececella gen. nov.

Candidatus Dececella (NL. fem. n. *Dececella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-40-25*. The type species for the genus is *Candidatus* Dececella subucentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-40-25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dececellaceae.

Description of *Candidatus* Dececellaceae fam. nov.

Candidatus Dececellaceae (NL. fem. n. *Dececellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG1-02-40-25.* The type genus for the taxon is *Candidatus* Dececella .

According to GTDB R06-RS202, this family belongs to the order *Portnoybacterales*.

Description of *Candidatus* Dececia inlocibra sp. nov.

Candidatus Dececia inlocibra (NL. fem. n. *inlocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEL01 sp011192125*. The type genome for the species is the GenBank assembly GCA_011192125.1. The GC content of the type genome is 65.44 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Dececia gen. nov.

Candidatus Dececia (NL. fem. n. *Dececia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUEL01*. The type species for the genus is *Candidatus* Dececia inlocibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUEL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dececiaceae.

Description of *Candidatus* Dececiaceae fam. nov.

Candidatus Dececiaceae (NL. fem. n. *Dececiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUEL01*. The type genus for the taxon is *Candidatus* Dececia .

According to the original version of GTDB R06-RS202, this family belongs to the order *B4-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colubulales.

Description of *Candidatus* Dececia inoblousia sp. nov.

Candidatus Dececia inoblousia (NL. fem. n. *inoblousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEL01 sp011388675*. The type genome for the species is the

GenBank assembly GCA_011388675.1. The GC content of the type genome is 66.11 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Dececida bonifessa sp. nov.

Candidatus Dececida bonifessa (NL. fem. n. *bonifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp900771305*. The type genome for the species is the GenBank assembly RS_GCF_900771305.1. The GC content of the type genome is 62.02 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Dececida gen. nov.

Candidatus Dececida (NL. fem. n. *Dececida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG572*. The type species for the genus is *Candidatus* Dececida bonifessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Dececida capudivita sp. nov.

Candidatus Dececida capudivita (NL. fem. n. *capudivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp902802945*. The type genome for the species is the GenBank assembly GCA_902802945.1. The GC content of the type genome is 60.28 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Dececida denixicula sp. nov.

Candidatus Dececida denixicula (NL. fem. n. *denixicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp902761035*. The type genome for the species is the GenBank assembly GCA_902761035.1. The GC content of the type genome is 59.75 %

and the genome length is 6.14 Mbp.

Description of *Candidatus* Dececida ficulilenta sp. nov.

Candidatus Dececida ficulilenta (NL. fem. n. *ficulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp902763655*. The type genome for the species is the GenBank assembly GCA_902763655.1. The GC content of the type genome is 63.85 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Dececida lucubousia sp. nov.

Candidatus Dececida lucubousia (NL. fem. n. *lucubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp902803135*. The type genome for the species is the GenBank assembly GCA_902803135.1. The GC content of the type genome is 64.33 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Dececida minagitoga sp. nov.

Candidatus Dececida minagitoga (NL. fem. n. *minagitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp902779865*. The type genome for the species is the GenBank assembly GCA_902793025.1. The GC content of the type genome is 59.96 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Dececida necubicula sp. nov.

Candidatus Dececida necubicula (NL. fem. n. *necubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp902779075*. The type genome for the species is the GenBank assembly GCA_902779075.1. The GC content of the type genome is 59.8 % and the genome length is 6.61 Mbp.

Description of *Candidatus* Dececida offuliforma sp. nov.

Candidatus Dececida offuliforma (NL. fem. n. *offuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp902769585*. The type genome for the species is the GenBank assembly GCA_902769585.1. The GC content of the type genome is 62.78 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Dececida pedepitura sp. nov.

Candidatus Dececida pedepitura (NL. fem. n. *pedepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp900547945*. The type genome for the species is the GenBank assembly RS_GCF_900763375.1. The GC content of the type genome is 67.02 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Dececida refulatica sp. nov.

Candidatus Dececida refulatica (NL. fem. n. *refulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp900320225*. The type genome for the species is the GenBank assembly GCA_902772315.1. The GC content of the type genome is 65.1 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Dececida televimonas sp. nov.

Candidatus Dececida televimonas (NL. fem. n. *televimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG572 sp002373695*. The type genome for the species is the GenBank assembly GCA_002373695.1. The GC content of the type genome is 60.57 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Dececosa hirunitoga sp. nov.

Candidatus Dececosa hirunitoga (NL. fem. n. *hirunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMXS01 sp004356955*. The type genome for the species is the GenBank assembly GCA_004356955.1. The GC content of the type genome is 54.79 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Dececosa gen. nov.

Candidatus Dececosa (NL. fem. n. *Dececosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMXS01*. The type species for the genus is *Candidatus* Dececosa hirunitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMXS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dececosaceae.

Description of *Candidatus* Dececosaceae fam. nov.

Candidatus Dececosaceae (NL. fem. n. *Dececosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMXS01*. The type genus for the taxon is *Candidatus* Dececosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SMXS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dececosales.

Description of *Candidatus* Dececosales ord. nov.

Candidatus Dececosales (NL. fem. n. *Dececosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMXS01*. The type genus for the taxon is *Candidatus* Dececosa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Dececula lubenentia sp. nov.

Candidatus Dececula lubenentia (NL. fem. n. *lubenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLFH01 sp007694925*. The type genome for the species is the GenBank assembly GCA_007694925.1. The GC content of the type genome is 68.13 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Dececula gen. nov.

Candidatus Dececula (NL. fem. n. *Dececula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLFH01*. The type species for the genus is *Candidatus* Dececula lubenentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Dececula necopisca sp. nov.

Candidatus Dececula necopisca (NL. fem. n. *necopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLFH01 sp007124345*. The type genome for the species is the GenBank assembly GCA_007122795.1. The GC content of the type genome is 68.05 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Decenana cohuritio sp. nov.

Candidatus Decenana cohuritio (NL. fem. n. *cohuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZPE01 sp903934295*. The type genome for the species is the GenBank assembly GCA_903926325.1. The GC content of the type genome is 68.77 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Decenana gen. nov.

Candidatus Decenana (NL. fem. n. *Decenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZPE01*. The type species for the genus is *Candidatus* Decenana

cohuritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decenana decacitas sp. nov.

Candidatus Decenana decacitas (NL. fem. n. *decacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZPE01 sp903934795*. The type genome for the species is the GenBank assembly GCA_903930215.1. The GC content of the type genome is 70.43 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Decenaria defenedo sp. nov.

Candidatus Decenaria defenedo (NL. fem. n. *defenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFJ001 sp004555865*. The type genome for the species is the GenBank assembly GCA_900548715.1. The GC content of the type genome is 61.14 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Decenaria gen. nov.

Candidatus Decenaria (NL. fem. n. *Decenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFJ001*. The type species for the genus is *Candidatus* Decenaria defenedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decenella innulentia sp. nov.

Candidatus Decenella innulentia (NL. fem. n. *innulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8366 sp002711555*. The type genome for the species is the GenBank assembly GCA_002711555.1. The GC content of the type genome is 45.15 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Decenella gen. nov.

Candidatus Decenella (NL. fem. n. *Decenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8366*. The type species for the genus is *Candidatus* Decenella innulentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8366*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decenellaceae.

Description of *Candidatus* Decenellaceae fam. nov.

Candidatus Decenellaceae (NL. fem. n. *Decenellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8366.* The type genus for the taxon is *Candidatus* Decenella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8366*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decenellales.

Description of *Candidatus* Decenellales ord. nov.

Candidatus Decenellales (NL. fem. n. *Decenellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8366.* The type genus for the taxon is *Candidatus* Decenella .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Decenella nivomilenta sp. nov.

Candidatus Decenella nivomilenta (NL. fem. n. *nivomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8366 sp002722095*. The type genome for the species is the GenBank assembly GCA_002722095.1. The GC content of the type genome is 55.83 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Decenella serotitrix sp. nov.

Candidatus Decenella serotitrix (NL. fem. n. *serotitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8366 sp002718015*. The type genome for the species is the GenBank assembly GCA_002718015.1. The GC content of the type genome is 45.14 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Decenida bigarigena sp. nov.

Candidatus Decenida bigarigena (NL. fem. n. *bigarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRHU01 sp009781535*. The type genome for the species is the GenBank assembly GCA_009781535.1. The GC content of the type genome is 52.61 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Decenida gen. nov.

Candidatus Decenida (NL. fem. n. *Decenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRHU01*. The type species for the genus is *Candidatus* Decenida bigarigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumanaceae.

Description of *Candidatus* Decenida filifedo sp. nov.

Candidatus Decenida filifedo (NL. fem. n. *filifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRHU01 sp009783085*. The type genome for the species is the GenBank assembly GCA_009783085.1. The GC content of the type genome is 49.85 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Decenosa exinditrix sp. nov.

Candidatus Decenosa exinditrix (NL. fem. n. *exinditrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8346 sp003501365*. The type genome for the species is the GenBank assembly GCA_003501365.1. The GC content of the type genome is 42.74 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Decenosa gen. nov.

Candidatus Decenosa (NL. fem. n. *Decenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8346*. The type species for the genus is *Candidatus* Decenosa exinditrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decenosaceae.

Description of *Candidatus* Decenosaceae fam. nov.

Candidatus Decenosaceae (NL. fem. n. *Decenosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8346.* The type genus for the taxon is *Candidatus* Decenosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decenosales.

Description of *Candidatus* Decenosales ord. nov.

Candidatus Decenosales (NL. fem. n. *Decenosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8346.* The type genus for the taxon is *Candidatus* Decenosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4882*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Lacinanae.

Description of *Candidatus* Decenosa salubatica sp. nov.

Candidatus Decenosa salubatica (NL. fem. n. *salubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8346 sp003501335*. The type genome for the species is the GenBank assembly GCA_003501335.1. The GC content of the type genome is 41.87 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Decenula modifastra sp. nov.

Candidatus Decenula modifastra (NL. fem. n. *modifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-564 sp003139255*. The type genome for the species is the GenBank assembly GCA_003160015.1. The GC content of the type genome is 65.61 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Decenula gen. nov.

Candidatus Decenula (NL. fem. n. *Decenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-564*. The type species for the genus is *Candidatus* Decenula modifastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegosaceae.

Description of *Candidatus* Decinana dibucitura sp. nov.

Candidatus Decinana dibucitura (NL. fem. n. *dibucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Phil1 sp004558525*. The type genome for the species is the GenBank assembly GCA_004558525.1. The GC content of the type genome is 51.69 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Decinana gen. nov.

Candidatus Decinana (NL. fem. n. *Decinana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Phil1*. The type species for the genus is *Candidatus* Decinana dibucitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Decinana ludibousia sp. nov.

Candidatus Decinana ludibousia (NL. fem. n. *ludibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Phil1 sp001940855*. The type genome for the species is the GenBank assembly GCA_004555375.1. The GC content of the type genome is 53.35 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Decinana prospago sp. nov.

Candidatus Decinana prospago (NL. fem. n. *prospago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Phil1 sp002069725*. The type genome for the species is the GenBank assembly GCA_002069725.1. The GC content of the type genome is 62.08 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Decinaria demulastra sp. nov.

Candidatus Decinaria demulastra (NL. fem. n. *demulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6244 sp002771745*. The type genome for the species is the GenBank assembly GCA_002771745.1. The GC content of the type genome is 41.27 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Decinaria gen. nov.

Candidatus Decinaria (NL. fem. n. *Decinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6244*. The type species for the genus is *Candidatus* Decinaria demulastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Decinaria intematio sp. nov.

Candidatus Decinaria intematio (NL. fem. n. *intematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6244 sp002840975*. The type genome for the species is the GenBank assembly GCA_002840975.1. The GC content of the type genome is 41.53 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Decinaria pedepax sp. nov.

Candidatus Decinaria pedepax (NL. fem. n. *pedepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6244 sp002440885*. The type genome for the species is the GenBank assembly GCA_002440885.1. The GC content of the type genome is 42.9 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Decinaria tomogugo sp. nov.

Candidatus Decinaria tomogugo (NL. fem. n. *tomogugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6244 sp001769215*. The type genome for the species is the GenBank assembly GCA_001769215.1. The GC content of the type genome is 41.19 % and the genome length is 4.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Decinella deniximonia sp. nov.

Candidatus Decinella deniximonia (NL. fem. n. *deniximonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILUG01 sp903853385*. The type genome for the species is the GenBank assembly GCA_903832185.1. The GC content of the type genome is 55.76 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Decinella gen. nov.

Candidatus Decinella (NL. fem. n. *Decinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILUG01*. The type species for the genus is *Candidatus* Decinella deniximonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decinella genocitia sp. nov.

Candidatus Decinella genocitia (NL. fem. n. *genocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILUG01 sp903837345*. The type genome for the species is the GenBank assembly GCA_903886995.1. The GC content of the type genome is 56.18 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Decinella inmemitoga sp. nov.

Candidatus Decinella inmemitoga (NL. fem. n. *inmemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILUG01 sp903926285*. The type genome for the species is the GenBank assembly GCA_903926285.1. The GC content of the type genome is 52.32 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Decinella nocenitura sp. nov.

Candidatus Decinella nocenitura (NL. fem. n. *nocenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAILUG01 sp903887045*. The type genome for the species is the GenBank assembly GCA_903887045.1. The GC content of the type genome is 58.09 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Decinella nugivivita sp. nov.

Candidatus Decinella nugivivita (NL. fem. n. *nugivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILUG01 sp903844415*. The type genome for the species is the GenBank assembly GCA_903844415.1. The GC content of the type genome is 46.84 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Decinia vilitessa sp. nov.

Candidatus Decinia vilitessa (NL. fem. n. *vilitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTRM01 sp012965975*. The type genome for the species is the GenBank assembly GCA_012965975.1. The GC content of the type genome is 53.72 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Decinia gen. nov.

Candidatus Decinia (NL. fem. n. *Decinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTRM01*. The type species for the genus is *Candidatus* Decinia vilitessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTRM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deciniaceae.

Description of *Candidatus* Deciniaceae fam. nov.

Candidatus Deciniaceae (NL. fem. n. *Deciniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTRM01.* The type genus for the taxon is *Candidatus* Decinia .

According to the original version of GTDB R06-RS202, this family belongs to the order

DTRM01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deciniales.

Description of *Candidatus* Deciniales ord. nov.

Candidatus Deciniales (NL. fem. n. *Deciniales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTRM01.* The type genus for the taxon is *Candidatus* Decinia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Decinida infunicella sp. nov.

Candidatus Decinida infunicella (NL. fem. n. *infunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2689605 sp013214245*. The type genome for the species is the GenBank assembly GCA_013214245.1. The GC content of the type genome is 39.1 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Decinida gen. nov.

Candidatus Decinida (NL. fem. n. *Decinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2689605*. The type species for the genus is *Candidatus* Decinida infunicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decinida lucififica sp. nov.

Candidatus Decinida lucififica (NL. fem. n. *lucififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2689605 sp002689605*. The type genome for the species is the GenBank assembly GCA_002170445.2. The GC content of the type genome is 53.63 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Decinosa lucubicula sp. nov.

Candidatus Decinosa lucubicula (NL. fem. n. *lucubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-38-13 sp000992395*. The type genome for the species is the GenBank assembly GCA_000992395.1. The GC content of the type genome is 38.2 % and the genome length is 1.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Decinosa gen. nov.

Candidatus Decinosa (NL. fem. n. *Decinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-38-13*. The type species for the genus is *Candidatus* Decinosa lucubicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-38-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decinosaceae.

Description of *Candidatus* Decinosaceae fam. nov.

Candidatus Decinosaceae (NL. fem. n. *Decinosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-38-13.* The type genus for the taxon is *Candidatus* Decinosa .

According to GTDB R06-RS202, this family belongs to the order *Buchananbacterales*.

Description of *Candidatus* Decinula procrifica sp. nov.

Candidatus Decinula procrifica (NL. fem. n. *procrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGYV01 sp002839855*. The type genome for the species is the GenBank assembly GCA_002839855.1. The GC content of the type genome is 42.2 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Decinula gen. nov.

Candidatus Decinula (NL. fem. n. *Decinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGYV01*. The type species for the genus is *Candidatus* Decinula procrifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PGYV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decinulaceae.

Description of *Candidatus* Decinulaceae fam. nov.

Candidatus Decinulaceae (NL. fem. n. *Decinulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PGYV01.* The type genus for the taxon is *Candidatus* Decinula .

According to the original version of GTDB R06-RS202, this family belongs to the order *PGYV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decinulales.

Description of *Candidatus* Decinulales ord. nov.

Candidatus Decinulales (NL. fem. n. *Decinulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PGYV01.* The type genus for the taxon is *Candidatus* Decinula .

According to the original version of GTDB R06-RS202, this family belongs to the class *PGYV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Decinulae.

Description of *Candidatus* Decinulae class. nov.

Candidatus Decinulae (NL. fem. n. *c__Decinulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PGYV01.* The type genus for the taxon is *Candidatus* Decinula .

According to GTDB R06-RS202, this class belongs to the phylum *Goldbacteria*.

Description of *Candidatus* Decitana monimedo sp. nov.

Candidatus Decitana monimedo (NL. fem. n. *monimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WM-3-3 sp002928495*. The type genome for the species is the GenBank assembly GCA_002928495.1. The GC content of the type genome is 49.39 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Decitana gen. nov.

Candidatus Decitana (NL. fem. n. *Decitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WM-3-3*. The type species for the genus is *Candidatus* Decitana monimedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decitana refacitas sp. nov.

Candidatus Decitana refacitas (NL. fem. n. *refacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WM-3-3 sp002928995*. The type genome for the species is the GenBank assembly GCA_002928915.1. The GC content of the type genome is 48.79 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Decitaria fefelitio sp. nov.

Candidatus Decitaria fefelitio (NL. fem. n. *fefelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7888 sp002500505*. The type genome for the species is the GenBank assembly GCA_002500505.1. The GC content of the type genome is 51.71 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Decitaria gen. nov.

Candidatus Decitaria (NL. fem. n. *Decitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7888*. The type species for the genus is *Candidatus* Decitaria fefelitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacellaceae.

Description of *Candidatus* Decitella nosocessa sp. nov.

Candidatus Decitella nosocessa (NL. fem. n. *nosocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Kazan-3B-28 sp001771185*. The type genome for the species is the GenBank assembly GCA_001771215.1. The GC content of the type genome is 45.58 % and the genome length is 0.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Decitella gen. nov.

Candidatus Decitella (NL. fem. n. *Decitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Kazan-3B-28*. The type species for the genus is *Candidatus* Decitella nosocessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Kazan-3B-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decitellaceae.

Description of *Candidatus* Decitellaceae fam. nov.

Candidatus Decitellaceae (NL. fem. n. *Decitellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Kazan-3B-28.* The type genus for the taxon is *Candidatus* Decitella .

According to the original version of GTDB R06-RS202, this family belongs to the order *Kazan-3B-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decitellales.

Description of *Candidatus* Decitellales ord. nov.

Candidatus Decitellales (NL. fem. n. *Decitellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Kazan-3B-28.* The type genus for the taxon is *Candidatus* Decitella .

According to the original version of GTDB R06-RS202, this family belongs to the class *Kazan-3B-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Decitellae.

Description of *Candidatus* Decitellae class. nov.

Candidatus Decitellae (NL. fem. n. *c__Decitellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Kazan-3B-28.* The type genus for the taxon is *Candidatus* Decitella .

According to GTDB R06-RS202, this class belongs to the phylum *Patescibacteria*.

Description of *Candidatus* Decitella teleficula sp. nov.

Candidatus Decitella teleficula (NL. fem. n. *teleficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Kazan-3B-28 sp001029795*. The type genome for the species is the GenBank assembly GCA_001004375.1. The GC content of the type genome is 51.7 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Decitia abveribra sp. nov.

Candidatus Decitia abveribra (NL. fem. n. *abveribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-003244245 sp003244055*. The type genome for the species is the GenBank assembly GCA_003244055.1. The GC content of the type genome is 67.38 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Decitia gen. nov.

Candidatus Decitia (NL. fem. n. *Decitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-003244245*. The type species for the genus is *Candidatus* Decitia abveribra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decitia delecitudo sp. nov.

Candidatus Decitia delecitudo (NL. fem. n. *delecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-003244245 sp003244245*. The type genome for the species is the GenBank assembly GCA_003244245.1. The GC content of the type genome is 67.5 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Decitida octacentia sp. nov.

Candidatus Decitida octacentia (NL. fem. n. *octacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AB1-6 sp001730065*. The type genome for the species is the GenBank assembly GCA_001730065.1. The GC content of the type genome is 21.61 % and the genome length is 0.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ovicells".

Description of *Candidatus* Decitida gen. nov.

Candidatus Decitida (NL. fem. n. *Decitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AB1-6*. The type species for the genus is *Candidatus* Decitida octacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB1-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decitidaceae.

Description of *Candidatus* Decitidaceae fam. nov.

Candidatus Decitidaceae (NL. fem. n. *Decitidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AB1-6.* The type genus for the taxon is *Candidatus* Decitida .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales_B*.

Description of *Candidatus* Decitosa nutamax sp. nov.

Candidatus Decitosa nutamax (NL. fem. n. *nutamax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J103 sp003694875*. The type genome for the species is the GenBank assembly GCA_003694875.1. The GC content of the type genome is 72.3 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Decitosa gen. nov.

Candidatus Decitosa (NL. fem. n. *Decitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J103*. The type species for the genus is *Candidatus* Decitosa nutamax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J103*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decitosaceae.

Description of *Candidatus* Decitosaceae fam. nov.

Candidatus Decitosaceae (NL. fem. n. *Decitosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J103.* The type genus for the taxon is *Candidatus* Decitosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *J103*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decitosales.

Description of *Candidatus* Decitosales ord. nov.

Candidatus Decitosales (NL. fem. n. *Decitosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J103*. The type genus for the taxon is *Candidatus* Decitosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *J058*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Siticiae.

Description of *Candidatus* Decitula fetifitoga sp. nov.

Candidatus Decitula fetifitoga (NL. fem. n. *fetifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900066755 sp900066755*. The type genome for the species is the GenBank assembly GCA_900066755.1. The GC content of the type genome is 48.78 % and the genome length is 5.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Decitula gen. nov.

Candidatus Decitula (NL. fem. n. *Decitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-900066755*. The type species for the genus is *Candidatus* Decitula fetifitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decitula turilimonia sp. nov.

Candidatus Decitula turilimonia (NL. fem. n. *turilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900066755 sp902363085*. The type genome for the species is the GenBank assembly RS_GCF_902363085.1. The GC content of the type genome is 48.25 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Decomana domigilega sp. nov.

Candidatus Decomana domigilega (NL. fem. n. *domigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA854 sp002364485*. The type genome for the species is the GenBank assembly GCA_002683275.1. The GC content of the type genome is 62.7 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Decomana gen. nov.

Candidatus Decomana (NL. fem. n. *Decomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA854*. The type species for the genus is *Candidatus* Decomana domigilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Decomana remedugo sp. nov.

Candidatus Decomana remedugo (NL. fem. n. *remedugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA854 sp002295885*. The type genome for the species is the GenBank assembly GCA_002480205.1. The GC content of the type genome is 65.12 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Decomana tomogibra sp. nov.

Candidatus Decomana tomogibra (NL. fem. n. *tomogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA854 sp002591705*. The type genome for the species is the GenBank assembly GCA_002591705.1. The GC content of the type genome is 59.62 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Decomaria anancicula sp. nov.

Candidatus Decomaria anancicula (NL. fem. n. *anancicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8108 sp002320775*. The type genome for the species is the GenBank assembly GCA_002320775.1. The GC content of the type genome is 59.84 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Decomaria gen. nov.

Candidatus Decomaria (NL. fem. n. *Decomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8108*. The type species for the genus is *Candidatus* Decomaria anancicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8108*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decomariaceae.

Description of *Candidatus* Decomariaceae fam. nov.

Candidatus Decomariaceae (NL. fem. n. *Decomariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8108.* The type genus for the taxon is *Candidatus* Decomaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8108*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decomariales.

Description of *Candidatus* Decomariales ord. nov.

Candidatus Decomariales (NL. fem. n. *Decomariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8108.* The type genus for the taxon is *Candidatus* Decomaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8108*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Decomariae.

Description of *Candidatus* Decomariae class. nov.

Candidatus Decomariae (NL. fem. n. *c__Decomariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8108.* The type genus for the taxon is *Candidatus* Decomaria .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Decomaria cimitentia sp. nov.

Candidatus Decomaria cimitentia (NL. fem. n. *cimitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8108 sp002695115*. The type genome for the species is the GenBank assembly GCA_002695115.1. The GC content of the type genome is 61.47 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Decomaria exentifica sp. nov.

Candidatus Decomaria exentifica (NL. fem. n. *exentifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8108 sp003509045*. The type genome for the species is the GenBank assembly GCA_003509045.1. The GC content of the type genome is 60.12 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Decomaria lorarastra sp. nov.

Candidatus Decomaria lorarastra (NL. fem. n. *lorarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8108 sp002708465*. The type genome for the species is the GenBank assembly GCA_002708465.1. The GC content of the type genome is 60.16 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Decomella dilacisca sp. nov.

Candidatus Decomella dilacisca (NL. fem. n. *dilacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG40 sp003242475*. The type genome for the species is the GenBank assembly GCA_003242475.1. The GC content of the type genome is 69.08 %

and the genome length is 2.73 Mbp.

Description of *Candidatus* Decomella gen. nov.

Candidatus Decomella (NL. fem. n. *Decomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG40*. The type species for the genus is *Candidatus* Decomella dilacisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decomida decacatio sp. nov.

Candidatus Decomida decacatio (NL. fem. n. *decacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AZRK01 sp002895485*. The type genome for the species is the GenBank assembly RS_GCF_002895485.1. The GC content of the type genome is 30.57 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Decomida gen. nov.

Candidatus Decomida (NL. fem. n. *Decomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AZRK01*. The type species for the genus is *Candidatus* Decomida decacatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decomosa ceromitoga sp. nov.

Candidatus Decomosa ceromitoga (NL. fem. n. *ceromitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU019 sp002402575*. The type genome for the species is the GenBank assembly GCA_002402575.1. The GC content of the type genome is 50.96 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Decomosa gen. nov.

Candidatus Decomosa (NL. fem. n. *Decomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU019*. The type species for the genus is *Candidatus* Decomosa ceromitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decomosa lenimitia sp. nov.

Candidatus Decomosa lenimitia (NL. fem. n. *lenimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU019 sp002398825*. The type genome for the species is the GenBank assembly GCA_002398825.1. The GC content of the type genome is 50.21 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Decomosa recocigena sp. nov.

Candidatus Decomosa recocigena (NL. fem. n. *recocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU019 sp001512785*. The type genome for the species is the GenBank assembly GCA_001512785.1. The GC content of the type genome is 50.54 % and the genome length is 2.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Decomula acistentia sp. nov.

Candidatus Decomula acistentia (NL. fem. n. *acistentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6911 sp002451015*. The type genome for the species is the GenBank assembly GCA_002451015.1. The GC content of the type genome is 51.61 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Decomula gen. nov.

Candidatus Decomula (NL. fem. n. *Decomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6911*. The type species for the genus is *Candidatus* Decomula acistentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6911*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decomulaceae.

Description of *Candidatus* Decomulaceae fam. nov.

Candidatus Decomulaceae (NL. fem. n. *Decomulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6911.* The type genus for the taxon is *Candidatus* Decomula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6911*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decomulales.

Description of *Candidatus* Decomulales ord. nov.

Candidatus Decomulales (NL. fem. n. *Decomulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6911.* The type genus for the taxon is *Candidatus* Decomula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6911*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Decomulae.

Description of *Candidatus* Decomulae class. nov.

Candidatus Decomulae (NL. fem. n. *c__Decomulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6911.* The type genus for the taxon is *Candidatus* Decomula .

According to GTDB R06-RS202, this class belongs to the phylum *Acidobacteriota*.

Description of *Candidatus* Decucana vepalitrix sp. nov.

Candidatus Decucana vepalitrix (NL. fem. n. *vepalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBAX01 sp005240095*. The type genome for the species is the GenBank assembly GCA_005240095.1. The GC content of the type genome is 63.56 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Decucana gen. nov.

Candidatus Decucana (NL. fem. n. *Decucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBAX01*. The type species for the genus is *Candidatus* Decucana vepalitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomariaceae.

Description of *Candidatus* Decucaria tirocitica sp. nov.

Candidatus Decucaria tirocitica (NL. fem. n. *tirocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEGR01 sp902826935*. The type genome for the species is the GenBank assembly GCA_902827075.1. The GC content of the type genome is 68.93 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Decucaria gen. nov.

Candidatus Decucaria (NL. fem. n. *Decucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEGR01*. The type species for the genus is *Candidatus* Decucaria tirocitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decucella adcesentia sp. nov.

Candidatus Decucella adcesentia (NL. fem. n. *adcesentia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MSPOR6 sp003635185*. The type genome for the species is the GenBank assembly GCA_003635185.1. The GC content of the type genome is 43.02 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Decucella gen. nov.

Candidatus Decucella (NL. fem. n. *Decucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MSPOR6*. The type species for the genus is *Candidatus* Decucella adcesentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WGA-3G*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funebosaceae.

Description of *Candidatus* Decucella immadax sp. nov.

Candidatus Decucella immadax (NL. fem. n. *immadax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MSPOR6 sp012270795*. The type genome for the species is the GenBank assembly GCA_012270795.1. The GC content of the type genome is 41.53 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Decucella impirisca sp. nov.

Candidatus Decucella impirisca (NL. fem. n. *impirisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MSPOR6 sp012267415*. The type genome for the species is the GenBank assembly GCA_012267415.1. The GC content of the type genome is 41.87 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Decucella lanifimonas sp. nov.

Candidatus Decucella lanifimonas (NL. fem. n. *lanifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MSPOR6 sp003635315*. The type genome for the species is the GenBank assembly GCA_003635315.1. The GC content of the type genome is 38.16 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Decucella sonivicella sp. nov.

Candidatus Decucella sonivicella (NL. fem. n. *sonivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MSPOR6 sp009839975*. The type genome for the species is the GenBank assembly GCA_009839975.1. The GC content of the type genome is 41.97 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Decucella tirunilenta sp. nov.

Candidatus Decucella tirunilenta (NL. fem. n. *tirunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MSPOR6 sp009842375*. The type genome for the species is the GenBank assembly GCA_009842375.1. The GC content of the type genome is 42.78 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Decucia advicigena sp. nov.

Candidatus Decucia advicigena (NL. fem. n. *advicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRYI01 sp011380295*. The type genome for the species is the GenBank assembly GCA_011380295.1. The GC content of the type genome is 47.41 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Decucia gen. nov.

Candidatus Decucia (NL. fem. n. *Decucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRYI01*. The type species for the genus is *Candidatus* Decucia

advicigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRYI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decuciaceae.

Description of *Candidatus* Decuciaceae fam. nov.

Candidatus Decuciaceae (NL. fem. n. *Decuciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRYI01.* The type genus for the taxon is *Candidatus* Decucia .

According to the original version of GTDB R06-RS202, this family belongs to the order *HRBIN17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Baropanales.

Description of *Candidatus* Decucida cululifica sp. nov.

Candidatus Decucida cululifica (NL. fem. n. *cululifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILUR01 sp903837445*. The type genome for the species is the GenBank assembly GCA_903837445.1. The GC content of the type genome is 39.08 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Decucida gen. nov.

Candidatus Decucida (NL. fem. n. *Decucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILUR01*. The type species for the genus is *Candidatus* Decucida cululifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAILUR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decucidaceae.

Description of *Candidatus* Decucidaceae fam. nov.

Candidatus Decucidaceae (NL. fem. n. *Decucidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAILUR01*. The type genus for the taxon is *Candidatus* Decucida .

According to the original version of GTDB R06-RS202, this family belongs to the order *PGYV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decinulales.

Description of *Candidatus* Decucosa semigatio sp. nov.

Candidatus Decucosa semigatio (NL. fem. n. *semigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG25 sp003221005*. The type genome for the species is the GenBank assembly GCA_003221975.1. The GC content of the type genome is 69.0 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Decucosa gen. nov.

Candidatus Decucosa (NL. fem. n. *Decucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG25*. The type species for the genus is *Candidatus* Decucosa semigatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Decucula pinififorma sp. nov.

Candidatus Decucula pinififorma (NL. fem. n. *pinififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-3 sp005888095*. The type genome for the species is the GenBank assembly GCA_005888095.1. The GC content of the type genome is 71.09 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Decucula gen. nov.

Candidatus Decucula (NL. fem. n. *Decucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DP-3*. The type species for the genus is *Candidatus* Decucula pinififorma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DP-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Betacariaceae.

Description of *Candidatus* Decucula progriforma sp. nov.

Candidatus Decucula progriforma (NL. fem. n. *progriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-3 sp005879585*. The type genome for the species is the GenBank assembly GCA_005879585.1. The GC content of the type genome is 70.46 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Decucula semipentia sp. nov.

Candidatus Decucula semipentia (NL. fem. n. *semipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DP-3 sp005879205*. The type genome for the species is the GenBank assembly GCA_005879205.1. The GC content of the type genome is 71.13 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Deculana pecunitoga sp. nov.

Candidatus Deculana pecunitoga (NL. fem. n. *pecunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2710765 sp002710765*. The type genome for the species is the GenBank assembly GCA_002690595.1. The GC content of the type genome is 28.05 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Deculana gen. nov.

Candidatus Deculana (NL. fem. n. *Deculana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *GCA-2710765*. The type species for the genus is *Candidatus* Deculana pecunitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Decularia calipilenta sp. nov.

Candidatus Decularia calipilenta (NL. fem. n. *calipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-104 sp007117885*. The type genome for the species is the GenBank assembly GCA_007117885.1. The GC content of the type genome is 39.96 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Decularia gen. nov.

Candidatus Decularia (NL. fem. n. *Decularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBR16-104*. The type species for the genus is *Candidatus* Decularia calipilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decularia cepuribra sp. nov.

Candidatus Decularia cepuribra (NL. fem. n. *cepuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-104 sp007116245*. The type genome for the species is the GenBank assembly GCA_007124145.1. The GC content of the type genome is 36.64 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Deculia vitigimonia sp. nov.

Candidatus Deculia vitigimonia (NL. fem. n. *vitigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SFEB01 sp004558105*. The type genome for the species is the GenBank assembly GCA_004558105.1. The GC content of the type genome is 45.06 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Deculia gen. nov.

Candidatus Deculia (NL. fem. n. *Deculia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFEB01*. The type species for the genus is *Candidatus* Deculia vitigimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-314*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurariaceae.

Description of *Candidatus* Deculida ridibax sp. nov.

Candidatus Deculida ridibax (NL. fem. n. *ridibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLJO01 sp009701715*. The type genome for the species is the GenBank assembly GCA_009705765.1. The GC content of the type genome is 65.89 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Deculida gen. nov.

Candidatus Deculida (NL. fem. n. *Deculida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLJO01*. The type species for the genus is *Candidatus* Deculida ridibax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Deculosa macilitrix sp. nov.

Candidatus Deculosa macilitrix (NL. fem. n. *macilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2638 sp002359735*. The type genome for the species is the

GenBank assembly GCA_002299145.1. The GC content of the type genome is 47.57 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Deculosa gen. nov.

Candidatus Deculosa (NL. fem. n. *Deculosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2638*. The type species for the genus is *Candidatus* Deculosa macilitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Deculula bicipax sp. nov.

Candidatus Deculula bicipax (NL. fem. n. *bicipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3125 sp002726315*. The type genome for the species is the GenBank assembly GCA_003542135.1. The GC content of the type genome is 58.99 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Deculula gen. nov.

Candidatus Deculula (NL. fem. n. *Deculula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3125*. The type species for the genus is *Candidatus* Deculula bicipax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MedAcidi-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamidaceae.

Description of *Candidatus* Deculula capucibula sp. nov.

Candidatus Deculula capucibula (NL. fem. n. *capucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3125 sp002687745*. The type genome for the species is the GenBank assembly GCA_002420625.1. The GC content of the type genome is 65.48 %

and the genome length is 1.99 Mbp.

Description of *Candidatus* Deculula expasago sp. nov.

Candidatus Deculula expasago (NL. fem. n. *expasago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3125 sp014381745*. The type genome for the species is the GenBank assembly GCA_014381745.1. The GC content of the type genome is 64.21 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Deculula penecilega sp. nov.

Candidatus Deculula penecilega (NL. fem. n. *penecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3125 sp002365325*. The type genome for the species is the GenBank assembly GCA_002365325.1. The GC content of the type genome is 64.62 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Deculula viburugo sp. nov.

Candidatus Deculula viburugo (NL. fem. n. *viburugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3125 sp002501135*. The type genome for the species is the GenBank assembly GCA_002731435.1. The GC content of the type genome is 64.46 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Decunana fetutivita sp. nov.

Candidatus Decunana fetutivita (NL. fem. n. *fetutivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS775 sp900545325*. The type genome for the species is the GenBank assembly GCA_900545325.1. The GC content of the type genome is 53.27 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Decunana gen. nov.

Candidatus Decunana (NL. fem. n. *Decunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS775*. The type species for the genus is *Candidatus* Decunana fetutivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decunana homilicella sp. nov.

Candidatus Decunana homilicella (NL. fem. n. *homilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS775 sp003343995*. The type genome for the species is the GenBank assembly GCA_003343995.1. The GC content of the type genome is 51.86 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Decunella abrepibula sp. nov.

Candidatus Decunella abrepibula (NL. fem. n. *abrepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNYO01 sp902578495*. The type genome for the species is the GenBank assembly GCA_902578495.1. The GC content of the type genome is 35.4 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Decunella gen. nov.

Candidatus Decunella (NL. fem. n. *Decunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACNYO01*. The type species for the genus is *Candidatus* Decunella abrepibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AG-339-G14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Seposariaceae.

Description of *Candidatus* Decunella daducifica sp. nov.

Candidatus Decunella daducifica (NL. fem. n. *daducifica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNYO01 sp902589965*. The type genome for the species is the GenBank assembly GCA_902566955.1. The GC content of the type genome is 35.25 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Decunella funamiforma sp. nov.

Candidatus Decunella funamiforma (NL. fem. n. *funamiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNYO01 sp902528485*. The type genome for the species is the GenBank assembly GCA_902604535.1. The GC content of the type genome is 34.98 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Decunella irradessa sp. nov.

Candidatus Decunella irradessa (NL. fem. n. *irradessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNYO01 sp902624765*. The type genome for the species is the GenBank assembly GCA_902624765.1. The GC content of the type genome is 35.04 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Decunella momoredo sp. nov.

Candidatus Decunella momoredo (NL. fem. n. *momoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNYO01 sp902594855*. The type genome for the species is the GenBank assembly GCA_902525435.1. The GC content of the type genome is 35.3 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Decunella pomifitia sp. nov.

Candidatus Decunella pomifitia (NL. fem. n. *pomifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNYO01 sp902570035*. The type genome for the species is the GenBank assembly GCA_902594105.1. The GC content of the type genome is 35.42 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Decunella resalisca sp. nov.

Candidatus Decunella resalisca (NL. fem. n. *resalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNYO01 sp902526045*. The type genome for the species is the GenBank assembly GCA_902526045.1. The GC content of the type genome is 34.93 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Decunella videlibula sp. nov.

Candidatus Decunella videlibula (NL. fem. n. *videlibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNYO01 sp902596665*. The type genome for the species is the GenBank assembly GCA_902526465.1. The GC content of the type genome is 35.51 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Decunia dilibitio sp. nov.

Candidatus Decunia dilibitio (NL. fem. n. *dilibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMH01 sp003149935*. The type genome for the species is the GenBank assembly GCA_003149935.1. The GC content of the type genome is 59.12 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Decunia gen. nov.

Candidatus Decunia (NL. fem. n. *Decunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAMH01*. The type species for the genus is *Candidatus* Decunia dilibitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family

QAMH01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decuniaceae.

Description of *Candidatus* Decuniaceae fam. nov.

Candidatus Decuniaceae (NL. fem. n. *Decuniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QAMH01*. The type genus for the taxon is *Candidatus* Decunia .

According to GTDB R06-RS202, this family belongs to the order *Coriobacteriales*.

Description of *Candidatus* Decunia encolitudo sp. nov.

Candidatus Decunia encolitudo (NL. fem. n. *encolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMH01 sp900756605*. The type genome for the species is the GenBank assembly RS_GCF_900756605.1. The GC content of the type genome is 58.68 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Decunia lacinessa sp. nov.

Candidatus Decunia lacinessa (NL. fem. n. *lacinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMH01 sp900556425*. The type genome for the species is the GenBank assembly GCA_900556425.1. The GC content of the type genome is 59.11 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Decunia levifetta sp. nov.

Candidatus Decunia levifetta (NL. fem. n. *levifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMH01 sp902783925*. The type genome for the species is the GenBank assembly GCA_902783925.1. The GC content of the type genome is 55.65 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Decunia masocitas sp. nov.

Candidatus Decunia masocitas (NL. fem. n. *masocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMH01 sp900544245*. The type genome for the species is the GenBank assembly RS_GCF_900758595.1. The GC content of the type genome is 60.71 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Decunida adalgitas sp. nov.

Candidatus Decunida adalgitas (NL. fem. n. *adalgitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1364 sp003154555*. The type genome for the species is the GenBank assembly GCA_003154555.1. The GC content of the type genome is 63.19 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Decunida gen. nov.

Candidatus Decunida (NL. fem. n. *Decunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1364*. The type species for the genus is *Candidatus* Decunida adalgitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1364*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decunidaceae.

Description of *Candidatus* Decunidaceae fam. nov.

Candidatus Decunidaceae (NL. fem. n. *Decunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-1364.* The type genus for the taxon is *Candidatus* Decunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Volucanales.

Description of *Candidatus* Decunida bonifitrix sp. nov.

Candidatus Decunida bonifitrix (NL. fem. n. *bonifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1364 sp003141795*. The type genome for the species is the GenBank assembly GCA_003141795.1. The GC content of the type genome is 62.63 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Decunida velifibula sp. nov.

Candidatus Decunida velifibula (NL. fem. n. *velifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1364 sp003170115*. The type genome for the species is the GenBank assembly GCA_003170115.1. The GC content of the type genome is 61.92 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Decunosa abmatitica sp. nov.

Candidatus Decunosa abmatitica (NL. fem. n. *abmatitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *STGJ01 sp010435965*. The type genome for the species is the GenBank assembly RS_GCF_010435965.1. The GC content of the type genome is 66.2 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Decunosa gen. nov.

Candidatus Decunosa (NL. fem. n. *Decunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *STGJ01*. The type species for the genus is *Candidatus* Decunosa abmatitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decunosa denomicula sp. nov.

Candidatus Decunosa denomicula (NL. fem. n. *denomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *STGJ01 sp003856275*. The type genome for the species is the GenBank assembly RS_GCF_009831765.1. The GC content of the type genome is 59.35 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Decunosa vehemitia sp. nov.

Candidatus Decunosa vehemitia (NL. fem. n. *vehemitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *STGJ01 sp004919095*. The type genome for the species is the GenBank assembly RS_GCF_004919095.1. The GC content of the type genome is 66.29 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Decunula indivax sp. nov.

Candidatus Decunula indivax (NL. fem. n. *indivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNDG01 sp003645915*. The type genome for the species is the GenBank assembly GCA_003645915.1. The GC content of the type genome is 36.88 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Decunula gen. nov.

Candidatus Decunula (NL. fem. n. *Decunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNDG01*. The type species for the genus is *Candidatus* Decunula indivax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QNDG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decunulaceae.

Description of *Candidatus* Decunulaceae fam. nov.

Candidatus Decunulaceae (NL. fem. n. *Decunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNDG01.* The type genus for the taxon is *Candidatus* Decunula .

According to the original version of GTDB R06-RS202, this family belongs to the order *QNDG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decunulales.

Description of *Candidatus* Decunulales ord. nov.

Candidatus Decunulales (NL. fem. n. *Decunulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNDG01.* The type genus for the taxon is *Candidatus* Decunula .

According to the original version of GTDB R06-RS202, this family belongs to the class *QNDG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Decunulae.

Description of *Candidatus* Decunulae class. nov.

Candidatus Decunulae (NL. fem. n. *c__Decunulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNDG01.* The type genus for the taxon is *Candidatus* Decunula .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *QNDG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Decunulota.

Description of *Candidatus* Decunulota phyl. nov.

Candidatus Decunulota (NL. fem. n. *Decunulota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNDG01.* The type genus for the taxon is *Candidatus* Decunula .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Decupana resupitia sp. nov.

Candidatus Decupana resupitia (NL. fem. n. *resupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5680 sp002420425*. The type genome for the species is the GenBank assembly GCA_002420425.1. The GC content of the type genome is 50.8 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Decupana gen. nov.

Candidatus Decupana (NL. fem. n. *Decupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5680*. The type species for the genus is *Candidatus* Decupana resupitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5680*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decupanaceae.

Description of *Candidatus* Decupanaceae fam. nov.

Candidatus Decupanaceae (NL. fem. n. *Decupanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5680.* The type genus for the taxon is *Candidatus* Decupana .

According to GTDB R06-RS202, this family belongs to the order *Arenicellales*.

Description of *Candidatus* Decuparia cenodimonas sp. nov.

Candidatus Decuparia cenodimonas (NL. fem. n. *cenodimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QBMD01 sp003249115*. The type genome for the species is the GenBank assembly GCA_003249115.1. The GC content of the type genome is 65.45 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Decuparia gen. nov.

Candidatus Decuparia (NL. fem. n. *Decuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QBMD01*. The type species for the genus is *Candidatus* Decuparia

cenodimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decuparia progretta sp. nov.

Candidatus Decuparia progretta (NL. fem. n. *progretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QBMD01 sp013203655*. The type genome for the species is the GenBank assembly GCA_013203655.1. The GC content of the type genome is 65.14 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Decuparia volubitia sp. nov.

Candidatus Decuparia volubitia (NL. fem. n. *volubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QBMD01 sp001885215*. The type genome for the species is the GenBank assembly RS_GCF_007828135.1. The GC content of the type genome is 63.92 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Decupella novilousia sp. nov.

Candidatus Decupella novilousia (NL. fem. n. *novilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J022 sp008363215*. The type genome for the species is the GenBank assembly GCA_011525725.1. The GC content of the type genome is 65.88 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Decupella gen. nov.

Candidatus Decupella (NL. fem. n. *Decupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J022*. The type species for the genus is *Candidatus* Decupella novilousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Decupella oblanessa sp. nov.

Candidatus Decupella oblanessa (NL. fem. n. *oblanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J022 sp003697045*. The type genome for the species is the GenBank assembly GCA_003697045.1. The GC content of the type genome is 62.34 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Decupia monacatica sp. nov.

Candidatus Decupia monacatica (NL. fem. n. *monacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-33-13 sp002782675*. The type genome for the species is the GenBank assembly GCA_001873345.1. The GC content of the type genome is 33.45 % and the genome length is 1.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Decupia gen. nov.

Candidatus Decupia (NL. fem. n. *Decupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-33-13*. The type species for the genus is *Candidatus* Decupia monacatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *34-128*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefosaceae.

Description of *Candidatus* Decupida allibastra sp. nov.

Candidatus Decupida allibastra (NL. fem. n. *allibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *ASTD01 sp011960625*. The type genome for the species is the GenBank assembly RS_GCF_011960625.1. The GC content of the type genome is 44.12 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Decupida gen. nov.

Candidatus Decupida (NL. fem. n. *Decupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ASTD01*. The type species for the genus is *Candidatus* Decupida allibastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Decupida arnacetta sp. nov.

Candidatus Decupida arnacetta (NL. fem. n. *arnacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASTD01 sp009830285*. The type genome for the species is the GenBank assembly RS_GCF_009830285.1. The GC content of the type genome is 44.44 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Decupida bisulitas sp. nov.

Candidatus Decupida bisulitas (NL. fem. n. *bisulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASTD01 sp009774295*. The type genome for the species is the GenBank assembly GCA_009774295.1. The GC content of the type genome is 47.95 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Decupida esculicella sp. nov.

Candidatus Decupida esculicella (NL. fem. n. *esculicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASTD01 sp000403455*. The type genome for the species is the GenBank assembly RS_GCF_000403455.2. The GC content of the type genome is 46.03 % and the genome length is 6.15 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Decuposa citivilega sp. nov.

Candidatus Decuposa citivilega (NL. fem. n. *citivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11426 sp003448375*. The type genome for the species is the GenBank assembly GCA_003448375.1. The GC content of the type genome is 48.71 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Decuposa gen. nov.

Candidatus Decuposa (NL. fem. n. *Decuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11426*. The type species for the genus is *Candidatus* Decuposa citivilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecellaceae.

Description of *Candidatus* Decuposa metabibula sp. nov.

Candidatus Decuposa metabibula (NL. fem. n. *metabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11426 sp002346225*. The type genome for the species is the GenBank assembly GCA_001438265.1. The GC content of the type genome is 47.35 % and the genome length is 2.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water; brackish water collected from the surface of the Baltic Sea".

Description of *Candidatus* Decupula decinitudo sp. nov.

Candidatus Decupula decinitudo (NL. fem. n. *decinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pan216 sp007748055*. The type genome for the species is the

GenBank assembly RS_GCF_007748055.1. The GC content of the type genome is 61.97 % and the genome length is 7.61 Mbp.

Description of *Candidatus* Decupula gen. nov.

Candidatus Decupula (NL. fem. n. *Decupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pan216*. The type species for the genus is *Candidatus* Decupula decinitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Pan216*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decupulaceae.

Description of *Candidatus* Decupulaceae fam. nov.

Candidatus Decupulaceae (NL. fem. n. *Decupulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Pan216.* The type genus for the taxon is *Candidatus* Decupula .

According to the original version of GTDB R06-RS202, this family belongs to the order *Pan216*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decupulales.

Description of *Candidatus* Decupulales ord. nov.

Candidatus Decupulales (NL. fem. n. *Decupulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Pan216.* The type genus for the taxon is *Candidatus* Decupula .

According to the GTDB R06-RS202, this order belongs to the class *Planctomycetes*.

Description of *Candidatus* Dedigana adsocugo sp. nov.

Candidatus Dedigana adsocugo (NL. fem. n. *adsocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP4073 sp902523675*. The type genome for the species is the GenBank assembly GCA_902523675.1. The GC content of the type genome is 28.96 %

and the genome length is 1.1 Mbp.

Description of *Candidatus* Dedigana gen. nov.

Candidatus Dedigana (NL. fem. n. *Dedigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SP4073*. The type species for the genus is *Candidatus* Dedigana adsocugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Dedigana catobibula sp. nov.

Candidatus Dedigana catobibula (NL. fem. n. *catobibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP4073 sp002717855*. The type genome for the species is the GenBank assembly GCA_002717855.1. The GC content of the type genome is 28.73 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Dedigana lacinitio sp. nov.

Candidatus Dedigana lacinitio (NL. fem. n. *lacinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP4073 sp902524895*. The type genome for the species is the GenBank assembly GCA_902524895.1. The GC content of the type genome is 28.93 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Dedigaria devecitica sp. nov.

Candidatus Dedigaria devecitica (NL. fem. n. *devecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBBT01 sp005239595*. The type genome for the species is the GenBank assembly GCA_005239595.1. The GC content of the type genome is 50.25 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Dedigaria gen. nov.

Candidatus Dedigaria (NL. fem. n. *Dedigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBBT01*. The type species for the genus is *Candidatus* Dedigaria devecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBBT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dedigariaceae.

Description of *Candidatus* Dedigariaceae fam. nov.

Candidatus Dedigariaceae (NL. fem. n. *Dedigariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBT01.* The type genus for the taxon is *Candidatus* Dedigaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBBL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ceraridales.

Description of *Candidatus* Dedigella ablepifica sp. nov.

Candidatus Dedigella ablepifica (NL. fem. n. *ablepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-64-32 sp001795235*. The type genome for the species is the GenBank assembly GCA_001795235.1. The GC content of the type genome is 65.56 % and the genome length is 1.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Dedigella gen. nov.

Candidatus Dedigella (NL. fem. n. *Dedigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-64-32*. The type species for the genus is *Candidatus* Dedigella ablepifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dedigellaceae.

Description of *Candidatus* Dedigellaceae fam. nov.

Candidatus Dedigellaceae (NL. fem. n. *Dedigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-64-32.* The type genus for the taxon is *Candidatus* Dedigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-28-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hecatosales.

Description of *Candidatus* Dedigida arvecitoga sp. nov.

Candidatus Dedigida arvecitoga (NL. fem. n. *arvecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFMI01 sp902761825*. The type genome for the species is the GenBank assembly GCA_902761825.1. The GC content of the type genome is 60.2 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Dedigida gen. nov.

Candidatus Dedigida (NL. fem. n. *Dedigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFMI01*. The type species for the genus is *Candidatus* Dedigida arvecitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Dedigida badititudo sp. nov.

Candidatus Dedigida badititudo (NL. fem. n. *badititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFMI01 sp004556155*. The type genome for the species is the GenBank assembly GCA_004553565.1. The GC content of the type genome is 58.7 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Dedigida bimotatica sp. nov.

Candidatus Dedigida bimotatica (NL. fem. n. *bimotatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFMI01 sp902764185*. The type genome for the species is the GenBank assembly GCA_902764185.1. The GC content of the type genome is 59.84 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Dedigida inexpago sp. nov.

Candidatus Dedigida inexpago (NL. fem. n. *inexpago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFMI01 sp902781945*. The type genome for the species is the GenBank assembly GCA_902781945.1. The GC content of the type genome is 59.74 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Dedigida inregitura sp. nov.

Candidatus Dedigida inregitura (NL. fem. n. *inregitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFMI01 sp902787835*. The type genome for the species is the GenBank assembly GCA_902787835.1. The GC content of the type genome is 61.56 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Dedigosa coninitica sp. nov.

Candidatus Dedigosa coninitica (NL. fem. n. *coninitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4729 sp002413865*. The type genome for the species is the GenBank assembly GCA_002427855.1. The GC content of the type genome is 52.7 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Dedigosa gen. nov.

Candidatus Dedigosa (NL. fem. n. *Dedigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4729*. The type species for the genus is *Candidatus* Dedigosa coninitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Dedigosa fetutatica sp. nov.

Candidatus Dedigosa fetutatica (NL. fem. n. *fetutatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4729 sp014378615*. The type genome for the species is the GenBank assembly GCA_014378615.1. The GC content of the type genome is 48.63 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Dedigosa inmutetta sp. nov.

Candidatus Dedigosa inmutetta (NL. fem. n. *inmutetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4729 sp014377525*. The type genome for the species is the GenBank assembly GCA_014377525.1. The GC content of the type genome is 47.17 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Dedigula decititura sp. nov.

Candidatus Dedigula decititura (NL. fem. n. *decititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC1-37-12b sp000993115*. The type genome for the species is the GenBank assembly GCA_000992155.1. The GC content of the type genome is 37.28 % and the genome length is 0.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Dedigula gen. nov.

Candidatus Dedigula (NL. fem. n. *Dedigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC1-37-12b*. The type species for the genus is *Candidatus* Dedigula decititura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Deefgea venunitas sp. nov.

Candidatus Deefgea venunitas (NL. fem. n. *venunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deefgea sp013284055*. The type genome for the species is the GenBank assembly RS_GCF_014042245.1. The GC content of the type genome is 48.15 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Defacana homunessa sp. nov.

Candidatus Defacana homunessa (NL. fem. n. *homunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKKV01 sp903828035*. The type genome for the species is the GenBank assembly GCA_903828035.1. The GC content of the type genome is 64.92 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Defacana gen. nov.

Candidatus Defacana (NL. fem. n. *Defacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKKV01*. The type species for the genus is *Candidatus* Defacana homunessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIKKV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defacanaceae.

Description of *Candidatus* Defacanaceae fam. nov.

Candidatus Defacanaceae (NL. fem. n. *Defacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIKKV01.* The type genus for the taxon is *Candidatus* Defacana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIKKV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defacanales.

Description of *Candidatus* Defacanales ord. nov.

Candidatus Defacanales (NL. fem. n. *Defacanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIKKV01.* The type genus for the taxon is *Candidatus* Defacana .

According to the GTDB R06-RS202, this order belongs to the class *Kiritimatiellae*.

Description of *Candidatus* Defacaria deculatio sp. nov.

Candidatus Defacaria deculatio (NL. fem. n. *deculatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2212 sp903919545*. The type genome for the species is the GenBank assembly GCA_903919545.1. The GC content of the type genome is 38.27 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Defacaria gen. nov.

Candidatus Defacaria (NL. fem. n. *Defacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2212*. The type species for the genus is *Candidatus* Defacaria deculatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defacaria divoratica sp. nov.

Candidatus Defacaria divoratica (NL. fem. n. *divoratica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2212 sp903847945*. The type genome for the species is the GenBank assembly GCA_903847945.1. The GC content of the type genome is 50.95 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Defacaria incenicula sp. nov.

Candidatus Defacaria incenicula (NL. fem. n. *incenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2212 sp013334325*. The type genome for the species is the GenBank assembly GCA_013334325.1. The GC content of the type genome is 38.57 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Defacaria munifitas sp. nov.

Candidatus Defacaria munifitas (NL. fem. n. *munifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2212 sp002402585*. The type genome for the species is the GenBank assembly GCA_002421625.1. The GC content of the type genome is 41.24 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Defacaria ossarastra sp. nov.

Candidatus Defacaria ossarastra (NL. fem. n. *ossarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2212 sp003543215*. The type genome for the species is the GenBank assembly GCA_003543215.1. The GC content of the type genome is 39.84 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Defacaria senipimonia sp. nov.

Candidatus Defacaria senipimonia (NL. fem. n. *senipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2212 sp009773735*. The type genome for the species is the GenBank assembly GCA_008080535.1. The GC content of the type genome is 38.6 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Defacella mavoritica sp. nov.

Candidatus Defacella mavoritica (NL. fem. n. *mavoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC2-FULL-47-12 sp001778285*. The type genome for the species is the GenBank assembly GCA_001778085.1. The GC content of the type genome is 46.8 % and the genome length is 0.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Defacella gen. nov.

Candidatus Defacella (NL. fem. n. *Defacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYC2-FULL-47-12*. The type species for the genus is *Candidatus* Defacella mavoritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-47-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defacellaceae.

Description of *Candidatus* Defacellaceae fam. nov.

Candidatus Defacellaceae (NL. fem. n. *Defacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYC2-FULL-47-12.* The type genus for the taxon is *Candidatus* Defacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Defacia xenopibra sp. nov.

Candidatus Defacia xenopibra (NL. fem. n. *xenopibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU056 sp001512985*. The type genome for the species is the GenBank assembly GCA_012521255.1. The GC content of the type genome is 30.0 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Defacia gen. nov.

Candidatus Defacia (NL. fem. n. *Defacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU056*. The type species for the genus is *Candidatus* Defacia xenopibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Defacida conigugo sp. nov.

Candidatus Defacida conigugo (NL. fem. n. *conigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CLD3 sp008501735*. The type genome for the species is the GenBank assembly GCA_008501735.1. The GC content of the type genome is 34.08 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Defacida gen. nov.

Candidatus Defacida (NL. fem. n. *Defacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CLD3*. The type species for the genus is *Candidatus* Defacida conigugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CLD3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defacidaceae.

Description of *Candidatus* Defacidaceae fam. nov.

Candidatus Defacidaceae (NL. fem. n. *Defacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CLD3.* The type genus for the taxon is *Candidatus* Defacida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CLD3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defacidales.

Description of *Candidatus* Defacidales ord. nov.

Candidatus Defacidales (NL. fem. n. *Defacidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CLD3.* The type genus for the taxon is *Candidatus* Defacida .

According to the original version of GTDB R06-RS202, this family belongs to the class *CLD3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defacidae.

Description of *Candidatus* Defacidae class. nov.

Candidatus Defacidae (NL. fem. n. *c__Defacidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CLD3.* The type genus for the taxon is *Candidatus* Defacida .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *CLD3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Defacidota.

Description of *Candidatus* Defacidota phyl. nov.

Candidatus Defacidota (NL. fem. n. *Defacidota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CLD3.* The type genus for the taxon is *Candidatus* Defacida .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Defacosa reduvimonia sp. nov.

Candidatus Defacosa reduvimonia (NL. fem. n. *reduvimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXN01 sp013696965*. The type genome for the species is the GenBank assembly GCA_013696965.1. The GC content of the type genome is 34.04 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Defacosa gen. nov.

Candidatus Defacosa (NL. fem. n. *Defacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXN01*. The type species for the genus is *Candidatus* Defacosa reduvimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACCXN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defacosaceae.

Description of *Candidatus* Defacosaceae fam. nov.

Candidatus Defacosaceae (NL. fem. n. *Defacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCXN01.* The type genus for the taxon is *Candidatus* Defacosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacosales.

Description of *Candidatus* Defacula cerevessa sp. nov.

Candidatus Defacula cerevessa (NL. fem. n. *cerevessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-39-127 sp003242895*. The type genome for the species is the GenBank assembly GCA_001784515.1. The GC content of the type genome is 38.56 % and the genome length is 3.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Defacula gen. nov.

Candidatus Defacula (NL. fem. n. *Defacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-39-127*. The type species for the genus is *Candidatus* Defacula cerevessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-39-127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defaculaceae.

Description of *Candidatus* Defaculaceae fam. nov.

Candidatus Defaculaceae (NL. fem. n. *Defaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-39-127.* The type genus for the taxon is *Candidatus* Defacula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWF2-39-127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defaculales.

Description of *Candidatus* Defaculales ord. nov.

Candidatus Defaculales (NL. fem. n. *Defaculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-39-127.* The type genus for the taxon is *Candidatus* Defacula .

According to the GTDB R06-RS202, this order belongs to the class *Riflemargulisbacteria*.

Description of *Candidatus* Defalana gen. nov.

Candidatus Defalana (NL. fem. n. *Defalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11795*. The type species for the genus is *Candidatus* Defalana rhusiopathiae_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defalaria desurousia sp. nov.

Candidatus Defalaria desurousia (NL. fem. n. *desurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVZB01 sp002068205*. The type genome for the species is the GenBank assembly GCA_002068205.1. The GC content of the type genome is 66.62 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Defalaria gen. nov.

Candidatus Defalaria (NL. fem. n. *Defalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MVZB01*. The type species for the genus is *Candidatus* Defalaria desurousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MVZB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defalariaceae.

Description of *Candidatus* Defalariaceae fam. nov.

Candidatus Defalariaceae (NL. fem. n. *Defalariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MVZB01.* The type genus for the taxon is *Candidatus* Defalaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *MVZB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defalariales.

Description of *Candidatus* Defalariales ord. nov.

Candidatus Defalariales (NL. fem. n. *Defalariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MVZB01.* The type genus for the taxon is *Candidatus* Defalaria .

According to the GTDB R06-RS202, this order belongs to the class *Sumerlaeia*.

Description of *Candidatus* Defalella abnocifica sp. nov.

Candidatus Defalella abnocifica (NL. fem. n. *abnocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002704325*. The type genome for the species is the GenBank assembly GCA_002704325.1. The GC content of the type genome is 51.88 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Defalella gen. nov.

Candidatus Defalella (NL. fem. n. *Defalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4421*. The type species for the genus is *Candidatus* Defalella abnocifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Defalella absuredo sp. nov.

Candidatus Defalella absuredo (NL. fem. n. *absuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002389675*. The type genome for the species is the GenBank assembly GCA_002389675.1. The GC content of the type genome is 51.7 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Defalella adhinitoga sp. nov.

Candidatus Defalella adhinitoga (NL. fem. n. *adhinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp902631405*. The type genome for the species is the GenBank assembly RS_GCF_902631405.1. The GC content of the type genome is 46.82 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Defalella adobrentia sp. nov.

Candidatus Defalella adobrentia (NL. fem. n. *adobrentia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp902535955*. The type genome for the species is the GenBank assembly RS_GCF_902535955.1. The GC content of the type genome is 52.36 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Defalella attesifica sp. nov.

Candidatus Defalella attesifica (NL. fem. n. *attesifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp009936775*. The type genome for the species is the GenBank assembly GCA_009936775.1. The GC content of the type genome is 55.59 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Defalella baropimonia sp. nov.

Candidatus Defalella baropimonia (NL. fem. n. *baropimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp004213835*. The type genome for the species is the GenBank assembly GCA_004213835.1. The GC content of the type genome is 56.14 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Defalella brasmimonia sp. nov.

Candidatus Defalella brasmimonia (NL. fem. n. *brasmimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp902528515*. The type genome for the species is the GenBank assembly RS_GCF_902528515.1. The GC content of the type genome is 52.39 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Defalella carecicella sp. nov.

Candidatus Defalella carecicella (NL. fem. n. *carecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp902537145*. The type genome for the species is the GenBank assembly RS_GCF_902537145.1. The GC content of the type genome is 55.06 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Defalella carunitoga sp. nov.

Candidatus Defalella carunitoga (NL. fem. n. *carunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002690405*. The type genome for the species is the GenBank assembly GCA_003505675.1. The GC content of the type genome is 52.96 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Defalella decacitoga sp. nov.

Candidatus Defalella decacitoga (NL. fem. n. *decacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp902613475*. The type genome for the species is the GenBank assembly RS_GCF_902613475.1. The GC content of the type genome is 53.88 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Defalella deparastra sp. nov.

Candidatus Defalella deparastra (NL. fem. n. *deparastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp902565895*. The type genome for the species is the GenBank assembly RS_GCF_902565895.1. The GC content of the type genome is 52.14 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Defalella docibicella sp. nov.

Candidatus Defalella docibicella (NL. fem. n. *docibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002336645*. The type genome for the species is the GenBank assembly GCA_002336645.1. The GC content of the type genome is 47.67 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Defalella echidousia sp. nov.

Candidatus Defalella echidousia (NL. fem. n. *echidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002390555*. The type genome for the species is the GenBank assembly GCA_002390555.1. The GC content of the type genome is 47.99 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Defalella fatifilenta sp. nov.

Candidatus Defalella fatifilenta (NL. fem. n. *fatifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002470275*. The type genome for the species is the GenBank assembly GCA_003453875.1. The GC content of the type genome is 56.53 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Defalella hexagilega sp. nov.

Candidatus Defalella hexagilega (NL. fem. n. *hexagilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002704225*. The type genome for the species is the GenBank assembly GCA_002168875.2. The GC content of the type genome is 55.12 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Defalella homicibra sp. nov.

Candidatus Defalella homicibra (NL. fem. n. *homicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002726925*. The type genome for the species is the GenBank assembly GCA_002726925.1. The GC content of the type genome is 54.92 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Defalella immodentia sp. nov.

Candidatus Defalella immodentia (NL. fem. n. *immodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp003230835*. The type genome for the species is the GenBank assembly GCA_003230835.1. The GC content of the type genome is 49.43 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Defalella impudedo sp. nov.

Candidatus Defalella impudedo (NL. fem. n. *impudedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp012103505*. The type genome for the species is the GenBank assembly GCA_012103505.1. The GC content of the type genome is 50.77 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Defalella inmoditrix sp. nov.

Candidatus Defalella inmoditrix (NL. fem. n. *inmoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002450255*. The type genome for the species is the GenBank assembly GCA_002450255.1. The GC content of the type genome is 52.59 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Defalella inpelicella sp. nov.

Candidatus Defalella inpelicella (NL. fem. n. *inpelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002684495*. The type genome for the species is the GenBank assembly GCA_002684495.1. The GC content of the type genome is 52.63 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Defalella insorimonas sp. nov.

Candidatus Defalella insorimonas (NL. fem. n. *insorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA4421 sp009936895*. The type genome for the species is the GenBank assembly GCA_009936895.1. The GC content of the type genome is 54.91 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Defalella invinatica sp. nov.

Candidatus Defalella invinatica (NL. fem. n. *invinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002170355*. The type genome for the species is the GenBank assembly GCA_002170355.2. The GC content of the type genome is 53.41 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Defalella legifitio sp. nov.

Candidatus Defalella legifitio (NL. fem. n. *legifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002348825*. The type genome for the species is the GenBank assembly GCA_002336595.1. The GC content of the type genome is 54.25 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Defalella malagastra sp. nov.

Candidatus Defalella malagastra (NL. fem. n. *malagastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp009886205*. The type genome for the species is the GenBank assembly GCA_009886205.1. The GC content of the type genome is 49.53 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Defalella panopitura sp. nov.

Candidatus Defalella panopitura (NL. fem. n. *panopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002731575*. The type genome for the species is the GenBank assembly GCA_003521885.1. The GC content of the type genome is 54.83 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Defalella pinigastra sp. nov.

Candidatus Defalella pinigastra (NL. fem. n. *pinigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002725095*. The type genome for the species is the GenBank assembly GCA_003538025.1. The GC content of the type genome is 53.4 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Defalella serotifica sp. nov.

Candidatus Defalella serotifica (NL. fem. n. *serotifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp012269545*. The type genome for the species is the GenBank assembly GCA_012269545.1. The GC content of the type genome is 54.66 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Defalella subabifica sp. nov.

Candidatus Defalella subabifica (NL. fem. n. *subabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp002727775*. The type genome for the species is the GenBank assembly GCA_002727775.1. The GC content of the type genome is 46.27 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Defalella uxorcilenta sp. nov.

Candidatus Defalella uxorcilenta (NL. fem. n. *uxorcilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4421 sp013151695*. The type genome for the species is the GenBank assembly GCA_013151695.1. The GC content of the type genome is 49.08 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Defalia cemenitudo sp. nov.

Candidatus Defalia cemenitudo (NL. fem. n. *cemenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG760 sp900322165*. The type genome for the species is the GenBank assembly GCA_900322165.1. The GC content of the type genome is 54.31 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Defalia gen. nov.

Candidatus Defalia (NL. fem. n. *Defalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG760*. The type species for the genus is *Candidatus* Defalia cemenitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1390*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibiaceae.

Description of *Candidatus* Defalia rinocessa sp. nov.

Candidatus Defalia rinocessa (NL. fem. n. *rinocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG760 sp900315265*. The type genome for the species is the GenBank assembly GCA_900314205.1. The GC content of the type genome is 50.61 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Defalia sacopitia sp. nov.

Candidatus Defalia sacopitia (NL. fem. n. *sacopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG760 sp902783575*. The type genome for the species is the GenBank assembly GCA_902783575.1. The GC content of the type genome is 53.69 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Defalida resupibra sp. nov.

Candidatus Defalida resupibra (NL. fem. n. *resupibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYA2-FULL-47-53 sp001800315*. The type genome for the species is the GenBank assembly GCA_001800315.1. The GC content of the type genome is 47.77 % and the genome length is 2.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Defalida gen. nov.

Candidatus Defalida (NL. fem. n. *Defalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYA2-FULL-47-53*. The type species for the genus is *Candidatus* Defalida resupibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYA2-FULL-47-53*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defalidaceae.

Description of *Candidatus* Defalidaceae fam. nov.

Candidatus Defalidaceae (NL. fem. n. *Defalidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYA2-FULL-47-53.* The type genus for the taxon is *Candidatus* Defalida .

According to GTDB R06-RS202, this family belongs to the order *Endomicrobiales*.

Description of *Candidatus* Defalosa advinicula sp. nov.

Candidatus Defalosa advinicula (NL. fem. n. *advinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUOA01 sp007123625*. The type genome for the species is the GenBank assembly GCA_007123625.1. The GC content of the type genome is 65.48 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Defalosa gen. nov.

Candidatus Defalosa (NL. fem. n. *Defalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUOA01*. The type species for the genus is *Candidatus* Defalosa advinicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defalosa lenocitudo sp. nov.

Candidatus Defalosa lenocitudo (NL. fem. n. *lenocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUOA01 sp007121115*. The type genome for the species is the GenBank assembly GCA_003561435.1. The GC content of the type genome is 67.6 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Defalosa luticetta sp. nov.

Candidatus Defalosa luticetta (NL. fem. n. *luticetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUOA01 sp003551925*. The type genome for the species is the GenBank assembly GCA_003551925.1. The GC content of the type genome is 69.62 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Defalosa peradetta sp. nov.

Candidatus Defalosa peradetta (NL. fem. n. *peradetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUOA01 sp003567395*. The type genome for the species is the GenBank assembly GCA_003567395.1. The GC content of the type genome is 66.7 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Defalula rubefedo sp. nov.

Candidatus Defalula rubefedo (NL. fem. n. *rubefedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *2-12-FULL-52-36 sp001828545*. The type genome for the species is the GenBank assembly GCA_001828545.1. The GC content of the type genome is 52.33 % and the genome length is 1.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Defalula gen. nov.

Candidatus Defalula (NL. fem. n. *Defalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-52-36*. The type species for the genus is *Candidatus* Defalula rubefedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-50-16-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funebiaceae.

Description of *Candidatus* Defanana inhonigena sp. nov.

Candidatus Defanana inhonigena (NL. fem. n. *inhonigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEHE01 sp902826775*. The type genome for the species is the GenBank assembly GCA_902826775.1. The GC content of the type genome is 59.86 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Defanana gen. nov.

Candidatus Defanana (NL. fem. n. *Defanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEHE01*. The type species for the genus is *Candidatus* Defanana inhonigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADEHE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defananaceae.

Description of *Candidatus* Defananaceae fam. nov.

Candidatus Defananaceae (NL. fem. n. *Defananaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADEHE01.* The type genus for the taxon is *Candidatus* Defanana .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Defanaria voragitas sp. nov.

Candidatus Defanaria voragitas (NL. fem. n. *voragitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721815 sp002721815*. The type genome for the species is the GenBank assembly GCA_002298025.1. The GC content of the type genome is 51.56 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Defanaria gen. nov.

Candidatus Defanaria (NL. fem. n. *Defanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2721815*. The type species for the genus is *Candidatus* Defanaria voragitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2721815*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defanariaceae.

Description of *Candidatus* Defanariaceae fam. nov.

Candidatus Defanariaceae (NL. fem. n. *Defanariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2721815.* The type genus for the taxon is *Candidatus* Defanaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA727*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Minurellales.

Description of *Candidatus* Defanella decupitudo sp. nov.

Candidatus Defanella decupitudo (NL. fem. n. *decupitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-105 sp005881155*. The type genome for the species is the GenBank assembly GCA_005880895.1. The GC content of the type genome is 69.58 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Defanella gen. nov.

Candidatus Defanella (NL. fem. n. *Defanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-105*. The type species for the genus is *Candidatus* Defanella decupitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defania adobricula sp. nov.

Candidatus Defania adobricula (NL. fem. n. *adobricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp002721375*. The type genome for the species is the GenBank assembly GCA_002721375.1. The GC content of the type genome is 50.23 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Defania gen. nov.

Candidatus Defania (NL. fem. n. *Defania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1096*. The type species for the genus is *Candidatus* Defania adobricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1096*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defaniaceae.

Description of *Candidatus* Defaniaceae fam. nov.

Candidatus Defaniaceae (NL. fem. n. *Defaniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA1096.* The type genus for the taxon is *Candidatus* Defania .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Defania altipimonia sp. nov.

Candidatus Defania altipimonia (NL. fem. n. *altipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp003972865*. The type genome for the species is the GenBank assembly GCA_003972865.1. The GC content of the type genome is 60.15 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Defania capilimonas sp. nov.

Candidatus Defania capilimonas (NL. fem. n. *capilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp002708005*. The type genome for the species is the GenBank assembly GCA_002702495.1. The GC content of the type genome is 41.19 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Defania defulibra sp. nov.

Candidatus Defania defulibra (NL. fem. n. *defulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp902589265*. The type genome for the species is the GenBank assembly GCA_902589265.1. The GC content of the type genome is 48.8 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Defania dibucigena sp. nov.

Candidatus Defania dibucigena (NL. fem. n. *dibucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp002689335*. The type genome for the species is the GenBank assembly GCA_002689335.1. The GC content of the type genome is 55.52 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Defania ficulitio sp. nov.

Candidatus Defania ficulitio (NL. fem. n. *ficulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp002684915*. The type genome for the species is the GenBank assembly GCA_002684915.1. The GC content of the type genome is 41.4 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Defania lucifentia sp. nov.

Candidatus Defania lucifentia (NL. fem. n. *lucifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp002686755*. The type genome for the species is the GenBank assembly GCA_002686755.1. The GC content of the type genome is 61.23 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Defania menapibra sp. nov.

Candidatus Defania menapibra (NL. fem. n. *menapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp002453165*. The type genome for the species is the GenBank assembly GCA_002306635.1. The GC content of the type genome is 57.03 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Defania nidifatica sp. nov.

Candidatus Defania nidifatica (NL. fem. n. *nidifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp002170545*. The type genome for the species is the GenBank assembly GCA_004213515.1. The GC content of the type genome is 40.45 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Defania scammimonas sp. nov.

Candidatus Defania scammimonas (NL. fem. n. *scammimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp002299785*. The type genome for the species is the GenBank assembly GCA_002299785.1. The GC content of the type genome is 57.46 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Defania subaditio sp. nov.

Candidatus Defania subaditio (NL. fem. n. *subaditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp902593035*. The type genome for the species is the GenBank assembly GCA_902593035.1. The GC content of the type genome is 39.98 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Defania vavasousia sp. nov.

Candidatus Defania vavasousia (NL. fem. n. *vavasousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp014382705*. The type genome for the species is the GenBank assembly GCA_014382705.1. The GC content of the type genome is 61.29 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Defania venefousia sp. nov.

Candidatus Defania venefousia (NL. fem. n. *venefousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1096 sp011523195*. The type genome for the species is the GenBank assembly GCA_011523195.1. The GC content of the type genome is 57.81 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Defanida cinefilenta sp. nov.

Candidatus Defanida cinefilenta (NL. fem. n. *cinefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *2-12-FULL-41-17 sp001774945*. The type genome for the species is the GenBank assembly GCA_001774945.1. The GC content of the type genome is 40.1 % and the genome length is 0.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Defanida gen. nov.

Candidatus Defanida (NL. fem. n. *Defanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-41-17*. The type species for the genus is *Candidatus* Defanida cinefilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-41-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Defarana carecitica sp. nov.

Candidatus Defarana carecitica (NL. fem. n. *carecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1544 sp002774425*. The type genome for the species is the GenBank assembly GCA_002323135.1. The GC content of the type genome is 48.54 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Defarana gen. nov.

Candidatus Defarana (NL. fem. n. *Defarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1544*. The type species for the genus is *Candidatus* Defarana carecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1544*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defaranaceae.

Description of *Candidatus* Defaranaceae fam. nov.

Candidatus Defaranaceae (NL. fem. n. *Defaranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1544.* The type genus for the taxon is *Candidatus* Defarana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1544*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defaranales.

Description of *Candidatus* Defaranales ord. nov.

Candidatus Defaranales (NL. fem. n. *Defaranales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1544.* The type genus for the taxon is *Candidatus* Defarana .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Defararia gralledo sp. nov.

Candidatus Defararia gralledo (NL. fem. n. *gralledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADEI01 sp013153515*. The type genome for the species is the GenBank assembly GCA_013153515.1. The GC content of the type genome is 42.08 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Defararia gen. nov.

Candidatus Defararia (NL. fem. n. *Defararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADEI01*. The type species for the genus is *Candidatus* Defararia gralledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADEI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defarariaceae.

Description of *Candidatus* Defarariaceae fam. nov.

Candidatus Defarariaceae (NL. fem. n. *Defarariaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADEI01*. The type genus for the taxon is *Candidatus* Defararia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-205*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tiruniales.

Description of *Candidatus* Defarella fibicitas sp. nov.

Candidatus Defarella fibicitas (NL. fem. n. *fibicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTFV01 sp009861545*. The type genome for the species is the GenBank assembly GCA_009861545.1. The GC content of the type genome is 69.3 % and the genome length is 6.35 Mbp.

Description of *Candidatus* Defarella gen. nov.

Candidatus Defarella (NL. fem. n. *Defarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTFV01*. The type species for the genus is *Candidatus* Defarella fibicitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8438*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citiposaceae.

Description of *Candidatus* Defarella meridax sp. nov.

Candidatus Defarella meridax (NL. fem. n. *meridax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTFV01 sp011523485*. The type genome for the species is the GenBank assembly GCA_011523485.1. The GC content of the type genome is 69.41 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Defarella secunisca sp. nov.

Candidatus Defarella secunisca (NL. fem. n. *secunisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTFV01 sp011523845*. The type genome for the species is the GenBank assembly GCA_011523845.1. The GC content of the type genome is 69.3 % and the genome length is 7.59 Mbp.

Description of *Candidatus* Defaria panifitoga sp. nov.

Candidatus Defaria panifitoga (NL. fem. n. *panifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKRM01 sp007118495*. The type genome for the species is the GenBank assembly GCA_007118495.1. The GC content of the type genome is 44.73 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Defaria gen. nov.

Candidatus Defaria (NL. fem. n. *Defaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKRM01*. The type species for the genus is *Candidatus* Defaria panifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Defarida pecunigena sp. nov.

Candidatus Defarida pecunigena (NL. fem. n. *pecunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNFC01 sp003645395*. The type genome for the species is the GenBank assembly GCA_003645395.1. The GC content of the type genome is 53.35 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Defarida gen. nov.

Candidatus Defarida (NL. fem. n. *Defarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNFC01*. The type species for the genus is *Candidatus* Defarida pecunigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defarosa idciricella sp. nov.

Candidatus Defarosa idciricella (NL. fem. n. *idciricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU030 sp012842325*. The type genome for the species is the GenBank assembly GCA_012842325.1. The GC content of the type genome is 56.9 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Defarosa gen. nov.

Candidatus Defarosa (NL. fem. n. *Defarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU030*. The type species for the genus is *Candidatus* Defarosa idciricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defarosaceae.

Description of *Candidatus* Defarosaceae fam. nov.

Candidatus Defarosaceae (NL. fem. n. *Defarosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU030.* The type genus for the taxon is *Candidatus* Defarosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defarosales.

Description of *Candidatus* Defarosales ord. nov.

Candidatus Defarosales (NL. fem. n. *Defarosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU030.* The type genus for the taxon is *Candidatus* Defarosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defarosae.

Description of *Candidatus* Defarosae class. nov.

Candidatus Defarosae (NL. fem. n. *c__Defarosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU030.* The type genus for the taxon is *Candidatus* Defarosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *DTU030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Defarosota.

Description of *Candidatus* Defarosota phyl. nov.

Candidatus Defarosota (NL. fem. n. *Defarosota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU030.* The type genus for the taxon is *Candidatus* Defarosa .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Defarosa pomifica sp. nov.

Candidatus Defarosa pomifica (NL. fem. n. *pomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU030 sp001513125*. The type genome for the species is the GenBank assembly GCA_002391605.1. The GC content of the type genome is 56.14 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Defarosa velifessa sp. nov.

Candidatus Defarosa velifessa (NL. fem. n. *velifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU030 sp012841005*. The type genome for the species is the GenBank assembly GCA_012841005.1. The GC content of the type genome is 52.79 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Defarula astapitia sp. nov.

Candidatus Defarula astapitia (NL. fem. n. *astapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACESI01 sp013911885*. The type genome for the species is the GenBank assembly GCA_013911885.1. The GC content of the type genome is 58.2 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Defarula gen. nov.

Candidatus Defarula (NL. fem. n. *Defarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACESI01*. The type species for the genus is *Candidatus* Defarula astapitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACESI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defarulaceae.

Description of *Candidatus* Defarulaceae fam. nov.

Candidatus Defarulaceae (NL. fem. n. *Defarulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACESI01.* The type genus for the taxon is *Candidatus* Defarula .

According to GTDB R06-RS202, this family belongs to the order *Rhizobiales*.

Description of *Candidatus* Defasana cerimentia sp. nov.

Candidatus Defasana cerimentia (NL. fem. n. *cerimentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5202 sp002412795*. The type genome for the species is the

GenBank assembly GCA_002345865.1. The GC content of the type genome is 54.91 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Defasana gen. nov.

Candidatus Defasana (NL. fem. n. *Defasana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5202*. The type species for the genus is *Candidatus* Defasana cerimentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EtOH8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cepuranaceae.

Description of *Candidatus* Defasaria dilematica sp. nov.

Candidatus Defasaria dilematica (NL. fem. n. *dilematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1224 sp900549775*. The type genome for the species is the GenBank assembly RS_GCF_900772065.1. The GC content of the type genome is 35.1 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Defasaria gen. nov.

Candidatus Defasaria (NL. fem. n. *Defasaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1224*. The type species for the genus is *Candidatus* Defasaria dilematica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defasella pavicitica sp. nov.

Candidatus Defasella pavicitica (NL. fem. n. *pavicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6626 sp002716625*. The type genome for the species is the GenBank assembly GCA_002716625.1. The GC content of the type genome is 50.89 %

and the genome length is 3.35 Mbp.

Description of *Candidatus* Defasella gen. nov.

Candidatus Defasella (NL. fem. n. *Defasella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6626*. The type species for the genus is *Candidatus* Defasella pavicitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defasia benifitrix sp. nov.

Candidatus Defasia benifitrix (NL. fem. n. *benifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1883 sp900555935*. The type genome for the species is the GenBank assembly GCA_900555935.1. The GC content of the type genome is 47.62 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Defasia gen. nov.

Candidatus Defasia (NL. fem. n. *Defasia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1883*. The type species for the genus is *Candidatus* Defasia benifitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1883*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defasiaceae.

Description of *Candidatus* Defasiaceae fam. nov.

Candidatus Defasiaceae (NL. fem. n. *Defasiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1883.* The type genus for the taxon is *Candidatus* Defasia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UMGS1883*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Defasiales.

Description of *Candidatus* Defasiales ord. nov.

Candidatus Defasiales (NL. fem. n. *Defasiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1883.* The type genus for the taxon is *Candidatus* Defasia .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Defasia encepessa sp. nov.

Candidatus Defasia encepessa (NL. fem. n. *encepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1883 sp900763305*. The type genome for the species is the GenBank assembly RS_GCF_900763305.1. The GC content of the type genome is 48.96 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Defasia occenicella sp. nov.

Candidatus Defasia occenicella (NL. fem. n. *occenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1883 sp900768005*. The type genome for the species is the GenBank assembly RS_GCF_900768005.1. The GC content of the type genome is 41.96 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Defasida holovedo sp. nov.

Candidatus Defasida holovedo (NL. fem. n. *holovedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1024 sp004554165*. The type genome for the species is the GenBank assembly GCA_004563445.1. The GC content of the type genome is 60.7 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Defasida gen. nov.

Candidatus Defasida (NL. fem. n. *Defasida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-1024*. The type species for the genus is *Candidatus* Defasida holovedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Defasida palifivita sp. nov.

Candidatus Defasida palifivita (NL. fem. n. *palifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1024 sp000432015*. The type genome for the species is the GenBank assembly GCA_900543745.1. The GC content of the type genome is 57.68 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Defasosa bicipago sp. nov.

Candidatus Defasosa bicipago (NL. fem. n. *bicipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1326 sp900550775*. The type genome for the species is the GenBank assembly RS_GCF_900758295.1. The GC content of the type genome is 50.46 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Defasosa gen. nov.

Candidatus Defasosa (NL. fem. n. *Defasosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1326*. The type species for the genus is *Candidatus* Defasosa bicipago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defasula solipago sp. nov.

Candidatus Defasula solipago (NL. fem. n. *solipago* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKON01 sp007120035*. The type genome for the species is the GenBank assembly GCA_007120035.1. The GC content of the type genome is 65.31 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Defasula gen. nov.

Candidatus Defasula (NL. fem. n. *Defasula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKON01*. The type species for the genus is *Candidatus* Defasula solipago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defenana delebifica sp. nov.

Candidatus Defenana delebifica (NL. fem. n. *delebifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2336 sp002344065*. The type genome for the species is the GenBank assembly GCA_002344485.1. The GC content of the type genome is 42.68 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Defenana gen. nov.

Candidatus Defenana (NL. fem. n. *Defenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2336*. The type species for the genus is *Candidatus* Defenana delebifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defenana venucentia sp. nov.

Candidatus Defenana venucentia (NL. fem. n. *venucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2336 sp002425185*. The type genome for the species is the GenBank assembly GCA_002425185.1. The GC content of the type genome is 43.42 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Defenaria abpatitrix sp. nov.

Candidatus Defenaria abpatitrix (NL. fem. n. *abpatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDM01 sp005882235*. The type genome for the species is the GenBank assembly GCA_005882235.1. The GC content of the type genome is 64.4 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Defenaria gen. nov.

Candidatus Defenaria (NL. fem. n. *Defenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBDM01*. The type species for the genus is *Candidatus* Defenaria abpatitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Defenaria bipinugo sp. nov.

Candidatus Defenaria bipinugo (NL. fem. n. *bipinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDM01 sp005883665*. The type genome for the species is the GenBank assembly GCA_005883665.1. The GC content of the type genome is 64.12 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Defenaria catobitrix sp. nov.

Candidatus Defenaria catobitrix (NL. fem. n. *catobitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDM01 sp005884335*. The type genome for the species is the GenBank assembly GCA_005884335.1. The GC content of the type genome is 64.33 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Defenaria dimadousia sp. nov.

Candidatus Defenaria dimadousia (NL. fem. n. *dimadousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDM01 sp005888845*. The type genome for the species is the GenBank assembly GCA_005888845.1. The GC content of the type genome is 64.17 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Defenaria feficivita sp. nov.

Candidatus Defenaria feficivita (NL. fem. n. *feficivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDM01 sp005888995*. The type genome for the species is the GenBank assembly GCA_005888995.1. The GC content of the type genome is 64.45 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Defenaria foricugo sp. nov.

Candidatus Defenaria foricugo (NL. fem. n. *foricugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDM01 sp005881575*. The type genome for the species is the GenBank assembly GCA_005881935.1. The GC content of the type genome is 64.61 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Defenaria palifitoga sp. nov.

Candidatus Defenaria palifitoga (NL. fem. n. *palifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDM01 sp005884455*. The type genome for the species is the GenBank assembly GCA_005884455.1. The GC content of the type genome is 64.65 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Defenaria penuritio sp. nov.

Candidatus Defenaria penuritio (NL. fem. n. *penuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDM01 sp005881355*. The type genome for the species is the GenBank assembly GCA_005883015.1. The GC content of the type genome is 65.13 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Defenella locelitrix sp. nov.

Candidatus Defenella locelitrix (NL. fem. n. *locelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8828 sp903929325*. The type genome for the species is the GenBank assembly GCA_903929325.1. The GC content of the type genome is 53.98 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Defenella gen. nov.

Candidatus Defenella (NL. fem. n. *Defenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8828*. The type species for the genus is *Candidatus* Defenella locelitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA953*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucanaceae.

Description of *Candidatus* Defenella reveciforma sp. nov.

Candidatus Defenella reveciforma (NL. fem. n. *reveciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8828 sp903957465*. The type genome for the species is the GenBank assembly GCA_903949215.1. The GC content of the type genome is 53.96 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Defenella vagabedo sp. nov.

Candidatus Defenella vagabedo (NL. fem. n. *vagabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8828 sp003485955*. The type genome for the species is the GenBank assembly GCA_003485955.1. The GC content of the type genome is 53.58 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Defenella venabitia sp. nov.

Candidatus Defenella venabitia (NL. fem. n. *venabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8828 sp903868455*. The type genome for the species is the GenBank assembly GCA_903830885.1. The GC content of the type genome is 72.09 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Defenida defetousia sp. nov.

Candidatus Defenida defetousia (NL. fem. n. *defetousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3ABIN06 sp002897895*. The type genome for the species is the GenBank assembly GCA_011040195.1. The GC content of the type genome is 43.19 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Defenida gen. nov.

Candidatus Defenida (NL. fem. n. *Defenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3ABIN06*. The type species for the genus is *Candidatus* Defenida defetousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodosaceae.

Description of *Candidatus* Defenida denorastra sp. nov.

Candidatus Defenida denorastra (NL. fem. n. *denorastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3ABIN06 sp011040095*. The type genome for the species is the GenBank assembly GCA_011040095.1. The GC content of the type genome is 44.03 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Defenula adnubisca sp. nov.

Candidatus Defenula adnubisca (NL. fem. n. *adnubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-68-14 sp005883955*. The type genome for the species is the GenBank assembly GCA_005883955.1. The GC content of the type genome is 68.21 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Defenula gen. nov.

Candidatus Defenula (NL. fem. n. *Defenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *13-2-20CM-68-14*. The type species for the genus is *Candidatus* Defenula adnubisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defenula bugilugo sp. nov.

Candidatus Defenula bugilugo (NL. fem. n. *bugilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-68-14 sp005888315*. The type genome for the species is the GenBank assembly GCA_005885195.1. The GC content of the type genome is 68.81 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Defenula figilousia sp. nov.

Candidatus Defenula figilousia (NL. fem. n. *figilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-68-14 sp005884005*. The type genome for the species is the GenBank assembly GCA_005883875.1. The GC content of the type genome is 68.06 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Defenula recogago sp. nov.

Candidatus Defenula recogago (NL. fem. n. *recogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-68-14 sp001914705*. The type genome for the species is the GenBank assembly GCA_001914705.1. The GC content of the type genome is 68.32 % and the genome length is 1.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 2; 20cm depth; 6 days after first rain event (27mm)".

Description of *Candidatus* Deferrisoma aglasitoga sp. nov.

Candidatus Deferrisoma aglasitoga (NL. fem. n. *aglasitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deferrisoma sp013152215*. The type genome for the species is the GenBank assembly GCA_013152215.1. The GC content of the type genome is 69.31 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Defesana repecessa sp. nov.

Candidatus Defesana repecessa (NL. fem. n. *repecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSGC01 sp011056285*. The type genome for the species is the GenBank assembly GCA_011057245.1. The GC content of the type genome is 63.54 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Defesana gen. nov.

Candidatus Defesana (NL. fem. n. *Defesana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSGC01*. The type species for the genus is *Candidatus* Defesana repecessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Defesaria telefitas sp. nov.

Candidatus Defesaria telefitas (NL. fem. n. *telefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002707905 sp002707905*. The type genome for the species is the GenBank assembly GCA_002707905.1. The GC content of the type genome is 27.81 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Defesaria gen. nov.

Candidatus Defesaria (NL. fem. n. *Defesaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002707905*. The type species for the genus is *Candidatus* Defesaria telefitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S15-B10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minagulaceae.

Description of *Candidatus* Defesaria tumefiforma sp. nov.

Candidatus Defesaria tumefiforma (NL. fem. n. *tumefiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002707905 sp002691365*. The type genome for the species is the GenBank assembly GCA_002169785.1. The GC content of the type genome is 27.79 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Defesella inrelifica sp. nov.

Candidatus Defesella inrelifica (NL. fem. n. *inrelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SZUA-381 sp003247185*. The type genome for the species is the GenBank assembly GCA_003247185.1. The GC content of the type genome is 40.96 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Defesella gen. nov.

Candidatus Defesella (NL. fem. n. *Defesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-381*. The type species for the genus is *Candidatus* Defesella inrelifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defesella tenematio sp. nov.

Candidatus Defesella tenematio (NL. fem. n. *tenematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-381 sp006226555*. The type genome for the species is the GenBank assembly GCA_006226695.1. The GC content of the type genome is 40.69 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Defesia dehinago sp. nov.

Candidatus Defesia dehinago (NL. fem. n. *dehinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPHK01 sp903864835*. The type genome for the species is the GenBank assembly GCA_903877905.1. The GC content of the type genome is 48.16 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Defesia gen. nov.

Candidatus Defesia (NL. fem. n. *Defesia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPHK01*. The type species for the genus is *Candidatus* Defesia dehinago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXXA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Cisalanaceae.

Description of *Candidatus* Defesosa parocentia sp. nov.

Candidatus Defesosa parocentia (NL. fem. n. *parocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4588 sp002387605*. The type genome for the species is the GenBank assembly GCA_002378945.1. The GC content of the type genome is 48.63 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Defesosa gen. nov.

Candidatus Defesosa (NL. fem. n. *Defesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4588*. The type species for the genus is *Candidatus* Defesosa parocentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defesula anagnitrix sp. nov.

Candidatus Defesula anagnitrix (NL. fem. n. *anagnitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVC01 sp009785665*. The type genome for the species is the GenBank assembly GCA_009785665.1. The GC content of the type genome is 44.14 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Defesula gen. nov.

Candidatus Defesula (NL. fem. n. *Defesula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVC01*. The type species for the genus is *Candidatus* Defesula anagnitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Defesula benificula sp. nov.

Candidatus Defesula benificula (NL. fem. n. *benificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVC01 sp009777845*. The type genome for the species is the GenBank assembly GCA_009777845.1. The GC content of the type genome is 47.51 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Defesula cerevax sp. nov.

Candidatus Defesula cerevax (NL. fem. n. *cerevax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVC01 sp009781765*. The type genome for the species is the GenBank assembly GCA_009781765.1. The GC content of the type genome is 49.48 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Defesula depocimonia sp. nov.

Candidatus Defesula depocimonia (NL. fem. n. *depocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVC01 sp009786925*. The type genome for the species is the GenBank assembly GCA_009786925.1. The GC content of the type genome is 44.8 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Defesula ellebitia sp. nov.

Candidatus Defesula ellebitia (NL. fem. n. *ellebitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVC01 sp009786975*. The type genome for the species is the GenBank assembly GCA_009786975.1. The GC content of the type genome is 50.67 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Defesula hecatisca sp. nov.

Candidatus Defesula hecatisca (NL. fem. n. *hecatisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVC01 sp009783395*. The type genome for the species is the GenBank assembly GCA_009783395.1. The GC content of the type genome is 47.91 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Defesula subinatio sp. nov.

Candidatus Defesula subinatio (NL. fem. n. *subinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVC01 sp009786685*. The type genome for the species is the GenBank assembly GCA_009786685.1. The GC content of the type genome is 46.85 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Defesula utrolibula sp. nov.

Candidatus Defesula utrolibula (NL. fem. n. *utrolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVC01 sp009779835*. The type genome for the species is the GenBank assembly GCA_009779835.1. The GC content of the type genome is 43.67 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Defesula xenodibula sp. nov.

Candidatus Defesula xenodibula (NL. fem. n. *xenodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVC01 sp009788055*. The type genome for the species is the GenBank assembly GCA_009787735.1. The GC content of the type genome is 47.62 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Defetana reforago sp. nov.

Candidatus Defetana reforago (NL. fem. n. *reforago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIMWO01 sp903845195*. The type genome for the species is the GenBank assembly GCA_903845195.1. The GC content of the type genome is 59.25 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Defetana gen. nov.

Candidatus Defetana (NL. fem. n. *Defetana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMWO01*. The type species for the genus is *Candidatus* Defetana reforago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WQYP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludidaceae.

Description of *Candidatus* Defetaria aterratio sp. nov.

Candidatus Defetaria aterratio (NL. fem. n. *aterratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp003553305*. The type genome for the species is the GenBank assembly GCA_003553305.1. The GC content of the type genome is 45.07 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Defetaria gen. nov.

Candidatus Defetaria (NL. fem. n. *Defetaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1SED10-74M*. The type species for the genus is *Candidatus* Defetaria aterratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Defetaria bifisifica sp. nov.

Candidatus Defetaria bifisifica (NL. fem. n. *bifisifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp007128625*. The type genome for the species is the GenBank assembly GCA_003551585.1. The GC content of the type genome is 44.99 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Defetaria decunitudo sp. nov.

Candidatus Defetaria decunitudo (NL. fem. n. *decunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp003553895*. The type genome for the species is the GenBank assembly GCA_003550865.1. The GC content of the type genome is 50.98 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Defetaria dilecicula sp. nov.

Candidatus Defetaria dilecicula (NL. fem. n. *dilecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp007121075*. The type genome for the species is the GenBank assembly GCA_007126875.1. The GC content of the type genome is 49.83 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Defetaria expalatio sp. nov.

Candidatus Defetaria expalatio (NL. fem. n. *expalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp003558195*. The type genome for the species is the GenBank assembly GCA_003558195.1. The GC content of the type genome is 43.9 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Defetaria inlacatio sp. nov.

Candidatus Defetaria inlacatio (NL. fem. n. *inlacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp003554615*. The type genome for the species is the GenBank assembly GCA_003554615.1. The GC content of the type genome is 49.04 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Defetaria loraressa sp. nov.

Candidatus Defetaria loraressa (NL. fem. n. *loraressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp003554395*. The type genome for the species is the GenBank assembly GCA_003554395.1. The GC content of the type genome is 50.76 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Defetaria lubenilenta sp. nov.

Candidatus Defetaria lubenilenta (NL. fem. n. *lubenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp003550645*. The type genome for the species is the GenBank assembly GCA_003550645.1. The GC content of the type genome is 49.4 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Defetaria masocousia sp. nov.

Candidatus Defetaria masocousia (NL. fem. n. *masocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp003567725*. The type genome for the species is the GenBank assembly GCA_007135065.1. The GC content of the type genome is 44.84 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Defetaria noviliforma sp. nov.

Candidatus Defetaria noviliforma (NL. fem. n. *noviliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp007130825*. The type genome for the species is the GenBank assembly GCA_007120945.1. The GC content of the type genome is 47.31 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Defetaria semidessa sp. nov.

Candidatus Defetaria semidessa (NL. fem. n. *semidessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp007119335*. The type genome for the species is the GenBank assembly GCA_007119335.1. The GC content of the type genome is 45.81 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Defetaria volucilenta sp. nov.

Candidatus Defetaria volucilenta (NL. fem. n. *volucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-74M sp003552365*. The type genome for the species is the GenBank assembly GCA_003553605.1. The GC content of the type genome is 47.47 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Defetella effigatica sp. nov.

Candidatus Defetella effigatica (NL. fem. n. *effigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM103 sp002869725*. The type genome for the species is the GenBank assembly GCA_002869725.1. The GC content of the type genome is 56.52 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Defetella gen. nov.

Candidatus Defetella (NL. fem. n. *Defetella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM103*. The type species for the genus is *Candidatus* Defetella effigatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM103*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defetellaceae.

Description of *Candidatus* Defetellaceae fam. nov.

Candidatus Defetellaceae (NL. fem. n. *Defetellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM103.* The type genus for the taxon is *Candidatus* Defetella .

According to GTDB R06-RS202, this family belongs to the order *Desulfuromonadales*.

Description of *Candidatus* Defetia habacago sp. nov.

Candidatus Defetia habacago (NL. fem. n. *habacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM002 sp002899795*. The type genome for the species is the GenBank assembly GCA_013619085.1. The GC content of the type genome is 50.27 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Defetia gen. nov.

Candidatus Defetia (NL. fem. n. *Defetia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM002*. The type species for the genus is *Candidatus* Defetia habacago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defetiaceae.

Description of *Candidatus* Defetiaceae fam. nov.

Candidatus Defetiaceae (NL. fem. n. *Defetiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM002.* The type genus for the taxon is *Candidatus* Defetia .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defetiales.

Description of *Candidatus* Defetiales ord. nov.

Candidatus Defetiales (NL. fem. n. *Defetiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM002.* The type genus for the taxon is *Candidatus* Defetia .

According to the GTDB R06-RS202, this order belongs to the class *Syntrophobacteria*.

Description of *Candidatus* Defetida inmobastra sp. nov.

Candidatus Defetida inmobastra (NL. fem. n. *inmobastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMRN01 sp013202515*. The type genome for the species is the GenBank assembly GCA_013202515.1. The GC content of the type genome is 40.21 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Defetida gen. nov.

Candidatus Defetida (NL. fem. n. *Defetida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMRN01*. The type species for the genus is *Candidatus* Defetida inmobastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMRN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defetidaceae.

Description of *Candidatus* Defetidaceae fam. nov.

Candidatus Defetidaceae (NL. fem. n. *Defetidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMRN01.* The type genus for the taxon is *Candidatus* Defetida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1560*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vacilellales.

Description of *Candidatus* Defetosa reduvitudo sp. nov.

Candidatus Defetosa reduvitudo (NL. fem. n. *reduvitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNMQ01 sp013823725*. The type genome for the species is the

GenBank assembly GCA_013823905.1. The GC content of the type genome is 33.88 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Defetosa gen. nov.

Candidatus Defetosa (NL. fem. n. *Defetosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNMQ01*. The type species for the genus is *Candidatus* Defetosa reduvitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11393*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifanaceae.

Description of *Candidatus* Defetula infirimonia sp. nov.

Candidatus Defetula infirimonia (NL. fem. n. *infirimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKKL01 sp007121465*. The type genome for the species is the GenBank assembly GCA_007121465.1. The GC content of the type genome is 69.55 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Defetula gen. nov.

Candidatus Defetula (NL. fem. n. *Defetula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKKL01*. The type species for the genus is *Candidatus* Defetula infirimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKKL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defetulaceae.

Description of *Candidatus* Defetulaceae fam. nov.

Candidatus Defetulaceae (NL. fem. n. *Defetulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKKL01.* The type genus for the taxon is *Candidatus* Defetula .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Defluviitalea apharisca sp. nov.

Candidatus Defluviitalea apharisca (NL. fem. n. *apharisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Defluviitalea_A sp012519955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012519955.1. The GC content of the type genome is 35.48 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Defluviitalea solipiforma sp. nov.

Candidatus Defluviitalea solipiforma (NL. fem. n. *solipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Defluviitalea_A sp012521175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012521175.1. The GC content of the type genome is 34.84 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Deforana revecibra sp. nov.

Candidatus Deforana revecibra (NL. fem. n. *revecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJMQ01 sp903821905*. The type genome for the species is the GenBank assembly GCA_903821905.1. The GC content of the type genome is 36.88 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Deforana gen. nov.

Candidatus Deforana (NL. fem. n. *Deforana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJMQ01*. The type species for the genus is *Candidatus* Deforana revecibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIJMQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deforanaceae.

Description of *Candidatus* Deforanaceae fam. nov.

Candidatus Deforanaceae (NL. fem. n. *Deforanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIJMQ01.* The type genus for the taxon is *Candidatus* Deforana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIJMQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deforanales.

Description of *Candidatus* Deforanales ord. nov.

Candidatus Deforanales (NL. fem. n. *Deforanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIJMQ01.* The type genus for the taxon is *Candidatus* Deforana .

According to the original version of GTDB R06-RS202, this family belongs to the class *CAIJMQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Deforanae.

Description of *Candidatus* Deforanae class. nov.

Candidatus Deforanae (NL. fem. n. *c__Deforanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIJMQ01.* The type genus for the taxon is *Candidatus* Deforana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *CAIJMQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Deforanota.

Description of *Candidatus* Deforanota phyl. nov.

Candidatus Deforanota (NL. fem. n. *Deforanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CAIJMQ01*. The type genus for the taxon is *Candidatus* Deforana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Deforaria denavicula sp. nov.

Candidatus Deforaria denavicula (NL. fem. n. *denavicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5272 sp002408565*. The type genome for the species is the GenBank assembly GCA_002409245.1. The GC content of the type genome is 31.81 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Deforaria gen. nov.

Candidatus Deforaria (NL. fem. n. *Deforaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5272*. The type species for the genus is *Candidatus* Deforaria denavicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deforariaceae.

Description of *Candidatus* Deforariaceae fam. nov.

Candidatus Deforariaceae (NL. fem. n. *Deforariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5272*. The type genus for the taxon is *Candidatus* Deforaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Deforella adsicitura sp. nov.

Candidatus Deforella adsicitura (NL. fem. n. *adsicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Bin87 sp009840165*. The type genome for the species is the GenBank assembly GCA_009840165.1. The GC content of the type genome is 61.35 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Deforella gen. nov.

Candidatus Deforella (NL. fem. n. *Deforella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin87*. The type species for the genus is *Candidatus* Deforella adsicitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Deforella bucolitura sp. nov.

Candidatus Deforella bucolitura (NL. fem. n. *bucolitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin87 sp002238825*. The type genome for the species is the GenBank assembly GCA_002238825.1. The GC content of the type genome is 62.79 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Deforella cicatisca sp. nov.

Candidatus Deforella cicatisca (NL. fem. n. *cicatisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin87 sp009837355*. The type genome for the species is the GenBank assembly GCA_009841575.1. The GC content of the type genome is 62.9 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Deforia vecoribula sp. nov.

Candidatus Deforia vecoribula (NL. fem. n. *vecoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B23-G16 sp003647435*. The type genome for the species is the

GenBank assembly GCA_003647435.1. The GC content of the type genome is 48.84 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Deforia gen. nov.

Candidatus Deforia (NL. fem. n. *Deforia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B23-G16*. The type species for the genus is *Candidatus* Deforia vecoribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *C00003060*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubidaceae.

Description of *Candidatus* Deforida adtenatica sp. nov.

Candidatus Deforida adtenatica (NL. fem. n. *adtenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKMS01 sp903839465*. The type genome for the species is the GenBank assembly GCA_903839465.1. The GC content of the type genome is 68.87 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Deforida gen. nov.

Candidatus Deforida (NL. fem. n. *Deforida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKMS01*. The type species for the genus is *Candidatus* Deforida adtenatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Deforida ardifitrix sp. nov.

Candidatus Deforida ardifitrix (NL. fem. n. *ardifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKMS01 sp903890265*. The type genome for the species is the GenBank assembly GCA_903890265.1. The GC content of the type genome is 68.37 %

and the genome length is 3.44 Mbp.

Description of *Candidatus* Deforida sacopago sp. nov.

Candidatus Deforida sacopago (NL. fem. n. *sacopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKMS01 sp903828595*. The type genome for the species is the GenBank assembly GCA_903821425.1. The GC content of the type genome is 56.09 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Deforosa desuratica sp. nov.

Candidatus Deforosa desuratica (NL. fem. n. *desuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZAB01 sp012514555*. The type genome for the species is the GenBank assembly GCA_012514555.1. The GC content of the type genome is 63.26 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Deforosa gen. nov.

Candidatus Deforosa (NL. fem. n. *Deforosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZAB01*. The type species for the genus is *Candidatus* Deforosa desuratica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZAB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deforosaceae.

Description of *Candidatus* Deforosaceae fam. nov.

Candidatus Deforosaceae (NL. fem. n. *Deforosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZAB01*. The type genus for the taxon is *Candidatus* Deforosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAZAB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deforosales.

Description of *Candidatus* Deforosales ord. nov.

Candidatus Deforosales (NL. fem. n. *Deforosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZAB01*. The type genus for the taxon is *Candidatus* Deforosa .

According to the GTDB R06-RS202, this order belongs to the class *Kiritimatiellae*.

Description of *Candidatus* Deforula citocisca sp. nov.

Candidatus Deforula citocisca (NL. fem. n. *citocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXNL01 sp005777185*. The type genome for the species is the GenBank assembly GCA_005777185.1. The GC content of the type genome is 71.26 % and the genome length is 6.44 Mbp.

Description of *Candidatus* Deforula gen. nov.

Candidatus Deforula (NL. fem. n. *Deforula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXNL01*. The type species for the genus is *Candidatus* Deforula citocisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defosana homogago sp. nov.

Candidatus Defosana homogago (NL. fem. n. *homogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXIX01 sp903859705*. The type genome for the species is the GenBank assembly GCA_903867455.1. The GC content of the type genome is 52.98 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Defosana gen. nov.

Candidatus Defosana (NL. fem. n. *Defosana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXIX01*. The type species for the genus is *Candidatus* Defosana homogago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defosana ludibimonia sp. nov.

Candidatus Defosana ludibimonia (NL. fem. n. *ludibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXIX01 sp903919615*. The type genome for the species is the GenBank assembly GCA_903909455.1. The GC content of the type genome is 53.68 % and the genome length is 7.36 Mbp.

Description of *Candidatus* Defosaria acratifica sp. nov.

Candidatus Defosaria acratifica (NL. fem. n. *acratifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQH01 sp013203355*. The type genome for the species is the GenBank assembly GCA_013203355.1. The GC content of the type genome is 42.1 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Defosaria gen. nov.

Candidatus Defosaria (NL. fem. n. *Defosaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQH01*. The type species for the genus is *Candidatus* Defosaria acratifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMQH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defosariaceae.

Description of *Candidatus* Defosariaceae fam. nov.

Candidatus Defosariaceae (NL. fem. n. *Defosariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQH01.* The type genus for the taxon is *Candidatus* Defosaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMQH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defosariales.

Description of *Candidatus* Defosariales ord. nov.

Candidatus Defosariales (NL. fem. n. *Defosariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQH01.* The type genus for the taxon is *Candidatus* Defosaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Defosella diluvatica sp. nov.

Candidatus Defosella diluvatica (NL. fem. n. *diluvatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU080 sp001513395*. The type genome for the species is the GenBank assembly GCA_001513395.1. The GC content of the type genome is 56.16 % and the genome length is 3.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Defosella gen. nov.

Candidatus Defosella (NL. fem. n. *Defosella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU080*. The type species for the genus is *Candidatus* Defosella diluvatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU080*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defosellaceae.

Description of *Candidatus* Defosellaceae fam. nov.

Candidatus Defosellaceae (NL. fem. n. *Defosellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU080.* The type genus for the taxon is *Candidatus* Defosella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU080*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defosellales.

Description of *Candidatus* Defosellales ord. nov.

Candidatus Defosellales (NL. fem. n. *Defosellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU080.* The type genus for the taxon is *Candidatus* Defosella .

According to the GTDB R06-RS202, this order belongs to the class *Limnochordia*.

Description of *Candidatus* Defosia rubefitura sp. nov.

Candidatus Defosia rubefitura (NL. fem. n. *rubefitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXBB01 sp003565735*. The type genome for the species is the GenBank assembly GCA_003565735.1. The GC content of the type genome is 38.21 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Defosia gen. nov.

Candidatus Defosia (NL. fem. n. *Defosia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXBB01*. The type species for the genus is *Candidatus* Defosia rubefitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PXBB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defosiaceae.

Description of *Candidatus* Defosiaceae fam. nov.

Candidatus Defosiaceae (NL. fem. n. *Defosiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PXBB01.* The type genus for the taxon is *Candidatus* Defosia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Defosida bicodastra sp. nov.

Candidatus Defosida bicodastra (NL. fem. n. *bicodastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU086 sp001513335*. The type genome for the species is the GenBank assembly GCA_012841895.1. The GC content of the type genome is 45.77 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Defosida gen. nov.

Candidatus Defosida (NL. fem. n. *Defosida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU086*. The type species for the genus is *Candidatus* Defosida bicodastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU086*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defosidaceae.

Description of *Candidatus* Defosidaceae fam. nov.

Candidatus Defosidaceae (NL. fem. n. *Defosidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU086.* The type genus for the taxon is *Candidatus* Defosida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU086*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defosidales.

Description of *Candidatus* Defosidales ord. nov.

Candidatus Defosidales (NL. fem. n. *Defosidales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU086.* The type genus for the taxon is *Candidatus* Defosida .

According to the GTDB R06-RS202, this order belongs to the class *Moorellia*.

Description of *Candidatus* Defososa cerucitrix sp. nov.

Candidatus Defososa cerucitrix (NL. fem. n. *cerucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AG-212-J23 sp001644455*. The type genome for the species is the GenBank assembly GCA_001644455.1. The GC content of the type genome is 66.56 % and the genome length is 2.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Single cell amplified by WGA-X; soil".

Description of *Candidatus* Defososa gen. nov.

Candidatus Defososa (NL. fem. n. *Defososa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCGC-AG-212-J23*. The type species for the genus is *Candidatus* Defososa cerucitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Defososa cuferentia sp. nov.

Candidatus Defososa cuferentia (NL. fem. n. *cuferentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AG-212-J23 sp005888925*. The type genome for the species is the GenBank assembly GCA_005888925.1. The GC content of the type genome is 67.19 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Defososa decunago sp. nov.

Candidatus Defososa decunago (NL. fem. n. *decunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AG-212-J23 sp005883675*. The type genome for the species is the GenBank assembly GCA_005881875.1. The GC content of the type genome is 67.48 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Defososa inoccitura sp. nov.

Candidatus Defososa inoccitura (NL. fem. n. *inoccitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AG-212-J23 sp001772055*. The type genome for the species is the GenBank assembly GCA_001772055.1. The GC content of the type genome is 68.56 % and the genome length is 1.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Defososa mimogigena sp. nov.

Candidatus Defososa mimogigena (NL. fem. n. *mimogigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AG-212-J23 sp005881595*. The type genome for the species is the GenBank assembly GCA_005888805.1. The GC content of the type genome is 66.59 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Defososa necopitudo sp. nov.

Candidatus Defososa necopitudo (NL. fem. n. *necopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AG-212-J23 sp004297625*. The type genome for the species is the GenBank assembly GCA_004297625.1. The GC content of the type genome is 65.86 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Defosula adinvastra sp. nov.

Candidatus Defosula adinvastra (NL. fem. n. *adinvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp002369155*. The type genome for the species is the GenBank assembly GCA_002369155.1. The GC content of the type genome is 39.65 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Defosula gen. nov.

Candidatus Defosula (NL. fem. n. *Defosula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3766*. The type species for the genus is *Candidatus* Defosula adinvastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defosula baropitura sp. nov.

Candidatus Defosula baropitura (NL. fem. n. *baropitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp902783455*. The type genome for the species is the GenBank assembly GCA_902783455.1. The GC content of the type genome is 43.22 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Defosula colopousia sp. nov.

Candidatus Defosula colopousia (NL. fem. n. *colopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp902790275*. The type genome for the species is the GenBank assembly GCA_902790275.1. The GC content of the type genome is 41.85 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Defosula dehinitrix sp. nov.

Candidatus Defosula dehinitrix (NL. fem. n. *dehinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp902803015*. The type genome for the species is the

GenBank assembly GCA_902803015.1. The GC content of the type genome is 46.06 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Defosula democivita sp. nov.

Candidatus Defosula democivita (NL. fem. n. *democivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp902765365*. The type genome for the species is the GenBank assembly GCA_902784935.1. The GC content of the type genome is 41.24 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Defosula epogditoga sp. nov.

Candidatus Defosula epogditoga (NL. fem. n. *epogditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp902789665*. The type genome for the species is the GenBank assembly GCA_902789665.1. The GC content of the type genome is 38.23 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Defosula fumifitrix sp. nov.

Candidatus Defosula fumifitrix (NL. fem. n. *fumifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp900769175*. The type genome for the species is the GenBank assembly RS_GCF_900769175.1. The GC content of the type genome is 40.67 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Defosula hexapimonas sp. nov.

Candidatus Defosula hexapimonas (NL. fem. n. *hexapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp002368665*. The type genome for the species is the GenBank assembly GCA_002368665.1. The GC content of the type genome is 45.09 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Defosula linigousia sp. nov.

Candidatus Defosula linigousia (NL. fem. n. *linigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp900313265*. The type genome for the species is the GenBank assembly GCA_900313265.1. The GC content of the type genome is 44.9 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Defosula retecilega sp. nov.

Candidatus Defosula retecilega (NL. fem. n. *retecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp002393735*. The type genome for the species is the GenBank assembly GCA_002393735.1. The GC content of the type genome is 38.07 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Defosula roraressa sp. nov.

Candidatus Defosula roraressa (NL. fem. n. *roraressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp902782715*. The type genome for the species is the GenBank assembly GCA_902782715.1. The GC content of the type genome is 41.13 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Defosula siticitio sp. nov.

Candidatus Defosula siticitio (NL. fem. n. *siticitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp002494135*. The type genome for the species is the GenBank assembly GCA_002494135.1. The GC content of the type genome is 46.07 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Defosula terebago sp. nov.

Candidatus Defosula terebago (NL. fem. n. *terebago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp900100245*. The type genome for the species is the GenBank assembly RS_GCF_900100245.1. The GC content of the type genome is 39.75 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Defosula tibicicella sp. nov.

Candidatus Defosula tibicicella (NL. fem. n. *tibicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3766 sp902789265*. The type genome for the species is the GenBank assembly GCA_902790125.1. The GC content of the type genome is 43.27 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Defulana domigastra sp. nov.

Candidatus Defulana domigastra (NL. fem. n. *domigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9775 sp003520145*. The type genome for the species is the GenBank assembly GCA_003520145.1. The GC content of the type genome is 40.78 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Defulana gen. nov.

Candidatus Defulana (NL. fem. n. *Defulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9775*. The type species for the genus is *Candidatus* Defulana domigastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defularia deparicula sp. nov.

Candidatus Defularia deparicula (NL. fem. n. *deparicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEVK01 sp013044245*. The type genome for the species is the

GenBank assembly GCA_013044245.1. The GC content of the type genome is 50.39 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Defularia gen. nov.

Candidatus Defularia (NL. fem. n. *Defularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEVK01*. The type species for the genus is *Candidatus* Defularia deparicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABEVK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defulariaceae.

Description of *Candidatus* Defulariaceae fam. nov.

Candidatus Defulariaceae (NL. fem. n. *Defulariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABEVK01.* The type genus for the taxon is *Candidatus* Defularia .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABEVK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defulariales.

Description of *Candidatus* Defulariales ord. nov.

Candidatus Defulariales (NL. fem. n. *Defulariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABEVK01.* The type genus for the taxon is *Candidatus* Defularia .

According to the GTDB R06-RS202, this order belongs to the class *Spirochaetia*.

Description of *Candidatus* Defularia herinitio sp. nov.

Candidatus Defularia herinitio (NL. fem. n. *herinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEVK01 sp013043995*. The type genome for the species is the GenBank assembly GCA_013043995.1. The GC content of the type genome is 53.89 %

and the genome length is 1.95 Mbp.

Description of *Candidatus* Defulella lucifibula sp. nov.

Candidatus Defulella lucifibula (NL. fem. n. *lucifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOS01 sp002070025*. The type genome for the species is the GenBank assembly GCA_002070025.1. The GC content of the type genome is 53.2 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Defulella gen. nov.

Candidatus Defulella (NL. fem. n. *Defulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOS01*. The type species for the genus is *Candidatus* Defulella lucifibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defulella navicitas sp. nov.

Candidatus Defulella navicitas (NL. fem. n. *navicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOS01 sp012838745*. The type genome for the species is the GenBank assembly GCA_012838745.1. The GC content of the type genome is 42.1 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Defulia adpagatio sp. nov.

Candidatus Defulia adpagatio (NL. fem. n. *adpagatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12178 sp003641795*. The type genome for the species is the GenBank assembly GCA_003641795.1. The GC content of the type genome is 47.92 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Defulia gen. nov.

Candidatus Defulia (NL. fem. n. *Defulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12178*. The type species for the genus is *Candidatus* Defulia adpagatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12178*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defuliaceae.

Description of *Candidatus* Defuliaceae fam. nov.

Candidatus Defuliaceae (NL. fem. n. *Defuliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12178.* The type genus for the taxon is *Candidatus* Defulia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA12178*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defuliales.

Description of *Candidatus* Defuliales ord. nov.

Candidatus Defuliales (NL. fem. n. *Defuliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12178.* The type genus for the taxon is *Candidatus* Defulia .

According to the GTDB R06-RS202, this order belongs to the class *Thermotogae*.

Description of *Candidatus* Defulia bicubilega sp. nov.

Candidatus Defulia bicubilega (NL. fem. n. *bicubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12178 sp003538775*. The type genome for the species is the GenBank assembly GCA_003538775.1. The GC content of the type genome is 46.12 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Defulosa desepitas sp. nov.

Candidatus Defulosa desepitas (NL. fem. n. *desepitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-36-10 sp001821375*. The type genome for the species is the GenBank assembly GCA_001821375.1. The GC content of the type genome is 36.14 % and the genome length is 0.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Defulosa gen. nov.

Candidatus Defulosa (NL. fem. n. *Defulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB1-36-10*. The type species for the genus is *Candidatus* Defulosa desepitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYB1-36-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defulosaceae.

Description of *Candidatus* Defulosaceae fam. nov.

Candidatus Defulosaceae (NL. fem. n. *Defulosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYB1-36-10.* The type genus for the taxon is *Candidatus* Defulosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Defunaria hemidentia sp. nov.

Candidatus Defunaria hemidentia (NL. fem. n. *hemidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCU01 sp012729595*. The type genome for the species is the GenBank assembly GCA_012729595.1. The GC content of the type genome is 57.36 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Defunaria gen. nov.

Candidatus Defunaria (NL. fem. n. *Defunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYCU01*. The type species for the genus is *Candidatus* Defunaria hemidentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWPN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifidaceae.

Description of *Candidatus* Defunella repurilega sp. nov.

Candidatus Defunella repurilega (NL. fem. n. *repurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-50-11 sp001774395*. The type genome for the species is the GenBank assembly GCA_001774395.1. The GC content of the type genome is 49.85 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Defunella gen. nov.

Candidatus Defunella (NL. fem. n. *Defunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-50-11*. The type species for the genus is *Candidatus* Defunella repurilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-50-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defunellaceae.

Description of *Candidatus* Defunellaceae fam. nov.

Candidatus Defunellaceae (NL. fem. n. *Defunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-50-11.* The type genus for the taxon is *Candidatus* Defunella .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-12-FULL-50-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defunellales.

Description of *Candidatus* Defunellales ord. nov.

Candidatus Defunellales (NL. fem. n. *Defunellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-50-11.* The type genus for the taxon is *Candidatus* Defunella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Panifidae.

Description of *Candidatus* Defunia exsisimonas sp. nov.

Candidatus Defunia exsisimonas (NL. fem. n. *exsisimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAU-1492 sp002210165*. The type genome for the species is the GenBank assembly RS_GCF_002210165.1. The GC content of the type genome is 60.31 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Defunia gen. nov.

Candidatus Defunia (NL. fem. n. *Defunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAU-1492*. The type species for the genus is *Candidatus* Defunia exsisimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defunia rorifibra sp. nov.

Candidatus Defunia rorifibra (NL. fem. n. *rorifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAU-1492 sp002706905*. The type genome for the species is the GenBank assembly RS_GCF_005938225.1. The GC content of the type genome is 63.12 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Defunida feditisca sp. nov.

Candidatus Defunida feditisca (NL. fem. n. *feditisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLIM01 sp007135625*. The type genome for the species is the GenBank assembly GCA_003563135.1. The GC content of the type genome is 58.92 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Defunida gen. nov.

Candidatus Defunida (NL. fem. n. *Defunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLIM01*. The type species for the genus is *Candidatus* Defunida feditisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defunida hexamivita sp. nov.

Candidatus Defunida hexamivita (NL. fem. n. *hexamivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLIM01 sp011390365*. The type genome for the species is the GenBank assembly GCA_011390365.1. The GC content of the type genome is 62.59 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Defunosa adaggitas sp. nov.

Candidatus Defunosa adaggitas (NL. fem. n. *adaggitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4810 sp002478265*. The type genome for the species is the GenBank assembly GCA_002478265.1. The GC content of the type genome is 47.73 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Defunosa gen. nov.

Candidatus Defunosa (NL. fem. n. *Defunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4810*. The type species for the genus is *Candidatus* Defunosa adaggitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Defunosa echogitura sp. nov.

Candidatus Defunosa echogitura (NL. fem. n. *echogitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4810 sp002402545*. The type genome for the species is the GenBank assembly GCA_002402545.1. The GC content of the type genome is 44.61 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Defunosa funivitudo sp. nov.

Candidatus Defunosa funivitudo (NL. fem. n. *funivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4810 sp011046295*. The type genome for the species is the GenBank assembly GCA_011046295.1. The GC content of the type genome is 45.89 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Defunosa rurigitia sp. nov.

Candidatus Defunosa rurigitia (NL. fem. n. *rurigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4810 sp002479215*. The type genome for the species is the GenBank assembly GCA_002312915.1. The GC content of the type genome is 43.47 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Defunosa semiditio sp. nov.

Candidatus Defunosa semiditio (NL. fem. n. *semiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4810 sp002418825*. The type genome for the species is the GenBank assembly GCA_012797395.1. The GC content of the type genome is 45.22 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Defunosa tomacessa sp. nov.

Candidatus Defunosa tomacessa (NL. fem. n. *tomacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4810 sp001797845*. The type genome for the species is the GenBank assembly GCA_001797845.1. The GC content of the type genome is 43.54 % and the genome length is 2.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Defunula bipinisca sp. nov.

Candidatus Defunula bipinisca (NL. fem. n. *bipinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-all-37-9 sp002772495*. The type genome for the species is the GenBank assembly GCA_002772495.1. The GC content of the type genome is 37.43 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Defunula gen. nov.

Candidatus Defunula (NL. fem. n. *Defunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-all-37-9*. The type species for the genus is *Candidatus* Defunula bipinisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD1-FULL-46-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidellaceae.

Description of *Candidatus* Dehalobacter estovitas sp. nov.

Candidatus Dehalobacter estovitas (NL. fem. n. *estovitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dehalobacter sp009910795*. The type genome for the species is the GenBank assembly GCA_009910795.1. The GC content of the type genome is 45.26 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Dehalobacter monacessa sp. nov.

Candidatus Dehalobacter monacessa (NL. fem. n. *monacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dehalobacter sp004343605*. The type genome for the species is the GenBank assembly RS_GCF_004343605.1. The GC content of the type genome is 44.38 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Dehalogenimonas innumago sp. nov.

Candidatus Dehalogenimonas innumago (NL. fem. n. *innumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dehalogenimonas sp002878295*. The type genome for the species is the GenBank assembly RS_GCF_002878295.2. The GC content of the type genome is 52.04 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Dehalogenimonas lenunitudo sp. nov.

Candidatus Dehalogenimonas lenunitudo (NL. fem. n. *lenunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dehalogenimonas sp001005265*. The type genome for the species is the GenBank assembly GCA_001005265.1. The GC content of the type genome is 49.19 % and the genome length is 1.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Dehinana redunicella sp. nov.

Candidatus Dehinana redunicella (NL. fem. n. *redunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB16 sp001567115*. The type genome for the species is the GenBank assembly GCA_001567115.1. The GC content of the type genome is 54.59 % and the genome length is 4.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Dehinana gen. nov.

Candidatus Dehinana (NL. fem. n. *Dehinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB16*. The type species for the genus is *Candidatus* Dehinana redunicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinanaceae.

Description of *Candidatus* Dehinanaceae fam. nov.

Candidatus Dehinanaceae (NL. fem. n. *Dehinanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OLB16.* The type genus for the taxon is *Candidatus* Dehinana .

According to the original version of GTDB R06-RS202, this family belongs to the order *OLB16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dehinanales.

Description of *Candidatus* Dehinanales ord. nov.

Candidatus Dehinanales (NL. fem. n. *Dehinanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OLB16.* The type genus for the taxon is *Candidatus* Dehinana .

According to the original version of GTDB R06-RS202, this family belongs to the class *OLB16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Dehinanae.

Description of *Candidatus* Dehinanae class. nov.

Candidatus Dehinanae (NL. fem. n. *c__Dehinanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OLB16.* The type genus for the taxon is *Candidatus* Dehinana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *OLB16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Dehinanota.

Description of *Candidatus* Dehinanota phyl. nov.

Candidatus Dehinanota (NL. fem. n. *Dehinanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OLB16.* The type genus for the taxon is *Candidatus* Dehinana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Dehinaria giganimonia sp. nov.

Candidatus Dehinaria giganimonia (NL. fem. n. *giganimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP154 sp002401055*. The type genome for the species is the GenBank assembly GCA_002401055.1. The GC content of the type genome is 40.81 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Dehinaria gen. nov.

Candidatus Dehinaria (NL. fem. n. *Dehinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NORP154*. The type species for the genus is *Candidatus* Dehinaria giganimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NORP154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinariaceae.

Description of *Candidatus* Dehinariaceae fam. nov.

Candidatus Dehinariaceae (NL. fem. n. *Dehinariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NORP154.* The type genus for the taxon is *Candidatus* Dehinaria .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Dehinaria monumetta sp. nov.

Candidatus Dehinaria monumetta (NL. fem. n. *monumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP154 sp012966015*. The type genome for the species is the GenBank assembly GCA_012966015.1. The GC content of the type genome is 42.09 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Dehinella duciliforma sp. nov.

Candidatus Dehinella duciliforma (NL. fem. n. *duciliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4647 sp002438625*. The type genome for the species is the GenBank assembly GCA_002405695.1. The GC content of the type genome is 31.35 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Dehinella gen. nov.

Candidatus Dehinella (NL. fem. n. *Dehinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4647*. The type species for the genus is *Candidatus* Dehinella duciliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Dehinia biparedo sp. nov.

Candidatus Dehinia biparedo (NL. fem. n. *biparedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-01-FULL-48-27b sp001824915*. The type genome for the species is the GenBank assembly GCA_001824915.1. The GC content of the type genome is 47.69 % and the genome length is 0.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Dehinia gen. nov.

Candidatus Dehinia (NL. fem. n. *Dehinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-01-FULL-48-27b*. The type species for the genus is *Candidatus* Dehinia biparedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxilidaceae.

Description of *Candidatus* Dehinida codifedo sp. nov.

Candidatus Dehinida codifedo (NL. fem. n. *codifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4763 sp002403455*. The type genome for the species is the GenBank assembly GCA_002299045.1. The GC content of the type genome is 61.61 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Dehinida gen. nov.

Candidatus Dehinida (NL. fem. n. *Dehinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4763*. The type species for the genus is *Candidatus* Dehinida codifedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dehinosa pociligena sp. nov.

Candidatus Dehinosa pociligena (NL. fem. n. *pociligena* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRO5 sp003577275*. The type genome for the species is the GenBank assembly GCA_003577275.1. The GC content of the type genome is 60.98 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Dehinosa gen. nov.

Candidatus Dehinosa (NL. fem. n. *Dehinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PRO5*. The type species for the genus is *Candidatus* Dehinosa pociligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J090*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufidaceae.

Description of *Candidatus* Dehinula cacomilega sp. nov.

Candidatus Dehinula cacomilega (NL. fem. n. *cacomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007128855*. The type genome for the species is the GenBank assembly GCA_007121885.1. The GC content of the type genome is 55.11 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Dehinula gen. nov.

Candidatus Dehinula (NL. fem. n. *Dehinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKNL01*. The type species for the genus is *Candidatus* Dehinula cacomilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinulaceae.

Description of *Candidatus* Dehinulaceae fam. nov.

Candidatus Dehinulaceae (NL. fem. n. *Dehinulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKNL01*. The type genus for the taxon is *Candidatus* Dehinula .

According to GTDB R06-RS202, this family belongs to the order *Balneolales*.

Description of *Candidatus* Dehinula conabigena sp. nov.

Candidatus Dehinula conabigena (NL. fem. n. *conabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007120385*. The type genome for the species is the GenBank assembly GCA_007124435.1. The GC content of the type genome is 54.81 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Dehinula demulousia sp. nov.

Candidatus Dehinula demulousia (NL. fem. n. *demulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007120555*. The type genome for the species is the GenBank assembly GCA_003567355.1. The GC content of the type genome is 54.35 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Dehinula depecicella sp. nov.

Candidatus Dehinula depecicella (NL. fem. n. *depecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007133995*. The type genome for the species is the GenBank assembly GCA_003560895.1. The GC content of the type genome is 49.58 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Dehinula desacitudo sp. nov.

Candidatus Dehinula desacitudo (NL. fem. n. *desacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007127665*. The type genome for the species is the GenBank assembly GCA_007118935.1. The GC content of the type genome is 52.98 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Dehinula ducilatica sp. nov.

Candidatus Dehinula ducilatica (NL. fem. n. *ducilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007134845*. The type genome for the species is the GenBank assembly GCA_007134845.1. The GC content of the type genome is 50.76 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Dehinula fidenitica sp. nov.

Candidatus Dehinula fidenitica (NL. fem. n. *fidenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007128425*. The type genome for the species is the GenBank assembly GCA_003559715.1. The GC content of the type genome is 49.2 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Dehinula offunitia sp. nov.

Candidatus Dehinula offunitia (NL. fem. n. *offunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007693825*. The type genome for the species is the GenBank assembly GCA_007693825.1. The GC content of the type genome is 54.75 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Dehinula pericitas sp. nov.

Candidatus Dehinula pericitas (NL. fem. n. *pericitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007132975*. The type genome for the species is the GenBank assembly GCA_007132975.1. The GC content of the type genome is 55.04 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Dehinula remedigena sp. nov.

Candidatus Dehinula remedigena (NL. fem. n. *remedigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007127695*. The type genome for the species is the GenBank assembly GCA_007127695.1. The GC content of the type genome is 54.14 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Dehinula umbilentia sp. nov.

Candidatus Dehinula umbilentia (NL. fem. n. *umbilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNL01 sp007122185*. The type genome for the species is the GenBank assembly GCA_007122185.1. The GC content of the type genome is 53.61 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Dehisana munifilenta sp. nov.

Candidatus Dehisana munifilenta (NL. fem. n. *munifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GBS-1 sp001443005*. The type genome for the species is the GenBank assembly GCA_011367565.1. The GC content of the type genome is 44.81 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Dehisana gen. nov.

Candidatus Dehisana (NL. fem. n. *Dehisana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GBS-1*. The type species for the genus is *Candidatus* Dehisana munifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehisanaceae.

Description of *Candidatus* Dehisanaceae fam. nov.

Candidatus Dehisanaceae (NL. fem. n. *Dehisanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GBS-1*. The type genus for the taxon is *Candidatus* Dehisana .

According to the original version of GTDB R06-RS202, this family belongs to the order *GBS-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dehisanales.

Description of *Candidatus* Dehisanales ord. nov.

Candidatus Dehisanales (NL. fem. n. *Dehisanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GBS-1*. The type genus for the taxon is *Candidatus* Dehisana .

According to the original version of GTDB R06-RS202, this family belongs to the class *GBS-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Dehisanae.

Description of *Candidatus* Dehisanae class. nov.

Candidatus Dehisanae (NL. fem. n. *c__Dehisanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GBS-1*. The type genus for the taxon is *Candidatus* Dehisana .

According to GTDB R06-RS202, this class belongs to the phylum *Synergistota*.

Description of *Candidatus* Dehisaria metapibra sp. nov.

Candidatus Dehisaria metapibra (NL. fem. n. *metapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKOH01 sp903829075*. The type genome for the species is the GenBank assembly GCA_903829075.1. The GC content of the type genome is 51.14 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Dehisaria gen. nov.

Candidatus Dehisaria (NL. fem. n. *Dehisaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKOH01*. The type species for the genus is *Candidatus* Dehisaria metapibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-60-25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugigulaceae.

Description of *Candidatus* Dehisaria thessivita sp. nov.

Candidatus Dehisaria thessivita (NL. fem. n. *thessivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKOH01 sp009691315*. The type genome for the species is the GenBank assembly GCA_009691315.1. The GC content of the type genome is 47.21 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Dehisella favilibula sp. nov.

Candidatus Dehisella favilibula (NL. fem. n. *favilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Barb7 sp010500925*. The type genome for the species is the GenBank assembly RS_GCF_010500925.1. The GC content of the type genome is 43.04 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Dehisella gen. nov.

Candidatus Dehisella (NL. fem. n. *Dehisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Barb7*. The type species for the genus is *Candidatus* Dehisella favilibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dehisella levifatica sp. nov.

Candidatus Dehisella levifatica (NL. fem. n. *levifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Barb7 sp001657575*. The type genome for the species is the GenBank assembly RS_GCF_001657575.1. The GC content of the type genome is 47.88 % and the genome length is 3.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hindgut of Cryptocercus punctulatus".

Description of *Candidatus* Dehisia bicorilega sp. nov.

Candidatus Dehisia bicorilega (NL. fem. n. *bicorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILNX01 sp903835685*. The type genome for the species is the GenBank assembly GCA_903879295.1. The GC content of the type genome is 63.75 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Dehisia gen. nov.

Candidatus Dehisia (NL. fem. n. *Dehisia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILNX01*. The type species for the genus is *Candidatus* Dehisia bicorilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dehisida gasomugo sp. nov.

Candidatus Dehisida gasomugo (NL. fem. n. *gasomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMF01 sp009841225*. The type genome for the species is the GenBank assembly GCA_009839945.1. The GC content of the type genome is 63.68 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Dehisida gen. nov.

Candidatus Dehisida (NL. fem. n. *Dehisida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXMF01*. The type species for the genus is *Candidatus* Dehisida

gasomugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6623*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Medimosaceae.

Description of *Candidatus* Dehisida megaligena sp. nov.

Candidatus Dehisida megaligena (NL. fem. n. *megaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMF01 sp009838515*. The type genome for the species is the GenBank assembly GCA_009843165.1. The GC content of the type genome is 63.62 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Dehisosa regigiforma sp. nov.

Candidatus Dehisosa regigiforma (NL. fem. n. *regigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7867 sp002405615*. The type genome for the species is the GenBank assembly GCA_002501295.1. The GC content of the type genome is 40.42 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Dehisosa gen. nov.

Candidatus Dehisosa (NL. fem. n. *Dehisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7867*. The type species for the genus is *Candidatus* Dehisosa regigiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Dehisula adsulitrix sp. nov.

Candidatus Dehisula adsulitrix (NL. fem. n. *adsulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *41-269 sp012523575*. The type genome for the species is the GenBank assembly GCA_012523575.1. The GC content of the type genome is 43.6 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Dehisula gen. nov.

Candidatus Dehisula (NL. fem. n. *Dehisula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *41-269*. The type species for the genus is *Candidatus* Dehisula adsulitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU086*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defosidaceae.

Description of *Candidatus* Dehisula categetta sp. nov.

Candidatus Dehisula categetta (NL. fem. n. *categetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *41-269 sp001508005*. The type genome for the species is the GenBank assembly GCA_001508005.1. The GC content of the type genome is 40.67 % and the genome length is 1.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample K2".

Description of *Candidatus* Dehonana arremicula sp. nov.

Candidatus Dehonana arremicula (NL. fem. n. *arremicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12225 sp009693165*. The type genome for the species is the GenBank assembly GCA_009693165.1. The GC content of the type genome is 62.12 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Dehonana gen. nov.

Candidatus Dehonana (NL. fem. n. *Dehonana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA12225*. The type species for the genus is *Candidatus* Dehonana arremicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12225*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehonanaceae.

Description of *Candidatus* Dehonanaceae fam. nov.

Candidatus Dehonanaceae (NL. fem. n. *Dehonanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12225.* The type genus for the taxon is *Candidatus* Dehonana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA12225*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dehonanales.

Description of *Candidatus* Dehonanales ord. nov.

Candidatus Dehonanales (NL. fem. n. *Dehonanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12225.* The type genus for the taxon is *Candidatus* Dehonana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2235*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Nocumosae.

Description of *Candidatus* Dehonana vocifitica sp. nov.

Candidatus Dehonana vocifitica (NL. fem. n. *vocifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12225 sp002347925*. The type genome for the species is the GenBank assembly GCA_003670395.1. The GC content of the type genome is 61.79 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Dehonaria eclipigena sp. nov.

Candidatus Dehonaria eclipigena (NL. fem. n. *eclipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1810 sp900555295*. The type genome for the species is the GenBank assembly GCA_900555295.1. The GC content of the type genome is 38.42 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Dehonaria gen. nov.

Candidatus Dehonaria (NL. fem. n. *Dehonaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1810*. The type species for the genus is *Candidatus* Dehonaria eclipigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1810*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehonariaceae.

Description of *Candidatus* Dehonariaceae fam. nov.

Candidatus Dehonariaceae (NL. fem. n. *Dehonariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1810.* The type genus for the taxon is *Candidatus* Dehonaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UMGS1810*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dehonariales.

Description of *Candidatus* Dehonariales ord. nov.

Candidatus Dehonariales (NL. fem. n. *Dehonariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1810.* The type genus for the taxon is *Candidatus* Dehonaria .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Dehonella inpudiforma sp. nov.

Candidatus Dehonella inpudiforma (NL. fem. n. *inpudiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA994 sp002292025*. The type genome for the species is the GenBank assembly GCA_002292025.1. The GC content of the type genome is 54.59 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Dehonella gen. nov.

Candidatus Dehonella (NL. fem. n. *Dehonella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA994*. The type species for the genus is *Candidatus* Dehonella inpudiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA994*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehonellaceae.

Description of *Candidatus* Dehonellaceae fam. nov.

Candidatus Dehonellaceae (NL. fem. n. *Dehonellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA994.* The type genus for the taxon is *Candidatus* Dehonella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA994*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dehonellales.

Description of *Candidatus* Dehonellales ord. nov.

Candidatus Dehonellales (NL. fem. n. *Dehonellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA994.* The type genus for the taxon is *Candidatus* Dehonella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA994*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Dehonellae.

Description of *Candidatus* Dehonellae class. nov.

Candidatus Dehonellae (NL. fem. n. *c__Dehonellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA994.* The type genus for the taxon is *Candidatus* Dehonella .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_H*.

Description of *Candidatus* Dehonia rudicax sp. nov.

Candidatus Dehonia rudicax (NL. fem. n. *rudicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12395 sp902778725*. The type genome for the species is the GenBank assembly GCA_902778395.1. The GC content of the type genome is 60.96 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Dehonia gen. nov.

Candidatus Dehonia (NL. fem. n. *Dehonia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12395*. The type species for the genus is *Candidatus* Dehonia rudicax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Dehonida bicinitas sp. nov.

Candidatus Dehonida bicinitas (NL. fem. n. *bicinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8403 sp002325615*. The type genome for the species is the GenBank assembly GCA_003456065.1. The GC content of the type genome is 45.28 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Dehonida gen. nov.

Candidatus Dehonida (NL. fem. n. *Dehonida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8403*. The type species for the genus is *Candidatus* Dehonida

bicinitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dehonida opporicella sp. nov.

Candidatus Dehonida opporicella (NL. fem. n. *opporicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8403 sp011524725*. The type genome for the species is the GenBank assembly GCA_011524725.1. The GC content of the type genome is 44.96 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Dehonosa altifitoga sp. nov.

Candidatus Dehonosa altifitoga (NL. fem. n. *altifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPQ01 sp013202585*. The type genome for the species is the GenBank assembly GCA_013202585.1. The GC content of the type genome is 42.82 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Dehonosa gen. nov.

Candidatus Dehonosa (NL. fem. n. *Dehonosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPQ01*. The type species for the genus is *Candidatus* Dehonosa altifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMPQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehonosaceae.

Description of *Candidatus* Dehonosaceae fam. nov.

Candidatus Dehonosaceae (NL. fem. n. *Dehonosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMPQ01*. The type genus for the taxon is *Candidatus* Dehonosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMPQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dehonosales.

Description of *Candidatus* Dehonosales ord. nov.

Candidatus Dehonosales (NL. fem. n. *Dehonosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMPQ01.* The type genus for the taxon is *Candidatus* Dehonosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *JABMPQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Dehonosae.

Description of *Candidatus* Dehonosae class. nov.

Candidatus Dehonosae (NL. fem. n. *c__Dehonosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMPQ01.* The type genus for the taxon is *Candidatus* Dehonosa .

According to GTDB R06-RS202, this class belongs to the phylum *Patescibacteria*.

Description of *Candidatus* Dehonula cibarilenta sp. nov.

Candidatus Dehonula cibarilenta (NL. fem. n. *cibarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7050 sp002493905*. The type genome for the species is the GenBank assembly GCA_002491645.1. The GC content of the type genome is 47.99 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Dehonula gen. nov.

Candidatus Dehonula (NL. fem. n. *Dehonula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7050*. The type species for the genus is *Candidatus* Dehonula cibarilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dehonula penicentia sp. nov.

Candidatus Dehonula penicentia (NL. fem. n. *penicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7050 sp003979345*. The type genome for the species is the GenBank assembly GCA_013316925.1. The GC content of the type genome is 47.88 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Deinococcus adtumousia sp. nov.

Candidatus Deinococcus adtumousia (NL. fem. n. *adtumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp002953415*. The type genome for the species is the GenBank assembly RS_GCF_002953415.1. The GC content of the type genome is 69.71 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Deinococcus amnenisca sp. nov.

Candidatus Deinococcus amnenisca (NL. fem. n. *amnenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp004801315*. The type genome for the species is the GenBank assembly RS_GCF_004801315.1. The GC content of the type genome is 61.81 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Deinococcus arrugugo sp. nov.

Candidatus Deinococcus arrugugo (NL. fem. n. *arrugugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp007280555*. The type genome for the species is the GenBank assembly RS_GCF_007280555.1. The GC content of the type genome is 61.32 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Deinococcus cuticitia sp. nov.

Candidatus Deinococcus cuticitia (NL. fem. n. *cuticitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp002017875*. The type genome for the species is the GenBank assembly RS_GCF_001413985.2. The GC content of the type genome is 69.37 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Deinococcus expopilega sp. nov.

Candidatus Deinococcus expopilega (NL. fem. n. *expopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp009017495*. The type genome for the species is the GenBank assembly RS_GCF_009017495.1. The GC content of the type genome is 64.01 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Deinococcus extipetta sp. nov.

Candidatus Deinococcus extipetta (NL. fem. n. *extipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp001424185*. The type genome for the species is the GenBank assembly RS_GCF_001424185.1. The GC content of the type genome is 67.4 % and the genome length is 4.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Deinococcus galacax sp. nov.

Candidatus Deinococcus galacax (NL. fem. n. *galacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp003860465*. The type genome for the species is the GenBank assembly RS_GCF_003860465.1. The GC content of the type genome is 61.09 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Deinococcus inpenitica sp. nov.

Candidatus Deinococcus inpenitica (NL. fem. n. *inpenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp003028415*. The type genome for the species is the GenBank assembly RS_GCF_003028415.1. The GC content of the type genome is 68.12 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Deinococcus oppanivita sp. nov.

Candidatus Deinococcus oppanivita (NL. fem. n. *oppanivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp000745175*. The type genome for the species is the GenBank assembly RS_GCF_000745175.1. The GC content of the type genome is 67.46 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Deinococcus scintiforma sp. nov.

Candidatus Deinococcus scintiforma (NL. fem. n. *scintiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp009377345*. The type genome for the species is the GenBank assembly RS_GCF_009377345.1. The GC content of the type genome is 69.21 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Deinococcus sonipousia sp. nov.

Candidatus Deinococcus sonipousia (NL. fem. n. *sonipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp013337115*. The type genome for the species is the GenBank assembly RS_GCF_013337115.1. The GC content of the type genome is 69.75 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Deinococcus turibitas sp. nov.

Candidatus Deinococcus turibitas (NL. fem. n. *turibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp004801415*. The type genome for the species is the GenBank assembly RS_GCF_004801415.1. The GC content of the type genome is 68.23 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Deinococcus verecitrix sp. nov.

Candidatus Deinococcus verecitrix (NL. fem. n. *verecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Deinococcus sp009755355*. The type genome for the species is the GenBank assembly RS_GCF_009755355.1. The GC content of the type genome is 65.73 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Delacana favonitura sp. nov.

Candidatus Delacana favonitura (NL. fem. n. *favonitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-12-A sp001776905*. The type genome for the species is the GenBank assembly GCA_001776905.1. The GC content of the type genome is 38.69 % and the genome length is 1.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Delacana gen. nov.

Candidatus Delacana (NL. fem. n. *Delacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-12-A*. The type species for the genus is *Candidatus* Delacana favonitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Delacella aterrousia sp. nov.

Candidatus Delacella aterrousia (NL. fem. n. *aterrousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDFO01 sp013815785*. The type genome for the species is the GenBank assembly GCA_013815785.1. The GC content of the type genome is 44.44 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Delacella gen. nov.

Candidatus Delacella (NL. fem. n. *Delacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDFO01*. The type species for the genus is *Candidatus* Delacella aterrousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACDFO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delacellaceae.

Description of *Candidatus* Delacellaceae fam. nov.

Candidatus Delacellaceae (NL. fem. n. *Delacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACDFO01.* The type genus for the taxon is *Candidatus* Delacella .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Delacia cerimitas sp. nov.

Candidatus Delacia cerimitas (NL. fem. n. *cerimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7378 sp002469805*. The type genome for the species is the GenBank assembly GCA_002469805.1. The GC content of the type genome is 54.13 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Delacia gen. nov.

Candidatus Delacia (NL. fem. n. *Delacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7378*. The type species for the genus is *Candidatus* Delacia cerimitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RS24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venuciaceae.

Description of *Candidatus* Delacia conubitica sp. nov.

Candidatus Delacia conubitica (NL. fem. n. *conubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7378 sp002689195*. The type genome for the species is the GenBank assembly GCA_002308375.1. The GC content of the type genome is 56.5 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Delacia monopicula sp. nov.

Candidatus Delacia monopicula (NL. fem. n. *monopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7378 sp902624095*. The type genome for the species is the GenBank assembly GCA_902624095.1. The GC content of the type genome is 52.91 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Delacida decunastra sp. nov.

Candidatus Delacida decunastra (NL. fem. n. *decunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSAB01 sp011388275*. The type genome for the species is the GenBank assembly GCA_011388275.1. The GC content of the type genome is 52.19 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Delacida gen. nov.

Candidatus Delacida (NL. fem. n. *Delacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSAB01*. The type species for the genus is *Candidatus* Delacida decunastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSAB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delacidaceae.

Description of *Candidatus* Delacidaceae fam. nov.

Candidatus Delacidaceae (NL. fem. n. *Delacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSAB01*. The type genus for the taxon is *Candidatus* Delacida .

According to the original version of GTDB R06-RS202, this family belongs to the order *QNDG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decunulales.

Description of *Candidatus* Delacosa baditisca sp. nov.

Candidatus Delacosa baditisca (NL. fem. n. *baditisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU032 sp002427505*. The type genome for the species is the GenBank assembly GCA_002409095.1. The GC content of the type genome is 47.87 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Delacosa gen. nov.

Candidatus Delacosa (NL. fem. n. *Delacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU032*. The type species for the genus is *Candidatus* Delacosa baditisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decunariaceae.

Description of *Candidatus* Delacosa coninimonia sp. nov.

Candidatus Delacosa coninimonia (NL. fem. n. *coninimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU032 sp001512745*. The type genome for the species is the GenBank assembly GCA_001512745.1. The GC content of the type genome is 46.47 % and the genome length is 1.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors

for biogas production (methane)".

Description of *Candidatus* Delacosa venefimonas sp. nov.

Candidatus Delacosa venefimonas (NL. fem. n. *venefimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU032 sp002427475*. The type genome for the species is the GenBank assembly GCA_012838025.1. The GC content of the type genome is 47.08 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Delacosa vilipisca sp. nov.

Candidatus Delacosa vilipisca (NL. fem. n. *vilipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU032 sp012728535*. The type genome for the species is the GenBank assembly GCA_012728535.1. The GC content of the type genome is 46.74 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Delacula astapicella sp. nov.

Candidatus Delacula astapicella (NL. fem. n. *astapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMRT01 sp013202295*. The type genome for the species is the GenBank assembly GCA_013202295.1. The GC content of the type genome is 44.06 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Delacula gen. nov.

Candidatus Delacula (NL. fem. n. *Delacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMRT01*. The type species for the genus is *Candidatus* Delacula astapicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMRT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delaculaceae.

Description of *Candidatus* Delaculaceae fam. nov.

Candidatus Delaculaceae (NL. fem. n. *Delaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMRT01.* The type genus for the taxon is *Candidatus* Delacula .

According to the original version of GTDB R06-RS202, this family belongs to the order *QNDG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decunulales.

Description of *Candidatus* Delapana disidibra sp. nov.

Candidatus Delapana disidibra (NL. fem. n. *disidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12532 sp003445475*. The type genome for the species is the GenBank assembly GCA_003445475.1. The GC content of the type genome is 61.46 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Delapana gen. nov.

Candidatus Delapana (NL. fem. n. *Delapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12532*. The type species for the genus is *Candidatus* Delapana disidibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delapanaceae.

Description of *Candidatus* Delapanaceae fam. nov.

Candidatus Delapanaceae (NL. fem. n. *Delapanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12532.* The type genus for the taxon is *Candidatus* Delapana .

According to GTDB R06-RS202, this family belongs to the order *Ammonifexales*.

Description of *Candidatus* Delapana pacifetta sp. nov.

Candidatus Delapana pacifetta (NL. fem. n. *pacifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12532 sp011048115*. The type genome for the species is the GenBank assembly GCA_011048115.1. The GC content of the type genome is 59.93 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Delaparia domigibra sp. nov.

Candidatus Delaparia domigibra (NL. fem. n. *domigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQIQ01 sp903871935*. The type genome for the species is the GenBank assembly GCA_903925855.1. The GC content of the type genome is 60.46 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Delaparia gen. nov.

Candidatus Delaparia (NL. fem. n. *Delaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQIQ01*. The type species for the genus is *Candidatus* Delaparia domigibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hariciaceae.

Description of *Candidatus* Delapella visibitica sp. nov.

Candidatus Delapella visibitica (NL. fem. n. *visibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-211 sp002084955*. The type genome for the species is the GenBank assembly GCA_002084955.1. The GC content of the type genome is 44.38 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Delapella gen. nov.

Candidatus Delapella (NL. fem. n. *Delapella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-211*. The type species for the genus is *Candidatus* Delapella visibitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-211*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delapellaceae.

Description of *Candidatus* Delapellaceae fam. nov.

Candidatus Delapellaceae (NL. fem. n. *Delapellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-211.* The type genus for the taxon is *Candidatus* Delapella .

According to the original version of GTDB R06-RS202, this family belongs to the order *4484-211*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delapellales.

Description of *Candidatus* Delapellales ord. nov.

Candidatus Delapellales (NL. fem. n. *Delapellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-211.* The type genus for the taxon is *Candidatus* Delapella .

According to the original version of GTDB R06-RS202, this family belongs to the class *4484-211*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Delapellae.

Description of *Candidatus* Delapellae class. nov.

Candidatus Delapellae (NL. fem. n. *c__Delapellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-211.* The type genus for the taxon is *Candidatus* Delapella .

According to GTDB R06-RS202, this class belongs to the phylum *Patescibacteria*.

Description of *Candidatus* Delapia admoditrix sp. nov.

Candidatus Delapia admoditrix (NL. fem. n. *admoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp002373935*. The type genome for the species is the GenBank assembly GCA_002373935.1. The GC content of the type genome is 42.8 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Delapia gen. nov.

Candidatus Delapia (NL. fem. n. *Delapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Rs-D84*. The type species for the genus is *Candidatus* Delapia admoditrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Rs-D84*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delapiaceae.

Description of *Candidatus* Delapiaceae fam. nov.

Candidatus Delapiaceae (NL. fem. n. *Delapiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Rs-D84.* The type genus for the taxon is *Candidatus* Delapia .

According to the original version of GTDB R06-RS202, this family belongs to the order *Rs-D84*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delapiales.

Description of *Candidatus* Delapiales ord. nov.

Candidatus Delapiales (NL. fem. n. *Delapiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Rs-D84.* The type genus for the taxon is *Candidatus* Delapia .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Delapia adpinibula sp. nov.

Candidatus Delapia adpinibula (NL. fem. n. *adpinibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902802115*. The type genome for the species is the GenBank assembly GCA_902802115.1. The GC content of the type genome is 39.0 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Delapia ambusitoga sp. nov.

Candidatus Delapia ambusitoga (NL. fem. n. *ambusitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902788485*. The type genome for the species is the GenBank assembly GCA_902788485.1. The GC content of the type genome is 41.49 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Delapia amnenitica sp. nov.

Candidatus Delapia amnenitica (NL. fem. n. *amnenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902799285*. The type genome for the species is the GenBank assembly GCA_902799285.1. The GC content of the type genome is 41.93 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Delapia armidedo sp. nov.

Candidatus Delapia armidedo (NL. fem. n. *armidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902801125*. The type genome for the species is the GenBank assembly GCA_902801125.1. The GC content of the type genome is 44.01 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Delapia assicitio sp. nov.

Candidatus Delapia assicitio (NL. fem. n. *assicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902784345*. The type genome for the species is the GenBank assembly GCA_902784345.1. The GC content of the type genome is 37.82 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Delapia bicalicella sp. nov.

Candidatus Delapia bicalicella (NL. fem. n. *bicalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp900546225*. The type genome for the species is the GenBank assembly RS_GCF_900771925.1. The GC content of the type genome is 46.8 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Delapia casigimonia sp. nov.

Candidatus Delapia casigimonia (NL. fem. n. *casigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902781465*. The type genome for the species is the GenBank assembly GCA_902781465.1. The GC content of the type genome is 37.24 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Delapia conabiforma sp. nov.

Candidatus Delapia conabiforma (NL. fem. n. *conabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp900550495*. The type genome for the species is the GenBank assembly GCA_900550495.1. The GC content of the type genome is 45.26 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Delapia deculatica sp. nov.

Candidatus Delapia deculatica (NL. fem. n. *deculatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp900549365*. The type genome for the species is the GenBank assembly GCA_900549365.1. The GC content of the type genome is 45.82 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Delapia dicibisca sp. nov.

Candidatus Delapia dicibisca (NL. fem. n. *dicibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp900546185*. The type genome for the species is the GenBank assembly RS_GCF_900753475.1. The GC content of the type genome is 45.11 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Delapia diludilega sp. nov.

Candidatus Delapia diludilega (NL. fem. n. *diludilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902784285*. The type genome for the species is the GenBank assembly GCA_902776865.1. The GC content of the type genome is 41.69 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Delapia disidilega sp. nov.

Candidatus Delapia disidilega (NL. fem. n. *disidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902793435*. The type genome for the species is the GenBank assembly GCA_902793435.1. The GC content of the type genome is 38.91 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Delapia epiclago sp. nov.

Candidatus Delapia epiclago (NL. fem. n. *epiclago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902795435*. The type genome for the species is the GenBank assembly GCA_902795435.1. The GC content of the type genome is 35.48 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Delapia exculitudo sp. nov.

Candidatus Delapia exculitudo (NL. fem. n. *exculitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902798205*. The type genome for the species is the GenBank assembly GCA_902798205.1. The GC content of the type genome is 36.28 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Delapia expurivita sp. nov.

Candidatus Delapia expurivita (NL. fem. n. *expurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp002309215*. The type genome for the species is the GenBank assembly GCA_002309215.1. The GC content of the type genome is 37.68 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Delapia impugentia sp. nov.

Candidatus Delapia impugentia (NL. fem. n. *impugentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902787665*. The type genome for the species is the GenBank assembly GCA_902787665.1. The GC content of the type genome is 40.38 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Delapia licenicula sp. nov.

Candidatus Delapia licenicula (NL. fem. n. *licenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp002310415*. The type genome for the species is the GenBank assembly GCA_002310415.1. The GC content of the type genome is 35.67 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Delapia lorarilenta sp. nov.

Candidatus Delapia lorarilenta (NL. fem. n. *lorarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Rs-D84 sp013316395*. The type genome for the species is the GenBank assembly GCA_013316395.1. The GC content of the type genome is 48.18 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Delapia lucelousia sp. nov.

Candidatus Delapia lucelousia (NL. fem. n. *lucelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902793005*. The type genome for the species is the GenBank assembly GCA_902795465.1. The GC content of the type genome is 41.95 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Delapia luculetta sp. nov.

Candidatus Delapia luculetta (NL. fem. n. *luculetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp002348925*. The type genome for the species is the GenBank assembly GCA_002348925.1. The GC content of the type genome is 37.66 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Delapia manomitudo sp. nov.

Candidatus Delapia manomitudo (NL. fem. n. *manomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp900321105*. The type genome for the species is the GenBank assembly GCA_900321105.1. The GC content of the type genome is 36.76 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Delapia momoritrix sp. nov.

Candidatus Delapia momoritrix (NL. fem. n. *momoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902774285*. The type genome for the species is the GenBank assembly GCA_902774285.1. The GC content of the type genome is 36.25 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Delapia paracitoga sp. nov.

Candidatus Delapia paracitoga (NL. fem. n. *paracitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902774305*. The type genome for the species is the GenBank assembly GCA_902774305.1. The GC content of the type genome is 37.47 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Delapia penuritrix sp. nov.

Candidatus Delapia penuritrix (NL. fem. n. *penuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp002437665*. The type genome for the species is the GenBank assembly GCA_002452175.1. The GC content of the type genome is 47.31 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Delapia reforifica sp. nov.

Candidatus Delapia reforifica (NL. fem. n. *reforifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp900313285*. The type genome for the species is the GenBank assembly GCA_902755675.1. The GC content of the type genome is 35.6 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Delapia refunitio sp. nov.

Candidatus Delapia refunitio (NL. fem. n. *refunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp900313105*. The type genome for the species is the GenBank assembly GCA_902799545.1. The GC content of the type genome is 43.97 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Delapia rinocedo sp. nov.

Candidatus Delapia rinocedo (NL. fem. n. *rinocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp900550565*. The type genome for the species is the GenBank assembly RS_GCF_900771825.1. The GC content of the type genome is 46.53 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Delapia saburigena sp. nov.

Candidatus Delapia saburigena (NL. fem. n. *saburigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902771095*. The type genome for the species is the GenBank assembly GCA_902771095.1. The GC content of the type genome is 37.33 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Delapia sarabousia sp. nov.

Candidatus Delapia sarabousia (NL. fem. n. *sarabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp900320405*. The type genome for the species is the GenBank assembly GCA_902756645.1. The GC content of the type genome is 43.23 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Delapia scombessa sp. nov.

Candidatus Delapia scombessa (NL. fem. n. *scombessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902787305*. The type genome for the species is the GenBank assembly GCA_902787305.1. The GC content of the type genome is 43.96 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Delapia solacisca sp. nov.

Candidatus Delapia solacisca (NL. fem. n. *solacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Rs-D84 sp902776515*. The type genome for the species is the GenBank assembly GCA_902776515.1. The GC content of the type genome is 39.38 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Delapia solivilega sp. nov.

Candidatus Delapia solivilega (NL. fem. n. *solivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp002371155*. The type genome for the species is the GenBank assembly GCA_902776925.1. The GC content of the type genome is 41.34 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Delapia tegimitura sp. nov.

Candidatus Delapia tegimitura (NL. fem. n. *tegimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902771695*. The type genome for the species is the GenBank assembly GCA_902771695.1. The GC content of the type genome is 40.97 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Delapia tiguriforma sp. nov.

Candidatus Delapia tiguriforma (NL. fem. n. *tiguriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902790415*. The type genome for the species is the GenBank assembly GCA_902790415.1. The GC content of the type genome is 40.27 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Delapia urbicitio sp. nov.

Candidatus Delapia urbicitio (NL. fem. n. *urbicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs-D84 sp902762295*. The type genome for the species is the GenBank assembly GCA_902762295.1. The GC content of the type genome is 41.81 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Delaposa calipimonas sp. nov.

Candidatus Delaposa calipimonas (NL. fem. n. *calipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-140-MAGs142 sp003671055*. The type genome for the species is the GenBank assembly GCA_903894775.1. The GC content of the type genome is 58.24 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Delaposa gen. nov.

Candidatus Delaposa (NL. fem. n. *Delaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-140-MAGs142*. The type species for the genus is *Candidatus* Delaposa calipimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Delaposa cobalitia sp. nov.

Candidatus Delaposa cobalitia (NL. fem. n. *cobalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-140-MAGs142 sp009691805*. The type genome for the species is the GenBank assembly GCA_009691805.1. The GC content of the type genome is 58.65 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Delaposa denorugo sp. nov.

Candidatus Delaposa denorugo (NL. fem. n. *denorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-140-MAGs142 sp005790605*. The type genome for the species is the GenBank assembly GCA_005790605.1. The GC content of the type genome is 59.91 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Delaposa depicitas sp. nov.

Candidatus Delaposa depicitas (NL. fem. n. *depicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-140-MAGs142 sp005790565*. The type genome for the species is the GenBank assembly GCA_005808685.1. The GC content of the type genome is 60.63 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Delapula ammixifica sp. nov.

Candidatus Delapula ammixifica (NL. fem. n. *ammixifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2259 sp002328465*. The type genome for the species is the GenBank assembly GCA_002328465.1. The GC content of the type genome is 33.73 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Delapula gen. nov.

Candidatus Delapula (NL. fem. n. *Delapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2259*. The type species for the genus is *Candidatus* Delapula ammixifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Delapula bigaratio sp. nov.

Candidatus Delapula bigaratio (NL. fem. n. *bigaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2259 sp002419125*. The type genome for the species is the GenBank assembly GCA_002419125.1. The GC content of the type genome is 32.84 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Delapula obnoxitia sp. nov.

Candidatus Delapula obnoxitia (NL. fem. n. *obnoxitia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2259 sp012514355*. The type genome for the species is the GenBank assembly GCA_012514355.1. The GC content of the type genome is 33.74 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Delapula semodax sp. nov.

Candidatus Delapula semodax (NL. fem. n. *semodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2259 sp002347605*. The type genome for the species is the GenBank assembly GCA_002381925.1. The GC content of the type genome is 33.29 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Delebana xeropivita sp. nov.

Candidatus Delebana xeropivita (NL. fem. n. *xeropivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAU01 sp903903925*. The type genome for the species is the GenBank assembly GCA_903933625.1. The GC content of the type genome is 42.91 % and the genome length is 7.4 Mbp.

Description of *Candidatus* Delebana gen. nov.

Candidatus Delebana (NL. fem. n. *Delebana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVAU01*. The type species for the genus is *Candidatus* Delebana xeropivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Delebaria masocitio sp. nov.

Candidatus Delebaria masocitio (NL. fem. n. *masocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11512 sp003522145*. The type genome for the species is the GenBank assembly GCA_003522145.1. The GC content of the type genome is 50.96 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Delebaria gen. nov.

Candidatus Delebaria (NL. fem. n. *Delebaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11512*. The type species for the genus is *Candidatus* Delebaria masocitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Delebella vagabitura sp. nov.

Candidatus Delebella vagabitura (NL. fem. n. *vagabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYPG01 sp903928055*. The type genome for the species is the GenBank assembly GCA_903902085.1. The GC content of the type genome is 61.8 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Delebella gen. nov.

Candidatus Delebella (NL. fem. n. *Delebella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYPG01*. The type species for the genus is *Candidatus* Delebella vagabitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Delebia rubicatica sp. nov.

Candidatus Delebia rubicatica (NL. fem. n. *rubicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M10-OD1-1 sp003056145*. The type genome for the species is the GenBank assembly GCA_003056095.1. The GC content of the type genome is 30.39 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Delebia gen. nov.

Candidatus Delebia (NL. fem. n. *Delebia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M10-OD1-1*. The type species for the genus is *Candidatus* Delebia rubicatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Delebida derecitia sp. nov.

Candidatus Delebida derecitia (NL. fem. n. *derecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077536 sp001464935*. The type genome for the species is the GenBank assembly GCA_001464935.1. The GC content of the type genome is 66.76 % and the genome length is 4.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Delebida gen. nov.

Candidatus Delebida (NL. fem. n. *Delebida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077536*. The type species for the genus is *Candidatus* Delebida derecitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077536*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delebidaceae.

Description of *Candidatus* Delebidaceae fam. nov.

Candidatus Delebidaceae (NL. fem. n. *Delebidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ga0077536.* The type genus for the taxon is *Candidatus* Delebida .

According to the original version of GTDB R06-RS202, this family belongs to the order *Ga0077536*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delebidales.

Description of *Candidatus* Delebidales ord. nov.

Candidatus Delebidales (NL. fem. n. *Delebidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ga0077536.* The type genus for the taxon is *Candidatus* Delebida .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Delebida omninigena sp. nov.

Candidatus Delebida omninigena (NL. fem. n. *omninigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077536 sp009692365*. The type genome for the species is the GenBank assembly GCA_009692365.1. The GC content of the type genome is 63.73 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Delebida scintitudo sp. nov.

Candidatus Delebida scintitudo (NL. fem. n. *scintitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077536 sp903866355*. The type genome for the species is the GenBank assembly GCA_903866355.1. The GC content of the type genome is 60.5 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Delebosa dececitudo sp. nov.

Candidatus Delebosa dececitudo (NL. fem. n. *dececitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-21 sp903830625*. The type genome for the species is the GenBank assembly GCA_903830625.1. The GC content of the type genome is 44.78 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Delebosa gen. nov.

Candidatus Delebosa (NL. fem. n. *Delebosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-41-21*. The type species for the genus is *Candidatus* Delebosa dececitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Delebosa entomugo sp. nov.

Candidatus Delebosa entomugo (NL. fem. n. *entomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-21 sp003151795*. The type genome for the species is the GenBank assembly GCA_003151795.1. The GC content of the type genome is 47.17 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Delebosa funamilenta sp. nov.

Candidatus Delebosa funamilenta (NL. fem. n. *funamilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-21 sp001794025*. The type genome for the species is the GenBank assembly GCA_001794025.1. The GC content of the type genome is 41.35 % and the genome length is 0.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Delebula mahemimonia sp. nov.

Candidatus Delebula mahemimonia (NL. fem. n. *mahemimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1449 sp902797995*. The type genome for the species is the GenBank assembly GCA_902798515.1. The GC content of the type genome is 27.45 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Delebula gen. nov.

Candidatus Delebula (NL. fem. n. *Delebula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1449*. The type species for the genus is *Candidatus* Delebula mahemimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Delebula remedifica sp. nov.

Candidatus Delebula remedifica (NL. fem. n. *remedifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1449 sp900551925*. The type genome for the species is the GenBank assembly GCA_900551925.1. The GC content of the type genome is 27.26 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Delecana metabatio sp. nov.

Candidatus Delecana metabatio (NL. fem. n. *metabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2207 sp002418885*. The type genome for the species is the GenBank assembly GCA_002382565.1. The GC content of the type genome is 56.11 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Delecana gen. nov.

Candidatus Delecana (NL. fem. n. *Delecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2207*. The type species for the genus is *Candidatus* Delecana metabatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4778*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Biverosaceae.

Description of *Candidatus* Delecaria adobricella sp. nov.

Candidatus Delecaria adobricella (NL. fem. n. *adobricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7445 sp009937095*. The type genome for the species is the GenBank assembly GCA_009937095.1. The GC content of the type genome is 53.4 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Delecaria gen. nov.

Candidatus Delecaria (NL. fem. n. *Delecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7445*. The type species for the genus is *Candidatus* Delecaria adobricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-45221*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamiaceae.

Description of *Candidatus* Delecaria medimentia sp. nov.

Candidatus Delecaria medimentia (NL. fem. n. *medimentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7445 sp002470925*. The type genome for the species is the GenBank assembly GCA_002479935.1. The GC content of the type genome is 55.1 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Delecella tenebitrix sp. nov.

Candidatus Delecella tenebitrix (NL. fem. n. *tenebitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-40-9 sp001818015*. The type genome for the species is the GenBank assembly GCA_001818015.1. The GC content of the type genome is 39.99 % and the genome length is 0.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Delecella gen. nov.

Candidatus Delecella (NL. fem. n. *Delecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD1-FULL-40-9*. The type species for the genus is *Candidatus* Delecella tenebitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD1-FULL-40-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delecellaceae.

Description of *Candidatus* Delecellaceae fam. nov.

Candidatus Delecellaceae (NL. fem. n. *Delecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYD1-FULL-40-9.* The type genus for the taxon is *Candidatus* Delecella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Delecia manupimonas sp. nov.

Candidatus Delecia manupimonas (NL. fem. n. *manupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2463 sp002342295*. The type genome for the species is the GenBank assembly GCA_002359615.1. The GC content of the type genome is 59.81 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Delecia gen. nov.

Candidatus Delecia (NL. fem. n. *Delecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2463*. The type species for the genus is *Candidatus* Delecia manupimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Delecia remeditura sp. nov.

Candidatus Delecia remeditura (NL. fem. n. *remeditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2463 sp009646425*. The type genome for the species is the GenBank assembly GCA_009922195.1. The GC content of the type genome is 59.82 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Delecida denicitio sp. nov.

Candidatus Delecida denicitio (NL. fem. n. *denicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2256 sp002383375*. The type genome for the species is the GenBank assembly GCA_002347545.1. The GC content of the type genome is 55.58 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Delecida gen. nov.

Candidatus Delecida (NL. fem. n. *Delecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2256*. The type species for the genus is *Candidatus* Delecida denicitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponosaceae.

Description of *Candidatus* Delecida retuniforma sp. nov.

Candidatus Delecida retuniforma (NL. fem. n. *retuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2256 sp002428725*. The type genome for the species is the GenBank assembly GCA_002428725.1. The GC content of the type genome is 52.33 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Delecida valefetta sp. nov.

Candidatus Delecida valefetta (NL. fem. n. *valefetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2256 sp001603165*. The type genome for the species is the GenBank assembly GCA_002410215.1. The GC content of the type genome is 56.68 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Delecosa gen. nov.

Candidatus Delecosa (NL. fem. n. *Delecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14284*. The type species for the genus is *Candidatus* Delecosa rhusiopathiae_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Delecula arrugitudo sp. nov.

Candidatus Delecula arrugitudo (NL. fem. n. *arrugitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLND01 sp009726075*. The type genome for the species is the GenBank assembly GCA_009726075.1. The GC content of the type genome is 67.03 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Delecula gen. nov.

Candidatus Delecula (NL. fem. n. *Delecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLND01*. The type species for the genus is *Candidatus* Delecula arrugitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Delecula lucifedo sp. nov.

Candidatus Delecula lucifedo (NL. fem. n. *lucifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLND01 sp009699015*. The type genome for the species is the GenBank assembly GCA_903902785.1. The GC content of the type genome is 66.16 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Delubana lorarilega sp. nov.

Candidatus Delubana lorarilega (NL. fem. n. *lorarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5859 sp002432655*. The type genome for the species is the GenBank assembly GCA_002432655.1. The GC content of the type genome is 45.81 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Delubana gen. nov.

Candidatus Delubana (NL. fem. n. *Delubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5859*. The type species for the genus is *Candidatus* Delubana lorarilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5859*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delubanaceae.

Description of *Candidatus* Delubanaceae fam. nov.

Candidatus Delubanaceae (NL. fem. n. *Delubanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5859.* The type genus for the taxon is *Candidatus* Delubana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5859*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delubanales.

Description of *Candidatus* Delubanales ord. nov.

Candidatus Delubanales (NL. fem. n. *Delubanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5859.* The type genus for the taxon is *Candidatus* Delubana .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Delubaria insemitrix sp. nov.

Candidatus Delubaria insemitrix (NL. fem. n. *insemitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *02-FULL-45-10c sp001818705*. The type genome for the species is the GenBank assembly GCA_001818705.1. The GC content of the type genome is 45.28 % and the genome length is 0.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Delubaria gen. nov.

Candidatus Delubaria (NL. fem. n. *Delubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *02-FULL-45-10c*. The type species for the genus is *Candidatus* Delubaria insemitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *02-FULL-45-10c*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delubariaceae.

Description of *Candidatus* Delubariaceae fam. nov.

Candidatus Delubariaceae (NL. fem. n. *Delubariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *02-FULL-45-10c.* The type genus for the taxon is *Candidatus* Delubaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Delubella ammixitia sp. nov.

Candidatus Delubella ammixitia (NL. fem. n. *ammixitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBBF01 sp005240075*. The type genome for the species is the GenBank assembly GCA_005240075.1. The GC content of the type genome is 47.34 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Delubella gen. nov.

Candidatus Delubella (NL. fem. n. *Delubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBBF01*. The type species for the genus is *Candidatus* Delubella ammixitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delubellaceae.

Description of *Candidatus* Delubellaceae fam. nov.

Candidatus Delubellaceae (NL. fem. n. *Delubellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBF01.* The type genus for the taxon is *Candidatus* Delubella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domigosales.

Description of *Candidatus* Delubia apporibula sp. nov.

Candidatus Delubia apporibula (NL. fem. n. *apporibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-345 sp003497225*. The type genome for the species is the GenBank assembly GCA_003497225.1. The GC content of the type genome is 32.42 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Delubia gen. nov.

Candidatus Delubia (NL. fem. n. *Delubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-345*. The type species for the genus is *Candidatus* Delubia apporibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-288*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropellaceae.

Description of *Candidatus* Delubia semigetta sp. nov.

Candidatus Delubia semigetta (NL. fem. n. *semigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-345 sp000433315*. The type genome for the species is the GenBank assembly GCA_000433315.1. The GC content of the type genome is 29.55 % and the genome length is 1.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Delubida benifisca sp. nov.

Candidatus Delubida benifisca (NL. fem. n. *benifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1275 sp002348545*. The type genome for the species is the GenBank assembly GCA_002348545.1. The GC content of the type genome is 38.15 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Delubida gen. nov.

Candidatus Delubida (NL. fem. n. *Delubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1275*. The type species for the genus is *Candidatus* Delubida benifisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Delubida bisulax sp. nov.

Candidatus Delubida bisulax (NL. fem. n. *bisulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1275 sp009926145*. The type genome for the species is the GenBank assembly GCA_009926145.1. The GC content of the type genome is 39.72 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Delubida casigitudo sp. nov.

Candidatus Delubida casigitudo (NL. fem. n. *casigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1275 sp902529365*. The type genome for the species is the GenBank assembly GCA_902529365.1. The GC content of the type genome is 40.0 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Delubida exsufivita sp. nov.

Candidatus Delubida exsufivita (NL. fem. n. *exsufivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1275 sp002323515*. The type genome for the species is the GenBank assembly GCA_002323515.1. The GC content of the type genome is 40.2 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Delubida pabiletta sp. nov.

Candidatus Delubida pabiletta (NL. fem. n. *pabiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1275 sp002720745*. The type genome for the species is the GenBank assembly GCA_002720745.1. The GC content of the type genome is 37.79 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Delubida resupisca sp. nov.

Candidatus Delubida resupisca (NL. fem. n. *resupisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1275 sp002457365*. The type genome for the species is the GenBank assembly GCA_002169235.1. The GC content of the type genome is 40.46 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Delubida vanitimonia sp. nov.

Candidatus Delubida vanitimonia (NL. fem. n. *vanitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1275 sp902529115*. The type genome for the species is the GenBank assembly GCA_902529115.1. The GC content of the type genome is 37.82 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Delubida xenodetta sp. nov.

Candidatus Delubida xenodetta (NL. fem. n. *xenodetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1275 sp002730655*. The type genome for the species is the GenBank assembly GCA_002730655.1. The GC content of the type genome is 37.98 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Delubosa inlacibra sp. nov.

Candidatus Delubosa inlacibra (NL. fem. n. *inlacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA4844 sp012729715*. The type genome for the species is the GenBank assembly GCA_012729715.1. The GC content of the type genome is 43.22 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Delubosa gen. nov.

Candidatus Delubosa (NL. fem. n. *Delubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4844*. The type species for the genus is *Candidatus* Delubosa inlacibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Delubosa practilega sp. nov.

Candidatus Delubosa practilega (NL. fem. n. *practilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4844 sp012839665*. The type genome for the species is the GenBank assembly GCA_012839665.1. The GC content of the type genome is 42.68 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Delubosa repepousia sp. nov.

Candidatus Delubosa repepousia (NL. fem. n. *repepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4844 sp002398105*. The type genome for the species is the GenBank assembly GCA_002408935.1. The GC content of the type genome is 47.78 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Delubosa rubicifica sp. nov.

Candidatus Delubosa rubicifica (NL. fem. n. *rubicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4844 sp002424365*. The type genome for the species is the GenBank assembly GCA_002410745.1. The GC content of the type genome is 42.79 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Delubula coticousia sp. nov.

Candidatus Delubula coticousia (NL. fem. n. *coticousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26207 sp001025035*. The type genome for the species is the GenBank assembly RS_GCF_001025035.1. The GC content of the type genome is 57.26 % and the genome length is 3.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater".

Description of *Candidatus* Delubula gen. nov.

Candidatus Delubula (NL. fem. n. *Delubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IMCC26207*. The type species for the genus is *Candidatus* Delubula coticousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Delubula dilibifica sp. nov.

Candidatus Delubula dilibifica (NL. fem. n. *dilibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26207 sp009700815*. The type genome for the species is the GenBank assembly GCA_009700815.1. The GC content of the type genome is 57.25 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Delubula domabatica sp. nov.

Candidatus Delubula domabatica (NL. fem. n. *domabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26207 sp009701845*. The type genome for the species is the GenBank assembly GCA_009705265.1. The GC content of the type genome is 57.08 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Delucana aclasitia sp. nov.

Candidatus Delucana aclasitia (NL. fem. n. *aclasitia* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002841655 sp002841655*. The type genome for the species is the GenBank assembly GCA_002841655.1. The GC content of the type genome is 42.95 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Delucana gen. nov.

Candidatus Delucana (NL. fem. n. *Delucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002841655*. The type species for the genus is *Candidatus* Delucana aclasitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Delucana dilacitudo sp. nov.

Candidatus Delucana dilacitudo (NL. fem. n. *dilacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002841655 sp903937325*. The type genome for the species is the GenBank assembly GCA_903937325.1. The GC content of the type genome is 39.01 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Delucana excetibra sp. nov.

Candidatus Delucana excetibra (NL. fem. n. *excetibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002841655 sp002070735*. The type genome for the species is the GenBank assembly GCA_002070735.1. The GC content of the type genome is 39.86 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Delucaria depecitudo sp. nov.

Candidatus Delucaria depecitudo (NL. fem. n. *depecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYA2-FULL-39-19 sp001800285*. The type genome for the species is the GenBank assembly GCA_001800285.1. The GC content of the type genome is 38.47 % and the genome length is 3.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Delucaria gen. nov.

Candidatus Delucaria (NL. fem. n. *Delucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYA2-FULL-39-19*. The type species for the genus is *Candidatus* Delucaria depecitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYA2-FULL-39-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delucariaceae.

Description of *Candidatus* Delucariaceae fam. nov.

Candidatus Delucariaceae (NL. fem. n. *Delucariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYA2-FULL-39-19.* The type genus for the taxon is *Candidatus* Delucaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG1-02-37-114*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Videlulales.

Description of *Candidatus* Delucella adaggastra sp. nov.

Candidatus Delucella adaggastra (NL. fem. n. *adaggastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp000424365*. The type genome for the species is the GenBank assembly RS_GCF_000424365.1. The GC content of the type genome is 41.62 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Delucella gen. nov.

Candidatus Delucella (NL. fem. n. *Delucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NK4A144*. The type species for the genus is *Candidatus* Delucella adaggastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Delucella adcubedo sp. nov.

Candidatus Delucella adcubedo (NL. fem. n. *adcubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp900168235*. The type genome for the species is the GenBank assembly RS_GCF_900168235.1. The GC content of the type genome is 43.53 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Delucella allobetta sp. nov.

Candidatus Delucella allobetta (NL. fem. n. *allobetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp902797705*. The type genome for the species is the GenBank assembly GCA_902797705.1. The GC content of the type genome is 48.47 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Delucella almucitoga sp. nov.

Candidatus Delucella almucitoga (NL. fem. n. *almucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp902803625*. The type genome for the species is the GenBank assembly GCA_902803625.1. The GC content of the type genome is 47.19 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Delucella butubimonas sp. nov.

Candidatus Delucella butubimonas (NL. fem. n. *butubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp000622025*. The type genome for the species is the GenBank assembly RS_GCF_000622025.1. The GC content of the type genome is 45.66 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Delucella cepuritas sp. nov.

Candidatus Delucella cepuritas (NL. fem. n. *cepuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp003488445*. The type genome for the species is the GenBank assembly GCA_003488445.1. The GC content of the type genome is 52.09 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Delucella conubessa sp. nov.

Candidatus Delucella conubessa (NL. fem. n. *conubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp900114405*. The type genome for the species is the GenBank assembly RS_GCF_900114405.1. The GC content of the type genome is 39.43 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Delucella dupunigena sp. nov.

Candidatus Delucella dupunigena (NL. fem. n. *dupunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp902803745*. The type genome for the species is the GenBank assembly GCA_902803745.1. The GC content of the type genome is 45.52 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Delucella gasifago sp. nov.

Candidatus Delucella gasifago (NL. fem. n. *gasifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *NK4A144 sp000746015*. The type genome for the species is the GenBank assembly RS_GCF_000746015.1. The GC content of the type genome is 39.93 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Delucella mirabitrix sp. nov.

Candidatus Delucella mirabitrix (NL. fem. n. *mirabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp000701625*. The type genome for the species is the GenBank assembly RS_GCF_000701625.1. The GC content of the type genome is 41.42 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Delucella petuligena sp. nov.

Candidatus Delucella petuligena (NL. fem. n. *petuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp902782575*. The type genome for the species is the GenBank assembly GCA_902782575.1. The GC content of the type genome is 51.95 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Delucella pinigifica sp. nov.

Candidatus Delucella pinigifica (NL. fem. n. *pinigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp902783395*. The type genome for the species is the GenBank assembly GCA_902783395.1. The GC content of the type genome is 48.16 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Delucella sotulilenta sp. nov.

Candidatus Delucella sotulilenta (NL. fem. n. *sotulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp902779445*. The type genome for the species is the GenBank assembly GCA_902779445.1. The GC content of the type genome is 44.55 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Delucella viripago sp. nov.

Candidatus Delucella viripago (NL. fem. n. *viripago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp000621405*. The type genome for the species is the GenBank assembly RS_GCF_000621405.1. The GC content of the type genome is 47.63 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Delucella xeropitica sp. nov.

Candidatus Delucella xeropitica (NL. fem. n. *xeropitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A144 sp902782655*. The type genome for the species is the GenBank assembly GCA_902782655.1. The GC content of the type genome is 48.32 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Delucosa abmatedo sp. nov.

Candidatus Delucosa abmatedo (NL. fem. n. *abmatedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMU01 sp012839805*. The type genome for the species is the GenBank assembly GCA_012839805.1. The GC content of the type genome is 63.58 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Delucosa gen. nov.

Candidatus Delucosa (NL. fem. n. *Delucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMU01*. The type species for the genus is *Candidatus* Delucosa abmatedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delucosaceae.

Description of *Candidatus* Delucosaceae fam. nov.

Candidatus Delucosaceae (NL. fem. n. *Delucosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMU01*. The type genus for the taxon is *Candidatus* Delucosa .

According to GTDB R06-RS202, this family belongs to the order *Limnochordales*.

Description of *Candidatus* Delucula arnogivita sp. nov.

Candidatus Delucula arnogivita (NL. fem. n. *arnogivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1003 sp003153475*. The type genome for the species is the GenBank assembly GCA_003153475.1. The GC content of the type genome is 65.09 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Delucula gen. nov.

Candidatus Delucula (NL. fem. n. *Delucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1003*. The type species for the genus is *Candidatus* Delucula arnogivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Delucula catabibra sp. nov.

Candidatus Delucula catabibra (NL. fem. n. *catabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1003 sp005882995*. The type genome for the species is the GenBank assembly GCA_005882995.1. The GC content of the type genome is 61.69 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Delucula incivibra sp. nov.

Candidatus Delucula incivibra (NL. fem. n. *incivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1003 sp005888865*. The type genome for the species is the GenBank assembly GCA_005888865.1. The GC content of the type genome is 65.19 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Delucula reduvicula sp. nov.

Candidatus Delucula reduvicula (NL. fem. n. *reduvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1003 sp005883655*. The type genome for the species is the GenBank assembly GCA_005882865.1. The GC content of the type genome is 62.64 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Delucula ruricilega sp. nov.

Candidatus Delucula ruricilega (NL. fem. n. *ruricilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1003 sp005888955*. The type genome for the species is the GenBank assembly GCA_005888955.1. The GC content of the type genome is 64.98 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Delucula vatilicula sp. nov.

Candidatus Delucula vatilicula (NL. fem. n. *vatilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1003 sp005889025*. The type genome for the species is the GenBank assembly GCA_005881305.1. The GC content of the type genome is 62.73 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Demadaria excucitio sp. nov.

Candidatus Demadaria excucitio (NL. fem. n. *excucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-43-13 sp002773985*. The type genome for the species is the GenBank assembly GCA_002773985.1. The GC content of the type genome is 43.23 %

and the genome length is 0.84 Mbp.

Description of *Candidatus* Demadaria gen. nov.

Candidatus Demadaria (NL. fem. n. *Demadaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-43-13*. The type species for the genus is *Candidatus* Demadaria excucitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-10-43-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demadariaceae.

Description of *Candidatus* Demadariaceae fam. nov.

Candidatus Demadariaceae (NL. fem. n. *Demadariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-10-43-13.* The type genus for the taxon is *Candidatus* Demadaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYA2-FULL-43-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denavulales.

Description of *Candidatus* Demadella cerofigena sp. nov.

Candidatus Demadella cerofigena (NL. fem. n. *cerofigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2993 sp002721705*. The type genome for the species is the GenBank assembly GCA_002721705.1. The GC content of the type genome is 53.99 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Demadella gen. nov.

Candidatus Demadella (NL. fem. n. *Demadella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2993*. The type species for the genus is *Candidatus* Demadella cerofigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MB11C04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detumiaceae.

Description of *Candidatus* Demadella visibimonia sp. nov.

Candidatus Demadella visibimonia (NL. fem. n. *visibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2993 sp002716045*. The type genome for the species is the GenBank assembly GCA_002716045.1. The GC content of the type genome is 51.46 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Demadia melopimonas sp. nov.

Candidatus Demadia melopimonas (NL. fem. n. *melopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRTT01 sp903915615*. The type genome for the species is the GenBank assembly GCA_903915615.1. The GC content of the type genome is 54.4 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Demadia gen. nov.

Candidatus Demadia (NL. fem. n. *Demadia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRTT01*. The type species for the genus is *Candidatus* Demadia melopimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Demadia solipivita sp. nov.

Candidatus Demadia solipivita (NL. fem. n. *solipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRTT01 sp903881535*. The type genome for the species is the GenBank assembly GCA_903926105.1. The GC content of the type genome is 53.67 %

and the genome length is 3.58 Mbp.

Description of *Candidatus* Demadia vanitousia sp. nov.

Candidatus Demadia vanitousia (NL. fem. n. *vanitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRTT01 sp903924445*. The type genome for the species is the GenBank assembly GCA_903924445.1. The GC content of the type genome is 54.23 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Demadida vanidimonas sp. nov.

Candidatus Demadida vanidimonas (NL. fem. n. *vanidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YB12-FULL-65-16 sp001803235*. The type genome for the species is the GenBank assembly GCA_001803305.1. The GC content of the type genome is 65.04 % and the genome length is 10.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point B".

Description of *Candidatus* Demadida gen. nov.

Candidatus Demadida (NL. fem. n. *Demadida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YB12-FULL-65-16*. The type species for the genus is *Candidatus* Demadida vanidimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *YB12-FULL-65-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demadidaceae.

Description of *Candidatus* Demadidaceae fam. nov.

Candidatus Demadidaceae (NL. fem. n. *Demadidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *YB12-FULL-65-16.* The type genus for the taxon is *Candidatus* Demadida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semilidales.

Description of *Candidatus* Demadosa cemenibra sp. nov.

Candidatus Demadosa cemenibra (NL. fem. n. *cemenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA852 sp002295925*. The type genome for the species is the GenBank assembly GCA_003525265.1. The GC content of the type genome is 35.36 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Demadosa gen. nov.

Candidatus Demadosa (NL. fem. n. *Demadosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA852*. The type species for the genus is *Candidatus* Demadosa cemenibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Demadula intamastra sp. nov.

Candidatus Demadula intamastra (NL. fem. n. *intamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-51-36 sp001796515*. The type genome for the species is the GenBank assembly GCA_001796515.1. The GC content of the type genome is 50.77 % and the genome length is 1.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Demadula gen. nov.

Candidatus Demadula (NL. fem. n. *Demadula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-51-36*. The type species for the genus is *Candidatus* Demadula

intamastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Demadula nubifatica sp. nov.

Candidatus Demadula nubifatica (NL. fem. n. *nubifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-51-36 sp903884455*. The type genome for the species is the GenBank assembly GCA_903925085.1. The GC content of the type genome is 47.72 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Demagaria inaccetta sp. nov.

Candidatus Demagaria inaccetta (NL. fem. n. *inaccetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1449 sp002335355*. The type genome for the species is the GenBank assembly GCA_002335355.1. The GC content of the type genome is 40.54 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Demagaria gen. nov.

Candidatus Demagaria (NL. fem. n. *Demagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1449*. The type species for the genus is *Candidatus* Demagaria inaccetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1449*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demagariaceae.

Description of *Candidatus* Demagariaceae fam. nov.

Candidatus Demagariaceae (NL. fem. n. *Demagariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA1449*. The type genus for the taxon is *Candidatus* Demagaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Demagella mavoritura sp. nov.

Candidatus Demagella mavoritura (NL. fem. n. *mavoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR37 sp003220345*. The type genome for the species is the GenBank assembly GCA_003220385.1. The GC content of the type genome is 68.29 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Demagella gen. nov.

Candidatus Demagella (NL. fem. n. *Demagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AR37*. The type species for the genus is *Candidatus* Demagella mavoritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Demagia decucitura sp. nov.

Candidatus Demagia decucitura (NL. fem. n. *decucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCD01 sp009784185*. The type genome for the species is the GenBank assembly GCA_009784185.1. The GC content of the type genome is 44.29 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Demagia gen. nov.

Candidatus Demagia (NL. fem. n. *Demagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *WRCD01*. The type species for the genus is *Candidatus* Demagia decucitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Demagida cemenousia sp. nov.

Candidatus Demagida cemenousia (NL. fem. n. *cemenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2995 sp014529615*. The type genome for the species is the GenBank assembly GCA_014529615.1. The GC content of the type genome is 54.12 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Demagida gen. nov.

Candidatus Demagida (NL. fem. n. *Demagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2995*. The type species for the genus is *Candidatus* Demagida cemenousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2995*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demagidaceae.

Description of *Candidatus* Demagidaceae fam. nov.

Candidatus Demagidaceae (NL. fem. n. *Demagidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2995.* The type genus for the taxon is *Candidatus* Demagida .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Demagida dilecimonia sp. nov.

Candidatus Demagida dilecimonia (NL. fem. n. *dilecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2995 sp014529675*. The type genome for the species is the GenBank assembly GCA_014529665.1. The GC content of the type genome is 48.6 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Demagida forinibula sp. nov.

Candidatus Demagida forinibula (NL. fem. n. *forinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2995 sp002346535*. The type genome for the species is the GenBank assembly GCA_002346535.1. The GC content of the type genome is 47.43 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Demagosa blactigena sp. nov.

Candidatus Demagosa blactigena (NL. fem. n. *blactigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748055 sp002748055*. The type genome for the species is the GenBank assembly GCA_002748055.1. The GC content of the type genome is 51.38 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Demagosa gen. nov.

Candidatus Demagosa (NL. fem. n. *Demagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2748055*. The type species for the genus is *Candidatus* Demagosa blactigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2748055*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demagosaceae.

Description of *Candidatus* Demagosaceae fam. nov.

Candidatus Demagosaceae (NL. fem. n. *Demagosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2748055.* The type genus for the taxon is *Candidatus* Demagosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Demagosa excomicula sp. nov.

Candidatus Demagosa excomicula (NL. fem. n. *excomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748055 sp004525825*. The type genome for the species is the GenBank assembly GCA_004525825.1. The GC content of the type genome is 48.25 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Demagosa expisitudo sp. nov.

Candidatus Demagosa expisitudo (NL. fem. n. *expisitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748055 sp003648635*. The type genome for the species is the GenBank assembly GCA_003648635.1. The GC content of the type genome is 45.88 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Demagosa hegumatio sp. nov.

Candidatus Demagosa hegumatio (NL. fem. n. *hegumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748055 sp011056635*. The type genome for the species is the GenBank assembly GCA_011056635.1. The GC content of the type genome is 52.37 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Demagosa homogitia sp. nov.

Candidatus Demagosa homogitia (NL. fem. n. *homogitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748055 sp011048475*. The type genome for the species is the GenBank assembly GCA_011048475.1. The GC content of the type genome is 53.53 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Demagula octupibula sp. nov.

Candidatus Demagula octupibula (NL. fem. n. *octupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABABV01 sp014238055*. The type genome for the species is the GenBank assembly GCA_014238055.1. The GC content of the type genome is 27.25 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Demagula gen. nov.

Candidatus Demagula (NL. fem. n. *Demagula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABABV01*. The type species for the genus is *Candidatus* Demagula octupibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABABV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demagulaceae.

Description of *Candidatus* Demagulaceae fam. nov.

Candidatus Demagulaceae (NL. fem. n. *Demagulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABABV01.* The type genus for the taxon is *Candidatus* Demagula .

According to GTDB R06-RS202, this family belongs to the order *Mycoplasmatales*.

Description of *Candidatus* Demequina adhositia sp. nov.

Candidatus Demequina adhositia (NL. fem. n. *adhositia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Demequina sp002090055*. The type genome for the species is the GenBank assembly RS_GCF_002090055.1. The GC content of the type genome is 69.15 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Demequina ambadiforma sp. nov.

Candidatus Demequina ambadiforma (NL. fem. n. *ambadiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Demequina sp002090135*. The type genome for the species is the GenBank assembly RS_GCF_002090135.1. The GC content of the type genome is 68.93 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Demequina bovicitura sp. nov.

Candidatus Demequina bovicitura (NL. fem. n. *bovicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Demequina sp002384765*. The type genome for the species is the GenBank assembly GCA_002384765.1. The GC content of the type genome is 66.82 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Demequina catafigena sp. nov.

Candidatus Demequina catafigena (NL. fem. n. *catafigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Demequina sp002841315*. The type genome for the species is the GenBank assembly GCA_002841315.1. The GC content of the type genome is 64.7 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Demequina chernatica sp. nov.

Candidatus Demequina chernatica (NL. fem. n. *chernatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Demequina sp002090155*. The type genome for the species is the GenBank assembly RS_GCF_002090155.1. The GC content of the type genome is 71.06 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Demequina deculitoga sp. nov.

Candidatus Demequina deculitoga (NL. fem. n. *deculitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Demequina sp002090175*. The type genome for the species is the GenBank assembly RS_GCF_002090175.1. The GC content of the type genome is 70.38 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Demequina impavigena sp. nov.

Candidatus Demequina impavigena (NL. fem. n. *impavigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Demequina sp002090095*. The type genome for the species is the GenBank assembly RS_GCF_002090095.1. The GC content of the type genome is 70.48 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Demequina remulax sp. nov.

Candidatus Demequina remulax (NL. fem. n. *remulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Demequina sp002090075*. The type genome for the species is the GenBank assembly RS_GCF_002090075.1. The GC content of the type genome is 69.62 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Demequina veridago sp. nov.

Candidatus Demequina veridago (NL. fem. n. *veridago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Demequina sp002090115*. The type genome for the species is the GenBank assembly RS_GCF_002090115.1. The GC content of the type genome is 70.04 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Demigana tametetta sp. nov.

Candidatus Demigana tametetta (NL. fem. n. *tametetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-42-39 sp003506435*. The type genome for the species is the GenBank assembly GCA_003506435.1. The GC content of the type genome is 42.05 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Demigana gen. nov.

Candidatus Demigana (NL. fem. n. *Demigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE2-42-39*. The type species for the genus is *Candidatus* Demigana tametetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Demigaria adculimonia sp. nov.

Candidatus Demigaria adculimonia (NL. fem. n. *adculimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701455 sp002730675*. The type genome for the species is the GenBank assembly GCA_002730675.1. The GC content of the type genome is 42.23 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Demigaria gen. nov.

Candidatus Demigaria (NL. fem. n. *Demigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002701455*. The type species for the genus is *Candidatus* Demigaria adculimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Demigaria mahelatica sp. nov.

Candidatus Demigaria mahelatica (NL. fem. n. *mahelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701455 sp002690995*. The type genome for the species is the GenBank assembly GCA_002690995.1. The GC content of the type genome is 41.61 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Demigaria mutabicula sp. nov.

Candidatus Demigaria mutabicula (NL. fem. n. *mutabicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701455 sp902578675*. The type genome for the species is the GenBank assembly GCA_011523095.1. The GC content of the type genome is 42.61 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Demigaria omnipitura sp. nov.

Candidatus Demigaria omnipitura (NL. fem. n. *omnipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701455 sp902589475*. The type genome for the species is the GenBank assembly GCA_902589475.1. The GC content of the type genome is 42.18 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Demigaria rubefibula sp. nov.

Candidatus Demigaria rubefibula (NL. fem. n. *rubefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701455 sp902629125*. The type genome for the species is the GenBank assembly GCA_902623435.1. The GC content of the type genome is 42.14 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Demigaria subabetta sp. nov.

Candidatus Demigaria subabetta (NL. fem. n. *subabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701455 sp002701455*. The type genome for the species is the GenBank assembly GCA_002725415.1. The GC content of the type genome is 42.82 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Demigella inmemitrix sp. nov.

Candidatus Demigella inmemitrix (NL. fem. n. *inmemitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYGS01 sp009839585*. The type genome for the species is the GenBank assembly GCA_009839585.1. The GC content of the type genome is 50.14 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Demigella gen. nov.

Candidatus Demigella (NL. fem. n. *Demigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VYGS01*. The type species for the genus is *Candidatus* Demigella inmemitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LS-SOB*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repeciaceae.

Description of *Candidatus* Demigella metucousia sp. nov.

Candidatus Demigella metucousia (NL. fem. n. *metucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYGS01 sp009841725*. The type genome for the species is the GenBank assembly GCA_009844755.1. The GC content of the type genome is 59.79 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Demigia adverisca sp. nov.

Candidatus Demigia adverisca (NL. fem. n. *adverisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACOND01 sp014323935*. The type genome for the species is the GenBank assembly GCA_014323935.1. The GC content of the type genome is 29.37 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Demigia gen. nov.

Candidatus Demigia (NL. fem. n. *Demigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACOND01*. The type species for the genus is *Candidatus* Demigia

adverisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACOND01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demigiaceae.

Description of *Candidatus* Demigiaceae fam. nov.

Candidatus Demigiaceae (NL. fem. n. *Demigiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACOND01.* The type genus for the taxon is *Candidatus* Demigia .

According to GTDB R06-RS202, this family belongs to the order *Bdellovibrionales*.

Description of *Candidatus* Demigida cohonibra sp. nov.

Candidatus Demigida cohonibra (NL. fem. n. *cohonibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1172 sp002457135*. The type genome for the species is the GenBank assembly GCA_003538355.1. The GC content of the type genome is 57.54 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Demigida gen. nov.

Candidatus Demigida (NL. fem. n. *Demigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1172*. The type species for the genus is *Candidatus* Demigida cohonibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1172*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demigidaceae.

Description of *Candidatus* Demigidaceae fam. nov.

Candidatus Demigidaceae (NL. fem. n. *Demigidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1172.* The type genus for the taxon is *Candidatus* Demigida .

According to GTDB R06-RS202, this family belongs to the order *Puniceispirillales*.

Description of *Candidatus* Demigida sifunitas sp. nov.

Candidatus Demigida sifunitas (NL. fem. n. *sifunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1172 sp011522975*. The type genome for the species is the GenBank assembly GCA_011522975.1. The GC content of the type genome is 49.67 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Demigosa betacugo sp. nov.

Candidatus Demigosa betacugo (NL. fem. n. *betacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4881 sp002399235*. The type genome for the species is the GenBank assembly GCA_002399235.1. The GC content of the type genome is 37.96 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Demigosa gen. nov.

Candidatus Demigosa (NL. fem. n. *Demigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4881*. The type species for the genus is *Candidatus* Demigosa betacugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cerarariaceae.

Description of *Candidatus* Demigosa rubicisca sp. nov.

Candidatus Demigosa rubicisca (NL. fem. n. *rubicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4881 sp012842235*. The type genome for the species is the GenBank assembly GCA_012842235.1. The GC content of the type genome is 37.46 %

and the genome length is 1.96 Mbp.

Description of *Candidatus* Demigula catafitica sp. nov.

Candidatus Demigula catafitica (NL. fem. n. *catafitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-04 sp003446315*. The type genome for the species is the GenBank assembly GCA_003446315.1. The GC content of the type genome is 50.47 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Demigula gen. nov.

Candidatus Demigula (NL. fem. n. *Demigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Firm-04*. The type species for the genus is *Candidatus* Demigula catafitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Demigula cerevitas sp. nov.

Candidatus Demigula cerevitas (NL. fem. n. *cerevitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-04 sp002394125*. The type genome for the species is the GenBank assembly GCA_902769125.1. The GC content of the type genome is 56.42 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Demigula depupatica sp. nov.

Candidatus Demigula depupatica (NL. fem. n. *depupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-04 sp001940925*. The type genome for the species is the GenBank assembly GCA_001940925.1. The GC content of the type genome is 54.85 % and the genome length is 3.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Phil the wombat".

Description of *Candidatus* Demigula maligatica sp. nov.

Candidatus Demigula maligatica (NL. fem. n. *maligatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-04 sp001603005*. The type genome for the species is the GenBank assembly GCA_001603005.1. The GC content of the type genome is 54.1 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Demigula vehicentia sp. nov.

Candidatus Demigula vehicentia (NL. fem. n. *vehicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-04 sp002395085*. The type genome for the species is the GenBank assembly GCA_002395085.1. The GC content of the type genome is 53.77 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Democana vacilentia sp. nov.

Candidatus Democana vacilentia (NL. fem. n. *vacilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZZT01 sp010014525*. The type genome for the species is the GenBank assembly GCA_010014525.1. The GC content of the type genome is 42.05 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Democana gen. nov.

Candidatus Democana (NL. fem. n. *Democana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RZZT01*. The type species for the genus is *Candidatus* Democana vacilentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Democaria giganastra sp. nov.

Candidatus Democaria giganastra (NL. fem. n. *giganastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-46-9 sp001791325*. The type genome for the species is the GenBank assembly GCA_001791385.1. The GC content of the type genome is 45.99 % and the genome length is 1.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Democaria gen. nov.

Candidatus Democaria (NL. fem. n. *Democaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-46-9*. The type species for the genus is *Candidatus* Democaria giganastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-46-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Democariaceae.

Description of *Candidatus* Democariaceae fam. nov.

Candidatus Democariaceae (NL. fem. n. *Democariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-46-9.* The type genus for the taxon is *Candidatus* Democaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-46-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Democariales.

Description of *Candidatus* Democariales ord. nov.

Candidatus Democariales (NL. fem. n. *Democariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-46-9.* The type genus for the taxon is *Candidatus* Democaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Democaria puruletta sp. nov.

Candidatus Democaria puruletta (NL. fem. n. *puruletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-46-9 sp001791425*. The type genome for the species is the GenBank assembly GCA_001791425.1. The GC content of the type genome is 47.63 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Democella bucolibra sp. nov.

Candidatus Democella bucolibra (NL. fem. n. *bucolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1532 sp002731825*. The type genome for the species is the GenBank assembly GCA_002323315.1. The GC content of the type genome is 52.77 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Democella gen. nov.

Candidatus Democella (NL. fem. n. *Democella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1532*. The type species for the genus is *Candidatus* Democella bucolibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Democellaceae.

Description of *Candidatus* Democellaceae fam. nov.

Candidatus Democellaceae (NL. fem. n. *Democellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1532.* The type genus for the taxon is *Candidatus* Democella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7976*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domabanales.

Description of *Candidatus* Democida adsulitas sp. nov.

Candidatus Democida adsulitas (NL. fem. n. *adsulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp013044305*. The type genome for the species is the GenBank assembly GCA_013044305.1. The GC content of the type genome is 46.59 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Democida gen. nov.

Candidatus Democida (NL. fem. n. *Democida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEUT01*. The type species for the genus is *Candidatus* Democida adsulitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-948*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Seposiaceae.

Description of *Candidatus* Democida defenitoga sp. nov.

Candidatus Democida defenitoga (NL. fem. n. *defenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp903863935*. The type genome for the species is the GenBank assembly GCA_903863935.1. The GC content of the type genome is 39.06 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Democida homulifica sp. nov.

Candidatus Democida homulifica (NL. fem. n. *homulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp013289475*. The type genome for the species is the GenBank assembly GCA_013289475.1. The GC content of the type genome is 39.29 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Democida incesitudo sp. nov.

Candidatus Democida incesitudo (NL. fem. n. *incesitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp013285805*. The type genome for the species is the GenBank assembly GCA_013285805.1. The GC content of the type genome is 41.24 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Democida manomicula sp. nov.

Candidatus Democida manomicula (NL. fem. n. *manomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp013285655*. The type genome for the species is the GenBank assembly GCA_013285655.1. The GC content of the type genome is 39.41 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Democida pulegitrix sp. nov.

Candidatus Democida pulegitrix (NL. fem. n. *pulegitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp013288345*. The type genome for the species is the GenBank assembly GCA_013288345.1. The GC content of the type genome is 39.35 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Democida revulilenta sp. nov.

Candidatus Democida revulilenta (NL. fem. n. *revulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp903901055*. The type genome for the species is the GenBank assembly GCA_903891685.1. The GC content of the type genome is 38.84 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Democida sarabiforma sp. nov.

Candidatus Democida sarabiforma (NL. fem. n. *sarabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp903916255*. The type genome for the species is the GenBank assembly GCA_903916255.1. The GC content of the type genome is 40.62 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Democida sarabitoga sp. nov.

Candidatus Democida sarabitoga (NL. fem. n. *sarabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp013289395*. The type genome for the species is the GenBank assembly GCA_013289395.1. The GC content of the type genome is 39.42 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Democida telefatica sp. nov.

Candidatus Democida telefatica (NL. fem. n. *telefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp013289165*. The type genome for the species is the GenBank assembly GCA_013289165.1. The GC content of the type genome is 39.7 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Democida telegimonia sp. nov.

Candidatus Democida telegimonia (NL. fem. n. *telegimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUT01 sp013288205*. The type genome for the species is the GenBank assembly GCA_013288205.1. The GC content of the type genome is 39.78 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Democosa cepulilega sp. nov.

Candidatus Democosa cepulilega (NL. fem. n. *cepulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKC01 sp011337995*. The type genome for the species is the GenBank assembly GCA_011337995.1. The GC content of the type genome is 62.72 %

and the genome length is 5.27 Mbp.

Description of *Candidatus* Democosa gen. nov.

Candidatus Democosa (NL. fem. n. *Democosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKC01*. The type species for the genus is *Candidatus* Democosa cepulilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTKC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Democosaceae.

Description of *Candidatus* Democosaceae fam. nov.

Candidatus Democosaceae (NL. fem. n. *Democosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTKC01.* The type genus for the taxon is *Candidatus* Democosa .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Democula adlicastra sp. nov.

Candidatus Democula adlicastra (NL. fem. n. *adlicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-69-37 sp003242705*. The type genome for the species is the GenBank assembly GCA_003242705.1. The GC content of the type genome is 69.42 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Democula gen. nov.

Candidatus Democula (NL. fem. n. *Democula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCN-69-37*. The type species for the genus is *Candidatus* Democula adlicastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCN-69-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Democulaceae.

Description of *Candidatus* Democulaceae fam. nov.

Candidatus Democulaceae (NL. fem. n. *Democulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCN-69-37.* The type genus for the taxon is *Candidatus* Democula .

According to GTDB R06-RS202, this family belongs to the order *Vicinamibacterales*.

Description of *Candidatus* Democula conibitia sp. nov.

Candidatus Democula conibitia (NL. fem. n. *conibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-69-37 sp001724025*. The type genome for the species is the GenBank assembly GCA_001724025.1. The GC content of the type genome is 68.48 % and the genome length is 4.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Demogana solacilenta sp. nov.

Candidatus Demogana solacilenta (NL. fem. n. *solacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQLG01 sp903872565*. The type genome for the species is the GenBank assembly GCA_903837735.1. The GC content of the type genome is 47.4 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Demogana gen. nov.

Candidatus Demogana (NL. fem. n. *Demogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQLG01*. The type species for the genus is *Candidatus* Demogana solacilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-50-93*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decaculaceae.

Description of *Candidatus* Demogida adnulisca sp. nov.

Candidatus Demogida adnulisca (NL. fem. n. *adnulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1783 sp012520255*. The type genome for the species is the GenBank assembly GCA_012520255.1. The GC content of the type genome is 32.03 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Demogida gen. nov.

Candidatus Demogida (NL. fem. n. *Demogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1783*. The type species for the genus is *Candidatus* Demogida adnulisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Demogida figilibra sp. nov.

Candidatus Demogida figilibra (NL. fem. n. *figilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1783 sp012800355*. The type genome for the species is the GenBank assembly GCA_012800355.1. The GC content of the type genome is 30.26 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Demogida recocitoga sp. nov.

Candidatus Demogida recocitoga (NL. fem. n. *recocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1783 sp012799935*. The type genome for the species is the GenBank assembly GCA_012799935.1. The GC content of the type genome is 30.94 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Demogida scammitio sp. nov.

Candidatus Demogida scammitio (NL. fem. n. *scammitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1783 sp002315205*. The type genome for the species is the GenBank assembly GCA_002315205.1. The GC content of the type genome is 34.98 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Demogosa capabugo sp. nov.

Candidatus Demogosa capabugo (NL. fem. n. *capabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8477 sp001872685*. The type genome for the species is the GenBank assembly GCA_001872685.1. The GC content of the type genome is 47.83 % and the genome length is 3.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Demogosa gen. nov.

Candidatus Demogosa (NL. fem. n. *Demogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8477*. The type species for the genus is *Candidatus* Demogosa capabugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8477*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogosaceae.

Description of *Candidatus* Demogosaceae fam. nov.

Candidatus Demogosaceae (NL. fem. n. *Demogosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8477*. The type genus for the taxon is *Candidatus* Demogosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8477*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Demogosales.

Description of *Candidatus* Demogosales ord. nov.

Candidatus Demogosales (NL. fem. n. *Demogosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8477*. The type genus for the taxon is *Candidatus* Demogosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8477*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Demogosae.

Description of *Candidatus* Demogosae class. nov.

Candidatus Demogosae (NL. fem. n. *c__Demogosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8477*. The type genus for the taxon is *Candidatus* Demogosa .

According to GTDB R06-RS202, this class belongs to the phylum *Marinisomatota*.

Description of *Candidatus* Demogula gasomicula sp. nov.

Candidatus Demogula gasomicula (NL. fem. n. *gasomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYIR01 sp012523355*. The type genome for the species is the GenBank assembly GCA_012523355.1. The GC content of the type genome is 64.27 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Demogula gen. nov.

Candidatus Demogula (NL. fem. n. *Demogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYIR01*. The type species for the genus is *Candidatus* Demogula gasomicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYIR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogulaceae.

Description of *Candidatus* Demogulaceae fam. nov.

Candidatus Demogulaceae (NL. fem. n. *Demogulaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYIR01.* The type genus for the taxon is *Candidatus* Demogula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5377*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Latibosales.

Description of *Candidatus* Demulana nocumifica sp. nov.

Candidatus Demulana nocumifica (NL. fem. n. *nocumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12409 sp000991575*. The type genome for the species is the GenBank assembly GCA_000991965.1. The GC content of the type genome is 35.98 % and the genome length is 1.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Demulana gen. nov.

Candidatus Demulana (NL. fem. n. *Demulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12409*. The type species for the genus is *Candidatus* Demulana nocumifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12409*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulanaceae.

Description of *Candidatus* Demulanaceae fam. nov.

Candidatus Demulanaceae (NL. fem. n. *Demulanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12409.* The type genus for the taxon is *Candidatus* Demulana .

According to GTDB R06-RS202, this family belongs to the order *Babeliales*.

Description of *Candidatus* Demularia obsecibula sp. nov.

Candidatus Demularia obsecibula (NL. fem. n. *obsecibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7887 sp002501105*. The type genome for the species is the GenBank assembly GCA_002501105.1. The GC content of the type genome is 61.51 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Demularia gen. nov.

Candidatus Demularia (NL. fem. n. *Demularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7887*. The type species for the genus is *Candidatus* Demularia obsecibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7887*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulariaceae.

Description of *Candidatus* Demulariaceae fam. nov.

Candidatus Demulariaceae (NL. fem. n. *Demulariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7887.* The type genus for the taxon is *Candidatus* Demularia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7887*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Demulariales.

Description of *Candidatus* Demulariales ord. nov.

Candidatus Demulariales (NL. fem. n. *Demulariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7887.* The type genus for the taxon is *Candidatus* Demularia .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Demulella citocicula sp. nov.

Candidatus Demulella citocicula (NL. fem. n. *citocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7455 sp003452295*. The type genome for the species is the GenBank assembly GCA_002477425.1. The GC content of the type genome is 50.88 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Demulella gen. nov.

Candidatus Demulella (NL. fem. n. *Demulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7455*. The type species for the genus is *Candidatus* Demulella citocicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Demulella errabibra sp. nov.

Candidatus Demulella errabibra (NL. fem. n. *errabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7455 sp002167855*. The type genome for the species is the GenBank assembly GCA_002167855.2. The GC content of the type genome is 43.86 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Demulella nidificula sp. nov.

Candidatus Demulella nidificula (NL. fem. n. *nidificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7455 sp002712135*. The type genome for the species is the GenBank assembly GCA_002712135.1. The GC content of the type genome is 48.84 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Demulella sicubitas sp. nov.

Candidatus Demulella sicubitas (NL. fem. n. *sicubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7455 sp002690865*. The type genome for the species is the GenBank assembly GCA_002690865.1. The GC content of the type genome is 43.43 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Demulida almucessa sp. nov.

Candidatus Demulida almucessa (NL. fem. n. *almucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2729495 sp002729495*. The type genome for the species is the GenBank assembly GCA_002729495.1. The GC content of the type genome is 55.29 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Demulida gen. nov.

Candidatus Demulida (NL. fem. n. *Demulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2729495*. The type species for the genus is *Candidatus* Demulida almucessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2729495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulidaceae.

Description of *Candidatus* Demulidaceae fam. nov.

Candidatus Demulidaceae (NL. fem. n. *Demulidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2729495.* The type genus for the taxon is *Candidatus* Demulida .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2729495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Demulidales.

Description of *Candidatus* Demulidales ord. nov.

Candidatus Demulidales (NL. fem. n. *Demulidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2729495.* The type genus for the taxon is *Candidatus* Demulida .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Demulida irroticula sp. nov.

Candidatus Demulida irroticula (NL. fem. n. *irroticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2729495 sp013001905*. The type genome for the species is the GenBank assembly GCA_013001905.1. The GC content of the type genome is 59.09 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Demulosa dinupigena sp. nov.

Candidatus Demulosa dinupigena (NL. fem. n. *dinupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4246 sp002391225*. The type genome for the species is the GenBank assembly GCA_902795155.1. The GC content of the type genome is 59.31 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Demulosa gen. nov.

Candidatus Demulosa (NL. fem. n. *Demulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4246*. The type species for the genus is *Candidatus* Demulosa dinupigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Demulosa impugitrix sp. nov.

Candidatus Demulosa impugitrix (NL. fem. n. *impugitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4246 sp902789795*. The type genome for the species is the GenBank assembly GCA_902789795.1. The GC content of the type genome is 60.13 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Demulosa inpuratica sp. nov.

Candidatus Demulosa inpuratica (NL. fem. n. *inpuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4246 sp902760595*. The type genome for the species is the GenBank assembly GCA_902760595.1. The GC content of the type genome is 60.53 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Demulosa semidatica sp. nov.

Candidatus Demulosa semidatica (NL. fem. n. *semidatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4246 sp902766515*. The type genome for the species is the GenBank assembly GCA_902766515.1. The GC content of the type genome is 62.74 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Demulosa thessitio sp. nov.

Candidatus Demulosa thessitio (NL. fem. n. *thessitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4246 sp902790015*. The type genome for the species is the GenBank assembly GCA_902790015.1. The GC content of the type genome is 60.09 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Demulula apogritio sp. nov.

Candidatus Demulula apogritio (NL. fem. n. *apogritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-64-13 sp003157225*. The type genome for the species is the GenBank assembly GCA_003157225.1. The GC content of the type genome is 63.53 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Demulula gen. nov.

Candidatus Demulula (NL. fem. n. *Demulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-64-13*. The type species for the genus is *Candidatus* Demulula apogritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demululaceae.

Description of *Candidatus* Demululaceae fam. nov.

Candidatus Demululaceae (NL. fem. n. *Demululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-64-13.* The type genus for the taxon is *Candidatus* Demulula .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-16-64-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Demululales.

Description of *Candidatus* Demululales ord. nov.

Candidatus Demululales (NL. fem. n. *Demululales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-64-13.* The type genus for the taxon is *Candidatus* Demulula .

According to the GTDB R06-RS202, this order belongs to the class *Thermoleophilia*.

Description of *Candidatus* Demulula dilacitas sp. nov.

Candidatus Demulula dilacitas (NL. fem. n. *dilacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-64-13 sp001768675*. The type genome for the species is the GenBank assembly GCA_001768675.1. The GC content of the type genome is 63.86 % and the genome length is 2.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at

16ft depth".

Description of *Candidatus* Demulula exheditura sp. nov.

Candidatus Demulula exheditura (NL. fem. n. *exheditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-64-13 sp012523095*. The type genome for the species is the GenBank assembly GCA_012523095.1. The GC content of the type genome is 62.68 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Demulula xenodivita sp. nov.

Candidatus Demulula xenodivita (NL. fem. n. *xenodivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-64-13 sp012729575*. The type genome for the species is the GenBank assembly GCA_012729575.1. The GC content of the type genome is 62.2 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Denavana categifica sp. nov.

Candidatus Denavana categifica (NL. fem. n. *categifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAEKA01 sp014155705*. The type genome for the species is the GenBank assembly GCA_014155705.1. The GC content of the type genome is 62.48 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Denavana gen. nov.

Candidatus Denavana (NL. fem. n. *Denavana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAEKA01*. The type species for the genus is *Candidatus* Denavana categifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAEKA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denavanaceae.

Description of *Candidatus* Denavanaceae fam. nov.

Candidatus Denavanaceae (NL. fem. n. *Denavanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAEKA01.* The type genus for the taxon is *Candidatus* Denavana .

According to GTDB R06-RS202, this family belongs to the order *Caldilineales*.

Description of *Candidatus* Denavaria serotiforma sp. nov.

Candidatus Denavaria serotiforma (NL. fem. n. *serotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUEQ01 sp903898215*. The type genome for the species is the GenBank assembly GCA_903928165.1. The GC content of the type genome is 33.23 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Denavaria gen. nov.

Candidatus Denavaria (NL. fem. n. *Denavaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUEQ01*. The type species for the genus is *Candidatus* Denavaria serotiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefananaceae.

Description of *Candidatus* Denavella adlocatica sp. nov.

Candidatus Denavella adlocatica (NL. fem. n. *adlocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4871 sp002424295*. The type genome for the species is the GenBank assembly GCA_002424295.1. The GC content of the type genome is 43.36 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Denavella gen. nov.

Candidatus Denavella (NL. fem. n. *Denavella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4871*. The type species for the genus is *Candidatus* Denavella adlocatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denavella adobressa sp. nov.

Candidatus Denavella adobressa (NL. fem. n. *adobressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4871 sp014467055*. The type genome for the species is the GenBank assembly GCA_014467055.1. The GC content of the type genome is 48.48 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Denavella cosidiforma sp. nov.

Candidatus Denavella cosidiforma (NL. fem. n. *cosidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4871 sp002119605*. The type genome for the species is the GenBank assembly GCA_002397555.1. The GC content of the type genome is 51.07 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Denavella effigastra sp. nov.

Candidatus Denavella effigastra (NL. fem. n. *effigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4871 sp902809935*. The type genome for the species is the GenBank assembly RS_GCF_902809935.1. The GC content of the type genome is 42.75 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Denavella fatifatica sp. nov.

Candidatus Denavella fatifatica (NL. fem. n. *fatifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4871 sp002399445*. The type genome for the species is the GenBank assembly GCA_002398045.1. The GC content of the type genome is 45.54 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Denavella hexamibula sp. nov.

Candidatus Denavella hexamibula (NL. fem. n. *hexamibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4871 sp002411615*. The type genome for the species is the GenBank assembly GCA_002411615.1. The GC content of the type genome is 43.59 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Denavella petulugo sp. nov.

Candidatus Denavella petulugo (NL. fem. n. *petulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4871 sp900554535*. The type genome for the species is the GenBank assembly RS_GCF_900755425.1. The GC content of the type genome is 53.64 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Denavia camilessa sp. nov.

Candidatus Denavia camilessa (NL. fem. n. *camilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2428 sp002343545*. The type genome for the species is the GenBank assembly GCA_002343545.1. The GC content of the type genome is 63.81 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Denavia gen. nov.

Candidatus Denavia (NL. fem. n. *Denavia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2428*. The type species for the genus is *Candidatus* Denavia camilessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2428*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denaviaceae.

Description of *Candidatus* Denaviaceae fam. nov.

Candidatus Denaviaceae (NL. fem. n. *Denaviaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2428.* The type genus for the taxon is *Candidatus* Denavia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2428*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denaviales.

Description of *Candidatus* Denaviales ord. nov.

Candidatus Denaviales (NL. fem. n. *Denaviales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2428.* The type genus for the taxon is *Candidatus* Denavia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2428*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Denaviae.

Description of *Candidatus* Denaviae class. nov.

Candidatus Denaviae (NL. fem. n. *c__Denaviae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2428.* The type genus for the taxon is *Candidatus* Denavia .

According to GTDB R06-RS202, this class belongs to the phylum *Bdellovibrionota*.

Description of *Candidatus* Denavida admoritoga sp. nov.

Candidatus Denavida admoritoga (NL. fem. n. *admoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLA01 sp014360805*. The type genome for the species is the

GenBank assembly GCA_014360805.1. The GC content of the type genome is 65.45 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Denavida gen. nov.

Candidatus Denavida (NL. fem. n. *Denavida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLA01*. The type species for the genus is *Candidatus* Denavida admoritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTLA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denavidaceae.

Description of *Candidatus* Denavidaceae fam. nov.

Candidatus Denavidaceae (NL. fem. n. *Denavidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLA01*. The type genus for the taxon is *Candidatus* Denavida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTPP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogosales.

Description of *Candidatus* Denavida allapimonas sp. nov.

Candidatus Denavida allapimonas (NL. fem. n. *allapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLA01 sp011333425*. The type genome for the species is the GenBank assembly GCA_011333425.1. The GC content of the type genome is 65.59 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Denavosa nutamitio sp. nov.

Candidatus Denavosa nutamitio (NL. fem. n. *nutamitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKLG01 sp007123335*. The type genome for the species is the

GenBank assembly GCA_007128385.1. The GC content of the type genome is 62.72 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Denavosa gen. nov.

Candidatus Denavosa (NL. fem. n. *Denavosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKLG01*. The type species for the genus is *Candidatus* Denavosa nutamitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Denavula epitribula sp. nov.

Candidatus Denavula epitribula (NL. fem. n. *epitribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYA2-FULL-43-10 sp001776195*. The type genome for the species is the GenBank assembly GCA_001776195.1. The GC content of the type genome is 43.45 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Denavula gen. nov.

Candidatus Denavula (NL. fem. n. *Denavula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYA2-FULL-43-10*. The type species for the genus is *Candidatus* Denavula epitribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYA2-FULL-43-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denavulaceae.

Description of *Candidatus* Denavulaceae fam. nov.

Candidatus Denavulaceae (NL. fem. n. *Denavulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYA2-FULL-43-10.* The type genus for the taxon is *Candidatus* Denavula .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYA2-FULL-43-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denavulales.

Description of *Candidatus* Denavulales ord. nov.

Candidatus Denavulales (NL. fem. n. *Denavulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYA2-FULL-43-10.* The type genus for the taxon is *Candidatus* Denavula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Panifidae.

Description of *Candidatus* Dendrosporobacter turibitia sp. nov.

Candidatus Dendrosporobacter turibitia (NL. fem. n. *turibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dendrosporobacter sp003990955*. The type genome for the species is the GenBank assembly RS_GCF_003990955.1. The GC content of the type genome is 42.18 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Denecana affiriforma sp. nov.

Candidatus Denecana affiriforma (NL. fem. n. *affiriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pb10988 sp009664345*. The type genome for the species is the GenBank assembly RS_GCF_009664345.1. The GC content of the type genome is 50.39 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Denecana gen. nov.

Candidatus Denecana (NL. fem. n. *Denecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pb10988*. The type species for the genus is *Candidatus* Denecana affiriforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Pb10988*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denecanaceae.

Description of *Candidatus* Denecanaceae fam. nov.

Candidatus Denecanaceae (NL. fem. n. *Denecanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Pb10988.* The type genus for the taxon is *Candidatus* Denecana .

According to GTDB R06-RS202, this family belongs to the order *Pirellulales*.

Description of *Candidatus* Denecella cinefugo sp. nov.

Candidatus Denecella cinefugo (NL. fem. n. *cinefugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1546 sp003535475*. The type genome for the species is the GenBank assembly GCA_003535475.1. The GC content of the type genome is 42.87 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Denecella gen. nov.

Candidatus Denecella (NL. fem. n. *Denecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1546*. The type species for the genus is *Candidatus* Denecella cinefugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1546*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denecellaceae.

Description of *Candidatus* Denecellaceae fam. nov.

Candidatus Denecellaceae (NL. fem. n. *Denecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1546.* The type genus for the taxon is *Candidatus* Denecella .

According to GTDB R06-RS202, this family belongs to the order *Thermodesulfovibrionales*.

Description of *Candidatus* Denecella incucicula sp. nov.

Candidatus Denecella incucicula (NL. fem. n. *incucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1546 sp003599795*. The type genome for the species is the GenBank assembly GCA_003599795.1. The GC content of the type genome is 44.25 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Denecella saxifitoga sp. nov.

Candidatus Denecella saxifitoga (NL. fem. n. *saxifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1546 sp001805105*. The type genome for the species is the GenBank assembly GCA_001803715.1. The GC content of the type genome is 43.71 % and the genome length is 1.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 4 / D; 5m depth; 0.2 filter".

Description of *Candidatus* Denecella sugilitrix sp. nov.

Candidatus Denecella sugilitrix (NL. fem. n. *sugilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1546 sp001871685*. The type genome for the species is the GenBank assembly GCA_002781345.1. The GC content of the type genome is 43.87 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Denecia impoliforma sp. nov.

Candidatus Denecia impoliforma (NL. fem. n. *impoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5629 sp002421445*. The type genome for the species is the GenBank assembly GCA_002421445.1. The GC content of the type genome is 47.48 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Denecia gen. nov.

Candidatus Denecia (NL. fem. n. *Denecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5629*. The type species for the genus is *Candidatus* Denecia impoliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5629*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deneciaceae.

Description of *Candidatus* Deneciaceae fam. nov.

Candidatus Deneciaceae (NL. fem. n. *Deneciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5629.* The type genus for the taxon is *Candidatus* Denecia .

According to the original version of GTDB R06-RS202, this family belongs to the order *GIF9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dedigiales.

Description of *Candidatus* Denecia minurifica sp. nov.

Candidatus Denecia minurifica (NL. fem. n. *minurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5629 sp003484395*. The type genome for the species is the GenBank assembly GCA_003484395.1. The GC content of the type genome is 46.88 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Denecida femelitica sp. nov.

Candidatus Denecida femelitica (NL. fem. n. *femelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWEH01 sp012799455*. The type genome for the species is the GenBank assembly GCA_012799455.1. The GC content of the type genome is 35.27 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Denecida gen. nov.

Candidatus Denecida (NL. fem. n. *Denecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWEH01*. The type species for the genus is *Candidatus* Denecida femelitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecariaceae.

Description of *Candidatus* Denecida homogedo sp. nov.

Candidatus Denecida homogedo (NL. fem. n. *homogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWEH01 sp002070965*. The type genome for the species is the GenBank assembly GCA_012718845.1. The GC content of the type genome is 36.48 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Denecosa capabitura sp. nov.

Candidatus Denecosa capabitura (NL. fem. n. *capabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUML01 sp007131125*. The type genome for the species is the GenBank assembly GCA_007131125.1. The GC content of the type genome is 46.18 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Denecosa gen. nov.

Candidatus Denecosa (NL. fem. n. *Denecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *PUML01*. The type species for the genus is *Candidatus* Denecosa capabitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Denecosa ellipilenta sp. nov.

Candidatus Denecosa ellipilenta (NL. fem. n. *ellipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUML01 sp003551345*. The type genome for the species is the GenBank assembly GCA_003551345.1. The GC content of the type genome is 46.38 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Denecosa refacilenta sp. nov.

Candidatus Denecosa refacilenta (NL. fem. n. *refacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUML01 sp007129255*. The type genome for the species is the GenBank assembly GCA_003566495.1. The GC content of the type genome is 45.56 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Denecula denicilega sp. nov.

Candidatus Denecula denicilega (NL. fem. n. *denicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGON01 sp003349915*. The type genome for the species is the GenBank assembly GCA_003349915.1. The GC content of the type genome is 54.18 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Denecula gen. nov.

Candidatus Denecula (NL. fem. n. *Denecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QGON01*. The type species for the genus is *Candidatus* Denecula

denicilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denecula detosicula sp. nov.

Candidatus Denecula detosicula (NL. fem. n. *detosicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGON01 sp003660235*. The type genome for the species is the GenBank assembly GCA_003660225.1. The GC content of the type genome is 54.47 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Denecula forinousia sp. nov.

Candidatus Denecula forinousia (NL. fem. n. *forinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGON01 sp003934985*. The type genome for the species is the GenBank assembly GCA_003934985.1. The GC content of the type genome is 54.12 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Denecula rutabimonia sp. nov.

Candidatus Denecula rutabimonia (NL. fem. n. *rutabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QGON01 sp011947365*. The type genome for the species is the GenBank assembly GCA_008642435.1. The GC content of the type genome is 54.78 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Denicana cetaricella sp. nov.

Candidatus Denicana cetaricella (NL. fem. n. *cetaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6614 sp002721895*. The type genome for the species is the GenBank assembly GCA_002721895.1. The GC content of the type genome is 57.06 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Denicana gen. nov.

Candidatus Denicana (NL. fem. n. *Denicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6614*. The type species for the genus is *Candidatus* Denicana cetaricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1100*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turilanaceae.

Description of *Candidatus* Denicana inredilenta sp. nov.

Candidatus Denicana inredilenta (NL. fem. n. *inredilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6614 sp002724615*. The type genome for the species is the GenBank assembly GCA_002724615.1. The GC content of the type genome is 57.16 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Denicaria cobalatica sp. nov.

Candidatus Denicaria cobalatica (NL. fem. n. *cobalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1443 sp002068945*. The type genome for the species is the GenBank assembly GCA_002068945.1. The GC content of the type genome is 57.15 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Denicaria gen. nov.

Candidatus Denicaria (NL. fem. n. *Denicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1443*. The type species for the genus is *Candidatus* Denicaria cobalatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2337*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panopellaceae.

Description of *Candidatus* Denicaria peropitura sp. nov.

Candidatus Denicaria peropitura (NL. fem. n. *peropitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1443 sp002329545*. The type genome for the species is the GenBank assembly GCA_002329545.1. The GC content of the type genome is 50.25 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Denicella catafatica sp. nov.

Candidatus Denicella catafatica (NL. fem. n. *catafatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-58-16 sp001830425*. The type genome for the species is the GenBank assembly GCA_001830425.1. The GC content of the type genome is 58.25 % and the genome length is 2.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Denicella gen. nov.

Candidatus Denicella (NL. fem. n. *Denicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-58-16*. The type species for the genus is *Candidatus* Denicella catafatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-58-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denicellaceae.

Description of *Candidatus* Denicellaceae fam. nov.

Candidatus Denicellaceae (NL. fem. n. *Denicellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-58-16.* The type genus for the taxon is *Candidatus* Denicella .

According to GTDB R06-RS202, this family belongs to the order *Rhodospirillales*.

Description of *Candidatus* Denicia semipicula sp. nov.

Candidatus Denicia semipicula (NL. fem. n. *semipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AP-16 sp005884745*. The type genome for the species is the GenBank assembly GCA_005882425.1. The GC content of the type genome is 66.3 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Denicia gen. nov.

Candidatus Denicia (NL. fem. n. *Denicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AP-16*. The type species for the genus is *Candidatus* Denicia semipicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denicida inlacastra sp. nov.

Candidatus Denicida inlacastra (NL. fem. n. *inlacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6624 sp002501535*. The type genome for the species is the GenBank assembly GCA_002501535.1. The GC content of the type genome is 36.29 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Denicida gen. nov.

Candidatus Denicida (NL. fem. n. *Denicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6624*. The type species for the genus is *Candidatus* Denicida inlacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6624*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denicidaceae.

Description of *Candidatus* Denicidaceae fam. nov.

Candidatus Denicidaceae (NL. fem. n. *Denicidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6624.* The type genus for the taxon is *Candidatus* Denicida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6624*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denicidales.

Description of *Candidatus* Denicidales ord. nov.

Candidatus Denicidales (NL. fem. n. *Denicidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6624.* The type genus for the taxon is *Candidatus* Denicida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6624*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Denicidae.

Description of *Candidatus* Denicidae class. nov.

Candidatus Denicidae (NL. fem. n. *c__Denicidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6624.* The type genus for the taxon is *Candidatus* Denicida .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBP7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Metapanota.

Description of *Candidatus* Denicida vacilimonas sp. nov.

Candidatus Denicida vacilimonas (NL. fem. n. *vacilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6624 sp002716355*. The type genome for the species is the GenBank assembly GCA_002716355.1. The GC content of the type genome is 35.88 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Denicosa necubousia sp. nov.

Candidatus Denicosa necubousia (NL. fem. n. *necubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA920 sp002293685*. The type genome for the species is the GenBank assembly GCA_002293795.1. The GC content of the type genome is 40.57 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Denicosa gen. nov.

Candidatus Denicosa (NL. fem. n. *Denicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA920*. The type species for the genus is *Candidatus* Denicosa necubousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA920*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denicosaceae.

Description of *Candidatus* Denicosaceae fam. nov.

Candidatus Denicosaceae (NL. fem. n. *Denicosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA920.* The type genus for the taxon is *Candidatus* Denicosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA920*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denicosales.

Description of *Candidatus* Denicosales ord. nov.

Candidatus Denicosales (NL. fem. n. *Denicosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA920.* The type genus for the taxon is *Candidatus* Denicosa .

According to the GTDB R06-RS202, this order belongs to the class *Doudnabacteria*.

Description of *Candidatus* Denicula inexcicula sp. nov.

Candidatus Denicula inexcicula (NL. fem. n. *inexcicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYT01 sp009692665*. The type genome for the species is the GenBank assembly GCA_009692665.1. The GC content of the type genome is 59.29 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Denicula gen. nov.

Candidatus Denicula (NL. fem. n. *Denicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYT01*. The type species for the genus is *Candidatus* Denicula inexcicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deniculaceae.

Description of *Candidatus* Deniculaceae fam. nov.

Candidatus Deniculaceae (NL. fem. n. *Deniculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYT01.* The type genus for the taxon is *Candidatus* Denicula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nivomellales.

Description of *Candidatus* Denigana subabiforma sp. nov.

Candidatus Denigana subabiforma (NL. fem. n. *subabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRYL01 sp903882825*. The type genome for the species is the GenBank assembly GCA_903882825.1. The GC content of the type genome is 35.75 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Denigana gen. nov.

Candidatus Denigana (NL. fem. n. *Denigana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRYL01*. The type species for the genus is *Candidatus* Denigana subabiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIRYL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deniganaceae.

Description of *Candidatus* Deniganaceae fam. nov.

Candidatus Deniganaceae (NL. fem. n. *Deniganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIRYL01*. The type genus for the taxon is *Candidatus* Denigana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIRYL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deniganales.

Description of *Candidatus* Deniganales ord. nov.

Candidatus Deniganales (NL. fem. n. *Deniganales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIRYL01*. The type genus for the taxon is *Candidatus* Denigana .

According to the GTDB R06-RS202, this order belongs to the class *Gracilibacteria*.

Description of *Candidatus* Denigaria miracatica sp. nov.

Candidatus Denigaria miracatica (NL. fem. n. *miracatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1562 sp002322525*. The type genome for the species is the GenBank assembly GCA_002322525.1. The GC content of the type genome is 40.13 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Denigaria gen. nov.

Candidatus Denigaria (NL. fem. n. *Denigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1562*. The type species for the genus is *Candidatus* Denigaria miracatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Denigella genufibula sp. nov.

Candidatus Denigella genufibula (NL. fem. n. *genufibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWXX01 sp903916735*. The type genome for the species is the GenBank assembly GCA_903888855.1. The GC content of the type genome is 53.92 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Denigella gen. nov.

Candidatus Denigella (NL. fem. n. *Denigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWXX01*. The type species for the genus is *Candidatus* Denigella genufibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIWXX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denigellaceae.

Description of *Candidatus* Denigellaceae fam. nov.

Candidatus Denigellaceae (NL. fem. n. *Denigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIWXX01.* The type genus for the taxon is *Candidatus* Denigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIWXX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denigellales.

Description of *Candidatus* Denigellales ord. nov.

Candidatus Denigellales (NL. fem. n. *Denigellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIWXX01.* The type genus for the taxon is *Candidatus* Denigella .

According to the original version of GTDB R06-RS202, this family belongs to the class *CAIWXX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Denigellae.

Description of *Candidatus* Denigellae class. nov.

Candidatus Denigellae (NL. fem. n. *c__Denigellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIWXX01.* The type genus for the taxon is *Candidatus* Denigella .

According to GTDB R06-RS202, this class belongs to the phylum *Acidobacteriota*.

Description of *Candidatus* Denigia masocilenta sp. nov.

Candidatus Denigia masocilenta (NL. fem. n. *masocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VTZT01 sp008367275*. The type genome for the species is the GenBank assembly RS_GCF_008367275.1. The GC content of the type genome is 41.45 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Denigia gen. nov.

Candidatus Denigia (NL. fem. n. *Denigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VTZT01*. The type species for the genus is *Candidatus* Denigia masocilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denigida resupitura sp. nov.

Candidatus Denigida resupitura (NL. fem. n. *resupitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-43-11-A sp002791035*. The type genome for the species is the GenBank assembly GCA_002791035.1. The GC content of the type genome is 43.54 % and the genome length is 0.51 Mbp.

Description of *Candidatus* Denigida gen. nov.

Candidatus Denigida (NL. fem. n. *Denigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-43-11-A*. The type species for the genus is *Candidatus* Denigida resupitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2143*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatulaceae.

Description of *Candidatus* Denigosa acrimisca sp. nov.

Candidatus Denigosa acrimisca (NL. fem. n. *acrimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABPS01 sp011391835*. The type genome for the species is the GenBank assembly GCA_011391835.1. The GC content of the type genome is 42.95 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Denigosa gen. nov.

Candidatus Denigosa (NL. fem. n. *Denigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABPS01*. The type species for the genus is *Candidatus* Denigosa acrimisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAABPS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denigosaceae.

Description of *Candidatus* Denigosaceae fam. nov.

Candidatus Denigosaceae (NL. fem. n. *Denigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAABPS01*. The type genus for the taxon is *Candidatus* Denigosa .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Denigula decatisca sp. nov.

Candidatus Denigula decatisca (NL. fem. n. *decatisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1014 sp002683785*. The type genome for the species is the GenBank assembly GCA_002291585.1. The GC content of the type genome is 46.64 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Denigula gen. nov.

Candidatus Denigula (NL. fem. n. *Denigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1014*. The type species for the genus is *Candidatus* Denigula decatisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NAC60-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peripidaceae.

Description of *Candidatus* Denigula sonabago sp. nov.

Candidatus Denigula sonabago (NL. fem. n. *sonabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1014 sp001469005*. The type genome for the species is the GenBank assembly GCA_011522785.1. The GC content of the type genome is 47.54 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Denitratisoma obvalatica sp. nov.

Candidatus Denitratisoma obvalatica (NL. fem. n. *obvalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Denitratisoma sp007833355*. The type genome for the species is the GenBank assembly RS_GCF_007833355.1. The GC content of the type genome is 64.89 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Denitromonas acratimonas sp. nov.

Candidatus Denitromonas acratimonas (NL. fem. n. *acratimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Denitromonas sp010983895*. The type genome for the species is the GenBank assembly RS_GCF_010983895.1. The GC content of the type genome is 67.13 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Denitromonas defasimonas sp. nov.

Candidatus Denitromonas defasimonas (NL. fem. n. *defasimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Denitromonas sp008501585*. The type genome for the species is the GenBank assembly GCA_008501585.1. The GC content of the type genome is 66.96 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Denitrovibrio adlapousia sp. nov.

Candidatus Denitrovibrio adlapousia (NL. fem. n. *adlapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Denitrovibrio sp002869145*. The type genome for the species is the GenBank assembly GCA_002869145.1. The GC content of the type genome is 41.07 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Denitrovibrio chancitica sp. nov.

Candidatus Denitrovibrio chancitica (NL. fem. n. *chancitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Denitrovibrio sp002869185*. The type genome for the species is the GenBank assembly GCA_002869185.1. The GC content of the type genome is 38.86 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Denixana culigousia sp. nov.

Candidatus Denixana culigousia (NL. fem. n. *culigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp002362065*. The type genome for the species is the GenBank assembly GCA_002362065.1. The GC content of the type genome is 46.06 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Denixana gen. nov.

Candidatus Denixana (NL. fem. n. *Denixana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA636*. The type species for the genus is *Candidatus* Denixana culigousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denixana cunabitrix sp. nov.

Candidatus Denixana cunabitrix (NL. fem. n. *cunabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp902795865*. The type genome for the species is the GenBank assembly GCA_902795865.1. The GC content of the type genome is 28.64 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Denixana delacitas sp. nov.

Candidatus Denixana delacitas (NL. fem. n. *delacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp900546285*. The type genome for the species is the GenBank assembly GCA_900546285.1. The GC content of the type genome is 32.52 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Denixana desepilega sp. nov.

Candidatus Denixana desepilega (NL. fem. n. *desepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp002299675*. The type genome for the species is the GenBank assembly GCA_002299675.1. The GC content of the type genome is 37.74 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Denixana detepitura sp. nov.

Candidatus Denixana detepitura (NL. fem. n. *detepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp902803275*. The type genome for the species is the GenBank assembly GCA_902803275.1. The GC content of the type genome is 44.06 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Denixana detesitio sp. nov.

Candidatus Denixana detesitio (NL. fem. n. *detesitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp002315565*. The type genome for the species is the GenBank assembly GCA_002315565.1. The GC content of the type genome is 37.28 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Denixana episcugo sp. nov.

Candidatus Denixana episcugo (NL. fem. n. *episcugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp002314515*. The type genome for the species is the GenBank assembly GCA_002314515.1. The GC content of the type genome is 36.45 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Denixana infiritura sp. nov.

Candidatus Denixana infiritura (NL. fem. n. *infiritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA636 sp902795875*. The type genome for the species is the GenBank assembly GCA_902795875.1. The GC content of the type genome is 45.75 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Denixana inurbivita sp. nov.

Candidatus Denixana inurbivita (NL. fem. n. *inurbivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp902803055*. The type genome for the species is the GenBank assembly GCA_902803055.1. The GC content of the type genome is 43.22 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Denixana peripimonas sp. nov.

Candidatus Denixana peripimonas (NL. fem. n. *peripimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp902796525*. The type genome for the species is the GenBank assembly GCA_902796525.1. The GC content of the type genome is 48.87 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Denixana sifunimonia sp. nov.

Candidatus Denixana sifunimonia (NL. fem. n. *sifunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp900321955*. The type genome for the species is the GenBank assembly GCA_902758715.1. The GC content of the type genome is 47.1 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Denixana tiguritoga sp. nov.

Candidatus Denixana tiguritoga (NL. fem. n. *tiguritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA636 sp902803785*. The type genome for the species is the GenBank assembly GCA_902803785.1. The GC content of the type genome is 49.05 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Denixaria risibitica sp. nov.

Candidatus Denixaria risibitica (NL. fem. n. *risibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5072 sp002415855*. The type genome for the species is the GenBank assembly GCA_002380925.1. The GC content of the type genome is 46.05 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Denixaria gen. nov.

Candidatus Denixaria (NL. fem. n. *Denixaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5072*. The type species for the genus is *Candidatus* Denixaria risibitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10428*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifellaceae.

Description of *Candidatus* Denixella remulimonia sp. nov.

Candidatus Denixella remulimonia (NL. fem. n. *remulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG033 sp900314665*. The type genome for the species is the GenBank assembly GCA_902797245.1. The GC content of the type genome is 64.45 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Denixella gen. nov.

Candidatus Denixella (NL. fem. n. *Denixella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG033*. The type species for the genus is *Candidatus* Denixella remulimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RUG033*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denixellaceae.

Description of *Candidatus* Denixellaceae fam. nov.

Candidatus Denixellaceae (NL. fem. n. *Denixellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG033.* The type genus for the taxon is *Candidatus* Denixella .

According to GTDB R06-RS202, this family belongs to the order *Coriobacteriales*.

Description of *Candidatus* Denixia defanatica sp. nov.

Candidatus Denixia defanatica (NL. fem. n. *defanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA228 sp002402635*. The type genome for the species is the GenBank assembly GCA_002348105.1. The GC content of the type genome is 30.1 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Denixia gen. nov.

Candidatus Denixia (NL. fem. n. *Denixia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA228*. The type species for the genus is *Candidatus* Denixia defanatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA228*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denixiaceae.

Description of *Candidatus* Denixiaceae fam. nov.

Candidatus Denixiaceae (NL. fem. n. *Denixiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA228.* The type genus for the taxon is *Candidatus* Denixia .

According to GTDB R06-RS202, this family belongs to the order *Deferribacterales*.

Description of *Candidatus* Denixida scellilenta sp. nov.

Candidatus Denixida scellilenta (NL. fem. n. *scellilenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-59-12 sp001800075*. The type genome for the species is the GenBank assembly GCA_001800075.1. The GC content of the type genome is 59.15 % and the genome length is 2.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Denixida gen. nov.

Candidatus Denixida (NL. fem. n. *Denixida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-59-12*. The type species for the genus is *Candidatus* Denixida scellilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-59-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denixidaceae.

Description of *Candidatus* Denixidaceae fam. nov.

Candidatus Denixidaceae (NL. fem. n. *Denixidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-59-12.* The type genus for the taxon is *Candidatus* Denixida .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-01-FULL-59-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denixidales.

Description of *Candidatus* Denixidales ord. nov.

Candidatus Denixidales (NL. fem. n. *Denixidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-59-12.* The type genus for the taxon is *Candidatus* Denixida .

According to the GTDB R06-RS202, this order belongs to the class *Elusimicrobia*.

Description of *Candidatus* Denixosa lanifitas sp. nov.

Candidatus Denixosa lanifitas (NL. fem. n. *lanifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8296 sp002338335*. The type genome for the species is the GenBank assembly GCA_003331845.1. The GC content of the type genome is 47.53 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Denixosa gen. nov.

Candidatus Denixosa (NL. fem. n. *Denixosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8296*. The type species for the genus is *Candidatus* Denixosa lanifitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denixula attubetta sp. nov.

Candidatus Denixula attubetta (NL. fem. n. *attubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCJ01 sp012729815*. The type genome for the species is the GenBank assembly GCA_012729815.1. The GC content of the type genome is 64.0 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Denixula gen. nov.

Candidatus Denixula (NL. fem. n. *Denixula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYCJ01*. The type species for the genus is *Candidatus* Denixula attubetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYCJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denixulaceae.

Description of *Candidatus* Denixulaceae fam. nov.

Candidatus Denixulaceae (NL. fem. n. *Denixulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYCJ01*. The type genus for the taxon is *Candidatus* Denixula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYCJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denixulales.

Description of *Candidatus* Denixulales ord. nov.

Candidatus Denixulales (NL. fem. n. *Denixulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYCJ01*. The type genus for the taxon is *Candidatus* Denixula .

According to the GTDB R06-RS202, this order belongs to the class *Phycisphaerae*.

Description of *Candidatus* Denomana carunax sp. nov.

Candidatus Denomana carunax (NL. fem. n. *carunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CYK-10 sp903845215*. The type genome for the species is the GenBank assembly GCA_903845215.1. The GC content of the type genome is 59.53 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Denomana gen. nov.

Candidatus Denomana (NL. fem. n. *Denomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CYK-10*. The type species for the genus is *Candidatus* Denomana carunax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denomana omnipilega sp. nov.

Candidatus Denomana omnipilega (NL. fem. n. *omnipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CYK-10 sp009925085*. The type genome for the species is the GenBank assembly RS_GCF_009925085.1. The GC content of the type genome is 66.04 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Denomana papavedo sp. nov.

Candidatus Denomana papavedo (NL. fem. n. *papavedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CYK-10 sp903873585*. The type genome for the species is the GenBank assembly GCA_903873585.1. The GC content of the type genome is 60.09 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Denomaria nocumousia sp. nov.

Candidatus Denomaria nocumousia (NL. fem. n. *nocumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKAF01 sp903825395*. The type genome for the species is the GenBank assembly GCA_903871795.1. The GC content of the type genome is 46.4 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Denomaria gen. nov.

Candidatus Denomaria (NL. fem. n. *Denomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKAF01*. The type species for the genus is *Candidatus* Denomaria nocumousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIKAF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denomariaceae.

Description of *Candidatus* Denomariaceae fam. nov.

Candidatus Denomariaceae (NL. fem. n. *Denomariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CAIKAF01*. The type genus for the taxon is *Candidatus* Denomaria .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Denomaria terebimonia sp. nov.

Candidatus Denomaria terebimonia (NL. fem. n. *terebimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKAF01 sp903837495*. The type genome for the species is the GenBank assembly GCA_903837495.1. The GC content of the type genome is 48.77 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Denomella benemitas sp. nov.

Candidatus Denomella benemitas (NL. fem. n. *benemitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFR01 sp005800325*. The type genome for the species is the GenBank assembly GCA_005805165.1. The GC content of the type genome is 70.38 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Denomella gen. nov.

Candidatus Denomella (NL. fem. n. *Denomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYFR01*. The type species for the genus is *Candidatus* Denomella benemitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denomella domipitas sp. nov.

Candidatus Denomella domipitas (NL. fem. n. *domipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFR01 sp009692485*. The type genome for the species is the GenBank assembly GCA_009692485.1. The GC content of the type genome is 66.76 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Denomia homolitas sp. nov.

Candidatus Denomia homolitas (NL. fem. n. *homolitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADDB01 sp013154135*. The type genome for the species is the GenBank assembly GCA_013154135.1. The GC content of the type genome is 61.92 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Denomia gen. nov.

Candidatus Denomia (NL. fem. n. *Denomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADDB01*. The type species for the genus is *Candidatus* Denomia homolitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADDB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denomiaceae.

Description of *Candidatus* Denomiaceae fam. nov.

Candidatus Denomiaceae (NL. fem. n. *Denomiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADDB01*. The type genus for the taxon is *Candidatus* Denomia .

According to GTDB R06-RS202, this family belongs to the order *Caldilineales*.

Description of *Candidatus* Denomida solaciforma sp. nov.

Candidatus Denomida solaciforma (NL. fem. n. *solaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-38-15-A sp001797335*. The type genome for the species is the GenBank assembly GCA_001798085.1. The GC content of the type genome is 37.78 % and the genome length is 2.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Denomida gen. nov.

Candidatus Denomida (NL. fem. n. *Denomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-38-15-A*. The type species for the genus is *Candidatus* Denomida solaciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-40-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favilellaceae.

Description of *Candidatus* Denomosa brasmiforma sp. nov.

Candidatus Denomosa brasmiforma (NL. fem. n. *brasmiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDQB01 sp013042495*. The type genome for the species is the GenBank assembly GCA_013042495.1. The GC content of the type genome is 65.22 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Denomosa gen. nov.

Candidatus Denomosa (NL. fem. n. *Denomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDQB01*. The type species for the genus is *Candidatus* Denomosa brasmiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDQB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denomosaceae.

Description of *Candidatus* Denomosaceae fam. nov.

Candidatus Denomosaceae (NL. fem. n. *Denomosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDQB01*. The type genus for the taxon is *Candidatus* Denomosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *KS3-K002*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Reforellales.

Description of *Candidatus* Denomula bipenimonas sp. nov.

Candidatus Denomula bipenimonas (NL. fem. n. *bipenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6257 sp002440845*. The type genome for the species is the GenBank assembly GCA_002440845.1. The GC content of the type genome is 34.26 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Denomula gen. nov.

Candidatus Denomula (NL. fem. n. *Denomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6257*. The type species for the genus is *Candidatus* Denomula bipenimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denomulaceae.

Description of *Candidatus* Denomulaceae fam. nov.

Candidatus Denomulaceae (NL. fem. n. *Denomulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6257.* The type genus for the taxon is *Candidatus* Denomula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Denomulales ord. nov.

Candidatus Denomulales (NL. fem. n. *Denomulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6257.* The type genus for the taxon is *Candidatus* Denomula .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Denorana casigugo sp. nov.

Candidatus Denorana casigugo (NL. fem. n. *casigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Abin12 sp002897735*. The type genome for the species is the GenBank assembly GCA_002897735.1. The GC content of the type genome is 66.57 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Denorana gen. nov.

Candidatus Denorana (NL. fem. n. *Denorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Abin12*. The type species for the genus is *Candidatus* Denorana casigugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *21-64-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditanaceae.

Description of *Candidatus* Denoraria vinacessa sp. nov.

Candidatus Denoraria vinacessa (NL. fem. n. *vinacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2774365 sp002774365*. The type genome for the species is the GenBank assembly GCA_002774365.1. The GC content of the type genome is 44.7 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Denoraria gen. nov.

Candidatus Denoraria (NL. fem. n. *Denoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2774365*. The type species for the genus is *Candidatus* Denoraria vinacessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-12-FULL-45-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fuligariaceae.

Description of *Candidatus* Denorella alsidetta sp. nov.

Candidatus Denorella alsidetta (NL. fem. n. *alsidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J014 sp003697135*. The type genome for the species is the GenBank assembly GCA_003697135.1. The GC content of the type genome is 42.89 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Denorella gen. nov.

Candidatus Denorella (NL. fem. n. *Denorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J014*. The type species for the genus is *Candidatus* Denorella alsidetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denorella cocodimonas sp. nov.

Candidatus Denorella cocodimonas (NL. fem. n. *cocodimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J014 sp011058355*. The type genome for the species is the GenBank assembly GCA_011058355.1. The GC content of the type genome is 41.24 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Denoria halucitudo sp. nov.

Candidatus Denoria halucitudo (NL. fem. n. *halucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12327 sp003529305*. The type genome for the species is the GenBank assembly GCA_003529305.1. The GC content of the type genome is 61.97 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Denoria gen. nov.

Candidatus Denoria (NL. fem. n. *Denoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12327*. The type species for the genus is *Candidatus* Denoria halucitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12327*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denoriaceae.

Description of *Candidatus* Denoriaceae fam. nov.

Candidatus Denoriaceae (NL. fem. n. *Denoriaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12327.* The type genus for the taxon is *Candidatus* Denoria .

According to GTDB R06-RS202, this family belongs to the order *Nanopelagicales*.

Description of *Candidatus* Denorida betacitrix sp. nov.

Candidatus Denorida betacitrix (NL. fem. n. *betacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEB-10 sp003105185*. The type genome for the species is the GenBank assembly GCA_003105185.1. The GC content of the type genome is 69.85 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Denorida gen. nov.

Candidatus Denorida (NL. fem. n. *Denorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEB-10*. The type species for the genus is *Candidatus* Denorida betacitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEB-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denoridaceae.

Description of *Candidatus* Denoridaceae fam. nov.

Candidatus Denoridaceae (NL. fem. n. *Denoridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEB-10.* The type genus for the taxon is *Candidatus* Denorida .

According to GTDB R06-RS202, this family belongs to the order *Thermoanaerobaculales*.

Description of *Candidatus* Denorosa rubecitica sp. nov.

Candidatus Denorosa rubecitica (NL. fem. n. *rubecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM523 sp002869425*. The type genome for the species is the GenBank assembly GCA_002869425.1. The GC content of the type genome is 35.51 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Denorosa gen. nov.

Candidatus Denorosa (NL. fem. n. *Denorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM523*. The type species for the genus is *Candidatus* Denorosa rubecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM523*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denorosaceae.

Description of *Candidatus* Denorosaceae fam. nov.

Candidatus Denorosaceae (NL. fem. n. *Denorosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM523.* The type genus for the taxon is *Candidatus* Denorosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Denorula demagago sp. nov.

Candidatus Denorula demagago (NL. fem. n. *demagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900066135 sp900543575*. The type genome for the species is the GenBank assembly RS_GCF_900765005.1. The GC content of the type genome is 49.44 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Denorula gen. nov.

Candidatus Denorula (NL. fem. n. *Denorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-900066135*. The type species for the genus is *Candidatus* Denorula demagago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denorula vepalatio sp. nov.

Candidatus Denorula vepalatio (NL. fem. n. *vepalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900066135 sp900066135*. The type genome for the species is the GenBank assembly RS_GCF_003463065.1. The GC content of the type genome is 46.16 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Denunana cinipisca sp. nov.

Candidatus Denunana cinipisca (NL. fem. n. *cinipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9865 sp003444375*. The type genome for the species is the GenBank assembly GCA_012522335.1. The GC content of the type genome is 47.25 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Denunana gen. nov.

Candidatus Denunana (NL. fem. n. *Denunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9865*. The type species for the genus is *Candidatus* Denunana cinipisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denunaria hemitibra sp. nov.

Candidatus Denunaria hemitibra (NL. fem. n. *hemitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTXA01 sp009773805*. The type genome for the species is the GenBank assembly GCA_009772615.1. The GC content of the type genome is 33.05 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Denunaria gen. nov.

Candidatus Denunaria (NL. fem. n. *Denunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTXA01*. The type species for the genus is *Candidatus* Denunaria hemitibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TC1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitifariaceae.

Description of *Candidatus* Denunella irrematio sp. nov.

Candidatus Denunella irrematio (NL. fem. n. *irrematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1783 sp900555065*. The type genome for the species is the GenBank assembly GCA_900555065.1. The GC content of the type genome is 57.11 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Denunella gen. nov.

Candidatus Denunella (NL. fem. n. *Denunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1783*. The type species for the genus is *Candidatus* Denunella irrematio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1783*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denunellaceae.

Description of *Candidatus* Denunellaceae fam. nov.

Candidatus Denunellaceae (NL. fem. n. *Denunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1783.* The type genus for the taxon is *Candidatus* Denunella .

According to GTDB R06-RS202, this family belongs to the order *Oscillospirales*.

Description of *Candidatus* Denunia locelatio sp. nov.

Candidatus Denunia locelatio (NL. fem. n. *locelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FeB-14 sp003104995*. The type genome for the species is the GenBank assembly GCA_012027015.1. The GC content of the type genome is 66.43 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Denunia gen. nov.

Candidatus Denunia (NL. fem. n. *Denunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FeB-14*. The type species for the genus is *Candidatus* Denunia locelatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2991*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifariaceae.

Description of *Candidatus* Denunia resulitica sp. nov.

Candidatus Denunia resulitica (NL. fem. n. *resulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FeB-14 sp011055725*. The type genome for the species is the GenBank assembly GCA_011055725.1. The GC content of the type genome is 67.5 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Denunida subadentia sp. nov.

Candidatus Denunida subadentia (NL. fem. n. *subadentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-107 sp005881435*. The type genome for the species is the GenBank assembly GCA_005881435.1. The GC content of the type genome is 67.63 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Denunida gen. nov.

Candidatus Denunida (NL. fem. n. *Denunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-107*. The type species for the genus is *Candidatus* Denunida subadentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CF-107*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denunidaceae.

Description of *Candidatus* Denunidaceae fam. nov.

Candidatus Denunidaceae (NL. fem. n. *Denunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CF-107.* The type genus for the taxon is *Candidatus* Denunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *P2-11E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curotosales.

Description of *Candidatus* Denunosa pomifentia sp. nov.

Candidatus Denunosa pomifentia (NL. fem. n. *pomifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB12-FULL-38-5 sp001803165*. The type genome for the species is the GenBank assembly GCA_001802805.1. The GC content of the type genome is 37.76 % and the genome length is 3.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Denunosa gen. nov.

Candidatus Denunosa (NL. fem. n. *Denunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB12-FULL-38-5*. The type species for the genus is *Candidatus* Denunosa pomifentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denunosa tubicax sp. nov.

Candidatus Denunosa tubicax (NL. fem. n. *tubicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB12-FULL-38-5 sp009773205*. The type genome for the species is the GenBank assembly GCA_009773245.1. The GC content of the type genome is 36.0 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Denunula adlubatio sp. nov.

Candidatus Denunula adlubatio (NL. fem. n. *adlubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-7 sp013824585*. The type genome for the species is the GenBank assembly GCA_013824585.1. The GC content of the type genome is 43.48 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Denunula gen. nov.

Candidatus Denunula (NL. fem. n. *Denunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-7*. The type species for the genus is *Candidatus* Denunula adlubatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denunulaceae.

Description of *Candidatus* Denunulaceae fam. nov.

Candidatus Denunulaceae (NL. fem. n. *Denunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-7.* The type genus for the taxon is *Candidatus* Denunula .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Denunula hibisitrix sp. nov.

Candidatus Denunula hibisitrix (NL. fem. n. *hibisitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-7 sp003599865*. The type genome for the species is the GenBank assembly GCA_003599865.1. The GC content of the type genome is 47.47 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Denupana ecfacetta sp. nov.

Candidatus Denupana ecfacetta (NL. fem. n. *ecfacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICC01 sp009694835*. The type genome for the species is the GenBank assembly GCA_009694835.1. The GC content of the type genome is 53.39 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Denupana gen. nov.

Candidatus Denupana (NL. fem. n. *Denupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICC01*. The type species for the genus is *Candidatus* Denupana ecfacetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SICC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denupanaceae.

Description of *Candidatus* Denupanaceae fam. nov.

Candidatus Denupanaceae (NL. fem. n. *Denupanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SICC01.* The type genus for the taxon is *Candidatus* Denupana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SICC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denupanales.

Description of *Candidatus* Denupanales ord. nov.

Candidatus Denupanales (NL. fem. n. *Denupanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SICC01.* The type genus for the taxon is *Candidatus* Denupana .

According to the original version of GTDB R06-RS202, this family belongs to the class *SICC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Denupanae.

Description of *Candidatus* Denupanae class. nov.

Candidatus Denupanae (NL. fem. n. *c__Denupanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SICC01.* The type genus for the taxon is *Candidatus* Denupana .

According to GTDB R06-RS202, this class belongs to the phylum *Patescibacteria*.

Description of *Candidatus* Denuparia antevifica sp. nov.

Candidatus Denuparia antevifica (NL. fem. n. *antevifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-465 sp009785395*. The type genome for the species is the GenBank assembly GCA_009785395.1. The GC content of the type genome is 69.59 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Denuparia gen. nov.

Candidatus Denuparia (NL. fem. n. *Denuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Palsa-465*. The type species for the genus is *Candidatus* Denuparia antevifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denuparia decenicella sp. nov.

Candidatus Denuparia decenicella (NL. fem. n. *decenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-465 sp005883415*. The type genome for the species is the GenBank assembly GCA_005883415.1. The GC content of the type genome is 67.74 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Denuparia inturugo sp. nov.

Candidatus Denuparia inturugo (NL. fem. n. *inturugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-465 sp003244035*. The type genome for the species is the GenBank assembly GCA_003244035.1. The GC content of the type genome is 70.11 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Denuparia nocumatio sp. nov.

Candidatus Denuparia nocumatio (NL. fem. n. *nocumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-465 sp003165655*. The type genome for the species is the GenBank assembly GCA_003156855.1. The GC content of the type genome is 68.29 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Denuparia ridibigena sp. nov.

Candidatus Denuparia ridibigena (NL. fem. n. *ridibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-465 sp003137075*. The type genome for the species is the GenBank assembly GCA_003137075.1. The GC content of the type genome is 65.89 %

and the genome length is 3.86 Mbp.

Description of *Candidatus* Denupella dapifitoga sp. nov.

Candidatus Denupella dapifitoga (NL. fem. n. *dapifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHWF01 sp009693795*. The type genome for the species is the GenBank assembly GCA_009693795.1. The GC content of the type genome is 61.39 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Denupella gen. nov.

Candidatus Denupella (NL. fem. n. *Denupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHWF01*. The type species for the genus is *Candidatus* Denupella dapifitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denupella venefifica sp. nov.

Candidatus Denupella venefifica (NL. fem. n. *venefifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHWF01 sp009693935*. The type genome for the species is the GenBank assembly GCA_009693935.1. The GC content of the type genome is 61.93 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Denupia arcatatica sp. nov.

Candidatus Denupia arcatatica (NL. fem. n. *arcatatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXDC01 sp003565135*. The type genome for the species is the GenBank assembly GCA_003565135.1. The GC content of the type genome is 61.57 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Denupia gen. nov.

Candidatus Denupia (NL. fem. n. *Denupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXDC01*. The type species for the genus is *Candidatus* Denupia arcatatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *T3Sed10-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depupariaceae.

Description of *Candidatus* Denupia laxitiforma sp. nov.

Candidatus Denupia laxitiforma (NL. fem. n. *laxitiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXDC01 sp007130045*. The type genome for the species is the GenBank assembly GCA_003559525.1. The GC content of the type genome is 58.25 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Denupia taxilitura sp. nov.

Candidatus Denupia taxilitura (NL. fem. n. *taxilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXDC01 sp003558065*. The type genome for the species is the GenBank assembly GCA_007130315.1. The GC content of the type genome is 60.38 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Denupida dehinifica sp. nov.

Candidatus Denupida dehinifica (NL. fem. n. *dehinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLDE01 sp007125455*. The type genome for the species is the GenBank assembly GCA_007135785.1. The GC content of the type genome is 60.93 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Denupida gen. nov.

Candidatus Denupida (NL. fem. n. *Denupida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLDE01*. The type species for the genus is *Candidatus* Denupida dehinifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Denupula appagilenta sp. nov.

Candidatus Denupula appagilenta (NL. fem. n. *appagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOMD01 sp903880655*. The type genome for the species is the GenBank assembly GCA_903880655.1. The GC content of the type genome is 40.21 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Denupula gen. nov.

Candidatus Denupula (NL. fem. n. *Denupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOMD01*. The type species for the genus is *Candidatus* Denupula appagilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIOMD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denupulaceae.

Description of *Candidatus* Denupulaceae fam. nov.

Candidatus Denupulaceae (NL. fem. n. *Denupulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIOMD01.* The type genus for the taxon is *Candidatus* Denupula .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Denupula fatifentia sp. nov.

Candidatus Denupula fatifentia (NL. fem. n. *fatifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOMD01 sp903853925*. The type genome for the species is the GenBank assembly GCA_903853925.1. The GC content of the type genome is 40.23 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Denupula genufastra sp. nov.

Candidatus Denupula genufastra (NL. fem. n. *genufastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOMD01 sp903859365*. The type genome for the species is the GenBank assembly GCA_903821315.1. The GC content of the type genome is 39.59 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Denupula nehalitica sp. nov.

Candidatus Denupula nehalitica (NL. fem. n. *nehalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOMD01 sp903920345*. The type genome for the species is the GenBank assembly GCA_903920345.1. The GC content of the type genome is 39.47 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Depacana annifitia sp. nov.

Candidatus Depacana annifitia (NL. fem. n. *annifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1545 sp001873165*. The type genome for the species is the GenBank assembly GCA_001873165.1. The GC content of the type genome is 37.29 % and the genome length is 0.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Depacana gen. nov.

Candidatus Depacana (NL. fem. n. *Depacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1545*. The type species for the genus is *Candidatus* Depacana

annifitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visifosaceae.

Description of *Candidatus* Depacana defanastra sp. nov.

Candidatus Depacana defanastra (NL. fem. n. *defanastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1545 sp002771035*. The type genome for the species is the GenBank assembly GCA_002323075.1. The GC content of the type genome is 38.02 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Depacana peracitoga sp. nov.

Candidatus Depacana peracitoga (NL. fem. n. *peracitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1545 sp003488655*. The type genome for the species is the GenBank assembly GCA_003488655.1. The GC content of the type genome is 42.14 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Depacaria dilemax sp. nov.

Candidatus Depacaria dilemax (NL. fem. n. *dilemax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-232 sp002084985*. The type genome for the species is the GenBank assembly GCA_003641585.1. The GC content of the type genome is 42.5 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Depacaria gen. nov.

Candidatus Depacaria (NL. fem. n. *Depacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-232*. The type species for the genus is *Candidatus* Depacaria dilemax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depacella adrumitia sp. nov.

Candidatus Depacella adrumitia (NL. fem. n. *adrumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABYT01 sp009937425*. The type genome for the species is the GenBank assembly GCA_009937425.1. The GC content of the type genome is 60.48 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Depacella gen. nov.

Candidatus Depacella (NL. fem. n. *Depacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABYT01*. The type species for the genus is *Candidatus* Depacella adrumitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HK1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rumifiaceae.

Description of *Candidatus* Depacella colepitudo sp. nov.

Candidatus Depacella colepitudo (NL. fem. n. *colepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABYT01 sp011775625*. The type genome for the species is the GenBank assembly GCA_011772935.1. The GC content of the type genome is 65.17 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Depacia tabitastra sp. nov.

Candidatus Depacia tabitastra (NL. fem. n. *tabitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LCOC01 sp001000545*. The type genome for the species is the GenBank assembly GCA_001000545.1. The GC content of the type genome is 46.77 %

and the genome length is 0.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Depacia gen. nov.

Candidatus Depacia (NL. fem. n. *Depacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LCOC01*. The type species for the genus is *Candidatus* Depacia tabitastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Depacida obsorimonas sp. nov.

Candidatus Depacida obsorimonas (NL. fem. n. *obsorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1429 sp007118555*. The type genome for the species is the GenBank assembly GCA_007118555.1. The GC content of the type genome is 64.42 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Depacida gen. nov.

Candidatus Depacida (NL. fem. n. *Depacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1429*. The type species for the genus is *Candidatus* Depacida obsorimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Depacidaceae fam. nov.

Candidatus Depacidaceae (NL. fem. n. *Depacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1429.* The type genus for the taxon is *Candidatus* Depacida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depacidales.

Description of *Candidatus* Depacidales ord. nov.

Candidatus Depacidales (NL. fem. n. *Depacidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1429.* The type genus for the taxon is *Candidatus* Depacida .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Depacida repecatica sp. nov.

Candidatus Depacida repecatica (NL. fem. n. *repecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1429 sp007132185*. The type genome for the species is the GenBank assembly GCA_007132185.1. The GC content of the type genome is 61.92 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Depacida tegimifica sp. nov.

Candidatus Depacida tegimifica (NL. fem. n. *tegimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1429 sp002329325*. The type genome for the species is the GenBank assembly GCA_002329325.1. The GC content of the type genome is 67.18 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Depacosa attubugo sp. nov.

Candidatus Depacosa attubugo (NL. fem. n. *attubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1071 sp900548305*. The type genome for the species is the GenBank assembly GCA_900548305.1. The GC content of the type genome is 37.36 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Depacosa gen. nov.

Candidatus Depacosa (NL. fem. n. *Depacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1071*. The type species for the genus is *Candidatus* Depacosa attubugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depacosa decatitura sp. nov.

Candidatus Depacosa decatitura (NL. fem. n. *decatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1071 sp900542375*. The type genome for the species is the GenBank assembly GCA_900542375.1. The GC content of the type genome is 38.59 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Depacosa laculitoga sp. nov.

Candidatus Depacosa laculitoga (NL. fem. n. *laculitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1071 sp900541905*. The type genome for the species is the GenBank assembly GCA_900541905.1. The GC content of the type genome is 38.51 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Depacula delacitica sp. nov.

Candidatus Depacula delacitica (NL. fem. n. *delacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SEOHO-28 sp902806205*. The type genome for the species is the GenBank assembly GCA_902806205.1. The GC content of the type genome is 72.24 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Depacula gen. nov.

Candidatus Depacula (NL. fem. n. *Depacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SEOHO-28*. The type species for the genus is *Candidatus* Depacula delacitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depacula mureledo sp. nov.

Candidatus Depacula mureledo (NL. fem. n. *mureledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SEOHO-28 sp003044185*. The type genome for the species is the GenBank assembly RS_GCF_009707605.1. The GC content of the type genome is 73.68 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Depacula subodastra sp. nov.

Candidatus Depacula subodastra (NL. fem. n. *subodastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SEOHO-28 sp013695395*. The type genome for the species is the GenBank assembly GCA_013695395.1. The GC content of the type genome is 70.88 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Deparana bimetugo sp. nov.

Candidatus Deparana bimetugo (NL. fem. n. *bimetugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7800 sp002704825*. The type genome for the species is the GenBank assembly GCA_002704825.1. The GC content of the type genome is 51.77 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Deparana gen. nov.

Candidatus Deparana (NL. fem. n. *Deparana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7800*. The type species for the genus is *Candidatus* Deparana

bimetugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Deparana seposicula sp. nov.

Candidatus Deparana seposicula (NL. fem. n. *seposicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7800 sp002480565*. The type genome for the species is the GenBank assembly GCA_002295795.1. The GC content of the type genome is 49.97 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Deparella utrolago sp. nov.

Candidatus Deparella utrolago (NL. fem. n. *utrolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-59 sp013215865*. The type genome for the species is the GenBank assembly GCA_013215865.1. The GC content of the type genome is 38.37 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Deparella gen. nov.

Candidatus Deparella (NL. fem. n. *Deparella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-59*. The type species for the genus is *Candidatus* Deparella utrolago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DT-59*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deparellaceae.

Description of *Candidatus* Deparellaceae fam. nov.

Candidatus Deparellaceae (NL. fem. n. *Deparellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DT-59*. The type genus for the taxon is *Candidatus* Deparella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DT-59*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deparellales.

Description of *Candidatus* Deparellales ord. nov.

Candidatus Deparellales (NL. fem. n. *Deparellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DT-59.* The type genus for the taxon is *Candidatus* Deparella .

According to the GTDB R06-RS202, this order belongs to the class *Marinamargulisbacteria*.

Description of *Candidatus* Deparida detotetta sp. nov.

Candidatus Deparida detotetta (NL. fem. n. *detotetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1260 sp900550105*. The type genome for the species is the GenBank assembly GCA_900550105.1. The GC content of the type genome is 43.06 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Deparida gen. nov.

Candidatus Deparida (NL. fem. n. *Deparida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1260*. The type species for the genus is *Candidatus* Deparida detotetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deparidaceae.

Description of *Candidatus* Deparidaceae fam. nov.

Candidatus Deparidaceae (NL. fem. n. *Deparidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1260.* The type genus for the taxon is *Candidatus* Deparida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UMGS1260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deparidales.

Description of *Candidatus* Deparidales ord. nov.

Candidatus Deparidales (NL. fem. n. *Deparidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1260.* The type genus for the taxon is *Candidatus* Deparida .

According to the GTDB R06-RS202, this order belongs to the class *Negativicutes*.

Description of *Candidatus* Deparosa nugigitoga sp. nov.

Candidatus Deparosa nugigitoga (NL. fem. n. *nugigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J102 sp003694905*. The type genome for the species is the GenBank assembly GCA_003694905.1. The GC content of the type genome is 62.49 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Deparosa gen. nov.

Candidatus Deparosa (NL. fem. n. *Deparosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J102*. The type species for the genus is *Candidatus* Deparosa nugigitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deparosaceae.

Description of *Candidatus* Deparosaceae fam. nov.

Candidatus Deparosaceae (NL. fem. n. *Deparosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J102.* The type genus for the taxon is *Candidatus* Deparosa .

According to GTDB R06-RS202, this family belongs to the order *Caldilineales*.

Description of *Candidatus* Deparula abrepimonas sp. nov.

Candidatus Deparula abrepimonas (NL. fem. n. *abrepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11774 sp900556645*. The type genome for the species is the GenBank assembly GCA_900556645.1. The GC content of the type genome is 42.4 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Deparula gen. nov.

Candidatus Deparula (NL. fem. n. *Deparula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11774*. The type species for the genus is *Candidatus* Deparula abrepimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Deparula velivitio sp. nov.

Candidatus Deparula velivitio (NL. fem. n. *velivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11774 sp003507655*. The type genome for the species is the GenBank assembly RS_GCF_900763635.1. The GC content of the type genome is 42.16 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Depasana sicinetta sp. nov.

Candidatus Depasana sicinetta (NL. fem. n. *sicinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1248 sp003152485*. The type genome for the species is the GenBank assembly GCA_003141175.1. The GC content of the type genome is 66.32 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Depasana gen. nov.

Candidatus Depasana (NL. fem. n. *Depasana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1248*. The type species for the genus is *Candidatus* Depasana sicinetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depasaria novililega sp. nov.

Candidatus Depasaria novililega (NL. fem. n. *novililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLCP01 sp007121015*. The type genome for the species is the GenBank assembly GCA_007125935.1. The GC content of the type genome is 66.67 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Depasaria gen. nov.

Candidatus Depasaria (NL. fem. n. *Depasaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLCP01*. The type species for the genus is *Candidatus* Depasaria novililega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLCP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depasariaceae.

Description of *Candidatus* Depasariaceae fam. nov.

Candidatus Depasariaceae (NL. fem. n. *Depasariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLCP01.* The type genus for the taxon is *Candidatus* Depasaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *OPB41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodanales.

Description of *Candidatus* Depasaria semipimonia sp. nov.

Candidatus Depasaria semipimonia (NL. fem. n. *semipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLCP01 sp007125735*. The type genome for the species is the GenBank assembly GCA_007132805.1. The GC content of the type genome is 66.73 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Depasella melilifica sp. nov.

Candidatus Depasella melilifica (NL. fem. n. *melilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLNJ01 sp007133065*. The type genome for the species is the GenBank assembly GCA_007133065.1. The GC content of the type genome is 61.71 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Depasella gen. nov.

Candidatus Depasella (NL. fem. n. *Depasella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLNJ01*. The type species for the genus is *Candidatus* Depasella melilifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Verruco-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigidaceae.

Description of *Candidatus* Depasia cadavicula sp. nov.

Candidatus Depasia cadavicula (NL. fem. n. *cadavicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-66-19 sp005878835*. The type genome for the species is the GenBank assembly GCA_005878315.1. The GC content of the type genome is 66.95 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Depasia gen. nov.

Candidatus Depasia (NL. fem. n. *Depasia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *13-2-20CM-66-19*. The type species for the genus is *Candidatus* Depasia cadavicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depasia democitas sp. nov.

Candidatus Depasia democitas (NL. fem. n. *democitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-66-19 sp005877965*. The type genome for the species is the GenBank assembly GCA_005877965.1. The GC content of the type genome is 67.78 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Depasia denixago sp. nov.

Candidatus Depasia denixago (NL. fem. n. *denixago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-66-19 sp005877705*. The type genome for the species is the GenBank assembly GCA_005877705.1. The GC content of the type genome is 65.57 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Depasia herinatica sp. nov.

Candidatus Depasia herinatica (NL. fem. n. *herinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-66-19 sp003156695*. The type genome for the species is the GenBank assembly GCA_003156695.1. The GC content of the type genome is 65.38 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Depasia notabetta sp. nov.

Candidatus Depasia notabetta (NL. fem. n. *notabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-66-19 sp001914695*. The type genome for the species is

the GenBank assembly GCA_005878065.1. The GC content of the type genome is 68.56 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Depasia paropicula sp. nov.

Candidatus Depasia paropicula (NL. fem. n. *paropicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-66-19 sp005878095*. The type genome for the species is the GenBank assembly GCA_005878735.1. The GC content of the type genome is 67.59 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Depasia volucilega sp. nov.

Candidatus Depasia volucilega (NL. fem. n. *volucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-2-20CM-66-19 sp003136935*. The type genome for the species is the GenBank assembly GCA_003136935.1. The GC content of the type genome is 65.5 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Depasida retecicella sp. nov.

Candidatus Depasida retecicella (NL. fem. n. *retecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTBG01 sp013139225*. The type genome for the species is the GenBank assembly GCA_013139225.1. The GC content of the type genome is 40.88 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Depasida gen. nov.

Candidatus Depasida (NL. fem. n. *Depasida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTBG01*. The type species for the genus is *Candidatus* Depasida retecicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WTBG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depasidaceae.

Description of *Candidatus* Depasidaceae fam. nov.

Candidatus Depasidaceae (NL. fem. n. *Depasidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WTBG01.* The type genus for the taxon is *Candidatus* Depasida .

According to the original version of GTDB R06-RS202, this family belongs to the order *WTBG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depasidales.

Description of *Candidatus* Depasidales ord. nov.

Candidatus Depasidales (NL. fem. n. *Depasidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WTBG01.* The type genus for the taxon is *Candidatus* Depasida .

According to the original version of GTDB R06-RS202, this family belongs to the class *SM23-61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Forinosae.

Description of *Candidatus* Depasosa tenebitio sp. nov.

Candidatus Depasosa tenebitio (NL. fem. n. *tenebitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXZF01 sp903923925*. The type genome for the species is the GenBank assembly GCA_903825805.1. The GC content of the type genome is 39.04 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Depasosa gen. nov.

Candidatus Depasosa (NL. fem. n. *Depasosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXZF01*. The type species for the genus is *Candidatus* Depasosa tenebitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIXZF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depasosaceae.

Description of *Candidatus* Depasosaceae fam. nov.

Candidatus Depasosaceae (NL. fem. n. *Depasosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIXZF01*. The type genus for the taxon is *Candidatus* Depasosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Depasula cocolatio sp. nov.

Candidatus Depasula cocolatio (NL. fem. n. *cocolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10646 sp003456175*. The type genome for the species is the GenBank assembly GCA_003456175.1. The GC content of the type genome is 39.83 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Depasula gen. nov.

Candidatus Depasula (NL. fem. n. *Depasula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10646*. The type species for the genus is *Candidatus* Depasula cocolatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depasula latibax sp. nov.

Candidatus Depasula latibax (NL. fem. n. *latibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10646 sp004292605*. The type genome for the species is the GenBank assembly GCA_004292605.1. The GC content of the type genome is 40.63 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Depecaria attelicula sp. nov.

Candidatus Depecaria attelicula (NL. fem. n. *attelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRLR01 sp009777515*. The type genome for the species is the GenBank assembly GCA_009777515.1. The GC content of the type genome is 54.32 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Depecaria gen. nov.

Candidatus Depecaria (NL. fem. n. *Depecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRLR01*. The type species for the genus is *Candidatus* Depecaria attelicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRLR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depecariaceae.

Description of *Candidatus* Depecariaceae fam. nov.

Candidatus Depecariaceae (NL. fem. n. *Depecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRLR01.* The type genus for the taxon is *Candidatus* Depecaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *WRLR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depecariales.

Description of *Candidatus* Depecariales ord. nov.

Candidatus Depecariales (NL. fem. n. *Depecariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRLR01.* The type genus for the taxon is *Candidatus* Depecaria .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Depecella pocilago sp. nov.

Candidatus Depecella pocilago (NL. fem. n. *pocilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFSG01 sp009924095*. The type genome for the species is the GenBank assembly GCA_009924095.1. The GC content of the type genome is 37.79 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Depecella gen. nov.

Candidatus Depecella (NL. fem. n. *Depecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFSG01*. The type species for the genus is *Candidatus* Depecella pocilago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RFSG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depecellaceae.

Description of *Candidatus* Depecellaceae fam. nov.

Candidatus Depecellaceae (NL. fem. n. *Depecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RFSG01*. The type genus for the taxon is *Candidatus* Depecella .

According to the original version of GTDB R06-RS202, this family belongs to the order *J057*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desepiales.

Description of *Candidatus* Depecia prodrilega sp. nov.

Candidatus Depecia prodrilega (NL. fem. n. *prodrilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2279 sp002347365*. The type genome for the species is the GenBank assembly GCA_002347365.1. The GC content of the type genome is 62.86 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Depecia gen. nov.

Candidatus Depecia (NL. fem. n. *Depecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2279*. The type species for the genus is *Candidatus* Depecia prodrilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2279*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depeciaceae.

Description of *Candidatus* Depeciaceae fam. nov.

Candidatus Depeciaceae (NL. fem. n. *Depeciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2279.* The type genus for the taxon is *Candidatus* Depecia .

According to the original version of GTDB R06-RS202, this family belongs to the order *OPB41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodanales.

Description of *Candidatus* Depecida abluventia sp. nov.

Candidatus Depecida abluventia (NL. fem. n. *abluventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp012744435*. The type genome for the species is the GenBank assembly GCA_012744435.1. The GC content of the type genome is 60.69 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Depecida gen. nov.

Candidatus Depecida (NL. fem. n. *Depecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RC9*. The type species for the genus is *Candidatus* Depecida abluventia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Depecida abmatitrix sp. nov.

Candidatus Depecida abmatitrix (NL. fem. n. *abmatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902784435*. The type genome for the species is the GenBank assembly GCA_902784435.1. The GC content of the type genome is 57.84 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Depecida adhorousia sp. nov.

Candidatus Depecida adhorousia (NL. fem. n. *adhorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902774345*. The type genome for the species is the GenBank assembly GCA_902774345.1. The GC content of the type genome is 57.9 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Depecida admorifica sp. nov.

Candidatus Depecida admorifica (NL. fem. n. *admorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902767465*. The type genome for the species is the GenBank assembly GCA_902767465.1. The GC content of the type genome is 51.33 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Depecida admutousia sp. nov.

Candidatus Depecida admutousia (NL. fem. n. *admutousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902796555*. The type genome for the species is the GenBank assembly GCA_902796555.1. The GC content of the type genome is 57.7 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Depecida adsibousia sp. nov.

Candidatus Depecida adsibousia (NL. fem. n. *adsibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RC9 sp002395925*. The type genome for the species is the GenBank assembly GCA_002395925.1. The GC content of the type genome is 55.43 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Depecida adtilibra sp. nov.

Candidatus Depecida adtilibra (NL. fem. n. *adtilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp001602865*. The type genome for the species is the GenBank assembly GCA_001602865.1. The GC content of the type genome is 61.5 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Depecida almucitas sp. nov.

Candidatus Depecida almucitas (NL. fem. n. *almucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900769905*. The type genome for the species is the GenBank assembly RS_GCF_900769905.1. The GC content of the type genome is 54.65 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Depecida amfititura sp. nov.

Candidatus Depecida amfititura (NL. fem. n. *amfititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902787255*. The type genome for the species is the GenBank assembly GCA_902787255.1. The GC content of the type genome is 54.36 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Depecida anactiforma sp. nov.

Candidatus Depecida anactiforma (NL. fem. n. *anactiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp004552615*. The type genome for the species is the GenBank assembly GCA_004552615.1. The GC content of the type genome is 52.57 % and the

genome length is 2.04 Mbp.

Description of *Candidatus* Depecida ancepitia sp. nov.

Candidatus Depecida ancepitia (NL. fem. n. *ancepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902797035*. The type genome for the species is the GenBank assembly GCA_902797035.1. The GC content of the type genome is 55.23 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Depecida apoplisca sp. nov.

Candidatus Depecida apoplisca (NL. fem. n. *apoplisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002438905*. The type genome for the species is the GenBank assembly GCA_002438905.1. The GC content of the type genome is 51.43 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Depecida apraritudo sp. nov.

Candidatus Depecida apraritudo (NL. fem. n. *apraritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900767405*. The type genome for the species is the GenBank assembly RS_GCF_900767405.1. The GC content of the type genome is 51.06 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Depecida argimitas sp. nov.

Candidatus Depecida argimitas (NL. fem. n. *argimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900769145*. The type genome for the species is the GenBank assembly RS_GCF_900769145.1. The GC content of the type genome is 51.14 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Depecida argitastra sp. nov.

Candidatus Depecida argitastra (NL. fem. n. *argitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902795445*. The type genome for the species is the GenBank assembly GCA_902795445.1. The GC content of the type genome is 57.49 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Depecida baropicella sp. nov.

Candidatus Depecida baropicella (NL. fem. n. *baropicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900316955*. The type genome for the species is the GenBank assembly GCA_900316955.1. The GC content of the type genome is 60.85 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Depecida baropicula sp. nov.

Candidatus Depecida baropicula (NL. fem. n. *baropicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900320185*. The type genome for the species is the GenBank assembly GCA_902787945.1. The GC content of the type genome is 56.3 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Depecida bicipimonas sp. nov.

Candidatus Depecida bicipimonas (NL. fem. n. *bicipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp004552965*. The type genome for the species is the GenBank assembly GCA_004552285.1. The GC content of the type genome is 54.23 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Depecida bicoritio sp. nov.

Candidatus Depecida bicoritio (NL. fem. n. *bicoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900167895*. The type genome for the species is the GenBank assembly RS_GCF_900167895.1. The GC content of the type genome is 61.54 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Depecida bigarousia sp. nov.

Candidatus Depecida bigarousia (NL. fem. n. *bigarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900541925*. The type genome for the species is the GenBank assembly RS_GCF_900767275.1. The GC content of the type genome is 56.13 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Depecida bimetitrix sp. nov.

Candidatus Depecida bimetitrix (NL. fem. n. *bimetitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002472565*. The type genome for the species is the GenBank assembly GCA_002472185.1. The GC content of the type genome is 52.66 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Depecida bimotimonas sp. nov.

Candidatus Depecida bimotimonas (NL. fem. n. *bimotimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002439805*. The type genome for the species is the GenBank assembly GCA_002404975.1. The GC content of the type genome is 54.78 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Depecida bimotitoga sp. nov.

Candidatus Depecida bimotitoga (NL. fem. n. *bimotitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902801885*. The type genome for the species is the GenBank assembly GCA_902785505.1. The GC content of the type genome is 51.96 % and the

genome length is 2.24 Mbp.

Description of *Candidatus* Depecida bipenago sp. nov.

Candidatus Depecida bipenago (NL. fem. n. *bipenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900316245*. The type genome for the species is the GenBank assembly GCA_902756065.1. The GC content of the type genome is 56.16 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Depecida bisulilega sp. nov.

Candidatus Depecida bisulilega (NL. fem. n. *bisulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902768665*. The type genome for the species is the GenBank assembly GCA_902768665.1. The GC content of the type genome is 59.03 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Depecida bovicetta sp. nov.

Candidatus Depecida bovicetta (NL. fem. n. *bovicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902778105*. The type genome for the species is the GenBank assembly GCA_902801095.1. The GC content of the type genome is 58.65 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Depecida bugilastra sp. nov.

Candidatus Depecida bugilastra (NL. fem. n. *bugilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902774045*. The type genome for the species is the GenBank assembly GCA_902774045.1. The GC content of the type genome is 49.77 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Depecida bulapitica sp. nov.

Candidatus Depecida bulapitica (NL. fem. n. *bulapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002438635*. The type genome for the species is the GenBank assembly GCA_002438655.1. The GC content of the type genome is 41.0 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Depecida caduritia sp. nov.

Candidatus Depecida caduritia (NL. fem. n. *caduritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002393945*. The type genome for the species is the GenBank assembly GCA_902795165.1. The GC content of the type genome is 53.58 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Depecida casabentia sp. nov.

Candidatus Depecida casabentia (NL. fem. n. *casabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900316045*. The type genome for the species is the GenBank assembly GCA_902790745.1. The GC content of the type genome is 48.99 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Depecida catagessa sp. nov.

Candidatus Depecida catagessa (NL. fem. n. *catagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900320385*. The type genome for the species is the GenBank assembly GCA_900320385.1. The GC content of the type genome is 56.89 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Depecida categedo sp. nov.

Candidatus Depecida categedo (NL. fem. n. *categedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900319685*. The type genome for the species is the GenBank assembly GCA_902770075.1. The GC content of the type genome is 53.71 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Depecida cenobugo sp. nov.

Candidatus Depecida cenobugo (NL. fem. n. *cenobugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902785065*. The type genome for the species is the GenBank assembly GCA_902785065.1. The GC content of the type genome is 59.94 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Depecida cerucifica sp. nov.

Candidatus Depecida cerucifica (NL. fem. n. *cerucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902794005*. The type genome for the species is the GenBank assembly GCA_902786935.1. The GC content of the type genome is 56.78 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Depecida cetaribula sp. nov.

Candidatus Depecida cetaribula (NL. fem. n. *cetaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002361625*. The type genome for the species is the GenBank assembly GCA_002361625.1. The GC content of the type genome is 58.69 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Depecida cilibilenta sp. nov.

Candidatus Depecida cilibilenta (NL. fem. n. *cilibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002314195*. The type genome for the species is the GenBank assembly GCA_002313435.1. The GC content of the type genome is 50.93 % and the

genome length is 2.85 Mbp.

Description of *Candidatus* Depecida cilotitura sp. nov.

Candidatus Depecida cilotitura (NL. fem. n. *cilotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002392525*. The type genome for the species is the GenBank assembly GCA_002392525.1. The GC content of the type genome is 56.97 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Depecida citipousia sp. nov.

Candidatus Depecida citipousia (NL. fem. n. *citipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp000431015*. The type genome for the species is the GenBank assembly GCA_000431015.1. The GC content of the type genome is 53.44 % and the genome length is 2.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Depecida cohonentia sp. nov.

Candidatus Depecida cohonentia (NL. fem. n. *cohonentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002308935*. The type genome for the species is the GenBank assembly GCA_002308935.1. The GC content of the type genome is 50.69 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Depecida coluticula sp. nov.

Candidatus Depecida coluticula (NL. fem. n. *coluticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902787295*. The type genome for the species is the GenBank assembly GCA_902781065.1. The GC content of the type genome is 59.47 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Depecida cosigisca sp. nov.

Candidatus Depecida cosigisca (NL. fem. n. *cosigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002314885*. The type genome for the species is the GenBank assembly GCA_002314885.1. The GC content of the type genome is 53.85 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Depecida curacedo sp. nov.

Candidatus Depecida curacedo (NL. fem. n. *curacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900319375*. The type genome for the species is the GenBank assembly GCA_900319375.1. The GC content of the type genome is 53.56 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Depecida curacitrix sp. nov.

Candidatus Depecida curacitrix (NL. fem. n. *curacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp000433355*. The type genome for the species is the GenBank assembly GCA_004556785.1. The GC content of the type genome is 51.98 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Depecida cuticitura sp. nov.

Candidatus Depecida cuticitura (NL. fem. n. *cuticitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900319405*. The type genome for the species is the GenBank assembly GCA_900319405.1. The GC content of the type genome is 56.24 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Depecida decacago sp. nov.

Candidatus Depecida decacago (NL. fem. n. *decacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902779495*. The type genome for the species is the GenBank assembly GCA_902779495.1. The GC content of the type genome is 56.75 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Depecida decomitica sp. nov.

Candidatus Depecida decomitica (NL. fem. n. *decomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900319485*. The type genome for the species is the GenBank assembly GCA_902772575.1. The GC content of the type genome is 53.39 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Depecida defasimonia sp. nov.

Candidatus Depecida defasimonia (NL. fem. n. *defasimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp000434935*. The type genome for the species is the GenBank assembly GCA_000434935.1. The GC content of the type genome is 49.37 % and the genome length is 2.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Depecida defetivita sp. nov.

Candidatus Depecida defetivita (NL. fem. n. *defetivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp004552115*. The type genome for the species is the GenBank assembly GCA_004553505.1. The GC content of the type genome is 53.88 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Depecida delacilega sp. nov.

Candidatus Depecida delacilega (NL. fem. n. *delacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp012800665*. The type genome for the species is the GenBank

assembly GCA_012800665.1. The GC content of the type genome is 47.06 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Depecida delebitio sp. nov.

Candidatus Depecida delebitio (NL. fem. n. *delebitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900546445*. The type genome for the species is the GenBank assembly GCA_004554845.1. The GC content of the type genome is 49.6 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Depecida denicitrix sp. nov.

Candidatus Depecida denicitrix (NL. fem. n. *denicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902780935*. The type genome for the species is the GenBank assembly GCA_902786755.1. The GC content of the type genome is 53.03 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Depecida denixessa sp. nov.

Candidatus Depecida denixessa (NL. fem. n. *denixessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp004554455*. The type genome for the species is the GenBank assembly GCA_004552065.1. The GC content of the type genome is 55.73 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Depecida depecax sp. nov.

Candidatus Depecida depecax (NL. fem. n. *depecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900316525*. The type genome for the species is the GenBank assembly GCA_902758675.1. The GC content of the type genome is 61.33 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Depecida depelessa sp. nov.

Candidatus Depecida depelessa (NL. fem. n. *depelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp001915575*. The type genome for the species is the GenBank assembly GCA_001915575.1. The GC content of the type genome is 57.1 % and the genome length is 1.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Depecida depocitudo sp. nov.

Candidatus Depecida depocitudo (NL. fem. n. *depocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902761655*. The type genome for the species is the GenBank assembly GCA_902761655.1. The GC content of the type genome is 53.11 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Depecida derunax sp. nov.

Candidatus Depecida derunax (NL. fem. n. *derunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902785575*. The type genome for the species is the GenBank assembly GCA_902768695.1. The GC content of the type genome is 50.87 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Depecida desuressa sp. nov.

Candidatus Depecida desuressa (NL. fem. n. *desuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902803715*. The type genome for the species is the GenBank assembly GCA_902803715.1. The GC content of the type genome is 59.26 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Depecida detorastra sp. nov.

Candidatus Depecida detorastra (NL. fem. n. *detorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900321655*. The type genome for the species is the GenBank assembly GCA_902758375.1. The GC content of the type genome is 56.24 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Depecida detotibula sp. nov.

Candidatus Depecida detotibula (NL. fem. n. *detotibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002439585*. The type genome for the species is the GenBank assembly GCA_002314015.1. The GC content of the type genome is 46.81 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Depecida detumitoga sp. nov.

Candidatus Depecida detumitoga (NL. fem. n. *detumitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902789395*. The type genome for the species is the GenBank assembly GCA_902800895.1. The GC content of the type genome is 53.94 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Depecida dicanitio sp. nov.

Candidatus Depecida dicanitio (NL. fem. n. *dicanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002439095*. The type genome for the species is the GenBank assembly GCA_002404525.1. The GC content of the type genome is 54.82 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Depecida dicibibula sp. nov.

Candidatus Depecida dicibibula (NL. fem. n. *dicibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900544195*. The type genome for the species is the GenBank assembly GCA_900544195.1. The GC content of the type genome is 51.9 % and the

genome length is 2.92 Mbp.

Description of *Candidatus* Depecida dicimax sp. nov.

Candidatus Depecida dicimax (NL. fem. n. *dicimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002437305*. The type genome for the species is the GenBank assembly GCA_002451455.1. The GC content of the type genome is 51.81 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Depecida didacifica sp. nov.

Candidatus Depecida didacifica (NL. fem. n. *didacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902789245*. The type genome for the species is the GenBank assembly GCA_902774235.1. The GC content of the type genome is 60.06 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Depecida dilemicula sp. nov.

Candidatus Depecida dilemicula (NL. fem. n. *dilemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900320545*. The type genome for the species is the GenBank assembly GCA_900320545.1. The GC content of the type genome is 57.7 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Depecida dimidimonia sp. nov.

Candidatus Depecida dimidimonia (NL. fem. n. *dimidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900320365*. The type genome for the species is the GenBank assembly GCA_902755235.1. The GC content of the type genome is 51.17 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Depecida dinupiforma sp. nov.

Candidatus Depecida dinupiforma (NL. fem. n. *dinupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900314395*. The type genome for the species is the GenBank assembly GCA_900314395.1. The GC content of the type genome is 50.71 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Depecida domigimonia sp. nov.

Candidatus Depecida domigimonia (NL. fem. n. *domigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900320795*. The type genome for the species is the GenBank assembly GCA_900320795.1. The GC content of the type genome is 55.63 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Depecida eccisicula sp. nov.

Candidatus Depecida eccisicula (NL. fem. n. *eccisicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002309995*. The type genome for the species is the GenBank assembly GCA_002309995.1. The GC content of the type genome is 56.15 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Depecida effacitia sp. nov.

Candidatus Depecida effacitia (NL. fem. n. *effacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902796455*. The type genome for the species is the GenBank assembly GCA_902796455.1. The GC content of the type genome is 56.42 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Depecida exsomax sp. nov.

Candidatus Depecida exsomax (NL. fem. n. *exsomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902790635*. The type genome for the species is the GenBank assembly GCA_902790635.1. The GC content of the type genome is 60.04 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Depecida exsupicella sp. nov.

Candidatus Depecida exsupicella (NL. fem. n. *exsupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902784785*. The type genome for the species is the GenBank assembly GCA_902784785.1. The GC content of the type genome is 53.25 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Depecida facunilenta sp. nov.

Candidatus Depecida facunilenta (NL. fem. n. *facunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002297815*. The type genome for the species is the GenBank assembly GCA_002297815.1. The GC content of the type genome is 48.46 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Depecida ficedatio sp. nov.

Candidatus Depecida ficedatio (NL. fem. n. *ficedatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002438805*. The type genome for the species is the GenBank assembly GCA_002449105.1. The GC content of the type genome is 54.69 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Depecida ficulitura sp. nov.

Candidatus Depecida ficulitura (NL. fem. n. *ficulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp000432655*. The type genome for the species is the GenBank assembly GCA_004553345.1. The GC content of the type genome is 49.65 % and the

genome length is 1.54 Mbp.

Description of *Candidatus* Depecida filifetta sp. nov.

Candidatus Depecida filifetta (NL. fem. n. *filifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902780175*. The type genome for the species is the GenBank assembly GCA_902780175.1. The GC content of the type genome is 57.2 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Depecida filifousia sp. nov.

Candidatus Depecida filifousia (NL. fem. n. *filifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900760425*. The type genome for the species is the GenBank assembly RS_GCF_900760425.1. The GC content of the type genome is 48.57 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Depecida funivitura sp. nov.

Candidatus Depecida funivitura (NL. fem. n. *funivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002298075*. The type genome for the species is the GenBank assembly GCA_009774805.1. The GC content of the type genome is 48.4 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Depecida gabinilega sp. nov.

Candidatus Depecida gabinilega (NL. fem. n. *gabinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900313205*. The type genome for the species is the GenBank assembly GCA_902780965.1. The GC content of the type genome is 52.76 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Depecida hegumitura sp. nov.

Candidatus Depecida hegumitura (NL. fem. n. *hegumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900317065*. The type genome for the species is the GenBank assembly GCA_902763545.1. The GC content of the type genome is 54.23 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Depecida hemiditoga sp. nov.

Candidatus Depecida hemiditoga (NL. fem. n. *hemiditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902768985*. The type genome for the species is the GenBank assembly GCA_902793265.1. The GC content of the type genome is 60.75 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Depecida hirudastra sp. nov.

Candidatus Depecida hirudastra (NL. fem. n. *hirudastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900321245*. The type genome for the species is the GenBank assembly GCA_902761405.1. The GC content of the type genome is 55.78 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Depecida holisigena sp. nov.

Candidatus Depecida holisigena (NL. fem. n. *holisigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902774155*. The type genome for the species is the GenBank assembly GCA_902786655.1. The GC content of the type genome is 56.67 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Depecida holovimonia sp. nov.

Candidatus Depecida holovimonia (NL. fem. n. *holovimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900546925*. The type genome for the species is the GenBank assembly GCA_900546925.1. The GC content of the type genome is 47.38 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Depecida holovitica sp. nov.

Candidatus Depecida holovitica (NL. fem. n. *holovitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900546395*. The type genome for the species is the GenBank assembly GCA_900546395.1. The GC content of the type genome is 43.37 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Depecida illuvicella sp. nov.

Candidatus Depecida illuvicella (NL. fem. n. *illuvicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902774145*. The type genome for the species is the GenBank assembly GCA_902774145.1. The GC content of the type genome is 57.95 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Depecida inargilega sp. nov.

Candidatus Depecida inargilega (NL. fem. n. *inargilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902766255*. The type genome for the species is the GenBank assembly GCA_902766255.1. The GC content of the type genome is 54.11 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Depecida incucentia sp. nov.

Candidatus Depecida incucentia (NL. fem. n. *incucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902788175*. The type genome for the species is the GenBank assembly GCA_902788175.1. The GC content of the type genome is 56.8 % and the

genome length is 2.09 Mbp.

Description of *Candidatus* Depecida indevedo sp. nov.

Candidatus Depecida indevedo (NL. fem. n. *indevedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900771005*. The type genome for the species is the GenBank assembly RS_GCF_900771005.1. The GC content of the type genome is 48.83 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Depecida infabatica sp. nov.

Candidatus Depecida infabatica (NL. fem. n. *infabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp001602885*. The type genome for the species is the GenBank assembly GCA_001602885.1. The GC content of the type genome is 62.71 % and the genome length is 1.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Depecida inforilega sp. nov.

Candidatus Depecida inforilega (NL. fem. n. *inforilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp012522855*. The type genome for the species is the GenBank assembly GCA_012522855.1. The GC content of the type genome is 53.54 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Depecida ininnicella sp. nov.

Candidatus Depecida ininnicella (NL. fem. n. *ininnicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002320605*. The type genome for the species is the GenBank assembly GCA_002320605.1. The GC content of the type genome is 48.48 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Depecida lametousia sp. nov.

Candidatus Depecida lametousia (NL. fem. n. *lametousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902782225*. The type genome for the species is the GenBank assembly GCA_902782225.1. The GC content of the type genome is 56.92 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Depecida lanifitica sp. nov.

Candidatus Depecida lanifitica (NL. fem. n. *lanifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900318015*. The type genome for the species is the GenBank assembly GCA_902787045.1. The GC content of the type genome is 60.16 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Depecida lanugitas sp. nov.

Candidatus Depecida lanugitas (NL. fem. n. *lanugitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900167925*. The type genome for the species is the GenBank assembly RS_GCF_900167925.1. The GC content of the type genome is 51.08 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Depecida lenimicella sp. nov.

Candidatus Depecida lenimicella (NL. fem. n. *lenimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp000432515*. The type genome for the species is the GenBank assembly GCA_000432515.1. The GC content of the type genome is 49.16 % and the genome length is 2.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Depecida luculugo sp. nov.

Candidatus Depecida luculugo (NL. fem. n. *luculugo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002396335*. The type genome for the species is the GenBank assembly GCA_002396335.1. The GC content of the type genome is 57.54 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Depecida luxuritas sp. nov.

Candidatus Depecida luxuritas (NL. fem. n. *luxuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902803535*. The type genome for the species is the GenBank assembly GCA_902803535.1. The GC content of the type genome is 54.45 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Depecida manomiforma sp. nov.

Candidatus Depecida manomiforma (NL. fem. n. *manomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002438845*. The type genome for the species is the GenBank assembly GCA_002297165.1. The GC content of the type genome is 51.89 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Depecida maxumastra sp. nov.

Candidatus Depecida maxumastra (NL. fem. n. *maxumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902768955*. The type genome for the species is the GenBank assembly GCA_902768955.1. The GC content of the type genome is 52.75 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Depecida meliledo sp. nov.

Candidatus Depecida meliledo (NL. fem. n. *meliledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900318565*. The type genome for the species is the GenBank assembly GCA_900318565.1. The GC content of the type genome is 56.93 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Depecida milipago sp. nov.

Candidatus Depecida milipago (NL. fem. n. *milipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp004555145*. The type genome for the species is the GenBank assembly GCA_004555145.1. The GC content of the type genome is 53.6 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Depecida minuritia sp. nov.

Candidatus Depecida minuritia (NL. fem. n. *minuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002395605*. The type genome for the species is the GenBank assembly GCA_002395605.1. The GC content of the type genome is 53.68 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Depecida molecicula sp. nov.

Candidatus Depecida molecicula (NL. fem. n. *molecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900319855*. The type genome for the species is the GenBank assembly GCA_902764115.1. The GC content of the type genome is 58.36 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Depecida navicentia sp. nov.

Candidatus Depecida navicentia (NL. fem. n. *navicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902788095*. The type genome for the species is the GenBank assembly GCA_902788095.1. The GC content of the type genome is 55.75 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Depecida nicomitura sp. nov.

Candidatus Depecida nicomitura (NL. fem. n. *nicomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900543205*. The type genome for the species is the GenBank assembly GCA_900543205.1. The GC content of the type genome is 56.9 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Depecida nicotilenta sp. nov.

Candidatus Depecida nicotilenta (NL. fem. n. *nicotilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900319185*. The type genome for the species is the GenBank assembly GCA_900319185.1. The GC content of the type genome is 57.07 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Depecida nidifentia sp. nov.

Candidatus Depecida nidifentia (NL. fem. n. *nidifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp009774765*. The type genome for the species is the GenBank assembly GCA_009774765.1. The GC content of the type genome is 46.54 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Depecida nidifica sp. nov.

Candidatus Depecida nidifica (NL. fem. n. *nidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002439875*. The type genome for the species is the GenBank assembly GCA_002439875.1. The GC content of the type genome is 50.74 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Depecida nucifousia sp. nov.

Candidatus Depecida nucifousia (NL. fem. n. *nucifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902779785*. The type genome for the species is the GenBank assembly GCA_902787315.1. The GC content of the type genome is 53.78 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Depecida nutabiforma sp. nov.

Candidatus Depecida nutabiforma (NL. fem. n. *nutabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902781705*. The type genome for the species is the GenBank assembly GCA_902781705.1. The GC content of the type genome is 59.03 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Depecida obnupigena sp. nov.

Candidatus Depecida obnupigena (NL. fem. n. *obnupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902798975*. The type genome for the species is the GenBank assembly GCA_902798975.1. The GC content of the type genome is 59.77 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Depecida pacififica sp. nov.

Candidatus Depecida pacififica (NL. fem. n. *pacififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902795735*. The type genome for the species is the GenBank assembly GCA_902795735.1. The GC content of the type genome is 51.99 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Depecida pimenatica sp. nov.

Candidatus Depecida pimenatica (NL. fem. n. *pimenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RC9 sp002354005*. The type genome for the species is the GenBank assembly GCA_902772135.1. The GC content of the type genome is 56.2 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Depecida pinigilenta sp. nov.

Candidatus Depecida pinigilenta (NL. fem. n. *pinigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902762435*. The type genome for the species is the GenBank assembly GCA_902762435.1. The GC content of the type genome is 61.87 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Depecida pocilimonas sp. nov.

Candidatus Depecida pocilimonas (NL. fem. n. *pocilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900320965*. The type genome for the species is the GenBank assembly GCA_902767705.1. The GC content of the type genome is 51.93 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Depecida procrilenta sp. nov.

Candidatus Depecida procrilenta (NL. fem. n. *procrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002315815*. The type genome for the species is the GenBank assembly GCA_002315815.1. The GC content of the type genome is 49.29 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Depecida procrousia sp. nov.

Candidatus Depecida procrousia (NL. fem. n. *procrousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902779765*. The type genome for the species is the GenBank assembly GCA_902779765.1. The GC content of the type genome is 53.17 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Depecida recogicella sp. nov.

Candidatus Depecida recogicella (NL. fem. n. *recogicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900319975*. The type genome for the species is the GenBank assembly GCA_900319975.1. The GC content of the type genome is 62.25 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Depecida recorisca sp. nov.

Candidatus Depecida recorisca (NL. fem. n. *recorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002451795*. The type genome for the species is the GenBank assembly GCA_002478105.1. The GC content of the type genome is 46.51 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Depecida recumimonia sp. nov.

Candidatus Depecida recumimonia (NL. fem. n. *recumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902766985*. The type genome for the species is the GenBank assembly GCA_902766985.1. The GC content of the type genome is 54.08 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Depecida refinicella sp. nov.

Candidatus Depecida refinicella (NL. fem. n. *refinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002350615*. The type genome for the species is the GenBank assembly GCA_002350615.1. The GC content of the type genome is 54.09 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Depecida resaligena sp. nov.

Candidatus Depecida resaligena (NL. fem. n. *resaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900317925*. The type genome for the species is the GenBank assembly GCA_902760445.1. The GC content of the type genome is 56.81 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Depecida retunimonia sp. nov.

Candidatus Depecida retunimonia (NL. fem. n. *retunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902791945*. The type genome for the species is the GenBank assembly GCA_902791945.1. The GC content of the type genome is 56.53 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Depecida saxifatica sp. nov.

Candidatus Depecida saxifatica (NL. fem. n. *saxifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900767375*. The type genome for the species is the GenBank assembly RS_GCF_900767375.1. The GC content of the type genome is 54.97 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Depecida semapitio sp. nov.

Candidatus Depecida semapitio (NL. fem. n. *semapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp004556005*. The type genome for the species is the GenBank assembly RS_GCF_900769135.1. The GC content of the type genome is 51.73 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Depecida semapitoga sp. nov.

Candidatus Depecida semapitoga (NL. fem. n. *semapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RC9 sp002321335*. The type genome for the species is the GenBank assembly GCA_003500085.1. The GC content of the type genome is 50.85 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Depecida sicunastra sp. nov.

Candidatus Depecida sicunastra (NL. fem. n. *sicunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002371115*. The type genome for the species is the GenBank assembly GCA_002395125.1. The GC content of the type genome is 56.18 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Depecida solipilenta sp. nov.

Candidatus Depecida solipilenta (NL. fem. n. *solipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900318355*. The type genome for the species is the GenBank assembly GCA_902759845.1. The GC content of the type genome is 57.36 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Depecida sotulastra sp. nov.

Candidatus Depecida sotulastra (NL. fem. n. *sotulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002393895*. The type genome for the species is the GenBank assembly GCA_002393895.1. The GC content of the type genome is 54.89 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Depecida subodibula sp. nov.

Candidatus Depecida subodibula (NL. fem. n. *subodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902799895*. The type genome for the species is the GenBank assembly GCA_902780675.1. The GC content of the type genome is 56.81 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Depecida subodousia sp. nov.

Candidatus Depecida subodousia (NL. fem. n. *subodousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002440085*. The type genome for the species is the GenBank assembly GCA_002440085.1. The GC content of the type genome is 52.74 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Depecida sugilifica sp. nov.

Candidatus Depecida sugilifica (NL. fem. n. *sugilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900316675*. The type genome for the species is the GenBank assembly GCA_902785225.1. The GC content of the type genome is 50.15 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Depecida sugilitas sp. nov.

Candidatus Depecida sugilitas (NL. fem. n. *sugilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902795785*. The type genome for the species is the GenBank assembly GCA_902795785.1. The GC content of the type genome is 50.15 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Depecida supelousia sp. nov.

Candidatus Depecida supelousia (NL. fem. n. *supelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900318445*. The type genome for the species is the GenBank assembly GCA_902756035.1. The GC content of the type genome is 57.03 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Depecida susicitrix sp. nov.

Candidatus Depecida susicitrix (NL. fem. n. *susicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900317845*. The type genome for the species is the GenBank assembly GCA_902759455.1. The GC content of the type genome is 56.47 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Depecida tegimago sp. nov.

Candidatus Depecida tegimago (NL. fem. n. *tegimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900318955*. The type genome for the species is the GenBank assembly GCA_902764365.1. The GC content of the type genome is 48.69 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Depecida televitura sp. nov.

Candidatus Depecida televitura (NL. fem. n. *televitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902792815*. The type genome for the species is the GenBank assembly GCA_902770455.1. The GC content of the type genome is 54.38 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Depecida tenemitia sp. nov.

Candidatus Depecida tenemitia (NL. fem. n. *tenemitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900321715*. The type genome for the species is the GenBank assembly GCA_902758725.1. The GC content of the type genome is 53.34 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Depecida tetenitia sp. nov.

Candidatus Depecida tetenitia (NL. fem. n. *tetenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RC9 sp902772985*. The type genome for the species is the GenBank assembly GCA_902772985.1. The GC content of the type genome is 53.11 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Depecida tibicigena sp. nov.

Candidatus Depecida tibicigena (NL. fem. n. *tibicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002373715*. The type genome for the species is the GenBank assembly GCA_002373715.1. The GC content of the type genome is 55.1 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Depecida timefastra sp. nov.

Candidatus Depecida timefastra (NL. fem. n. *timefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902794615*. The type genome for the species is the GenBank assembly GCA_902794615.1. The GC content of the type genome is 57.37 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Depecida turilitica sp. nov.

Candidatus Depecida turilitica (NL. fem. n. *turilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp000435075*. The type genome for the species is the GenBank assembly GCA_900542105.1. The GC content of the type genome is 47.73 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Depecida vatilicella sp. nov.

Candidatus Depecida vatilicella (NL. fem. n. *vatilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902801205*. The type genome for the species is the GenBank assembly GCA_902801205.1. The GC content of the type genome is 60.24 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Depecida vatilitia sp. nov.

Candidatus Depecida vatilitia (NL. fem. n. *vatilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902797435*. The type genome for the species is the GenBank assembly GCA_902797435.1. The GC content of the type genome is 54.84 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Depecida velivimonas sp. nov.

Candidatus Depecida velivimonas (NL. fem. n. *velivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900545245*. The type genome for the species is the GenBank assembly GCA_900545245.1. The GC content of the type genome is 49.93 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Depecida venucibula sp. nov.

Candidatus Depecida venucibula (NL. fem. n. *venucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp900313275*. The type genome for the species is the GenBank assembly GCA_902758995.1. The GC content of the type genome is 51.55 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Depecida viginitura sp. nov.

Candidatus Depecida viginitura (NL. fem. n. *viginitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp002315825*. The type genome for the species is the GenBank assembly GCA_002315825.1. The GC content of the type genome is 47.16 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Depecida vinulivita sp. nov.

Candidatus Depecida vinulivita (NL. fem. n. *vinulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902762655*. The type genome for the species is the GenBank assembly GCA_902762655.1. The GC content of the type genome is 52.74 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Depecida virecibula sp. nov.

Candidatus Depecida virecibula (NL. fem. n. *virecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RC9 sp902785825*. The type genome for the species is the GenBank assembly GCA_902789355.1. The GC content of the type genome is 52.23 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Depecosa modifimonia sp. nov.

Candidatus Depecosa modifimonia (NL. fem. n. *modifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM1-73 sp001304225*. The type genome for the species is the GenBank assembly GCA_001304225.1. The GC content of the type genome is 44.13 % and the genome length is 2.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Depecosa gen. nov.

Candidatus Depecosa (NL. fem. n. *Depecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM1-73*. The type species for the genus is *Candidatus* Depecosa modifimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depecosaceae.

Description of *Candidatus* Depecosaceae fam. nov.

Candidatus Depecosaceae (NL. fem. n. *Depecosaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM1-73*. The type genus for the taxon is *Candidatus* Depecosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Loripellales.

Description of *Candidatus* Depecula crastitudo sp. nov.

Candidatus Depecula crastitudo (NL. fem. n. *crastitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1316 sp004321925*. The type genome for the species is the GenBank assembly GCA_004321925.1. The GC content of the type genome is 54.48 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Depecula gen. nov.

Candidatus Depecula (NL. fem. n. *Depecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1316*. The type species for the genus is *Candidatus* Depecula crastitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6898*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecunellaceae.

Description of *Candidatus* Depecula culiledo sp. nov.

Candidatus Depecula culiledo (NL. fem. n. *culiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1316 sp013824615*. The type genome for the species is the GenBank assembly GCA_013824615.1. The GC content of the type genome is 51.73 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Depecula excalugo sp. nov.

Candidatus Depecula excalugo (NL. fem. n. *excalugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1316 sp003153275*. The type genome for the species is the GenBank assembly GCA_003153275.1. The GC content of the type genome is 49.59 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Depelana adtemitica sp. nov.

Candidatus Depelana adtemitica (NL. fem. n. *adtemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BN30871 sp002483605*. The type genome for the species is the GenBank assembly GCA_002483605.1. The GC content of the type genome is 37.16 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Depelana gen. nov.

Candidatus Depelana (NL. fem. n. *Depelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BN30871*. The type species for the genus is *Candidatus* Depelana adtemitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depelana cululitas sp. nov.

Candidatus Depelana cululitas (NL. fem. n. *cululitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BN30871 sp002424475*. The type genome for the species is the GenBank assembly GCA_002424475.1. The GC content of the type genome is 36.02 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Depelana herinibula sp. nov.

Candidatus Depelana herinibula (NL. fem. n. *herinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BN30871 sp001493195*. The type genome for the species is the GenBank assembly GCA_001493195.1. The GC content of the type genome is 32.71 % and the genome length is 1.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hydrocarbon-contaminated sulfidic aquifer".

Description of *Candidatus* Depelana luceritudo sp. nov.

Candidatus Depelana luceritudo (NL. fem. n. *luceritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BN30871 sp002412865*. The type genome for the species is the GenBank assembly GCA_002345465.1. The GC content of the type genome is 34.93 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Depelana solacifica sp. nov.

Candidatus Depelana solacifica (NL. fem. n. *solacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BN30871 sp011372825*. The type genome for the species is the GenBank assembly GCA_011372825.1. The GC content of the type genome is 37.46 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Depelaria advinitica sp. nov.

Candidatus Depelaria advinitica (NL. fem. n. *advinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA027-K21 sp003058465*. The type genome for the species is the GenBank assembly RS_GCF_003058465.1. The GC content of the type genome is 55.54 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Depelaria gen. nov.

Candidatus Depelaria (NL. fem. n. *Depelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCGC-AAA027-K21*. The type species for the genus is *Candidatus* Depelaria advinitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depelaria pecunetta sp. nov.

Candidatus Depelaria pecunetta (NL. fem. n. *pecunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA027-K21 sp002422175*. The type genome for the species is the GenBank assembly GCA_002422175.1. The GC content of the type genome is 45.98 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Depelaria rubicitica sp. nov.

Candidatus Depelaria rubicitica (NL. fem. n. *rubicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA027-K21 sp007116135*. The type genome for the species is the GenBank assembly GCA_007116135.1. The GC content of the type genome is 55.95 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Depelella dibapitura sp. nov.

Candidatus Depelella dibapitura (NL. fem. n. *dibapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *STC3 sp009742725*. The type genome for the species is the GenBank assembly RS_GCF_009742725.1. The GC content of the type genome is 64.73 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Depelella gen. nov.

Candidatus Depelella (NL. fem. n. *Depelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *STC3*. The type species for the genus is *Candidatus* Depelella dibapitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depelella futatetta sp. nov.

Candidatus Depelella futatetta (NL. fem. n. *futatetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *STC3 sp003015025*. The type genome for the species is the GenBank assembly RS_GCF_003015025.1. The GC content of the type genome is 65.52 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Depelella revulatica sp. nov.

Candidatus Depelella revulatica (NL. fem. n. *revulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *STC3 sp007922615*. The type genome for the species is the GenBank assembly RS_GCF_007922615.2. The GC content of the type genome is 64.89 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Depelia lanugastra sp. nov.

Candidatus Depelia lanugastra (NL. fem. n. *lanugastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8518 sp903841185*. The type genome for the species is the GenBank assembly GCA_903885935.1. The GC content of the type genome is 41.4 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Depelia gen. nov.

Candidatus Depelia (NL. fem. n. *Depelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8518*. The type species for the genus is *Candidatus* Depelia lanugastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Depelia octacitudo sp. nov.

Candidatus Depelia octacitudo (NL. fem. n. *octacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8518 sp003543115*. The type genome for the species is the GenBank assembly GCA_003543115.1. The GC content of the type genome is 37.98 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Depelida futatatio sp. nov.

Candidatus Depelida futatatio (NL. fem. n. *futatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU022 sp001512835*. The type genome for the species is the GenBank assembly GCA_012521155.1. The GC content of the type genome is 58.18 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Depelida gen. nov.

Candidatus Depelida (NL. fem. n. *Depelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU022*. The type species for the genus is *Candidatus* Depelida futatatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Depelidaceae fam. nov.

Candidatus Depelidaceae (NL. fem. n. *Depelidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU022.* The type genus for the taxon is *Candidatus* Depelida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depelidales.

Description of *Candidatus* Depelidales ord. nov.

Candidatus Depelidales (NL. fem. n. *Depelidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU022.* The type genus for the taxon is *Candidatus* Depelida .

According to the GTDB R06-RS202, this order belongs to the class *Dethiobacteria*.

Description of *Candidatus* Depelosa melilimonia sp. nov.

Candidatus Depelosa melilimonia (NL. fem. n. *melilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YIM-75507 sp003594875*. The type genome for the species is the GenBank assembly RS_GCF_003594875.1. The GC content of the type genome is 73.83 % and the genome length is 8.99 Mbp.

Description of *Candidatus* Depelosa gen. nov.

Candidatus Depelosa (NL. fem. n. *Depelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YIM-75507*. The type species for the genus is *Candidatus* Depelosa melilimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depelula laxititura sp. nov.

Candidatus Depelula laxititura (NL. fem. n. *laxititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB2-FULL-49-35 sp001789205*. The type genome for the species is the GenBank assembly GCA_001789245.1. The GC content of the type genome is 49.55 % and the genome length is 4.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point C".

Description of *Candidatus* Depelula gen. nov.

Candidatus Depelula (NL. fem. n. *Depelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB2-FULL-49-35*. The type species for the genus is *Candidatus* Depelula laxititura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYB2-FULL-49-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelulaceae.

Description of *Candidatus* Depelulaceae fam. nov.

Candidatus Depelulaceae (NL. fem. n. *Depelulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYB2-FULL-49-35.* The type genus for the taxon is *Candidatus* Depelula .

According to the original version of GTDB R06-RS202, this family belongs to the order *OXYB2-FULL-49-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodiales.

Description of *Candidatus* Depetaria siciniforma sp. nov.

Candidatus Depetaria siciniforma (NL. fem. n. *siciniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9649 sp001804415*. The type genome for the species is the GenBank assembly GCA_001805685.1. The GC content of the type genome is 63.46 % and the genome length is 1.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Depetaria gen. nov.

Candidatus Depetaria (NL. fem. n. *Depetaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9649*. The type species for the genus is *Candidatus* Depetaria siciniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9649*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depetariaceae.

Description of *Candidatus* Depetariaceae fam. nov.

Candidatus Depetariaceae (NL. fem. n. *Depetariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9649.* The type genus for the taxon is *Candidatus* Depetaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9649*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depetariales.

Description of *Candidatus* Depetariales ord. nov.

Candidatus Depetariales (NL. fem. n. *Depetariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9649.* The type genus for the taxon is *Candidatus* Depetaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Depetella aggeniforma sp. nov.

Candidatus Depetella aggeniforma (NL. fem. n. *aggeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp902775895*. The type genome for the species is the GenBank assembly GCA_902775895.1. The GC content of the type genome is 43.14 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Depetella gen. nov.

Candidatus Depetella (NL. fem. n. *Depetella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4285*. The type species for the genus is *Candidatus* Depetella aggeniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depetella anatritio sp. nov.

Candidatus Depetella anatritio (NL. fem. n. *anatritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp902784165*. The type genome for the species is the GenBank assembly GCA_902784165.1. The GC content of the type genome is 43.98 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Depetella demogitudo sp. nov.

Candidatus Depetella demogitudo (NL. fem. n. *demogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp900542465*. The type genome for the species is the GenBank assembly GCA_900542465.1. The GC content of the type genome is 40.94 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Depetella depupilenta sp. nov.

Candidatus Depetella depupilenta (NL. fem. n. *depupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp902764045*. The type genome for the species is the GenBank assembly GCA_902764045.1. The GC content of the type genome is 44.55 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Depetella dimidastra sp. nov.

Candidatus Depetella dimidastra (NL. fem. n. *dimidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp900314255*. The type genome for the species is the GenBank assembly GCA_900314255.1. The GC content of the type genome is 53.82 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Depetella illibibra sp. nov.

Candidatus Depetella illibibra (NL. fem. n. *illibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp902784025*. The type genome for the species is the GenBank assembly GCA_902784025.1. The GC content of the type genome is 41.32 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Depetella nugivibra sp. nov.

Candidatus Depetella nugivibra (NL. fem. n. *nugivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp002394965*. The type genome for the species is the GenBank assembly GCA_902796655.1. The GC content of the type genome is 56.0 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Depetella relapivita sp. nov.

Candidatus Depetella relapivita (NL. fem. n. *relapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp900545225*. The type genome for the species is the GenBank assembly RS_GCF_900758125.1. The GC content of the type genome is 36.88 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Depetella relenitrix sp. nov.

Candidatus Depetella relenitrix (NL. fem. n. *relenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp902781505*. The type genome for the species is the GenBank assembly GCA_902781505.1. The GC content of the type genome is 44.19 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Depetella vitabicula sp. nov.

Candidatus Depetella vitabicula (NL. fem. n. *vitabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4285 sp903789615*. The type genome for the species is the GenBank assembly GCA_903789615.1. The GC content of the type genome is 54.93 %

and the genome length is 2.45 Mbp.

Description of *Candidatus* Depetia cenacicula sp. nov.

Candidatus Depetia cenacicula (NL. fem. n. *cenacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12078 sp000991805*. The type genome for the species is the GenBank assembly GCA_003453845.1. The GC content of the type genome is 35.68 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Depetia gen. nov.

Candidatus Depetia (NL. fem. n. *Depetia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12078*. The type species for the genus is *Candidatus* Depetia cenacicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Depetia immobisca sp. nov.

Candidatus Depetia immobisca (NL. fem. n. *immobisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12078 sp903906305*. The type genome for the species is the GenBank assembly GCA_903906305.1. The GC content of the type genome is 35.48 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Depetida redacimonas sp. nov.

Candidatus Depetida redacimonas (NL. fem. n. *redacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXRD01 sp009838845*. The type genome for the species is the GenBank assembly GCA_009841665.1. The GC content of the type genome is 51.03 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Depetida gen. nov.

Candidatus Depetida (NL. fem. n. *Depetida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXRD01*. The type species for the genus is *Candidatus* Depetida redacimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Medimellaceae.

Description of *Candidatus* Depetosa conipago sp. nov.

Candidatus Depetosa conipago (NL. fem. n. *conipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-349 sp001940895*. The type genome for the species is the GenBank assembly GCA_001940895.1. The GC content of the type genome is 46.78 % and the genome length is 1.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Phil the wombat".

Description of *Candidatus* Depetosa gen. nov.

Candidatus Depetosa (NL. fem. n. *Depetosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-349*. The type species for the genus is *Candidatus* Depetosa conipago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadanaceae.

Description of *Candidatus* Depetosa gabinousia sp. nov.

Candidatus Depetosa gabinousia (NL. fem. n. *gabinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-349 sp003539515*. The type genome for the species is the GenBank assembly GCA_004555415.1. The GC content of the type genome is 47.88 %

and the genome length is 1.27 Mbp.

Description of *Candidatus* Depetula bigaribra sp. nov.

Candidatus Depetula bigaribra (NL. fem. n. *bigaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730975 sp002730975*. The type genome for the species is the GenBank assembly GCA_002341135.1. The GC content of the type genome is 50.0 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Depetula gen. nov.

Candidatus Depetula (NL. fem. n. *Depetula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2730975*. The type species for the genus is *Candidatus* Depetula bigaribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MB11C04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detumiaceae.

Description of *Candidatus* Depetula lametitura sp. nov.

Candidatus Depetula lametitura (NL. fem. n. *lametitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730975 sp014382645*. The type genome for the species is the GenBank assembly GCA_014382645.1. The GC content of the type genome is 52.13 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Depicana turicitudo sp. nov.

Candidatus Depicana turicitudo (NL. fem. n. *turicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-36-11 sp001871575*. The type genome for the species is the GenBank assembly GCA_002781085.1. The GC content of the type genome is 35.62 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Depicana gen. nov.

Candidatus Depicana (NL. fem. n. *Depicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-36-11*. The type species for the genus is *Candidatus* Depicana turicitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depicaria volunousia sp. nov.

Candidatus Depicaria volunousia (NL. fem. n. *volunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2792135 sp002792135*. The type genome for the species is the GenBank assembly GCA_002792135.1. The GC content of the type genome is 34.64 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Depicaria gen. nov.

Candidatus Depicaria (NL. fem. n. *Depicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2792135*. The type species for the genus is *Candidatus* Depicaria volunousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2792135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depicariaceae.

Description of *Candidatus* Depicariaceae fam. nov.

Candidatus Depicariaceae (NL. fem. n. *Depicariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2792135.* The type genus for the taxon is *Candidatus* Depicaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2792135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depicariales.

Description of *Candidatus* Depicariales ord. nov.

Candidatus Depicariales (NL. fem. n. *Depicariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2792135.* The type genus for the taxon is *Candidatus* Depicaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *GCA-2792135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Depicariae.

Description of *Candidatus* Depicariae class. nov.

Candidatus Depicariae (NL. fem. n. *c__Depicariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2792135.* The type genus for the taxon is *Candidatus* Depicaria .

According to GTDB R06-RS202, this class belongs to the phylum *Patescibacteria*.

Description of *Candidatus* Depicella denoribula sp. nov.

Candidatus Depicella denoribula (NL. fem. n. *denoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-48-11 sp001805615*. The type genome for the species is the GenBank assembly GCA_001805525.1. The GC content of the type genome is 47.65 % and the genome length is 2.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Depicella gen. nov.

Candidatus Depicella (NL. fem. n. *Depicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-48-11*. The type species for the genus is *Candidatus* Depicella denoribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Kpj58rc*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanellaceae.

Description of *Candidatus* Depicia cerucitia sp. nov.

Candidatus Depicia cerucitia (NL. fem. n. *cerucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-68-42 sp001872285*. The type genome for the species is the GenBank assembly GCA_002791095.1. The GC content of the type genome is 68.27 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Depicia gen. nov.

Candidatus Depicia (NL. fem. n. *Depicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-68-42*. The type species for the genus is *Candidatus* Depicia cerucitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depicida cenacivita sp. nov.

Candidatus Depicida cenacivita (NL. fem. n. *cenacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMPN01 sp014377495*. The type genome for the species is the GenBank assembly GCA_014377495.1. The GC content of the type genome is 64.44 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Depicida gen. nov.

Candidatus Depicida (NL. fem. n. *Depicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMPN01*. The type species for the genus is *Candidatus* Depicida cenacivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACMPN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depicidaceae.

Description of *Candidatus* Depicidaceae fam. nov.

Candidatus Depicidaceae (NL. fem. n. *Depicidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACMPN01.* The type genus for the taxon is *Candidatus* Depicida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACMPN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depicidales.

Description of *Candidatus* Depicidales ord. nov.

Candidatus Depicidales (NL. fem. n. *Depicidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACMPN01.* The type genus for the taxon is *Candidatus* Depicida .

According to the GTDB R06-RS202, this order belongs to the class *Sericytochromatia*.

Description of *Candidatus* Depicosa ambecatio sp. nov.

Candidatus Depicosa ambecatio (NL. fem. n. *ambecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902618025*. The type genome for the species is the GenBank assembly GCA_902618025.1. The GC content of the type genome is 30.59 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Depicosa gen. nov.

Candidatus Depicosa (NL. fem. n. *Depicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AAA536-G10*. The type species for the genus is *Candidatus* Depicosa ambecatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AAA536-G10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depicosaceae.

Description of *Candidatus* Depicosaceae fam. nov.

Candidatus Depicosaceae (NL. fem. n. *Depicosaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AAA536-G10.* The type genus for the taxon is *Candidatus* Depicosa .

According to GTDB R06-RS202, this family belongs to the order *Puniceispirillales*.

Description of *Candidatus* Depicosa anactatio sp. nov.

Candidatus Depicosa anactatio (NL. fem. n. *anactatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902622875*. The type genome for the species is the GenBank assembly GCA_902622875.1. The GC content of the type genome is 30.99 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Depicosa annifatio sp. nov.

Candidatus Depicosa annifatio (NL. fem. n. *annifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp000421325*. The type genome for the species is the GenBank assembly GCA_000421325.1. The GC content of the type genome is 31.04 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Depicosa attegousia sp. nov.

Candidatus Depicosa attegousia (NL. fem. n. *attegousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp002691185*. The type genome for the species is the GenBank assembly GCA_002691185.1. The GC content of the type genome is 31.74 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Depicosa attoliforma sp. nov.

Candidatus Depicosa attoliforma (NL. fem. n. *attoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *AAA536-G10 sp902619615*. The type genome for the species is the GenBank assembly GCA_902619615.1. The GC content of the type genome is 30.62 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Depicosa bicalilenta sp. nov.

Candidatus Depicosa bicalilenta (NL. fem. n. *bicalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902543145*. The type genome for the species is the GenBank assembly GCA_902543145.1. The GC content of the type genome is 30.94 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Depicosa caduratio sp. nov.

Candidatus Depicosa caduratio (NL. fem. n. *caduratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902542765*. The type genome for the species is the GenBank assembly GCA_902542765.1. The GC content of the type genome is 30.86 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Depicosa casabitura sp. nov.

Candidatus Depicosa casabitura (NL. fem. n. *casabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902616615*. The type genome for the species is the GenBank assembly GCA_902616615.1. The GC content of the type genome is 30.69 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Depicosa cilicatica sp. nov.

Candidatus Depicosa cilicatica (NL. fem. n. *cilicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902619485*. The type genome for the species is the GenBank assembly GCA_902619485.1. The GC content of the type genome is 30.72 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Depicosa colubitudo sp. nov.

Candidatus Depicosa colubitudo (NL. fem. n. *colubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp003283875*. The type genome for the species is the GenBank assembly GCA_003283875.1. The GC content of the type genome is 31.43 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Depicosa defacilega sp. nov.

Candidatus Depicosa defacilega (NL. fem. n. *defacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp003282435*. The type genome for the species is the GenBank assembly GCA_003282435.1. The GC content of the type genome is 31.08 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Depicosa delucifica sp. nov.

Candidatus Depicosa delucifica (NL. fem. n. *delucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902514865*. The type genome for the species is the GenBank assembly GCA_902514865.1. The GC content of the type genome is 31.45 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Depicosa detotitio sp. nov.

Candidatus Depicosa detotitio (NL. fem. n. *detotitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902528415*. The type genome for the species is the GenBank assembly GCA_902528415.1. The GC content of the type genome is 31.16 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Depicosa entomessa sp. nov.

Candidatus Depicosa entomessa (NL. fem. n. *entomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp000383115*. The type genome for the species is the GenBank assembly GCA_000383115.1. The GC content of the type genome is 30.61 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Depicosa episcisca sp. nov.

Candidatus Depicosa episcisca (NL. fem. n. *episcisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902595515*. The type genome for the species is the GenBank assembly GCA_902595515.1. The GC content of the type genome is 30.76 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Depicosa gabinibula sp. nov.

Candidatus Depicosa gabinibula (NL. fem. n. *gabinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp003278095*. The type genome for the species is the GenBank assembly GCA_902558615.1. The GC content of the type genome is 30.94 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Depicosa humecisca sp. nov.

Candidatus Depicosa humecisca (NL. fem. n. *humecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp000384615*. The type genome for the species is the GenBank assembly GCA_000384615.1. The GC content of the type genome is 30.96 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Depicosa ingigastra sp. nov.

Candidatus Depicosa ingigastra (NL. fem. n. *ingigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *AAA536-G10 sp902517275*. The type genome for the species is the GenBank assembly GCA_902517275.1. The GC content of the type genome is 31.32 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Depicosa ingurivita sp. nov.

Candidatus Depicosa ingurivita (NL. fem. n. *ingurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp003284565*. The type genome for the species is the GenBank assembly GCA_003284565.1. The GC content of the type genome is 30.87 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Depicosa inlepicella sp. nov.

Candidatus Depicosa inlepicella (NL. fem. n. *inlepicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902593735*. The type genome for the species is the GenBank assembly GCA_902593735.1. The GC content of the type genome is 30.49 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Depicosa minurimonas sp. nov.

Candidatus Depicosa minurimonas (NL. fem. n. *minurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902598805*. The type genome for the species is the GenBank assembly GCA_902598805.1. The GC content of the type genome is 31.11 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Depicosa obfusitica sp. nov.

Candidatus Depicosa obfusitica (NL. fem. n. *obfusitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902589185*. The type genome for the species is the GenBank assembly GCA_902589185.1. The GC content of the type genome is 30.86 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Depicosa papililenta sp. nov.

Candidatus Depicosa papililenta (NL. fem. n. *papililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902592615*. The type genome for the species is the GenBank assembly GCA_902592615.1. The GC content of the type genome is 30.82 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Depicosa pimenimonas sp. nov.

Candidatus Depicosa pimenimonas (NL. fem. n. *pimenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902583415*. The type genome for the species is the GenBank assembly GCA_902583415.1. The GC content of the type genome is 30.85 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Depicosa regifitrix sp. nov.

Candidatus Depicosa regifitrix (NL. fem. n. *regifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902539895*. The type genome for the species is the GenBank assembly GCA_902539895.1. The GC content of the type genome is 30.89 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Depicosa repuriforma sp. nov.

Candidatus Depicosa repuriforma (NL. fem. n. *repuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902517815*. The type genome for the species is the GenBank assembly GCA_902517815.1. The GC content of the type genome is 30.84 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Depicosa rosaritudo sp. nov.

Candidatus Depicosa rosaritudo (NL. fem. n. *rosaritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902623995*. The type genome for the species is the GenBank assembly GCA_902540885.1. The GC content of the type genome is 30.91 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Depicosa ruricicella sp. nov.

Candidatus Depicosa ruricicella (NL. fem. n. *ruricicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902625215*. The type genome for the species is the GenBank assembly GCA_902625215.1. The GC content of the type genome is 30.91 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Depicosa sanabitas sp. nov.

Candidatus Depicosa sanabitas (NL. fem. n. *sanabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902558885*. The type genome for the species is the GenBank assembly GCA_902558885.1. The GC content of the type genome is 30.51 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Depicosa semigimonas sp. nov.

Candidatus Depicosa semigimonas (NL. fem. n. *semigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902578805*. The type genome for the species is the GenBank assembly GCA_902578805.1. The GC content of the type genome is 30.86 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Depicosa subofousia sp. nov.

Candidatus Depicosa subofousia (NL. fem. n. *subofousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *AAA536-G10 sp902529515*. The type genome for the species is the GenBank assembly GCA_902529515.1. The GC content of the type genome is 31.3 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Depicosa telefitoga sp. nov.

Candidatus Depicosa telefitoga (NL. fem. n. *telefitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902619805*. The type genome for the species is the GenBank assembly GCA_902619805.1. The GC content of the type genome is 30.65 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Depicosa timeficula sp. nov.

Candidatus Depicosa timeficula (NL. fem. n. *timeficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902537945*. The type genome for the species is the GenBank assembly GCA_902537945.1. The GC content of the type genome is 30.46 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Depicosa vagabilenta sp. nov.

Candidatus Depicosa vagabilenta (NL. fem. n. *vagabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902530325*. The type genome for the species is the GenBank assembly GCA_902530325.1. The GC content of the type genome is 31.07 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Depicosa visocitio sp. nov.

Candidatus Depicosa visocitio (NL. fem. n. *visocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp902595145*. The type genome for the species is the GenBank assembly GCA_902595145.1. The GC content of the type genome is 30.53 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Depicosa vitifimonia sp. nov.

Candidatus Depicosa vitifimonia (NL. fem. n. *vitifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp003282885*. The type genome for the species is the GenBank assembly GCA_902552975.1. The GC content of the type genome is 31.07 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Depicosa vitupitas sp. nov.

Candidatus Depicosa vitupitas (NL. fem. n. *vitupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp003282145*. The type genome for the species is the GenBank assembly GCA_003282145.1. The GC content of the type genome is 31.06 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Depicosa vivifisca sp. nov.

Candidatus Depicosa vivifisca (NL. fem. n. *vivifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA536-G10 sp003279355*. The type genome for the species is the GenBank assembly GCA_003279355.1. The GC content of the type genome is 31.41 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Depicula atropilega sp. nov.

Candidatus Depicula atropilega (NL. fem. n. *atropilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-273 sp900752335*. The type genome for the species is the GenBank assembly RS_GCF_900752335.1. The GC content of the type genome is 29.51 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Depicula gen. nov.

Candidatus Depicula (NL. fem. n. *Depicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-273*. The type species for the genus is *Candidatus* Depicula atropilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Depicula baditigena sp. nov.

Candidatus Depicula baditigena (NL. fem. n. *baditigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-273 sp000438355*. The type genome for the species is the GenBank assembly GCA_900551795.1. The GC content of the type genome is 26.78 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Depicula defanatio sp. nov.

Candidatus Depicula defanatio (NL. fem. n. *defanatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-273 sp003507395*. The type genome for the species is the GenBank assembly GCA_003507395.1. The GC content of the type genome is 27.53 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Depicula munimatica sp. nov.

Candidatus Depicula munimatica (NL. fem. n. *munimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-273 sp000437855*. The type genome for the species is the GenBank assembly GCA_900550535.1. The GC content of the type genome is 27.69 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Depicula risibilenta sp. nov.

Candidatus Depicula risibilenta (NL. fem. n. *risibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-273 sp902406115*. The type genome for the species is the GenBank assembly GCA_902406115.1. The GC content of the type genome is 27.91 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Depicula scellimonas sp. nov.

Candidatus Depicula scellimonas (NL. fem. n. *scellimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-273 sp900752095*. The type genome for the species is the GenBank assembly RS_GCF_900752095.1. The GC content of the type genome is 28.07 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Depicula subabago sp. nov.

Candidatus Depicula subabago (NL. fem. n. *subabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-273 sp000435755*. The type genome for the species is the GenBank assembly GCA_000435755.1. The GC content of the type genome is 28.95 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Depicula tegimisca sp. nov.

Candidatus Depicula tegimisca (NL. fem. n. *tegimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-273 sp003534295*. The type genome for the species is the GenBank assembly GCA_003534295.1. The GC content of the type genome is 27.94 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Depocana vitifimonas sp. nov.

Candidatus Depocana vitifimonas (NL. fem. n. *vitifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDZO01 sp902812395*. The type genome for the species is the

GenBank assembly RS_GCF_902812395.1. The GC content of the type genome is 69.62 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Depocana gen. nov.

Candidatus Depocana (NL. fem. n. *Depocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDZO01*. The type species for the genus is *Candidatus* Depocana vitifimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depocaria pecunatio sp. nov.

Candidatus Depocaria pecunatio (NL. fem. n. *pecunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FD2005 sp000702525*. The type genome for the species is the GenBank assembly RS_GCF_000702525.1. The GC content of the type genome is 41.29 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Depocaria gen. nov.

Candidatus Depocaria (NL. fem. n. *Depocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FD2005*. The type species for the genus is *Candidatus* Depocaria pecunatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depocella oblanetta sp. nov.

Candidatus Depocella oblanetta (NL. fem. n. *oblanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-73-2 sp001304315*. The type genome for the species is the GenBank assembly GCA_001304315.1. The GC content of the type genome is 42.5 % and the genome length is 2.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary

sediments 16-26 cm".

Description of *Candidatus* Depocella gen. nov.

Candidatus Depocella (NL. fem. n. *Depocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-73-2*. The type species for the genus is *Candidatus* Depocella oblanetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-73-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depocellaceae.

Description of *Candidatus* Depocellaceae fam. nov.

Candidatus Depocellaceae (NL. fem. n. *Depocellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-73-2.* The type genus for the taxon is *Candidatus* Depocella .

According to the original version of GTDB R06-RS202, this family belongs to the order *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Loripellales.

Description of *Candidatus* Depocia meridedo sp. nov.

Candidatus Depocia meridedo (NL. fem. n. *meridedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp18-AA60 sp003225335*. The type genome for the species is the GenBank assembly GCA_003225335.1. The GC content of the type genome is 58.7 % and the genome length is 7.54 Mbp.

Description of *Candidatus* Depocia gen. nov.

Candidatus Depocia (NL. fem. n. *Depocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp18-AA60*. The type species for the genus is *Candidatus* Depocia meridedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6911*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decomulaceae.

Description of *Candidatus* Depocida delubimonas sp. nov.

Candidatus Depocida delubimonas (NL. fem. n. *delubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPVR01 sp903868545*. The type genome for the species is the GenBank assembly GCA_903896735.1. The GC content of the type genome is 73.24 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Depocida gen. nov.

Candidatus Depocida (NL. fem. n. *Depocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPVR01*. The type species for the genus is *Candidatus* Depocida delubimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depocosa abinvetta sp. nov.

Candidatus Depocosa abinvetta (NL. fem. n. *abinvetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4473 sp002389285*. The type genome for the species is the GenBank assembly GCA_002389285.1. The GC content of the type genome is 44.1 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Depocosa gen. nov.

Candidatus Depocosa (NL. fem. n. *Depocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4473*. The type species for the genus is *Candidatus* Depocosa abinvetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA4473. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depocosaceae.

Description of *Candidatus* Depocosaceae fam. nov.

Candidatus Depocosaceae (NL. fem. n. *Depocosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4473.* The type genus for the taxon is *Candidatus* Depocosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4473*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depocosales.

Description of *Candidatus* Depocosales ord. nov.

Candidatus Depocosales (NL. fem. n. *Depocosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4473.* The type genus for the taxon is *Candidatus* Depocosa .

According to the GTDB R06-RS202, this order belongs to the class *Gracilibacteria*.

Description of *Candidatus* Depocula milifitio sp. nov.

Candidatus Depocula milifitio (NL. fem. n. *milifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YD12-FULL-39-22 sp001770205*. The type genome for the species is the GenBank assembly GCA_001771845.1. The GC content of the type genome is 39.2 % and the genome length is 3.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Depocula gen. nov.

Candidatus Depocula (NL. fem. n. *Depocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YD12-FULL-39-22*. The type species for the genus is *Candidatus* Depocula milifitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depopana affabousia sp. nov.

Candidatus Depopana affabousia (NL. fem. n. *affabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900754145*. The type genome for the species is the GenBank assembly RS_GCF_900754145.1. The GC content of the type genome is 45.97 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Depopana gen. nov.

Candidatus Depopana (NL. fem. n. *Depopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA737*. The type species for the genus is *Candidatus* Depopana affabousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depopana attegedo sp. nov.

Candidatus Depopana attegedo (NL. fem. n. *attegedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp002315765*. The type genome for the species is the GenBank assembly GCA_002315765.1. The GC content of the type genome is 37.71 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Depopana cenotetta sp. nov.

Candidatus Depopana cenotetta (NL. fem. n. *cenotetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900769375*. The type genome for the species is the GenBank assembly RS_GCF_900769375.1. The GC content of the type genome is 41.07 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Depopana cerevitrix sp. nov.

Candidatus Depopana cerevitrix (NL. fem. n. *cerevitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp002297415*. The type genome for the species is the GenBank assembly GCA_002437145.1. The GC content of the type genome is 41.51 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Depopana derunitrix sp. nov.

Candidatus Depopana derunitrix (NL. fem. n. *derunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900547305*. The type genome for the species is the GenBank assembly RS_GCF_900772245.1. The GC content of the type genome is 46.35 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Depopana diluvitrix sp. nov.

Candidatus Depopana diluvitrix (NL. fem. n. *diluvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900549755*. The type genome for the species is the GenBank assembly RS_GCF_900757365.1. The GC content of the type genome is 46.02 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Depopana divulugo sp. nov.

Candidatus Depopana divulugo (NL. fem. n. *divulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp002371985*. The type genome for the species is the GenBank assembly GCA_002371985.1. The GC content of the type genome is 37.66 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Depopana fiducitoga sp. nov.

Candidatus Depopana fiducitoga (NL. fem. n. *fiducitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900554525*. The type genome for the species is the GenBank assembly GCA_900554525.1. The GC content of the type genome is 47.29 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Depopana homicugo sp. nov.

Candidatus Depopana homicugo (NL. fem. n. *homicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900543215*. The type genome for the species is the GenBank assembly GCA_900543215.1. The GC content of the type genome is 43.92 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Depopana irrotitudo sp. nov.

Candidatus Depopana irrotitudo (NL. fem. n. *irrotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp002451855*. The type genome for the species is the GenBank assembly GCA_002451855.1. The GC content of the type genome is 44.66 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Depopana molecisca sp. nov.

Candidatus Depopana molecisca (NL. fem. n. *molecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp002363095*. The type genome for the species is the GenBank assembly GCA_003521945.1. The GC content of the type genome is 42.61 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Depopana occenibula sp. nov.

Candidatus Depopana occenibula (NL. fem. n. *occenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA737 sp002315685*. The type genome for the species is the GenBank assembly GCA_002315685.1. The GC content of the type genome is 38.56 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Depopana omnipibra sp. nov.

Candidatus Depopana omnipibra (NL. fem. n. *omnipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900768035*. The type genome for the species is the GenBank assembly RS_GCF_900768035.1. The GC content of the type genome is 38.08 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Depopana rubicilenta sp. nov.

Candidatus Depopana rubicilenta (NL. fem. n. *rubicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900549055*. The type genome for the species is the GenBank assembly GCA_004554955.1. The GC content of the type genome is 47.74 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Depopana sarabisca sp. nov.

Candidatus Depopana sarabisca (NL. fem. n. *sarabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900547445*. The type genome for the species is the GenBank assembly RS_GCF_900756075.1. The GC content of the type genome is 44.85 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Depopana subofatio sp. nov.

Candidatus Depopana subofatio (NL. fem. n. *subofatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp900547095*. The type genome for the species is the GenBank assembly GCA_900547095.1. The GC content of the type genome is 40.49 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Depopana turilatica sp. nov.

Candidatus Depopana turilatica (NL. fem. n. *turilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA737 sp002431945*. The type genome for the species is the GenBank assembly GCA_900545045.1. The GC content of the type genome is 45.22 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Depoparia assififorma sp. nov.

Candidatus Depoparia assififorma (NL. fem. n. *assififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG643 sp902782705*. The type genome for the species is the GenBank assembly GCA_902782705.1. The GC content of the type genome is 55.82 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Depoparia gen. nov.

Candidatus Depoparia (NL. fem. n. *Depoparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG643*. The type species for the genus is *Candidatus* Depoparia assififorma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depoparia obrigibula sp. nov.

Candidatus Depoparia obrigibula (NL. fem. n. *obrigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG643 sp902778455*. The type genome for the species is the GenBank assembly GCA_902778455.1. The GC content of the type genome is 54.6 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Depoparia semapilenta sp. nov.

Candidatus Depoparia semapilenta (NL. fem. n. *semapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG643 sp900321035*. The type genome for the species is the GenBank assembly GCA_902762255.1. The GC content of the type genome is 56.75 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Depoparia tirunitura sp. nov.

Candidatus Depoparia tirunitura (NL. fem. n. *tirunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG643 sp902777615*. The type genome for the species is the GenBank assembly GCA_902777615.1. The GC content of the type genome is 55.58 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Depopia exsatitoga sp. nov.

Candidatus Depopia exsatitoga (NL. fem. n. *exsatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYPD01 sp903928075*. The type genome for the species is the GenBank assembly GCA_903928075.1. The GC content of the type genome is 43.29 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Depopia gen. nov.

Candidatus Depopia (NL. fem. n. *Depopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYPD01*. The type species for the genus is *Candidatus* Depopia exsatitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2-FULL-39-29*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilanaceae.

Description of *Candidatus* Depopia videlisca sp. nov.

Candidatus Depopia videlisca (NL. fem. n. *videlisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYPD01 sp903891415*. The type genome for the species is the GenBank assembly GCA_903891415.1. The GC content of the type genome is 44.71 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Depopida arundilenta sp. nov.

Candidatus Depopida arundilenta (NL. fem. n. *arundilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp004211905*. The type genome for the species is the GenBank assembly GCA_004211905.1. The GC content of the type genome is 44.28 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Depopida gen. nov.

Candidatus Depopida (NL. fem. n. *Depopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HTCC2207*. The type species for the genus is *Candidatus* Depopida arundilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depopida avoncicula sp. nov.

Candidatus Depopida avoncicula (NL. fem. n. *avoncicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp002313335*. The type genome for the species is the GenBank assembly GCA_002313335.1. The GC content of the type genome is 44.44 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Depopida cerevatio sp. nov.

Candidatus Depopida cerevatio (NL. fem. n. *cerevatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp002382445*. The type genome for the species is the

GenBank assembly GCA_002382445.1. The GC content of the type genome is 46.02 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Depopida colipetta sp. nov.

Candidatus Depopida colipetta (NL. fem. n. *colipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp001438605*. The type genome for the species is the GenBank assembly GCA_002340805.1. The GC content of the type genome is 51.64 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Depopida decamugo sp. nov.

Candidatus Depopida decamugo (NL. fem. n. *decamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp002334915*. The type genome for the species is the GenBank assembly GCA_002334915.1. The GC content of the type genome is 51.02 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Depopida decititio sp. nov.

Candidatus Depopida decititio (NL. fem. n. *decititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp000153445*. The type genome for the species is the GenBank assembly RS_GCF_000153445.1. The GC content of the type genome is 49.39 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Depopida depasibula sp. nov.

Candidatus Depopida depasibula (NL. fem. n. *depasibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp002335945*. The type genome for the species is the GenBank assembly GCA_002480055.1. The GC content of the type genome is 49.08 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Depopida ficulessa sp. nov.

Candidatus Depopida ficulessa (NL. fem. n. *ficulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp003491845*. The type genome for the species is the GenBank assembly GCA_003491845.1. The GC content of the type genome is 43.42 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Depopida indiratica sp. nov.

Candidatus Depopida indiratica (NL. fem. n. *indiratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp000511875*. The type genome for the species is the GenBank assembly RS_GCF_000511875.1. The GC content of the type genome is 50.03 % and the genome length is 2.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mediterranean seawater".

Description of *Candidatus* Depopida inrepitura sp. nov.

Candidatus Depopida inrepitura (NL. fem. n. *inrepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp002685715*. The type genome for the species is the GenBank assembly GCA_002685715.1. The GC content of the type genome is 47.66 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Depopida lavacitica sp. nov.

Candidatus Depopida lavacitica (NL. fem. n. *lavacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp002457245*. The type genome for the species is the GenBank assembly GCA_002457245.1. The GC content of the type genome is 42.44 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Depopida nefanicula sp. nov.

Candidatus Depopida nefanicula (NL. fem. n. *nefanicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp014381985*. The type genome for the species is the GenBank assembly GCA_014381985.1. The GC content of the type genome is 45.88 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Depopida refocax sp. nov.

Candidatus Depopida refocax (NL. fem. n. *refocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp002378645*. The type genome for the species is the GenBank assembly GCA_002378645.1. The GC content of the type genome is 51.06 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Depopida relapifica sp. nov.

Candidatus Depopida relapifica (NL. fem. n. *relapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp002469845*. The type genome for the species is the GenBank assembly GCA_002469845.1. The GC content of the type genome is 42.18 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Depopida utputigena sp. nov.

Candidatus Depopida utputigena (NL. fem. n. *utputigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp012960115*. The type genome for the species is the GenBank assembly GCA_012960115.1. The GC content of the type genome is 46.11 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Depopida xenopitica sp. nov.

Candidatus Depopida xenopitica (NL. fem. n. *xenopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2207 sp002685195*. The type genome for the species is the GenBank assembly GCA_002685195.1. The GC content of the type genome is 44.32 %

and the genome length is 1.9 Mbp.

Description of *Candidatus* Depoposa unetvousia sp. nov.

Candidatus Depoposa unetvousia (NL. fem. n. *unetvousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PH28-bin88 sp000987045*. The type genome for the species is the GenBank assembly GCA_000987045.1. The GC content of the type genome is 54.58 % and the genome length is 4.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "anaerobic enrichment culture derived from coal bed methane formation water".

Description of *Candidatus* Depoposa gen. nov.

Candidatus Depoposa (NL. fem. n. *Depoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PH28-bin88*. The type species for the genus is *Candidatus* Depoposa unetvousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PH28-bin88*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depoposaceae.

Description of *Candidatus* Depoposaceae fam. nov.

Candidatus Depoposaceae (NL. fem. n. *Depoposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PH28-bin88.* The type genus for the taxon is *Candidatus* Depoposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *PH28-bin88*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depoposales.

Description of *Candidatus* Depoposales ord. nov.

Candidatus Depoposales (NL. fem. n. *Depoposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PH28-bin88.* The type genus for the taxon is *Candidatus* Depoposa .

According to the GTDB R06-RS202, this order belongs to the class *Moorellia*.

Description of *Candidatus* Depubana secunilenta sp. nov.

Candidatus Depubana secunilenta (NL. fem. n. *secunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-0-80-60-11 sp002779455*. The type genome for the species is the GenBank assembly GCA_002779455.1. The GC content of the type genome is 59.82 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Depubana gen. nov.

Candidatus Depubana (NL. fem. n. *Depubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-0-80-60-11*. The type species for the genus is *Candidatus* Depubana secunilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *0-14-0-80-60-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubanaceae.

Description of *Candidatus* Depubanaceae fam. nov.

Candidatus Depubanaceae (NL. fem. n. *Depubanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *0-14-0-80-60-11.* The type genus for the taxon is *Candidatus* Depubana .

According to GTDB R06-RS202, this family belongs to the order *Desulfobaccales*.

Description of *Candidatus* Depubaria nubigetta sp. nov.

Candidatus Depubaria nubigetta (NL. fem. n. *nubigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2202 sp002327905*. The type genome for the species is the GenBank assembly GCA_002327905.1. The GC content of the type genome is 38.09 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Depubaria gen. nov.

Candidatus Depubaria (NL. fem. n. *Depubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2202*. The type species for the genus is *Candidatus* Depubaria nubigetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *32-111*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasifiaceae.

Description of *Candidatus* Depubella fetulatio sp. nov.

Candidatus Depubella fetulatio (NL. fem. n. *fetulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *N075bin58 sp004356825*. The type genome for the species is the GenBank assembly GCA_004356135.1. The GC content of the type genome is 44.26 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Depubella gen. nov.

Candidatus Depubella (NL. fem. n. *Depubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *N075bin58*. The type species for the genus is *Candidatus* Depubella fetulatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CR04bin15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinefosaceae.

Description of *Candidatus* Depubia depocilenta sp. nov.

Candidatus Depubia depocilenta (NL. fem. n. *depocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8154 sp003456095*. The type genome for the species is the GenBank assembly GCA_003456095.1. The GC content of the type genome is 51.93 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Depubia gen. nov.

Candidatus Depubia (NL. fem. n. *Depubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8154*. The type species for the genus is *Candidatus* Depubia depocilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubiaceae.

Description of *Candidatus* Depubiaceae fam. nov.

Candidatus Depubiaceae (NL. fem. n. *Depubiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8154.* The type genus for the taxon is *Candidatus* Depubia .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depelidales.

Description of *Candidatus* Depubia negidousia sp. nov.

Candidatus Depubia negidousia (NL. fem. n. *negidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8154 sp007122565*. The type genome for the species is the GenBank assembly GCA_007122565.1. The GC content of the type genome is 48.29 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Depubia ossaricella sp. nov.

Candidatus Depubia ossaricella (NL. fem. n. *ossaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8154 sp007131175*. The type genome for the species is the GenBank assembly GCA_007131175.1. The GC content of the type genome is 46.41 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Depubida monocitio sp. nov.

Candidatus Depubida monocitio (NL. fem. n. *monocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMX01 sp004555605*. The type genome for the species is the GenBank assembly GCA_004555605.1. The GC content of the type genome is 57.75 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Depubida gen. nov.

Candidatus Depubida (NL. fem. n. *Depubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAMX01*. The type species for the genus is *Candidatus* Depubida monocitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QAMX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubidaceae.

Description of *Candidatus* Depubidaceae fam. nov.

Candidatus Depubidaceae (NL. fem. n. *Depubidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QAMX01.* The type genus for the taxon is *Candidatus* Depubida .

According to GTDB R06-RS202, this family belongs to the order *Oscillospirales*.

Description of *Candidatus* Depubida mutabedo sp. nov.

Candidatus Depubida mutabedo (NL. fem. n. *mutabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMX01 sp003149835*. The type genome for the species is the GenBank assembly GCA_003149835.1. The GC content of the type genome is 58.11 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Depubosa peniciforma sp. nov.

Candidatus Depubosa peniciforma (NL. fem. n. *peniciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNGX01 sp013334825*. The type genome for the species is the GenBank assembly GCA_013334825.1. The GC content of the type genome is 43.3 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Depubosa gen. nov.

Candidatus Depubosa (NL. fem. n. *Depubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNGX01*. The type species for the genus is *Candidatus* Depubosa peniciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACNGX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubosaceae.

Description of *Candidatus* Depubosaceae fam. nov.

Candidatus Depubosaceae (NL. fem. n. *Depubosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACNGX01.* The type genus for the taxon is *Candidatus* Depubosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Depubosa resalax sp. nov.

Candidatus Depubosa resalax (NL. fem. n. *resalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNGX01 sp014383885*. The type genome for the species is the GenBank assembly GCA_014383885.1. The GC content of the type genome is 46.08 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Depupana ammodax sp. nov.

Candidatus Depupana ammodax (NL. fem. n. *ammodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5004 sp001004085*. The type genome for the species is the GenBank assembly GCA_001004085.1. The GC content of the type genome is 50.82 % and the genome length is 0.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Depupana gen. nov.

Candidatus Depupana (NL. fem. n. *Depupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5004*. The type species for the genus is *Candidatus* Depupana ammodax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Depupana democicula sp. nov.

Candidatus Depupana democicula (NL. fem. n. *democicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5004 sp001824255*. The type genome for the species is the GenBank assembly GCA_001824255.1. The GC content of the type genome is 51.52 % and the genome length is 0.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Depupana derunibra sp. nov.

Candidatus Depupana derunibra (NL. fem. n. *derunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5004 sp001824005*. The type genome for the species is the GenBank assembly GCA_001824005.1. The GC content of the type genome is 47.8 % and the genome length is 0.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Depupana detosifica sp. nov.

Candidatus Depupana detosifica (NL. fem. n. *detosifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5004 sp001825155*. The type genome for the species is the GenBank assembly GCA_001824055.1. The GC content of the type genome is 47.62 % and the genome length is 0.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Depupana nitelastra sp. nov.

Candidatus Depupana nitelastra (NL. fem. n. *nitelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5004 sp001824135*. The type genome for the species is the GenBank assembly GCA_001824135.1. The GC content of the type genome is 38.93 % and the genome length is 0.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Depupana pedifilenta sp. nov.

Candidatus Depupana pedifilenta (NL. fem. n. *pedifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5004 sp001825475*. The type genome for the species is the GenBank assembly GCA_001825475.1. The GC content of the type genome is 42.77 % and the genome length is 0.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Depupana sanabitrix sp. nov.

Candidatus Depupana sanabitrix (NL. fem. n. *sanabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5004 sp001825315*. The type genome for the species is the

GenBank assembly GCA_001823715.1. The GC content of the type genome is 42.86 % and the genome length is 0.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Depupana vinacitio sp. nov.

Candidatus Depupana vinacitio (NL. fem. n. *vinacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5004 sp009691335*. The type genome for the species is the GenBank assembly GCA_009691335.1. The GC content of the type genome is 43.85 % and the genome length is 0.48 Mbp.

Description of *Candidatus* Depupana volubibra sp. nov.

Candidatus Depupana volubibra (NL. fem. n. *volubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5004 sp002787855*. The type genome for the species is the GenBank assembly GCA_002787855.1. The GC content of the type genome is 42.15 % and the genome length is 0.44 Mbp.

Description of *Candidatus* Depuparia inmodibula sp. nov.

Candidatus Depuparia inmodibula (NL. fem. n. *inmodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-336 sp003566375*. The type genome for the species is the GenBank assembly GCA_003566375.1. The GC content of the type genome is 60.64 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Depuparia gen. nov.

Candidatus Depuparia (NL. fem. n. *Depuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3Sed10-336*. The type species for the genus is *Candidatus* Depuparia inmodibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

T3Sed10-336. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depupariaceae.

Description of *Candidatus* Depupariaceae fam. nov.

Candidatus Depupariaceae (NL. fem. n. *Depupariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T3Sed10-336.* The type genus for the taxon is *Candidatus* Depuparia .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Depupella nefanimonia sp. nov.

Candidatus Depupella nefanimonia (NL. fem. n. *nefanimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8416 sp002428045*. The type genome for the species is the GenBank assembly GCA_002428045.1. The GC content of the type genome is 58.25 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Depupella gen. nov.

Candidatus Depupella (NL. fem. n. *Depupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8416*. The type species for the genus is *Candidatus* Depupella nefanimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depupellaceae.

Description of *Candidatus* Depupellaceae fam. nov.

Candidatus Depupellaceae (NL. fem. n. *Depupellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8416.* The type genus for the taxon is *Candidatus* Depupella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Depupellales.

Description of *Candidatus* Depupellales ord. nov.

Candidatus Depupellales (NL. fem. n. *Depupellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8416.* The type genus for the taxon is *Candidatus* Depupella .

According to the GTDB R06-RS202, this order belongs to the class *Kiritimatiellae*.

Description of *Candidatus* Depupia petulicella sp. nov.

Candidatus Depupia petulicella (NL. fem. n. *petulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-64-22 sp001803795*. The type genome for the species is the GenBank assembly GCA_001803795.1. The GC content of the type genome is 64.57 % and the genome length is 2.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Depupia gen. nov.

Candidatus Depupia (NL. fem. n. *Depupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-64-22*. The type species for the genus is *Candidatus* Depupia petulicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depupiaceae.

Description of *Candidatus* Depupiaceae fam. nov.

Candidatus Depupiaceae (NL. fem. n. *Depupiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-64-22.* The type genus for the taxon is *Candidatus* Depupia .

According to the original version of GTDB R06-RS202, this family belongs to the order

RBG-16-64-22. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depupiales.

Description of *Candidatus* Depupiales ord. nov.

Candidatus Depupiales (NL. fem. n. *Depupiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-64-22.* The type genus for the taxon is *Candidatus* Depupia .

According to the original version of GTDB R06-RS202, this family belongs to the class *RBG-16-64-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Depupiae.

Description of *Candidatus* Depupiae class. nov.

Candidatus Depupiae (NL. fem. n. *c__Depupiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-64-22.* The type genus for the taxon is *Candidatus* Depupia .

According to GTDB R06-RS202, this class belongs to the phylum *Nitrospirota*.

Description of *Candidatus* Depupida octipilenta sp. nov.

Candidatus Depupida octipilenta (NL. fem. n. *octipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDEC01 sp013287265*. The type genome for the species is the GenBank assembly GCA_013287265.1. The GC content of the type genome is 28.47 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Depupida gen. nov.

Candidatus Depupida (NL. fem. n. *Depupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDEC01*. The type species for the genus is *Candidatus* Depupida octipilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDEC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Depupidaceae.

Description of *Candidatus* Depupidaceae fam. nov.

Candidatus Depupidaceae (NL. fem. n. *Depupidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDEC01.* The type genus for the taxon is *Candidatus* Depupida .

According to GTDB R06-RS202, this family belongs to the order *Babeliales*.

Description of *Candidatus* Depuposa adlacibra sp. nov.

Candidatus Depuposa adlacibra (NL. fem. n. *adlacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6915 sp002450975*. The type genome for the species is the GenBank assembly GCA_002450975.1. The GC content of the type genome is 53.32 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Depuposa gen. nov.

Candidatus Depuposa (NL. fem. n. *Depuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6915*. The type species for the genus is *Candidatus* Depuposa adlacibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6915*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depuposaceae.

Description of *Candidatus* Depuposaceae fam. nov.

Candidatus Depuposaceae (NL. fem. n. *Depuposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6915.* The type genus for the taxon is *Candidatus* Depuposa .

According to GTDB R06-RS202, this family belongs to the order *Thiohalomonadales_A*.

Description of *Candidatus* Depupula perabifica sp. nov.

Candidatus Depupula perabifica (NL. fem. n. *perabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2121 sp002331385*. The type genome for the species is the GenBank assembly GCA_002331385.1. The GC content of the type genome is 61.95 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Depupula gen. nov.

Candidatus Depupula (NL. fem. n. *Depupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2121*. The type species for the genus is *Candidatus* Depupula perabifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Derecana adsusitio sp. nov.

Candidatus Derecana adsusitio (NL. fem. n. *adsusitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp001603425*. The type genome for the species is the GenBank assembly GCA_001603425.1. The GC content of the type genome is 33.62 % and the genome length is 1.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Derecana gen. nov.

Candidatus Derecana (NL. fem. n. *Derecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bact-08*. The type species for the genus is *Candidatus* Derecana adsusitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Derecana arcubastra sp. nov.

Candidatus Derecana arcubastra (NL. fem. n. *arcubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp002425935*. The type genome for the species is the GenBank assembly GCA_002425935.1. The GC content of the type genome is 41.95 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Derecana culigessa sp. nov.

Candidatus Derecana culigessa (NL. fem. n. *culigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp003520315*. The type genome for the species is the GenBank assembly GCA_003520315.1. The GC content of the type genome is 37.97 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Derecana delacessa sp. nov.

Candidatus Derecana delacessa (NL. fem. n. *delacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp003542575*. The type genome for the species is the GenBank assembly GCA_003542255.1. The GC content of the type genome is 39.67 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Derecana delecisca sp. nov.

Candidatus Derecana delecisca (NL. fem. n. *delecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp001897515*. The type genome for the species is the GenBank assembly GCA_001897515.1. The GC content of the type genome is 41.11 % and the genome length is 2.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Derecana delucedo sp. nov.

Candidatus Derecana delucedo (NL. fem. n. *delucedo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp002842695*. The type genome for the species is the GenBank assembly GCA_002842695.1. The GC content of the type genome is 42.34 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Derecana dicabigena sp. nov.

Candidatus Derecana dicabigena (NL. fem. n. *dicabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp002842655*. The type genome for the species is the GenBank assembly GCA_002842655.1. The GC content of the type genome is 43.31 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Derecana exadvicula sp. nov.

Candidatus Derecana exadvicula (NL. fem. n. *exadvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp001769195*. The type genome for the species is the GenBank assembly GCA_001769195.1. The GC content of the type genome is 39.81 % and the genome length is 3.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Derecana faticastra sp. nov.

Candidatus Derecana faticastra (NL. fem. n. *faticastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp003513895*. The type genome for the species is the GenBank assembly GCA_003513895.1. The GC content of the type genome is 39.88 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Derecana incivicella sp. nov.

Candidatus Derecana incivicella (NL. fem. n. *incivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp002842465*. The type genome for the species is the GenBank assembly GCA_002842465.1. The GC content of the type genome is 39.62 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Derecana inordugo sp. nov.

Candidatus Derecana inordugo (NL. fem. n. *inordugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp000473305*. The type genome for the species is the GenBank assembly RS_GCF_000473305.1. The GC content of the type genome is 41.49 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Derecana menapitia sp. nov.

Candidatus Derecana menapitia (NL. fem. n. *menapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp002842515*. The type genome for the species is the GenBank assembly GCA_001769545.1. The GC content of the type genome is 41.01 % and the genome length is 2.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Derecana recocibra sp. nov.

Candidatus Derecana recocibra (NL. fem. n. *recocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp002428635*. The type genome for the species is the GenBank assembly GCA_002428635.1. The GC content of the type genome is 41.36 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Derecana saburentia sp. nov.

Candidatus Derecana saburentia (NL. fem. n. *saburentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Bact-08 sp002840895*. The type genome for the species is the GenBank assembly GCA_002840895.1. The GC content of the type genome is 40.39 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Derecana telegatio sp. nov.

Candidatus Derecana telegatio (NL. fem. n. *telegatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp009929175*. The type genome for the species is the GenBank assembly GCA_009929175.1. The GC content of the type genome is 44.67 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Derecana thapsifica sp. nov.

Candidatus Derecana thapsifica (NL. fem. n. *thapsifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-08 sp013335275*. The type genome for the species is the GenBank assembly GCA_013335275.1. The GC content of the type genome is 41.04 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Derecella delacimonas sp. nov.

Candidatus Derecella delacimonas (NL. fem. n. *delacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *79-D21 sp002436015*. The type genome for the species is the GenBank assembly GCA_002436015.1. The GC content of the type genome is 58.66 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Derecella gen. nov.

Candidatus Derecella (NL. fem. n. *Derecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *79-D21*. The type species for the genus is *Candidatus* Derecella delacimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *79-D21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Derecellaceae.

Description of *Candidatus* Derecellaceae fam. nov.

Candidatus Derecellaceae (NL. fem. n. *Derecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *79-D21.* The type genus for the taxon is *Candidatus* Derecella .

According to GTDB R06-RS202, this family belongs to the order *Synergistales*.

Description of *Candidatus* Derecella dimacilega sp. nov.

Candidatus Derecella dimacilega (NL. fem. n. *dimacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *79-D21 sp000402835*. The type genome for the species is the GenBank assembly GCA_012517495.1. The GC content of the type genome is 60.38 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Derecella extoritio sp. nov.

Candidatus Derecella extoritio (NL. fem. n. *extoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *79-D21 sp012517195*. The type genome for the species is the GenBank assembly GCA_012517195.1. The GC content of the type genome is 59.02 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Derecella vinacitas sp. nov.

Candidatus Derecella vinacitas (NL. fem. n. *vinacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *79-D21 sp002432945*. The type genome for the species is the GenBank assembly GCA_002432705.1. The GC content of the type genome is 56.05 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Derecia delacitia sp. nov.

Candidatus Derecia delacitia (NL. fem. n. *delacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-36-11 sp002781265*. The type genome for the species is the GenBank assembly GCA_002790115.1. The GC content of the type genome is 35.98 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Derecia gen. nov.

Candidatus Derecia (NL. fem. n. *Derecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-36-11*. The type species for the genus is *Candidatus* Derecia delacitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-36-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dereciaceae.

Description of *Candidatus* Dereciaceae fam. nov.

Candidatus Dereciaceae (NL. fem. n. *Dereciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-36-11*. The type genus for the taxon is *Candidatus* Derecia .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Derecida adnaribula sp. nov.

Candidatus Derecida adnaribula (NL. fem. n. *adnaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs163 sp009699565*. The type genome for the species is the GenBank assembly GCA_009699565.1. The GC content of the type genome is 64.83 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Derecida gen. nov.

Candidatus Derecida (NL. fem. n. *Derecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-60-MAGs163*. The type species for the genus is *Candidatus* Derecida adnaribula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Derecida alsulitudo sp. nov.

Candidatus Derecida alsulitudo (NL. fem. n. *alsulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs163 sp009699615*. The type genome for the species is the GenBank assembly GCA_009699615.1. The GC content of the type genome is 63.97 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Derecida dimaditas sp. nov.

Candidatus Derecida dimaditas (NL. fem. n. *dimaditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs163 sp005798685*. The type genome for the species is the GenBank assembly GCA_005772845.1. The GC content of the type genome is 64.11 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Derecida fidenisca sp. nov.

Candidatus Derecida fidenisca (NL. fem. n. *fidenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs163 sp009699915*. The type genome for the species is the GenBank assembly GCA_009699915.1. The GC content of the type genome is 69.7 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Derecida manomitica sp. nov.

Candidatus Derecida manomitica (NL. fem. n. *manomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs163 sp903959665*. The type genome for the species is the GenBank assembly GCA_903934105.1. The GC content of the type genome is 64.8 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Derecida nivomax sp. nov.

Candidatus Derecida nivomax (NL. fem. n. *nivomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs163 sp009699245*. The type genome for the species is the GenBank assembly GCA_009699245.1. The GC content of the type genome is 71.1 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Derecida peradivita sp. nov.

Candidatus Derecida peradivita (NL. fem. n. *peradivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs163 sp903953065*. The type genome for the species is the GenBank assembly GCA_903953065.1. The GC content of the type genome is 64.43 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Derecida vinacitica sp. nov.

Candidatus Derecida vinacitica (NL. fem. n. *vinacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs163 sp903821395*. The type genome for the species is the GenBank assembly GCA_903842875.1. The GC content of the type genome is 62.88 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Derecida xeramitrix sp. nov.

Candidatus Derecida xeramitrix (NL. fem. n. *xeramitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *F1-60-MAGs163 sp903830015*. The type genome for the species is the GenBank assembly GCA_903912375.1. The GC content of the type genome is 70.96 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Derecosa imbecax sp. nov.

Candidatus Derecosa imbecax (NL. fem. n. *imbecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTDR01 sp011363735*. The type genome for the species is the GenBank assembly GCA_011363735.1. The GC content of the type genome is 31.86 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Derecosa gen. nov.

Candidatus Derecosa (NL. fem. n. *Derecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTDR01*. The type species for the genus is *Candidatus* Derecosa imbecax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTDR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derecosaceae.

Description of *Candidatus* Derecosaceae fam. nov.

Candidatus Derecosaceae (NL. fem. n. *Derecosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTDR01*. The type genus for the taxon is *Candidatus* Derecosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homulosales.

Description of *Candidatus* Derecula indipimonas sp. nov.

Candidatus Derecula indipimonas (NL. fem. n. *indipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA5609 sp002067975*. The type genome for the species is the GenBank assembly GCA_002067975.1. The GC content of the type genome is 51.11 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Derecula gen. nov.

Candidatus Derecula (NL. fem. n. *Derecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5609*. The type species for the genus is *Candidatus* Derecula indipimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Derecula octobilenta sp. nov.

Candidatus Derecula octobilenta (NL. fem. n. *octobilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5609 sp002478225*. The type genome for the species is the GenBank assembly GCA_002478225.1. The GC content of the type genome is 50.29 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Derecula paropatio sp. nov.

Candidatus Derecula paropatio (NL. fem. n. *paropatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5609 sp002428485*. The type genome for the species is the GenBank assembly GCA_002428485.1. The GC content of the type genome is 50.21 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Derecula semunitas sp. nov.

Candidatus Derecula semunitas (NL. fem. n. *semunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5609 sp002418945*. The type genome for the species is the GenBank assembly GCA_002418945.1. The GC content of the type genome is 51.55 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Derelana adnecastra sp. nov.

Candidatus Derelana adnecastra (NL. fem. n. *adnecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1724 sp002315885*. The type genome for the species is the GenBank assembly GCA_002315885.1. The GC content of the type genome is 55.43 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Derelana gen. nov.

Candidatus Derelana (NL. fem. n. *Derelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1724*. The type species for the genus is *Candidatus* Derelana adnecastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semilidaceae.

Description of *Candidatus* Derelana alsisastra sp. nov.

Candidatus Derelana alsisastra (NL. fem. n. *alsisastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1724 sp900771165*. The type genome for the species is the GenBank assembly RS_GCF_900771165.1. The GC content of the type genome is 62.56 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Derelana cacomago sp. nov.

Candidatus Derelana cacomago (NL. fem. n. *cacomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1724 sp900548225*. The type genome for the species is the GenBank assembly GCA_004557165.1. The GC content of the type genome is 59.21 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Derelaria recorentia sp. nov.

Candidatus Derelaria recorentia (NL. fem. n. *recorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Cfx3-03 sp013390605*. The type genome for the species is the GenBank assembly GCA_013390605.1. The GC content of the type genome is 36.77 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Derelaria gen. nov.

Candidatus Derelaria (NL. fem. n. *Derelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Cfx3-03*. The type species for the genus is *Candidatus* Derelaria recorentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Cfx3-03*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derelariaceae.

Description of *Candidatus* Derelariaceae fam. nov.

Candidatus Derelariaceae (NL. fem. n. *Derelariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Cfx3-03.* The type genus for the taxon is *Candidatus* Derelaria .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Derelella brabribula sp. nov.

Candidatus Derelella brabribula (NL. fem. n. *brabribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTD01 sp902805775*. The type genome for the species is the GenBank assembly GCA_902805775.1. The GC content of the type genome is 74.68 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Derelella gen. nov.

Candidatus Derelella (NL. fem. n. *Derelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTD01*. The type species for the genus is *Candidatus* Derelella brabribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCTD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derelellaceae.

Description of *Candidatus* Derelellaceae fam. nov.

Candidatus Derelellaceae (NL. fem. n. *Derelellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCTD01.* The type genus for the taxon is *Candidatus* Derelella .

According to GTDB R06-RS202, this family belongs to the order *Mycobacteriales*.

Description of *Candidatus* Derelella scombigena sp. nov.

Candidatus Derelella scombigena (NL. fem. n. *scombigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTD01 sp902805805*. The type genome for the species is the GenBank assembly GCA_902805805.1. The GC content of the type genome is 74.49 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Derelella semiditoga sp. nov.

Candidatus Derelella semiditoga (NL. fem. n. *semiditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTD01 sp004299215*. The type genome for the species is the GenBank assembly GCA_004299215.1. The GC content of the type genome is 73.45 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Derelia futatibula sp. nov.

Candidatus Derelia futatibula (NL. fem. n. *futatibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6595 sp002433595*. The type genome for the species is the GenBank assembly GCA_002433595.1. The GC content of the type genome is 44.9 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Derelia gen. nov.

Candidatus Derelia (NL. fem. n. *Derelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6595*. The type species for the genus is *Candidatus* Derelia futatibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dereliaceae.

Description of *Candidatus* Dereliaceae fam. nov.

Candidatus Dereliaceae (NL. fem. n. *Dereliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6595.* The type genus for the taxon is *Candidatus* Derelia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dereliales.

Description of *Candidatus* Dereliales ord. nov.

Candidatus Dereliales (NL. fem. n. *Dereliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6595.* The type genus for the taxon is *Candidatus* Derelia .

According to the GTDB R06-RS202, this order belongs to the class *Marinamargulisbacteria*.

Description of *Candidatus* Derelida biverugo sp. nov.

Candidatus Derelida biverugo (NL. fem. n. *biverugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12158 sp009885205*. The type genome for the species is the GenBank assembly GCA_009885205.1. The GC content of the type genome is 35.58 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Derelida gen. nov.

Candidatus Derelida (NL. fem. n. *Derelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12158*. The type species for the genus is *Candidatus* Derelida biverugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Derelida casabifica sp. nov.

Candidatus Derelida casabifica (NL. fem. n. *casabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12158 sp001873665*. The type genome for the species is the GenBank assembly GCA_002791175.1. The GC content of the type genome is 35.38 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Derelida cisalentia sp. nov.

Candidatus Derelida cisalentia (NL. fem. n. *cisalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12158 sp000989305*. The type genome for the species is the GenBank assembly GCA_000992285.1. The GC content of the type genome is 37.9 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Derelida dilemitura sp. nov.

Candidatus Derelida dilemitura (NL. fem. n. *dilemitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12158 sp002780135*. The type genome for the species is the GenBank assembly GCA_002792215.1. The GC content of the type genome is 40.04 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Derelida eclecitica sp. nov.

Candidatus Derelida eclecitica (NL. fem. n. *eclecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12158 sp002304845*. The type genome for the species is the GenBank assembly GCA_002304845.1. The GC content of the type genome is 38.44 % and the genome length is 0.51 Mbp.

Description of *Candidatus* Derelida pavimitica sp. nov.

Candidatus Derelida pavimitica (NL. fem. n. *pavimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12158 sp002402535*. The type genome for the species is the GenBank assembly GCA_002402535.1. The GC content of the type genome is 36.81 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Derelosa penicifica sp. nov.

Candidatus Derelosa penicifica (NL. fem. n. *penicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10003 sp003514455*. The type genome for the species is the GenBank assembly GCA_000996735.1. The GC content of the type genome is 41.5 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Derelosa gen. nov.

Candidatus Derelosa (NL. fem. n. *Derelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10003*. The type species for the genus is *Candidatus* Derelosa penicifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10003*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derelosaceae.

Description of *Candidatus* Derelosaceae fam. nov.

Candidatus Derelosaceae (NL. fem. n. *Derelosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10003.* The type genus for the taxon is *Candidatus* Derelosa .

According to GTDB R06-RS202, this family belongs to the order *Magasanikbacterales*.

Description of *Candidatus* Derelula cobaledo sp. nov.

Candidatus Derelula cobaledo (NL. fem. n. *cobaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2231 sp003500765*. The type genome for the species is the GenBank assembly GCA_003500765.1. The GC content of the type genome is 62.95 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Derelula gen. nov.

Candidatus Derelula (NL. fem. n. *Derelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2231*. The type species for the genus is *Candidatus* Derelula cobaledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9959*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvidaceae.

Description of *Candidatus* Derelula dilecessa sp. nov.

Candidatus Derelula dilecessa (NL. fem. n. *dilecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2231 sp009773155*. The type genome for the species is the

GenBank assembly GCA_009773155.1. The GC content of the type genome is 62.86 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Derunana culigivita sp. nov.

Candidatus Derunana culigivita (NL. fem. n. *culigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8898 sp002402755*. The type genome for the species is the GenBank assembly GCA_003452155.1. The GC content of the type genome is 69.69 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Derunana gen. nov.

Candidatus Derunana (NL. fem. n. *Derunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8898*. The type species for the genus is *Candidatus* Derunana culigivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8898*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derunanaceae.

Description of *Candidatus* Derunanaceae fam. nov.

Candidatus Derunanaceae (NL. fem. n. *Derunanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8898.* The type genus for the taxon is *Candidatus* Derunana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8890*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sacopariales.

Description of *Candidatus* Derunana licenugo sp. nov.

Candidatus Derunana licenugo (NL. fem. n. *licenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8898 sp002070955*. The type genome for the species is the

GenBank assembly GCA_002070955.1. The GC content of the type genome is 69.29 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Derunaria lupanatica sp. nov.

Candidatus Derunaria lupanatica (NL. fem. n. *lupanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DG-60 sp001304365*. The type genome for the species is the GenBank assembly GCA_001304365.1. The GC content of the type genome is 39.12 % and the genome length is 1.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Methane-rich estuary sediments 52-54 cm".

Description of *Candidatus* Derunaria gen. nov.

Candidatus Derunaria (NL. fem. n. *Derunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DG-60*. The type species for the genus is *Candidatus* Derunaria lupanatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DG-60*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derunariaceae.

Description of *Candidatus* Derunariaceae fam. nov.

Candidatus Derunariaceae (NL. fem. n. *Derunariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DG-60.* The type genus for the taxon is *Candidatus* Derunaria .

According to GTDB R06-RS202, this family belongs to the order *Desulfofervidales*.

Description of *Candidatus* Derunella tirocitoga sp. nov.

Candidatus Derunella tirocitoga (NL. fem. n. *tirocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-39-15 sp002784465*. The type genome for the species is the GenBank assembly GCA_002784465.1. The GC content of the type genome is 39.15

% and the genome length is 0.82 Mbp.

Description of *Candidatus* Derunella gen. nov.

Candidatus Derunella (NL. fem. n. *Derunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-39-15*. The type species for the genus is *Candidatus* Derunella tirocitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-39-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derunellaceae.

Description of *Candidatus* Derunellaceae fam. nov.

Candidatus Derunellaceae (NL. fem. n. *Derunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-39-15.* The type genus for the taxon is *Candidatus* Derunella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UM-FILTER-39-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Derunellales.

Description of *Candidatus* Derunellales ord. nov.

Candidatus Derunellales (NL. fem. n. *Derunellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-39-15.* The type genus for the taxon is *Candidatus* Derunella .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Derunia turilisca sp. nov.

Candidatus Derunia turilisca (NL. fem. n. *turilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-40-17 sp001783145*. The type genome for the species is the

GenBank assembly GCA_001783145.1. The GC content of the type genome is 39.43 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Derunia gen. nov.

Candidatus Derunia (NL. fem. n. *Derunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-40-17*. The type species for the genus is *Candidatus* Derunia turilisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10003*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derelosaceae.

Description of *Candidatus* Derunida urbicitas sp. nov.

Candidatus Derunida urbicitas (NL. fem. n. *urbicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABLXN01 sp013177995*. The type genome for the species is the GenBank assembly GCA_013177995.1. The GC content of the type genome is 45.4 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Derunida gen. nov.

Candidatus Derunida (NL. fem. n. *Derunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABLXN01*. The type species for the genus is *Candidatus* Derunida urbicitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABLXN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derunidaceae.

Description of *Candidatus* Derunidaceae fam. nov.

Candidatus Derunidaceae (NL. fem. n. *Derunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABLXN01.* The type genus for the taxon is *Candidatus* Derunida .

According to GTDB R06-RS202, this family belongs to the order *Brevinematales*.

Description of *Candidatus* Derunosa exhonimonia sp. nov.

Candidatus Derunosa exhonimonia (NL. fem. n. *exhonimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UCB3 sp003576755*. The type genome for the species is the GenBank assembly GCA_003576755.1. The GC content of the type genome is 73.19 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Derunosa gen. nov.

Candidatus Derunosa (NL. fem. n. *Derunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UCB3*. The type species for the genus is *Candidatus* Derunosa exhonimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UCB3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derunosaceae.

Description of *Candidatus* Derunosaceae fam. nov.

Candidatus Derunosaceae (NL. fem. n. *Derunosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UCB3.* The type genus for the taxon is *Candidatus* Derunosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UCB3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Derunosales.

Description of *Candidatus* Derunosales ord. nov.

Candidatus Derunosales (NL. fem. n. *Derunosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UCB3*. The type genus for the taxon is *Candidatus* Derunosa .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Derunula adpacicula sp. nov.

Candidatus Derunula adpacicula (NL. fem. n. *adpacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU013 sp012519745*. The type genome for the species is the GenBank assembly GCA_012519745.1. The GC content of the type genome is 46.66 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Derunula gen. nov.

Candidatus Derunula (NL. fem. n. *Derunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU013*. The type species for the genus is *Candidatus* Derunula adpacicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Derunula decitilenta sp. nov.

Candidatus Derunula decitilenta (NL. fem. n. *decitilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU013 sp012799845*. The type genome for the species is the GenBank assembly GCA_012799845.1. The GC content of the type genome is 49.43 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Derunula desupilenta sp. nov.

Candidatus Derunula desupilenta (NL. fem. n. *desupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU013 sp002386045*. The type genome for the species is the GenBank assembly GCA_012516635.1. The GC content of the type genome is 52.49 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Derunula pepenatica sp. nov.

Candidatus Derunula pepenatica (NL. fem. n. *pepenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU013 sp002385815*. The type genome for the species is the GenBank assembly GCA_001512425.1. The GC content of the type genome is 47.65 % and the genome length is 2.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Desacana deparousia sp. nov.

Candidatus Desacana deparousia (NL. fem. n. *deparousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU029 sp001512435*. The type genome for the species is the GenBank assembly GCA_001512435.1. The GC content of the type genome is 40.24 % and the genome length is 1.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Desacana gen. nov.

Candidatus Desacana (NL. fem. n. *Desacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU029*. The type species for the genus is *Candidatus* Desacana deparousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desacanaceae.

Description of *Candidatus* Desacanaceae fam. nov.

Candidatus Desacanaceae (NL. fem. n. *Desacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *DTU029*. The type genus for the taxon is *Candidatus* Desacana .

According to GTDB R06-RS202, this family belongs to the order *Halanaerobiales*.

Description of *Candidatus* Desacana octodax sp. nov.

Candidatus Desacana octodax (NL. fem. n. *octodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU029 sp012518635*. The type genome for the species is the GenBank assembly GCA_012518635.1. The GC content of the type genome is 42.43 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Desacaria ficediforma sp. nov.

Candidatus Desacaria ficediforma (NL. fem. n. *ficediforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXOY01 sp009839835*. The type genome for the species is the GenBank assembly GCA_009839835.1. The GC content of the type genome is 42.89 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Desacaria gen. nov.

Candidatus Desacaria (NL. fem. n. *Desacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXOY01*. The type species for the genus is *Candidatus* Desacaria ficediforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-38-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifulaceae.

Description of *Candidatus* Desacella detumibra sp. nov.

Candidatus Desacella detumibra (NL. fem. n. *detumibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA919 sp002344425*. The type genome for the species is the

GenBank assembly GCA_002343995.1. The GC content of the type genome is 43.92 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Desacella gen. nov.

Candidatus Desacella (NL. fem. n. *Desacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA919*. The type species for the genus is *Candidatus* Desacella detumibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuriaceae.

Description of *Candidatus* Desacia buxanisca sp. nov.

Candidatus Desacia buxanisca (NL. fem. n. *buxanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7430 sp002478765*. The type genome for the species is the GenBank assembly GCA_002478765.1. The GC content of the type genome is 38.81 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Desacia gen. nov.

Candidatus Desacia (NL. fem. n. *Desacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7430*. The type species for the genus is *Candidatus* Desacia buxanisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7430*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desaciaceae.

Description of *Candidatus* Desaciaceae fam. nov.

Candidatus Desaciaceae (NL. fem. n. *Desaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7430.* The type genus for the taxon is *Candidatus* Desacia .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Desacida detunastra sp. nov.

Candidatus Desacida detunastra (NL. fem. n. *detunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-44-35 sp001822695*. The type genome for the species is the GenBank assembly GCA_001820965.1. The GC content of the type genome is 44.39 % and the genome length is 0.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Desacida gen. nov.

Candidatus Desacida (NL. fem. n. *Desacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-44-35*. The type species for the genus is *Candidatus* Desacida detunastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Desacida effosedo sp. nov.

Candidatus Desacida effosedo (NL. fem. n. *effosedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-44-35 sp000999175*. The type genome for the species is the GenBank assembly GCA_000999175.1. The GC content of the type genome is 43.53 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Desacosa adsulentia sp. nov.

Candidatus Desacosa adsulentia (NL. fem. n. *adsulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG472 sp902761365*. The type genome for the species is the GenBank assembly GCA_902761365.1. The GC content of the type genome is 61.06 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Desacosa gen. nov.

Candidatus Desacosa (NL. fem. n. *Desacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG472*. The type species for the genus is *Candidatus* Desacosa adsulentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Desacosa ammulilenta sp. nov.

Candidatus Desacosa ammulilenta (NL. fem. n. *ammulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG472 sp902802575*. The type genome for the species is the GenBank assembly GCA_902802575.1. The GC content of the type genome is 60.12 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Desacosa attelibula sp. nov.

Candidatus Desacosa attelibula (NL. fem. n. *attelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG472 sp902786465*. The type genome for the species is the GenBank assembly GCA_902786465.1. The GC content of the type genome is 61.62 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Desacosa cohonicula sp. nov.

Candidatus Desacosa cohonicula (NL. fem. n. *cohonicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RUG472 sp902768995*. The type genome for the species is the GenBank assembly GCA_902768015.1. The GC content of the type genome is 62.52 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Desacosa cunabicula sp. nov.

Candidatus Desacosa cunabicula (NL. fem. n. *cunabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG472 sp902801845*. The type genome for the species is the GenBank assembly GCA_902801845.1. The GC content of the type genome is 60.13 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Desacosa decitigena sp. nov.

Candidatus Desacosa decitigena (NL. fem. n. *decitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG472 sp900545265*. The type genome for the species is the GenBank assembly RS_GCF_900759255.1. The GC content of the type genome is 54.2 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Desacosa defulivita sp. nov.

Candidatus Desacosa defulivita (NL. fem. n. *defulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG472 sp900319345*. The type genome for the species is the GenBank assembly GCA_002350935.1. The GC content of the type genome is 60.86 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Desacosa indupitrix sp. nov.

Candidatus Desacosa indupitrix (NL. fem. n. *indupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG472 sp902802805*. The type genome for the species is the GenBank assembly GCA_902802805.1. The GC content of the type genome is 61.15 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Desacosa necopatio sp. nov.

Candidatus Desacosa necopatio (NL. fem. n. *necopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG472 sp902798825*. The type genome for the species is the GenBank assembly GCA_902798825.1. The GC content of the type genome is 60.96 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Desacosa rutabax sp. nov.

Candidatus Desacosa rutabax (NL. fem. n. *rutabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG472 sp902765005*. The type genome for the species is the GenBank assembly GCA_902765005.1. The GC content of the type genome is 60.9 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Desacula abhinitas sp. nov.

Candidatus Desacula abhinitas (NL. fem. n. *abhinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001783355*. The type genome for the species is the GenBank assembly GCA_001783355.1. The GC content of the type genome is 53.94 % and the genome length is 0.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Desacula gen. nov.

Candidatus Desacula (NL. fem. n. *Desacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10103*. The type species for the genus is *Candidatus* Desacula abhinitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Desacula adtubedo sp. nov.

Candidatus Desacula adtubedo (NL. fem. n. *adtubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp003164215*. The type genome for the species is the GenBank assembly GCA_003164215.1. The GC content of the type genome is 53.45 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Desacula anagnimonas sp. nov.

Candidatus Desacula anagnimonas (NL. fem. n. *anagnimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp002773285*. The type genome for the species is the GenBank assembly GCA_002773285.1. The GC content of the type genome is 58.55 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Desacula annifetta sp. nov.

Candidatus Desacula annifetta (NL. fem. n. *annifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp009924895*. The type genome for the species is the GenBank assembly GCA_009924895.1. The GC content of the type genome is 47.16 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Desacula arcebessa sp. nov.

Candidatus Desacula arcebessa (NL. fem. n. *arcebessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001781275*. The type genome for the species is the GenBank assembly GCA_001781275.1. The GC content of the type genome is 53.99 % and the genome length is 0.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Desacula benevugo sp. nov.

Candidatus Desacula benevugo (NL. fem. n. *benevugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001781335*. The type genome for the species is the GenBank assembly GCA_001781335.1. The GC content of the type genome is 55.18 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Desacula bovicitoga sp. nov.

Candidatus Desacula bovicitoga (NL. fem. n. *bovicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp903858755*. The type genome for the species is the GenBank assembly GCA_903858755.1. The GC content of the type genome is 56.99 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Desacula cepuritica sp. nov.

Candidatus Desacula cepuritica (NL. fem. n. *cepuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp903881205*. The type genome for the species is the GenBank assembly GCA_903881205.1. The GC content of the type genome is 53.95 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Desacula cocibitrix sp. nov.

Candidatus Desacula cocibitrix (NL. fem. n. *cocibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001781465*. The type genome for the species is the GenBank assembly GCA_001781465.1. The GC content of the type genome is 48.45 % and the genome length is 0.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Desacula cohuritoga sp. nov.

Candidatus Desacula cohuritoga (NL. fem. n. *cohuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp007375785*. The type genome for the species is the GenBank assembly GCA_007375785.1. The GC content of the type genome is 54.2 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Desacula curotetta sp. nov.

Candidatus Desacula curotetta (NL. fem. n. *curotetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp007376385*. The type genome for the species is the GenBank assembly GCA_007376385.1. The GC content of the type genome is 49.96 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Desacula daducibula sp. nov.

Candidatus Desacula daducibula (NL. fem. n. *daducibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp003545515*. The type genome for the species is the GenBank assembly GCA_001003805.1. The GC content of the type genome is 50.14 % and the genome length is 0.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Desacula demagicula sp. nov.

Candidatus Desacula demagicula (NL. fem. n. *demagicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001781685*. The type genome for the species is the GenBank assembly GCA_001781685.1. The GC content of the type genome is 53.95 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Desacula demigiforma sp. nov.

Candidatus Desacula demigiforma (NL. fem. n. *demigiforma* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001781555*. The type genome for the species is the GenBank assembly GCA_001781555.1. The GC content of the type genome is 52.62 % and the genome length is 0.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Desacula desurilega sp. nov.

Candidatus Desacula desurilega (NL. fem. n. *desurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001781445*. The type genome for the species is the GenBank assembly GCA_001781795.1. The GC content of the type genome is 58.48 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Desacula faticedo sp. nov.

Candidatus Desacula faticedo (NL. fem. n. *faticedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp003599295*. The type genome for the species is the GenBank assembly GCA_003599295.1. The GC content of the type genome is 54.22 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Desacula grallilega sp. nov.

Candidatus Desacula grallilega (NL. fem. n. *grallilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001004345*. The type genome for the species is the GenBank assembly GCA_001004345.1. The GC content of the type genome is 51.99 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Desacula incocivita sp. nov.

Candidatus Desacula incocivita (NL. fem. n. *incocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp903854215*. The type genome for the species is the GenBank assembly GCA_903854215.1. The GC content of the type genome is 50.98 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Desacula insubibula sp. nov.

Candidatus Desacula insubibula (NL. fem. n. *insubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001004265*. The type genome for the species is the GenBank assembly GCA_001004265.1. The GC content of the type genome is 51.56 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Desacula intecago sp. nov.

Candidatus Desacula intecago (NL. fem. n. *intecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001781125*. The type genome for the species is the GenBank assembly GCA_001781125.1. The GC content of the type genome is 53.47 % and the genome length is 1.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Desacula manubimonas sp. nov.

Candidatus Desacula manubimonas (NL. fem. n. *manubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001781175*. The type genome for the species is the GenBank assembly GCA_001781175.1. The GC content of the type genome is 54.9 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Desacula meridifica sp. nov.

Candidatus Desacula meridifica (NL. fem. n. *meridifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001781105*. The type genome for the species is the GenBank assembly GCA_001781105.1. The GC content of the type genome is 53.81 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Desacula oblocentia sp. nov.

Candidatus Desacula oblocentia (NL. fem. n. *oblocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp003599175*. The type genome for the species is the GenBank assembly GCA_003599175.1. The GC content of the type genome is 52.46 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Desacula refacedo sp. nov.

Candidatus Desacula refacedo (NL. fem. n. *refacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp001783335*. The type genome for the species is the GenBank assembly GCA_001783335.1. The GC content of the type genome is 50.42 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Desacula timefugo sp. nov.

Candidatus Desacula timefugo (NL. fem. n. *timefugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10103 sp903824595*. The type genome for the species is the GenBank assembly GCA_903832655.1. The GC content of the type genome is 51.22 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Desepana dicabimonas sp. nov.

Candidatus Desepana dicabimonas (NL. fem. n. *dicabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5239 sp002408885*. The type genome for the species is the GenBank assembly GCA_002408885.1. The GC content of the type genome is 55.59 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Desepana gen. nov.

Candidatus Desepana (NL. fem. n. *Desepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5239*. The type species for the genus is *Candidatus* Desepana dicabimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desepella depopisca sp. nov.

Candidatus Desepella depopisca (NL. fem. n. *depopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUNB01 sp003552565*. The type genome for the species is the GenBank assembly GCA_003552565.1. The GC content of the type genome is 52.2 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Desepella gen. nov.

Candidatus Desepella (NL. fem. n. *Desepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUNB01*. The type species for the genus is *Candidatus* Desepella depopisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUNB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desepellaceae.

Description of *Candidatus* Desepellaceae fam. nov.

Candidatus Desepellaceae (NL. fem. n. *Desepellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PUNB01.* The type genus for the taxon is *Candidatus* Desepella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semilidales.

Description of *Candidatus* Desepia rudecigena sp. nov.

Candidatus Desepia rudecigena (NL. fem. n. *rudecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J057 sp003696835*. The type genome for the species is the GenBank assembly GCA_003696835.1. The GC content of the type genome is 53.47 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Desepia gen. nov.

Candidatus Desepia (NL. fem. n. *Desepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J057*. The type species for the genus is *Candidatus* Desepia rudecigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J057*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desepiaceae.

Description of *Candidatus* Desepiaceae fam. nov.

Candidatus Desepiaceae (NL. fem. n. *Desepiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J057.* The type genus for the taxon is *Candidatus* Desepia .

According to the original version of GTDB R06-RS202, this family belongs to the order *J057*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desepiales.

Description of *Candidatus* Desepiales ord. nov.

Candidatus Desepiales (NL. fem. n. *Desepiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J057.* The type genus for the taxon is *Candidatus* Desepia .

According to the GTDB R06-RS202, this order belongs to the class *Bacteroidia*.

Description of *Candidatus* Desepida colipax sp. nov.

Candidatus Desepida colipax (NL. fem. n. *colipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKGQ01 sp007117515*. The type genome for the species is the GenBank assembly GCA_007117515.1. The GC content of the type genome is 62.95 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Desepida gen. nov.

Candidatus Desepida (NL. fem. n. *Desepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKGQ01*. The type species for the genus is *Candidatus* Desepida colipax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desepida panopitoga sp. nov.

Candidatus Desepida panopitoga (NL. fem. n. *panopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKGQ01 sp003565775*. The type genome for the species is the GenBank assembly GCA_007129115.1. The GC content of the type genome is 64.42 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Deseposa fefelago sp. nov.

Candidatus Deseposa fefelago (NL. fem. n. *fefelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6176 sp903925515*. The type genome for the species is the GenBank assembly GCA_903861805.1. The GC content of the type genome is 67.76 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Deseposa gen. nov.

Candidatus Deseposa (NL. fem. n. *Deseposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6176*. The type species for the genus is *Candidatus* Deseposa fefelago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9464*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilariaceae.

Description of *Candidatus* Deseposa ossicibula sp. nov.

Candidatus Deseposa ossicibula (NL. fem. n. *ossicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6176 sp008933025*. The type genome for the species is the GenBank assembly GCA_008933025.1. The GC content of the type genome is 67.77 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Deseposa sepositio sp. nov.

Candidatus Deseposa sepositio (NL. fem. n. *sepositio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6176 sp002422905*. The type genome for the species is the GenBank assembly GCA_002422905.1. The GC content of the type genome is 63.13 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Deseposa vitupax sp. nov.

Candidatus Deseposa vitupax (NL. fem. n. *vitupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6176 sp903880005*. The type genome for the species is the GenBank assembly GCA_903838715.1. The GC content of the type genome is 67.27 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Deseposa vocamousia sp. nov.

Candidatus Deseposa vocamousia (NL. fem. n. *vocamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6176 sp903842505*. The type genome for the species is the GenBank assembly GCA_903842505.1. The GC content of the type genome is 64.66 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Desepula tegimitrix sp. nov.

Candidatus Desepula tegimitrix (NL. fem. n. *tegimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11792 sp902772645*. The type genome for the species is the GenBank assembly GCA_902772645.1. The GC content of the type genome is 26.37 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Desepula gen. nov.

Candidatus Desepula (NL. fem. n. *Desepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11792*. The type species for the genus is *Candidatus* Desepula tegimitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RUG11792*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desepulaceae.

Description of *Candidatus* Desepulaceae fam. nov.

Candidatus Desepulaceae (NL. fem. n. *Desepulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG11792.* The type genus for the taxon is *Candidatus* Desepula .

According to the original version of GTDB R06-RS202, this family belongs to the order *RUG11792*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desepulales.

Description of *Candidatus* Desepulales ord. nov.

Candidatus Desepulales (NL. fem. n. *Desepulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG11792.* The type genus for the taxon is *Candidatus* Desepula .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Desertiactinospora adfunimonas sp. nov.

Candidatus Desertiactinospora adfunimonas (NL. fem. n. *adfunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desertiactinospora sp003315795*. The type genome for the species is the GenBank assembly RS_GCF_003315795.1. The GC content of the type genome is 70.85 % and the genome length is 9.81 Mbp.

Description of *Candidatus* Desertifilum assucatio sp. nov.

Candidatus Desertifilum assucatio (NL. fem. n. *assucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desertifilum sp001746915*. The type genome for the species is the GenBank assembly RS_GCF_001746915.1. The GC content of the type genome is 48.68 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Desomana desupitudo sp. nov.

Candidatus Desomana desupitudo (NL. fem. n. *desupitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11717 sp003509895*. The type genome for the species is the GenBank assembly GCA_003509895.1. The GC content of the type genome is 48.74 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Desomana gen. nov.

Candidatus Desomana (NL. fem. n. *Desomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11717*. The type species for the genus is *Candidatus* Desomana desupitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11717*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desomanaceae.

Description of *Candidatus* Desomanaceae fam. nov.

Candidatus Desomanaceae (NL. fem. n. *Desomanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11717*. The type genus for the taxon is *Candidatus* Desomana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Desomana inexpifica sp. nov.

Candidatus Desomana inexpifica (NL. fem. n. *inexpifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11717 sp002774875*. The type genome for the species is the GenBank assembly GCA_002774875.1. The GC content of the type genome is 49.51 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Desomaria apercibula sp. nov.

Candidatus Desomaria apercibula (NL. fem. n. *apercibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002720895 sp002711715*. The type genome for the species is the GenBank assembly GCA_002711715.1. The GC content of the type genome is 26.43 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Desomaria gen. nov.

Candidatus Desomaria (NL. fem. n. *Desomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002720895*. The type species for the genus is *Candidatus* Desomaria apercibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002720895*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desomariaceae.

Description of *Candidatus* Desomariaceae fam. nov.

Candidatus Desomariaceae (NL. fem. n. *Desomariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002720895.* The type genus for the taxon is *Candidatus* Desomaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-002720895*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desomariales.

Description of *Candidatus* Desomariales ord. nov.

Candidatus Desomariales (NL. fem. n. *Desomariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002720895.* The type genus for the taxon is *Candidatus* Desomaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Desomaria bicoditura sp. nov.

Candidatus Desomaria bicoditura (NL. fem. n. *bicoditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002720895 sp002717245*. The type genome for the species is the GenBank assembly GCA_002937755.1. The GC content of the type genome is 25.74 %

and the genome length is 0.92 Mbp.

Description of *Candidatus* Desomaria hibisitura sp. nov.

Candidatus Desomaria hibisitura (NL. fem. n. *hibisitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002720895 sp002937775*. The type genome for the species is the GenBank assembly GCA_002937795.1. The GC content of the type genome is 26.65 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Desomaria indifago sp. nov.

Candidatus Desomaria indifago (NL. fem. n. *indifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002720895 sp902607475*. The type genome for the species is the GenBank assembly GCA_902607475.1. The GC content of the type genome is 26.78 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Desomaria lutulax sp. nov.

Candidatus Desomaria lutulax (NL. fem. n. *lutulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002720895 sp002720895*. The type genome for the species is the GenBank assembly GCA_002720895.1. The GC content of the type genome is 26.48 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Desomella pepenicella sp. nov.

Candidatus Desomella pepenicella (NL. fem. n. *pepenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PEYW01 sp002774225*. The type genome for the species is the GenBank assembly GCA_002774225.1. The GC content of the type genome is 42.71 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Desomella gen. nov.

Candidatus Desomella (NL. fem. n. *Desomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PEYW01*. The type species for the genus is *Candidatus* Desomella pepenicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PEYW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desomellaceae.

Description of *Candidatus* Desomellaceae fam. nov.

Candidatus Desomellaceae (NL. fem. n. *Desomellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PEYW01.* The type genus for the taxon is *Candidatus* Desomella .

According to the original version of GTDB R06-RS202, this family belongs to the order *PEYW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desomellales.

Description of *Candidatus* Desomellales ord. nov.

Candidatus Desomellales (NL. fem. n. *Desomellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PEYW01.* The type genus for the taxon is *Candidatus* Desomella .

According to the original version of GTDB R06-RS202, this family belongs to the class *WWE3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Veridulae.

Description of *Candidatus* Desomia invetitas sp. nov.

Candidatus Desomia invetitas (NL. fem. n. *invetitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTZQ01 sp012961305*. The type genome for the species is the GenBank assembly GCA_012961305.1. The GC content of the type genome is 60.37 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Desomia gen. nov.

Candidatus Desomia (NL. fem. n. *Desomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTZQ01*. The type species for the genus is *Candidatus* Desomia invetitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTZQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desomiaceae.

Description of *Candidatus* Desomiaceae fam. nov.

Candidatus Desomiaceae (NL. fem. n. *Desomiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTZQ01.* The type genus for the taxon is *Candidatus* Desomia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10988*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resalulales.

Description of *Candidatus* Desomida binocicella sp. nov.

Candidatus Desomida binocicella (NL. fem. n. *binocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCQA01 sp004298725*. The type genome for the species is the GenBank assembly GCA_004298725.1. The GC content of the type genome is 48.87 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Desomida gen. nov.

Candidatus Desomida (NL. fem. n. *Desomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCQA01*. The type species for the genus is *Candidatus* Desomida binocicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCQA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Desomidaceae.

Description of *Candidatus* Desomidaceae fam. nov.

Candidatus Desomidaceae (NL. fem. n. *Desomidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCQA01*. The type genus for the taxon is *Candidatus* Desomida .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabifellales.

Description of *Candidatus* Desomosa accucitas sp. nov.

Candidatus Desomosa accucitas (NL. fem. n. *accucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp001603505*. The type genome for the species is the GenBank assembly GCA_001603505.1. The GC content of the type genome is 57.96 % and the genome length is 1.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Desomosa gen. nov.

Candidatus Desomosa (NL. fem. n. *Desomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bact-11*. The type species for the genus is *Candidatus* Desomosa accucitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Desomosa adalgitio sp. nov.

Candidatus Desomosa adalgitio (NL. fem. n. *adalgitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp012798805*. The type genome for the species is the GenBank assembly GCA_012798805.1. The GC content of the type genome is 44.29 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Desomosa ambecilega sp. nov.

Candidatus Desomosa ambecilega (NL. fem. n. *ambecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp012511975*. The type genome for the species is the GenBank assembly GCA_012511975.1. The GC content of the type genome is 44.58 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Desomosa aprugiforma sp. nov.

Candidatus Desomosa aprugiforma (NL. fem. n. *aprugiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp002376715*. The type genome for the species is the GenBank assembly GCA_002376715.1. The GC content of the type genome is 45.05 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Desomosa apsorilega sp. nov.

Candidatus Desomosa apsorilega (NL. fem. n. *apsorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp902784965*. The type genome for the species is the GenBank assembly GCA_902784965.1. The GC content of the type genome is 58.36 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Desomosa atricilenta sp. nov.

Candidatus Desomosa atricilenta (NL. fem. n. *atricilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp002305275*. The type genome for the species is the GenBank assembly GCA_002305275.1. The GC content of the type genome is 44.28 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Desomosa cerarifica sp. nov.

Candidatus Desomosa cerarifica (NL. fem. n. *cerarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp002309795*. The type genome for the species is the GenBank assembly GCA_002309795.1. The GC content of the type genome is 58.35 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Desomosa curotimonia sp. nov.

Candidatus Desomosa curotimonia (NL. fem. n. *curotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp012728975*. The type genome for the species is the GenBank assembly GCA_012728975.1. The GC content of the type genome is 44.12 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Desomosa dilemitio sp. nov.

Candidatus Desomosa dilemitio (NL. fem. n. *dilemitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp902778855*. The type genome for the species is the GenBank assembly GCA_902761005.1. The GC content of the type genome is 60.21 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Desomosa emancifica sp. nov.

Candidatus Desomosa emancifica (NL. fem. n. *emancifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp002314725*. The type genome for the species is the GenBank assembly GCA_002314725.1. The GC content of the type genome is 40.2 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Desomosa maxilitoga sp. nov.

Candidatus Desomosa maxilitoga (NL. fem. n. *maxilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp902773925*. The type genome for the species is the GenBank assembly GCA_902773925.1. The GC content of the type genome is 55.05 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Desomosa minuratio sp. nov.

Candidatus Desomosa minuratio (NL. fem. n. *minuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp902789445*. The type genome for the species is the GenBank assembly GCA_902789445.1. The GC content of the type genome is 58.63 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Desomosa vinoliforma sp. nov.

Candidatus Desomosa vinoliforma (NL. fem. n. *vinoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp002361615*. The type genome for the species is the GenBank assembly GCA_902799595.1. The GC content of the type genome is 57.56 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Desomosa volunedo sp. nov.

Candidatus Desomosa volunedo (NL. fem. n. *volunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-11 sp001602845*. The type genome for the species is the GenBank assembly GCA_001602845.1. The GC content of the type genome is 58.58 % and the genome length is 2.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Desomula semunetta sp. nov.

Candidatus Desomula semunetta (NL. fem. n. *semunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin01 sp011682695*. The type genome for the species is the GenBank assembly GCA_011682695.1. The GC content of the type genome is 63.25 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Desomula gen. nov.

Candidatus Desomula (NL. fem. n. *Desomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Bbin01*. The type species for the genus is *Candidatus* Desomula semunetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4744*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rinoculaceae.

Description of *Candidatus* Desomula tenemitio sp. nov.

Candidatus Desomula tenemitio (NL. fem. n. *tenemitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin01 sp013152275*. The type genome for the species is the GenBank assembly GCA_013152275.1. The GC content of the type genome is 63.81 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Desomula vinacitudo sp. nov.

Candidatus Desomula vinacitudo (NL. fem. n. *vinacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin01 sp002897675*. The type genome for the species is the GenBank assembly GCA_002897675.1. The GC content of the type genome is 63.95 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Desonana benepibra sp. nov.

Candidatus Desonana benepibra (NL. fem. n. *benepibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQIA01 sp903871775*. The type genome for the species is the GenBank assembly GCA_903834295.1. The GC content of the type genome is 69.61 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Desonana gen. nov.

Candidatus Desonana (NL. fem. n. *Desonana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQIA01*. The type species for the genus is *Candidatus* Desonana benepibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desonaria denecessa sp. nov.

Candidatus Desonaria denecessa (NL. fem. n. *denecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11361 sp005880425*. The type genome for the species is the GenBank assembly GCA_005880425.1. The GC content of the type genome is 52.15 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Desonaria gen. nov.

Candidatus Desonaria (NL. fem. n. *Desonaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11361*. The type species for the genus is *Candidatus* Desonaria denecessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desonaria dereliforma sp. nov.

Candidatus Desonaria dereliforma (NL. fem. n. *dereliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11361 sp005881495*. The type genome for the species is the GenBank assembly GCA_005881495.1. The GC content of the type genome is 53.29 %

and the genome length is 6.58 Mbp.

Description of *Candidatus* Desonaria mavoratio sp. nov.

Candidatus Desonaria mavoratio (NL. fem. n. *mavoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11361 sp001920235*. The type genome for the species is the GenBank assembly GCA_001920235.1. The GC content of the type genome is 53.73 % and the genome length is 3.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 20cm depth; 6 days after first rain event (27mm)".

Description of *Candidatus* Desonaria semibicella sp. nov.

Candidatus Desonaria semibicella (NL. fem. n. *semibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11361 sp001919995*. The type genome for the species is the GenBank assembly GCA_001919995.1. The GC content of the type genome is 53.47 % and the genome length is 2.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 20cm depth; 2 days after second rain event (91mm)".

Description of *Candidatus* Desonaria tolutax sp. nov.

Candidatus Desonaria tolutax (NL. fem. n. *tolutax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11361 sp005880595*. The type genome for the species is the GenBank assembly GCA_005880595.1. The GC content of the type genome is 52.55 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Desonaria vehemastra sp. nov.

Candidatus Desonaria vehemastra (NL. fem. n. *vehemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11361 sp005881295*. The type genome for the species is the GenBank assembly GCA_005881515.1. The GC content of the type genome is 52.94 %

and the genome length is 4.21 Mbp.

Description of *Candidatus* Desonella ambecitoga sp. nov.

Candidatus Desonella ambecitoga (NL. fem. n. *ambecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AABM5-125-24 sp002127415*. The type genome for the species is the GenBank assembly GCA_002127415.1. The GC content of the type genome is 55.8 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Desonella gen. nov.

Candidatus Desonella (NL. fem. n. *Desonella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AABM5-125-24*. The type species for the genus is *Candidatus* Desonella ambecitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AABM5-125-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desonellaceae.

Description of *Candidatus* Desonellaceae fam. nov.

Candidatus Desonellaceae (NL. fem. n. *Desonellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AABM5-125-24.* The type genus for the taxon is *Candidatus* Desonella .

According to the original version of GTDB R06-RS202, this family belongs to the order *AABM5-125-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desonellales.

Description of *Candidatus* Desonellales ord. nov.

Candidatus Desonellales (NL. fem. n. *Desonellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AABM5-125-24.* The type genus for the taxon is *Candidatus* Desonella .

According to the original version of GTDB R06-RS202, this family belongs to the class

AABM5-125-24. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Desonellae.

Description of *Candidatus* Desonellae class. nov.

Candidatus Desonellae (NL. fem. n. *c__Desonellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AABM5-125-24.* The type genus for the taxon is *Candidatus* Desonella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *AABM5-125-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Desonellota.

Description of *Candidatus* Desonellota phyl. nov.

Candidatus Desonellota (NL. fem. n. *Desonellota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AABM5-125-24.* The type genus for the taxon is *Candidatus* Desonella .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Desonia detenitio sp. nov.

Candidatus Desonia detenitio (NL. fem. n. *detenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-671 sp003166025*. The type genome for the species is the GenBank assembly GCA_003158015.1. The GC content of the type genome is 67.34 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Desonia gen. nov.

Candidatus Desonia (NL. fem. n. *Desonia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-671*. The type species for the genus is *Candidatus* Desonia detenitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-688*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Attubulaceae.

Description of *Candidatus* Desonia locupitoga sp. nov.

Candidatus Desonia locupitoga (NL. fem. n. *locupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-671 sp003158835*. The type genome for the species is the GenBank assembly GCA_003158835.1. The GC content of the type genome is 67.86 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Desonida favilousia sp. nov.

Candidatus Desonida favilousia (NL. fem. n. *favilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CR02bin9 sp004356555*. The type genome for the species is the GenBank assembly GCA_004356535.1. The GC content of the type genome is 40.37 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Desonida gen. nov.

Candidatus Desonida (NL. fem. n. *Desonida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CR02bin9*. The type species for the genus is *Candidatus* Desonida favilousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2774*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siligiaceae.

Description of *Candidatus* Desonida inpinicula sp. nov.

Candidatus Desonida inpinicula (NL. fem. n. *inpinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CR02bin9 sp004525335*. The type genome for the species is the GenBank assembly GCA_004525335.1. The GC content of the type genome is 39.9 %

and the genome length is 2.29 Mbp.

Description of *Candidatus* Desonosa adsudimonia sp. nov.

Candidatus Desonosa adsudimonia (NL. fem. n. *adsudimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-14 sp005888325*. The type genome for the species is the GenBank assembly GCA_005888325.1. The GC content of the type genome is 70.28 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Desonosa gen. nov.

Candidatus Desonosa (NL. fem. n. *Desonosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-14*. The type species for the genus is *Candidatus* Desonosa adsudimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AC-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desonosaceae.

Description of *Candidatus* Desonosaceae fam. nov.

Candidatus Desonosaceae (NL. fem. n. *Desonosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AC-14.* The type genus for the taxon is *Candidatus* Desonosa .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Desonula camilibula sp. nov.

Candidatus Desonula camilibula (NL. fem. n. *camilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6985 sp002450035*. The type genome for the species is the GenBank assembly GCA_002450035.1. The GC content of the type genome is 28.33 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Desonula gen. nov.

Candidatus Desonula (NL. fem. n. *Desonula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6985*. The type species for the genus is *Candidatus* Desonula camilibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Desonula petulibra sp. nov.

Candidatus Desonula petulibra (NL. fem. n. *petulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6985 sp900314465*. The type genome for the species is the GenBank assembly GCA_902803955.1. The GC content of the type genome is 24.96 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Desoraria apporivita sp. nov.

Candidatus Desoraria apporivita (NL. fem. n. *apporivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1018 sp002291495*. The type genome for the species is the GenBank assembly GCA_002291495.1. The GC content of the type genome is 45.97 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Desoraria gen. nov.

Candidatus Desoraria (NL. fem. n. *Desoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1018*. The type species for the genus is *Candidatus* Desoraria apporivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Desorariaceae fam. nov.

Candidatus Desorariaceae (NL. fem. n. *Desorariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1018.* The type genus for the taxon is *Candidatus* Desoraria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desorariales.

Description of *Candidatus* Desorariales ord. nov.

Candidatus Desorariales (NL. fem. n. *Desorariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1018.* The type genus for the taxon is *Candidatus* Desoraria .

According to the GTDB R06-RS202, this order belongs to the class *Bdellovibrionia_A*.

Description of *Candidatus* Desoraria manibibra sp. nov.

Candidatus Desoraria manibibra (NL. fem. n. *manibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1018 sp014378465*. The type genome for the species is the GenBank assembly GCA_014378465.1. The GC content of the type genome is 54.74 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Desorida biverago sp. nov.

Candidatus Desorida biverago (NL. fem. n. *biverago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10170 sp001798165*. The type genome for the species is the GenBank assembly GCA_001797355.1. The GC content of the type genome is 42.64 % and the genome length is 2.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Desorida gen. nov.

Candidatus Desorida (NL. fem. n. *Desorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10170*. The type species for the genus is *Candidatus* Desorida biverago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9637*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarulaceae.

Description of *Candidatus* Desorosa colopisca sp. nov.

Candidatus Desorosa colopisca (NL. fem. n. *colopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1362 sp003170415*. The type genome for the species is the GenBank assembly GCA_003170415.1. The GC content of the type genome is 49.79 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Desorosa gen. nov.

Candidatus Desorosa (NL. fem. n. *Desorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1362*. The type species for the genus is *Candidatus* Desorosa colopisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Desorosa infabifica sp. nov.

Candidatus Desorosa infabifica (NL. fem. n. *infabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1362 sp003141275*. The type genome for the species is the GenBank assembly GCA_003141275.1. The GC content of the type genome is 49.22 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Desorosa letifica sp. nov.

Candidatus Desorosa letifica (NL. fem. n. *letifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1362 sp903857265*. The type genome for the species is the GenBank assembly GCA_903945645.1. The GC content of the type genome is 49.22 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Desorula exsufatica sp. nov.

Candidatus Desorula exsufatica (NL. fem. n. *exsufatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIX01 sp012800515*. The type genome for the species is the GenBank assembly GCA_012800515.1. The GC content of the type genome is 54.44 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Desorula gen. nov.

Candidatus Desorula (NL. fem. n. *Desorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZIX01*. The type species for the genus is *Candidatus* Desorula exsufatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desorula turilimonas sp. nov.

Candidatus Desorula turilimonas (NL. fem. n. *turilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIX01 sp012800655*. The type genome for the species is the GenBank assembly GCA_012800655.1. The GC content of the type genome is 53.27 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Desucana vehemitio sp. nov.

Candidatus Desucana vehemitio (NL. fem. n. *vehemitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1254 sp003162695*. The type genome for the species is the GenBank assembly GCA_003136015.1. The GC content of the type genome is 46.18 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Desucana gen. nov.

Candidatus Desucana (NL. fem. n. *Desucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1254*. The type species for the genus is *Candidatus* Desucana vehemitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabanaceae.

Description of *Candidatus* Desucaria appacibra sp. nov.

Candidatus Desucaria appacibra (NL. fem. n. *appacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp011331705*. The type genome for the species is the GenBank assembly GCA_011331705.1. The GC content of the type genome is 41.71 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Desucaria gen. nov.

Candidatus Desucaria (NL. fem. n. *Desucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JJ008*. The type species for the genus is *Candidatus* Desucaria appacibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desucaria bicubitura sp. nov.

Candidatus Desucaria bicubitura (NL. fem. n. *bicubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp005791465*. The type genome for the species is the GenBank assembly GCA_005799805.1. The GC content of the type genome is 41.77 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Desucaria culibitia sp. nov.

Candidatus Desucaria culibitia (NL. fem. n. *culibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp002342205*. The type genome for the species is the GenBank assembly GCA_003452805.1. The GC content of the type genome is 40.37 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Desucaria depocitica sp. nov.

Candidatus Desucaria depocitica (NL. fem. n. *depocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp002352145*. The type genome for the species is the GenBank assembly GCA_002352145.1. The GC content of the type genome is 41.71 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Desucaria derelibra sp. nov.

Candidatus Desucaria derelibra (NL. fem. n. *derelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp002378975*. The type genome for the species is the GenBank assembly GCA_002378975.1. The GC content of the type genome is 49.62 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Desucaria diponigena sp. nov.

Candidatus Desucaria diponigena (NL. fem. n. *diponigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp001464625*. The type genome for the species is the GenBank assembly GCA_001464625.1. The GC content of the type genome is 38.06 % and the

genome length is 4.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Desucaria exurrimonas sp. nov.

Candidatus Desucaria exurrimonas (NL. fem. n. *exurrimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp002400415*. The type genome for the species is the GenBank assembly GCA_002400415.1. The GC content of the type genome is 43.29 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Desucaria homilitio sp. nov.

Candidatus Desucaria homilitio (NL. fem. n. *homilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp903879995*. The type genome for the species is the GenBank assembly GCA_903879995.1. The GC content of the type genome is 41.7 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Desucaria inoccatio sp. nov.

Candidatus Desucaria inoccatio (NL. fem. n. *inoccatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp002069045*. The type genome for the species is the GenBank assembly GCA_002069045.1. The GC content of the type genome is 38.39 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Desucaria lanigitia sp. nov.

Candidatus Desucaria lanigitia (NL. fem. n. *lanigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp005789565*. The type genome for the species is the GenBank assembly GCA_005789565.1. The GC content of the type genome is 52.41 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Desucaria lugubigena sp. nov.

Candidatus Desucaria lugubigena (NL. fem. n. *lugubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp902826165*. The type genome for the species is the GenBank assembly GCA_902826165.1. The GC content of the type genome is 43.12 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Desucaria panopetta sp. nov.

Candidatus Desucaria panopetta (NL. fem. n. *panopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp013140985*. The type genome for the species is the GenBank assembly GCA_013140985.1. The GC content of the type genome is 40.52 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Desucaria parocivita sp. nov.

Candidatus Desucaria parocivita (NL. fem. n. *parocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp003489485*. The type genome for the species is the GenBank assembly GCA_003489485.1. The GC content of the type genome is 48.44 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Desucaria podagitia sp. nov.

Candidatus Desucaria podagitia (NL. fem. n. *podagitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp014190475*. The type genome for the species is the GenBank assembly GCA_014190475.1. The GC content of the type genome is 42.0 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Desucaria tirunastra sp. nov.

Candidatus Desucaria tirunastra (NL. fem. n. *tirunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JJ008 sp002127295*. The type genome for the species is the GenBank assembly RS_GCF_002127295.1. The GC content of the type genome is 38.36 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Desucella badititoga sp. nov.

Candidatus Desucella badititoga (NL. fem. n. *badititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1234 sp900753135*. The type genome for the species is the GenBank assembly RS_GCF_900753135.1. The GC content of the type genome is 30.88 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Desucella gen. nov.

Candidatus Desucella (NL. fem. n. *Desucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1234*. The type species for the genus is *Candidatus* Desucella badititoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1234*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desucellaceae.

Description of *Candidatus* Desucellaceae fam. nov.

Candidatus Desucellaceae (NL. fem. n. *Desucellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1234.* The type genus for the taxon is *Candidatus* Desucella .

According to the original version of GTDB R06-RS202, this family belongs to the order *TANB77*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dupuniales.

Description of *Candidatus* Desucella excoratica sp. nov.

Candidatus Desucella excoratica (NL. fem. n. *excoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1234 sp002308995*. The type genome for the species is the GenBank assembly GCA_002308995.1. The GC content of the type genome is 35.51 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Desucella lucelitia sp. nov.

Candidatus Desucella lucelitia (NL. fem. n. *lucelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1234 sp002404755*. The type genome for the species is the GenBank assembly GCA_002404755.1. The GC content of the type genome is 31.22 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Desucella tolutibula sp. nov.

Candidatus Desucella tolutibula (NL. fem. n. *tolutibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1234 sp900765095*. The type genome for the species is the GenBank assembly RS_GCF_900765095.1. The GC content of the type genome is 31.68 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Desucia metabigena sp. nov.

Candidatus Desucia metabigena (NL. fem. n. *metabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-49-12 sp001873675*. The type genome for the species is the GenBank assembly GCA_002788015.1. The GC content of the type genome is 48.65 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Desucia gen. nov.

Candidatus Desucia (NL. fem. n. *Desucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-49-12*. The type species for the genus is *Candidatus* Desucia

metabigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-49-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuciaceae.

Description of *Candidatus* Desuciaceae fam. nov.

Candidatus Desuciaceae (NL. fem. n. *Desuciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-49-12.* The type genus for the taxon is *Candidatus* Desucia .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Desucida carecago sp. nov.

Candidatus Desucida carecago (NL. fem. n. *carecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LSCE01 sp007125985*. The type genome for the species is the GenBank assembly GCA_007132275.1. The GC content of the type genome is 63.31 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Desucida gen. nov.

Candidatus Desucida (NL. fem. n. *Desucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LSCE01*. The type species for the genus is *Candidatus* Desucida carecago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desucosa alceditica sp. nov.

Candidatus Desucosa alceditica (NL. fem. n. *alceditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUQP01 sp012837735*. The type genome for the species is the GenBank assembly GCA_012837735.1. The GC content of the type genome is 55.64 %

and the genome length is 1.55 Mbp.

Description of *Candidatus* Desucosa gen. nov.

Candidatus Desucosa (NL. fem. n. *Desucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUQP01*. The type species for the genus is *Candidatus* Desucosa alceditica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUQP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desucosaceae.

Description of *Candidatus* Desucosaceae fam. nov.

Candidatus Desucosaceae (NL. fem. n. *Desucosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUQP01.* The type genus for the taxon is *Candidatus* Desucosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vinolariales.

Description of *Candidatus* Desucula adpecitrix sp. nov.

Candidatus Desucula adpecitrix (NL. fem. n. *adpecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F2B08 sp009184895*. The type genome for the species is the GenBank assembly RS_GCF_009184895.1. The GC content of the type genome is 69.93 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Desucula gen. nov.

Candidatus Desucula (NL. fem. n. *Desucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F2B08*. The type species for the genus is *Candidatus* Desucula adpecitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desucula adpecousia sp. nov.

Candidatus Desucula adpecousia (NL. fem. n. *adpecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F2B08 sp012518475*. The type genome for the species is the GenBank assembly GCA_012518475.1. The GC content of the type genome is 69.18 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Desucula nefanitica sp. nov.

Candidatus Desucula nefanitica (NL. fem. n. *nefanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F2B08 sp012729695*. The type genome for the species is the GenBank assembly GCA_014360485.1. The GC content of the type genome is 69.72 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Desucula omnigatio sp. nov.

Candidatus Desucula omnigatio (NL. fem. n. *omnigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F2B08 sp012838445*. The type genome for the species is the GenBank assembly GCA_012838445.1. The GC content of the type genome is 69.55 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Desulana deparicella sp. nov.

Candidatus Desulana deparicella (NL. fem. n. *deparicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QPJE01 sp003337245*. The type genome for the species is the GenBank assembly RS_GCF_003338615.1. The GC content of the type genome is 33.75 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Desulana gen. nov.

Candidatus Desulana (NL. fem. n. *Desulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QPJE01*. The type species for the genus is *Candidatus* Desulana deparicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desularia canacilenta sp. nov.

Candidatus Desularia canacilenta (NL. fem. n. *canacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILZL01 sp903838705*. The type genome for the species is the GenBank assembly GCA_903838705.1. The GC content of the type genome is 53.17 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Desularia gen. nov.

Candidatus Desularia (NL. fem. n. *Desularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILZL01*. The type species for the genus is *Candidatus* Desularia canacilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desulella malagitica sp. nov.

Candidatus Desulella malagitica (NL. fem. n. *malagitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWXH01 sp903916565*. The type genome for the species is the GenBank assembly GCA_903868955.1. The GC content of the type genome is 64.8 % and the genome length is 5.95 Mbp.

Description of *Candidatus* Desulella gen. nov.

Candidatus Desulella (NL. fem. n. *Desulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWXH01*. The type species for the genus is *Candidatus* Desulella malagitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desulfacinum ambifastra sp. nov.

Candidatus Desulfacinum ambifastra (NL. fem. n. *ambifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfacinum sp014359885*. The type genome for the species is the GenBank assembly GCA_014359885.1. The GC content of the type genome is 62.62 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Desulfatiglans menapitio sp. nov.

Candidatus Desulfatiglans menapitio (NL. fem. n. *menapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfatiglans sp900498135*. The type genome for the species is the GenBank assembly GCA_900498135.1. The GC content of the type genome is 58.62 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Desulfatitalea culibatica sp. nov.

Candidatus Desulfatitalea culibatica (NL. fem. n. *culibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfatitalea sp000961655*. The type genome for the species is the GenBank assembly GCA_000961655.1. The GC content of the type genome is 55.05 % and the genome length is 6.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Desulfatitalea eccisessa sp. nov.

Candidatus Desulfatitalea eccisessa (NL. fem. n. *eccisessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfatitalea sp003599575*. The type genome for the species is the GenBank assembly GCA_003599575.1. The GC content of the type genome is 55.75 % and the genome length is 6.45 Mbp.

Description of *Candidatus* Desulfatitalea protratica sp. nov.

Candidatus Desulfatitalea protratica (NL. fem. n. *protratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfatitalea sp002402905*. The type genome for the species is the GenBank assembly GCA_002402905.1. The GC content of the type genome is 58.25 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Desulfatitalea utrinastra sp. nov.

Candidatus Desulfatitalea utrinastra (NL. fem. n. *utrinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfatitalea sp013041835*. The type genome for the species is the GenBank assembly GCA_013041835.1. The GC content of the type genome is 54.39 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Desulfitibacter inexcatio sp. nov.

Candidatus Desulfitibacter inexcatio (NL. fem. n. *inexcatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfitibacter sp001515945*. The type genome for the species is the GenBank assembly GCA_001515945.1. The GC content of the type genome is 36.12 % and the genome length is 3.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Desulfitobacterium adordibra sp. nov.

Candidatus Desulfitobacterium adordibra (NL. fem. n. *adordibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Desulfitobacterium sp012799495*. The type genome for the species is the GenBank assembly GCA_012799495.1. The GC content of the type genome is 39.65 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Desulfobacca conopatio sp. nov.

Candidatus Desulfobacca conopatio (NL. fem. n. *conopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacca_B sp002049795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003643895.1. The GC content of the type genome is 53.39 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Desulfobacter socagatica sp. nov.

Candidatus Desulfobacter socagatica (NL. fem. n. *socagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacter sp003538835*. The type genome for the species is the GenBank assembly GCA_003538835.1. The GC content of the type genome is 53.41 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Desulfobacula adambitica sp. nov.

Candidatus Desulfobacula adambitica (NL. fem. n. *adambitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacula sp011390435*. The type genome for the species is the GenBank assembly GCA_011390435.1. The GC content of the type genome is 49.09 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Desulfobacula conibedo sp. nov.

Candidatus Desulfobacula conibedo (NL. fem. n. *conibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacula sp011390085*. The type genome for the species is the GenBank assembly GCA_011390085.1. The GC content of the type genome is 48.33 %

and the genome length is 2.47 Mbp.

Description of *Candidatus* Desulfobacula culigitia sp. nov.

Candidatus Desulfobacula culigitia (NL. fem. n. *culigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacula sp013151635*. The type genome for the species is the GenBank assembly GCA_013151635.1. The GC content of the type genome is 41.43 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Desulfobacula favonitrix sp. nov.

Candidatus Desulfobacula favonitrix (NL. fem. n. *favonitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacula sp001799395*. The type genome for the species is the GenBank assembly GCA_001799405.1. The GC content of the type genome is 45.32 % and the genome length is 3.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Desulfobacula inexpitas sp. nov.

Candidatus Desulfobacula inexpitas (NL. fem. n. *inexpitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacula sp012031875*. The type genome for the species is the GenBank assembly GCA_012031875.1. The GC content of the type genome is 51.08 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Desulfobacula octupentia sp. nov.

Candidatus Desulfobacula octupentia (NL. fem. n. *octupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacula sp003647385*. The type genome for the species is the GenBank assembly GCA_003647385.1. The GC content of the type genome is 41.15 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Desulfobacula turicetta sp. nov.

Candidatus Desulfobacula turicetta (NL. fem. n. *turicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacula sp014383445*. The type genome for the species is the GenBank assembly GCA_014383445.1. The GC content of the type genome is 40.94 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Desulfobacula viginibula sp. nov.

Candidatus Desulfobacula viginibula (NL. fem. n. *viginibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobacula sp014237455*. The type genome for the species is the GenBank assembly GCA_014237455.1. The GC content of the type genome is 41.2 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Desulfobulbus accogitas sp. nov.

Candidatus Desulfobulbus accogitas (NL. fem. n. *accogitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus sp013201405*. The type genome for the species is the GenBank assembly GCA_013201405.1. The GC content of the type genome is 54.32 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Desulfobulbus advorax sp. nov.

Candidatus Desulfobulbus advorax (NL. fem. n. *advorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus sp903896915*. The type genome for the species is the GenBank assembly GCA_903896915.1. The GC content of the type genome is 51.79 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Desulfobulbus depicitia sp. nov.

Candidatus Desulfobulbus depicitia (NL. fem. n. *depicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus sp009778235*. The type genome for the species is the GenBank assembly GCA_009778235.1. The GC content of the type genome is 58.92 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Desulfobulbus fameletta sp. nov.

Candidatus Desulfobulbus fameletta (NL. fem. n. *fameletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus sp007121995*. The type genome for the species is the GenBank assembly GCA_007121995.1. The GC content of the type genome is 54.16 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Desulfobulbus fetulastra sp. nov.

Candidatus Desulfobulbus fetulastra (NL. fem. n. *fetulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus sp903842475*. The type genome for the species is the GenBank assembly GCA_903842475.1. The GC content of the type genome is 56.52 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Desulfobulbus hexamax sp. nov.

Candidatus Desulfobulbus hexamax (NL. fem. n. *hexamax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus sp009782165*. The type genome for the species is the GenBank assembly GCA_009782165.1. The GC content of the type genome is 62.32 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Desulfobulbus insorimonia sp. nov.

Candidatus Desulfobulbus insorimonia (NL. fem. n. *insorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Desulfobulbus sp012744275*. The type genome for the species is the GenBank assembly GCA_012744275.1. The GC content of the type genome is 53.68 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Desulfobulbus lupaniforma sp. nov.

Candidatus Desulfobulbus lupaniforma (NL. fem. n. *lupaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus sp009780825*. The type genome for the species is the GenBank assembly GCA_009780825.1. The GC content of the type genome is 57.37 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Desulfobulbus vanidentia sp. nov.

Candidatus Desulfobulbus vanidentia (NL. fem. n. *vanidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus sp009778955*. The type genome for the species is the GenBank assembly GCA_009778955.1. The GC content of the type genome is 58.87 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Desulfobulbus vitigicula sp. nov.

Candidatus Desulfobulbus vitigicula (NL. fem. n. *vitigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus sp012729435*. The type genome for the species is the GenBank assembly GCA_012729435.1. The GC content of the type genome is 52.45 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Desulfobulbus minagentia sp. nov.

Candidatus Desulfobulbus minagentia (NL. fem. n. *minagentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfobulbus_C sp003978695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003978855.1. The GC

content of the type genome is 47.61 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Desulfocucumis inguretta sp. nov.

Candidatus Desulfocucumis inguretta (NL. fem. n. *inguretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfocucumis sp000961595*. The type genome for the species is the GenBank assembly GCA_000961595.1. The GC content of the type genome is 47.61 % and the genome length is 3.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Desulfohalovibrio ineffedo sp. nov.

Candidatus Desulfohalovibrio ineffedo (NL. fem. n. *ineffedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfohalovibrio sp000422205*. The type genome for the species is the GenBank assembly RS_GCF_000422205.1. The GC content of the type genome is 67.99 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Chesapeake Bay bottom sediments".

Description of *Candidatus* Desulfoluna exaspitio sp. nov.

Candidatus Desulfoluna exaspitio (NL. fem. n. *exaspitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfoluna sp013619155*. The type genome for the species is the GenBank assembly GCA_013619155.1. The GC content of the type genome is 53.67 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Desulfomicrobium agripatio sp. nov.

Candidatus Desulfomicrobium agripatio (NL. fem. n. *agripatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfomicrobium sp009930495*. The type genome for the species is the GenBank assembly GCA_009930495.1. The GC content of the type genome is 60.52

% and the genome length is 3.2 Mbp.

Description of *Candidatus* Desulfomicrobium appicitura sp. nov.

Candidatus Desulfomicrobium appicitura (NL. fem. n. *appicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfomicrobium sp002412965*. The type genome for the species is the GenBank assembly GCA_002412965.1. The GC content of the type genome is 58.67 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Desulfomicrobium attesitudo sp. nov.

Candidatus Desulfomicrobium attesitudo (NL. fem. n. *attesitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfomicrobium sp002841885*. The type genome for the species is the GenBank assembly GCA_002841885.1. The GC content of the type genome is 58.55 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Desulfomicrobium cilicax sp. nov.

Candidatus Desulfomicrobium cilicax (NL. fem. n. *cilicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfomicrobium sp012727715*. The type genome for the species is the GenBank assembly GCA_012727715.1. The GC content of the type genome is 46.32 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Desulfomicrobium inlacitudo sp. nov.

Candidatus Desulfomicrobium inlacitudo (NL. fem. n. *inlacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfomicrobium sp012727515*. The type genome for the species is the GenBank assembly GCA_012727515.1. The GC content of the type genome is 51.7 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Desulfomicrobium manibetta sp. nov.

Candidatus Desulfomicrobium manibetta (NL. fem. n. *manibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfomicrobium sp003542385*. The type genome for the species is the GenBank assembly GCA_003542385.1. The GC content of the type genome is 63.78 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Desulfomicrobium venefibula sp. nov.

Candidatus Desulfomicrobium venefibula (NL. fem. n. *venefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfomicrobium sp012729655*. The type genome for the species is the GenBank assembly GCA_012729655.1. The GC content of the type genome is 60.17 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Desulfonatronospira carucessa sp. nov.

Candidatus Desulfonatronospira carucessa (NL. fem. n. *carucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronospira sp003554505*. The type genome for the species is the GenBank assembly GCA_003554505.1. The GC content of the type genome is 52.86 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Desulfonatronospira grallugo sp. nov.

Candidatus Desulfonatronospira grallugo (NL. fem. n. *grallugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronospira sp007127015*. The type genome for the species is the GenBank assembly GCA_007127015.1. The GC content of the type genome is 49.04 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Desulfonatronospira intabitas sp. nov.

Candidatus Desulfonatronospira intabitas (NL. fem. n. *intabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronospira sp003551145*. The type genome for the species is the GenBank assembly GCA_003551145.1. The GC content of the type genome is 52.74 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Desulfonatronospira lametugo sp. nov.

Candidatus Desulfonatronospira lametugo (NL. fem. n. *lametugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronospira sp003563255*. The type genome for the species is the GenBank assembly GCA_003563255.1. The GC content of the type genome is 50.96 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Desulfonatronospira lanigicula sp. nov.

Candidatus Desulfonatronospira lanigicula (NL. fem. n. *lanigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronospira sp003551155*. The type genome for the species is the GenBank assembly GCA_003551155.1. The GC content of the type genome is 51.87 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Desulfonatronospira pacifentia sp. nov.

Candidatus Desulfonatronospira pacifentia (NL. fem. n. *pacifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronospira sp003553695*. The type genome for the species is the GenBank assembly GCA_003550685.1. The GC content of the type genome is 53.37 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Desulfonatronospira turicibra sp. nov.

Candidatus Desulfonatronospira turicibra (NL. fem. n. *turicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronospira sp007125075*. The type genome for the species is the GenBank assembly GCA_003561395.1. The GC content of the type genome is 49.33

% and the genome length is 2.93 Mbp.

Description of *Candidatus* Desulfonatronovibrio aplesatio sp. nov.

Candidatus Desulfonatronovibrio aplesatio (NL. fem. n. *aplesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronovibrio sp003558575*. The type genome for the species is the GenBank assembly GCA_003558575.1. The GC content of the type genome is 43.61 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Desulfonatronovibrio dimaditrix sp. nov.

Candidatus Desulfonatronovibrio dimaditrix (NL. fem. n. *dimaditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronovibrio sp003557865*. The type genome for the species is the GenBank assembly GCA_007133425.1. The GC content of the type genome is 50.84 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Desulfonatronovibrio exoscitoga sp. nov.

Candidatus Desulfonatronovibrio exoscitoga (NL. fem. n. *exoscitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronovibrio sp003566455*. The type genome for the species is the GenBank assembly GCA_003566455.1. The GC content of the type genome is 47.23 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Desulfonatronovibrio pepenitia sp. nov.

Candidatus Desulfonatronovibrio pepenitia (NL. fem. n. *pepenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronovibrio sp007121655*. The type genome for the species is the GenBank assembly GCA_007121655.1. The GC content of the type genome is 47.63 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Desulfonatronum invoritrix sp. nov.

Candidatus Desulfonatronum invoritrix (NL. fem. n. *invoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronum sp002299865*. The type genome for the species is the GenBank assembly GCA_002299865.1. The GC content of the type genome is 58.58 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Desulfonatronum lenunimonia sp. nov.

Candidatus Desulfonatronum lenunimonia (NL. fem. n. *lenunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronum sp011049455*. The type genome for the species is the GenBank assembly GCA_011049455.1. The GC content of the type genome is 57.06 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Desulfonatronum monumitio sp. nov.

Candidatus Desulfonatronum monumitio (NL. fem. n. *monumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronum sp003046795*. The type genome for the species is the GenBank assembly RS_GCF_003046795.1. The GC content of the type genome is 58.63 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Desulfonatronum nehalilenta sp. nov.

Candidatus Desulfonatronum nehalilenta (NL. fem. n. *nehalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronum sp007693505*. The type genome for the species is the GenBank assembly GCA_007693505.1. The GC content of the type genome is 57.6 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Desulfonatronum pudibitudo sp. nov.

Candidatus Desulfonatronum pudibitudo (NL. fem. n. *pudibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonatronum sp007127655*. The type genome for the species is the GenBank assembly GCA_007127655.1. The GC content of the type genome is 59.4 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Desulfonauticus fusifitura sp. nov.

Candidatus Desulfonauticus fusifitura (NL. fem. n. *fusifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfonauticus sp001507915*. The type genome for the species is the GenBank assembly GCA_001507915.1. The GC content of the type genome is 38.21 % and the genome length is 2.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample I2".

Description of *Candidatus* Desulfopertinax venunago sp. nov.

Candidatus Desulfopertinax venunago (NL. fem. n. *venunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfopertinax sp002375985*. The type genome for the species is the GenBank assembly GCA_002375985.1. The GC content of the type genome is 59.38 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Desulfopila inheratica sp. nov.

Candidatus Desulfopila inheratica (NL. fem. n. *inheratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfopila sp005116675*. The type genome for the species is the GenBank assembly RS_GCF_005116675.2. The GC content of the type genome is 48.43 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Desulfopila lacinax sp. nov.

Candidatus Desulfopila lacinax (NL. fem. n. *lacinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfopila sp010646885*. The type genome for the species is the

GenBank assembly RS_GCF_010646885.1. The GC content of the type genome is 47.15 % and the genome length is 6.24 Mbp.

Description of *Candidatus* Desulfopila saxifibra sp. nov.

Candidatus Desulfopila saxifibra (NL. fem. n. *saxifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfopila sp005116655*. The type genome for the species is the GenBank assembly RS_GCF_005116655.2. The GC content of the type genome is 44.3 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Desulfoprunum appicetta sp. nov.

Candidatus Desulfoprunum appicetta (NL. fem. n. *appicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfoprunum sp008933635*. The type genome for the species is the GenBank assembly GCA_008933635.1. The GC content of the type genome is 58.36 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Desulfoprunum devecigena sp. nov.

Candidatus Desulfoprunum devecigena (NL. fem. n. *devecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfoprunum sp000769715*. The type genome for the species is the GenBank assembly GCA_000769715.1. The GC content of the type genome is 59.29 % and the genome length is 4.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "obtained by stable isotope probing of toluene degrading sulfate-reducing culture enriched from oil sands tailings of Alberta; Canada".

Description of *Candidatus* Desulforhabdus ambusitio sp. nov.

Candidatus Desulforhabdus ambusitio (NL. fem. n. *ambusitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhabdus sp007244385*. The type genome for the species is the GenBank assembly GCA_007244385.1. The GC content of the type genome is 54.39 %

and the genome length is 5.2 Mbp.

Description of *Candidatus* Desulforhopalus acceribra sp. nov.

Candidatus Desulforhopalus acceribra (NL. fem. n. *acceribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp001799365*. The type genome for the species is the GenBank assembly GCA_001799365.1. The GC content of the type genome is 55.56 % and the genome length is 4.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 2 / B; 5m depth; 0.2 filter".

Description of *Candidatus* Desulforhopalus bicubicella sp. nov.

Candidatus Desulforhopalus bicubicella (NL. fem. n. *bicubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp005116645*. The type genome for the species is the GenBank assembly RS_GCF_005116645.1. The GC content of the type genome is 49.74 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Desulforhopalus ecfacisca sp. nov.

Candidatus Desulforhopalus ecfacisca (NL. fem. n. *ecfacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp000961725*. The type genome for the species is the GenBank assembly GCA_000961725.1. The GC content of the type genome is 51.68 % and the genome length is 6.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Desulforhopalus expasisca sp. nov.

Candidatus Desulforhopalus expasisca (NL. fem. n. *expasisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp013139415*. The type genome for the species is the GenBank assembly GCA_013139415.1. The GC content of the type genome is 45.93 %

and the genome length is 4.5 Mbp.

Description of *Candidatus* Desulforhopalus grallousia sp. nov.

Candidatus Desulforhopalus grallousia (NL. fem. n. *grallousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp011390165*. The type genome for the species is the GenBank assembly GCA_011390165.1. The GC content of the type genome is 60.73 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Desulforhopalus ignositudo sp. nov.

Candidatus Desulforhopalus ignositudo (NL. fem. n. *ignositudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp005116575*. The type genome for the species is the GenBank assembly RS_GCF_005116575.1. The GC content of the type genome is 45.99 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Desulforhopalus inlibisca sp. nov.

Candidatus Desulforhopalus inlibisca (NL. fem. n. *inlibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp011391225*. The type genome for the species is the GenBank assembly GCA_011391225.1. The GC content of the type genome is 50.34 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Desulforhopalus letifessa sp. nov.

Candidatus Desulforhopalus letifessa (NL. fem. n. *letifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp903875445*. The type genome for the species is the GenBank assembly GCA_903921845.1. The GC content of the type genome is 51.92 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Desulforhopalus rumifilega sp. nov.

Candidatus Desulforhopalus rumifilega (NL. fem. n. *rumifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp002747825*. The type genome for the species is the GenBank assembly GCA_002747825.1. The GC content of the type genome is 49.48 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Desulforhopalus thapsimonas sp. nov.

Candidatus Desulforhopalus thapsimonas (NL. fem. n. *thapsimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforhopalus sp002733995*. The type genome for the species is the GenBank assembly GCA_002733995.1. The GC content of the type genome is 44.41 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Desulforudis inlapessa sp. nov.

Candidatus Desulforudis inlapessa (NL. fem. n. *inlapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulforudis sp002294005*. The type genome for the species is the GenBank assembly GCA_002294005.1. The GC content of the type genome is 62.84 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Desulfosalsimonas detepimonas sp. nov.

Candidatus Desulfosalsimonas detepimonas (NL. fem. n. *detepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosalsimonas sp011389605*. The type genome for the species is the GenBank assembly GCA_011389605.1. The GC content of the type genome is 50.48 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Desulfosarcina adambitrix sp. nov.

Candidatus Desulfosarcina adambitrix (NL. fem. n. *adambitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosarcina sp002747175*. The type genome for the species is the GenBank assembly GCA_002747175.1. The GC content of the type genome is 53.53 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Desulfosarcina aphoricella sp. nov.

Candidatus Desulfosarcina aphoricella (NL. fem. n. *aphoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosarcina sp002747365*. The type genome for the species is the GenBank assembly GCA_002747365.1. The GC content of the type genome is 54.73 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Desulfosarcina effaretta sp. nov.

Candidatus Desulfosarcina effaretta (NL. fem. n. *effaretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosarcina sp002352605*. The type genome for the species is the GenBank assembly GCA_002352605.1. The GC content of the type genome is 54.14 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Desulfosarcina fetutousia sp. nov.

Candidatus Desulfosarcina fetutousia (NL. fem. n. *fetutousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosarcina sp014237405*. The type genome for the species is the GenBank assembly GCA_014237405.1. The GC content of the type genome is 53.62 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Desulfosporosinus adpelentia sp. nov.

Candidatus Desulfosporosinus adpelentia (NL. fem. n. *adpelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp000960765*. The type genome for the species is the GenBank assembly RS_GCF_000960765.1. The GC content of the type genome is

42.4 % and the genome length is 5.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Desulfosporosinus cicilentia sp. nov.

Candidatus Desulfosporosinus cicilentia (NL. fem. n. *cicilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp000770645*. The type genome for the species is the GenBank assembly GCA_002347555.1. The GC content of the type genome is 44.22 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Desulfosporosinus detorago sp. nov.

Candidatus Desulfosporosinus detorago (NL. fem. n. *detorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp001936615*. The type genome for the species is the GenBank assembly RS_GCF_001936615.1. The GC content of the type genome is 43.62 % and the genome length is 5.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Desulfosporosinus dilibitoga sp. nov.

Candidatus Desulfosporosinus dilibitoga (NL. fem. n. *dilibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp001707885*. The type genome for the species is the GenBank assembly RS_GCF_001707885.1. The GC content of the type genome is 42.4 % and the genome length is 4.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mining waste".

Description of *Candidatus* Desulfosporosinus disiditudo sp. nov.

Candidatus Desulfosporosinus disiditudo (NL. fem. n. *disiditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp000961805*. The type genome for the species is the GenBank assembly GCA_000961805.1. The GC content of the type genome is 42.71 % and the genome length is 6.03 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Desulfosporosinus effinugo sp. nov.

Candidatus Desulfosporosinus effinugo (NL. fem. n. *effinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp002404215*. The type genome for the species is the GenBank assembly GCA_002404215.1. The GC content of the type genome is 42.72 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Desulfosporosinus inlocetta sp. nov.

Candidatus Desulfosporosinus inlocetta (NL. fem. n. *inlocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp002196705*. The type genome for the species is the GenBank assembly RS_GCF_002196705.1. The GC content of the type genome is 41.75 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Desulfosporosinus irrelibra sp. nov.

Candidatus Desulfosporosinus irrelibra (NL. fem. n. *irrelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp000765145*. The type genome for the species is the GenBank assembly RS_GCF_000765145.1. The GC content of the type genome is 41.25 % and the genome length is 4.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "lab enrichment culture in anaerobic medium".

Description of *Candidatus* Desulfosporosinus octinetta sp. nov.

Candidatus Desulfosporosinus octinetta (NL. fem. n. *octinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp004766055*. The type genome for the species is the GenBank assembly RS_GCF_004766055.1. The GC content of the type genome is 42.54 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Desulfosporosinus pedepivita sp. nov.

Candidatus Desulfosporosinus pedepivita (NL. fem. n. *pedepivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp003132105*. The type genome for the species is the GenBank assembly GCA_003132105.1. The GC content of the type genome is 43.51 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Desulfosporosinus podagigena sp. nov.

Candidatus Desulfosporosinus podagigena (NL. fem. n. *podagigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp001516045*. The type genome for the species is the GenBank assembly GCA_001516045.1. The GC content of the type genome is 41.96 % and the genome length is 6.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Desulfosporosinus reduvedo sp. nov.

Candidatus Desulfosporosinus reduvedo (NL. fem. n. *reduvedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp000224515*. The type genome for the species is the GenBank assembly RS_GCF_000224515.1. The GC content of the type genome is 42.06 % and the genome length is 5.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "isolated from the sediment in the Norilsk hydrometallurgy tailings dam".

Description of *Candidatus* Desulfosporosinus relapibula sp. nov.

Candidatus Desulfosporosinus relapibula (NL. fem. n. *relapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp003513495*. The type genome for the species is the GenBank assembly GCA_014237315.1. The GC content of the type genome is 42.61 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Desulfosporosinus subadibra sp. nov.

Candidatus Desulfosporosinus subadibra (NL. fem. n. *subadibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosporosinus sp002413075*. The type genome for the species is the GenBank assembly GCA_002403815.1. The GC content of the type genome is 43.07 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Desulfosudis baditedo sp. nov.

Candidatus Desulfosudis baditedo (NL. fem. n. *baditedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfosudis sp002085115*. The type genome for the species is the GenBank assembly GCA_002085115.1. The GC content of the type genome is 50.57 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Desulfotignum albogugo sp. nov.

Candidatus Desulfotignum albogugo (NL. fem. n. *albogugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfotignum sp011390695*. The type genome for the species is the GenBank assembly GCA_011390695.1. The GC content of the type genome is 49.98 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Desulfotignum apraritio sp. nov.

Candidatus Desulfotignum apraritio (NL. fem. n. *apraritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfotignum sp011390615*. The type genome for the species is the GenBank assembly GCA_011390615.1. The GC content of the type genome is 51.2 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Desulfotignum capudimonia sp. nov.

Candidatus Desulfotignum capudimonia (NL. fem. n. *capudimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfotignum sp011389835*. The type genome for the species is the GenBank assembly GCA_011389835.1. The GC content of the type genome is 54.24 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Desulfotignum culilatica sp. nov.

Candidatus Desulfotignum culilatica (NL. fem. n. *culilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfotignum sp011390235*. The type genome for the species is the GenBank assembly GCA_011390235.1. The GC content of the type genome is 50.13 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Desulfotignum exoscastra sp. nov.

Candidatus Desulfotignum exoscastra (NL. fem. n. *exoscastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfotignum sp011389555*. The type genome for the species is the GenBank assembly GCA_011389555.1. The GC content of the type genome is 53.43 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Desulfotignum hirunivita sp. nov.

Candidatus Desulfotignum hirunivita (NL. fem. n. *hirunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfotignum sp011390335*. The type genome for the species is the GenBank assembly GCA_011390335.1. The GC content of the type genome is 51.07 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Desulfotignum tomogicella sp. nov.

Candidatus Desulfotignum tomogicella (NL. fem. n. *tomogicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Desulfotignum sp011389715*. The type genome for the species is the GenBank assembly GCA_011389715.1. The GC content of the type genome is 50.36 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Desulfotignum vilipicella sp. nov.

Candidatus Desulfotignum vilipicella (NL. fem. n. *vilipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfotignum sp011390635*. The type genome for the species is the GenBank assembly GCA_011390635.1. The GC content of the type genome is 50.76 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Desulfotignum vitupousia sp. nov.

Candidatus Desulfotignum vitupousia (NL. fem. n. *vitupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfotignum sp011389575*. The type genome for the species is the GenBank assembly GCA_011389575.1. The GC content of the type genome is 50.52 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Desulfovibrio arvecitia sp. nov.

Candidatus Desulfovibrio arvecitia (NL. fem. n. *arvecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp900547595*. The type genome for the species is the GenBank assembly GCA_900547595.1. The GC content of the type genome is 65.11 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Desulfovibrio bimetitura sp. nov.

Candidatus Desulfovibrio bimetitura (NL. fem. n. *bimetitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp011039085*. The type genome for the species is the GenBank assembly RS_GCF_011039095.1. The GC content of the type genome is 59.69 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Desulfovibrio canacax sp. nov.

Candidatus Desulfovibrio canacax (NL. fem. n. *canacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp900540515*. The type genome for the species is the GenBank assembly RS_GCF_009696265.1. The GC content of the type genome is 61.56 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Desulfovibrio chancivita sp. nov.

Candidatus Desulfovibrio chancivita (NL. fem. n. *chancivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp002237645*. The type genome for the species is the GenBank assembly GCA_002237645.1. The GC content of the type genome is 57.79 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Desulfovibrio cicilitudo sp. nov.

Candidatus Desulfovibrio cicilitudo (NL. fem. n. *cicilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp900546145*. The type genome for the species is the GenBank assembly RS_GCF_900753965.1. The GC content of the type genome is 58.61 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Desulfovibrio colimetta sp. nov.

Candidatus Desulfovibrio colimetta (NL. fem. n. *colimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp002369295*. The type genome for the species is the GenBank assembly GCA_002369295.1. The GC content of the type genome is 65.33 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Desulfovibrio defalatica sp. nov.

Candidatus Desulfovibrio defalatica (NL. fem. n. *defalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp003860215*. The type genome for the species is the GenBank assembly RS_GCF_003860215.1. The GC content of the type genome is 58.65 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Desulfovibrio dilacimonas sp. nov.

Candidatus Desulfovibrio dilacimonas (NL. fem. n. *dilacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp002159665*. The type genome for the species is the GenBank assembly RS_GCF_002159665.1. The GC content of the type genome is 55.44 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Desulfovibrio embamastra sp. nov.

Candidatus Desulfovibrio embamastra (NL. fem. n. *embamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp009712225*. The type genome for the species is the GenBank assembly GCA_009712225.1. The GC content of the type genome is 57.14 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Desulfovibrio encenatio sp. nov.

Candidatus Desulfovibrio encenatio (NL. fem. n. *encenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp009929215*. The type genome for the species is the GenBank assembly GCA_009929215.1. The GC content of the type genome is 57.35 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Desulfovibrio homogilega sp. nov.

Candidatus Desulfovibrio homogilega (NL. fem. n. *homogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Desulfovibrio sp011039135*. The type genome for the species is the GenBank assembly RS_GCF_011039155.1. The GC content of the type genome is 65.38 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Desulfovibrio indupitas sp. nov.

Candidatus Desulfovibrio indupitas (NL. fem. n. *indupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp000403945*. The type genome for the species is the GenBank assembly GCA_000403945.1. The GC content of the type genome is 59.92 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Desulfovibrio mimogimonia sp. nov.

Candidatus Desulfovibrio mimogimonia (NL. fem. n. *mimogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp900319575*. The type genome for the species is the GenBank assembly GCA_902785865.1. The GC content of the type genome is 58.64 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Desulfovibrio nivomigena sp. nov.

Candidatus Desulfovibrio nivomigena (NL. fem. n. *nivomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp900556755*. The type genome for the species is the GenBank assembly GCA_900556755.1. The GC content of the type genome is 62.94 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Desulfovibrio nubigilega sp. nov.

Candidatus Desulfovibrio nubigilega (NL. fem. n. *nubigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp900095395*. The type genome for the species is the GenBank assembly GCA_900095395.1. The GC content of the type genome is 58.1 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Desulfovibrio subaditura sp. nov.

Candidatus Desulfovibrio subaditura (NL. fem. n. *subaditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfovibrio sp009773975*. The type genome for the species is the GenBank assembly GCA_013316485.1. The GC content of the type genome is 53.66 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Desulfurivibrio resalitoga sp. nov.

Candidatus Desulfurivibrio resalitoga (NL. fem. n. *resalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfurivibrio sp004332195*. The type genome for the species is the GenBank assembly GCA_004332195.1. The GC content of the type genome is 54.26 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Desulfurivibrio sonabitas sp. nov.

Candidatus Desulfurivibrio sonabitas (NL. fem. n. *sonabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfurivibrio sp003557565*. The type genome for the species is the GenBank assembly GCA_007133805.1. The GC content of the type genome is 60.2 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Desulfurobacterium expecastra sp. nov.

Candidatus Desulfurobacterium expecastra (NL. fem. n. *expecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfurobacterium_A sp000421485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000421485.1. The GC content of the type genome is 39.83 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Desulfuromonas catociforma sp. nov.

Candidatus Desulfuromonas catociforma (NL. fem. n. *catociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfuromonas sp002869685*. The type genome for the species is the GenBank assembly GCA_002869685.1. The GC content of the type genome is 52.53 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Desulfuromonas detotigena sp. nov.

Candidatus Desulfuromonas detotigena (NL. fem. n. *detotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfuromonas sp002084665*. The type genome for the species is the GenBank assembly GCA_002084665.1. The GC content of the type genome is 46.14 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Desulfuromonas inretatio sp. nov.

Candidatus Desulfuromonas inretatio (NL. fem. n. *inretatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfuromonas sp002084705*. The type genome for the species is the GenBank assembly GCA_002084705.1. The GC content of the type genome is 45.64 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Desulfuromonas letifatica sp. nov.

Candidatus Desulfuromonas letifatica (NL. fem. n. *letifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfuromonas sp001751155*. The type genome for the species is the GenBank assembly GCA_001751155.1. The GC content of the type genome is 46.28 % and the genome length is 2.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "combined push core samples #3730; #5133; and #5579 collected at Hydrate Ridge".

Description of *Candidatus* Desulfuromusa levidastra sp. nov.

Candidatus Desulfuromusa levidastra (NL. fem. n. *levidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Desulfuromusa sp002049545*. The type genome for the species is the GenBank assembly GCA_002049545.1. The GC content of the type genome is 48.34 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Desulia caselicella sp. nov.

Candidatus Desulia caselicella (NL. fem. n. *caselicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5422 sp002409405*. The type genome for the species is the GenBank assembly GCA_002409405.1. The GC content of the type genome is 40.28 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Desulia gen. nov.

Candidatus Desulia (NL. fem. n. *Desulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5422*. The type species for the genus is *Candidatus* Desulia caselicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desulia sotulimonia sp. nov.

Candidatus Desulia sotulimonia (NL. fem. n. *sotulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5422 sp011030385*. The type genome for the species is the GenBank assembly GCA_014518315.1. The GC content of the type genome is 41.52 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Desulida denomitura sp. nov.

Candidatus Desulida denomitura (NL. fem. n. *denomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JdFR-97 sp002010915*. The type genome for the species is the GenBank assembly GCA_002010915.1. The GC content of the type genome is 57.59 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Desulida gen. nov.

Candidatus Desulida (NL. fem. n. *Desulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-97*. The type species for the genus is *Candidatus* Desulida denomitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-97*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desulidaceae.

Description of *Candidatus* Desulidaceae fam. nov.

Candidatus Desulidaceae (NL. fem. n. *Desulidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-97.* The type genus for the taxon is *Candidatus* Desulida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JdFR-97*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desulidales.

Description of *Candidatus* Desulidales ord. nov.

Candidatus Desulidales (NL. fem. n. *Desulidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-97.* The type genus for the taxon is *Candidatus* Desulida .

According to the original version of GTDB R06-RS202, this family belongs to the class *JdFR-97*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Desulidae.

Description of *Candidatus* Desulidae class. nov.

Candidatus Desulidae (NL. fem. n. *c__Desulidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *JdFR-97*. The type genus for the taxon is *Candidatus* Desulida .

According to GTDB R06-RS202, this class belongs to the phylum *Desulfobacterota*.

Description of *Candidatus* Desulosa colepago sp. nov.

Candidatus Desulosa colepago (NL. fem. n. *colepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-49-16 sp002772605*. The type genome for the species is the GenBank assembly GCA_002772605.1. The GC content of the type genome is 49.3 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Desulosa gen. nov.

Candidatus Desulosa (NL. fem. n. *Desulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-49-16*. The type species for the genus is *Candidatus* Desulosa colepago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desulosa hexagax sp. nov.

Candidatus Desulosa hexagax (NL. fem. n. *hexagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-49-16 sp001788955*. The type genome for the species is the GenBank assembly GCA_001787485.1. The GC content of the type genome is 47.72 % and the genome length is 0.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Desulula dupunastra sp. nov.

Candidatus Desulula dupunastra (NL. fem. n. *dupunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FJAT-46582 sp002797355*. The type genome for the species is the

GenBank assembly RS_GCF_002797355.1. The GC content of the type genome is 44.21 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Desulula gen. nov.

Candidatus Desulula (NL. fem. n. *Desulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FJAT-46582*. The type species for the genus is *Candidatus* Desulula dupunastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desulula modifatica sp. nov.

Candidatus Desulula modifatica (NL. fem. n. *modifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FJAT-46582 sp002261155*. The type genome for the species is the GenBank assembly RS_GCF_002261155.1. The GC content of the type genome is 39.71 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Desulula nitelilega sp. nov.

Candidatus Desulula nitelilega (NL. fem. n. *nitelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FJAT-46582 sp002797375*. The type genome for the species is the GenBank assembly RS_GCF_002283755.1. The GC content of the type genome is 39.92 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Desupana ammulifica sp. nov.

Candidatus Desupana ammulifica (NL. fem. n. *ammulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMM01 sp900762715*. The type genome for the species is the GenBank assembly RS_GCF_900762715.1. The GC content of the type genome is 49.77 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Desupana gen. nov.

Candidatus Desupana (NL. fem. n. *Desupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAMM01*. The type species for the genus is *Candidatus* Desupana ammulifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desupana defaressa sp. nov.

Candidatus Desupana defaressa (NL. fem. n. *defaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMM01 sp003150405*. The type genome for the species is the GenBank assembly GCA_003150405.1. The GC content of the type genome is 50.85 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Desupana ridibatica sp. nov.

Candidatus Desupana ridibatica (NL. fem. n. *ridibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMM01 sp900552945*. The type genome for the species is the GenBank assembly GCA_900552945.1. The GC content of the type genome is 50.48 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Desuparia dibapitoga sp. nov.

Candidatus Desuparia dibapitoga (NL. fem. n. *dibapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HR10 sp002898775*. The type genome for the species is the GenBank assembly GCA_002898775.1. The GC content of the type genome is 63.7 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Desuparia gen. nov.

Candidatus Desuparia (NL. fem. n. *Desuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HR10*. The type species for the genus is *Candidatus* Desuparia dibapitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HR10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desupariaceae.

Description of *Candidatus* Desupariaceae fam. nov.

Candidatus Desupariaceae (NL. fem. n. *Desupariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HR10.* The type genus for the taxon is *Candidatus* Desuparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *HR10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desupariales.

Description of *Candidatus* Desupariales ord. nov.

Candidatus Desupariales (NL. fem. n. *Desupariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HR10.* The type genus for the taxon is *Candidatus* Desuparia .

According to the GTDB R06-RS202, this order belongs to the class *Blastocatellia*.

Description of *Candidatus* Desuparia ecfunilenta sp. nov.

Candidatus Desuparia ecfunilenta (NL. fem. n. *ecfunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HR10 sp011056055*. The type genome for the species is the GenBank assembly GCA_011056055.1. The GC content of the type genome is 62.79 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Desuparia endivivita sp. nov.

Candidatus Desuparia endivivita (NL. fem. n. *endivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HR10 sp002923315*. The type genome for the species is the GenBank assembly GCA_002923315.1. The GC content of the type genome is 63.75 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Desuparia sacomivita sp. nov.

Candidatus Desuparia sacomivita (NL. fem. n. *sacomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HR10 sp011053445*. The type genome for the species is the GenBank assembly GCA_011053445.1. The GC content of the type genome is 63.06 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Desuparia tirocitrix sp. nov.

Candidatus Desuparia tirocitrix (NL. fem. n. *tirocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HR10 sp011058595*. The type genome for the species is the GenBank assembly GCA_011058595.1. The GC content of the type genome is 63.98 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Desupella illepivita sp. nov.

Candidatus Desupella illepivita (NL. fem. n. *illepivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHST01 sp009379825*. The type genome for the species is the GenBank assembly GCA_009379825.1. The GC content of the type genome is 70.34 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Desupella gen. nov.

Candidatus Desupella (NL. fem. n. *Desupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHST01*. The type species for the genus is *Candidatus* Desupella illepivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHST01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desupellaceae.

Description of *Candidatus* Desupellaceae fam. nov.

Candidatus Desupellaceae (NL. fem. n. *Desupellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WHST01*. The type genus for the taxon is *Candidatus* Desupella .

According to GTDB R06-RS202, this family belongs to the order *Streptosporangiales*.

Description of *Candidatus* Desupella refinibula sp. nov.

Candidatus Desupella refinibula (NL. fem. n. *refinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHST01 sp009379955*. The type genome for the species is the GenBank assembly GCA_009379955.1. The GC content of the type genome is 70.83 % and the genome length is 6.61 Mbp.

Description of *Candidatus* Desupia arcubiforma sp. nov.

Candidatus Desupia arcubiforma (NL. fem. n. *arcubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2724215 sp007571365*. The type genome for the species is the GenBank assembly GCA_007571365.1. The GC content of the type genome is 59.33 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Desupia gen. nov.

Candidatus Desupia (NL. fem. n. *Desupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2724215*. The type species for the genus is *Candidatus* Desupia arcubiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8231*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Cicatosaceae.

Description of *Candidatus* Desupia dececitica sp. nov.

Candidatus Desupia dececitica (NL. fem. n. *dececitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2724215 sp009841115*. The type genome for the species is the GenBank assembly GCA_009836325.1. The GC content of the type genome is 59.43 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Desupia effunivita sp. nov.

Candidatus Desupia effunivita (NL. fem. n. *effunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2724215 sp002724215*. The type genome for the species is the GenBank assembly GCA_002724215.1. The GC content of the type genome is 62.44 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Desupia nutamousia sp. nov.

Candidatus Desupia nutamousia (NL. fem. n. *nutamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2724215 sp009845645*. The type genome for the species is the GenBank assembly GCA_009845645.1. The GC content of the type genome is 59.18 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Desupia senacitio sp. nov.

Candidatus Desupia senacitio (NL. fem. n. *senacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2724215 sp009840005*. The type genome for the species is the GenBank assembly GCA_009835785.1. The GC content of the type genome is 59.08 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Desupida haricicella sp. nov.

Candidatus Desupida haricicella (NL. fem. n. *haricicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKYG01 sp007128045*. The type genome for the species is the GenBank assembly GCA_007117045.1. The GC content of the type genome is 43.22 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Desupida gen. nov.

Candidatus Desupida (NL. fem. n. *Desupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKYG01*. The type species for the genus is *Candidatus* Desupida haricicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Desuposa alticibula sp. nov.

Candidatus Desuposa alticibula (NL. fem. n. *alticibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686955 sp002686955*. The type genome for the species is the GenBank assembly GCA_002686955.1. The GC content of the type genome is 63.44 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Desuposa gen. nov.

Candidatus Desuposa (NL. fem. n. *Desuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2686955*. The type species for the genus is *Candidatus* Desuposa alticibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2686955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuposaceae.

Description of *Candidatus* Desuposaceae fam. nov.

Candidatus Desuposaceae (NL. fem. n. *Desuposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2686955.* The type genus for the taxon is *Candidatus* Desuposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2686955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desuposales.

Description of *Candidatus* Desuposales ord. nov.

Candidatus Desuposales (NL. fem. n. *Desuposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2686955.* The type genus for the taxon is *Candidatus* Desuposa .

According to the original version of GTDB R06-RS202, this family belongs to the class *GCA-2686955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Desuposae.

Description of *Candidatus* Desuposae class. nov.

Candidatus Desuposae (NL. fem. n. *c__Desuposae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2686955.* The type genus for the taxon is *Candidatus* Desuposa .

According to GTDB R06-RS202, this class belongs to the phylum *Gemmatimonadota_A*.

Description of *Candidatus* Desupula hemidastra sp. nov.

Candidatus Desupula hemidastra (NL. fem. n. *hemidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6263 sp002441085*. The type genome for the species is the GenBank assembly GCA_002441085.1. The GC content of the type genome is 29.1 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Desupula gen. nov.

Candidatus Desupula (NL. fem. n. *Desupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6263*. The type species for the genus is *Candidatus* Desupula hemidastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *X112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Desupula recorugo sp. nov.

Candidatus Desupula recorugo (NL. fem. n. *recorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6263 sp903943625*. The type genome for the species is the GenBank assembly GCA_903959875.1. The GC content of the type genome is 31.44 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Desurana meridisca sp. nov.

Candidatus Desurana meridisca (NL. fem. n. *meridisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12091 sp001799485*. The type genome for the species is the GenBank assembly GCA_001799535.1. The GC content of the type genome is 61.24 % and the genome length is 2.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 4 / D; 5m depth; 0.2 filter".

Description of *Candidatus* Desurana gen. nov.

Candidatus Desurana (NL. fem. n. *Desurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12091*. The type species for the genus is *Candidatus* Desurana meridisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Desuraria delacastra sp. nov.

Candidatus Desuraria delacastra (NL. fem. n. *delacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-50-9b sp903893485*. The type genome for the species is the GenBank assembly GCA_903826655.1. The GC content of the type genome is 46.14 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Desuraria gen. nov.

Candidatus Desuraria (NL. fem. n. *Desuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-50-9b*. The type species for the genus is *Candidatus* Desuraria delacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-50-9b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurariaceae.

Description of *Candidatus* Desurariaceae fam. nov.

Candidatus Desurariaceae (NL. fem. n. *Desurariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-50-9b.* The type genus for the taxon is *Candidatus* Desuraria .

According to GTDB R06-RS202, this family belongs to the order *Magasanikbacterales*.

Description of *Candidatus* Desuraria xenopimonia sp. nov.

Candidatus Desuraria xenopimonia (NL. fem. n. *xenopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-50-9b sp001782975*. The type genome for the species is the GenBank assembly GCA_001782815.1. The GC content of the type genome is 50.02 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Desurella melopitoga sp. nov.

Candidatus Desurella melopitoga (NL. fem. n. *melopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12405 sp003542615*. The type genome for the species is the GenBank assembly GCA_000993215.1. The GC content of the type genome is 38.15 % and the genome length is 0.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Desurella gen. nov.

Candidatus Desurella (NL. fem. n. *Desurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12405*. The type species for the genus is *Candidatus* Desurella melopitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Desurellaceae fam. nov.

Candidatus Desurellaceae (NL. fem. n. *Desurellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12405.* The type genus for the taxon is *Candidatus* Desurella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desurellales.

Description of *Candidatus* Desurellales ord. nov.

Candidatus Desurellales (NL. fem. n. *Desurellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12405.* The type genus for the taxon is *Candidatus* Desurella .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Desuria denomimonia sp. nov.

Candidatus Desuria denomimonia (NL. fem. n. *denomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA917 sp002293855*. The type genome for the species is the GenBank assembly GCA_002293855.1. The GC content of the type genome is 42.66 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Desuria gen. nov.

Candidatus Desuria (NL. fem. n. *Desuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA917*. The type species for the genus is *Candidatus* Desuria denomimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuriaceae.

Description of *Candidatus* Desuriaceae fam. nov.

Candidatus Desuriaceae (NL. fem. n. *Desuriaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA917*. The type genus for the taxon is *Candidatus* Desuria .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Desurida repudiforma sp. nov.

Candidatus Desurida repudiforma (NL. fem. n. *repudiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-47-37 sp002772455*. The type genome for the species is the GenBank assembly GCA_002771645.1. The GC content of the type genome is 46.75 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Desurida gen. nov.

Candidatus Desurida (NL. fem. n. *Desurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-47-37*. The type species for the genus is *Candidatus* Desurida repudiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-47-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuridaceae.

Description of *Candidatus* Desuridaceae fam. nov.

Candidatus Desuridaceae (NL. fem. n. *Desuridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG1-02-47-37.* The type genus for the taxon is *Candidatus* Desurida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Desurula unetvisca sp. nov.

Candidatus Desurula unetvisca (NL. fem. n. *unetvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUZI01 sp013349595*. The type genome for the species is the GenBank assembly GCA_013349595.1. The GC content of the type genome is 35.33 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Desurula gen. nov.

Candidatus Desurula (NL. fem. n. *Desurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUZI01*. The type species for the genus is *Candidatus* Desurula unetvisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUZI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Desurulaceae.

Description of *Candidatus* Desurulaceae fam. nov.

Candidatus Desurulaceae (NL. fem. n. *Desurulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUZI01.* The type genus for the taxon is *Candidatus* Desurula .

According to GTDB R06-RS202, this family belongs to the order *Thermodesulfovibrionales*.

Description of *Candidatus* Detecana benepugo sp. nov.

Candidatus Detecana benepugo (NL. fem. n. *benepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120531 sp000173115*. The type genome for the species is the GenBank assembly GCA_002390585.1. The GC content of the type genome is 38.57 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Detecana gen. nov.

Candidatus Detecana (NL. fem. n. *Detecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MAG-120531*. The type species for the genus is *Candidatus* Detecana benepugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detecana rorifimonia sp. nov.

Candidatus Detecana rorifimonia (NL. fem. n. *rorifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120531 sp002378585*. The type genome for the species is the GenBank assembly GCA_002378585.1. The GC content of the type genome is 44.17 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Detecana volunitura sp. nov.

Candidatus Detecana volunitura (NL. fem. n. *volunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-120531 sp013373635*. The type genome for the species is the GenBank assembly GCA_013373635.1. The GC content of the type genome is 38.47 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Detecaria inperibra sp. nov.

Candidatus Detecaria inperibra (NL. fem. n. *inperibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WPAF01 sp009772965*. The type genome for the species is the GenBank assembly GCA_009772965.1. The GC content of the type genome is 39.99 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Detecaria gen. nov.

Candidatus Detecaria (NL. fem. n. *Detecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WPAF01*. The type species for the genus is *Candidatus* Detecaria inperibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WPAF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detecariaceae.

Description of *Candidatus* Detecariaceae fam. nov.

Candidatus Detecariaceae (NL. fem. n. *Detecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WPAF01.* The type genus for the taxon is *Candidatus* Detecaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYC2-FULL-46-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domipidales.

Description of *Candidatus* Detecella citivifica sp. nov.

Candidatus Detecella citivifica (NL. fem. n. *citivifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-89 sp003166865*. The type genome for the species is the GenBank assembly GCA_003167175.1. The GC content of the type genome is 59.66 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Detecella gen. nov.

Candidatus Detecella (NL. fem. n. *Detecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-89*. The type species for the genus is *Candidatus* Detecella citivifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detecella documisca sp. nov.

Candidatus Detecella documisca (NL. fem. n. *documisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-89 sp003132905*. The type genome for the species is the GenBank assembly GCA_003132905.1. The GC content of the type genome is 57.68 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Detecella relecitoga sp. nov.

Candidatus Detecella relecitoga (NL. fem. n. *relecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-89 sp003166875*. The type genome for the species is the GenBank assembly GCA_003133465.1. The GC content of the type genome is 58.36 % and the genome length is 7.51 Mbp.

Description of *Candidatus* Detecella siticilega sp. nov.

Candidatus Detecella siticilega (NL. fem. n. *siticilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-89 sp003162425*. The type genome for the species is the GenBank assembly GCA_003162425.1. The GC content of the type genome is 58.21 % and the genome length is 8.72 Mbp.

Description of *Candidatus* Detecia delecitura sp. nov.

Candidatus Detecia delecitura (NL. fem. n. *delecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRFN01 sp903877885*. The type genome for the species is the GenBank assembly GCA_903852855.1. The GC content of the type genome is 38.21 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Detecia gen. nov.

Candidatus Detecia (NL. fem. n. *Detecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRFN01*. The type species for the genus is *Candidatus* Detecia delecitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12157*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maledosaceae.

Description of *Candidatus* Detecida decenifica sp. nov.

Candidatus Detecida decenifica (NL. fem. n. *decenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-306 sp000980375*. The type genome for the species is the GenBank assembly GCA_002103135.1. The GC content of the type genome is 36.89 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Detecida gen. nov.

Candidatus Detecida (NL. fem. n. *Detecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-306*. The type species for the genus is *Candidatus* Detecida decenifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detecosa delacitoga sp. nov.

Candidatus Detecosa delacitoga (NL. fem. n. *delacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED660 sp002691205*. The type genome for the species is the GenBank assembly GCA_002691205.1. The GC content of the type genome is 54.19 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Detecosa gen. nov.

Candidatus Detecosa (NL. fem. n. *Detecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED660*. The type species for the genus is *Candidatus* Detecosa delacitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4427*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapiaceae.

Description of *Candidatus* Detecosa docibimonia sp. nov.

Candidatus Detecosa docibimonia (NL. fem. n. *docibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED660 sp002691025*. The type genome for the species is the GenBank assembly GCA_002170485.2. The GC content of the type genome is 59.98 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Detecula maleditica sp. nov.

Candidatus Detecula maleditica (NL. fem. n. *maleditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4839 sp002400085*. The type genome for the species is the GenBank assembly GCA_002397015.1. The GC content of the type genome is 32.45 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Detecula gen. nov.

Candidatus Detecula (NL. fem. n. *Detecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4839*. The type species for the genus is *Candidatus* Detecula maleditica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detenana conamitrix sp. nov.

Candidatus Detenana conamitrix (NL. fem. n. *conamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002793235 sp002402165*. The type genome for the species is the GenBank assembly GCA_002402165.1. The GC content of the type genome is 32.04 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Detenana gen. nov.

Candidatus Detenana (NL. fem. n. *Detenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002793235*. The type species for the genus is *Candidatus* Detenana conamitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detenana pabilicella sp. nov.

Candidatus Detenana pabilicella (NL. fem. n. *pabilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002793235 sp002790175*. The type genome for the species is the GenBank assembly GCA_002793235.1. The GC content of the type genome is 32.07 %

and the genome length is 2.18 Mbp.

Description of *Candidatus* Detenana rubicedo sp. nov.

Candidatus Detenana rubicedo (NL. fem. n. *rubicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002793235 sp002401955*. The type genome for the species is the GenBank assembly GCA_002401955.1. The GC content of the type genome is 32.48 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Detenella irregitia sp. nov.

Candidatus Detenella irregitia (NL. fem. n. *irregitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2770 sp002352565*. The type genome for the species is the GenBank assembly GCA_002352565.1. The GC content of the type genome is 50.22 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Detenella gen. nov.

Candidatus Detenella (NL. fem. n. *Detenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2770*. The type species for the genus is *Candidatus* Detenella irregitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2770*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detenellaceae.

Description of *Candidatus* Detenellaceae fam. nov.

Candidatus Detenellaceae (NL. fem. n. *Detenellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2770.* The type genus for the taxon is *Candidatus* Detenella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2770*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Detenellales.

Description of *Candidatus* Detenellales ord. nov.

Candidatus Detenellales (NL. fem. n. *Detenellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2770.* The type genus for the taxon is *Candidatus* Detenella .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Detenia turibisca sp. nov.

Candidatus Detenia turibisca (NL. fem. n. *turibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVZH01 sp002068325*. The type genome for the species is the GenBank assembly GCA_002068325.1. The GC content of the type genome is 69.46 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Detenia gen. nov.

Candidatus Detenia (NL. fem. n. *Detenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MVZH01*. The type species for the genus is *Candidatus* Detenia turibisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MVZH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deteniaceae.

Description of *Candidatus* Deteniaceae fam. nov.

Candidatus Deteniaceae (NL. fem. n. *Deteniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MVZH01.* The type genus for the taxon is *Candidatus* Detenia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semilidales.

Description of *Candidatus* Detenosa categibula sp. nov.

Candidatus Detenosa categibula (NL. fem. n. *categibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL24 sp003503355*. The type genome for the species is the GenBank assembly GCA_003503355.1. The GC content of the type genome is 54.96 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Detenosa gen. nov.

Candidatus Detenosa (NL. fem. n. *Detenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BACL24*. The type species for the genus is *Candidatus* Detenosa categibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-45221*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamiaceae.

Description of *Candidatus* Detenosa cocoledo sp. nov.

Candidatus Detenosa cocoledo (NL. fem. n. *cocoledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL24 sp002430605*. The type genome for the species is the GenBank assembly GCA_001439535.1. The GC content of the type genome is 53.07 % and the genome length is 2.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water; brackish water collected from the surface of the Baltic Sea".

Description of *Candidatus* Detenosa inbecitio sp. nov.

Candidatus Detenosa inbecitio (NL. fem. n. *inbecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL24 sp003485085*. The type genome for the species is the GenBank assembly GCA_003485085.1. The GC content of the type genome is 49.13 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Detenosa melililenta sp. nov.

Candidatus Detenosa melililenta (NL. fem. n. *melililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL24 sp002292345*. The type genome for the species is the GenBank assembly GCA_002470805.1. The GC content of the type genome is 51.75 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Detenosa taxilitia sp. nov.

Candidatus Detenosa taxilitia (NL. fem. n. *taxilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL24 sp902728235*. The type genome for the species is the GenBank assembly RS_GCF_902728255.1. The GC content of the type genome is 51.6 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Detenula pabilastra sp. nov.

Candidatus Detenula pabilastra (NL. fem. n. *pabilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWVB01 sp003562365*. The type genome for the species is the GenBank assembly GCA_007133285.1. The GC content of the type genome is 60.35 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Detenula gen. nov.

Candidatus Detenula (NL. fem. n. *Detenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWVB01*. The type species for the genus is *Candidatus* Detenula pabilastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLSP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decamosaceae.

Description of *Candidatus* Detenula timefitoga sp. nov.

Candidatus Detenula timefitoga (NL. fem. n. *timefitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWVB01 sp007125545*. The type genome for the species is the GenBank assembly GCA_007119465.1. The GC content of the type genome is 60.03 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Detepana abnoritrix sp. nov.

Candidatus Detepana abnoritrix (NL. fem. n. *abnoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA822 sp002712565*. The type genome for the species is the GenBank assembly GCA_002712565.1. The GC content of the type genome is 60.77 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Detepana gen. nov.

Candidatus Detepana (NL. fem. n. *Detepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA822*. The type species for the genus is *Candidatus* Detepana abnoritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Detepana buxifitia sp. nov.

Candidatus Detepana buxifitia (NL. fem. n. *buxifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA822 sp002731735*. The type genome for the species is the GenBank assembly GCA_002295725.1. The GC content of the type genome is 62.14 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Deteparia hemidatio sp. nov.

Candidatus Deteparia hemidatio (NL. fem. n. *hemidatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-63-19 sp001770425*. The type genome for the species is the GenBank assembly GCA_001772025.1. The GC content of the type genome is 64.55 % and the genome length is 2.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Deteparia gen. nov.

Candidatus Deteparia (NL. fem. n. *Deteparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-63-19*. The type species for the genus is *Candidatus* Deteparia hemidatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Deteparia taxililega sp. nov.

Candidatus Deteparia taxililega (NL. fem. n. *taxililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-63-19 sp001770415*. The type genome for the species is the GenBank assembly GCA_001770545.1. The GC content of the type genome is 62.39 % and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Detepella pabilitia sp. nov.

Candidatus Detepella pabilitia (NL. fem. n. *pabilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-69 sp005885325*. The type genome for the species is the GenBank assembly GCA_005885325.1. The GC content of the type genome is 69.18 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Detepella gen. nov.

Candidatus Detepella (NL. fem. n. *Detepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-69*. The type species for the genus is *Candidatus* Detepella pabilitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navifellaceae.

Description of *Candidatus* Detepia metapisca sp. nov.

Candidatus Detepia metapisca (NL. fem. n. *metapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED11-315 sp003561715*. The type genome for the species is the GenBank assembly GCA_007120885.1. The GC content of the type genome is 51.04 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Detepia gen. nov.

Candidatus Detepia (NL. fem. n. *Detepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED11-315*. The type species for the genus is *Candidatus* Detepia metapisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Detepida lucelibula sp. nov.

Candidatus Detepida lucelibula (NL. fem. n. *lucelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10025 sp001003705*. The type genome for the species is the GenBank assembly GCA_003527115.1. The GC content of the type genome is 47.45 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Detepida gen. nov.

Candidatus Detepida (NL. fem. n. *Detepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10025*. The type species for the genus is *Candidatus* Detepida lucelibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detepidaceae.

Description of *Candidatus* Detepidaceae fam. nov.

Candidatus Detepidaceae (NL. fem. n. *Detepidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10025.* The type genus for the taxon is *Candidatus* Detepida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Detepidales.

Description of *Candidatus* Detepidales ord. nov.

Candidatus Detepidales (NL. fem. n. *Detepidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10025.* The type genus for the taxon is *Candidatus* Detepida .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Deteposa inornisca sp. nov.

Candidatus Deteposa inornisca (NL. fem. n. *inornisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSP1-2 sp001443445*. The type genome for the species is the GenBank assembly GCA_001443445.1. The GC content of the type genome is 40.27 %

and the genome length is 2.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment at 5m depth".

Description of *Candidatus* Deteposa gen. nov.

Candidatus Deteposa (NL. fem. n. *Deteposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSP1-2*. The type species for the genus is *Candidatus* Deteposa inornisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deteposaceae.

Description of *Candidatus* Deteposaceae fam. nov.

Candidatus Deteposaceae (NL. fem. n. *Deteposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSP1-2.* The type genus for the taxon is *Candidatus* Deteposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2774*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Siligiales.

Description of *Candidatus* Detesaria ambecimonia sp. nov.

Candidatus Detesaria ambecimonia (NL. fem. n. *ambecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp012522155*. The type genome for the species is the GenBank assembly GCA_012522155.1. The GC content of the type genome is 44.61 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Detesaria gen. nov.

Candidatus Detesaria (NL. fem. n. *Detesaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LD21*. The type species for the genus is *Candidatus* Detesaria ambecimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VadinHA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categariaceae.

Description of *Candidatus* Detesaria argititrix sp. nov.

Candidatus Detesaria argititrix (NL. fem. n. *argititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp002319885*. The type genome for the species is the GenBank assembly GCA_002319885.1. The GC content of the type genome is 38.15 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Detesaria astipedo sp. nov.

Candidatus Detesaria astipedo (NL. fem. n. *astipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003501665*. The type genome for the species is the GenBank assembly GCA_003501665.1. The GC content of the type genome is 41.34 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Detesaria benevicula sp. nov.

Candidatus Detesaria benevicula (NL. fem. n. *benevicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp013314865*. The type genome for the species is the GenBank assembly GCA_013314865.1. The GC content of the type genome is 41.9 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Detesaria buxanimonia sp. nov.

Candidatus Detesaria buxanimonia (NL. fem. n. *buxanimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp002328625*. The type genome for the species is the GenBank assembly GCA_002328625.1. The GC content of the type genome is 40.48 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Detesaria camilentia sp. nov.

Candidatus Detesaria camilentia (NL. fem. n. *camilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp002428385*. The type genome for the species is the GenBank assembly GCA_002418645.1. The GC content of the type genome is 46.19 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Detesaria carecicula sp. nov.

Candidatus Detesaria carecicula (NL. fem. n. *carecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003142255*. The type genome for the species is the GenBank assembly GCA_003142255.1. The GC content of the type genome is 41.75 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Detesaria cinefatio sp. nov.

Candidatus Detesaria cinefatio (NL. fem. n. *cinefatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003141415*. The type genome for the species is the GenBank assembly GCA_003141415.1. The GC content of the type genome is 37.46 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Detesaria conigimonas sp. nov.

Candidatus Detesaria conigimonas (NL. fem. n. *conigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp012519515*. The type genome for the species is the GenBank assembly GCA_012519515.1. The GC content of the type genome is 45.31 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Detesaria decomax sp. nov.

Candidatus Detesaria decomax (NL. fem. n. *decomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003520925*. The type genome for the species is the GenBank assembly GCA_003520925.1. The GC content of the type genome is 41.49 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Detesaria defosedo sp. nov.

Candidatus Detesaria defosedo (NL. fem. n. *defosedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003157015*. The type genome for the species is the GenBank assembly GCA_003157015.1. The GC content of the type genome is 37.81 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Detesaria diluditia sp. nov.

Candidatus Detesaria diluditia (NL. fem. n. *diluditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp002070505*. The type genome for the species is the GenBank assembly GCA_002070505.1. The GC content of the type genome is 41.32 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Detesaria documifica sp. nov.

Candidatus Detesaria documifica (NL. fem. n. *documifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp012729475*. The type genome for the species is the GenBank assembly GCA_012729475.1. The GC content of the type genome is 39.16 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Detesaria effulimonia sp. nov.

Candidatus Detesaria effulimonia (NL. fem. n. *effulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *LD21 sp003141495*. The type genome for the species is the GenBank assembly GCA_003141495.1. The GC content of the type genome is 38.2 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Detesaria embamitura sp. nov.

Candidatus Detesaria embamitura (NL. fem. n. *embamitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp002319915*. The type genome for the species is the GenBank assembly GCA_002319915.1. The GC content of the type genome is 48.72 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Detesaria extunetta sp. nov.

Candidatus Detesaria extunetta (NL. fem. n. *extunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003157055*. The type genome for the species is the GenBank assembly GCA_003157055.1. The GC content of the type genome is 41.5 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Detesaria fefelicula sp. nov.

Candidatus Detesaria fefelicula (NL. fem. n. *fefelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003141895*. The type genome for the species is the GenBank assembly GCA_003141895.1. The GC content of the type genome is 38.01 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Detesaria haricibula sp. nov.

Candidatus Detesaria haricibula (NL. fem. n. *haricibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003155705*. The type genome for the species is the GenBank assembly GCA_003155705.1. The GC content of the type genome is 38.44 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Detesaria imbecilega sp. nov.

Candidatus Detesaria imbecilega (NL. fem. n. *imbecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003162595*. The type genome for the species is the GenBank assembly GCA_003162595.1. The GC content of the type genome is 38.18 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Detesaria lenunessa sp. nov.

Candidatus Detesaria lenunessa (NL. fem. n. *lenunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003152835*. The type genome for the species is the GenBank assembly GCA_003152835.1. The GC content of the type genome is 41.63 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Detesaria malagicula sp. nov.

Candidatus Detesaria malagicula (NL. fem. n. *malagicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp001768195*. The type genome for the species is the GenBank assembly GCA_003528105.1. The GC content of the type genome is 40.92 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Detesaria obfenicella sp. nov.

Candidatus Detesaria obfenicella (NL. fem. n. *obfenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp002424525*. The type genome for the species is the GenBank assembly GCA_002424525.1. The GC content of the type genome is 45.71 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Detesaria pepeniforma sp. nov.

Candidatus Detesaria pepeniforma (NL. fem. n. *pepeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003141715*. The type genome for the species is the GenBank assembly GCA_003141715.1. The GC content of the type genome is 38.16 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Detesaria ranunicula sp. nov.

Candidatus Detesaria ranunicula (NL. fem. n. *ranunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp012517605*. The type genome for the species is the GenBank assembly GCA_012517605.1. The GC content of the type genome is 43.18 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Detesaria resacitio sp. nov.

Candidatus Detesaria resacitio (NL. fem. n. *resacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp009877105*. The type genome for the species is the GenBank assembly GCA_009877105.1. The GC content of the type genome is 45.22 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Detesaria rudeciforma sp. nov.

Candidatus Detesaria rudeciforma (NL. fem. n. *rudeciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp903844815*. The type genome for the species is the GenBank assembly GCA_903844815.1. The GC content of the type genome is 40.95 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Detesaria saxifisca sp. nov.

Candidatus Detesaria saxifisca (NL. fem. n. *saxifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *LD21 sp903824785*. The type genome for the species is the GenBank assembly GCA_903945345.1. The GC content of the type genome is 39.82 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Detesaria subacugo sp. nov.

Candidatus Detesaria subacugo (NL. fem. n. *subacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003157075*. The type genome for the species is the GenBank assembly GCA_003152935.1. The GC content of the type genome is 38.94 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Detesaria venabicella sp. nov.

Candidatus Detesaria venabicella (NL. fem. n. *venabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LD21 sp003141525*. The type genome for the species is the GenBank assembly GCA_003141525.1. The GC content of the type genome is 38.04 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Detesella derelitoga sp. nov.

Candidatus Detesella derelitoga (NL. fem. n. *derelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1217 sp900549625*. The type genome for the species is the GenBank assembly RS_GCF_900772455.1. The GC content of the type genome is 27.98 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Detesella gen. nov.

Candidatus Detesella (NL. fem. n. *Detesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1217*. The type species for the genus is *Candidatus* Detesella derelitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Detesella prospimonia sp. nov.

Candidatus Detesella prospimonia (NL. fem. n. *prospimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1217 sp902766135*. The type genome for the species is the GenBank assembly GCA_902766135.1. The GC content of the type genome is 29.86 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Detesia cerevetta sp. nov.

Candidatus Detesia cerevetta (NL. fem. n. *cerevetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2903 sp002349565*. The type genome for the species is the GenBank assembly GCA_002349565.1. The GC content of the type genome is 52.36 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Detesia gen. nov.

Candidatus Detesia (NL. fem. n. *Detesia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2903*. The type species for the genus is *Candidatus* Detesia cerevetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-977*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemariaceae.

Description of *Candidatus* Detesia cocolitrix sp. nov.

Candidatus Detesia cocolitrix (NL. fem. n. *cocolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2903 sp002393065*. The type genome for the species is the GenBank assembly GCA_002393065.1. The GC content of the type genome is 53.86 %

and the genome length is 1.89 Mbp.

Description of *Candidatus* Detesia coticetta sp. nov.

Candidatus Detesia coticetta (NL. fem. n. *coticetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2903 sp002438565*. The type genome for the species is the GenBank assembly GCA_003532815.1. The GC content of the type genome is 52.34 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Detesia depupitas sp. nov.

Candidatus Detesia depupitas (NL. fem. n. *depupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2903 sp900768875*. The type genome for the species is the GenBank assembly RS_GCF_900768875.1. The GC content of the type genome is 52.24 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Detesia inhabibra sp. nov.

Candidatus Detesia inhabibra (NL. fem. n. *inhabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2903 sp900768465*. The type genome for the species is the GenBank assembly RS_GCF_900768465.1. The GC content of the type genome is 52.3 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Detesida artufitica sp. nov.

Candidatus Detesida artufitica (NL. fem. n. *artufitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5189 sp004298915*. The type genome for the species is the GenBank assembly GCA_004298915.1. The GC content of the type genome is 69.39 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Detesida gen. nov.

Candidatus Detesida (NL. fem. n. *Detesida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5189*. The type species for the genus is *Candidatus* Detesida artufitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Detesida coninago sp. nov.

Candidatus Detesida coninago (NL. fem. n. *coninago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5189 sp003250155*. The type genome for the species is the GenBank assembly GCA_003250155.1. The GC content of the type genome is 71.71 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Detesida decupilenta sp. nov.

Candidatus Detesida decupilenta (NL. fem. n. *decupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5189 sp012026785*. The type genome for the species is the GenBank assembly GCA_012026785.1. The GC content of the type genome is 70.66 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Detesida echidilega sp. nov.

Candidatus Detesida echidilega (NL. fem. n. *echidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5189 sp005889475*. The type genome for the species is the GenBank assembly GCA_005889475.1. The GC content of the type genome is 70.45 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Detesida linigugo sp. nov.

Candidatus Detesida linigugo (NL. fem. n. *linigugo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5189 sp004297395*. The type genome for the species is the GenBank assembly GCA_004297395.1. The GC content of the type genome is 71.6 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Detesida modificella sp. nov.

Candidatus Detesida modificella (NL. fem. n. *modificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5189 sp002413045*. The type genome for the species is the GenBank assembly GCA_002413045.1. The GC content of the type genome is 69.86 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Detesida necubiforma sp. nov.

Candidatus Detesida necubiforma (NL. fem. n. *necubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5189 sp001795245*. The type genome for the species is the GenBank assembly GCA_001795245.1. The GC content of the type genome is 71.69 % and the genome length is 2.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Detesida omninago sp. nov.

Candidatus Detesida omninago (NL. fem. n. *omninago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5189 sp013822395*. The type genome for the species is the GenBank assembly GCA_013822395.1. The GC content of the type genome is 70.62 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Detesosa anapledo sp. nov.

Candidatus Detesosa anapledo (NL. fem. n. *anapledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWH-TA3 sp003053925*. The type genome for the species is the GenBank assembly RS_GCF_003053925.1. The GC content of the type genome is 60.78 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Detesosa gen. nov.

Candidatus Detesosa (NL. fem. n. *Detesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWH-TA3*. The type species for the genus is *Candidatus* Detesosa anapledo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detesosa cuferilega sp. nov.

Candidatus Detesosa cuferilega (NL. fem. n. *cuferilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWH-TA3 sp903940225*. The type genome for the species is the GenBank assembly GCA_903937105.1. The GC content of the type genome is 60.11 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Detesosa excucicula sp. nov.

Candidatus Detesosa excucicula (NL. fem. n. *excucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWH-TA3 sp009704225*. The type genome for the species is the GenBank assembly GCA_009704225.1. The GC content of the type genome is 58.64 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Detesosa favonicula sp. nov.

Candidatus Detesosa favonicula (NL. fem. n. *favonicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWH-TA3 sp009704155*. The type genome for the species is the

GenBank assembly GCA_009704155.1. The GC content of the type genome is 58.63 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Detesosa octipibra sp. nov.

Candidatus Detesosa octipibra (NL. fem. n. *octipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWH-TA3 sp903882245*. The type genome for the species is the GenBank assembly GCA_903882245.1. The GC content of the type genome is 58.75 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Detesosa vitigimonas sp. nov.

Candidatus Detesosa vitigimonas (NL. fem. n. *vitigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWH-TA3 sp009703545*. The type genome for the species is the GenBank assembly GCA_009703545.1. The GC content of the type genome is 58.21 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Detesula acculedo sp. nov.

Candidatus Detesula acculedo (NL. fem. n. *acculedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CT4 sp014193895*. The type genome for the species is the GenBank assembly RS_GCF_014193895.1. The GC content of the type genome is 31.3 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Detesula gen. nov.

Candidatus Detesula (NL. fem. n. *Detesula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CT4*. The type species for the genus is *Candidatus* Detesula acculedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detesula adsifilenta sp. nov.

Candidatus Detesula adsifilenta (NL. fem. n. *adsifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CT4 sp009928445*. The type genome for the species is the GenBank assembly RS_GCF_009928445.1. The GC content of the type genome is 31.6 % and the genome length is 6.05 Mbp.

Description of *Candidatus* Detesula resalessa sp. nov.

Candidatus Detesula resalessa (NL. fem. n. *resalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CT4 sp004015185*. The type genome for the species is the GenBank assembly RS_GCF_004015185.1. The GC content of the type genome is 31.98 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Detorana apperago sp. nov.

Candidatus Detorana apperago (NL. fem. n. *apperago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC9063 sp008638025*. The type genome for the species is the GenBank assembly GCA_008638025.1. The GC content of the type genome is 30.18 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Detorana gen. nov.

Candidatus Detorana (NL. fem. n. *Detorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IMCC9063*. The type species for the genus is *Candidatus* Detorana apperago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detorana bovicimonas sp. nov.

Candidatus Detorana bovicimonas (NL. fem. n. *bovicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC9063 sp008638205*. The type genome for the species is the GenBank assembly GCA_008638205.1. The GC content of the type genome is 31.99 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Detorana homilitrix sp. nov.

Candidatus Detorana homilitrix (NL. fem. n. *homilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC9063 sp000750175*. The type genome for the species is the GenBank assembly GCA_000750175.1. The GC content of the type genome is 31.39 % and the genome length is 0.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "a planktonic sample of freshwater lake at 1m depth".

Description of *Candidatus* Detorana ludimetta sp. nov.

Candidatus Detorana ludimetta (NL. fem. n. *ludimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC9063 sp008638015*. The type genome for the species is the GenBank assembly GCA_008638245.1. The GC content of the type genome is 30.92 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Detorana parocatica sp. nov.

Candidatus Detorana parocatica (NL. fem. n. *parocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC9063 sp000195085*. The type genome for the species is the GenBank assembly RS_GCF_000195085.1. The GC content of the type genome is 31.67 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Detorana selecitas sp. nov.

Candidatus Detorana selecitas (NL. fem. n. *selecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *IMCC9063 sp008638225*. The type genome for the species is the GenBank assembly GCA_008638225.1. The GC content of the type genome is 31.05 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Detoraria tiguritura sp. nov.

Candidatus Detoraria tiguritura (NL. fem. n. *tiguritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J040 sp003696505*. The type genome for the species is the GenBank assembly GCA_003696505.1. The GC content of the type genome is 57.7 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Detoraria gen. nov.

Candidatus Detoraria (NL. fem. n. *Detoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J040*. The type species for the genus is *Candidatus* Detoraria tiguritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J040*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detorariaceae.

Description of *Candidatus* Detorariaceae fam. nov.

Candidatus Detorariaceae (NL. fem. n. *Detorariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J040.* The type genus for the taxon is *Candidatus* Detoraria .

According to the original version of GTDB R06-RS202, this family belongs to the order *J040*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Detorariales.

Description of *Candidatus* Detorariales ord. nov.

Candidatus Detorariales (NL. fem. n. *Detorariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J040.* The type genus for the taxon is *Candidatus* Detoraria .

According to the original version of GTDB R06-RS202, this family belongs to the class *MBNT15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bipenulae.

Description of *Candidatus* Detorella deceniforma sp. nov.

Candidatus Detorella deceniforma (NL. fem. n. *deceniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs055 sp005772765*. The type genome for the species is the GenBank assembly GCA_005772765.1. The GC content of the type genome is 66.28 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Detorella gen. nov.

Candidatus Detorella (NL. fem. n. *Detorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-120-MAGs055*. The type species for the genus is *Candidatus* Detorella deceniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-610*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpellaceae.

Description of *Candidatus* Detorella nocumedo sp. nov.

Candidatus Detorella nocumedo (NL. fem. n. *nocumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs055 sp005779395*. The type genome for the species is the GenBank assembly GCA_005779395.1. The GC content of the type genome is 57.01 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Detoria cacomicula sp. nov.

Candidatus Detoria cacomicula (NL. fem. n. *cacomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CSP1-8 sp003513855*. The type genome for the species is the GenBank assembly GCA_003513855.1. The GC content of the type genome is 64.22 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Detoria gen. nov.

Candidatus Detoria (NL. fem. n. *Detoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSP1-8*. The type species for the genus is *Candidatus* Detoria cacomicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MBNT15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenulaceae.

Description of *Candidatus* Detoria insuritrix sp. nov.

Candidatus Detoria insuritrix (NL. fem. n. *insuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSP1-8 sp001443455*. The type genome for the species is the GenBank assembly GCA_001443455.1. The GC content of the type genome is 63.49 % and the genome length is 2.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment at 5m depth".

Description of *Candidatus* Detorida dibapitas sp. nov.

Candidatus Detorida dibapitas (NL. fem. n. *dibapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDET01 sp013286945*. The type genome for the species is the GenBank assembly GCA_013286945.1. The GC content of the type genome is 48.24 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Detorida gen. nov.

Candidatus Detorida (NL. fem. n. *Detorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDET01*. The type species for the genus is *Candidatus* Detorida

dibapitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDET01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detoridaceae.

Description of *Candidatus* Detoridaceae fam. nov.

Candidatus Detoridaceae (NL. fem. n. *Detoridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDET01.* The type genus for the taxon is *Candidatus* Detorida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABDET01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Detoridales.

Description of *Candidatus* Detoridales ord. nov.

Candidatus Detoridales (NL. fem. n. *Detoridales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDET01.* The type genus for the taxon is *Candidatus* Detorida .

According to the original version of GTDB R06-RS202, this family belongs to the class *JABDET01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Detoridae.

Description of *Candidatus* Detoridae class. nov.

Candidatus Detoridae (NL. fem. n. *c__Detoridae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDET01.* The type genus for the taxon is *Candidatus* Detorida .

According to GTDB R06-RS202, this class belongs to the phylum *Eremiobacterota*.

Description of *Candidatus* Detorosa vitupilega sp. nov.

Candidatus Detorosa vitupilega (NL. fem. n. *vitupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1260 sp003162635*. The type genome for the species is the GenBank assembly GCA_003157155.1. The GC content of the type genome is 58.18 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Detorosa gen. nov.

Candidatus Detorosa (NL. fem. n. *Detorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1260*. The type species for the genus is *Candidatus* Detorosa vitupilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6906*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibellaceae.

Description of *Candidatus* Detorula murelifica sp. nov.

Candidatus Detorula murelifica (NL. fem. n. *murelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2353 sp002344005*. The type genome for the species is the GenBank assembly GCA_002343575.1. The GC content of the type genome is 38.78 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Detorula gen. nov.

Candidatus Detorula (NL. fem. n. *Detorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2353*. The type species for the genus is *Candidatus* Detorula murelifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA961*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citipellaceae.

Description of *Candidatus* Detosana dececedo sp. nov.

Candidatus Detosana dececedo (NL. fem. n. *dececedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2922 sp900313925*. The type genome for the species is the GenBank assembly GCA_002350875.1. The GC content of the type genome is 53.05 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Detosana gen. nov.

Candidatus Detosana (NL. fem. n. *Detosana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2922*. The type species for the genus is *Candidatus* Detosana dececedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detosaria capabicella sp. nov.

Candidatus Detosaria capabicella (NL. fem. n. *capabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVT01 sp009694125*. The type genome for the species is the GenBank assembly GCA_009694125.1. The GC content of the type genome is 63.99 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Detosaria gen. nov.

Candidatus Detosaria (NL. fem. n. *Detosaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVT01*. The type species for the genus is *Candidatus* Detosaria capabicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHVT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detosariaceae.

Description of *Candidatus* Detosariaceae fam. nov.

Candidatus Detosariaceae (NL. fem. n. *Detosariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *SHVT01*. The type genus for the taxon is *Candidatus* Detosaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHVT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Detosariales.

Description of *Candidatus* Detosariales ord. nov.

Candidatus Detosariales (NL. fem. n. *Detosariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVT01*. The type genus for the taxon is *Candidatus* Detosaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Detosia resurigena sp. nov.

Candidatus Detosia resurigena (NL. fem. n. *resurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7018 sp002448305*. The type genome for the species is the GenBank assembly GCA_002448305.1. The GC content of the type genome is 45.2 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Detosia gen. nov.

Candidatus Detosia (NL. fem. n. *Detosia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7018*. The type species for the genus is *Candidatus* Detosia resurigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detosida indecitura sp. nov.

Candidatus Detosida indecitura (NL. fem. n. *indecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8153 sp003449495*. The type genome for the species is the GenBank assembly GCA_003449495.1. The GC content of the type genome is 65.23 %

and the genome length is 1.93 Mbp.

Description of *Candidatus* Detosida gen. nov.

Candidatus Detosida (NL. fem. n. *Detosida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8153*. The type species for the genus is *Candidatus* Detosida indecitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8153*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detosidaceae.

Description of *Candidatus* Detosidaceae fam. nov.

Candidatus Detosidaceae (NL. fem. n. *Detosidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8153.* The type genus for the taxon is *Candidatus* Detosida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8153*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Detosidales.

Description of *Candidatus* Detosidales ord. nov.

Candidatus Detosidales (NL. fem. n. *Detosidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8153.* The type genus for the taxon is *Candidatus* Detosida .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetariae.

Description of *Candidatus* Detososa butubilenta sp. nov.

Candidatus Detososa butubilenta (NL. fem. n. *butubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGY01 sp007378955*. The type genome for the species is the

GenBank assembly GCA_007376655.1. The GC content of the type genome is 35.14 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Detososa gen. nov.

Candidatus Detososa (NL. fem. n. *Detososa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGY01*. The type species for the genus is *Candidatus* Detososa butubilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VMGY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detososaceae.

Description of *Candidatus* Detososaceae fam. nov.

Candidatus Detososaceae (NL. fem. n. *Detososaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VMGY01.* The type genus for the taxon is *Candidatus* Detososa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2591*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peribosales.

Description of *Candidatus* Detosula carucibula sp. nov.

Candidatus Detosula carucibula (NL. fem. n. *carucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LGRT01 sp001642945*. The type genome for the species is the GenBank assembly GCA_009887035.1. The GC content of the type genome is 51.27 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Detosula gen. nov.

Candidatus Detosula (NL. fem. n. *Detosula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LGRT01*. The type species for the genus is *Candidatus* Detosula carucibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detosula casabitio sp. nov.

Candidatus Detosula casabitio (NL. fem. n. *casabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LGRT01 sp902542575*. The type genome for the species is the GenBank assembly GCA_902542575.1. The GC content of the type genome is 48.81 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Detosula irreviforma sp. nov.

Candidatus Detosula irreviforma (NL. fem. n. *irreviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LGRT01 sp902539465*. The type genome for the species is the GenBank assembly GCA_902539465.1. The GC content of the type genome is 48.88 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Detosula ornitentia sp. nov.

Candidatus Detosula ornitentia (NL. fem. n. *ornitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LGRT01 sp902592485*. The type genome for the species is the GenBank assembly GCA_902592485.1. The GC content of the type genome is 49.15 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Detotana bipinitica sp. nov.

Candidatus Detotana bipinitica (NL. fem. n. *bipinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLFT01 sp007118765*. The type genome for the species is the GenBank assembly GCA_007118765.1. The GC content of the type genome is 56.25 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Detotana gen. nov.

Candidatus Detotana (NL. fem. n. *Detotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLFT01*. The type species for the genus is *Candidatus* Detotana bipinitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilulaceae.

Description of *Candidatus* Detotana licenicella sp. nov.

Candidatus Detotana licenicella (NL. fem. n. *licenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLFT01 sp011046175*. The type genome for the species is the GenBank assembly GCA_011046175.1. The GC content of the type genome is 56.19 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Detotana refinastra sp. nov.

Candidatus Detotana refinastra (NL. fem. n. *refinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLFT01 sp007124105*. The type genome for the species is the GenBank assembly GCA_007130975.1. The GC content of the type genome is 56.05 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Detotaria adcumax sp. nov.

Candidatus Detotaria adcumax (NL. fem. n. *adcumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-831 sp900769885*. The type genome for the species is the GenBank assembly RS_GCF_900769885.1. The GC content of the type genome is 40.61 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Detotaria gen. nov.

Candidatus Detotaria (NL. fem. n. *Detotaria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-831*. The type species for the genus is *Candidatus* Detotaria adcumax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Detotaria adobrisca sp. nov.

Candidatus Detotaria adobrisca (NL. fem. n. *adobrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-831 sp002317435*. The type genome for the species is the GenBank assembly GCA_002317435.1. The GC content of the type genome is 51.44 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Detotaria annubimonia sp. nov.

Candidatus Detotaria annubimonia (NL. fem. n. *annubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-831 sp900771335*. The type genome for the species is the GenBank assembly RS_GCF_900771335.1. The GC content of the type genome is 45.01 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Detotaria defulitia sp. nov.

Candidatus Detotaria defulitia (NL. fem. n. *defulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-831 sp900550465*. The type genome for the species is the GenBank assembly GCA_900550465.1. The GC content of the type genome is 55.28 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Detotaria dibapiforma sp. nov.

Candidatus Detotaria dibapiforma (NL. fem. n. *dibapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-831 sp000432775*. The type genome for the species is the GenBank assembly GCA_900542585.1. The GC content of the type genome is 53.73 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Detotaria didacilenta sp. nov.

Candidatus Detotaria didacilenta (NL. fem. n. *didacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-831 sp900544175*. The type genome for the species is the GenBank assembly GCA_900544175.1. The GC content of the type genome is 51.26 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Detotaria tabitax sp. nov.

Candidatus Detotaria tabitax (NL. fem. n. *tabitax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-831 sp902388455*. The type genome for the species is the GenBank assembly GCA_902388455.1. The GC content of the type genome is 53.71 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Detotella funebetta sp. nov.

Candidatus Detotella funebetta (NL. fem. n. *funebetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABBTK01 sp011389885*. The type genome for the species is the GenBank assembly GCA_011389885.1. The GC content of the type genome is 63.84 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Detotella gen. nov.

Candidatus Detotella (NL. fem. n. *Detotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABBTK01*. The type species for the genus is *Candidatus* Detotella

funebetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detotia decapitio sp. nov.

Candidatus Detotia decapitio (NL. fem. n. *decapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8444 sp003454845*. The type genome for the species is the GenBank assembly GCA_003454845.1. The GC content of the type genome is 35.49 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Detotia gen. nov.

Candidatus Detotia (NL. fem. n. *Detotia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8444*. The type species for the genus is *Candidatus* Detotia decapitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7312*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalellaceae.

Description of *Candidatus* Detotia nubecilenta sp. nov.

Candidatus Detotia nubecilenta (NL. fem. n. *nubecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8444 sp002714805*. The type genome for the species is the GenBank assembly GCA_002714805.1. The GC content of the type genome is 31.65 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Detotida acrufitas sp. nov.

Candidatus Detotida acrufitas (NL. fem. n. *acrufitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHXV01 sp009693105*. The type genome for the species is the

GenBank assembly GCA_009693105.1. The GC content of the type genome is 66.85 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Detotida gen. nov.

Candidatus Detotida (NL. fem. n. *Detotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHXV01*. The type species for the genus is *Candidatus* Detotida acrufitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHXV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotidaceae.

Description of *Candidatus* Detotidaceae fam. nov.

Candidatus Detotidaceae (NL. fem. n. *Detotidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHXV01*. The type genus for the taxon is *Candidatus* Detotida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHXV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Detotidales.

Description of *Candidatus* Detotidales ord. nov.

Candidatus Detotidales (NL. fem. n. *Detotidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHXV01*. The type genus for the taxon is *Candidatus* Detotida .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Detotosa benemimonas sp. nov.

Candidatus Detotosa benemimonas (NL. fem. n. *benemimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7960 sp003451785*. The type genome for the species is the GenBank assembly GCA_003451785.1. The GC content of the type genome is 41.85 %

and the genome length is 2.41 Mbp.

Description of *Candidatus* Detotosa gen. nov.

Candidatus Detotosa (NL. fem. n. *Detotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7960*. The type species for the genus is *Candidatus* Detotosa benemimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Detotosaceae fam. nov.

Candidatus Detotosaceae (NL. fem. n. *Detotosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7960.* The type genus for the taxon is *Candidatus* Detotosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Detotosa funivatio sp. nov.

Candidatus Detotosa funivatio (NL. fem. n. *funivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7960 sp002402465*. The type genome for the species is the GenBank assembly GCA_002402465.1. The GC content of the type genome is 47.7 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Detotosa obtorigena sp. nov.

Candidatus Detotosa obtorigena (NL. fem. n. *obtorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7960 sp012521995*. The type genome for the species is the GenBank assembly GCA_012521995.1. The GC content of the type genome is 49.48 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Detotula dimacatio sp. nov.

Candidatus Detotula dimacatio (NL. fem. n. *dimacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYQD01 sp007280345*. The type genome for the species is the GenBank assembly GCA_007280345.1. The GC content of the type genome is 50.5 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Detotula gen. nov.

Candidatus Detotula (NL. fem. n. *Detotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QYQD01*. The type species for the genus is *Candidatus* Detotula dimacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QYQD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotulaceae.

Description of *Candidatus* Detotulaceae fam. nov.

Candidatus Detotulaceae (NL. fem. n. *Detotulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QYQD01.* The type genus for the taxon is *Candidatus* Detotula .

According to the original version of GTDB R06-RS202, this family belongs to the order *QYQD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Detotulales.

Description of *Candidatus* Detotulales ord. nov.

Candidatus Detotulales (NL. fem. n. *Detotulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QYQD01.* The type genus for the taxon is *Candidatus* Detotula .

According to the original version of GTDB R06-RS202, this family belongs to the class *QYQD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Detotulae.

Description of *Candidatus* Detotulae class. nov.

Candidatus Detotulae (NL. fem. n. *c__Detotulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QYQD01.* The type genus for the taxon is *Candidatus* Detotula .

According to GTDB R06-RS202, this class belongs to the phylum *Desulfobacterota*.

Description of *Candidatus* Detotula hirunatio sp. nov.

Candidatus Detotula hirunatio (NL. fem. n. *hirunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYQD01 sp011046395*. The type genome for the species is the GenBank assembly GCA_011046395.1. The GC content of the type genome is 48.67 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Detumana adlocicella sp. nov.

Candidatus Detumana adlocicella (NL. fem. n. *adlocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWXJ01 sp003561965*. The type genome for the species is the GenBank assembly GCA_003561965.1. The GC content of the type genome is 64.22 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Detumana gen. nov.

Candidatus Detumana (NL. fem. n. *Detumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWXJ01*. The type species for the genus is *Candidatus* Detumana adlocicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWXJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detumanaceae.

Description of *Candidatus* Detumanaceae fam. nov.

Candidatus Detumanaceae (NL. fem. n. *Detumanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWXJ01*. The type genus for the taxon is *Candidatus* Detumana .

According to the original version of GTDB R06-RS202, this family belongs to the order *PUNC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sanabidales.

Description of *Candidatus* Detumaria nimirilega sp. nov.

Candidatus Detumaria nimirilega (NL. fem. n. *nimirilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAALLB01 sp011087745*. The type genome for the species is the GenBank assembly GCA_011087745.1. The GC content of the type genome is 44.93 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Detumaria gen. nov.

Candidatus Detumaria (NL. fem. n. *Detumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAALLB01*. The type species for the genus is *Candidatus* Detumaria nimirilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detumella excorago sp. nov.

Candidatus Detumella excorago (NL. fem. n. *excorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJZX01 sp903825245*. The type genome for the species is the GenBank assembly GCA_903825245.1. The GC content of the type genome is 49.26 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Detumella gen. nov.

Candidatus Detumella (NL. fem. n. *Detumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJZX01*. The type species for the genus is *Candidatus* Detumella excorago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIJZX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detumellaceae.

Description of *Candidatus* Detumellaceae fam. nov.

Candidatus Detumellaceae (NL. fem. n. *Detumellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIJZX01.* The type genus for the taxon is *Candidatus* Detumella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBBC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pinacellales.

Description of *Candidatus* Detumia antecibula sp. nov.

Candidatus Detumia antecibula (NL. fem. n. *antecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002689665*. The type genome for the species is the GenBank assembly GCA_002689665.1. The GC content of the type genome is 42.5 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Detumia gen. nov.

Candidatus Detumia (NL. fem. n. *Detumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MB11C04*. The type species for the genus is *Candidatus* Detumia antecibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MB11C04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detumiaceae.

Description of *Candidatus* Detumiaceae fam. nov.

Candidatus Detumiaceae (NL. fem. n. *Detumiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MB11C04.* The type genus for the taxon is *Candidatus* Detumia .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Detumia appagitoga sp. nov.

Candidatus Detumia appagitoga (NL. fem. n. *appagitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp902612125*. The type genome for the species is the GenBank assembly GCA_902612125.1. The GC content of the type genome is 43.68 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Detumia apsoritrix sp. nov.

Candidatus Detumia apsoritrix (NL. fem. n. *apsoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp902615835*. The type genome for the species is the GenBank assembly GCA_902615835.1. The GC content of the type genome is 43.95 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Detumia arilledo sp. nov.

Candidatus Detumia arilledo (NL. fem. n. *arilledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002167265*. The type genome for the species is the GenBank assembly GCA_002167265.1. The GC content of the type genome is 41.09 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Detumia arnogitas sp. nov.

Candidatus Detumia arnogitas (NL. fem. n. *arnogitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp900299365*. The type genome for the species is the GenBank assembly GCA_900299365.1. The GC content of the type genome is 43.37 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Detumia ascalitas sp. nov.

Candidatus Detumia ascalitas (NL. fem. n. *ascalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002713685*. The type genome for the species is the GenBank assembly GCA_002713685.1. The GC content of the type genome is 42.7 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Detumia bifarisca sp. nov.

Candidatus Detumia bifarisca (NL. fem. n. *bifarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002692535*. The type genome for the species is the GenBank assembly GCA_002692535.1. The GC content of the type genome is 42.43 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Detumia cohurimonas sp. nov.

Candidatus Detumia cohurimonas (NL. fem. n. *cohurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002171765*. The type genome for the species is the GenBank assembly GCA_002308735.1. The GC content of the type genome is 43.75 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Detumia conipetta sp. nov.

Candidatus Detumia conipetta (NL. fem. n. *conipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002500665*. The type genome for the species is the GenBank assembly GCA_002480625.1. The GC content of the type genome is 55.81 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Detumia defalastra sp. nov.

Candidatus Detumia defalastra (NL. fem. n. *defalastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002686835*. The type genome for the species is the GenBank assembly GCA_002686835.1. The GC content of the type genome is 45.22 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Detumia defalatio sp. nov.

Candidatus Detumia defalatio (NL. fem. n. *defalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002726435*. The type genome for the species is the GenBank assembly GCA_002726435.1. The GC content of the type genome is 43.94 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Detumia fatifitio sp. nov.

Candidatus Detumia fatifitio (NL. fem. n. *fatifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp902580225*. The type genome for the species is the GenBank assembly GCA_902580225.1. The GC content of the type genome is 40.64 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Detumia lametiforma sp. nov.

Candidatus Detumia lametiforma (NL. fem. n. *lametiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002722545*. The type genome for the species is the GenBank assembly GCA_002722545.1. The GC content of the type genome is 49.87 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Detumia maxilitas sp. nov.

Candidatus Detumia maxilitas (NL. fem. n. *maxilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp003448565*. The type genome for the species is the GenBank assembly GCA_003448565.1. The GC content of the type genome is 43.17 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Detumia papavitoga sp. nov.

Candidatus Detumia papavitoga (NL. fem. n. *papavitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp902569115*. The type genome for the species is the GenBank assembly GCA_902569115.1. The GC content of the type genome is 43.11 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Detumia recorilenta sp. nov.

Candidatus Detumia recorilenta (NL. fem. n. *recorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002168015*. The type genome for the species is the GenBank assembly GCA_002168015.1. The GC content of the type genome is 42.05 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Detumia refacitia sp. nov.

Candidatus Detumia refacitia (NL. fem. n. *refacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002692605*. The type genome for the species is the GenBank assembly GCA_003486585.1. The GC content of the type genome is 50.48 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Detumia refacitica sp. nov.

Candidatus Detumia refacitica (NL. fem. n. *refacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MB11C04 sp002167605*. The type genome for the species is the GenBank assembly GCA_002450215.1. The GC content of the type genome is 47.68 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Detumia ridibugo sp. nov.

Candidatus Detumia ridibugo (NL. fem. n. *ridibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002477515*. The type genome for the species is the GenBank assembly GCA_002477515.1. The GC content of the type genome is 42.42 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Detumia secunitia sp. nov.

Candidatus Detumia secunitia (NL. fem. n. *secunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp902618175*. The type genome for the species is the GenBank assembly GCA_902618175.1. The GC content of the type genome is 44.01 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Detumia sotulifica sp. nov.

Candidatus Detumia sotulifica (NL. fem. n. *sotulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002694035*. The type genome for the species is the GenBank assembly GCA_002694035.1. The GC content of the type genome is 38.64 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Detumia subinivita sp. nov.

Candidatus Detumia subinivita (NL. fem. n. *subinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MB11C04 sp002364975*. The type genome for the species is the GenBank assembly GCA_002722335.1. The GC content of the type genome is 42.96 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Detumida fiducago sp. nov.

Candidatus Detumida fiducago (NL. fem. n. *fiducago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-36-13 sp002787405*. The type genome for the species is the GenBank assembly GCA_002787405.1. The GC content of the type genome is 35.51 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Detumida gen. nov.

Candidatus Detumida (NL. fem. n. *Detumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-36-13*. The type species for the genus is *Candidatus* Detumida fiducago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-36-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mutabiaceae.

Description of *Candidatus* Detumosa bicipugo sp. nov.

Candidatus Detumosa bicipugo (NL. fem. n. *bicipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDBP01 sp013288565*. The type genome for the species is the GenBank assembly GCA_013288565.1. The GC content of the type genome is 48.56 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Detumosa gen. nov.

Candidatus Detumosa (NL. fem. n. *Detumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDBP01*. The type species for the genus is *Candidatus* Detumosa bicipugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDBP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detumosaceae.

Description of *Candidatus* Detumosaceae fam. nov.

Candidatus Detumosaceae (NL. fem. n. *Detumosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDBP01.* The type genus for the taxon is *Candidatus* Detumosa .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Detumula conigitio sp. nov.

Candidatus Detumula conigitio (NL. fem. n. *conigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NSJ-61 sp003433845*. The type genome for the species is the GenBank assembly RS_GCF_003434225.1. The GC content of the type genome is 35.07 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Detumula gen. nov.

Candidatus Detumula (NL. fem. n. *Detumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NSJ-61*. The type species for the genus is *Candidatus* Detumula conigitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detunana adpagiforma sp. nov.

Candidatus Detunana adpagiforma (NL. fem. n. *adpagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYEO01 sp903925195*. The type genome for the species is the GenBank assembly GCA_903925195.1. The GC content of the type genome is 36.35 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Detunana gen. nov.

Candidatus Detunana (NL. fem. n. *Detunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYEO01*. The type species for the genus is *Candidatus* Detunana adpagiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Detunana conamitio sp. nov.

Candidatus Detunana conamitio (NL. fem. n. *conamitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYEO01 sp903839515*. The type genome for the species is the GenBank assembly GCA_903881855.1. The GC content of the type genome is 36.7 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Detunana lubenago sp. nov.

Candidatus Detunana lubenago (NL. fem. n. *lubenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYEO01 sp903840315*. The type genome for the species is the GenBank assembly GCA_903894915.1. The GC content of the type genome is 36.75 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Detunana peradibula sp. nov.

Candidatus Detunana peradibula (NL. fem. n. *peradibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYEO01 sp903891235*. The type genome for the species is the GenBank assembly GCA_903891235.1. The GC content of the type genome is 34.3 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Detunana solipitia sp. nov.

Candidatus Detunana solipitia (NL. fem. n. *solipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYEO01 sp903900685*. The type genome for the species is the GenBank assembly GCA_903837565.1. The GC content of the type genome is 35.18 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Detunaria arrugax sp. nov.

Candidatus Detunaria arrugax (NL. fem. n. *arrugax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-187 sp902826605*. The type genome for the species is the GenBank assembly GCA_902826605.1. The GC content of the type genome is 58.17 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Detunaria gen. nov.

Candidatus Detunaria (NL. fem. n. *Detunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-187*. The type species for the genus is *Candidatus* Detunaria arrugax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detunaria ceromibra sp. nov.

Candidatus Detunaria ceromibra (NL. fem. n. *ceromibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-187 sp903892565*. The type genome for the species is the GenBank assembly GCA_903892565.1. The GC content of the type genome is 58.47 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Detunaria enigmigena sp. nov.

Candidatus Detunaria enigmigena (NL. fem. n. *enigmigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-187 sp009697505*. The type genome for the species is the

GenBank assembly GCA_009697505.1. The GC content of the type genome is 61.16 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Detunaria fecunugo sp. nov.

Candidatus Detunaria fecunugo (NL. fem. n. *fecunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-187 sp003170295*. The type genome for the species is the GenBank assembly GCA_003170295.1. The GC content of the type genome is 58.53 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Detunella aneclitas sp. nov.

Candidatus Detunella aneclitas (NL. fem. n. *aneclitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4719 sp002404345*. The type genome for the species is the GenBank assembly GCA_002404345.1. The GC content of the type genome is 66.74 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Detunella gen. nov.

Candidatus Detunella (NL. fem. n. *Detunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4719*. The type species for the genus is *Candidatus* Detunella aneclitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detunella depupitio sp. nov.

Candidatus Detunella depupitio (NL. fem. n. *depupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4719 sp003132125*. The type genome for the species is the GenBank assembly GCA_003132125.1. The GC content of the type genome is 66.42 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Detunella exheritura sp. nov.

Candidatus Detunella exheritura (NL. fem. n. *exheritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4719 sp003157445*. The type genome for the species is the GenBank assembly GCA_003157445.1. The GC content of the type genome is 64.89 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Detunella exsolessa sp. nov.

Candidatus Detunella exsolessa (NL. fem. n. *exsolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4719 sp014377705*. The type genome for the species is the GenBank assembly GCA_014377705.1. The GC content of the type genome is 67.52 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Detunella letifivita sp. nov.

Candidatus Detunella letifivita (NL. fem. n. *letifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4719 sp012927555*. The type genome for the species is the GenBank assembly GCA_012927555.1. The GC content of the type genome is 66.63 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Detunia affamiforma sp. nov.

Candidatus Detunia affamiforma (NL. fem. n. *affamiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABUFB01 sp013314775*. The type genome for the species is the GenBank assembly GCA_013314775.1. The GC content of the type genome is 63.63 % and the genome length is 6.12 Mbp.

Description of *Candidatus* Detunia gen. nov.

Candidatus Detunia (NL. fem. n. *Detunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABUFB01*. The type species for the genus is *Candidatus* Detunia affamiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABUFB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detuniaceae.

Description of *Candidatus* Detuniaceae fam. nov.

Candidatus Detuniaceae (NL. fem. n. *Detuniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABUFB01.* The type genus for the taxon is *Candidatus* Detunia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5377*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Latibosales.

Description of *Candidatus* Detunida favonimonia sp. nov.

Candidatus Detunida favonimonia (NL. fem. n. *favonimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGU01 sp009787015*. The type genome for the species is the GenBank assembly GCA_009787245.1. The GC content of the type genome is 47.45 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Detunida gen. nov.

Candidatus Detunida (NL. fem. n. *Detunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGU01*. The type species for the genus is *Candidatus* Detunida favonimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detunosa celamigena sp. nov.

Candidatus Detunosa celamigena (NL. fem. n. *celamigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen731 sp003155275*. The type genome for the species is the GenBank assembly GCA_003154475.1. The GC content of the type genome is 38.16 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Detunosa gen. nov.

Candidatus Detunosa (NL. fem. n. *Detunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen731*. The type species for the genus is *Candidatus* Detunosa celamigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1414*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefulaceae.

Description of *Candidatus* Detunosa galacitoga sp. nov.

Candidatus Detunosa galacitoga (NL. fem. n. *galacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen731 sp002068775*. The type genome for the species is the GenBank assembly GCA_002068775.1. The GC content of the type genome is 38.91 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Detunula adtesax sp. nov.

Candidatus Detunula adtesax (NL. fem. n. *adtesax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Spiro-10 sp003246335*. The type genome for the species is the GenBank assembly GCA_003246335.1. The GC content of the type genome is 57.82 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Detunula gen. nov.

Candidatus Detunula (NL. fem. n. *Detunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Spiro-10*. The type species for the genus is *Candidatus* Detunula adtesax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Detunula cerofimonas sp. nov.

Candidatus Detunula cerofimonas (NL. fem. n. *cerofimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Spiro-10 sp003246765*. The type genome for the species is the GenBank assembly GCA_003246765.1. The GC content of the type genome is 60.39 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Detunula effinetta sp. nov.

Candidatus Detunula effinetta (NL. fem. n. *effinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Spiro-10 sp001604385*. The type genome for the species is the GenBank assembly GCA_001604385.1. The GC content of the type genome is 51.0 % and the genome length is 2.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Detunula impacentia sp. nov.

Candidatus Detunula impacentia (NL. fem. n. *impacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Spiro-10 sp003252395*. The type genome for the species is the GenBank assembly GCA_003252395.1. The GC content of the type genome is 59.09 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Detunula inexpatica sp. nov.

Candidatus Detunula inexpatica (NL. fem. n. *inexpatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Spiro-10 sp003245785*. The type genome for the species is the GenBank assembly GCA_003245785.1. The GC content of the type genome is 62.51 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Detunula oblaniforma sp. nov.

Candidatus Detunula oblaniforma (NL. fem. n. *oblaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Spiro-10 sp001604405*. The type genome for the species is the GenBank assembly GCA_001604405.1. The GC content of the type genome is 61.81 % and the genome length is 2.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Detunula vilitetta sp. nov.

Candidatus Detunula vilitetta (NL. fem. n. *vilitetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Spiro-10 sp004294945*. The type genome for the species is the GenBank assembly GCA_004294945.1. The GC content of the type genome is 53.2 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Devecana abverimonas sp. nov.

Candidatus Devecana abverimonas (NL. fem. n. *abverimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12014 sp009936695*. The type genome for the species is the GenBank assembly GCA_009936695.1. The GC content of the type genome is 66.56 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Devecana gen. nov.

Candidatus Devecana (NL. fem. n. *Devecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12014*. The type species for the genus is *Candidatus* Devecana abverimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Devecana adcelax sp. nov.

Candidatus Devecana adcelax (NL. fem. n. *adcelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12014 sp014237965*. The type genome for the species is the GenBank assembly GCA_014237965.1. The GC content of the type genome is 63.29 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Devecana attorifica sp. nov.

Candidatus Devecana attorifica (NL. fem. n. *attorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12014 sp002684855*. The type genome for the species is the GenBank assembly GCA_002684855.1. The GC content of the type genome is 63.37 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Devecana dilemitia sp. nov.

Candidatus Devecana dilemitia (NL. fem. n. *dilemitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12014 sp002683215*. The type genome for the species is the GenBank assembly GCA_002683215.1. The GC content of the type genome is 66.16 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Devecana excogatio sp. nov.

Candidatus Devecana excogatio (NL. fem. n. *excogatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12014 sp002684755*. The type genome for the species is the GenBank assembly GCA_002684755.1. The GC content of the type genome is 66.73 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Devecana monumitica sp. nov.

Candidatus Devecana monumitica (NL. fem. n. *monumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12014 sp002167845*. The type genome for the species is the GenBank assembly GCA_002167845.2. The GC content of the type genome is 63.21 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Devecana nehalastra sp. nov.

Candidatus Devecana nehalastra (NL. fem. n. *nehalastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12014 sp002690755*. The type genome for the species is the GenBank assembly GCA_002169045.1. The GC content of the type genome is 66.03 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Devecaria ratifimonia sp. nov.

Candidatus Devecaria ratifimonia (NL. fem. n. *ratifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITNQ01 sp903893785*. The type genome for the species is the GenBank assembly GCA_903878335.1. The GC content of the type genome is 68.68 % and the genome length is 6.95 Mbp.

Description of *Candidatus* Devecaria gen. nov.

Candidatus Devecaria (NL. fem. n. *Devecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITNQ01*. The type species for the genus is *Candidatus* Devecaria ratifimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8231*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatosaceae.

Description of *Candidatus* Devecella culilimonas sp. nov.

Candidatus Devecella culilimonas (NL. fem. n. *culilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2270 sp903891045*. The type genome for the species is the GenBank assembly GCA_903822535.1. The GC content of the type genome is 51.61 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Devecella gen. nov.

Candidatus Devecella (NL. fem. n. *Devecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2270*. The type species for the genus is *Candidatus* Devecella culilimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Devecella decunitica sp. nov.

Candidatus Devecella decunitica (NL. fem. n. *decunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2270 sp002347745*. The type genome for the species is the GenBank assembly GCA_002347745.1. The GC content of the type genome is 48.8 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Devecella defaritudo sp. nov.

Candidatus Devecella defaritudo (NL. fem. n. *defaritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2270 sp903887485*. The type genome for the species is the GenBank assembly GCA_903887485.1. The GC content of the type genome is 51.29 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Devecella giganibula sp. nov.

Candidatus Devecella giganibula (NL. fem. n. *giganibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2270 sp002424635*. The type genome for the species is the GenBank assembly GCA_002424635.1. The GC content of the type genome is 50.29 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Devecella inrecitia sp. nov.

Candidatus Devecella inrecitia (NL. fem. n. *inrecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2270 sp002347085*. The type genome for the species is the GenBank assembly GCA_002347085.1. The GC content of the type genome is 51.37 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Devecella ossarisca sp. nov.

Candidatus Devecella ossarisca (NL. fem. n. *ossarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2270 sp009773475*. The type genome for the species is the GenBank assembly GCA_009773475.1. The GC content of the type genome is 51.39 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Devecella suboditica sp. nov.

Candidatus Devecella suboditica (NL. fem. n. *suboditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2270 sp002327225*. The type genome for the species is the GenBank assembly GCA_002327225.1. The GC content of the type genome is 51.85 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Devecella turicugo sp. nov.

Candidatus Devecella turicugo (NL. fem. n. *turicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2270 sp013426795*. The type genome for the species is the GenBank assembly GCA_013426795.1. The GC content of the type genome is 54.1 %

and the genome length is 3.28 Mbp.

Description of *Candidatus* Devecia loripifica sp. nov.

Candidatus Devecia loripifica (NL. fem. n. *loripifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7702 sp002482535*. The type genome for the species is the GenBank assembly GCA_002482535.1. The GC content of the type genome is 49.47 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Devecia gen. nov.

Candidatus Devecia (NL. fem. n. *Devecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7702*. The type species for the genus is *Candidatus* Devecia loripifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7702*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deveciaceae.

Description of *Candidatus* Deveciaceae fam. nov.

Candidatus Deveciaceae (NL. fem. n. *Deveciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7702.* The type genus for the taxon is *Candidatus* Devecia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7702*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deveciales.

Description of *Candidatus* Deveciales ord. nov.

Candidatus Deveciales (NL. fem. n. *Deveciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7702.* The type genus for the taxon is *Candidatus* Devecia .

According to the GTDB R06-RS202, this order belongs to the class *Dehalobacteriia*.

Description of *Candidatus* Devecia lutulilega sp. nov.

Candidatus Devecia lutulilega (NL. fem. n. *lutulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7702 sp902796855*. The type genome for the species is the GenBank assembly GCA_902796855.1. The GC content of the type genome is 57.41 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Devecia oblonibula sp. nov.

Candidatus Devecia oblonibula (NL. fem. n. *oblonibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7702 sp902766525*. The type genome for the species is the GenBank assembly GCA_902766525.1. The GC content of the type genome is 49.98 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Devecida irrotiforma sp. nov.

Candidatus Devecida irrotiforma (NL. fem. n. *irrotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWN01 sp902806415*. The type genome for the species is the GenBank assembly GCA_902806415.1. The GC content of the type genome is 68.63 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Devecida gen. nov.

Candidatus Devecida (NL. fem. n. *Devecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWN01*. The type species for the genus is *Candidatus* Devecida irrotiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADCWN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Devecidaceae.

Description of *Candidatus* Devecidaceae fam. nov.

Candidatus Devecidaceae (NL. fem. n. *Devecidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADCWN01.* The type genus for the taxon is *Candidatus* Devecida .

According to GTDB R06-RS202, this family belongs to the order *Thermomicrobiales*.

Description of *Candidatus* Devecosa adoscitrix sp. nov.

Candidatus Devecosa adoscitrix (NL. fem. n. *adoscitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHOS-HE28 sp002360495*. The type genome for the species is the GenBank assembly GCA_002360495.1. The GC content of the type genome is 59.59 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Devecosa gen. nov.

Candidatus Devecosa (NL. fem. n. *Devecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHOS-HE28*. The type species for the genus is *Candidatus* Devecosa adoscitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHOS-HE28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Devecosaceae.

Description of *Candidatus* Devecosaceae fam. nov.

Candidatus Devecosaceae (NL. fem. n. *Devecosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PHOS-HE28.* The type genus for the taxon is *Candidatus* Devecosa .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Devecosa defacousia sp. nov.

Candidatus Devecosa defacousia (NL. fem. n. *defacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHOS-HE28 sp014584605*. The type genome for the species is the GenBank assembly GCA_014584605.1. The GC content of the type genome is 66.14 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Devecosa desucimonia sp. nov.

Candidatus Devecosa desucimonia (NL. fem. n. *desucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHOS-HE28 sp902826215*. The type genome for the species is the GenBank assembly GCA_902826215.1. The GC content of the type genome is 57.52 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Devecosa dilacitica sp. nov.

Candidatus Devecosa dilacitica (NL. fem. n. *dilacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHOS-HE28 sp002396605*. The type genome for the species is the GenBank assembly GCA_002426905.1. The GC content of the type genome is 59.51 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Devecosa forabibra sp. nov.

Candidatus Devecosa forabibra (NL. fem. n. *forabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHOS-HE28 sp902825795*. The type genome for the species is the GenBank assembly GCA_902825795.1. The GC content of the type genome is 58.34 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Devecosa luceratica sp. nov.

Candidatus Devecosa luceratica (NL. fem. n. *luceratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHOS-HE28 sp002342985*. The type genome for the species is the GenBank assembly GCA_002342985.1. The GC content of the type genome is 65.32 %

and the genome length is 3.64 Mbp.

Description of *Candidatus* Devecosa luculimonia sp. nov.

Candidatus Devecosa luculimonia (NL. fem. n. *luculimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHOS-HE28 sp013360395*. The type genome for the species is the GenBank assembly GCA_013360395.1. The GC content of the type genome is 66.67 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Devecosa necopousia sp. nov.

Candidatus Devecosa necopousia (NL. fem. n. *necopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHOS-HE28 sp008016945*. The type genome for the species is the GenBank assembly GCA_008016945.1. The GC content of the type genome is 61.92 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Devecosa obnoxitas sp. nov.

Candidatus Devecosa obnoxitas (NL. fem. n. *obnoxitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHOS-HE28 sp002482775*. The type genome for the species is the GenBank assembly GCA_002482775.1. The GC content of the type genome is 58.63 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Devecula dehinatio sp. nov.

Candidatus Devecula dehinatio (NL. fem. n. *dehinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RSA17 sp002919105*. The type genome for the species is the GenBank assembly GCA_002919105.1. The GC content of the type genome is 71.28 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Devecula gen. nov.

Candidatus Devecula (NL. fem. n. *Devecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RSA17*. The type species for the genus is *Candidatus* Devecula dehinatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RSA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deveculaceae.

Description of *Candidatus* Deveculaceae fam. nov.

Candidatus Deveculaceae (NL. fem. n. *Deveculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RSA17.* The type genus for the taxon is *Candidatus* Devecula .

According to GTDB R06-RS202, this family belongs to the order *Thermaerobacterales*.

Description of *Candidatus* Devosia ascaletta sp. nov.

Candidatus Devosia ascaletta (NL. fem. n. *ascaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp003056355*. The type genome for the species is the GenBank assembly RS_GCF_003056355.1. The GC content of the type genome is 61.38 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Devosia defunitas sp. nov.

Candidatus Devosia defunitas (NL. fem. n. *defunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp001899045*. The type genome for the species is the GenBank assembly RS_GCF_900631955.1. The GC content of the type genome is 62.66 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Devosia depupastra sp. nov.

Candidatus Devosia depupastra (NL. fem. n. *depupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp001426345*. The type genome for the species is the GenBank assembly RS_GCF_001426345.1. The GC content of the type genome is 63.82 % and the genome length is 3.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Devosia dinupilenta sp. nov.

Candidatus Devosia dinupilenta (NL. fem. n. *dinupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp900470445*. The type genome for the species is the GenBank assembly GCA_902168155.1. The GC content of the type genome is 62.55 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Devosia ecfacitoga sp. nov.

Candidatus Devosia ecfacitoga (NL. fem. n. *ecfacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp011058215*. The type genome for the species is the GenBank assembly RS_GCF_011058215.1. The GC content of the type genome is 61.97 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Devosia egregifica sp. nov.

Candidatus Devosia egregifica (NL. fem. n. *egregifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp001427875*. The type genome for the species is the GenBank assembly RS_GCF_001427875.1. The GC content of the type genome is 61.54 % and the genome length is 4.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Devosia favilitio sp. nov.

Candidatus Devosia favilitio (NL. fem. n. *favilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp012799265*. The type genome for the species is the GenBank assembly GCA_012799265.1. The GC content of the type genome is 61.25 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Devosia fecunilega sp. nov.

Candidatus Devosia fecunilega (NL. fem. n. *fecunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp014127105*. The type genome for the species is the GenBank assembly RS_GCF_012847305.1. The GC content of the type genome is 57.57 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Devosia ficedisca sp. nov.

Candidatus Devosia ficedisca (NL. fem. n. *ficedisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp005222805*. The type genome for the species is the GenBank assembly RS_GCF_005222805.1. The GC content of the type genome is 64.31 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Devosia genufousia sp. nov.

Candidatus Devosia genufousia (NL. fem. n. *genufousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp001425445*. The type genome for the species is the GenBank assembly RS_GCF_001425445.1. The GC content of the type genome is 60.67 % and the genome length is 4.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Devosia occumilega sp. nov.

Candidatus Devosia occumilega (NL. fem. n. *occumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp000735585*. The type genome for the species is the

GenBank assembly RS_GCF_000735585.1. The GC content of the type genome is 62.25 % and the genome length is 4.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cave surface layer".

Description of *Candidatus* Devosia panopilega sp. nov.

Candidatus Devosia panopilega (NL. fem. n. *panopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp001427605*. The type genome for the species is the GenBank assembly RS_GCF_001427605.1. The GC content of the type genome is 64.1 % and the genome length is 3.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Devosia pomififorma sp. nov.

Candidatus Devosia pomififorma (NL. fem. n. *pomififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp004005995*. The type genome for the species is the GenBank assembly RS_GCF_013185955.1. The GC content of the type genome is 62.62 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Devosia tomogastra sp. nov.

Candidatus Devosia tomogastra (NL. fem. n. *tomogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia sp900110945*. The type genome for the species is the GenBank assembly RS_GCF_900110945.1. The GC content of the type genome is 62.52 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Devosia defasitas sp. nov.

Candidatus Devosia defasitas (NL. fem. n. *defasitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia_A sp001899065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_001899065.1. The GC content of the type genome is 65.91 % and the genome length is 4.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Devosia delacitudo sp. nov.

Candidatus Devosia delacitudo (NL. fem. n. *delacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia_A sp001402915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001402915.1. The GC content of the type genome is 65.78 % and the genome length is 5.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Wheat field".

Description of *Candidatus* Devosia genufitudo sp. nov.

Candidatus Devosia genufitudo (NL. fem. n. *genufitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia_A sp001425235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001425235.1. The GC content of the type genome is 65.38 % and the genome length is 5.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Devosia innasitas sp. nov.

Candidatus Devosia innasitas (NL. fem. n. *innasitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia_A sp903842455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903842455.1. The GC content of the type genome is 65.39 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Devosia parocilenta sp. nov.

Candidatus Devosia parocilenta (NL. fem. n. *parocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia_A sp001899085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001899085.1. The GC content of the type genome is 65.73 % and the genome length is 5.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Devosia pinifax sp. nov.

Candidatus Devosia pinifax (NL. fem. n. *pinifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia_A sp001899075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001899075.1. The GC content of the type genome is 67.1 % and the genome length is 4.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Devosia rubigousia sp. nov.

Candidatus Devosia rubigousia (NL. fem. n. *rubigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia_A sp903828145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903959205.1. The GC content of the type genome is 63.26 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Devosia tegumitica sp. nov.

Candidatus Devosia tegumitica (NL. fem. n. *tegumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Devosia_A sp004144345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004144345.1. The GC content of the type genome is 65.07 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Dialister advecitas sp. nov.

Candidatus Dialister advecitas (NL. fem. n. *advecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900543455*. The type genome for the species is the GenBank assembly GCA_900543455.1. The GC content of the type genome is 52.27 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Dialister bifisitrix sp. nov.

Candidatus Dialister bifisitrix (NL. fem. n. *bifisitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900759415*. The type genome for the species is the GenBank assembly GCA_900759415.1. The GC content of the type genome is 46.04 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Dialister cibicitica sp. nov.

Candidatus Dialister cibicitica (NL. fem. n. *cibicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900543165*. The type genome for the species is the GenBank assembly GCA_900762505.1. The GC content of the type genome is 51.98 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Dialister depubetta sp. nov.

Candidatus Dialister depubetta (NL. fem. n. *depubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Dialister sp002320515*. The type genome for the species is the GenBank assembly GCA_002320515.1. The GC content of the type genome is 52.25 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Dialister desucigena sp. nov.

Candidatus Dialister desucigena (NL. fem. n. *desucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900314595*. The type genome for the species is the GenBank assembly GCA_900314595.1. The GC content of the type genome is 47.7 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Dialister dimadax sp. nov.

Candidatus Dialister dimadax (NL. fem. n. *dimadax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp002297935*. The type genome for the species is the GenBank assembly GCA_002297935.1. The GC content of the type genome is 46.43 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Dialister direpousia sp. nov.

Candidatus Dialister direpousia (NL. fem. n. *direpousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900545785*. The type genome for the species is the GenBank assembly GCA_900545785.1. The GC content of the type genome is 42.94 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Dialister diritago sp. nov.

Candidatus Dialister diritago (NL. fem. n. *diritago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900557365*. The type genome for the species is the GenBank assembly GCA_900557365.1. The GC content of the type genome is 51.14 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Dialister hemiditica sp. nov.

Candidatus Dialister hemiditica (NL. fem. n. *hemiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp002471975*. The type genome for the species is the GenBank assembly GCA_002481125.1. The GC content of the type genome is 49.98 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Dialister homulitura sp. nov.

Candidatus Dialister homulitura (NL. fem. n. *homulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900547785*. The type genome for the species is the GenBank assembly GCA_900547785.1. The GC content of the type genome is 43.34 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Dialister levidentia sp. nov.

Candidatus Dialister levidentia (NL. fem. n. *levidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900555245*. The type genome for the species is the GenBank assembly GCA_900555245.1. The GC content of the type genome is 41.37 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Dialister nucifugo sp. nov.

Candidatus Dialister nucifugo (NL. fem. n. *nucifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900541485*. The type genome for the species is the GenBank assembly GCA_900756205.1. The GC content of the type genome is 40.7 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Dialister obsecugo sp. nov.

Candidatus Dialister obsecugo (NL. fem. n. *obsecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp001553355*. The type genome for the species is the GenBank assembly RS_GCF_001553355.1. The GC content of the type genome is 39.28 % and the genome length is 1.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Dialister pimenitica sp. nov.

Candidatus Dialister pimenitica (NL. fem. n. *pimenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900765565*. The type genome for the species is the GenBank assembly GCA_900765565.1. The GC content of the type genome is 52.17 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Dialister recogilenta sp. nov.

Candidatus Dialister recogilenta (NL. fem. n. *recogilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900541605*. The type genome for the species is the GenBank assembly GCA_900541605.1. The GC content of the type genome is 51.91 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Dialister rosacimonia sp. nov.

Candidatus Dialister rosacimonia (NL. fem. n. *rosacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp900538805*. The type genome for the species is the GenBank assembly GCA_900538805.1. The GC content of the type genome is 52.61 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Dialister verifivita sp. nov.

Candidatus Dialister verifivita (NL. fem. n. *verifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp002439665*. The type genome for the species is the GenBank assembly GCA_002439665.1. The GC content of the type genome is 41.51 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Dialister videlax sp. nov.

Candidatus Dialister videlax (NL. fem. n. *videlax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dialister sp000434475*. The type genome for the species is the GenBank assembly GCA_900540225.1. The GC content of the type genome is 51.91 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Diaphorobacter accucigena sp. nov.

Candidatus Diaphorobacter accucigena (NL. fem. n. *accucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Diaphorobacter_A sp011305535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011305535.1. The GC content of the type genome is 61.15 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Diaphorobacter cerucimonia sp. nov.

Candidatus Diaphorobacter cerucimonia (NL. fem. n. *cerucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Diaphorobacter_A sp011305995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011305995.1. The GC content of the type genome is 61.35 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Dibapana elastugo sp. nov.

Candidatus Dibapana elastugo (NL. fem. n. *elastugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKJO01 sp007121975*. The type genome for the species is the GenBank assembly GCA_007121975.1. The GC content of the type genome is 72.59 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Dibapana gen. nov.

Candidatus Dibapana (NL. fem. n. *Dibapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKJO01*. The type species for the genus is *Candidatus* Dibapana elastugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dibapana morigisca sp. nov.

Candidatus Dibapana morigisca (NL. fem. n. *morigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKJO01 sp007134165*. The type genome for the species is the GenBank assembly GCA_007134165.1. The GC content of the type genome is 71.7 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Dibaparia socagax sp. nov.

Candidatus Dibaparia socagax (NL. fem. n. *socagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3824 sp002393195*. The type genome for the species is the GenBank assembly GCA_002393195.1. The GC content of the type genome is 46.21 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Dibaparia gen. nov.

Candidatus Dibaparia (NL. fem. n. *Dibaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3824*. The type species for the genus is *Candidatus* Dibaparia

socagax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3824*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dibapariaceae.

Description of *Candidatus* Dibapariaceae fam. nov.

Candidatus Dibapariaceae (NL. fem. n. *Dibapariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3824.* The type genus for the taxon is *Candidatus* Dibaparia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Dibapella venefilenta sp. nov.

Candidatus Dibapella venefilenta (NL. fem. n. *venefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-all-47-15 sp002771515*. The type genome for the species is the GenBank assembly GCA_002771515.1. The GC content of the type genome is 46.68 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Dibapella gen. nov.

Candidatus Dibapella (NL. fem. n. *Dibapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-all-47-15*. The type species for the genus is *Candidatus* Dibapella venefilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *21-14-all-47-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dibapellaceae.

Description of *Candidatus* Dibapellaceae fam. nov.

Candidatus Dibapellaceae (NL. fem. n. *Dibapellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *21-14-all-47-15.* The type genus for the taxon is *Candidatus* Dibapella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Dibapia doxolibra sp. nov.

Candidatus Dibapia doxolibra (NL. fem. n. *doxolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-33 sp002773855*. The type genome for the species is the GenBank assembly GCA_002773855.1. The GC content of the type genome is 33.06 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Dibapia gen. nov.

Candidatus Dibapia (NL. fem. n. *Dibapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-33*. The type species for the genus is *Candidatus* Dibapia doxolibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-39-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dibapiaceae.

Description of *Candidatus* Dibapiaceae fam. nov.

Candidatus Dibapiaceae (NL. fem. n. *Dibapiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-39-33.* The type genus for the taxon is *Candidatus* Dibapia .

According to GTDB R06-RS202, this family belongs to the order *Buchananbacterales*.

Description of *Candidatus* Dibapia vitupugo sp. nov.

Candidatus Dibapia vitupugo (NL. fem. n. *vitupugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-33 sp001817505*. The type genome for the species is

the GenBank assembly GCA_001817455.1. The GC content of the type genome is 39.55 % and the genome length is 0.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Dibapida annicitrix sp. nov.

Candidatus Dibapida annicitrix (NL. fem. n. *annicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPN01 sp903831155*. The type genome for the species is the GenBank assembly GCA_903831155.1. The GC content of the type genome is 69.83 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Dibapida gen. nov.

Candidatus Dibapida (NL. fem. n. *Dibapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QWPN01*. The type species for the genus is *Candidatus* Dibapida annicitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subinellaceae.

Description of *Candidatus* Dibapida immuribula sp. nov.

Candidatus Dibapida immuribula (NL. fem. n. *immuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPN01 sp003671185*. The type genome for the species is the GenBank assembly GCA_003671185.1. The GC content of the type genome is 69.57 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Dibapida mahelimonia sp. nov.

Candidatus Dibapida mahelimonia (NL. fem. n. *mahelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *QWPN01 sp003669255*. The type genome for the species is the GenBank assembly GCA_003669255.1. The GC content of the type genome is 66.97 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Dibapida maxumitica sp. nov.

Candidatus Dibapida maxumitica (NL. fem. n. *maxumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPN01 sp005789975*. The type genome for the species is the GenBank assembly GCA_005773625.1. The GC content of the type genome is 69.04 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Dibapida novilicula sp. nov.

Candidatus Dibapida novilicula (NL. fem. n. *novilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPN01 sp903917235*. The type genome for the species is the GenBank assembly GCA_903862635.1. The GC content of the type genome is 70.21 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Dibapida purulicella sp. nov.

Candidatus Dibapida purulicella (NL. fem. n. *purulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPN01 sp003670825*. The type genome for the species is the GenBank assembly GCA_003670825.1. The GC content of the type genome is 67.66 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Dibapida repuretta sp. nov.

Candidatus Dibapida repuretta (NL. fem. n. *repuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPN01 sp903958265*. The type genome for the species is the GenBank assembly GCA_903958265.1. The GC content of the type genome is 68.23 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Dibapida sonivibra sp. nov.

Candidatus Dibapida sonivibra (NL. fem. n. *sonivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPN01 sp903919035*. The type genome for the species is the GenBank assembly GCA_903919035.1. The GC content of the type genome is 69.61 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Dibapida vehicitica sp. nov.

Candidatus Dibapida vehicitica (NL. fem. n. *vehicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPN01 sp014192425*. The type genome for the species is the GenBank assembly GCA_014192425.1. The GC content of the type genome is 69.72 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Dibaposa ciminatio sp. nov.

Candidatus Dibaposa ciminatio (NL. fem. n. *ciminatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-307 sp900547045*. The type genome for the species is the GenBank assembly GCA_900547045.1. The GC content of the type genome is 32.95 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Dibaposa gen. nov.

Candidatus Dibaposa (NL. fem. n. *Dibaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-307*. The type species for the genus is *Candidatus* Dibaposa ciminatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dibaposa tomacimonia sp. nov.

Candidatus Dibaposa tomacimonia (NL. fem. n. *tomacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-307 sp001916215*. The type genome for the species is the GenBank assembly GCA_003524985.1. The GC content of the type genome is 29.8 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Dibapula abagmiforma sp. nov.

Candidatus Dibapula abagmiforma (NL. fem. n. *abagmiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11657 sp002346435*. The type genome for the species is the GenBank assembly GCA_002346435.1. The GC content of the type genome is 40.9 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Dibapula gen. nov.

Candidatus Dibapula (NL. fem. n. *Dibapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11657*. The type species for the genus is *Candidatus* Dibapula abagmiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11657*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dibapulaceae.

Description of *Candidatus* Dibapulaceae fam. nov.

Candidatus Dibapulaceae (NL. fem. n. *Dibapulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11657.* The type genus for the taxon is *Candidatus* Dibapula .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Dibapula denorisca sp. nov.

Candidatus Dibapula denorisca (NL. fem. n. *denorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11657 sp002377585*. The type genome for the species is the GenBank assembly GCA_003540985.1. The GC content of the type genome is 40.86 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Dibapula gabinatica sp. nov.

Candidatus Dibapula gabinatica (NL. fem. n. *gabinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11657 sp002296125*. The type genome for the species is the GenBank assembly GCA_003449775.1. The GC content of the type genome is 35.7 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Dibapula impiricula sp. nov.

Candidatus Dibapula impiricula (NL. fem. n. *impiricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11657 sp002311455*. The type genome for the species is the GenBank assembly GCA_002311455.1. The GC content of the type genome is 42.36 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Dibucana anarricella sp. nov.

Candidatus Dibucana anarricella (NL. fem. n. *anarricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1241 sp900550525*. The type genome for the species is the GenBank assembly GCA_900550525.1. The GC content of the type genome is 67.14 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Dibucana gen. nov.

Candidatus Dibucana (NL. fem. n. *Dibucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1241*. The type species for the genus is *Candidatus* Dibucana anarricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Dibucana exorcetta sp. nov.

Candidatus Dibucana exorcetta (NL. fem. n. *exorcetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1241 sp900549955*. The type genome for the species is the GenBank assembly GCA_900549955.1. The GC content of the type genome is 62.89 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Dibucana refacilega sp. nov.

Candidatus Dibucana refacilega (NL. fem. n. *refacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1241 sp900540495*. The type genome for the species is the GenBank assembly GCA_900540495.1. The GC content of the type genome is 63.16 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Dibucaria ammurifica sp. nov.

Candidatus Dibucaria ammurifica (NL. fem. n. *ammurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1081 sp900321595*. The type genome for the species is the GenBank assembly GCA_900321595.1. The GC content of the type genome is 61.05 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Dibucaria gen. nov.

Candidatus Dibucaria (NL. fem. n. *Dibucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1081*. The type species for the genus is *Candidatus* Dibucaria ammurifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dibucaria bicaledo sp. nov.

Candidatus Dibucaria bicaledo (NL. fem. n. *bicaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1081 sp900543395*. The type genome for the species is the GenBank assembly GCA_900543395.1. The GC content of the type genome is 44.89 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Dibucaria linigitoga sp. nov.

Candidatus Dibucaria linigitoga (NL. fem. n. *linigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1081 sp900314355*. The type genome for the species is the GenBank assembly GCA_900314355.1. The GC content of the type genome is 42.38 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Dibucaria rudecitica sp. nov.

Candidatus Dibucaria rudecitica (NL. fem. n. *rudecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1081 sp002431305*. The type genome for the species is the GenBank assembly GCA_002313815.1. The GC content of the type genome is 45.28 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Dibucella relenugo sp. nov.

Candidatus Dibucella relenugo (NL. fem. n. *relenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12396 sp001791615*. The type genome for the species is the GenBank assembly GCA_000994725.1. The GC content of the type genome is 40.22 % and the genome length is 1.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Dibucella gen. nov.

Candidatus Dibucella (NL. fem. n. *Dibucella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12396*. The type species for the genus is *Candidatus* Dibucella relenugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Dibucia bifaritas sp. nov.

Candidatus Dibucia bifaritas (NL. fem. n. *bifaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2100 sp002331495*. The type genome for the species is the GenBank assembly GCA_002707825.1. The GC content of the type genome is 47.9 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Dibucia gen. nov.

Candidatus Dibucia (NL. fem. n. *Dibucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2100*. The type species for the genus is *Candidatus* Dibucia bifaritas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Dibucia deparago sp. nov.

Candidatus Dibucia deparago (NL. fem. n. *deparago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2100 sp002331185*. The type genome for the species is the GenBank assembly GCA_002692235.1. The GC content of the type genome is 41.39 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Dibucia docibifica sp. nov.

Candidatus Dibucia docibifica (NL. fem. n. *docibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2100 sp002401925*. The type genome for the species is the GenBank assembly GCA_002401925.1. The GC content of the type genome is 41.39 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Dibucia echogitia sp. nov.

Candidatus Dibucia echogitia (NL. fem. n. *echogitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2100 sp002376945*. The type genome for the species is the GenBank assembly GCA_002376945.1. The GC content of the type genome is 44.88 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Dibucia insibastra sp. nov.

Candidatus Dibucia insibastra (NL. fem. n. *insibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2100 sp002401495*. The type genome for the species is the GenBank assembly GCA_002401495.1. The GC content of the type genome is 42.03 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Dibucia plascitas sp. nov.

Candidatus Dibucia plascitas (NL. fem. n. *plascitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2100 sp002378745*. The type genome for the species is the GenBank assembly GCA_002378745.1. The GC content of the type genome is 47.61 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Dibucida defesousia sp. nov.

Candidatus Dibucida defesousia (NL. fem. n. *defesousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5261 sp011174675*. The type genome for the species is the GenBank assembly RS_GCF_011174675.1. The GC content of the type genome is 43.48 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Dibucida gen. nov.

Candidatus Dibucida (NL. fem. n. *Dibucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5261*. The type species for the genus is *Candidatus* Dibucida defesousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BBW3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribiaceae.

Description of *Candidatus* Dibucida divulifica sp. nov.

Candidatus Dibucida divulifica (NL. fem. n. *divulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5261 sp002410065*. The type genome for the species is the GenBank assembly GCA_002408645.1. The GC content of the type genome is 38.83 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Dibucida tribredo sp. nov.

Candidatus Dibucida tribredo (NL. fem. n. *tribredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5261 sp002345825*. The type genome for the species is the GenBank assembly GCA_002345825.1. The GC content of the type genome is 41.94 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Dibucosa delapifica sp. nov.

Candidatus Dibucosa delapifica (NL. fem. n. *delapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZQW01 sp903935195*. The type genome for the species is the GenBank assembly GCA_903917135.1. The GC content of the type genome is 53.14 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Dibucosa gen. nov.

Candidatus Dibucosa (NL. fem. n. *Dibucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZQW01*. The type species for the genus is *Candidatus* Dibucosa delapifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Dibucula minagisca sp. nov.

Candidatus Dibucula minagisca (NL. fem. n. *minagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2679 sp002354735*. The type genome for the species is the GenBank assembly GCA_002738205.1. The GC content of the type genome is 55.75 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Dibucula gen. nov.

Candidatus Dibucula (NL. fem. n. *Dibucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2679*. The type species for the genus is *Candidatus* Dibucula minagisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dicabana revulax sp. nov.

Candidatus Dicabana revulax (NL. fem. n. *revulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA8524 sp003531115*. The type genome for the species is the GenBank assembly GCA_003531115.1. The GC content of the type genome is 45.06 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Dicabana gen. nov.

Candidatus Dicabana (NL. fem. n. *Dicabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8524*. The type species for the genus is *Candidatus* Dicabana revulax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8524*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabanaceae.

Description of *Candidatus* Dicabanaceae fam. nov.

Candidatus Dicabanaceae (NL. fem. n. *Dicabanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8524.* The type genus for the taxon is *Candidatus* Dicabana .

According to the original version of GTDB R06-RS202, this family belongs to the order *NS11-12g*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peropanales.

Description of *Candidatus* Dicabaria culibessa sp. nov.

Candidatus Dicabaria culibessa (NL. fem. n. *culibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA830 sp002937455*. The type genome for the species is the GenBank assembly GCA_002348275.1. The GC content of the type genome is 50.42 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Dicabaria gen. nov.

Candidatus Dicabaria (NL. fem. n. *Dicabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA830*. The type species for the genus is *Candidatus* Dicabaria

culibessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MPNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Meridellaceae.

Description of *Candidatus* Dicabaria pericentia sp. nov.

Candidatus Dicabaria pericentia (NL. fem. n. *pericentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA830 sp002471575*. The type genome for the species is the GenBank assembly GCA_002306775.1. The GC content of the type genome is 58.0 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Dicabia relapastra sp. nov.

Candidatus Dicabia relapastra (NL. fem. n. *relapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2717285 sp002717285*. The type genome for the species is the GenBank assembly GCA_002717285.1. The GC content of the type genome is 40.59 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Dicabia gen. nov.

Candidatus Dicabia (NL. fem. n. *Dicabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2717285*. The type species for the genus is *Candidatus* Dicabia relapastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-58-16_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bulapanaceae.

Description of *Candidatus* Dicabida acrocibra sp. nov.

Candidatus Dicabida acrocibra (NL. fem. n. *acrocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-4 sp005223045*. The type genome for the species is the GenBank assembly GCA_005223045.1. The GC content of the type genome is 52.93 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Dicabida gen. nov.

Candidatus Dicabida (NL. fem. n. *Dicabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG8-4*. The type species for the genus is *Candidatus* Dicabida acrocibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Dicabidaceae fam. nov.

Candidatus Dicabidaceae (NL. fem. n. *Dicabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SG8-4*. The type genus for the taxon is *Candidatus* Dicabida .

According to GTDB R06-RS202, this family belongs to the order *Sedimentisphaerales*.

Description of *Candidatus* Dicabida oblanitrix sp. nov.

Candidatus Dicabida oblanitrix (NL. fem. n. *oblanitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-4 sp001303465*. The type genome for the species is the GenBank assembly GCA_001303465.1. The GC content of the type genome is 54.85 % and the genome length is 4.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-rich zone estuary sediments 8-12 cm".

Description of *Candidatus* Dicabosa exorcitas sp. nov.

Candidatus Dicabosa exorcitas (NL. fem. n. *exorcitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SICP01 sp009691415*. The type genome for the species is the GenBank assembly GCA_009691415.1. The GC content of the type genome is 41.79 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Dicabosa gen. nov.

Candidatus Dicabosa (NL. fem. n. *Dicabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICP01*. The type species for the genus is *Candidatus* Dicabosa exorcitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SICP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabosaceae.

Description of *Candidatus* Dicabosaceae fam. nov.

Candidatus Dicabosaceae (NL. fem. n. *Dicabosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SICP01.* The type genus for the taxon is *Candidatus* Dicabosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SXXA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cisalanales.

Description of *Candidatus* Dicabula divolimonas sp. nov.

Candidatus Dicabula divolimonas (NL. fem. n. *divolimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KLE1615 sp900066985*. The type genome for the species is the GenBank assembly RS_GCF_001641065.1. The GC content of the type genome is 41.22 % and the genome length is 3.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "stool".

Description of *Candidatus* Dicabula gen. nov.

Candidatus Dicabula (NL. fem. n. *Dicabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *KLE1615*. The type species for the genus is *Candidatus* Dicabula divolimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dicanana inordivita sp. nov.

Candidatus Dicanana inordivita (NL. fem. n. *inordivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-429 sp011052015*. The type genome for the species is the GenBank assembly GCA_011052015.1. The GC content of the type genome is 51.78 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Dicanana gen. nov.

Candidatus Dicanana (NL. fem. n. *Dicanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HyVt-429*. The type species for the genus is *Candidatus* Dicanana inordivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HyVt-429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicananaceae.

Description of *Candidatus* Dicananaceae fam. nov.

Candidatus Dicananaceae (NL. fem. n. *Dicananaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HyVt-429.* The type genus for the taxon is *Candidatus* Dicanana .

According to GTDB R06-RS202, this family belongs to the order *Arenicellales*.

Description of *Candidatus* Dicanana lenocimonia sp. nov.

Candidatus Dicanana lenocimonia (NL. fem. n. *lenocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-429 sp013152415*. The type genome for the species is the

GenBank assembly GCA_013152415.1. The GC content of the type genome is 51.37 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Dicanaria sugilibra sp. nov.

Candidatus Dicanaria sugilibra (NL. fem. n. *sugilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS2037 sp900557385*. The type genome for the species is the GenBank assembly GCA_900557385.1. The GC content of the type genome is 45.49 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Dicanaria gen. nov.

Candidatus Dicanaria (NL. fem. n. *Dicanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS2037*. The type species for the genus is *Candidatus* Dicanaria sugilibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dicanella cibicatio sp. nov.

Candidatus Dicanella cibicatio (NL. fem. n. *cibicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8687 sp002697825*. The type genome for the species is the GenBank assembly GCA_002697825.1. The GC content of the type genome is 37.06 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Dicanella gen. nov.

Candidatus Dicanella (NL. fem. n. *Dicanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8687*. The type species for the genus is *Candidatus* Dicanella cibicatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dicanella corocitudo sp. nov.

Candidatus Dicanella corocitudo (NL. fem. n. *corocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8687 sp013349585*. The type genome for the species is the GenBank assembly GCA_013349585.1. The GC content of the type genome is 42.63 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Dicanella innabitrix sp. nov.

Candidatus Dicanella innabitrix (NL. fem. n. *innabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8687 sp002721515*. The type genome for the species is the GenBank assembly GCA_002721515.1. The GC content of the type genome is 36.86 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Dicanella volubilega sp. nov.

Candidatus Dicanella volubilega (NL. fem. n. *volubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8687 sp009873655*. The type genome for the species is the GenBank assembly GCA_009874385.1. The GC content of the type genome is 44.06 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Dicania aglasitas sp. nov.

Candidatus Dicania aglasitas (NL. fem. n. *aglasitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900756715*. The type genome for the species is the GenBank assembly GCA_900756715.1. The GC content of the type genome is 57.39 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Dicania gen. nov.

Candidatus Dicania (NL. fem. n. *Dicania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-83*. The type species for the genus is *Candidatus* Dicania aglasitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dicania bicubitica sp. nov.

Candidatus Dicania bicubitica (NL. fem. n. *bicubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp002392625*. The type genome for the species is the GenBank assembly GCA_002361515.1. The GC content of the type genome is 61.66 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Dicania bipenitrix sp. nov.

Candidatus Dicania bipenitrix (NL. fem. n. *bipenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900549395*. The type genome for the species is the GenBank assembly GCA_900549395.1. The GC content of the type genome is 58.18 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Dicania canacifica sp. nov.

Candidatus Dicania canacifica (NL. fem. n. *canacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900552475*. The type genome for the species is the GenBank assembly GCA_900552475.1. The GC content of the type genome is 62.2 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Dicania carunatio sp. nov.

Candidatus Dicania carunatio (NL. fem. n. *carunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-83 sp900547745*. The type genome for the species is the GenBank assembly GCA_900547745.1. The GC content of the type genome is 61.83 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Dicania casigitio sp. nov.

Candidatus Dicania casigitio (NL. fem. n. *casigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp001916855*. The type genome for the species is the GenBank assembly GCA_001916855.1. The GC content of the type genome is 62.17 % and the genome length is 1.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Dicania cetariforma sp. nov.

Candidatus Dicania cetariforma (NL. fem. n. *cetariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900555735*. The type genome for the species is the GenBank assembly GCA_900753835.1. The GC content of the type genome is 59.58 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Dicania decucedo sp. nov.

Candidatus Dicania decucedo (NL. fem. n. *decucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900551995*. The type genome for the species is the GenBank assembly GCA_900762925.1. The GC content of the type genome is 61.37 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Dicania dedigigena sp. nov.

Candidatus Dicania dedigigena (NL. fem. n. *dedigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp902388735*. The type genome for the species is the GenBank assembly GCA_902388735.1. The GC content of the type genome is 59.49 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Dicania depeliforma sp. nov.

Candidatus Dicania depeliforma (NL. fem. n. *depeliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp000435555*. The type genome for the species is the GenBank assembly GCA_008673135.1. The GC content of the type genome is 60.92 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Dicania dilecilega sp. nov.

Candidatus Dicania dilecilega (NL. fem. n. *dilecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp004555205*. The type genome for the species is the GenBank assembly GCA_004555205.1. The GC content of the type genome is 55.07 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Dicania expisax sp. nov.

Candidatus Dicania expisax (NL. fem. n. *expisax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp012719745*. The type genome for the species is the GenBank assembly GCA_012719745.1. The GC content of the type genome is 53.73 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Dicania famelago sp. nov.

Candidatus Dicania famelago (NL. fem. n. *famelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900545585*. The type genome for the species is the GenBank assembly GCA_900756505.1. The GC content of the type genome is 61.24 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Dicania fuligago sp. nov.

Candidatus Dicania fuligago (NL. fem. n. *fuligago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900551355*. The type genome for the species is the GenBank assembly GCA_900551355.1. The GC content of the type genome is 63.03 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Dicania intamousia sp. nov.

Candidatus Dicania intamousia (NL. fem. n. *intamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900757415*. The type genome for the species is the GenBank assembly GCA_900757415.1. The GC content of the type genome is 58.22 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Dicania lapicicella sp. nov.

Candidatus Dicania lapicicella (NL. fem. n. *lapicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900550585*. The type genome for the species is the GenBank assembly GCA_900550585.1. The GC content of the type genome is 62.25 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Dicania letifilenta sp. nov.

Candidatus Dicania letifilenta (NL. fem. n. *letifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp002309395*. The type genome for the species is the GenBank assembly GCA_002309395.1. The GC content of the type genome is 59.04 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Dicania manibitas sp. nov.

Candidatus Dicania manibitas (NL. fem. n. *manibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-83 sp900313295*. The type genome for the species is the GenBank assembly GCA_004553935.1. The GC content of the type genome is 58.09 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Dicania miracivita sp. nov.

Candidatus Dicania miracivita (NL. fem. n. *miracivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900556015*. The type genome for the species is the GenBank assembly GCA_900556015.1. The GC content of the type genome is 63.23 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Dicania necopax sp. nov.

Candidatus Dicania necopax (NL. fem. n. *necopax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900545495*. The type genome for the species is the GenBank assembly GCA_900763535.1. The GC content of the type genome is 60.94 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Dicania nimiribula sp. nov.

Candidatus Dicania nimiribula (NL. fem. n. *nimiribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900552725*. The type genome for the species is the GenBank assembly GCA_900552725.1. The GC content of the type genome is 61.03 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Dicania nubecatio sp. nov.

Candidatus Dicania nubecatio (NL. fem. n. *nubecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900548615*. The type genome for the species is the GenBank assembly GCA_900548615.1. The GC content of the type genome is 59.64 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Dicania nutabitrix sp. nov.

Candidatus Dicania nutabitrix (NL. fem. n. *nutabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900317425*. The type genome for the species is the GenBank assembly GCA_900317425.1. The GC content of the type genome is 61.02 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Dicania nutabugo sp. nov.

Candidatus Dicania nutabugo (NL. fem. n. *nutabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp002438575*. The type genome for the species is the GenBank assembly GCA_002438575.1. The GC content of the type genome is 62.1 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Dicania oratrigena sp. nov.

Candidatus Dicania oratrigena (NL. fem. n. *oratrigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900550615*. The type genome for the species is the GenBank assembly GCA_900550615.1. The GC content of the type genome is 59.16 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Dicania pacifitoga sp. nov.

Candidatus Dicania pacifitoga (NL. fem. n. *pacifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp004557655*. The type genome for the species is the GenBank assembly GCA_004557655.1. The GC content of the type genome is 55.77 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Dicania rorarifica sp. nov.

Candidatus Dicania rorarifica (NL. fem. n. *rorarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp003539495*. The type genome for the species is the GenBank assembly GCA_003526115.1. The GC content of the type genome is 57.6 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Dicania tirocibra sp. nov.

Candidatus Dicania tirocibra (NL. fem. n. *tirocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp000435975*. The type genome for the species is the GenBank assembly GCA_000435975.1. The GC content of the type genome is 60.59 % and the genome length is 1.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Dicania vecoressa sp. nov.

Candidatus Dicania vecoressa (NL. fem. n. *vecoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp900554275*. The type genome for the species is the GenBank assembly GCA_900554275.1. The GC content of the type genome is 61.42 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Dicania vocamitudo sp. nov.

Candidatus Dicania vocamitudo (NL. fem. n. *vocamitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp003487665*. The type genome for the species is the GenBank assembly GCA_003487665.1. The GC content of the type genome is 61.49 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Dicania vocificella sp. nov.

Candidatus Dicania vocificella (NL. fem. n. *vocificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-83 sp000431575*. The type genome for the species is the GenBank assembly GCA_900545235.1. The GC content of the type genome is 60.71 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Dicanida deculitura sp. nov.

Candidatus Dicanida deculitura (NL. fem. n. *deculitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MPNP01 sp002239085*. The type genome for the species is the GenBank assembly GCA_002239085.1. The GC content of the type genome is 41.99 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Dicanida gen. nov.

Candidatus Dicanida (NL. fem. n. *Dicanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MPNP01*. The type species for the genus is *Candidatus* Dicanida deculitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dicanida hibisastra sp. nov.

Candidatus Dicanida hibisastra (NL. fem. n. *hibisastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MPNP01 sp011523445*. The type genome for the species is the GenBank assembly GCA_009842555.1. The GC content of the type genome is 44.66 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Dicanida lutulitica sp. nov.

Candidatus Dicanida lutulitica (NL. fem. n. *lutulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MPNP01 sp009842205*. The type genome for the species is the GenBank assembly GCA_009845745.1. The GC content of the type genome is 44.52 %

and the genome length is 2.26 Mbp.

Description of *Candidatus* Dicanosa citivitas sp. nov.

Candidatus Dicanosa citivitas (NL. fem. n. *citivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12471 sp001768735*. The type genome for the species is the GenBank assembly GCA_003485165.1. The GC content of the type genome is 56.7 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Dicanosa gen. nov.

Candidatus Dicanosa (NL. fem. n. *Dicanosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12471*. The type species for the genus is *Candidatus* Dicanosa citivitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1247*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotiaceae.

Description of *Candidatus* Dicanula antevatio sp. nov.

Candidatus Dicanula antevatio (NL. fem. n. *antevatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718035 sp002718035*. The type genome for the species is the GenBank assembly GCA_002718035.1. The GC content of the type genome is 27.99 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Dicanula gen. nov.

Candidatus Dicanula (NL. fem. n. *Dicanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2718035*. The type species for the genus is *Candidatus* Dicanula antevatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED113*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Fusifulaceae.

Description of *Candidatus* Dicanula monopimonia sp. nov.

Candidatus Dicanula monopimonia (NL. fem. n. *monopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718035 sp902520385*. The type genome for the species is the GenBank assembly GCA_902520385.1. The GC content of the type genome is 29.45 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Dicanula pulegilenta sp. nov.

Candidatus Dicanula pulegilenta (NL. fem. n. *pulegilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718035 sp902533035*. The type genome for the species is the GenBank assembly GCA_902533035.1. The GC content of the type genome is 28.61 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Dichloromethanomonas supeliforma sp. nov.

Candidatus Dichloromethanomonas supeliforma (NL. fem. n. *supeliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dichloromethanomonas sp012517475*. The type genome for the species is the GenBank assembly GCA_012517475.1. The GC content of the type genome is 42.66 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Dicibana cilibiforma sp. nov.

Candidatus Dicibana cilibiforma (NL. fem. n. *cilibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2136 sp002689455*. The type genome for the species is the GenBank assembly GCA_002689455.1. The GC content of the type genome is 38.87 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Dicibana gen. nov.

Candidatus Dicibana (NL. fem. n. *Dicibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2136*. The type species for the genus is *Candidatus* Dicibana cilibiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2136*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibanaceae.

Description of *Candidatus* Dicibanaceae fam. nov.

Candidatus Dicibanaceae (NL. fem. n. *Dicibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2136.* The type genus for the taxon is *Candidatus* Dicibana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1280*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redacariales.

Description of *Candidatus* Dicibana disidax sp. nov.

Candidatus Dicibana disidax (NL. fem. n. *disidax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2136 sp002328405*. The type genome for the species is the GenBank assembly GCA_002328405.1. The GC content of the type genome is 44.38 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Dicibaria prognitio sp. nov.

Candidatus Dicibaria prognitio (NL. fem. n. *prognitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOZP01 sp903862805*. The type genome for the species is the GenBank assembly GCA_903862805.1. The GC content of the type genome is 49.67 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Dicibaria gen. nov.

Candidatus Dicibaria (NL. fem. n. *Dicibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOZP01*. The type species for the genus is *Candidatus* Dicibaria prognitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIOZP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibariaceae.

Description of *Candidatus* Dicibariaceae fam. nov.

Candidatus Dicibariaceae (NL. fem. n. *Dicibariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIOZP01.* The type genus for the taxon is *Candidatus* Dicibaria .

According to GTDB R06-RS202, this family belongs to the order *Chitinivibrionales*.

Description of *Candidatus* Dicibella decomicula sp. nov.

Candidatus Dicibella decomicula (NL. fem. n. *decomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10009 sp001001205*. The type genome for the species is the GenBank assembly GCA_001818475.1. The GC content of the type genome is 45.21 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Dicibella gen. nov.

Candidatus Dicibella (NL. fem. n. *Dicibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10009*. The type species for the genus is *Candidatus* Dicibella decomicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10009*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibellaceae.

Description of *Candidatus* Dicibellaceae fam. nov.

Candidatus Dicibellaceae (NL. fem. n. *Dicibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10009.* The type genus for the taxon is *Candidatus* Dicibella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1558*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nugivellales.

Description of *Candidatus* Dicibia adceliforma sp. nov.

Candidatus Dicibia adceliforma (NL. fem. n. *adceliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1390 sp002305315*. The type genome for the species is the GenBank assembly GCA_002305315.1. The GC content of the type genome is 49.51 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Dicibia gen. nov.

Candidatus Dicibia (NL. fem. n. *Dicibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1390*. The type species for the genus is *Candidatus* Dicibia adceliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1390*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibiaceae.

Description of *Candidatus* Dicibiaceae fam. nov.

Candidatus Dicibiaceae (NL. fem. n. *Dicibiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1390.* The type genus for the taxon is *Candidatus* Dicibia .

According to GTDB R06-RS202, this family belongs to the order *Lachnospirales*.

Description of *Candidatus* Dicibia octusicella sp. nov.

Candidatus Dicibia octusicella (NL. fem. n. *octusicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1390 sp900764045*. The type genome for the species is the GenBank assembly RS_GCF_900764045.1. The GC content of the type genome is 50.77 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Dicibida direcetta sp. nov.

Candidatus Dicibida direcetta (NL. fem. n. *direcetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYGI01 sp903925685*. The type genome for the species is the GenBank assembly GCA_903883095.1. The GC content of the type genome is 62.68 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Dicibida gen. nov.

Candidatus Dicibida (NL. fem. n. *Dicibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYGI01*. The type species for the genus is *Candidatus* Dicibida direcetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYGI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibidaceae.

Description of *Candidatus* Dicibidaceae fam. nov.

Candidatus Dicibidaceae (NL. fem. n. *Dicibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYGI01*. The type genus for the taxon is *Candidatus* Dicibida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIKKV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defacanales.

Description of *Candidatus* Dicibosa semunilenta sp. nov.

Candidatus Dicibosa semunilenta (NL. fem. n. *semunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABRJ01 sp011390985*. The type genome for the species is the GenBank assembly GCA_011390985.1. The GC content of the type genome is 62.3 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Dicibosa gen. nov.

Candidatus Dicibosa (NL. fem. n. *Dicibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABRJ01*. The type species for the genus is *Candidatus* Dicibosa semunilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAABRJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibosaceae.

Description of *Candidatus* Dicibosaceae fam. nov.

Candidatus Dicibosaceae (NL. fem. n. *Dicibosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAABRJ01*. The type genus for the taxon is *Candidatus* Dicibosa .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Dicibula tirunitoga sp. nov.

Candidatus Dicibula tirunitoga (NL. fem. n. *tirunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMYD01 sp004356015*. The type genome for the species is the GenBank assembly GCA_004356015.1. The GC content of the type genome is 63.89 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Dicibula gen. nov.

Candidatus Dicibula (NL. fem. n. *Dicibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMYD01*. The type species for the genus is *Candidatus* Dicibula tirunitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMYD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibulaceae.

Description of *Candidatus* Dicibulaceae fam. nov.

Candidatus Dicibulaceae (NL. fem. n. *Dicibulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMYD01.* The type genus for the taxon is *Candidatus* Dicibula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SMYD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dicibulales.

Description of *Candidatus* Dicibulales ord. nov.

Candidatus Dicibulales (NL. fem. n. *Dicibulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMYD01.* The type genus for the taxon is *Candidatus* Dicibula .

According to the original version of GTDB R06-RS202, this family belongs to the class *Mor1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ceracosae.

Description of *Candidatus* Dicimana abambastra sp. nov.

Candidatus Dicimana abambastra (NL. fem. n. *abambastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3478 sp011525015*. The type genome for the species is the GenBank assembly GCA_011525015.1. The GC content of the type genome is 39.05 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Dicimana gen. nov.

Candidatus Dicimana (NL. fem. n. *Dicimana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3478*. The type species for the genus is *Candidatus* Dicimana abambastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dicimana absegilenta sp. nov.

Candidatus Dicimana absegilenta (NL. fem. n. *absegilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3478 sp002691645*. The type genome for the species is the GenBank assembly GCA_002691645.1. The GC content of the type genome is 38.15 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Dicimana bucolatica sp. nov.

Candidatus Dicimana bucolatica (NL. fem. n. *bucolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3478 sp003045935*. The type genome for the species is the GenBank assembly GCA_003045935.1. The GC content of the type genome is 39.95 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Dicimana depubifica sp. nov.

Candidatus Dicimana depubifica (NL. fem. n. *depubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3478 sp002691685*. The type genome for the species is the GenBank assembly GCA_002691685.1. The GC content of the type genome is 36.94 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Dicimana mirifimonas sp. nov.

Candidatus Dicimana mirifimonas (NL. fem. n. *mirifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3478 sp002381155*. The type genome for the species is the GenBank assembly GCA_002381155.1. The GC content of the type genome is 40.41 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Dicimaria dilemedo sp. nov.

Candidatus Dicimaria dilemedo (NL. fem. n. *dilemedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2687025 sp002687025*. The type genome for the species is the GenBank assembly GCA_002687025.1. The GC content of the type genome is 66.58 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Dicimaria gen. nov.

Candidatus Dicimaria (NL. fem. n. *Dicimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2687025*. The type species for the genus is *Candidatus* Dicimaria dilemedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2687025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicimariaceae.

Description of *Candidatus* Dicimariaceae fam. nov.

Candidatus Dicimariaceae (NL. fem. n. *Dicimariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2687025.* The type genus for the taxon is *Candidatus* Dicimaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2687025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dicimariales.

Description of *Candidatus* Dicimariales ord. nov.

Candidatus Dicimariales (NL. fem. n. *Dicimariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *GCA-2687025.* The type genus for the taxon is *Candidatus* Dicimaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *WGA-4E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Demociae.

Description of *Candidatus* Dicimella cetarilega sp. nov.

Candidatus Dicimella cetarilega (NL. fem. n. *cetarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHJ01 sp009838765*. The type genome for the species is the GenBank assembly GCA_009845855.1. The GC content of the type genome is 68.84 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Dicimella gen. nov.

Candidatus Dicimella (NL. fem. n. *Dicimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXHJ01*. The type species for the genus is *Candidatus* Dicimella cetarilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDQB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denomosaceae.

Description of *Candidatus* Dicimella cuticisca sp. nov.

Candidatus Dicimella cuticisca (NL. fem. n. *cuticisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHJ01 sp012270965*. The type genome for the species is the GenBank assembly GCA_012270965.1. The GC content of the type genome is 68.96 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Dicimella macilitio sp. nov.

Candidatus Dicimella macilitio (NL. fem. n. *macilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHJ01 sp009840115*. The type genome for the species is the GenBank assembly GCA_009840115.1. The GC content of the type genome is 69.49 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Dicimella nugigimonia sp. nov.

Candidatus Dicimella nugigimonia (NL. fem. n. *nugigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHJ01 sp009841005*. The type genome for the species is the GenBank assembly GCA_009846385.1. The GC content of the type genome is 68.98 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Dicimella semodilega sp. nov.

Candidatus Dicimella semodilega (NL. fem. n. *semodilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHJ01 sp009841015*. The type genome for the species is the GenBank assembly GCA_009841015.1. The GC content of the type genome is 69.11 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Dicimia arrabitas sp. nov.

Candidatus Dicimia arrabitas (NL. fem. n. *arrabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKB01 sp011333655*. The type genome for the species is the GenBank assembly GCA_011333655.1. The GC content of the type genome is 36.78 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Dicimia gen. nov.

Candidatus Dicimia (NL. fem. n. *Dicimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKB01*. The type species for the genus is *Candidatus* Dicimia arrabitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family

DTKB01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicimiaceae.

Description of *Candidatus* Dicimiaceae fam. nov.

Candidatus Dicimiaceae (NL. fem. n. *Dicimiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTKB01.* The type genus for the taxon is *Candidatus* Dicimia .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTKB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dicimiales.

Description of *Candidatus* Dicimiales ord. nov.

Candidatus Dicimiales (NL. fem. n. *Dicimiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTKB01.* The type genus for the taxon is *Candidatus* Dicimia .

According to the GTDB R06-RS202, this order belongs to the class *Aminicenantia*.

Description of *Candidatus* Dicimida accomifica sp. nov.

Candidatus Dicimida accomifica (NL. fem. n. *accomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1402 sp012511135*. The type genome for the species is the GenBank assembly GCA_012511135.1. The GC content of the type genome is 45.48 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Dicimida gen. nov.

Candidatus Dicimida (NL. fem. n. *Dicimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1402*. The type species for the genus is *Candidatus* Dicimida accomifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1402*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Dicimidaceae.

Description of *Candidatus* Dicimidaceae fam. nov.

Candidatus Dicimidaceae (NL. fem. n. *Dicimidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1402.* The type genus for the taxon is *Candidatus* Dicimida .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Dicimida saburitoga sp. nov.

Candidatus Dicimida saburitoga (NL. fem. n. *saburitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1402 sp002305085*. The type genome for the species is the GenBank assembly GCA_002379805.1. The GC content of the type genome is 46.13 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Dicimosa filifibra sp. nov.

Candidatus Dicimosa filifibra (NL. fem. n. *filifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILMK01 sp903829945*. The type genome for the species is the GenBank assembly GCA_903832045.1. The GC content of the type genome is 35.7 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Dicimosa gen. nov.

Candidatus Dicimosa (NL. fem. n. *Dicimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILMK01*. The type species for the genus is *Candidatus* Dicimosa filifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAILMK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicimosaceae.

Description of *Candidatus* Dicimosaceae fam. nov.

Candidatus Dicimosaceae (NL. fem. n. *Dicimosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAILMK01.* The type genus for the taxon is *Candidatus* Dicimosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAILMK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dicimosales.

Description of *Candidatus* Dicimosales ord. nov.

Candidatus Dicimosales (NL. fem. n. *Dicimosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAILMK01.* The type genus for the taxon is *Candidatus* Dicimosa .

According to the GTDB R06-RS202, this order belongs to the class *Bacteroidia*.

Description of *Candidatus* Dicimosa ludibatica sp. nov.

Candidatus Dicimosa ludibatica (NL. fem. n. *ludibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILMK01 sp903835275*. The type genome for the species is the GenBank assembly GCA_903835275.1. The GC content of the type genome is 40.26 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Dicimula antacugo sp. nov.

Candidatus Dicimula antacugo (NL. fem. n. *antacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-430-B22 sp902608415*. The type genome for the species is the GenBank assembly GCA_902608415.1. The GC content of the type genome is 31.76 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Dicimula gen. nov.

Candidatus Dicimula (NL. fem. n. *Dicimula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-430-B22*. The type species for the genus is *Candidatus* Dicimula antacugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citipiaceae.

Description of *Candidatus* Dicimula decomatio sp. nov.

Candidatus Dicimula decomatio (NL. fem. n. *decomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-430-B22 sp002726005*. The type genome for the species is the GenBank assembly GCA_002726005.1. The GC content of the type genome is 32.11 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Dicimula forabatica sp. nov.

Candidatus Dicimula forabatica (NL. fem. n. *forabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-430-B22 sp003212795*. The type genome for the species is the GenBank assembly GCA_003212795.1. The GC content of the type genome is 32.11 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Dicimula meridibula sp. nov.

Candidatus Dicimula meridibula (NL. fem. n. *meridibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-430-B22 sp003209955*. The type genome for the species is the GenBank assembly GCA_003209955.1. The GC content of the type genome is 31.93 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Dicimula plascilega sp. nov.

Candidatus Dicimula plascilega (NL. fem. n. *plascilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-430-B22 sp902609025*. The type genome for the species is the GenBank assembly GCA_902609025.1. The GC content of the type genome is 31.91 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Dicimula retecatica sp. nov.

Candidatus Dicimula retecatica (NL. fem. n. *retecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-430-B22 sp002728335*. The type genome for the species is the GenBank assembly GCA_902577045.1. The GC content of the type genome is 32.27 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Dicimula taraxessa sp. nov.

Candidatus Dicimula taraxessa (NL. fem. n. *taraxessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-430-B22 sp902533755*. The type genome for the species is the GenBank assembly GCA_902530585.1. The GC content of the type genome is 31.97 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Dictyobacter penicitudo sp. nov.

Candidatus Dictyobacter penicitudo (NL. fem. n. *penicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dictyobacter sp008326305*. The type genome for the species is the GenBank assembly RS_GCF_008326305.1. The GC content of the type genome is 49.65 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Didacana adfunibra sp. nov.

Candidatus Didacana adfunibra (NL. fem. n. *adfunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DRMV01 sp013154225*. The type genome for the species is the GenBank assembly GCA_013154225.1. The GC content of the type genome is 59.28 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Didacana gen. nov.

Candidatus Didacana (NL. fem. n. *Didacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRMV01*. The type species for the genus is *Candidatus* Didacana adfunibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRMV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacanaceae.

Description of *Candidatus* Didacanaceae fam. nov.

Candidatus Didacanaceae (NL. fem. n. *Didacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRMV01.* The type genus for the taxon is *Candidatus* Didacana .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Didacana domipetta sp. nov.

Candidatus Didacana domipetta (NL. fem. n. *domipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRMV01 sp011322445*. The type genome for the species is the GenBank assembly GCA_011322445.1. The GC content of the type genome is 62.06 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Didacaria favonitica sp. nov.

Candidatus Didacaria favonitica (NL. fem. n. *favonitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1173 sp003158755*. The type genome for the species is the GenBank assembly GCA_003158755.1. The GC content of the type genome is 61.15 %

and the genome length is 2.65 Mbp.

Description of *Candidatus* Didacaria gen. nov.

Candidatus Didacaria (NL. fem. n. *Didacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1173*. The type species for the genus is *Candidatus* Didacaria favonitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1173*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacariaceae.

Description of *Candidatus* Didacariaceae fam. nov.

Candidatus Didacariaceae (NL. fem. n. *Didacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-1173.* The type genus for the taxon is *Candidatus* Didacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *F11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodosales.

Description of *Candidatus* Didacella adhosilega sp. nov.

Candidatus Didacella adhosilega (NL. fem. n. *adhosilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1135 sp002311925*. The type genome for the species is the GenBank assembly GCA_002311925.1. The GC content of the type genome is 62.14 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Didacella gen. nov.

Candidatus Didacella (NL. fem. n. *Didacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1135*. The type species for the genus is *Candidatus* Didacella adhosilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacellaceae.

Description of *Candidatus* Didacellaceae fam. nov.

Candidatus Didacellaceae (NL. fem. n. *Didacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1135.* The type genus for the taxon is *Candidatus* Didacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Didacellales.

Description of *Candidatus* Didacellales ord. nov.

Candidatus Didacellales (NL. fem. n. *Didacellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1135.* The type genus for the taxon is *Candidatus* Didacella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Didacellae.

Description of *Candidatus* Didacellae class. nov.

Candidatus Didacellae (NL. fem. n. *c__Didacellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1135.* The type genus for the taxon is *Candidatus* Didacella .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Didacella thapsitura sp. nov.

Candidatus Didacella thapsitura (NL. fem. n. *thapsitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1135 sp003501525*. The type genome for the species is the

GenBank assembly GCA_003501525.1. The GC content of the type genome is 51.82 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Didacia turilifica sp. nov.

Candidatus Didacia turilifica (NL. fem. n. *turilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8919 sp002402375*. The type genome for the species is the GenBank assembly GCA_002402375.1. The GC content of the type genome is 39.18 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Didacia gen. nov.

Candidatus Didacia (NL. fem. n. *Didacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8919*. The type species for the genus is *Candidatus* Didacia turilifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8919*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didaciaceae.

Description of *Candidatus* Didaciaceae fam. nov.

Candidatus Didaciaceae (NL. fem. n. *Didaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8919.* The type genus for the taxon is *Candidatus* Didacia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8919*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Didaciales.

Description of *Candidatus* Didaciales ord. nov.

Candidatus Didaciales (NL. fem. n. *Didaciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8919.* The type genus for the taxon is *Candidatus* Didacia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8919*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Didaciae.

Description of *Candidatus* Didaciae class. nov.

Candidatus Didaciae (NL. fem. n. *c__Didaciae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8919.* The type genus for the taxon is *Candidatus* Didacia .

According to GTDB R06-RS202, this class belongs to the phylum *Elusimicrobiota*.

Description of *Candidatus* Didacia vavasastra sp. nov.

Candidatus Didacia vavasastra (NL. fem. n. *vavasastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8919 sp002780205*. The type genome for the species is the GenBank assembly GCA_002780205.1. The GC content of the type genome is 38.4 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Didacida semimicella sp. nov.

Candidatus Didacida semimicella (NL. fem. n. *semimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHCE01 sp003243955*. The type genome for the species is the GenBank assembly GCA_003243955.1. The GC content of the type genome is 59.63 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Didacida gen. nov.

Candidatus Didacida (NL. fem. n. *Didacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHCE01*. The type species for the genus is *Candidatus* Didacida semimicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHCE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Didacidaceae.

Description of *Candidatus* Didacidaceae fam. nov.

Candidatus Didacidaceae (NL. fem. n. *Didacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QHCE01.* The type genus for the taxon is *Candidatus* Didacida .

According to GTDB R06-RS202, this family belongs to the order *Mycobacteriales*.

Description of *Candidatus* Didacosa indevitia sp. nov.

Candidatus Didacosa indevitia (NL. fem. n. *indevitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPRZ01 sp903867585*. The type genome for the species is the GenBank assembly GCA_903867585.1. The GC content of the type genome is 36.77 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Didacosa gen. nov.

Candidatus Didacosa (NL. fem. n. *Didacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPRZ01*. The type species for the genus is *Candidatus* Didacosa indevitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIPRZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacosaceae.

Description of *Candidatus* Didacosaceae fam. nov.

Candidatus Didacosaceae (NL. fem. n. *Didacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIPRZ01.* The type genus for the taxon is *Candidatus* Didacosa .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Didacula calipedo sp. nov.

Candidatus Didacula calipedo (NL. fem. n. *calipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003220155*. The type genome for the species is the GenBank assembly GCA_003220035.1. The GC content of the type genome is 55.25 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Didacula gen. nov.

Candidatus Didacula (NL. fem. n. *Didacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AV69*. The type species for the genus is *Candidatus* Didacula calipedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Didacula coturitudo sp. nov.

Candidatus Didacula coturitudo (NL. fem. n. *coturitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003219125*. The type genome for the species is the GenBank assembly GCA_003219555.1. The GC content of the type genome is 55.01 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Didacula invecetta sp. nov.

Candidatus Didacula invecetta (NL. fem. n. *invecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003220075*. The type genome for the species is the GenBank assembly GCA_003220075.1. The GC content of the type genome is 55.18 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Didacula invigatica sp. nov.

Candidatus Didacula invigatica (NL. fem. n. *invigatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003219925*. The type genome for the species is the GenBank assembly GCA_003219925.1. The GC content of the type genome is 55.26 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Didacula murilessa sp. nov.

Candidatus Didacula murilessa (NL. fem. n. *murilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003217965*. The type genome for the species is the GenBank assembly GCA_003217965.1. The GC content of the type genome is 55.16 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Didacula nugivatio sp. nov.

Candidatus Didacula nugivatio (NL. fem. n. *nugivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003221405*. The type genome for the species is the GenBank assembly GCA_003221405.1. The GC content of the type genome is 55.42 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Didacula panopicula sp. nov.

Candidatus Didacula panopicula (NL. fem. n. *panopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003244125*. The type genome for the species is the GenBank assembly GCA_003244125.1. The GC content of the type genome is 58.67 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Didacula parocago sp. nov.

Candidatus Didacula parocago (NL. fem. n. *parocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003218525*. The type genome for the species is the GenBank assembly GCA_003218525.1. The GC content of the type genome is 55.3 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Didacula pinifimonas sp. nov.

Candidatus Didacula pinifimonas (NL. fem. n. *pinifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003219115*. The type genome for the species is the GenBank assembly GCA_003219115.1. The GC content of the type genome is 55.32 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Didacula regifitia sp. nov.

Candidatus Didacula regifitia (NL. fem. n. *regifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003219095*. The type genome for the species is the GenBank assembly GCA_003219095.1. The GC content of the type genome is 55.05 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Didacula semapibula sp. nov.

Candidatus Didacula semapibula (NL. fem. n. *semapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003221295*. The type genome for the species is the GenBank assembly GCA_003221295.1. The GC content of the type genome is 55.27 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Didacula tegimilenta sp. nov.

Candidatus Didacula tegimilenta (NL. fem. n. *tegimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV69 sp003219175*. The type genome for the species is the GenBank assembly GCA_003221175.1. The GC content of the type genome is 54.94 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Didemnitutus arunditura sp. nov.

Candidatus Didemnitutus arunditura (NL. fem. n. *arunditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Didemnitutus sp013821985*. The type genome for the species is the GenBank assembly GCA_013821985.1. The GC content of the type genome is 64.76 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Didemnitutus buxifago sp. nov.

Candidatus Didemnitutus buxifago (NL. fem. n. *buxifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Didemnitutus sp903885525*. The type genome for the species is the GenBank assembly GCA_903885525.1. The GC content of the type genome is 66.76 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Didemnitutus vitifentia sp. nov.

Candidatus Didemnitutus vitifentia (NL. fem. n. *vitifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Didemnitutus sp013822585*. The type genome for the species is the GenBank assembly GCA_013822585.1. The GC content of the type genome is 68.25 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Dielma direpimonas sp. nov.

Candidatus Dielma direpimonas (NL. fem. n. *direpimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dielma sp001305055*. The type genome for the species is the GenBank assembly RS_GCF_000508965.1. The GC content of the type genome is 40.49 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Dietzia adnulimonas sp. nov.

Candidatus Dietzia adnulimonas (NL. fem. n. *adnulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dietzia sp008369165*. The type genome for the species is the GenBank assembly RS_GCF_008369165.1. The GC content of the type genome is 68.23 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Dietzia bucolitica sp. nov.

Candidatus Dietzia bucolitica (NL. fem. n. *bucolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dietzia sp003052165*. The type genome for the species is the GenBank assembly RS_GCF_003052165.1. The GC content of the type genome is 70.24 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Dietzia dicimetta sp. nov.

Candidatus Dietzia dicimetta (NL. fem. n. *dicimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dietzia sp002415925*. The type genome for the species is the GenBank assembly GCA_002415925.1. The GC content of the type genome is 71.87 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Dietzia exadvessa sp. nov.

Candidatus Dietzia exadvessa (NL. fem. n. *exadvessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dietzia sp012841845*. The type genome for the species is the GenBank assembly GCA_012841845.1. The GC content of the type genome is 72.73 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Dietzia visifago sp. nov.

Candidatus Dietzia visifago (NL. fem. n. *visifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Dietzia sp014145095*. The type genome for the species is the GenBank assembly RS_GCF_014145095.1. The GC content of the type genome is 69.15 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Dilacana rutabicula sp. nov.

Candidatus Dilacana rutabicula (NL. fem. n. *rutabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACKPV01 sp902602185*. The type genome for the species is the GenBank assembly GCA_902621585.1. The GC content of the type genome is 34.76 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Dilacana gen. nov.

Candidatus Dilacana (NL. fem. n. *Dilacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACKPV01*. The type species for the genus is *Candidatus* Dilacana rutabicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Dilacaria adfamimonia sp. nov.

Candidatus Dilacaria adfamimonia (NL. fem. n. *adfamimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7182 sp002160135*. The type genome for the species is the GenBank assembly RS_GCF_002160135.1. The GC content of the type genome is 50.05 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Dilacaria gen. nov.

Candidatus Dilacaria (NL. fem. n. *Dilacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7182*. The type species for the genus is *Candidatus* Dilacaria adfamimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dilacaria ambacitica sp. nov.

Candidatus Dilacaria ambacitica (NL. fem. n. *ambacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7182 sp009774155*. The type genome for the species is the GenBank assembly GCA_009774155.1. The GC content of the type genome is 47.54 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Dilacaria biveratica sp. nov.

Candidatus Dilacaria biveratica (NL. fem. n. *biveratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7182 sp002491115*. The type genome for the species is the GenBank assembly GCA_002490395.1. The GC content of the type genome is 47.77 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Dilacaria cuticousia sp. nov.

Candidatus Dilacaria cuticousia (NL. fem. n. *cuticousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7182 sp003480725*. The type genome for the species is the GenBank assembly RS_GCF_003478475.1. The GC content of the type genome is 45.22 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Dilacaria detoritoga sp. nov.

Candidatus Dilacaria detoritoga (NL. fem. n. *detoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7182 sp003481535*. The type genome for the species is the GenBank assembly GCA_900556125.1. The GC content of the type genome is 46.93 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Dilacaria holisimonas sp. nov.

Candidatus Dilacaria holisimonas (NL. fem. n. *holisimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7182 sp001941045*. The type genome for the species is the GenBank assembly GCA_001941045.1. The GC content of the type genome is 52.86 % and the genome length is 3.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Zagget the koala".

Description of *Candidatus* Dilacaria immededo sp. nov.

Candidatus Dilacaria immededo (NL. fem. n. *immededo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7182 sp009774135*. The type genome for the species is the GenBank assembly GCA_009774135.1. The GC content of the type genome is 51.95 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Dilacaria lapilousia sp. nov.

Candidatus Dilacaria lapilousia (NL. fem. n. *lapilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7182 sp009774145*. The type genome for the species is the GenBank assembly GCA_009774145.1. The GC content of the type genome is 48.45 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Dilacella expisatio sp. nov.

Candidatus Dilacella expisatio (NL. fem. n. *expisatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-68-15 sp001917585*. The type genome for the species is the GenBank assembly GCA_001917585.1. The GC content of the type genome is 68.4 % and the genome length is 4.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; pre rain".

Description of *Candidatus* Dilacella gen. nov.

Candidatus Dilacella (NL. fem. n. *Dilacella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40CM-68-15*. The type species for the genus is *Candidatus* Dilacella expisatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Dilacella volunitas sp. nov.

Candidatus Dilacella volunitas (NL. fem. n. *volunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-68-15 sp003220615*. The type genome for the species is the GenBank assembly GCA_001919805.1. The GC content of the type genome is 68.34 % and the genome length is 4.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 20cm depth; 2 days after second rain event (91mm)".

Description of *Candidatus* Dilacia colepitia sp. nov.

Candidatus Dilacia colepitia (NL. fem. n. *colepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-34-14 sp001802795*. The type genome for the species is the GenBank assembly GCA_001802205.1. The GC content of the type genome is 35.67 % and the genome length is 3.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Dilacia gen. nov.

Candidatus Dilacia (NL. fem. n. *Dilacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-34-14*. The type species for the genus is *Candidatus* Dilacia colepitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dilacia effinitica sp. nov.

Candidatus Dilacia effinitica (NL. fem. n. *effinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-34-14 sp001802865*. The type genome for the species is the GenBank assembly GCA_001802865.1. The GC content of the type genome is 33.75 % and the genome length is 2.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Dilacida cohonisca sp. nov.

Candidatus Dilacida cohonisca (NL. fem. n. *cohonisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2705445 sp002705445*. The type genome for the species is the GenBank assembly GCA_902613735.1. The GC content of the type genome is 30.29 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Dilacida gen. nov.

Candidatus Dilacida (NL. fem. n. *Dilacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2705445*. The type species for the genus is *Candidatus* Dilacida cohonisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002705445*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifanaceae.

Description of *Candidatus* Dilacida episcessa sp. nov.

Candidatus Dilacida episcessa (NL. fem. n. *episcessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2705445 sp902595225*. The type genome for the species is the GenBank assembly GCA_902595225.1. The GC content of the type genome is 31.48 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Dilacida lavabago sp. nov.

Candidatus Dilacida lavabago (NL. fem. n. *lavabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2705445 sp902559815*. The type genome for the species is the GenBank assembly GCA_902559815.1. The GC content of the type genome is 29.59 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Dilacida stercax sp. nov.

Candidatus Dilacida stercax (NL. fem. n. *stercax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2705445 sp902624655*. The type genome for the species is the GenBank assembly GCA_902624655.1. The GC content of the type genome is 31.46 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Dilacosa rubecatica sp. nov.

Candidatus Dilacosa rubecatica (NL. fem. n. *rubecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-39-10b sp001792215*. The type genome for the species is the GenBank assembly GCA_001792215.1. The GC content of the type genome is 37.73 % and the genome length is 1.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Dilacosa gen. nov.

Candidatus Dilacosa (NL. fem. n. *Dilacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-39-10b*. The type species for the genus is *Candidatus* Dilacosa rubecatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Dilacula occumedo sp. nov.

Candidatus Dilacula occumedo (NL. fem. n. *occumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7683 sp002482925*. The type genome for the species is the GenBank assembly GCA_002482925.1. The GC content of the type genome is 41.66 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Dilacula gen. nov.

Candidatus Dilacula (NL. fem. n. *Dilacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7683*. The type species for the genus is *Candidatus* Dilacula occumedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7683*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilaculaceae.

Description of *Candidatus* Dilaculaceae fam. nov.

Candidatus Dilaculaceae (NL. fem. n. *Dilaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7683.* The type genus for the taxon is *Candidatus* Dilacula .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Dilecaria delucigena sp. nov.

Candidatus Dilecaria delucigena (NL. fem. n. *delucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD2-FULL-41-16 sp001828645*. The type genome for the species is the GenBank assembly GCA_001828645.1. The GC content of the type genome is 41.1 % and the genome length is 1.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Dilecaria gen. nov.

Candidatus Dilecaria (NL. fem. n. *Dilecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD2-FULL-41-16*. The type species for the genus is *Candidatus* Dilecaria delucigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dilecella ciminatica sp. nov.

Candidatus Dilecella ciminatica (NL. fem. n. *ciminatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OM05-12 sp900760755*. The type genome for the species is the GenBank assembly RS_GCF_900760755.1. The GC content of the type genome is 41.32 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Dilecella gen. nov.

Candidatus Dilecella (NL. fem. n. *Dilecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OM05-12*. The type species for the genus is *Candidatus* Dilecella ciminatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dilecella genocilega sp. nov.

Candidatus Dilecella genocilega (NL. fem. n. *genocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OM05-12 sp003438995*. The type genome for the species is the GenBank assembly RS_GCF_003479375.1. The GC content of the type genome is 40.05 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Dilecia videlastra sp. nov.

Candidatus Dilecia videlastra (NL. fem. n. *videlastra* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWDD01 sp002070375*. The type genome for the species is the GenBank assembly GCA_002070375.1. The GC content of the type genome is 40.3 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Dilecia gen. nov.

Candidatus Dilecia (NL. fem. n. *Dilecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWDD01*. The type species for the genus is *Candidatus* Dilecia videlastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dilecida bipinicula sp. nov.

Candidatus Dilecida bipinicula (NL. fem. n. *bipinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLR01 sp003558435*. The type genome for the species is the GenBank assembly GCA_003558435.1. The GC content of the type genome is 69.93 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Dilecida gen. nov.

Candidatus Dilecida (NL. fem. n. *Dilecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWLR01*. The type species for the genus is *Candidatus* Dilecida bipinicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dilecula lorarigena sp. nov.

Candidatus Dilecula lorarigena (NL. fem. n. *lorarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDDW01 sp013287405*. The type genome for the species is the GenBank assembly GCA_013287405.1. The GC content of the type genome is 43.98 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Dilecula gen. nov.

Candidatus Dilecula (NL. fem. n. *Dilecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDW01*. The type species for the genus is *Candidatus* Dilecula lorarigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDDW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dileculaceae.

Description of *Candidatus* Dileculaceae fam. nov.

Candidatus Dileculaceae (NL. fem. n. *Dileculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDDW01.* The type genus for the taxon is *Candidatus* Dilecula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABDDW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dileculales.

Description of *Candidatus* Dileculales ord. nov.

Candidatus Dileculales (NL. fem. n. *Dileculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDDW01.* The type genus for the taxon is *Candidatus* Dilecula .

According to the GTDB R06-RS202, this order belongs to the class *Bdellovibrionia*.

Description of *Candidatus* Dilemana xenopitura sp. nov.

Candidatus Dilemana xenopitura (NL. fem. n. *xenopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BHER01 sp003864555*. The type genome for the species is the GenBank assembly GCA_003864555.1. The GC content of the type genome is 36.22 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Dilemana gen. nov.

Candidatus Dilemana (NL. fem. n. *Dilemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BHER01*. The type species for the genus is *Candidatus* Dilemana xenopitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BHER01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilemanaceae.

Description of *Candidatus* Dilemanaceae fam. nov.

Candidatus Dilemanaceae (NL. fem. n. *Dilemanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BHER01.* The type genus for the taxon is *Candidatus* Dilemana .

According to the original version of GTDB R06-RS202, this family belongs to the order *ZOR0006*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Megalulales.

Description of *Candidatus* Dilemaria cerifitia sp. nov.

Candidatus Dilemaria cerifitia (NL. fem. n. *cerifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin34 sp002238555*. The type genome for the species is the GenBank assembly GCA_002238555.1. The GC content of the type genome is 63.15 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Dilemaria gen. nov.

Candidatus Dilemaria (NL. fem. n. *Dilemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Bin34*. The type species for the genus is *Candidatus* Dilemaria cerifitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin34*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilemariaceae.

Description of *Candidatus* Dilemariaceae fam. nov.

Candidatus Dilemariaceae (NL. fem. n. *Dilemariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin34.* The type genus for the taxon is *Candidatus* Dilemaria .

According to GTDB R06-RS202, this family belongs to the order *Caldilineales*.

Description of *Candidatus* Dilemaria delapousia sp. nov.

Candidatus Dilemaria delapousia (NL. fem. n. *delapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin34 sp009841145*. The type genome for the species is the GenBank assembly GCA_009837875.1. The GC content of the type genome is 61.95 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Dilemaria inlibugo sp. nov.

Candidatus Dilemaria inlibugo (NL. fem. n. *inlibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin34 sp012271135*. The type genome for the species is the GenBank assembly GCA_012271135.1. The GC content of the type genome is 62.38 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Dilemella volucitio sp. nov.

Candidatus Dilemella volucitio (NL. fem. n. *volucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYCZ01 sp903924805*. The type genome for the species is the GenBank assembly GCA_903924805.1. The GC content of the type genome is 48.26 %

and the genome length is 2.99 Mbp.

Description of *Candidatus* Dilemella gen. nov.

Candidatus Dilemella (NL. fem. n. *Dilemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYCZ01*. The type species for the genus is *Candidatus* Dilemella volucitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYCZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilemellaceae.

Description of *Candidatus* Dilemellaceae fam. nov.

Candidatus Dilemellaceae (NL. fem. n. *Dilemellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYCZ01.* The type genus for the taxon is *Candidatus* Dilemella .

According to the original version of GTDB R06-RS202, this family belongs to the order *WTBG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depasidales.

Description of *Candidatus* Dilemia absurimonas sp. nov.

Candidatus Dilemia absurimonas (NL. fem. n. *absurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GM7GCV1 sp014323765*. The type genome for the species is the GenBank assembly GCA_014323765.1. The GC content of the type genome is 59.56 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Dilemia gen. nov.

Candidatus Dilemia (NL. fem. n. *Dilemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GM7GCV1*. The type species for the genus is *Candidatus* Dilemia absurimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GM7GCV1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilemiaceae.

Description of *Candidatus* Dilemiaceae fam. nov.

Candidatus Dilemiaceae (NL. fem. n. *Dilemiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GM7GCV1.* The type genus for the taxon is *Candidatus* Dilemia .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Dilemosa ininnilenta sp. nov.

Candidatus Dilemosa ininnilenta (NL. fem. n. *ininnilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMXR01 sp004356215*. The type genome for the species is the GenBank assembly GCA_004356215.1. The GC content of the type genome is 51.92 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Dilemosa gen. nov.

Candidatus Dilemosa (NL. fem. n. *Dilemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMXR01*. The type species for the genus is *Candidatus* Dilemosa ininnilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMXR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilemosaceae.

Description of *Candidatus* Dilemosaceae fam. nov.

Candidatus Dilemosaceae (NL. fem. n. *Dilemosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMXR01.* The type genus for the taxon is *Candidatus* Dilemosa .

According to GTDB R06-RS202, this family belongs to the order *Sphingomonadales*.

Description of *Candidatus* Dilemula bicalisca sp. nov.

Candidatus Dilemula bicalisca (NL. fem. n. *bicalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2330 sp002344965*. The type genome for the species is the GenBank assembly GCA_002344965.1. The GC content of the type genome is 35.83 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Dilemula gen. nov.

Candidatus Dilemula (NL. fem. n. *Dilemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2330*. The type species for the genus is *Candidatus* Dilemula bicalisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-1AR*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufosaceae.

Description of *Candidatus* Dilibana ducilitudo sp. nov.

Candidatus Dilibana ducilitudo (NL. fem. n. *ducilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-78 sp002010665*. The type genome for the species is the GenBank assembly GCA_002010665.1. The GC content of the type genome is 32.6 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Dilibana gen. nov.

Candidatus Dilibana (NL. fem. n. *Dilibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-78*. The type species for the genus is *Candidatus* Dilibana ducilitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-78*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilibanaceae.

Description of *Candidatus* Dilibanaceae fam. nov.

Candidatus Dilibanaceae (NL. fem. n. *Dilibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-78.* The type genus for the taxon is *Candidatus* Dilibana .

According to the original version of GTDB R06-RS202, this family belongs to the order *JdFR-78*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dilibanales.

Description of *Candidatus* Dilibanales ord. nov.

Candidatus Dilibanales (NL. fem. n. *Dilibanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-78.* The type genus for the taxon is *Candidatus* Dilibana .

According to the GTDB R06-RS202, this order belongs to the class *Aminicenantia*.

Description of *Candidatus* Dilibaria rudicilega sp. nov.

Candidatus Dilibaria rudicilega (NL. fem. n. *rudicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRDA01 sp009783675*. The type genome for the species is the GenBank assembly GCA_009783675.1. The GC content of the type genome is 50.57 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Dilibaria gen. nov.

Candidatus Dilibaria (NL. fem. n. *Dilibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRDA01*. The type species for the genus is *Candidatus* Dilibaria rudicilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRDA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilibariaceae.

Description of *Candidatus* Dilibariaceae fam. nov.

Candidatus Dilibariaceae (NL. fem. n. *Dilibariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRDA01.* The type genus for the taxon is *Candidatus* Dilibaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYKD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dimacariales.

Description of *Candidatus* Dilibella annifibra sp. nov.

Candidatus Dilibella annifibra (NL. fem. n. *annifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBLF01 sp903904545*. The type genome for the species is the GenBank assembly GCA_903904545.1. The GC content of the type genome is 35.55 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Dilibella gen. nov.

Candidatus Dilibella (NL. fem. n. *Dilibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBLF01*. The type species for the genus is *Candidatus* Dilibella annifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *X112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Dilibella conigitudo sp. nov.

Candidatus Dilibella conigitudo (NL. fem. n. *conigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBLF01 sp903953935*. The type genome for the species is the GenBank assembly GCA_903837375.1. The GC content of the type genome is 33.21 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Dilibella devecitudo sp. nov.

Candidatus Dilibella devecitudo (NL. fem. n. *devecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBLF01 sp903904875*. The type genome for the species is the GenBank assembly GCA_903835395.1. The GC content of the type genome is 37.51 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Dilibella horomax sp. nov.

Candidatus Dilibella horomax (NL. fem. n. *horomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBLF01 sp903918675*. The type genome for the species is the GenBank assembly GCA_903918675.1. The GC content of the type genome is 38.46 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Dilibia adsibigena sp. nov.

Candidatus Dilibia adsibigena (NL. fem. n. *adsibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG369 sp902772705*. The type genome for the species is the GenBank assembly GCA_902772705.1. The GC content of the type genome is 54.74 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Dilibia gen. nov.

Candidatus Dilibia (NL. fem. n. *Dilibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG369*. The type species for the genus is *Candidatus* Dilibia adsibigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dilibia bicapilenta sp. nov.

Candidatus Dilibia bicapilenta (NL. fem. n. *bicapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG369 sp900318195*. The type genome for the species is the GenBank assembly GCA_900318195.1. The GC content of the type genome is 54.02 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Dilibia bigaritoga sp. nov.

Candidatus Dilibia bigaritoga (NL. fem. n. *bigaritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG369 sp900317365*. The type genome for the species is the GenBank assembly GCA_902760095.1. The GC content of the type genome is 55.01 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Dilibia malifilega sp. nov.

Candidatus Dilibia malifilega (NL. fem. n. *malifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG369 sp902803085*. The type genome for the species is the GenBank assembly GCA_902803085.1. The GC content of the type genome is 55.9 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Dilibia necubitudo sp. nov.

Candidatus Dilibia necubitudo (NL. fem. n. *necubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG369 sp902786505*. The type genome for the species is the GenBank assembly GCA_902801085.1. The GC content of the type genome is 55.47 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Dilibia totidibra sp. nov.

Candidatus Dilibia totidibra (NL. fem. n. *totidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG369 sp004556055*. The type genome for the species is the GenBank assembly GCA_004556055.1. The GC content of the type genome is 54.16 %

and the genome length is 2.33 Mbp.

Description of *Candidatus* Dilibida carunentia sp. nov.

Candidatus Dilibida carunentia (NL. fem. n. *carunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-14 sp001767855*. The type genome for the species is the GenBank assembly GCA_001767775.1. The GC content of the type genome is 44.67 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.1 filter".

Description of *Candidatus* Dilibida gen. nov.

Candidatus Dilibida (NL. fem. n. *Dilibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-41-14*. The type species for the genus is *Candidatus* Dilibida carunentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5542*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favilidaceae.

Description of *Candidatus* Dilibula decitousia sp. nov.

Candidatus Dilibula decitousia (NL. fem. n. *decitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-41-35 sp002791275*. The type genome for the species is the GenBank assembly GCA_002791275.1. The GC content of the type genome is 41.11 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Dilibula gen. nov.

Candidatus Dilibula (NL. fem. n. *Dilibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-41-35*. The type species for the genus is *Candidatus* Dilibula decitousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9934*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivanaceae.

Description of *Candidatus* Dilicana cacalousia sp. nov.

Candidatus Dilicana cacalousia (NL. fem. n. *cacalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKLO01 sp007123195*. The type genome for the species is the GenBank assembly GCA_007123195.1. The GC content of the type genome is 67.41 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Dilicana gen. nov.

Candidatus Dilicana (NL. fem. n. *Dilicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKLO01*. The type species for the genus is *Candidatus* Dilicana cacalousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKLO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicanaceae.

Description of *Candidatus* Dilicanaceae fam. nov.

Candidatus Dilicanaceae (NL. fem. n. *Dilicanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKLO01*. The type genus for the taxon is *Candidatus* Dilicana .

According to GTDB R06-RS202, this family belongs to the order *Verrucomicrobiales*.

Description of *Candidatus* Dilicella accenivita sp. nov.

Candidatus Dilicella accenivita (NL. fem. n. *accenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003224075*. The type genome for the species is the

GenBank assembly GCA_003224075.1. The GC content of the type genome is 58.37 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Dilicella gen. nov.

Candidatus Dilicella (NL. fem. n. *Dilicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7541*. The type species for the genus is *Candidatus* Dilicella accenivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Dilicellaceae fam. nov.

Candidatus Dilicellaceae (NL. fem. n. *Dilicellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7541.* The type genus for the taxon is *Candidatus* Dilicella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dilicellales.

Description of *Candidatus* Dilicellales ord. nov.

Candidatus Dilicellales (NL. fem. n. *Dilicellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7541.* The type genus for the taxon is *Candidatus* Dilicella .

According to the GTDB R06-RS202, this order belongs to the class *Acidobacteriae*.

Description of *Candidatus* Dilicella adremitas sp. nov.

Candidatus Dilicella adremitas (NL. fem. n. *adremitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp001914785*. The type genome for the species is the GenBank assembly GCA_001914785.1. The GC content of the type genome is 57.08 %

and the genome length is 4.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 2; 20cm depth; 6 days after first rain event (27mm)".

Description of *Candidatus* Dilicella adtemilega sp. nov.

Candidatus Dilicella adtemilega (NL. fem. n. *adtemilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003224525*. The type genome for the species is the GenBank assembly GCA_003224525.1. The GC content of the type genome is 57.47 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Dilicella antomastra sp. nov.

Candidatus Dilicella antomastra (NL. fem. n. *antomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003224105*. The type genome for the species is the GenBank assembly GCA_003224105.1. The GC content of the type genome is 57.28 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Dilicella apsocibra sp. nov.

Candidatus Dilicella apsocibra (NL. fem. n. *apsocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp013289855*. The type genome for the species is the GenBank assembly GCA_013289855.1. The GC content of the type genome is 57.9 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Dilicella aseptibula sp. nov.

Candidatus Dilicella aseptibula (NL. fem. n. *aseptibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003223245*. The type genome for the species is the GenBank assembly GCA_003223245.1. The GC content of the type genome is 57.51 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Dilicella benepetta sp. nov.

Candidatus Dilicella benepetta (NL. fem. n. *benepetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003225295*. The type genome for the species is the GenBank assembly GCA_003225255.1. The GC content of the type genome is 57.61 % and the genome length is 7.26 Mbp.

Description of *Candidatus* Dilicella bifisessa sp. nov.

Candidatus Dilicella bifisessa (NL. fem. n. *bifisessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp001917435*. The type genome for the species is the GenBank assembly GCA_003223195.1. The GC content of the type genome is 57.24 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Dilicella cerevigena sp. nov.

Candidatus Dilicella cerevigena (NL. fem. n. *cerevigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp013289665*. The type genome for the species is the GenBank assembly GCA_013289665.1. The GC content of the type genome is 58.43 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Dilicella detunitoga sp. nov.

Candidatus Dilicella detunitoga (NL. fem. n. *detunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003224135*. The type genome for the species is the GenBank assembly GCA_003224135.1. The GC content of the type genome is 56.21 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Dilicella energetta sp. nov.

Candidatus Dilicella energetta (NL. fem. n. *energetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003161195*. The type genome for the species is the GenBank assembly GCA_003161195.1. The GC content of the type genome is 59.95 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Dilicella essonitura sp. nov.

Candidatus Dilicella essonitura (NL. fem. n. *essonitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp013289825*. The type genome for the species is the GenBank assembly GCA_013289825.1. The GC content of the type genome is 58.21 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Dilicella exturugo sp. nov.

Candidatus Dilicella exturugo (NL. fem. n. *exturugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003223295*. The type genome for the species is the GenBank assembly GCA_003223295.1. The GC content of the type genome is 57.14 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Dilicella filifilenta sp. nov.

Candidatus Dilicella filifilenta (NL. fem. n. *filifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003223215*. The type genome for the species is the GenBank assembly GCA_003223215.1. The GC content of the type genome is 57.75 % and the genome length is 8.8 Mbp.

Description of *Candidatus* Dilicella gabinitas sp. nov.

Candidatus Dilicella gabinitas (NL. fem. n. *gabinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA7541 sp003154775*. The type genome for the species is the GenBank assembly GCA_003142415.1. The GC content of the type genome is 58.46 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Dilicella inconicella sp. nov.

Candidatus Dilicella inconicella (NL. fem. n. *inconicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003224055*. The type genome for the species is the GenBank assembly GCA_003224055.1. The GC content of the type genome is 58.02 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Dilicella infelax sp. nov.

Candidatus Dilicella infelax (NL. fem. n. *infelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003224145*. The type genome for the species is the GenBank assembly GCA_003224145.1. The GC content of the type genome is 57.67 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Dilicella insalitrix sp. nov.

Candidatus Dilicella insalitrix (NL. fem. n. *insalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003225315*. The type genome for the species is the GenBank assembly GCA_003225315.1. The GC content of the type genome is 57.07 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Dilicella mahelicella sp. nov.

Candidatus Dilicella mahelicella (NL. fem. n. *mahelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003223255*. The type genome for the species is the GenBank assembly GCA_003223255.1. The GC content of the type genome is 57.45 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Dilicella nocenimonas sp. nov.

Candidatus Dilicella nocenimonas (NL. fem. n. *nocenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp003224085*. The type genome for the species is the GenBank assembly GCA_003224085.1. The GC content of the type genome is 57.44 % and the genome length is 6.8 Mbp.

Description of *Candidatus* Dilicella obfenugo sp. nov.

Candidatus Dilicella obfenugo (NL. fem. n. *obfenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp013289585*. The type genome for the species is the GenBank assembly GCA_013289585.1. The GC content of the type genome is 57.54 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Dilicella omnipibula sp. nov.

Candidatus Dilicella omnipibula (NL. fem. n. *omnipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp002478115*. The type genome for the species is the GenBank assembly GCA_002478115.1. The GC content of the type genome is 57.99 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Dilicella oratricella sp. nov.

Candidatus Dilicella oratricella (NL. fem. n. *oratricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp001919715*. The type genome for the species is the GenBank assembly GCA_001919715.1. The GC content of the type genome is 57.92 % and the genome length is 3.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 20cm depth; pre rain".

Description of *Candidatus* Dilicella redunigena sp. nov.

Candidatus Dilicella redunigena (NL. fem. n. *redunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp013289835*. The type genome for the species is the GenBank assembly GCA_013289835.1. The GC content of the type genome is 57.91 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Dilicella tibicitoga sp. nov.

Candidatus Dilicella tibicitoga (NL. fem. n. *tibicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp903970165*. The type genome for the species is the GenBank assembly GCA_903970165.1. The GC content of the type genome is 56.96 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Dilicella vitigugo sp. nov.

Candidatus Dilicella vitigugo (NL. fem. n. *vitigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7541 sp013289955*. The type genome for the species is the GenBank assembly GCA_013289955.1. The GC content of the type genome is 57.99 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Dilicia fusifedo sp. nov.

Candidatus Dilicia fusifedo (NL. fem. n. *fusifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYYX01 sp903930535*. The type genome for the species is the GenBank assembly GCA_903930535.1. The GC content of the type genome is 60.47 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Dilicia gen. nov.

Candidatus Dilicia (NL. fem. n. *Dilicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYYX01*. The type species for the genus is *Candidatus* Dilicia fusifedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dilicia senacousia sp. nov.

Candidatus Dilicia senacousia (NL. fem. n. *senacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYYX01 sp903832735*. The type genome for the species is the GenBank assembly GCA_903841365.1. The GC content of the type genome is 61.94 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Dilicia subofessa sp. nov.

Candidatus Dilicia subofessa (NL. fem. n. *subofessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYYX01 sp903904605*. The type genome for the species is the GenBank assembly GCA_903904605.1. The GC content of the type genome is 63.38 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Dilicida calipicula sp. nov.

Candidatus Dilicida calipicula (NL. fem. n. *calipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAA01 sp003564775*. The type genome for the species is the GenBank assembly GCA_003564775.1. The GC content of the type genome is 55.03 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Dilicida gen. nov.

Candidatus Dilicida (NL. fem. n. *Dilicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLAA01*. The type species for the genus is *Candidatus* Dilicida calipicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLAA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicidaceae.

Description of *Candidatus* Dilicidaceae fam. nov.

Candidatus Dilicidaceae (NL. fem. n. *Dilicidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLAA01.* The type genus for the taxon is *Candidatus* Dilicida .

According to GTDB R06-RS202, this family belongs to the order *Spirochaetales_C*.

Description of *Candidatus* Dilicida epogdessa sp. nov.

Candidatus Dilicida epogdessa (NL. fem. n. *epogdessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAA01 sp007695055*. The type genome for the species is the GenBank assembly GCA_007695055.1. The GC content of the type genome is 54.79 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Dilicida humecimonas sp. nov.

Candidatus Dilicida humecimonas (NL. fem. n. *humecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAA01 sp007127105*. The type genome for the species is the GenBank assembly GCA_007127105.1. The GC content of the type genome is 55.37 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Dilicosa daducivita sp. nov.

Candidatus Dilicosa daducivita (NL. fem. n. *daducivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12037 sp003245635*. The type genome for the species is the GenBank assembly GCA_003245635.1. The GC content of the type genome is 62.94 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Dilicosa gen. nov.

Candidatus Dilicosa (NL. fem. n. *Dilicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12037*. The type species for the genus is *Candidatus* Dilicosa daducivita .

According to GTDB R06-RS202, this genus belongs to the family _B.

Description of *Candidatus* Dilicosa rurigitio sp. nov.

Candidatus Dilicosa rurigitio (NL. fem. n. *rurigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12037 sp003527485*. The type genome for the species is the GenBank assembly GCA_001831045.1. The GC content of the type genome is 61.24 % and the genome length is 4.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.1 filter".

Description of *Candidatus* Dilicula nucifitura sp. nov.

Candidatus Dilicula nucifitura (NL. fem. n. *nucifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20-14-0-20-35-9 sp004376325*. The type genome for the species is the GenBank assembly GCA_009619015.1. The GC content of the type genome is 34.39 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Dilicula gen. nov.

Candidatus Dilicula (NL. fem. n. *Dilicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *20-14-0-20-35-9*. The type species for the genus is *Candidatus* Dilicula nucifitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1414*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefulaceae.

Description of *Candidatus* Dilicula reduvibula sp. nov.

Candidatus Dilicula reduvibula (NL. fem. n. *reduvibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20-14-0-20-35-9 sp013202875*. The type genome for the species is the GenBank assembly GCA_013202875.1. The GC content of the type genome is 34.09 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Dilicula salubax sp. nov.

Candidatus Dilicula salubax (NL. fem. n. *salubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20-14-0-20-35-9 sp002779205*. The type genome for the species is the GenBank assembly GCA_002779205.1. The GC content of the type genome is 35.1 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Dilogana decenetta sp. nov.

Candidatus Dilogana decenetta (NL. fem. n. *decenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHXW01 sp009693115*. The type genome for the species is the GenBank assembly GCA_009693115.1. The GC content of the type genome is 62.13 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Dilogana gen. nov.

Candidatus Dilogana (NL. fem. n. *Dilogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHXW01*. The type species for the genus is *Candidatus* Dilogana decenetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHXW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diloganaceae.

Description of *Candidatus* Diloganaceae fam. nov.

Candidatus Diloganaceae (NL. fem. n. *Diloganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHXW01*. The type genus for the taxon is *Candidatus* Dilogana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Carucellales.

Description of *Candidatus* Dilogaria subinitrix sp. nov.

Candidatus Dilogaria subinitrix (NL. fem. n. *subinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2862715 sp002862715*. The type genome for the species is the GenBank assembly GCA_902576535.1. The GC content of the type genome is 30.87 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Dilogaria gen. nov.

Candidatus Dilogaria (NL. fem. n. *Dilogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2862715*. The type species for the genus is *Candidatus* Dilogaria subinitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dilogella bicubibra sp. nov.

Candidatus Dilogella bicubibra (NL. fem. n. *bicubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRME01 sp011375175*. The type genome for the species is the GenBank assembly GCA_011375175.1. The GC content of the type genome is 64.47 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Dilogella gen. nov.

Candidatus Dilogella (NL. fem. n. *Dilogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRME01*. The type species for the genus is *Candidatus* Dilogella bicubibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRME01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilogellaceae.

Description of *Candidatus* Dilogellaceae fam. nov.

Candidatus Dilogellaceae (NL. fem. n. *Dilogellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRME01.* The type genus for the taxon is *Candidatus* Dilogella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabifellales.

Description of *Candidatus* Dilogida advinifica sp. nov.

Candidatus Dilogida advinifica (NL. fem. n. *advinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXV01 sp013696835*. The type genome for the species is the GenBank assembly GCA_013696835.1. The GC content of the type genome is 69.84 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Dilogida gen. nov.

Candidatus Dilogida (NL. fem. n. *Dilogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXV01*. The type species for the genus is *Candidatus* Dilogida advinifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACCXV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilogidaceae.

Description of *Candidatus* Dilogidaceae fam. nov.

Candidatus Dilogidaceae (NL. fem. n. *Dilogidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCXV01.* The type genus for the taxon is *Candidatus* Dilogida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACCXV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dilogidales.

Description of *Candidatus* Dilogidales ord. nov.

Candidatus Dilogidales (NL. fem. n. *Dilogidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCXV01.* The type genus for the taxon is *Candidatus* Dilogida .

According to the GTDB R06-RS202, this order belongs to the class *Gemmatimonadetes*.

Description of *Candidatus* Dilogosa minuribula sp. nov.

Candidatus Dilogosa minuribula (NL. fem. n. *minuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9629 sp001818235*. The type genome for the species is the GenBank assembly GCA_001818185.1. The GC content of the type genome is 43.27 % and the genome length is 1.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Dilogosa gen. nov.

Candidatus Dilogosa (NL. fem. n. *Dilogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9629*. The type species for the genus is *Candidatus* Dilogosa minuribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9629*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilogosaceae.

Description of *Candidatus* Dilogosaceae fam. nov.

Candidatus Dilogosaceae (NL. fem. n. *Dilogosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9629.* The type genus for the taxon is *Candidatus* Dilogosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9629*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dilogosales.

Description of *Candidatus* Dilogosales ord. nov.

Candidatus Dilogosales (NL. fem. n. *Dilogosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9629.* The type genus for the taxon is *Candidatus* Dilogosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Dilogula bicubicula sp. nov.

Candidatus Dilogula bicubicula (NL. fem. n. *bicubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin125 sp009838735*. The type genome for the species is the GenBank assembly GCA_009835345.1. The GC content of the type genome is 64.2 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Dilogula gen. nov.

Candidatus Dilogula (NL. fem. n. *Dilogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin125*. The type species for the genus is *Candidatus* Dilogula bicubicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin125*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilogulaceae.

Description of *Candidatus* Dilogulaceae fam. nov.

Candidatus Dilogulaceae (NL. fem. n. *Dilogulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin125.* The type genus for the taxon is *Candidatus* Dilogula .

According to the original version of GTDB R06-RS202, this family belongs to the order *Bin125*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dilogulales.

Description of *Candidatus* Dilogulales ord. nov.

Candidatus Dilogulales (NL. fem. n. *Dilogulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin125.* The type genus for the taxon is *Candidatus* Dilogula .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Dilogula calipitia sp. nov.

Candidatus Dilogula calipitia (NL. fem. n. *calipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin125 sp007571275*. The type genome for the species is the GenBank assembly GCA_007571275.1. The GC content of the type genome is 63.14 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Dilogula desepicula sp. nov.

Candidatus Dilogula desepicula (NL. fem. n. *desepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin125 sp009838915*. The type genome for the species is the GenBank assembly GCA_009842405.1. The GC content of the type genome is 65.37 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Dilogula favilivita sp. nov.

Candidatus Dilogula favilivita (NL. fem. n. *favilivita* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin125 sp002239025*. The type genome for the species is the GenBank assembly GCA_002239025.1. The GC content of the type genome is 62.27 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Diludana carecimonia sp. nov.

Candidatus Diludana carecimonia (NL. fem. n. *carecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-41 sp001303585*. The type genome for the species is the GenBank assembly GCA_001303585.1. The GC content of the type genome is 62.91 % and the genome length is 3.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-rich zone estuary sediments 8-12 cm".

Description of *Candidatus* Diludana gen. nov.

Candidatus Diludana (NL. fem. n. *Diludana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG8-41*. The type species for the genus is *Candidatus* Diludana carecimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludanaceae.

Description of *Candidatus* Diludanaceae fam. nov.

Candidatus Diludanaceae (NL. fem. n. *Diludanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SG8-41*. The type genus for the taxon is *Candidatus* Diludana .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Diludana inlapicula sp. nov.

Candidatus Diludana inlapicula (NL. fem. n. *inlapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-41 sp011330925*. The type genome for the species is the GenBank assembly GCA_011330925.1. The GC content of the type genome is 67.35 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Diludana smegmicella sp. nov.

Candidatus Diludana smegmicella (NL. fem. n. *smegmicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-41 sp001771935*. The type genome for the species is the GenBank assembly GCA_001771935.1. The GC content of the type genome is 66.61 % and the genome length is 3.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Diludaria cosidousia sp. nov.

Candidatus Diludaria cosidousia (NL. fem. n. *cosidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-49-12 sp001796315*. The type genome for the species is the GenBank assembly GCA_001796065.1. The GC content of the type genome is 49.34 % and the genome length is 1.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Diludaria gen. nov.

Candidatus Diludaria (NL. fem. n. *Diludaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-49-12*. The type species for the genus is *Candidatus* Diludaria cosidousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Diludella paracibula sp. nov.

Candidatus Diludella paracibula (NL. fem. n. *paracibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZJ304 sp011039075*. The type genome for the species is the GenBank assembly RS_GCF_011039055.1. The GC content of the type genome is 46.55 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Diludella gen. nov.

Candidatus Diludella (NL. fem. n. *Diludella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZJ304*. The type species for the genus is *Candidatus* Diludella paracibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Diludida edissilenta sp. nov.

Candidatus Diludida edissilenta (NL. fem. n. *edissilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYP01 sp009781185*. The type genome for the species is the GenBank assembly GCA_009781185.1. The GC content of the type genome is 56.95 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Diludida gen. nov.

Candidatus Diludida (NL. fem. n. *Diludida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQYP01*. The type species for the genus is *Candidatus* Diludida edissilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WQYP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludidaceae.

Description of *Candidatus* Diludidaceae fam. nov.

Candidatus Diludidaceae (NL. fem. n. *Diludidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WQYP01*. The type genus for the taxon is *Candidatus* Diludida .

According to the original version of GTDB R06-RS202, this family belongs to the order *WQYP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Diludidales.

Description of *Candidatus* Diludidales ord. nov.

Candidatus Diludidales (NL. fem. n. *Diludidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WQYP01*. The type genus for the taxon is *Candidatus* Diludida .

According to the GTDB R06-RS202, this order belongs to the class *Phycisphaerae*.

Description of *Candidatus* Diludida repepigena sp. nov.

Candidatus Diludida repepigena (NL. fem. n. *repepigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYP01 sp903868035*. The type genome for the species is the GenBank assembly GCA_903868035.1. The GC content of the type genome is 62.89 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Diludosa repuritio sp. nov.

Candidatus Diludosa repuritio (NL. fem. n. *repuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-45-44 sp001824555*. The type genome for the species is the GenBank assembly GCA_001824555.1. The GC content of the type genome is 44.92 % and the genome length is 2.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Diludosa gen. nov.

Candidatus Diludosa (NL. fem. n. *Diludosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-45-44*. The type species for the genus is *Candidatus* Diludosa repuritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12454*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucellaceae.

Description of *Candidatus* Diludula recomifica sp. nov.

Candidatus Diludula recomifica (NL. fem. n. *recomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVWW01 sp011773795*. The type genome for the species is the GenBank assembly GCA_011771415.1. The GC content of the type genome is 66.49 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Diludula gen. nov.

Candidatus Diludula (NL. fem. n. *Diludula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVWW01*. The type species for the genus is *Candidatus* Diludula recomifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Mor1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracosaceae.

Description of *Candidatus* Diluvana alticitura sp. nov.

Candidatus Diluvana alticitura (NL. fem. n. *alticitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp903859795*. The type genome for the species is the GenBank assembly GCA_903859795.1. The GC content of the type genome is 40.61 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Diluvana gen. nov.

Candidatus Diluvana (NL. fem. n. *Diluvana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHB01*. The type species for the genus is *Candidatus* Diluvana alticitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Diluvana argitifica sp. nov.

Candidatus Diluvana argitifica (NL. fem. n. *argitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp903927965*. The type genome for the species is the GenBank assembly GCA_903927965.1. The GC content of the type genome is 41.19 % and the genome length is 7.57 Mbp.

Description of *Candidatus* Diluvana artocago sp. nov.

Candidatus Diluvana artocago (NL. fem. n. *artocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp903904515*. The type genome for the species is the GenBank assembly GCA_903904515.1. The GC content of the type genome is 41.87 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Diluvana capabigena sp. nov.

Candidatus Diluvana capabigena (NL. fem. n. *capabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp903897145*. The type genome for the species is the GenBank assembly GCA_903918685.1. The GC content of the type genome is 39.77 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Diluvana detepugo sp. nov.

Candidatus Diluvana detepugo (NL. fem. n. *detepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAFHB01 sp903923905*. The type genome for the species is the GenBank assembly GCA_903913395.1. The GC content of the type genome is 41.2 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Diluvana obvalibra sp. nov.

Candidatus Diluvana obvalibra (NL. fem. n. *obvalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp903918045*. The type genome for the species is the GenBank assembly GCA_903918045.1. The GC content of the type genome is 41.16 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Diluvana pavimitudo sp. nov.

Candidatus Diluvana pavimitudo (NL. fem. n. *pavimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp903907075*. The type genome for the species is the GenBank assembly GCA_903907075.1. The GC content of the type genome is 39.89 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Diluvana repecousia sp. nov.

Candidatus Diluvana repecousia (NL. fem. n. *repecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp903850335*. The type genome for the species is the GenBank assembly GCA_903850335.1. The GC content of the type genome is 39.76 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Diluvana sicaritrix sp. nov.

Candidatus Diluvana sicaritrix (NL. fem. n. *sicaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp903905505*. The type genome for the species is the GenBank assembly GCA_903945255.1. The GC content of the type genome is 40.28 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Diluvana tibiciforma sp. nov.

Candidatus Diluvana tibiciforma (NL. fem. n. *tibiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp903834845*. The type genome for the species is the GenBank assembly GCA_903880335.1. The GC content of the type genome is 37.85 % and the genome length is 7.99 Mbp.

Description of *Candidatus* Diluvana vivifousia sp. nov.

Candidatus Diluvana vivifousia (NL. fem. n. *vivifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHB01 sp010906965*. The type genome for the species is the GenBank assembly GCA_010906965.1. The GC content of the type genome is 40.24 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Diluvaria assubigena sp. nov.

Candidatus Diluvaria assubigena (NL. fem. n. *assubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp900759825*. The type genome for the species is the GenBank assembly GCA_900759825.1. The GC content of the type genome is 60.09 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Diluvaria gen. nov.

Candidatus Diluvaria (NL. fem. n. *Diluvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-873*. The type species for the genus is *Candidatus* Diluvaria assubigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Diluvaria binocibra sp. nov.

Candidatus Diluvaria binocibra (NL. fem. n. *binocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp900550395*. The type genome for the species is the GenBank assembly GCA_900550395.1. The GC content of the type genome is 57.2 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Diluvaria bonifivita sp. nov.

Candidatus Diluvaria bonifivita (NL. fem. n. *bonifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp002490635*. The type genome for the species is the GenBank assembly GCA_002361255.1. The GC content of the type genome is 55.74 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Diluvaria cepurifica sp. nov.

Candidatus Diluvaria cepurifica (NL. fem. n. *cepurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp900755985*. The type genome for the species is the GenBank assembly RS_GCF_900755985.1. The GC content of the type genome is 51.75 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Diluvaria ciminifica sp. nov.

Candidatus Diluvaria ciminifica (NL. fem. n. *ciminifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp900548975*. The type genome for the species is the GenBank assembly RS_GCF_900753465.1. The GC content of the type genome is 53.98 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Diluvaria cocolugo sp. nov.

Candidatus Diluvaria cocolugo (NL. fem. n. *cocolugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-873 sp900759845*. The type genome for the species is the GenBank assembly GCA_900759845.1. The GC content of the type genome is 52.94 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Diluvaria cohoriforma sp. nov.

Candidatus Diluvaria cohoriforma (NL. fem. n. *cohoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp001701165*. The type genome for the species is the GenBank assembly GCA_004553385.1. The GC content of the type genome is 52.41 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Diluvaria defunigena sp. nov.

Candidatus Diluvaria defunigena (NL. fem. n. *defunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp009775535*. The type genome for the species is the GenBank assembly GCA_009775535.1. The GC content of the type genome is 48.84 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Diluvaria denixitia sp. nov.

Candidatus Diluvaria denixitia (NL. fem. n. *denixitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp009775275*. The type genome for the species is the GenBank assembly GCA_013316725.1. The GC content of the type genome is 53.89 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Diluvaria dimidivita sp. nov.

Candidatus Diluvaria dimidivita (NL. fem. n. *dimidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp011959565*. The type genome for the species is the GenBank assembly RS_GCF_011959565.1. The GC content of the type genome is 52.14 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Diluvaria furibigena sp. nov.

Candidatus Diluvaria furibigena (NL. fem. n. *furibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp009775195*. The type genome for the species is the GenBank assembly GCA_009775195.1. The GC content of the type genome is 53.4 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Diluvaria gabinilenta sp. nov.

Candidatus Diluvaria gabinilenta (NL. fem. n. *gabinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp900554265*. The type genome for the species is the GenBank assembly GCA_900554265.1. The GC content of the type genome is 59.31 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Diluvaria hemitentia sp. nov.

Candidatus Diluvaria hemitentia (NL. fem. n. *hemitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp001689665*. The type genome for the species is the GenBank assembly GCA_009775125.1. The GC content of the type genome is 53.27 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Diluvaria inlecitica sp. nov.

Candidatus Diluvaria inlecitica (NL. fem. n. *inlecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp001689415*. The type genome for the species is the GenBank assembly GCA_001689415.1. The GC content of the type genome is 49.19 % and the genome length is 3.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Feces".

Description of *Candidatus* Diluvaria navifatica sp. nov.

Candidatus Diluvaria navifatica (NL. fem. n. *navifatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp900555715*. The type genome for the species is the GenBank assembly GCA_900555715.1. The GC content of the type genome is 52.38 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Diluvaria nugivitudo sp. nov.

Candidatus Diluvaria nugivitudo (NL. fem. n. *nugivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp002493945*. The type genome for the species is the GenBank assembly GCA_002491835.1. The GC content of the type genome is 58.03 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Diluvaria onocritas sp. nov.

Candidatus Diluvaria onocritas (NL. fem. n. *onocritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp900541865*. The type genome for the species is the GenBank assembly GCA_900541865.1. The GC content of the type genome is 57.93 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Diluvaria palifilenta sp. nov.

Candidatus Diluvaria palifilenta (NL. fem. n. *palifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp004552485*. The type genome for the species is the GenBank assembly GCA_004562995.1. The GC content of the type genome is 59.58 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Diluvaria peraditas sp. nov.

Candidatus Diluvaria peraditas (NL. fem. n. *peraditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp002478045*. The type genome for the species is the GenBank assembly GCA_002297345.1. The GC content of the type genome is 52.18 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Diluvaria pomifatio sp. nov.

Candidatus Diluvaria pomifatio (NL. fem. n. *pomifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp004553485*. The type genome for the species is the GenBank assembly GCA_004561505.1. The GC content of the type genome is 59.17 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Diluvaria rarefilenta sp. nov.

Candidatus Diluvaria rarefilenta (NL. fem. n. *rarefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp003979155*. The type genome for the species is the GenBank assembly GCA_013316815.1. The GC content of the type genome is 51.5 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Diluvaria rurigisca sp. nov.

Candidatus Diluvaria rurigisca (NL. fem. n. *rurigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp002633115*. The type genome for the species is the GenBank assembly GCA_001689645.1. The GC content of the type genome is 51.41 % and the genome length is 4.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Feces".

Description of *Candidatus* Diluvaria satacatica sp. nov.

Candidatus Diluvaria satacatica (NL. fem. n. *satacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp002491245*. The type genome for the species is the GenBank assembly GCA_002361195.1. The GC content of the type genome is 52.11 %

and the genome length is 2.0 Mbp.

Description of *Candidatus* Diluvaria seposibula sp. nov.

Candidatus Diluvaria seposibula (NL. fem. n. *seposibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp900540625*. The type genome for the species is the GenBank assembly RS_GCF_900771835.1. The GC content of the type genome is 52.46 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Diluvaria sepositoga sp. nov.

Candidatus Diluvaria sepositoga (NL. fem. n. *sepositoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp009775225*. The type genome for the species is the GenBank assembly GCA_009775225.1. The GC content of the type genome is 54.5 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Diluvaria tibicimonas sp. nov.

Candidatus Diluvaria tibicimonas (NL. fem. n. *tibicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp009775135*. The type genome for the species is the GenBank assembly GCA_009775135.1. The GC content of the type genome is 52.17 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Diluvaria turifitas sp. nov.

Candidatus Diluvaria turifitas (NL. fem. n. *turifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp900554715*. The type genome for the species is the GenBank assembly GCA_900554715.1. The GC content of the type genome is 54.14 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Diluvaria vavasifica sp. nov.

Candidatus Diluvaria vavasifica (NL. fem. n. *vavasifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp004552725*. The type genome for the species is the GenBank assembly GCA_004552725.1. The GC content of the type genome is 52.07 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Diluvaria vitabedo sp. nov.

Candidatus Diluvaria vitabedo (NL. fem. n. *vitabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp009775265*. The type genome for the species is the GenBank assembly GCA_009775265.1. The GC content of the type genome is 54.62 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Diluvaria vitupitoga sp. nov.

Candidatus Diluvaria vitupitoga (NL. fem. n. *vitupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-873 sp004554255*. The type genome for the species is the GenBank assembly GCA_004554255.1. The GC content of the type genome is 53.75 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Diluvella detesitia sp. nov.

Candidatus Diluvella detesitia (NL. fem. n. *detesitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG756 sp902803675*. The type genome for the species is the GenBank assembly GCA_902782865.1. The GC content of the type genome is 61.3 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Diluvella gen. nov.

Candidatus Diluvella (NL. fem. n. *Diluvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG756*. The type species for the genus is *Candidatus* Diluvella detesitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Diluvella inregatica sp. nov.

Candidatus Diluvella inregatica (NL. fem. n. *inregatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG756 sp902796115*. The type genome for the species is the GenBank assembly GCA_902796115.1. The GC content of the type genome is 58.15 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Diluvella subodimonia sp. nov.

Candidatus Diluvella subodimonia (NL. fem. n. *subodimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG756 sp900322115*. The type genome for the species is the GenBank assembly GCA_900322115.1. The GC content of the type genome is 59.62 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Diluvida ludimibra sp. nov.

Candidatus Diluvida ludimibra (NL. fem. n. *ludimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J042 sp003696445*. The type genome for the species is the GenBank assembly GCA_003696445.1. The GC content of the type genome is 56.03 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Diluvida gen. nov.

Candidatus Diluvida (NL. fem. n. *Diluvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *J042*. The type species for the genus is *Candidatus* Diluvida ludimibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diluvidaceae.

Description of *Candidatus* Diluvidaceae fam. nov.

Candidatus Diluvidaceae (NL. fem. n. *Diluvidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J042.* The type genus for the taxon is *Candidatus* Diluvida .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-13-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Demogiales.

Description of *Candidatus* Diluvosa coticimonia sp. nov.

Candidatus Diluvosa coticimonia (NL. fem. n. *coticimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3442 sp002378565*. The type genome for the species is the GenBank assembly GCA_009936935.1. The GC content of the type genome is 49.55 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Diluvosa gen. nov.

Candidatus Diluvosa (NL. fem. n. *Diluvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3442*. The type species for the genus is *Candidatus* Diluvosa coticimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Diluvula caravugo sp. nov.

Candidatus Diluvula caravugo (NL. fem. n. *caravugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *TMED126 sp002701605*. The type genome for the species is the GenBank assembly GCA_002172385.3. The GC content of the type genome is 30.43 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Diluvula gen. nov.

Candidatus Diluvula (NL. fem. n. *Diluvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED126*. The type species for the genus is *Candidatus* Diluvula caravugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1144*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conifellaceae.

Description of *Candidatus* Dimacana lanugigena sp. nov.

Candidatus Dimacana lanugigena (NL. fem. n. *lanugigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9673 sp003530255*. The type genome for the species is the GenBank assembly GCA_003530255.1. The GC content of the type genome is 68.97 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Dimacana gen. nov.

Candidatus Dimacana (NL. fem. n. *Dimacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9673*. The type species for the genus is *Candidatus* Dimacana lanugigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9673*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimacanaceae.

Description of *Candidatus* Dimacanaceae fam. nov.

Candidatus Dimacanaceae (NL. fem. n. *Dimacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA9673*. The type genus for the taxon is *Candidatus* Dimacana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9673*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dimacanales.

Description of *Candidatus* Dimacanales ord. nov.

Candidatus Dimacanales (NL. fem. n. *Dimacanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9673*. The type genus for the taxon is *Candidatus* Dimacana .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetariae.

Description of *Candidatus* Dimacana loraritia sp. nov.

Candidatus Dimacana loraritia (NL. fem. n. *loraritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9673 sp003541445*. The type genome for the species is the GenBank assembly GCA_003541445.1. The GC content of the type genome is 68.9 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Dimacaria rubecicula sp. nov.

Candidatus Dimacaria rubecicula (NL. fem. n. *rubecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYKD01 sp012522585*. The type genome for the species is the GenBank assembly GCA_012522585.1. The GC content of the type genome is 42.17 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Dimacaria gen. nov.

Candidatus Dimacaria (NL. fem. n. *Dimacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYKD01*. The type species for the genus is *Candidatus* Dimacaria

rubecicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYKD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimacariaceae.

Description of *Candidatus* Dimacariaceae fam. nov.

Candidatus Dimacariaceae (NL. fem. n. *Dimacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYKD01.* The type genus for the taxon is *Candidatus* Dimacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYKD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dimacariales.

Description of *Candidatus* Dimacariales ord. nov.

Candidatus Dimacariales (NL. fem. n. *Dimacariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYKD01.* The type genus for the taxon is *Candidatus* Dimacaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA994*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Dehonellae.

Description of *Candidatus* Dimacella cuticibula sp. nov.

Candidatus Dimacella cuticibula (NL. fem. n. *cuticibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-38 sp003599335*. The type genome for the species is the GenBank assembly GCA_003599335.1. The GC content of the type genome is 40.84 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Dimacella gen. nov.

Candidatus Dimacella (NL. fem. n. *Dimacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SURF-38*. The type species for the genus is *Candidatus* Dimacella cuticibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimacellaceae.

Description of *Candidatus* Dimacellaceae fam. nov.

Candidatus Dimacellaceae (NL. fem. n. *Dimacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-38.* The type genus for the taxon is *Candidatus* Dimacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SURF-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dimacellales.

Description of *Candidatus* Dimacellales ord. nov.

Candidatus Dimacellales (NL. fem. n. *Dimacellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-38.* The type genus for the taxon is *Candidatus* Dimacella .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Dimacia insibatica sp. nov.

Candidatus Dimacia insibatica (NL. fem. n. *insibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSWB01 sp011368175*. The type genome for the species is the GenBank assembly GCA_011368175.1. The GC content of the type genome is 61.27 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Dimacia gen. nov.

Candidatus Dimacia (NL. fem. n. *Dimacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSWB01*. The type species for the genus is *Candidatus* Dimacia

insibatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSWB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimaciaceae.

Description of *Candidatus* Dimaciaceae fam. nov.

Candidatus Dimaciaceae (NL. fem. n. *Dimaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSWB01*. The type genus for the taxon is *Candidatus* Dimacia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6099*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hirudulales.

Description of *Candidatus* Dimacida estovago sp. nov.

Candidatus Dimacida estovago (NL. fem. n. *estovago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2711565 sp002711565*. The type genome for the species is the GenBank assembly GCA_002711565.1. The GC content of the type genome is 36.02 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Dimacida gen. nov.

Candidatus Dimacida (NL. fem. n. *Dimacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2711565*. The type species for the genus is *Candidatus* Dimacida estovago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2711565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimacidaceae.

Description of *Candidatus* Dimacidaceae fam. nov.

Candidatus Dimacidaceae (NL. fem. n. *Dimacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2711565.* The type genus for the taxon is *Candidatus* Dimacida .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Dimacosa lanigago sp. nov.

Candidatus Dimacosa lanigago (NL. fem. n. *lanigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKOZ01 sp007119795*. The type genome for the species is the GenBank assembly GCA_007126245.1. The GC content of the type genome is 68.22 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Dimacosa gen. nov.

Candidatus Dimacosa (NL. fem. n. *Dimacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKOZ01*. The type species for the genus is *Candidatus* Dimacosa lanigago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feficariaceae.

Description of *Candidatus* Dimacula advinentia sp. nov.

Candidatus Dimacula advinentia (NL. fem. n. *advinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-72 sp005883405*. The type genome for the species is the GenBank assembly GCA_005883405.1. The GC content of the type genome is 66.1 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Dimacula gen. nov.

Candidatus Dimacula (NL. fem. n. *Dimacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-72*. The type species for the genus is *Candidatus* Dimacula

advinentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CF-72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimaculaceae.

Description of *Candidatus* Dimaculaceae fam. nov.

Candidatus Dimaculaceae (NL. fem. n. *Dimaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CF-72*. The type genus for the taxon is *Candidatus* Dimacula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6077*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Doxolariales.

Description of *Candidatus* Dimadana remulentia sp. nov.

Candidatus Dimadana remulentia (NL. fem. n. *remulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-917 sp000437555*. The type genome for the species is the GenBank assembly GCA_900551475.1. The GC content of the type genome is 42.38 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Dimadana gen. nov.

Candidatus Dimadana (NL. fem. n. *Dimadana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-917*. The type species for the genus is *Candidatus* Dimadana remulentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadanaceae.

Description of *Candidatus* Dimadanaceae fam. nov.

Candidatus Dimadanaceae (NL. fem. n. *Dimadanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-917.* The type genus for the taxon is *Candidatus* Dimadana .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Dimadaria exorciforma sp. nov.

Candidatus Dimadaria exorciforma (NL. fem. n. *exorciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNBC01 sp003641665*. The type genome for the species is the GenBank assembly GCA_003641665.1. The GC content of the type genome is 36.33 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Dimadaria gen. nov.

Candidatus Dimadaria (NL. fem. n. *Dimadaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNBC01*. The type species for the genus is *Candidatus* Dimadaria exorciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QNBC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadariaceae.

Description of *Candidatus* Dimadariaceae fam. nov.

Candidatus Dimadariaceae (NL. fem. n. *Dimadariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNBC01.* The type genus for the taxon is *Candidatus* Dimadaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *QNBC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dimadariales.

Description of *Candidatus* Dimadariales ord. nov.

Candidatus Dimadariales (NL. fem. n. *Dimadariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *QNBC01*. The type genus for the taxon is *Candidatus* Dimadaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *32-111*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Gasifiae.

Description of *Candidatus* Dimadaria sitelitas sp. nov.

Candidatus Dimadaria sitelitas (NL. fem. n. *sitelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNBC01 sp011682715*. The type genome for the species is the GenBank assembly GCA_011682715.1. The GC content of the type genome is 37.54 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Dimadella bicubimonas sp. nov.

Candidatus Dimadella bicubimonas (NL. fem. n. *bicubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN24 sp011380505*. The type genome for the species is the GenBank assembly GCA_011055145.1. The GC content of the type genome is 68.57 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Dimadella gen. nov.

Candidatus Dimadella (NL. fem. n. *Dimadella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN24*. The type species for the genus is *Candidatus* Dimadella bicubimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRbin24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadellaceae.

Description of *Candidatus* Dimadellaceae fam. nov.

Candidatus Dimadellaceae (NL. fem. n. *Dimadellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *HRbin24*. The type genus for the taxon is *Candidatus* Dimadella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-28-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hecatosales.

Description of *Candidatus* Dimadella lupanedo sp. nov.

Candidatus Dimadella lupanedo (NL. fem. n. *lupanedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN24 sp002898715*. The type genome for the species is the GenBank assembly GCA_002898715.1. The GC content of the type genome is 69.26 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Dimadella manubilega sp. nov.

Candidatus Dimadella manubilega (NL. fem. n. *manubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN24 sp011047455*. The type genome for the species is the GenBank assembly GCA_011047455.1. The GC content of the type genome is 70.85 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Dimadia lapiligena sp. nov.

Candidatus Dimadia lapiligena (NL. fem. n. *lapiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-48-11 sp001003475*. The type genome for the species is the GenBank assembly GCA_001004035.1. The GC content of the type genome is 49.16 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Dimadia gen. nov.

Candidatus Dimadia (NL. fem. n. *Dimadia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-48-11*. The type species for the genus is *Candidatus* Dimadia

lapiligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Dimadida feficilega sp. nov.

Candidatus Dimadida feficilega (NL. fem. n. *feficilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCMT01 sp008015835*. The type genome for the species is the GenBank assembly GCA_008015835.1. The GC content of the type genome is 65.72 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Dimadida gen. nov.

Candidatus Dimadida (NL. fem. n. *Dimadida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCMT01*. The type species for the genus is *Candidatus* Dimadida feficilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dimadida immodastra sp. nov.

Candidatus Dimadida immodastra (NL. fem. n. *immodastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCMT01 sp008015095*. The type genome for the species is the GenBank assembly GCA_008015095.1. The GC content of the type genome is 63.25 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Dimadida malogitia sp. nov.

Candidatus Dimadida malogitia (NL. fem. n. *malogitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCMT01 sp011526085*. The type genome for the species is the

GenBank assembly GCA_011526085.1. The GC content of the type genome is 67.92 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Dimadida navicisca sp. nov.

Candidatus Dimadida navicisca (NL. fem. n. *navicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCMT01 sp013141175*. The type genome for the species is the GenBank assembly GCA_013141175.1. The GC content of the type genome is 64.81 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Dimadida nugivastra sp. nov.

Candidatus Dimadida nugivastra (NL. fem. n. *nugivastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCMT01 sp005502915*. The type genome for the species is the GenBank assembly RS_GCF_005503645.1. The GC content of the type genome is 67.97 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Dimadosa everbiforma sp. nov.

Candidatus Dimadosa everbiforma (NL. fem. n. *everbiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6767 sp900095305*. The type genome for the species is the GenBank assembly RS_GCF_900095305.1. The GC content of the type genome is 32.44 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biogas sludge".

Description of *Candidatus* Dimadosa gen. nov.

Candidatus Dimadosa (NL. fem. n. *Dimadosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6767*. The type species for the genus is *Candidatus* Dimadosa everbiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dimadosa vatilax sp. nov.

Candidatus Dimadosa vatilax (NL. fem. n. *vatilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6767 sp002376545*. The type genome for the species is the GenBank assembly GCA_002376545.1. The GC content of the type genome is 33.36 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Dimadula denupax sp. nov.

Candidatus Dimadula denupax (NL. fem. n. *denupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLWX01 sp012103375*. The type genome for the species is the GenBank assembly GCA_011088055.1. The GC content of the type genome is 61.56 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Dimadula gen. nov.

Candidatus Dimadula (NL. fem. n. *Dimadula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLWX01*. The type species for the genus is *Candidatus* Dimadula denupax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dimidana offiressa sp. nov.

Candidatus Dimidana offiressa (NL. fem. n. *offiressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PEYH01 sp002774465*. The type genome for the species is the GenBank assembly GCA_002774465.1. The GC content of the type genome is 43.3 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Dimidana gen. nov.

Candidatus Dimidana (NL. fem. n. *Dimidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PEYH01*. The type species for the genus is *Candidatus* Dimidana offiressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PEYH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimidanaceae.

Description of *Candidatus* Dimidanaceae fam. nov.

Candidatus Dimidanaceae (NL. fem. n. *Dimidanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PEYH01*. The type genus for the taxon is *Candidatus* Dimidana .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Dimidaria repurimonia sp. nov.

Candidatus Dimidaria repurimonia (NL. fem. n. *repurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-69-37 sp001790955*. The type genome for the species is the GenBank assembly GCA_001790955.1. The GC content of the type genome is 69.49 % and the genome length is 3.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Dimidaria gen. nov.

Candidatus Dimidaria (NL. fem. n. *Dimidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-69-37*. The type species for the genus is *Candidatus* Dimidaria repurimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turifosaceae.

Description of *Candidatus* Dimidella adinvilenta sp. nov.

Candidatus Dimidella adinvilenta (NL. fem. n. *adinvilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2962 sp002699485*. The type genome for the species is the GenBank assembly GCA_002699485.1. The GC content of the type genome is 38.81 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Dimidella gen. nov.

Candidatus Dimidella (NL. fem. n. *Dimidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2962*. The type species for the genus is *Candidatus* Dimidella adinvilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2962*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimidellaceae.

Description of *Candidatus* Dimidellaceae fam. nov.

Candidatus Dimidellaceae (NL. fem. n. *Dimidellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2962.* The type genus for the taxon is *Candidatus* Dimidella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defulidales.

Description of *Candidatus* Dimidella disiditio sp. nov.

Candidatus Dimidella disiditio (NL. fem. n. *disiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2962 sp002728115*. The type genome for the species is the GenBank assembly GCA_002348445.1. The GC content of the type genome is 39.12 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Dimidella obsecivita sp. nov.

Candidatus Dimidella obsecivita (NL. fem. n. *obsecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2962 sp003228095*. The type genome for the species is the GenBank assembly GCA_003228095.2. The GC content of the type genome is 38.65 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Dimidella propritura sp. nov.

Candidatus Dimidella propritura (NL. fem. n. *propritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2962 sp002311285*. The type genome for the species is the GenBank assembly GCA_002311285.1. The GC content of the type genome is 39.82 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Dimidida adsusigena sp. nov.

Candidatus Dimidida adsusigena (NL. fem. n. *adsusigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2716345 sp902533655*. The type genome for the species is the GenBank assembly GCA_902533655.1. The GC content of the type genome is 30.08 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Dimidida gen. nov.

Candidatus Dimidida (NL. fem. n. *Dimidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2716345*. The type species for the genus is *Candidatus* Dimidida adsusigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Dimidida letifitoga sp. nov.

Candidatus Dimidida letifitoga (NL. fem. n. *letifitoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2716345 sp002716345*. The type genome for the species is the GenBank assembly GCA_002716345.1. The GC content of the type genome is 29.75 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Dimidida munifax sp. nov.

Candidatus Dimidida munifax (NL. fem. n. *munifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2716345 sp902597195*. The type genome for the species is the GenBank assembly GCA_902597195.1. The GC content of the type genome is 30.74 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Dimidida nocenentia sp. nov.

Candidatus Dimidida nocenentia (NL. fem. n. *nocenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2716345 sp902587125*. The type genome for the species is the GenBank assembly GCA_902546675.1. The GC content of the type genome is 30.33 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Dimidosa venucitura sp. nov.

Candidatus Dimidosa venucitura (NL. fem. n. *venucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-193 sp007117035*. The type genome for the species is the GenBank assembly GCA_007117035.1. The GC content of the type genome is 40.89 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Dimidosa gen. nov.

Candidatus Dimidosa (NL. fem. n. *Dimidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CSBR16-193*. The type species for the genus is *Candidatus* Dimidosa venucitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSBR16-193*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimidosaceae.

Description of *Candidatus* Dimidosaceae fam. nov.

Candidatus Dimidosaceae (NL. fem. n. *Dimidosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSBR16-193.* The type genus for the taxon is *Candidatus* Dimidosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Dimidula medimitas sp. nov.

Candidatus Dimidula medimitas (NL. fem. n. *medimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2722175 sp002722175*. The type genome for the species is the GenBank assembly GCA_002722175.1. The GC content of the type genome is 43.26 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Dimidula gen. nov.

Candidatus Dimidula (NL. fem. n. *Dimidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2722175*. The type species for the genus is *Candidatus* Dimidula medimitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Casp-alpha2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninidaceae.

Description of *Candidatus* Diminana inmobessa sp. nov.

Candidatus Diminana inmobessa (NL. fem. n. *inmobessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADFF01 sp013153035*. The type genome for the species is the GenBank assembly GCA_013153035.1. The GC content of the type genome is 41.03 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Diminana gen. nov.

Candidatus Diminana (NL. fem. n. *Diminana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFF01*. The type species for the genus is *Candidatus* Diminana inmobessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADFF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diminanaceae.

Description of *Candidatus* Diminanaceae fam. nov.

Candidatus Diminanaceae (NL. fem. n. *Diminanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADFF01.* The type genus for the taxon is *Candidatus* Diminana .

According to GTDB R06-RS202, this family belongs to the order *Coprothermobacterales*.

Description of *Candidatus* Diminaria refacatica sp. nov.

Candidatus Diminaria refacatica (NL. fem. n. *refacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITIS01 sp903892515*. The type genome for the species is the GenBank assembly GCA_903914155.1. The GC content of the type genome is 63.15 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Diminaria gen. nov.

Candidatus Diminaria (NL. fem. n. *Diminaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITIS01*. The type species for the genus is *Candidatus* Diminaria refacatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Diminella ammixilega sp. nov.

Candidatus Diminella ammixilega (NL. fem. n. *ammixilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1259 sp002308755*. The type genome for the species is the GenBank assembly GCA_002308755.1. The GC content of the type genome is 46.38 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Diminella gen. nov.

Candidatus Diminella (NL. fem. n. *Diminella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1259*. The type species for the genus is *Candidatus* Diminella ammixilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Diminella apsenatica sp. nov.

Candidatus Diminella apsenatica (NL. fem. n. *apsenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1259 sp900770685*. The type genome for the species is the GenBank assembly RS_GCF_900770685.1. The GC content of the type genome is 37.28 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Diminella encenitura sp. nov.

Candidatus Diminella encenitura (NL. fem. n. *encenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1259 sp900771345*. The type genome for the species is the GenBank assembly RS_GCF_900771345.1. The GC content of the type genome is 36.53 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Diminella fibicax sp. nov.

Candidatus Diminella fibicax (NL. fem. n. *fibicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1259 sp900760875*. The type genome for the species is the GenBank assembly RS_GCF_900760875.1. The GC content of the type genome is 46.91 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Diminella homagisca sp. nov.

Candidatus Diminella homagisca (NL. fem. n. *homagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1259 sp900769565*. The type genome for the species is the GenBank assembly RS_GCF_900769565.1. The GC content of the type genome is 38.31 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Diminella induvetta sp. nov.

Candidatus Diminella induvetta (NL. fem. n. *induvetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1259 sp003523255*. The type genome for the species is the GenBank assembly GCA_003523255.1. The GC content of the type genome is 44.68 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Diminella maledibra sp. nov.

Candidatus Diminella maledibra (NL. fem. n. *maledibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1259 sp900320065*. The type genome for the species is the GenBank assembly GCA_900320065.1. The GC content of the type genome is 44.21 %

and the genome length is 1.34 Mbp.

Description of *Candidatus* Diminella mutabitica sp. nov.

Candidatus Diminella mutabitica (NL. fem. n. *mutabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1259 sp902767225*. The type genome for the species is the GenBank assembly GCA_902767225.1. The GC content of the type genome is 41.09 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Diminia cocodilenta sp. nov.

Candidatus Diminia cocodilenta (NL. fem. n. *cocodilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1663 sp900553405*. The type genome for the species is the GenBank assembly GCA_900553405.1. The GC content of the type genome is 27.01 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Diminia gen. nov.

Candidatus Diminia (NL. fem. n. *Diminia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1663*. The type species for the genus is *Candidatus* Diminia cocodilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Diminia invicisca sp. nov.

Candidatus Diminia invicisca (NL. fem. n. *invicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1663 sp012513065*. The type genome for the species is the GenBank assembly GCA_012513065.1. The GC content of the type genome is 25.85 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Diminia redunilega sp. nov.

Candidatus Diminia redunilega (NL. fem. n. *redunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1663 sp900553865*. The type genome for the species is the GenBank assembly GCA_900553865.1. The GC content of the type genome is 28.33 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Diminia saxopatio sp. nov.

Candidatus Diminia saxopatio (NL. fem. n. *saxopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1663 sp900753245*. The type genome for the species is the GenBank assembly RS_GCF_900753245.1. The GC content of the type genome is 27.01 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Diminida verecatio sp. nov.

Candidatus Diminida verecatio (NL. fem. n. *verecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5214 sp002412545*. The type genome for the species is the GenBank assembly GCA_002400355.1. The GC content of the type genome is 37.24 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Diminida gen. nov.

Candidatus Diminida (NL. fem. n. *Diminida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5214*. The type species for the genus is *Candidatus* Diminida verecatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diminidaceae.

Description of *Candidatus* Diminidaceae fam. nov.

Candidatus Diminidaceae (NL. fem. n. *Diminidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5214.* The type genus for the taxon is *Candidatus* Diminida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Diminidales.

Description of *Candidatus* Diminidales ord. nov.

Candidatus Diminidales (NL. fem. n. *Diminidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5214.* The type genus for the taxon is *Candidatus* Diminida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA5214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Diminidae.

Description of *Candidatus* Diminidae class. nov.

Candidatus Diminidae (NL. fem. n. *c__Diminidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5214.* The type genus for the taxon is *Candidatus* Diminida .

According to GTDB R06-RS202, this class belongs to the phylum *Elusimicrobiota*.

Description of *Candidatus* Diminosa tegimousia sp. nov.

Candidatus Diminosa tegimousia (NL. fem. n. *tegimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSJA01 sp011054185*. The type genome for the species is the GenBank assembly GCA_011054895.1. The GC content of the type genome is 74.42 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Diminosa gen. nov.

Candidatus Diminosa (NL. fem. n. *Diminosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSJA01*. The type species for the genus is *Candidatus* Diminosa tegimousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navifellaceae.

Description of *Candidatus* Diminula benifax sp. nov.

Candidatus Diminula benifax (NL. fem. n. *benifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WH-5701 sp002252625*. The type genome for the species is the GenBank assembly RS_GCF_002252625.1. The GC content of the type genome is 64.56 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Diminula gen. nov.

Candidatus Diminula (NL. fem. n. *Diminula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WH-5701*. The type species for the genus is *Candidatus* Diminula benifax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Diminula cocoditica sp. nov.

Candidatus Diminula cocoditica (NL. fem. n. *cocoditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WH-5701 sp000153045*. The type genome for the species is the GenBank assembly RS_GCF_000153045.1. The GC content of the type genome is 65.39 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Diminula habacivita sp. nov.

Candidatus Diminula habacivita (NL. fem. n. *habacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WH-5701 sp014224355*. The type genome for the species is the GenBank assembly RS_GCF_014224335.1. The GC content of the type genome is 65.76 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Dinghuibacter cerimatica sp. nov.

Candidatus Dinghuibacter cerimatica (NL. fem. n. *cerimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dinghuibacter sp903970475*. The type genome for the species is the GenBank assembly GCA_903970475.1. The GC content of the type genome is 47.81 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Dinoroseobacter diminentia sp. nov.

Candidatus Dinoroseobacter diminentia (NL. fem. n. *diminentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dinoroseobacter sp013215265*. The type genome for the species is the GenBank assembly GCA_013215265.1. The GC content of the type genome is 55.56 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Dinoroseobacter ellebousia sp. nov.

Candidatus Dinoroseobacter ellebousia (NL. fem. n. *ellebousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dinoroseobacter sp006844665*. The type genome for the species is the GenBank assembly GCA_006844665.1. The GC content of the type genome is 57.68 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Dinupana necopimonia sp. nov.

Candidatus Dinupana necopimonia (NL. fem. n. *necopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAND01 sp003150225*. The type genome for the species is the GenBank assembly GCA_003150225.1. The GC content of the type genome is 56.01 %

and the genome length is 1.47 Mbp.

Description of *Candidatus* Dinupana gen. nov.

Candidatus Dinupana (NL. fem. n. *Dinupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAND01*. The type species for the genus is *Candidatus* Dinupana necopimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QAND01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dinupanaceae.

Description of *Candidatus* Dinupanaceae fam. nov.

Candidatus Dinupanaceae (NL. fem. n. *Dinupanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QAND01.* The type genus for the taxon is *Candidatus* Dinupana .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Dinuparia denupitas sp. nov.

Candidatus Dinuparia denupitas (NL. fem. n. *denupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2334 sp903928495*. The type genome for the species is the GenBank assembly GCA_903900205.1. The GC content of the type genome is 62.43 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Dinuparia gen. nov.

Candidatus Dinuparia (NL. fem. n. *Dinuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2334*. The type species for the genus is *Candidatus* Dinuparia denupitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dinuparia edulcetta sp. nov.

Candidatus Dinuparia edulcetta (NL. fem. n. *edulcetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2334 sp002479815*. The type genome for the species is the GenBank assembly GCA_002479815.1. The GC content of the type genome is 56.87 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Dinuparia inmacibra sp. nov.

Candidatus Dinuparia inmacibra (NL. fem. n. *inmacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2334 sp013823635*. The type genome for the species is the GenBank assembly GCA_013823635.1. The GC content of the type genome is 65.13 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Dinuparia redacitica sp. nov.

Candidatus Dinuparia redacitica (NL. fem. n. *redacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2334 sp002344885*. The type genome for the species is the GenBank assembly GCA_002344885.1. The GC content of the type genome is 62.16 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Dinupella malagibula sp. nov.

Candidatus Dinupella malagibula (NL. fem. n. *malagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUL01 sp012841575*. The type genome for the species is the GenBank assembly GCA_012841575.1. The GC content of the type genome is 38.79 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Dinupella gen. nov.

Candidatus Dinupella (NL. fem. n. *Dinupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUUL01*. The type species for the genus is *Candidatus* Dinupella malagibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUUL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dinupellaceae.

Description of *Candidatus* Dinupellaceae fam. nov.

Candidatus Dinupellaceae (NL. fem. n. *Dinupellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUUL01.* The type genus for the taxon is *Candidatus* Dinupella .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Dinupida attesatio sp. nov.

Candidatus Dinupida attesatio (NL. fem. n. *attesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp902793845*. The type genome for the species is the GenBank assembly GCA_902793845.1. The GC content of the type genome is 42.45 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Dinupida gen. nov.

Candidatus Dinupida (NL. fem. n. *Dinupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NK4A136*. The type species for the genus is *Candidatus* Dinupida attesatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dinupida avoncax sp. nov.

Candidatus Dinupida avoncax (NL. fem. n. *avoncax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp902787595*. The type genome for the species is the GenBank assembly GCA_902787595.1. The GC content of the type genome is 47.13 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Dinupida bicalimonia sp. nov.

Candidatus Dinupida bicalimonia (NL. fem. n. *bicalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp000621425*. The type genome for the species is the GenBank assembly RS_GCF_000621425.1. The GC content of the type genome is 43.61 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Dinupida decomifica sp. nov.

Candidatus Dinupida decomifica (NL. fem. n. *decomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp000421045*. The type genome for the species is the GenBank assembly GCA_900321615.1. The GC content of the type genome is 44.07 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Dinupida holisitoga sp. nov.

Candidatus Dinupida holisitoga (NL. fem. n. *holisitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp000687675*. The type genome for the species is the GenBank assembly RS_GCF_000420925.1. The GC content of the type genome is 36.91 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Dinupida homogilenta sp. nov.

Candidatus Dinupida homogilenta (NL. fem. n. *homogilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp002478505*. The type genome for the species is the GenBank assembly GCA_002414075.1. The GC content of the type genome is 43.19 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Dinupida monumatica sp. nov.

Candidatus Dinupida monumatica (NL. fem. n. *monumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp002479655*. The type genome for the species is the GenBank assembly GCA_002479655.1. The GC content of the type genome is 44.54 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Dinupida noninimonas sp. nov.

Candidatus Dinupida noninimonas (NL. fem. n. *noninimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp002314855*. The type genome for the species is the GenBank assembly GCA_002314855.1. The GC content of the type genome is 37.43 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Dinupida ontolicula sp. nov.

Candidatus Dinupida ontolicula (NL. fem. n. *ontolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp900102065*. The type genome for the species is the GenBank assembly RS_GCF_900102065.1. The GC content of the type genome is 43.34 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Dinupida patibivita sp. nov.

Candidatus Dinupida patibivita (NL. fem. n. *patibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp002373855*. The type genome for the species is the GenBank assembly GCA_002373855.1. The GC content of the type genome is 42.47 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Dinupida renavousia sp. nov.

Candidatus Dinupida renavousia (NL. fem. n. *renavousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp002393955*. The type genome for the species is the GenBank assembly GCA_002392885.1. The GC content of the type genome is 44.5 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Dinupida rorulisca sp. nov.

Candidatus Dinupida rorulisca (NL. fem. n. *rorulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK4A136 sp902779395*. The type genome for the species is the GenBank assembly GCA_902779395.1. The GC content of the type genome is 45.17 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Dinuposa refocessa sp. nov.

Candidatus Dinuposa refocessa (NL. fem. n. *refocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2966 sp002348365*. The type genome for the species is the GenBank assembly GCA_002377535.1. The GC content of the type genome is 58.49 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Dinuposa gen. nov.

Candidatus Dinuposa (NL. fem. n. *Dinuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2966*. The type species for the genus is *Candidatus* Dinuposa refocessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2966*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dinuposaceae.

Description of *Candidatus* Dinuposaceae fam. nov.

Candidatus Dinuposaceae (NL. fem. n. *Dinuposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2966.* The type genus for the taxon is *Candidatus* Dinuposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2966*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dinuposales.

Description of *Candidatus* Dinuposales ord. nov.

Candidatus Dinuposales (NL. fem. n. *Dinuposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2966.* The type genus for the taxon is *Candidatus* Dinuposa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Dinupula subabitrix sp. nov.

Candidatus Dinupula subabitrix (NL. fem. n. *subabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12508 sp001831095*. The type genome for the species is the GenBank assembly GCA_001831095.1. The GC content of the type genome is 50.56 % and the genome length is 1.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Dinupula gen. nov.

Candidatus Dinupula (NL. fem. n. *Dinupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12508*. The type species for the genus is *Candidatus* Dinupula subabitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dinupulaceae.

Description of *Candidatus* Dinupulaceae fam. nov.

Candidatus Dinupulaceae (NL. fem. n. *Dinupulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12508.* The type genus for the taxon is *Candidatus* Dinupula .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Diponana attesigena sp. nov.

Candidatus Diponana attesigena (NL. fem. n. *attesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-965 sp003153435*. The type genome for the species is the GenBank assembly GCA_003153435.1. The GC content of the type genome is 43.25 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Diponana gen. nov.

Candidatus Diponana (NL. fem. n. *Diponana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-965*. The type species for the genus is *Candidatus* Diponana attesigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-965*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponanaceae.

Description of *Candidatus* Diponanaceae fam. nov.

Candidatus Diponanaceae (NL. fem. n. *Diponanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-965.* The type genus for the taxon is *Candidatus* Diponana .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacosales.

Description of *Candidatus* Diponana attubedo sp. nov.

Candidatus Diponana attubedo (NL. fem. n. *attubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-965 sp013289095*. The type genome for the species is the GenBank assembly GCA_013289095.1. The GC content of the type genome is 46.99 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Diponana scombugo sp. nov.

Candidatus Diponana scombugo (NL. fem. n. *scombugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-965 sp003151415*. The type genome for the species is the GenBank assembly GCA_003151415.1. The GC content of the type genome is 45.52 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Diponana utrarigena sp. nov.

Candidatus Diponana utrarigena (NL. fem. n. *utrarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-965 sp013288325*. The type genome for the species is the GenBank assembly GCA_013288325.1. The GC content of the type genome is 43.19 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Diponaria giganiforma sp. nov.

Candidatus Diponaria giganiforma (NL. fem. n. *giganiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJARJ01 sp903944345*. The type genome for the species is the GenBank assembly GCA_903933965.1. The GC content of the type genome is 49.59 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Diponaria gen. nov.

Candidatus Diponaria (NL. fem. n. *Diponaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJARJ01*. The type species for the genus is *Candidatus* Diponaria giganiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002753745*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosaculaceae.

Description of *Candidatus* Diponaria subadicella sp. nov.

Candidatus Diponaria subadicella (NL. fem. n. *subadicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJARJ01 sp013335325*. The type genome for the species is the GenBank assembly GCA_013335325.1. The GC content of the type genome is 54.14 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Diponella adpacentia sp. nov.

Candidatus Diponella adpacentia (NL. fem. n. *adpacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UKL13-2 sp014378085*. The type genome for the species is the GenBank assembly GCA_014378085.1. The GC content of the type genome is 55.45 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Diponella gen. nov.

Candidatus Diponella (NL. fem. n. *Diponella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UKL13-2*. The type species for the genus is *Candidatus* Diponella adpacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponellaceae.

Description of *Candidatus* Diponellaceae fam. nov.

Candidatus Diponellaceae (NL. fem. n. *Diponellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UKL13-2.* The type genus for the taxon is *Candidatus* Diponella .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Diponella revecicella sp. nov.

Candidatus Diponella revecicella (NL. fem. n. *revecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UKL13-2 sp001602455*. The type genome for the species is the GenBank assembly GCA_003522245.1. The GC content of the type genome is 54.86 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Diponia adsenousia sp. nov.

Candidatus Diponia adsenousia (NL. fem. n. *adsenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQR01 sp013202335*. The type genome for the species is the GenBank assembly GCA_013202335.1. The GC content of the type genome is 40.57 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Diponia gen. nov.

Candidatus Diponia (NL. fem. n. *Diponia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQR01*. The type species for the genus is *Candidatus* Diponia adsenousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMQR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponiaceae.

Description of *Candidatus* Diponiaceae fam. nov.

Candidatus Diponiaceae (NL. fem. n. *Diponiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQR01.* The type genus for the taxon is *Candidatus* Diponia .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMQR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Diponiales.

Description of *Candidatus* Diponiales ord. nov.

Candidatus Diponiales (NL. fem. n. *Diponiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMQR01.* The type genus for the taxon is *Candidatus* Diponia .

According to the GTDB R06-RS202, this order belongs to the class *Spirochaetia*.

Description of *Candidatus* Diponida cohonitoga sp. nov.

Candidatus Diponida cohonitoga (NL. fem. n. *cohonitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1163 sp002327985*. The type genome for the species is the GenBank assembly GCA_002327985.1. The GC content of the type genome is 45.72 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Diponida gen. nov.

Candidatus Diponida (NL. fem. n. *Diponida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1163*. The type species for the genus is *Candidatus* Diponida cohonitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponidaceae.

Description of *Candidatus* Diponidaceae fam. nov.

Candidatus Diponidaceae (NL. fem. n. *Diponidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1163.* The type genus for the taxon is *Candidatus* Diponida .

According to the original version of GTDB R06-RS202, this family belongs to the order *BSN033*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Debucellales.

Description of *Candidatus* Diponida defanitas sp. nov.

Candidatus Diponida defanitas (NL. fem. n. *defanitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1163 sp002780715*. The type genome for the species is the GenBank assembly GCA_002783725.1. The GC content of the type genome is 45.34 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Diponida desuredo sp. nov.

Candidatus Diponida desuredo (NL. fem. n. *desuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1163 sp002327885*. The type genome for the species is the GenBank assembly GCA_002327885.1. The GC content of the type genome is 46.13 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Diponida sarabitudo sp. nov.

Candidatus Diponida sarabitudo (NL. fem. n. *sarabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1163 sp002311635*. The type genome for the species is the GenBank assembly GCA_002311635.1. The GC content of the type genome is 48.44 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Diponida vocamatio sp. nov.

Candidatus Diponida vocamatio (NL. fem. n. *vocamatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1163 sp013388645*. The type genome for the species is the GenBank assembly GCA_013388645.1. The GC content of the type genome is 44.92 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Diponosa ranunastra sp. nov.

Candidatus Diponosa ranunastra (NL. fem. n. *ranunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOLM01 sp903859205*. The type genome for the species is the GenBank assembly GCA_903859205.1. The GC content of the type genome is 59.93 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Diponosa gen. nov.

Candidatus Diponosa (NL. fem. n. *Diponosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOLM01*. The type species for the genus is *Candidatus* Diponosa ranunastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Diponula aterribra sp. nov.

Candidatus Diponula aterribra (NL. fem. n. *aterribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2728255 sp902562525*. The type genome for the species is the GenBank assembly GCA_902562525.1. The GC content of the type genome is 47.16 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Diponula gen. nov.

Candidatus Diponula (NL. fem. n. *Diponula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2728255*. The type species for the genus is *Candidatus* Diponula aterribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7887*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulariaceae.

Description of *Candidatus* Diponula milifastra sp. nov.

Candidatus Diponula milifastra (NL. fem. n. *milifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2728255 sp002728255*. The type genome for the species is the GenBank assembly GCA_002377485.1. The GC content of the type genome is 46.89 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Direcana ascalilenta sp. nov.

Candidatus Direcana ascalilenta (NL. fem. n. *ascalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11517 sp900551855*. The type genome for the species is the GenBank assembly GCA_900551855.1. The GC content of the type genome is 32.76 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Direcana gen. nov.

Candidatus Direcana (NL. fem. n. *Direcana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11517*. The type species for the genus is *Candidatus* Direcana ascalilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Direcana carecetta sp. nov.

Candidatus Direcana carecetta (NL. fem. n. *carecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11517 sp900555365*. The type genome for the species is the GenBank assembly GCA_900555365.1. The GC content of the type genome is 34.62 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Direcana cepuratica sp. nov.

Candidatus Direcana cepuratica (NL. fem. n. *cepuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11517 sp902796285*. The type genome for the species is the GenBank assembly GCA_902796285.1. The GC content of the type genome is 33.83 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Direcana immigedo sp. nov.

Candidatus Direcana immigedo (NL. fem. n. *immigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11517 sp900753315*. The type genome for the species is the GenBank assembly RS_GCF_900753315.1. The GC content of the type genome is 33.82 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Direcana indubentia sp. nov.

Candidatus Direcana indubentia (NL. fem. n. *indubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11517 sp900557645*. The type genome for the species is the GenBank assembly GCA_900557645.1. The GC content of the type genome is 28.13 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Direcana malifivita sp. nov.

Candidatus Direcana malifivita (NL. fem. n. *malifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11517 sp900768545*. The type genome for the species is the GenBank assembly RS_GCF_900768545.1. The GC content of the type genome is 35.84 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Direcana paracitica sp. nov.

Candidatus Direcana paracitica (NL. fem. n. *paracitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11517 sp003522085*. The type genome for the species is the GenBank assembly GCA_003522085.1. The GC content of the type genome is 37.83 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Direcaria cohonedo sp. nov.

Candidatus Direcaria cohonedo (NL. fem. n. *cohonedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-3-53-8 sp001920415*. The type genome for the species is the GenBank assembly GCA_001920415.1. The GC content of the type genome is 52.89 % and the genome length is 6.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 20cm depth; 6 days after first rain event (27mm)".

Description of *Candidatus* Direcaria gen. nov.

Candidatus Direcaria (NL. fem. n. *Direcaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *3-1-20CM-3-53-8*. The type species for the genus is *Candidatus* Direcaria cohonedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Direcella cerebilenta sp. nov.

Candidatus Direcella cerebilenta (NL. fem. n. *cerebilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1Sed10-7 sp007131525*. The type genome for the species is the GenBank assembly GCA_003552015.1. The GC content of the type genome is 72.23 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Direcella gen. nov.

Candidatus Direcella (NL. fem. n. *Direcella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1Sed10-7*. The type species for the genus is *Candidatus* Direcella cerebilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Direcella cerimilega sp. nov.

Candidatus Direcella cerimilega (NL. fem. n. *cerimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1Sed10-7 sp003565155*. The type genome for the species is the GenBank assembly GCA_003565155.1. The GC content of the type genome is 72.06 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Direcella dicabiforma sp. nov.

Candidatus Direcella dicabiforma (NL. fem. n. *dicabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1Sed10-7 sp003561535*. The type genome for the species is the GenBank assembly GCA_003550915.1. The GC content of the type genome is 71.15 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Direcella fatifessa sp. nov.

Candidatus Direcella fatifessa (NL. fem. n. *fatifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1Sed10-7 sp003554005*. The type genome for the species is the GenBank assembly GCA_003553145.1. The GC content of the type genome is 71.34 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Direcella pinacibula sp. nov.

Candidatus Direcella pinacibula (NL. fem. n. *pinacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1Sed10-7 sp007117945*. The type genome for the species is the GenBank assembly GCA_007117945.1. The GC content of the type genome is 72.74 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Direcia decenitudo sp. nov.

Candidatus Direcia decenitudo (NL. fem. n. *decenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS2070 sp900557655*. The type genome for the species is the GenBank assembly RS_GCF_900767635.1. The GC content of the type genome is 41.94 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Direcia gen. nov.

Candidatus Direcia (NL. fem. n. *Direcia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS2070*. The type species for the genus is *Candidatus* Direcia decenitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Direcida fetutifica sp. nov.

Candidatus Direcida fetutifica (NL. fem. n. *fetutifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2593 sp002340085*. The type genome for the species is the GenBank assembly GCA_002340085.1. The GC content of the type genome is 35.42 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Direcida gen. nov.

Candidatus Direcida (NL. fem. n. *Direcida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2593*. The type species for the genus is *Candidatus* Direcida fetutifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2593*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direcidaceae.

Description of *Candidatus* Direcidaceae fam. nov.

Candidatus Direcidaceae (NL. fem. n. *Direcidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2593.* The type genus for the taxon is *Candidatus* Direcida .

According to the original version of GTDB R06-RS202, this family belongs to the order *GIF10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decamellales.

Description of *Candidatus* Direcosa monogisca sp. nov.

Candidatus Direcosa monogisca (NL. fem. n. *monogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2011-GWC2-44-17 sp001790515*. The type genome for the species is the GenBank assembly GCA_001790435.1. The GC content of the type genome is 45.41 % and the genome length is 1.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Direcosa gen. nov.

Candidatus Direcosa (NL. fem. n. *Direcosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2011-GWC2-44-17*. The type species for the genus is *Candidatus* Direcosa monogisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Direcosa necubitas sp. nov.

Candidatus Direcosa necubitas (NL. fem. n. *necubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2011-GWC2-44-17 sp004145215*. The type genome for the species is the GenBank assembly GCA_004145215.1. The GC content of the type genome is 46.33 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Direcosa repepax sp. nov.

Candidatus Direcosa repepax (NL. fem. n. *repepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2011-GWC2-44-17 sp001029695*. The type genome for the species is the GenBank assembly GCA_001790385.1. The GC content of the type genome is 45.84 % and the genome length is 1.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Direcula catecitura sp. nov.

Candidatus Direcula catecitura (NL. fem. n. *catecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J045 sp003696075*. The type genome for the species is the GenBank assembly GCA_003696075.1. The GC content of the type genome is 71.87 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Direcula gen. nov.

Candidatus Direcula (NL. fem. n. *Direcula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J045*. The type species for the genus is *Candidatus* Direcula catecitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J045*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direculaceae.

Description of *Candidatus* Direculaceae fam. nov.

Candidatus Direculaceae (NL. fem. n. *Direculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J045.* The type genus for the taxon is *Candidatus* Direcula .

According to the original version of GTDB R06-RS202, this family belongs to the order *J045*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Direculales.

Description of *Candidatus* Direculales ord. nov.

Candidatus Direculales (NL. fem. n. *Direculales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J045*. The type genus for the taxon is *Candidatus* Direcula .

According to the original version of GTDB R06-RS202, this family belongs to the class *Mor1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ceracosae.

Description of *Candidatus* Direparia verecitio sp. nov.

Candidatus Direparia verecitio (NL. fem. n. *verecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWCD01 sp903911145*. The type genome for the species is the GenBank assembly GCA_903864035.1. The GC content of the type genome is 65.74 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Direparia gen. nov.

Candidatus Direparia (NL. fem. n. *Direparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWCD01*. The type species for the genus is *Candidatus* Direparia verecitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *40CM-4-68-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venucellaceae.

Description of *Candidatus* Direpella ridibago sp. nov.

Candidatus Direpella ridibago (NL. fem. n. *ridibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-610 sp003134555*. The type genome for the species is the GenBank assembly GCA_003134555.1. The GC content of the type genome is 67.43 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Direpella gen. nov.

Candidatus Direpella (NL. fem. n. *Direpella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-610*. The type species for the genus is *Candidatus* Direpella ridibago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-610*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpellaceae.

Description of *Candidatus* Direpellaceae fam. nov.

Candidatus Direpellaceae (NL. fem. n. *Direpellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PALSA-610.* The type genus for the taxon is *Candidatus* Direpella .

According to the original version of GTDB R06-RS202, this family belongs to the order *IMCC26256*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rosarellales.

Description of *Candidatus* Direpia abagmifica sp. nov.

Candidatus Direpia abagmifica (NL. fem. n. *abagmifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-225 sp003557505*. The type genome for the species is the GenBank assembly GCA_003557505.1. The GC content of the type genome is 38.27 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Direpia gen. nov.

Candidatus Direpia (NL. fem. n. *Direpia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1SED10-225*. The type species for the genus is *Candidatus* Direpia abagmifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Direpia attesitas sp. nov.

Candidatus Direpia attesitas (NL. fem. n. *attesitas* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-225 sp003558105*. The type genome for the species is the GenBank assembly GCA_003558105.1. The GC content of the type genome is 40.69 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Direpia cicaricella sp. nov.

Candidatus Direpia cicaricella (NL. fem. n. *cicaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-225 sp007135105*. The type genome for the species is the GenBank assembly GCA_007135105.1. The GC content of the type genome is 47.05 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Direpia citivilenta sp. nov.

Candidatus Direpia citivilenta (NL. fem. n. *citivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-225 sp003559585*. The type genome for the species is the GenBank assembly GCA_003559585.1. The GC content of the type genome is 39.65 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Direpia enunticella sp. nov.

Candidatus Direpia enunticella (NL. fem. n. *enunticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-225 sp003554735*. The type genome for the species is the GenBank assembly GCA_003554735.1. The GC content of the type genome is 48.99 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Direpia homicatica sp. nov.

Candidatus Direpia homicatica (NL. fem. n. *homicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-225 sp003555335*. The type genome for the species is the GenBank assembly GCA_003555335.1. The GC content of the type genome is 49.59 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Direpia robigiforma sp. nov.

Candidatus Direpia robigiforma (NL. fem. n. *robigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-225 sp003551405*. The type genome for the species is the GenBank assembly GCA_003551405.1. The GC content of the type genome is 44.1 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Direpida lutulitas sp. nov.

Candidatus Direpida lutulitas (NL. fem. n. *lutulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3940 sp002385675*. The type genome for the species is the GenBank assembly GCA_002385675.1. The GC content of the type genome is 65.02 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Direpida gen. nov.

Candidatus Direpida (NL. fem. n. *Direpida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3940*. The type species for the genus is *Candidatus* Direpida lutulitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3940*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpidaceae.

Description of *Candidatus* Direpidaceae fam. nov.

Candidatus Direpidaceae (NL. fem. n. *Direpidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3940.* The type genus for the taxon is *Candidatus* Direpida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBR1031*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nocumellales.

Description of *Candidatus* Direposa categessa sp. nov.

Candidatus Direposa categessa (NL. fem. n. *categessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABLXH01 sp013178155*. The type genome for the species is the GenBank assembly GCA_013178155.1. The GC content of the type genome is 65.78 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Direposa gen. nov.

Candidatus Direposa (NL. fem. n. *Direposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABLXH01*. The type species for the genus is *Candidatus* Direposa categessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABLXH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direposaceae.

Description of *Candidatus* Direposaceae fam. nov.

Candidatus Direposaceae (NL. fem. n. *Direposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABLXH01.* The type genus for the taxon is *Candidatus* Direposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5377*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Latibosales.

Description of *Candidatus* Direpula semidimonia sp. nov.

Candidatus Direpula semidimonia (NL. fem. n. *semidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC2047 sp001593685*. The type genome for the species is the GenBank assembly GCA_001593685.1. The GC content of the type genome is 48.47 % and the genome length is 2.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine bulk water (WCO station L4)".

Description of *Candidatus* Direpula gen. nov.

Candidatus Direpula (NL. fem. n. *Direpula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IMCC2047*. The type species for the genus is *Candidatus* Direpula semidimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *IMCC2047*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpulaceae.

Description of *Candidatus* Direpulaceae fam. nov.

Candidatus Direpulaceae (NL. fem. n. *Direpulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *IMCC2047.* The type genus for the taxon is *Candidatus* Direpula .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Diritana pimenilega sp. nov.

Candidatus Diritana pimenilega (NL. fem. n. *pimenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTOZ01 sp011358055*. The type genome for the species is the GenBank assembly GCA_011358055.1. The GC content of the type genome is 38.81 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Diritana gen. nov.

Candidatus Diritana (NL. fem. n. *Diritana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTOZ01*. The type species for the genus is *Candidatus* Diritana

pimenilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-42*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Labeciaceae.

Description of *Candidatus* Diritana semunimonas sp. nov.

Candidatus Diritana semunimonas (NL. fem. n. *semunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTOZ01 sp011051315*. The type genome for the species is the GenBank assembly GCA_011051315.1. The GC content of the type genome is 38.1 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Diritaria cohonitas sp. nov.

Candidatus Diritaria cohonitas (NL. fem. n. *cohonitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYLR01 sp012521815*. The type genome for the species is the GenBank assembly GCA_002071135.1. The GC content of the type genome is 72.28 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Diritaria gen. nov.

Candidatus Diritaria (NL. fem. n. *Diritaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYLR01*. The type species for the genus is *Candidatus* Diritaria cohonitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5704*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovidaceae.

Description of *Candidatus* Diritella enharago sp. nov.

Candidatus Diritella enharago (NL. fem. n. *enharago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSOQ01 sp011053305*. The type genome for the species is the GenBank assembly GCA_011053305.1. The GC content of the type genome is 67.01 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Diritella gen. nov.

Candidatus Diritella (NL. fem. n. *Diritella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSOQ01*. The type species for the genus is *Candidatus* Diritella enharago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSOQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritellaceae.

Description of *Candidatus* Diritellaceae fam. nov.

Candidatus Diritellaceae (NL. fem. n. *Diritellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSOQ01.* The type genus for the taxon is *Candidatus* Diritella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cacomariales.

Description of *Candidatus* Diritia dehinitas sp. nov.

Candidatus Diritia dehinitas (NL. fem. n. *dehinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-617 sp900553285*. The type genome for the species is the GenBank assembly GCA_900553285.1. The GC content of the type genome is 54.42 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Diritia gen. nov.

Candidatus Diritia (NL. fem. n. *Diritia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CAG-617*. The type species for the genus is *Candidatus* Diritia dehinitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Diritia melopousia sp. nov.

Candidatus Diritia melopousia (NL. fem. n. *melopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-617 sp000438115*. The type genome for the species is the GenBank assembly GCA_000438115.1. The GC content of the type genome is 49.18 % and the genome length is 2.28 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Diritia vanitivita sp. nov.

Candidatus Diritia vanitivita (NL. fem. n. *vanitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-617 sp000431275*. The type genome for the species is the GenBank assembly GCA_900551725.1. The GC content of the type genome is 55.03 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Diritida adcelentia sp. nov.

Candidatus Diritida adcelentia (NL. fem. n. *adcelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBF01 sp009784685*. The type genome for the species is the GenBank assembly GCA_009784685.1. The GC content of the type genome is 38.71 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Diritida gen. nov.

Candidatus Diritida (NL. fem. n. *Diritida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBF01*. The type species for the genus is *Candidatus* Diritida adcelentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Diritidaceae fam. nov.

Candidatus Diritidaceae (NL. fem. n. *Diritidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRBF01.* The type genus for the taxon is *Candidatus* Diritida .

According to GTDB R06-RS202, this family belongs to the order *Lachnospirales*.

Description of *Candidatus* Diritosa homagago sp. nov.

Candidatus Diritosa homagago (NL. fem. n. *homagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12170 sp003445975*. The type genome for the species is the GenBank assembly GCA_003445975.1. The GC content of the type genome is 38.24 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Diritosa gen. nov.

Candidatus Diritosa (NL. fem. n. *Diritosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12170*. The type species for the genus is *Candidatus* Diritosa homagago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12170*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritosaceae.

Description of *Candidatus* Diritosaceae fam. nov.

Candidatus Diritosaceae (NL. fem. n. *Diritosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12170.* The type genus for the taxon is *Candidatus* Diritosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Diritosa repudigena sp. nov.

Candidatus Diritosa repudigena (NL. fem. n. *repudigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12170 sp013166655*. The type genome for the species is the GenBank assembly RS_GCF_013166655.1. The GC content of the type genome is 35.03 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Diritula denavitudo sp. nov.

Candidatus Diritula denavitudo (NL. fem. n. *denavitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pla111 sp007753455*. The type genome for the species is the GenBank assembly RS_GCF_007753265.1. The GC content of the type genome is 64.08 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Diritula gen. nov.

Candidatus Diritula (NL. fem. n. *Diritula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pla111*. The type species for the genus is *Candidatus* Diritula denavitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelariaceae.

Description of *Candidatus* Diritula exheditio sp. nov.

Candidatus Diritula exheditio (NL. fem. n. *exheditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pla111 sp007859955*. The type genome for the species is the GenBank assembly RS_GCF_007859955.1. The GC content of the type genome is 65.42 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Diritula inresicula sp. nov.

Candidatus Diritula inresicula (NL. fem. n. *inresicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pla111 sp007859815*. The type genome for the species is the GenBank assembly RS_GCF_007859815.1. The GC content of the type genome is 63.12 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Diritula rubicimonia sp. nov.

Candidatus Diritula rubicimonia (NL. fem. n. *rubicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pla111 sp007745835*. The type genome for the species is the GenBank assembly RS_GCF_007745835.1. The GC content of the type genome is 66.31 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Diritula semivitio sp. nov.

Candidatus Diritula semivitio (NL. fem. n. *semivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pla111 sp007859945*. The type genome for the species is the GenBank assembly RS_GCF_007859945.1. The GC content of the type genome is 66.15 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Disidana accumifica sp. nov.

Candidatus Disidana accumifica (NL. fem. n. *accumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLTJ01 sp004347685*. The type genome for the species is the GenBank assembly GCA_004347685.1. The GC content of the type genome is 59.32 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Disidana gen. nov.

Candidatus Disidana (NL. fem. n. *Disidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLTJ01*. The type species for the genus is *Candidatus* Disidana accumifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLTJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidanaceae.

Description of *Candidatus* Disidanaceae fam. nov.

Candidatus Disidanaceae (NL. fem. n. *Disidanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLTJ01.* The type genus for the taxon is *Candidatus* Disidana .

According to GTDB R06-RS202, this family belongs to the order *Moorellales*.

Description of *Candidatus* Disidaria ridibiforma sp. nov.

Candidatus Disidaria ridibiforma (NL. fem. n. *ridibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1551 sp001871075*. The type genome for the species is the GenBank assembly GCA_002790035.1. The GC content of the type genome is 49.58 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Disidaria gen. nov.

Candidatus Disidaria (NL. fem. n. *Disidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1551*. The type species for the genus is *Candidatus* Disidaria ridibiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1551*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidariaceae.

Description of *Candidatus* Disidariaceae fam. nov.

Candidatus Disidariaceae (NL. fem. n. *Disidariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1551.* The type genus for the taxon is *Candidatus* Disidaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1551*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Disidariales.

Description of *Candidatus* Disidariales ord. nov.

Candidatus Disidariales (NL. fem. n. *Disidariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1551.* The type genus for the taxon is *Candidatus* Disidaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1551*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Disidariae.

Description of *Candidatus* Disidariae class. nov.

Candidatus Disidariae (NL. fem. n. *c__Disidariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1551.* The type genus for the taxon is *Candidatus* Disidaria .

According to GTDB R06-RS202, this class belongs to the phylum *Desantisbacteria*.

Description of *Candidatus* Disidella dedigedo sp. nov.

Candidatus Disidella dedigedo (NL. fem. n. *dedigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-46-19 sp001824825*. The type genome for the species is the GenBank assembly GCA_001824825.1. The GC content of the type genome is 45.21 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Disidella gen. nov.

Candidatus Disidella (NL. fem. n. *Disidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD1-FULL-46-19*. The type species for the genus is *Candidatus* Disidella dedigedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD1-FULL-46-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidellaceae.

Description of *Candidatus* Disidellaceae fam. nov.

Candidatus Disidellaceae (NL. fem. n. *Disidellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYD1-FULL-46-19.* The type genus for the taxon is *Candidatus* Disidella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Disidia actarugo sp. nov.

Candidatus Disidia actarugo (NL. fem. n. *actarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp000384935*. The type genome for the species is the GenBank assembly GCA_000384935.1. The GC content of the type genome is 34.18 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Disidia gen. nov.

Candidatus Disidia (NL. fem. n. *Disidia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCGC-AAA076-P13*. The type species for the genus is *Candidatus* Disidia actarugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Disidia catilitoga sp. nov.

Candidatus Disidia catilitoga (NL. fem. n. *catilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp902558395*. The type genome for the species is the GenBank assembly GCA_902558395.1. The GC content of the type genome is 33.0 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Disidia cicilitrix sp. nov.

Candidatus Disidia cicilitrix (NL. fem. n. *cicilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp000385055*. The type genome for the species is the GenBank assembly GCA_000384955.1. The GC content of the type genome is 33.1 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Disidia conibigena sp. nov.

Candidatus Disidia conibigena (NL. fem. n. *conibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp010024215*. The type genome for the species is the GenBank assembly GCA_010021965.1. The GC content of the type genome is 33.05 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Disidia duponigena sp. nov.

Candidatus Disidia duponigena (NL. fem. n. *duponigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp902591665*. The type genome for the species is the GenBank assembly GCA_902635115.1. The GC content of the type genome is 33.09 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Disidia exsupimonas sp. nov.

Candidatus Disidia exsupimonas (NL. fem. n. *exsupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp902610905*. The type genome for the species is the GenBank assembly GCA_902610905.1. The GC content of the type genome is 32.59 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Disidia illapitica sp. nov.

Candidatus Disidia illapitica (NL. fem. n. *illapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp902515155*. The type genome for the species is the GenBank assembly GCA_902515155.1. The GC content of the type genome is 32.67 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Disidia masocitia sp. nov.

Candidatus Disidia masocitia (NL. fem. n. *masocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp902557705*. The type genome for the species is the GenBank assembly GCA_902557705.1. The GC content of the type genome is 33.04 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Disidia milifugo sp. nov.

Candidatus Disidia milifugo (NL. fem. n. *milifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp902591565*. The type genome for the species is the GenBank assembly GCA_902591565.1. The GC content of the type genome is 32.43 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Disidia octodibula sp. nov.

Candidatus Disidia octodibula (NL. fem. n. *octodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp902558375*. The type genome for the species is the GenBank assembly GCA_902558375.1. The GC content of the type genome is 32.93

% and the genome length is 1.01 Mbp.

Description of *Candidatus* Disidia pinacitica sp. nov.

Candidatus Disidia pinacitica (NL. fem. n. *pinacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp902635645*. The type genome for the species is the GenBank assembly GCA_010023405.1. The GC content of the type genome is 33.09 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Disidia tabitisca sp. nov.

Candidatus Disidia tabitisca (NL. fem. n. *tabitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA076-P13 sp902556355*. The type genome for the species is the GenBank assembly GCA_902556355.1. The GC content of the type genome is 32.86 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Disidida amfitigena sp. nov.

Candidatus Disidida amfitigena (NL. fem. n. *amfitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7377 sp002171155*. The type genome for the species is the GenBank assembly GCA_002171155.1. The GC content of the type genome is 34.93 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Disidida gen. nov.

Candidatus Disidida (NL. fem. n. *Disidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7377*. The type species for the genus is *Candidatus* Disidida amfitigena .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Disidida bifarago sp. nov.

Candidatus Disidida bifarago (NL. fem. n. *bifarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7377 sp002170395*. The type genome for the species is the GenBank assembly GCA_002470265.1. The GC content of the type genome is 37.53 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Disidida nocenousia sp. nov.

Candidatus Disidida nocenousia (NL. fem. n. *nocenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7377 sp002170285*. The type genome for the species is the GenBank assembly GCA_002170285.1. The GC content of the type genome is 34.16 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Disidida occucitas sp. nov.

Candidatus Disidida occucitas (NL. fem. n. *occucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7377 sp902625535*. The type genome for the species is the GenBank assembly GCA_902625535.1. The GC content of the type genome is 38.95 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Disidida ossucitura sp. nov.

Candidatus Disidida ossucitura (NL. fem. n. *ossucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7377 sp002684875*. The type genome for the species is the GenBank assembly GCA_002684875.1. The GC content of the type genome is 38.11 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Disidida pavicivita sp. nov.

Candidatus Disidida pavicivita (NL. fem. n. *pavicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7377 sp002167365*. The type genome for the species is the GenBank assembly GCA_002167365.1. The GC content of the type genome is 35.83 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Disidida prospilega sp. nov.

Candidatus Disidida prospilega (NL. fem. n. *prospilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7377 sp004214155*. The type genome for the species is the GenBank assembly GCA_004214155.1. The GC content of the type genome is 38.23 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Disidida visifedo sp. nov.

Candidatus Disidida visifedo (NL. fem. n. *visifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7377 sp902586195*. The type genome for the species is the GenBank assembly GCA_902586195.1. The GC content of the type genome is 37.96 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Disidosa arrabimonia sp. nov.

Candidatus Disidosa arrabimonia (NL. fem. n. *arrabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN35 sp002898235*. The type genome for the species is the GenBank assembly GCA_002898235.1. The GC content of the type genome is 28.52 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Disidosa gen. nov.

Candidatus Disidosa (NL. fem. n. *Disidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN35*. The type species for the genus is *Candidatus* Disidosa arrabimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HR35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanosaceae.

Description of *Candidatus* Disidosa depubastra sp. nov.

Candidatus Disidosa depubastra (NL. fem. n. *depubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN35 sp011055845*. The type genome for the species is the GenBank assembly GCA_011053585.1. The GC content of the type genome is 27.29 % and the genome length is 0.5 Mbp.

Description of *Candidatus* Disidula apsimatica sp. nov.

Candidatus Disidula apsimatica (NL. fem. n. *apsimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKTG01 sp007122985*. The type genome for the species is the GenBank assembly GCA_007122985.1. The GC content of the type genome is 71.65 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Disidula gen. nov.

Candidatus Disidula (NL. fem. n. *Disidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKTG01*. The type species for the genus is *Candidatus* Disidula apsimatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Disidula defetago sp. nov.

Candidatus Disidula defetago (NL. fem. n. *defetago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKTG01 sp007118045*. The type genome for the species is the GenBank assembly GCA_007118045.1. The GC content of the type genome is 71.68 %

and the genome length is 3.84 Mbp.

Description of *Candidatus* Disidula manupousia sp. nov.

Candidatus Disidula manupousia (NL. fem. n. *manupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKTG01 sp007120485*. The type genome for the species is the GenBank assembly GCA_003558755.1. The GC content of the type genome is 70.11 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Disidula patibibra sp. nov.

Candidatus Disidula patibibra (NL. fem. n. *patibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKTG01 sp007121785*. The type genome for the species is the GenBank assembly GCA_007121785.1. The GC content of the type genome is 71.23 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Divolana ciminessa sp. nov.

Candidatus Divolana ciminessa (NL. fem. n. *ciminessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mxb001 sp004379115*. The type genome for the species is the GenBank assembly GCA_004379115.1. The GC content of the type genome is 64.75 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Divolana gen. nov.

Candidatus Divolana (NL. fem. n. *Divolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Mxb001*. The type species for the genus is *Candidatus* Divolana ciminessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Divolana coticicella sp. nov.

Candidatus Divolana coticicella (NL. fem. n. *coticicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mxb001 sp903954205*. The type genome for the species is the GenBank assembly GCA_903960885.1. The GC content of the type genome is 67.66 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Divolana denunitio sp. nov.

Candidatus Divolana denunitio (NL. fem. n. *denunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mxb001 sp903909555*. The type genome for the species is the GenBank assembly GCA_903888695.1. The GC content of the type genome is 70.3 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Divolana recumitrix sp. nov.

Candidatus Divolana recumitrix (NL. fem. n. *recumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mxb001 sp903848435*. The type genome for the species is the GenBank assembly GCA_903848435.1. The GC content of the type genome is 68.14 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Divolaria acrufitica sp. nov.

Candidatus Divolaria acrufitica (NL. fem. n. *acrufitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JA-3-3Ab sp000013225*. The type genome for the species is the GenBank assembly RS_GCF_000013225.1. The GC content of the type genome is 58.45 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Divolaria gen. nov.

Candidatus Divolaria (NL. fem. n. *Divolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JA-3-3Ab*. The type species for the genus is *Candidatus* Divolaria acrufitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JA-3-3Ab*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divolariaceae.

Description of *Candidatus* Divolariaceae fam. nov.

Candidatus Divolariaceae (NL. fem. n. *Divolariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JA-3-3Ab.* The type genus for the taxon is *Candidatus* Divolaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *PCC-7336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peradellales.

Description of *Candidatus* Divolaria capucitoga sp. nov.

Candidatus Divolaria capucitoga (NL. fem. n. *capucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JA-3-3Ab sp011055065*. The type genome for the species is the GenBank assembly GCA_011047875.1. The GC content of the type genome is 58.12 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Divolaria documibula sp. nov.

Candidatus Divolaria documibula (NL. fem. n. *documibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JA-3-3Ab sp000013205*. The type genome for the species is the GenBank assembly RS_GCF_002760375.1. The GC content of the type genome is 60.36 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Divolella adgesiforma sp. nov.

Candidatus Divolella adgesiforma (NL. fem. n. *adgesiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5177 sp002413265*. The type genome for the species is the GenBank assembly GCA_002413265.1. The GC content of the type genome is 61.09 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Divolella gen. nov.

Candidatus Divolella (NL. fem. n. *Divolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5177*. The type species for the genus is *Candidatus* Divolella adgesiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5177*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divolellaceae.

Description of *Candidatus* Divolellaceae fam. nov.

Candidatus Divolellaceae (NL. fem. n. *Divolellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5177.* The type genus for the taxon is *Candidatus* Divolella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5177*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Divolellales.

Description of *Candidatus* Divolellales ord. nov.

Candidatus Divolellales (NL. fem. n. *Divolellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5177.* The type genus for the taxon is *Candidatus* Divolella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA5177*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Divolellae.

Description of *Candidatus* Divolellae class. nov.

Candidatus Divolellae (NL. fem. n. *c__Divolellae* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5177*. The type genus for the taxon is *Candidatus* Divolella .

According to GTDB R06-RS202, this class belongs to the phylum *Chloroflexota*.

Description of *Candidatus* Divolia cetarax sp. nov.

Candidatus Divolia cetarax (NL. fem. n. *cetarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR19 sp003220595*. The type genome for the species is the GenBank assembly GCA_003220275.1. The GC content of the type genome is 70.74 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Divolia gen. nov.

Candidatus Divolia (NL. fem. n. *Divolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AR19*. The type species for the genus is *Candidatus* Divolia cetarax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Divolida inreviforma sp. nov.

Candidatus Divolida inreviforma (NL. fem. n. *inreviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTEH01 sp011369555*. The type genome for the species is the GenBank assembly GCA_011369555.1. The GC content of the type genome is 29.1 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Divolida gen. nov.

Candidatus Divolida (NL. fem. n. *Divolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTEH01*. The type species for the genus is *Candidatus* Divolida inreviforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTEH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divolidaceae.

Description of *Candidatus* Divolidaceae fam. nov.

Candidatus Divolidaceae (NL. fem. n. *Divolidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTEH01*. The type genus for the taxon is *Candidatus* Divolida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTEH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Divolidales.

Description of *Candidatus* Divolidales ord. nov.

Candidatus Divolidales (NL. fem. n. *Divolidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTEH01*. The type genus for the taxon is *Candidatus* Divolida .

According to the GTDB R06-RS202, this order belongs to the class *Endomicrobia*.

Description of *Candidatus* Divolida subinetta sp. nov.

Candidatus Divolida subinetta (NL. fem. n. *subinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTEH01 sp011329045*. The type genome for the species is the GenBank assembly GCA_011329045.1. The GC content of the type genome is 29.62 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Divolosa vatilitio sp. nov.

Candidatus Divolosa vatilitio (NL. fem. n. *vatilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QOAV01 sp003972845*. The type genome for the species is the GenBank assembly GCA_003972845.1. The GC content of the type genome is 56.97 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Divolosa gen. nov.

Candidatus Divolosa (NL. fem. n. *Divolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QOAV01*. The type species for the genus is *Candidatus* Divolosa vatilitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QOAV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divolosaceae.

Description of *Candidatus* Divolosaceae fam. nov.

Candidatus Divolosaceae (NL. fem. n. *Divolosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QOAV01.* The type genus for the taxon is *Candidatus* Divolosa .

According to GTDB R06-RS202, this family belongs to the order *Arenicellales*.

Description of *Candidatus* Divolula adporicella sp. nov.

Candidatus Divolula adporicella (NL. fem. n. *adporicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS995 sp902784095*. The type genome for the species is the GenBank assembly GCA_902784095.1. The GC content of the type genome is 26.26 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Divolula gen. nov.

Candidatus Divolula (NL. fem. n. *Divolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS995*. The type species for the genus is *Candidatus* Divolula adporicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Divolula bifisitoga sp. nov.

Candidatus Divolula bifisitoga (NL. fem. n. *bifisitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS995 sp900547465*. The type genome for the species is the GenBank assembly GCA_900547465.1. The GC content of the type genome is 27.55 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Divolula pecunitio sp. nov.

Candidatus Divolula pecunitio (NL. fem. n. *pecunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS995 sp900769695*. The type genome for the species is the GenBank assembly RS_GCF_900769695.1. The GC content of the type genome is 27.01 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Divorana necubibula sp. nov.

Candidatus Divorana necubibula (NL. fem. n. *necubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUSP01 sp903901855*. The type genome for the species is the GenBank assembly GCA_903885625.1. The GC content of the type genome is 63.9 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Divorana gen. nov.

Candidatus Divorana (NL. fem. n. *Divorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUSP01*. The type species for the genus is *Candidatus* Divorana necubibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

70-9. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Divoraria patibessa sp. nov.

Candidatus Divoraria patibessa (NL. fem. n. *patibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An172 sp002160515*. The type genome for the species is the GenBank assembly GCA_900546975.1. The GC content of the type genome is 40.38 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Divoraria gen. nov.

Candidatus Divoraria (NL. fem. n. *Divoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *An172*. The type species for the genus is *Candidatus* Divoraria patibessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Divorella dibucago sp. nov.

Candidatus Divorella dibucago (NL. fem. n. *dibucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-181 sp003170135*. The type genome for the species is the GenBank assembly GCA_003170135.1. The GC content of the type genome is 67.53 % and the genome length is 5.8 Mbp.

Description of *Candidatus* Divorella gen. nov.

Candidatus Divorella (NL. fem. n. *Divorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-181*. The type species for the genus is *Candidatus* Divorella dibucago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-181*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Divorellaceae.

Description of *Candidatus* Divorellaceae fam. nov.

Candidatus Divorellaceae (NL. fem. n. *Divorellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-181*. The type genus for the taxon is *Candidatus* Divorella .

According to GTDB R06-RS202, this family belongs to the order *Vicinamibacterales*.

Description of *Candidatus* Divoria admoritrix sp. nov.

Candidatus Divoria admoritrix (NL. fem. n. *admoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7160 sp003612585*. The type genome for the species is the GenBank assembly RS_GCF_003612585.1. The GC content of the type genome is 45.59 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Divoria gen. nov.

Candidatus Divoria (NL. fem. n. *Divoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7160*. The type species for the genus is *Candidatus* Divoria admoritrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Divoria catilivita sp. nov.

Candidatus Divoria catilivita (NL. fem. n. *catilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7160 sp002491565*. The type genome for the species is the GenBank assembly GCA_002491565.1. The GC content of the type genome is 51.48 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Divoria conaritoga sp. nov.

Candidatus Divoria conaritoga (NL. fem. n. *conaritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7160 sp902363665*. The type genome for the species is the GenBank assembly RS_GCF_902363665.1. The GC content of the type genome is 47.03 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Divoria diluditudo sp. nov.

Candidatus Divoria diluditudo (NL. fem. n. *diluditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7160 sp900757145*. The type genome for the species is the GenBank assembly RS_GCF_900757145.1. The GC content of the type genome is 46.52 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Divoria diluvetta sp. nov.

Candidatus Divoria diluvetta (NL. fem. n. *diluvetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7160 sp902363135*. The type genome for the species is the GenBank assembly RS_GCF_900758105.1. The GC content of the type genome is 50.4 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Divoria horomitio sp. nov.

Candidatus Divoria horomitio (NL. fem. n. *horomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7160 sp902783665*. The type genome for the species is the GenBank assembly GCA_902783665.1. The GC content of the type genome is 53.07 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Divoria inardatica sp. nov.

Candidatus Divoria inardatica (NL. fem. n. *inardatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7160 sp004557975*. The type genome for the species is the GenBank assembly GCA_004557975.1. The GC content of the type genome is 48.75 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Divorida peradigena sp. nov.

Candidatus Divorida peradigena (NL. fem. n. *peradigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCTF01 sp902805655*. The type genome for the species is the GenBank assembly GCA_902805655.1. The GC content of the type genome is 70.71 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Divorida gen. nov.

Candidatus Divorida (NL. fem. n. *Divorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCTF01*. The type species for the genus is *Candidatus* Divorida peradigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADCTF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divoridaceae.

Description of *Candidatus* Divoridaceae fam. nov.

Candidatus Divoridaceae (NL. fem. n. *Divoridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADCTF01.* The type genus for the taxon is *Candidatus* Divorida .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Divorosa capucatica sp. nov.

Candidatus Divorosa capucatica (NL. fem. n. *capucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA10348 sp002469915*. The type genome for the species is the GenBank assembly GCA_002469915.1. The GC content of the type genome is 49.31 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Divorosa gen. nov.

Candidatus Divorosa (NL. fem. n. *Divorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10348*. The type species for the genus is *Candidatus* Divorosa capucatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10348*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divorosaceae.

Description of *Candidatus* Divorosaceae fam. nov.

Candidatus Divorosaceae (NL. fem. n. *Divorosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10348.* The type genus for the taxon is *Candidatus* Divorosa .

According to GTDB R06-RS202, this family belongs to the order *Rhodothermales*.

Description of *Candidatus* Divorosa decenisca sp. nov.

Candidatus Divorosa decenisca (NL. fem. n. *decenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10348 sp013204185*. The type genome for the species is the GenBank assembly GCA_013204185.1. The GC content of the type genome is 49.73 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Divorula tigurilenta sp. nov.

Candidatus Divorula tigurilenta (NL. fem. n. *tigurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWFF01 sp002071485*. The type genome for the species is the GenBank assembly GCA_002071485.1. The GC content of the type genome is 63.22 %

and the genome length is 4.8 Mbp.

Description of *Candidatus* Divorula gen. nov.

Candidatus Divorula (NL. fem. n. *Divorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWFF01*. The type species for the genus is *Candidatus* Divorula tigurilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J093*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelosaceae.

Description of *Candidatus* Divulana bifaritrix sp. nov.

Candidatus Divulana bifaritrix (NL. fem. n. *bifaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDY01 sp005882775*. The type genome for the species is the GenBank assembly GCA_005881675.1. The GC content of the type genome is 65.74 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Divulana gen. nov.

Candidatus Divulana (NL. fem. n. *Divulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBDY01*. The type species for the genus is *Candidatus* Divulana bifaritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CF-121*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Haluculaceae.

Description of *Candidatus* Divularia adlubitio sp. nov.

Candidatus Divularia adlubitio (NL. fem. n. *adlubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP4260 sp902510755*. The type genome for the species is the

GenBank assembly GCA_902510755.1. The GC content of the type genome is 36.7 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Divularia gen. nov.

Candidatus Divularia (NL. fem. n. *Divularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SP4260*. The type species for the genus is *Candidatus* Divularia adlubitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Divularia anatrentia sp. nov.

Candidatus Divularia anatrentia (NL. fem. n. *anatrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP4260 sp002728725*. The type genome for the species is the GenBank assembly GCA_002728725.1. The GC content of the type genome is 36.66 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Divularia citipivita sp. nov.

Candidatus Divularia citipivita (NL. fem. n. *citipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP4260 sp003331585*. The type genome for the species is the GenBank assembly GCA_003331585.1. The GC content of the type genome is 35.4 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Divularia coticedo sp. nov.

Candidatus Divularia coticedo (NL. fem. n. *coticedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP4260 sp902517795*. The type genome for the species is the GenBank assembly GCA_902519395.1. The GC content of the type genome is 36.88 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Divularia cunabousia sp. nov.

Candidatus Divularia cunabousia (NL. fem. n. *cunabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP4260 sp002715745*. The type genome for the species is the GenBank assembly GCA_002715745.1. The GC content of the type genome is 36.63 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Divularia innumibula sp. nov.

Candidatus Divularia innumibula (NL. fem. n. *innumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP4260 sp902512585*. The type genome for the species is the GenBank assembly GCA_902512585.1. The GC content of the type genome is 36.37 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Divulella arnogilega sp. nov.

Candidatus Divulella arnogilega (NL. fem. n. *arnogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp009918005*. The type genome for the species is the GenBank assembly GCA_009918005.1. The GC content of the type genome is 47.78 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Divulella gen. nov.

Candidatus Divulella (NL. fem. n. *Divulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5976*. The type species for the genus is *Candidatus* Divulella arnogilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5976*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divulellaceae.

Description of *Candidatus* Divulellaceae fam. nov.

Candidatus Divulellaceae (NL. fem. n. *Divulellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5976.* The type genus for the taxon is *Candidatus* Divulella .

According to GTDB R06-RS202, this family belongs to the order *Nanopelagicales*.

Description of *Candidatus* Divulella depecitas sp. nov.

Candidatus Divulella depecitas (NL. fem. n. *depecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp009923495*. The type genome for the species is the GenBank assembly GCA_009927365.1. The GC content of the type genome is 48.81 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Divulella encenitia sp. nov.

Candidatus Divulella encenitia (NL. fem. n. *encenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp903925705*. The type genome for the species is the GenBank assembly GCA_903925705.1. The GC content of the type genome is 47.95 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Divulella feditilenta sp. nov.

Candidatus Divulella feditilenta (NL. fem. n. *feditilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp903892635*. The type genome for the species is the GenBank assembly GCA_903846825.1. The GC content of the type genome is 50.44 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Divulella inaccilenta sp. nov.

Candidatus Divulella inaccilenta (NL. fem. n. *inaccilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp009885745*. The type genome for the species is the GenBank assembly GCA_009885745.1. The GC content of the type genome is 48.27 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Divulella invigatio sp. nov.

Candidatus Divulella invigatio (NL. fem. n. *invigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp009702945*. The type genome for the species is the GenBank assembly GCA_009702945.1. The GC content of the type genome is 48.2 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Divulella manubilenta sp. nov.

Candidatus Divulella manubilenta (NL. fem. n. *manubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp009698575*. The type genome for the species is the GenBank assembly GCA_009702125.1. The GC content of the type genome is 47.97 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Divulella momoritura sp. nov.

Candidatus Divulella momoritura (NL. fem. n. *momoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp903951185*. The type genome for the species is the GenBank assembly GCA_903919135.1. The GC content of the type genome is 44.1 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Divulella monodago sp. nov.

Candidatus Divulella monodago (NL. fem. n. *monodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp903907835*. The type genome for the species is the GenBank assembly GCA_903907835.1. The GC content of the type genome is 48.23 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Divulella rubigitica sp. nov.

Candidatus Divulella rubigitica (NL. fem. n. *rubigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5976 sp002430405*. The type genome for the species is the GenBank assembly GCA_002430405.1. The GC content of the type genome is 47.5 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Divulia futatugo sp. nov.

Candidatus Divulia futatugo (NL. fem. n. *futatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG131 sp900315885*. The type genome for the species is the GenBank assembly GCA_900315885.1. The GC content of the type genome is 31.09 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Divulia gen. nov.

Candidatus Divulia (NL. fem. n. *Divulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG131*. The type species for the genus is *Candidatus* Divulia futatugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Divulia tetenigena sp. nov.

Candidatus Divulia tetenigena (NL. fem. n. *tetenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG131 sp900549975*. The type genome for the species is the GenBank assembly GCA_900549975.1. The GC content of the type genome is 30.0 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Divulida pudibentia sp. nov.

Candidatus Divulida pudibentia (NL. fem. n. *pudibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKOX01 sp007119835*. The type genome for the species is the GenBank assembly GCA_007119835.1. The GC content of the type genome is 70.15 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Divulida gen. nov.

Candidatus Divulida (NL. fem. n. *Divulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKOX01*. The type species for the genus is *Candidatus* Divulida pudibentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Divulosa alembibula sp. nov.

Candidatus Divulosa alembibula (NL. fem. n. *alembibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4068 sp002419055*. The type genome for the species is the GenBank assembly GCA_002419055.1. The GC content of the type genome is 42.73 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Divulosa gen. nov.

Candidatus Divulosa (NL. fem. n. *Divulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4068*. The type species for the genus is *Candidatus* Divulosa alembibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4068*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divulosaceae.

Description of *Candidatus* Divulosaceae fam. nov.

Candidatus Divulosaceae (NL. fem. n. *Divulosaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4068.* The type genus for the taxon is *Candidatus* Divulosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4068*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Divulosales.

Description of *Candidatus* Divulosales ord. nov.

Candidatus Divulosales (NL. fem. n. *Divulosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4068.* The type genus for the taxon is *Candidatus* Divulosa .

According to the GTDB R06-RS202, this order belongs to the class *Dehalobacteriia*.

Description of *Candidatus* Divulosa enucliforma sp. nov.

Candidatus Divulosa enucliforma (NL. fem. n. *enucliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4068 sp002382665*. The type genome for the species is the GenBank assembly GCA_002382665.1. The GC content of the type genome is 43.23 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Divulula affirivita sp. nov.

Candidatus Divulula affirivita (NL. fem. n. *affirivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5603 sp002839155*. The type genome for the species is the GenBank assembly GCA_002839155.1. The GC content of the type genome is 34.61 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Divulula gen. nov.

Candidatus Divulula (NL. fem. n. *Divulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5603*. The type species for the genus is *Candidatus* Divulula affirivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5603*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divululaceae.

Description of *Candidatus* Divululaceae fam. nov.

Candidatus Divululaceae (NL. fem. n. *Divululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5603.* The type genus for the taxon is *Candidatus* Divulula .

According to GTDB R06-RS202, this family belongs to the order *Izemoplasmatales*.

Description of *Candidatus* Divulula exsurimonas sp. nov.

Candidatus Divulula exsurimonas (NL. fem. n. *exsurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5603 sp002421405*. The type genome for the species is the GenBank assembly GCA_002421405.1. The GC content of the type genome is 36.66 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Divulula fuligousia sp. nov.

Candidatus Divulula fuligousia (NL. fem. n. *fuligousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5603 sp002424815*. The type genome for the species is the GenBank assembly GCA_002424815.1. The GC content of the type genome is 35.64 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Docibana cacomivita sp. nov.

Candidatus Docibana cacomivita (NL. fem. n. *cacomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2245 sp002347265*. The type genome for the species is the GenBank assembly GCA_002382005.1. The GC content of the type genome is 53.93 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Docibana gen. nov.

Candidatus Docibana (NL. fem. n. *Docibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2245*. The type species for the genus is *Candidatus* Docibana cacomivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2245*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibanaceae.

Description of *Candidatus* Docibanaceae fam. nov.

Candidatus Docibanaceae (NL. fem. n. *Docibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2245.* The type genus for the taxon is *Candidatus* Docibana .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Docibaria casigitas sp. nov.

Candidatus Docibaria casigitas (NL. fem. n. *casigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1342 sp003162245*. The type genome for the species is the GenBank assembly GCA_003162245.1. The GC content of the type genome is 67.14 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Docibaria gen. nov.

Candidatus Docibaria (NL. fem. n. *Docibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1342*. The type species for the genus is *Candidatus* Docibaria casigitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1342*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibariaceae.

Description of *Candidatus* Docibariaceae fam. nov.

Candidatus Docibariaceae (NL. fem. n. *Docibariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-1342*. The type genus for the taxon is *Candidatus* Docibaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cacomariales.

Description of *Candidatus* Docibaria tabifentia sp. nov.

Candidatus Docibaria tabifentia (NL. fem. n. *tabifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1342 sp903914415*. The type genome for the species is the GenBank assembly GCA_903835475.1. The GC content of the type genome is 67.43 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Docibella accorago sp. nov.

Candidatus Docibella accorago (NL. fem. n. *accorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2192 sp012728915*. The type genome for the species is the GenBank assembly GCA_012728915.1. The GC content of the type genome is 63.81 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Docibella gen. nov.

Candidatus Docibella (NL. fem. n. *Docibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2192*. The type species for the genus is *Candidatus* Docibella accorago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4778*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Biverosaceae.

Description of *Candidatus* Docibella defanitia sp. nov.

Candidatus Docibella defanitia (NL. fem. n. *defanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2192 sp002419215*. The type genome for the species is the GenBank assembly GCA_002419215.1. The GC content of the type genome is 60.36 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Docibella ectenicula sp. nov.

Candidatus Docibella ectenicula (NL. fem. n. *ectenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2192 sp002067855*. The type genome for the species is the GenBank assembly GCA_002067855.1. The GC content of the type genome is 64.54 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Docibella incomousia sp. nov.

Candidatus Docibella incomousia (NL. fem. n. *incomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2192 sp013177795*. The type genome for the species is the GenBank assembly GCA_013177795.1. The GC content of the type genome is 64.37 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Docibella volubisca sp. nov.

Candidatus Docibella volubisca (NL. fem. n. *volubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2192 sp002327315*. The type genome for the species is the GenBank assembly GCA_002327315.1. The GC content of the type genome is 59.42 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Docibia cerevicula sp. nov.

Candidatus Docibia cerevicula (NL. fem. n. *cerevicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4293 sp900316585*. The type genome for the species is the GenBank assembly GCA_900316585.1. The GC content of the type genome is 42.17 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Docibia gen. nov.

Candidatus Docibia (NL. fem. n. *Docibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4293*. The type species for the genus is *Candidatus* Docibia cerevicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Docibia ficuledo sp. nov.

Candidatus Docibia ficuledo (NL. fem. n. *ficuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4293 sp002395835*. The type genome for the species is the GenBank assembly GCA_002353875.1. The GC content of the type genome is 42.17 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Docibida pavicilega sp. nov.

Candidatus Docibida pavicilega (NL. fem. n. *pavicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2059 sp002332615*. The type genome for the species is the GenBank assembly GCA_002423725.1. The GC content of the type genome is 43.36 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Docibida gen. nov.

Candidatus Docibida (NL. fem. n. *Docibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2059*. The type species for the genus is *Candidatus* Docibida pavicilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Docibosa vinacifica sp. nov.

Candidatus Docibosa vinacifica (NL. fem. n. *vinacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-42-23 sp002796345*. The type genome for the species is the GenBank assembly GCA_002796345.1. The GC content of the type genome is 42.21 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Docibosa gen. nov.

Candidatus Docibosa (NL. fem. n. *Docibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-42-23*. The type species for the genus is *Candidatus* Docibosa vinacifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-44-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponariaceae.

Description of *Candidatus* Docibula demagousia sp. nov.

Candidatus Docibula demagousia (NL. fem. n. *demagousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-152 sp003229995*. The type genome for the species is the GenBank assembly GCA_003229995.1. The GC content of the type genome is 48.75 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Docibula gen. nov.

Candidatus Docibula (NL. fem. n. *Docibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-152*. The type species for the genus is *Candidatus* Docibula demagousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-152*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibulaceae.

Description of *Candidatus* Docibulaceae fam. nov.

Candidatus Docibulaceae (NL. fem. n. *Docibulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-152.* The type genus for the taxon is *Candidatus* Docibula .

According to GTDB R06-RS202, this family belongs to the order *Thiohalomonadales_A*.

Description of *Candidatus* Docibula edissitudo sp. nov.

Candidatus Docibula edissitudo (NL. fem. n. *edissitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-152 sp011321815*. The type genome for the species is the GenBank assembly GCA_011321815.1. The GC content of the type genome is 50.47 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Docibula indupilenta sp. nov.

Candidatus Docibula indupilenta (NL. fem. n. *indupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-152 sp013151355*. The type genome for the species is the GenBank assembly GCA_013151355.1. The GC content of the type genome is 49.34 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Docibula invetousia sp. nov.

Candidatus Docibula invetousia (NL. fem. n. *invetousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SZUA-152 sp011051685*. The type genome for the species is the GenBank assembly GCA_011051685.1. The GC content of the type genome is 57.29 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Documana atropibra sp. nov.

Candidatus Documana atropibra (NL. fem. n. *atropibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8337 sp009920875*. The type genome for the species is the GenBank assembly GCA_009920875.1. The GC content of the type genome is 54.25 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Documana gen. nov.

Candidatus Documana (NL. fem. n. *Documana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8337*. The type species for the genus is *Candidatus* Documana atropibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RS24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venuciaceae.

Description of *Candidatus* Documana capudiforma sp. nov.

Candidatus Documana capudiforma (NL. fem. n. *capudiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8337 sp002721725*. The type genome for the species is the GenBank assembly GCA_002721725.1. The GC content of the type genome is 52.86 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Documana resupitio sp. nov.

Candidatus Documana resupitio (NL. fem. n. *resupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8337 sp900197605*. The type genome for the species is the

GenBank assembly GCA_002170955.2. The GC content of the type genome is 54.53 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Documaria nutamitura sp. nov.

Candidatus Documaria nutamitura (NL. fem. n. *nutamitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVXT01 sp011773355*. The type genome for the species is the GenBank assembly GCA_011771205.1. The GC content of the type genome is 43.06 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Documaria gen. nov.

Candidatus Documaria (NL. fem. n. *Documaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVXT01*. The type species for the genus is *Candidatus* Documaria nutamitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WVXT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Documariaceae.

Description of *Candidatus* Documariaceae fam. nov.

Candidatus Documariaceae (NL. fem. n. *Documariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WVXT01.* The type genus for the taxon is *Candidatus* Documaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *WVXT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Documariales.

Description of *Candidatus* Documariales ord. nov.

Candidatus Documariales (NL. fem. n. *Documariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WVXT01.* The type genus for the taxon is *Candidatus* Documaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6262*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Semunulae.

Description of *Candidatus* Documaria obnunatica sp. nov.

Candidatus Documaria obnunatica (NL. fem. n. *obnunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVXT01 sp009619095*. The type genome for the species is the GenBank assembly GCA_009619095.1. The GC content of the type genome is 41.15 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Documella adpecilega sp. nov.

Candidatus Documella adpecilega (NL. fem. n. *adpecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2376 sp002344285*. The type genome for the species is the GenBank assembly GCA_002344285.1. The GC content of the type genome is 72.01 % and the genome length is 8.69 Mbp.

Description of *Candidatus* Documella gen. nov.

Candidatus Documella (NL. fem. n. *Documella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2376*. The type species for the genus is *Candidatus* Documella adpecilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Documella redacedo sp. nov.

Candidatus Documella redacedo (NL. fem. n. *redacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2376 sp005779305*. The type genome for the species is the GenBank assembly GCA_005779305.1. The GC content of the type genome is 71.29 %

and the genome length is 8.08 Mbp.

Description of *Candidatus* Documella reforitura sp. nov.

Candidatus Documella reforitura (NL. fem. n. *reforitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2376 sp900696455*. The type genome for the species is the GenBank assembly GCA_014584455.1. The GC content of the type genome is 75.07 % and the genome length is 7.22 Mbp.

Description of *Candidatus* Documia catecetta sp. nov.

Candidatus Documia catecetta (NL. fem. n. *catecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp003149875*. The type genome for the species is the GenBank assembly GCA_900547215.1. The GC content of the type genome is 38.79 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Documia gen. nov.

Candidatus Documia (NL. fem. n. *Documia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TF01-11*. The type species for the genus is *Candidatus* Documia catecetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Documia cenacedo sp. nov.

Candidatus Documia cenacedo (NL. fem. n. *cenacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp001414325*. The type genome for the species is the GenBank assembly GCA_000433155.1. The GC content of the type genome is 36.6 % and the genome length is 3.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Documia citiviforma sp. nov.

Candidatus Documia citiviforma (NL. fem. n. *citiviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp000436755*. The type genome for the species is the GenBank assembly GCA_000436755.1. The GC content of the type genome is 35.91 % and the genome length is 2.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Documia colubatica sp. nov.

Candidatus Documia colubatica (NL. fem. n. *colubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp902788645*. The type genome for the species is the GenBank assembly GCA_902788645.1. The GC content of the type genome is 45.63 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Documia decacigena sp. nov.

Candidatus Documia decacigena (NL. fem. n. *decacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp001916135*. The type genome for the species is the GenBank assembly RS_GCF_902385585.1. The GC content of the type genome is 43.74 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Documia dedigax sp. nov.

Candidatus Documia dedigax (NL. fem. n. *dedigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp003611745*. The type genome for the species is the GenBank assembly RS_GCF_003612355.1. The GC content of the type genome is 42.67 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Documia delacicella sp. nov.

Candidatus Documia delacicella (NL. fem. n. *delacicella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp900759665*. The type genome for the species is the GenBank assembly RS_GCF_900759665.1. The GC content of the type genome is 44.74 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Documia depelatio sp. nov.

Candidatus Documia depelatio (NL. fem. n. *depelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp002361175*. The type genome for the species is the GenBank assembly GCA_002493555.1. The GC content of the type genome is 34.49 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Documia dimidimonas sp. nov.

Candidatus Documia dimidimonas (NL. fem. n. *dimidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp003612285*. The type genome for the species is the GenBank assembly RS_GCF_003612285.1. The GC content of the type genome is 41.46 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Documia fecunitas sp. nov.

Candidatus Documia fecunitas (NL. fem. n. *fecunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp003529475*. The type genome for the species is the GenBank assembly GCA_003529475.1. The GC content of the type genome is 42.27 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Documia genufigena sp. nov.

Candidatus Documia genufigena (NL. fem. n. *genufigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp003524945*. The type genome for the species is the GenBank assembly GCA_003524945.1. The GC content of the type genome is 46.46 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Documia irrelousia sp. nov.

Candidatus Documia irrelousia (NL. fem. n. *irrelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp902795775*. The type genome for the species is the GenBank assembly GCA_902795775.1. The GC content of the type genome is 42.59 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Documia luculifica sp. nov.

Candidatus Documia luculifica (NL. fem. n. *luculifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp902795705*. The type genome for the species is the GenBank assembly GCA_902795705.1. The GC content of the type genome is 41.78 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Documia nicomitica sp. nov.

Candidatus Documia nicomitica (NL. fem. n. *nicomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp009774235*. The type genome for the species is the GenBank assembly GCA_009774235.1. The GC content of the type genome is 35.55 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Documia noninitura sp. nov.

Candidatus Documia noninitura (NL. fem. n. *noninitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp002499945*. The type genome for the species is the GenBank assembly GCA_002499945.1. The GC content of the type genome is 37.47 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Documia vilitibula sp. nov.

Candidatus Documia vilitibula (NL. fem. n. *vilitibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TF01-11 sp002493085*. The type genome for the species is the GenBank assembly GCA_002493085.1. The GC content of the type genome is 36.9 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Documida cobalimonas sp. nov.

Candidatus Documida cobalimonas (NL. fem. n. *cobalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU068 sp001513545*. The type genome for the species is the GenBank assembly GCA_001513545.1. The GC content of the type genome is 45.67 % and the genome length is 2.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Documida gen. nov.

Candidatus Documida (NL. fem. n. *Documida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU068*. The type species for the genus is *Candidatus* Documida cobalimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Documida loripago sp. nov.

Candidatus Documida loripago (NL. fem. n. *loripago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU068 sp012516535*. The type genome for the species is the GenBank assembly GCA_012516535.1. The GC content of the type genome is 45.65 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Documida virecousia sp. nov.

Candidatus Documida virecousia (NL. fem. n. *virecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU068 sp012842275*. The type genome for the species is the GenBank assembly GCA_012842275.1. The GC content of the type genome is 45.99 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Documida visibigena sp. nov.

Candidatus Documida visibigena (NL. fem. n. *visibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU068 sp012840405*. The type genome for the species is the GenBank assembly GCA_012840405.1. The GC content of the type genome is 45.16 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Documosa nicotilega sp. nov.

Candidatus Documosa nicotilega (NL. fem. n. *nicotilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-191 sp003230535*. The type genome for the species is the GenBank assembly GCA_003230535.1. The GC content of the type genome is 46.94 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Documosa gen. nov.

Candidatus Documosa (NL. fem. n. *Documosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-191*. The type species for the genus is *Candidatus* Documosa nicotilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-191*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Documosaceae.

Description of *Candidatus* Documosaceae fam. nov.

Candidatus Documosaceae (NL. fem. n. *Documosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-191.* The type genus for the taxon is *Candidatus* Documosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-182*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rinocanales.

Description of *Candidatus* Documula adfamugo sp. nov.

Candidatus Documula adfamugo (NL. fem. n. *adfamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5951 sp902573725*. The type genome for the species is the GenBank assembly GCA_902573725.1. The GC content of the type genome is 37.31 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Documula gen. nov.

Candidatus Documula (NL. fem. n. *Documula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5951*. The type species for the genus is *Candidatus* Documula adfamugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Documula adrotitio sp. nov.

Candidatus Documula adrotitio (NL. fem. n. *adrotitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5951 sp902516825*. The type genome for the species is the GenBank assembly GCA_902516825.1. The GC content of the type genome is 39.34 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Documula apsocimonia sp. nov.

Candidatus Documula apsocimonia (NL. fem. n. *apsocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5951 sp003332015*. The type genome for the species is the GenBank assembly GCA_003332015.1. The GC content of the type genome is 41.44 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Documula arrugicella sp. nov.

Candidatus Documula arrugicella (NL. fem. n. *arrugicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5951 sp902632595*. The type genome for the species is the GenBank assembly GCA_902632595.1. The GC content of the type genome is 37.87 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Documula lavacilega sp. nov.

Candidatus Documula lavacilega (NL. fem. n. *lavacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5951 sp002430515*. The type genome for the species is the GenBank assembly GCA_002430425.1. The GC content of the type genome is 40.98 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Documula modififorma sp. nov.

Candidatus Documula modififorma (NL. fem. n. *modififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5951 sp012269555*. The type genome for the species is the GenBank assembly GCA_012269555.1. The GC content of the type genome is 37.26 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Documula monocilega sp. nov.

Candidatus Documula monocilega (NL. fem. n. *monocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA5951 sp902520885*. The type genome for the species is the GenBank assembly GCA_902520885.1. The GC content of the type genome is 37.1 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Documula nitelifica sp. nov.

Candidatus Documula nitelifica (NL. fem. n. *nitelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5951 sp902622515*. The type genome for the species is the GenBank assembly GCA_902622515.1. The GC content of the type genome is 37.1 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Documula peracitrix sp. nov.

Candidatus Documula peracitrix (NL. fem. n. *peracitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5951 sp009936885*. The type genome for the species is the GenBank assembly GCA_009936885.1. The GC content of the type genome is 41.1 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Documula rubecicella sp. nov.

Candidatus Documula rubecicella (NL. fem. n. *rubecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5951 sp902625725*. The type genome for the species is the GenBank assembly GCA_902625725.1. The GC content of the type genome is 37.65 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Dokdonella capabax sp. nov.

Candidatus Dokdonella capabax (NL. fem. n. *capabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonella sp004295005*. The type genome for the species is the GenBank assembly GCA_004295005.1. The GC content of the type genome is 61.83 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Dokdonella cotenibula sp. nov.

Candidatus Dokdonella cotenibula (NL. fem. n. *cotenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonella sp001899855*. The type genome for the species is the GenBank assembly GCA_001899855.1. The GC content of the type genome is 63.38 % and the genome length is 3.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Dokdonella inretilenta sp. nov.

Candidatus Dokdonella inretilenta (NL. fem. n. *inretilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonella sp002483055*. The type genome for the species is the GenBank assembly GCA_002483055.1. The GC content of the type genome is 70.04 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Dokdonella allacentia sp. nov.

Candidatus Dokdonella allacentia (NL. fem. n. *allacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonella_A sp004143945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004143945.1. The GC content of the type genome is 69.41 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Dokdonella cotenilenta sp. nov.

Candidatus Dokdonella cotenilenta (NL. fem. n. *cotenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonella_A sp002297645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002298205.1. The GC

content of the type genome is 68.52 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Dokdonella decucitica sp. nov.

Candidatus Dokdonella decucitica (NL. fem. n. *decucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonella_A sp002632325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002632325.1. The GC content of the type genome is 65.02 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Dokdonella homunax sp. nov.

Candidatus Dokdonella homunax (NL. fem. n. *homunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonella_A sp014338185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014338185.1. The GC content of the type genome is 69.53 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Dokdonella menapatica sp. nov.

Candidatus Dokdonella menapatica (NL. fem. n. *menapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonella_A sp003142815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003159285.1. The GC content of the type genome is 64.09 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Dokdonella penecitas sp. nov.

Candidatus Dokdonella penecitas (NL. fem. n. *penecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Dokdonella_A sp009996615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009996615.1. The GC content of the type genome is 69.95 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Dokdonia dimacilenta sp. nov.

Candidatus Dokdonia dimacilenta (NL. fem. n. *dimacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonia sp002712765*. The type genome for the species is the GenBank assembly GCA_002337205.1. The GC content of the type genome is 40.75 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Dokdonia exaspicula sp. nov.

Candidatus Dokdonia exaspicula (NL. fem. n. *exaspicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonia sp000355805*. The type genome for the species is the GenBank assembly RS_GCF_000355805.1. The GC content of the type genome is 37.4 % and the genome length is 3.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater 60 km offshore".

Description of *Candidatus* Dokdonia ignicessa sp. nov.

Candidatus Dokdonia ignicessa (NL. fem. n. *ignicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonia sp003095655*. The type genome for the species is the GenBank assembly RS_GCF_003095655.1. The GC content of the type genome is 37.16 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Dokdonia minagatica sp. nov.

Candidatus Dokdonia minagatica (NL. fem. n. *minagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonia sp000212355*. The type genome for the species is the

GenBank assembly RS_GCF_000212355.1. The GC content of the type genome is 37.29 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Dokdonia ruricastra sp. nov.

Candidatus Dokdonia ruricastra (NL. fem. n. *ruricastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dokdonia sp007827465*. The type genome for the species is the GenBank assembly RS_GCF_007827465.1. The GC content of the type genome is 35.77 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Dolichospermum ambaciforma sp. nov.

Candidatus Dolichospermum ambaciforma (NL. fem. n. *ambaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dolichospermum sp903848645*. The type genome for the species is the GenBank assembly GCA_903848645.1. The GC content of the type genome is 37.84 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Dolichospermum cisorilega sp. nov.

Candidatus Dolichospermum cisorilega (NL. fem. n. *cisorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dolichospermum sp009712035*. The type genome for the species is the GenBank assembly RS_GCF_009712035.1. The GC content of the type genome is 38.17 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Dolichospermum conaritas sp. nov.

Candidatus Dolichospermum conaritas (NL. fem. n. *conaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dolichospermum sp009711975*. The type genome for the species is the GenBank assembly RS_GCF_009711975.1. The GC content of the type genome is 37.57 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Dolichospermum homicitoga sp. nov.

Candidatus Dolichospermum homicitoga (NL. fem. n. *homicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dolichospermum sp000312705*. The type genome for the species is the GenBank assembly RS_GCF_009711925.1. The GC content of the type genome is 38.01 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Dolichospermum risibisca sp. nov.

Candidatus Dolichospermum risibisca (NL. fem. n. *risibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dolichospermum sp009711935*. The type genome for the species is the GenBank assembly RS_GCF_009711935.1. The GC content of the type genome is 38.0 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Dolichospermum roraricula sp. nov.

Candidatus Dolichospermum roraricula (NL. fem. n. *roraricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dolichospermum sp001277295*. The type genome for the species is the GenBank assembly RS_GCF_000789435.1. The GC content of the type genome is 38.22 % and the genome length is 5.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Lagoon".

Description of *Candidatus* Dolichospermum sotuledo sp. nov.

Candidatus Dolichospermum sotuledo (NL. fem. n. *sotuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dolichospermum sp900299285*. The type genome for the species is the GenBank assembly GCA_900299285.1. The GC content of the type genome is 37.07 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Domabaria semunicella sp. nov.

Candidatus Domabaria semunicella (NL. fem. n. *semunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIBH01 sp009695285*. The type genome for the species is the GenBank assembly GCA_009695285.1. The GC content of the type genome is 62.99 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Domabaria gen. nov.

Candidatus Domabaria (NL. fem. n. *Domabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIBH01*. The type species for the genus is *Candidatus* Domabaria semunicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SIBH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabariaceae.

Description of *Candidatus* Domabariaceae fam. nov.

Candidatus Domabariaceae (NL. fem. n. *Domabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SIBH01*. The type genus for the taxon is *Candidatus* Domabaria .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Domabella desonilega sp. nov.

Candidatus Domabella desonilega (NL. fem. n. *desonilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2144 sp002328295*. The type genome for the species is the GenBank assembly GCA_002434705.1. The GC content of the type genome is 42.73 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Domabella gen. nov.

Candidatus Domabella (NL. fem. n. *Domabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2144*. The type species for the genus is *Candidatus* Domabella

desonilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Domabia haricitudo sp. nov.

Candidatus Domabia haricitudo (NL. fem. n. *haricitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXPS01 sp903921365*. The type genome for the species is the GenBank assembly GCA_903898895.1. The GC content of the type genome is 57.88 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Domabia gen. nov.

Candidatus Domabia (NL. fem. n. *Domabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXPS01*. The type species for the genus is *Candidatus* Domabia haricitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J036*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depetanaceae.

Description of *Candidatus* Domabia malifisca sp. nov.

Candidatus Domabia malifisca (NL. fem. n. *malifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXPS01 sp903873965*. The type genome for the species is the GenBank assembly GCA_903873965.1. The GC content of the type genome is 55.73 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Domabida recorousia sp. nov.

Candidatus Domabida recorousia (NL. fem. n. *recorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYYI01 sp903930345*. The type genome for the species is the

GenBank assembly GCA_903930345.1. The GC content of the type genome is 61.64 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Domabida gen. nov.

Candidatus Domabida (NL. fem. n. *Domabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYYI01*. The type species for the genus is *Candidatus* Domabida recorousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYYI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabidaceae.

Description of *Candidatus* Domabidaceae fam. nov.

Candidatus Domabidaceae (NL. fem. n. *Domabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYYI01*. The type genus for the taxon is *Candidatus* Domabida .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Domicana faticatica sp. nov.

Candidatus Domicana faticatica (NL. fem. n. *faticatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRTN01 sp903881515*. The type genome for the species is the GenBank assembly GCA_903929285.1. The GC content of the type genome is 66.61 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Domicana gen. nov.

Candidatus Domicana (NL. fem. n. *Domicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRTN01*. The type species for the genus is *Candidatus* Domicana faticatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Domicaria catocimonas sp. nov.

Candidatus Domicaria catocimonas (NL. fem. n. *catocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKKY01 sp007123515*. The type genome for the species is the GenBank assembly GCA_007123515.1. The GC content of the type genome is 39.88 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Domicaria gen. nov.

Candidatus Domicaria (NL. fem. n. *Domicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKKY01*. The type species for the genus is *Candidatus* Domicaria catocimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKKY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domicariaceae.

Description of *Candidatus* Domicariaceae fam. nov.

Candidatus Domicariaceae (NL. fem. n. *Domicariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKKY01.* The type genus for the taxon is *Candidatus* Domicaria .

According to GTDB R06-RS202, this family belongs to the order *Peptococcales*.

Description of *Candidatus* Domicaria epigribra sp. nov.

Candidatus Domicaria epigribra (NL. fem. n. *epigribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKKY01 sp009930175*. The type genome for the species is the GenBank assembly GCA_009930175.1. The GC content of the type genome is 33.59 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Domicia cicatibula sp. nov.

Candidatus Domicia cicatibula (NL. fem. n. *cicatibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBG01 sp013360575*. The type genome for the species is the GenBank assembly GCA_013360575.1. The GC content of the type genome is 64.31 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Domicia gen. nov.

Candidatus Domicia (NL. fem. n. *Domicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBG01*. The type species for the genus is *Candidatus* Domicia cicatibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deparosaceae.

Description of *Candidatus* Domicida accogibula sp. nov.

Candidatus Domicida accogibula (NL. fem. n. *accogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3792 sp902790115*. The type genome for the species is the GenBank assembly GCA_902790115.1. The GC content of the type genome is 57.23 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Domicida gen. nov.

Candidatus Domicida (NL. fem. n. *Domicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3792*. The type species for the genus is *Candidatus* Domicida accogibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Domicida denunimonia sp. nov.

Candidatus Domicida denunimonia (NL. fem. n. *denunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3792 sp902768795*. The type genome for the species is the GenBank assembly GCA_902768795.1. The GC content of the type genome is 56.72 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Domicida furibitura sp. nov.

Candidatus Domicida furibitura (NL. fem. n. *furibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3792 sp900318765*. The type genome for the species is the GenBank assembly GCA_900318765.1. The GC content of the type genome is 55.42 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Domicida infanax sp. nov.

Candidatus Domicida infanax (NL. fem. n. *infanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3792 sp902789675*. The type genome for the species is the GenBank assembly GCA_902789675.1. The GC content of the type genome is 57.4 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Domicida panifitudo sp. nov.

Candidatus Domicida panifitudo (NL. fem. n. *panifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3792 sp902792295*. The type genome for the species is the GenBank assembly GCA_902792295.1. The GC content of the type genome is 58.08 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Domicida subofentia sp. nov.

Candidatus Domicida subofentia (NL. fem. n. *subofentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3792 sp002369195*. The type genome for the species is the GenBank assembly GCA_002369195.1. The GC content of the type genome is 59.55 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Domicida voragimonas sp. nov.

Candidatus Domicida voragimonas (NL. fem. n. *voragimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3792 sp900318745*. The type genome for the species is the GenBank assembly GCA_900318745.1. The GC content of the type genome is 57.13 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Domicosa astapugo sp. nov.

Candidatus Domicosa astapugo (NL. fem. n. *astapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10183 sp001871815*. The type genome for the species is the GenBank assembly GCA_001871815.1. The GC content of the type genome is 39.65 % and the genome length is 1.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Domicosa gen. nov.

Candidatus Domicosa (NL. fem. n. *Domicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10183*. The type species for the genus is *Candidatus* Domicosa astapugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10183*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domicosaceae.

Description of *Candidatus* Domicosaceae fam. nov.

Candidatus Domicosaceae (NL. fem. n. *Domicosaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10183.* The type genus for the taxon is *Candidatus* Domicosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10183*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domicosales.

Description of *Candidatus* Domicosales ord. nov.

Candidatus Domicosales (NL. fem. n. *Domicosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10183.* The type genus for the taxon is *Candidatus* Domicosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Domicosa favonentia sp. nov.

Candidatus Domicosa favonentia (NL. fem. n. *favonentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10183 sp002780805*. The type genome for the species is the GenBank assembly GCA_002780805.1. The GC content of the type genome is 42.03 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Domicosa nugacessa sp. nov.

Candidatus Domicosa nugacessa (NL. fem. n. *nugacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10183 sp002771475*. The type genome for the species is the GenBank assembly GCA_002771475.1. The GC content of the type genome is 42.82 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Domicosa rosarastra sp. nov.

Candidatus Domicosa rosarastra (NL. fem. n. *rosarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10183 sp003485765*. The type genome for the species is the GenBank assembly GCA_001803975.1. The GC content of the type genome is 39.42 % and the genome length is 1.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Domicula pragmicula sp. nov.

Candidatus Domicula pragmicula (NL. fem. n. *pragmicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-13 sp001772665*. The type genome for the species is the GenBank assembly GCA_001772665.1. The GC content of the type genome is 38.92 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Domicula gen. nov.

Candidatus Domicula (NL. fem. n. *Domicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-13*. The type species for the genus is *Candidatus* Domicula pragmicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-39-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domiculaceae.

Description of *Candidatus* Domiculaceae fam. nov.

Candidatus Domiculaceae (NL. fem. n. *Domiculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-39-13.* The type genus for the taxon is *Candidatus* Domicula .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-01-FULL-39-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domiculales.

Description of *Candidatus* Domiculales ord. nov.

Candidatus Domiculales (NL. fem. n. *Domiculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-39-13.* The type genus for the taxon is *Candidatus* Domicula .

According to the original version of GTDB R06-RS202, this family belongs to the class *WWE3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Veridulae.

Description of *Candidatus* Domigana doxolitia sp. nov.

Candidatus Domigana doxolitia (NL. fem. n. *doxolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMSN01 sp903844135*. The type genome for the species is the GenBank assembly GCA_903922595.1. The GC content of the type genome is 69.26 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Domigana gen. nov.

Candidatus Domigana (NL. fem. n. *Domigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMSN01*. The type species for the genus is *Candidatus* Domigana doxolitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Domigana hirudimonas sp. nov.

Candidatus Domigana hirudimonas (NL. fem. n. *hirudimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMSN01 sp013201075*. The type genome for the species is the GenBank assembly RS_GCF_013166815.1. The GC content of the type genome is 64.65 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Domigaria colimigena sp. nov.

Candidatus Domigaria colimigena (NL. fem. n. *colimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS743 sp900545085*. The type genome for the species is the GenBank assembly GCA_900545085.1. The GC content of the type genome is 47.24 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Domigaria gen. nov.

Candidatus Domigaria (NL. fem. n. *Domigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS743*. The type species for the genus is *Candidatus* Domigaria colimigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Domigella rorifugo sp. nov.

Candidatus Domigella rorifugo (NL. fem. n. *rorifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-46-9 sp001873005*. The type genome for the species is the GenBank assembly GCA_002779125.1. The GC content of the type genome is 45.46 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Domigella gen. nov.

Candidatus Domigella (NL. fem. n. *Domigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-46-9*. The type species for the genus is *Candidatus* Domigella rorifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Domigia genocitrix sp. nov.

Candidatus Domigia genocitrix (NL. fem. n. *genocitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-N16 sp003278305*. The type genome for the species is the GenBank assembly GCA_003278305.1. The GC content of the type genome is 35.67 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Domigia gen. nov.

Candidatus Domigia (NL. fem. n. *Domigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-363-N16*. The type species for the genus is *Candidatus* Domigia genocitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Domigia nosocilenta sp. nov.

Candidatus Domigia nosocilenta (NL. fem. n. *nosocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-N16 sp902634515*. The type genome for the species is the GenBank assembly GCA_902634515.1. The GC content of the type genome is 35.57 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Domigia utricifica sp. nov.

Candidatus Domigia utricifica (NL. fem. n. *utricifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-N16 sp003280135*. The type genome for the species is the GenBank assembly GCA_003280135.1. The GC content of the type genome is 35.36 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Domigida denoretta sp. nov.

Candidatus Domigida denoretta (NL. fem. n. *denoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-32-17 sp002771395*. The type genome for the species is the GenBank assembly GCA_002771395.1. The GC content of the type genome is 32.5 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Domigida gen. nov.

Candidatus Domigida (NL. fem. n. *Domigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-32-17*. The type species for the genus is *Candidatus* Domigida denoretta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-32-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domigidaceae.

Description of *Candidatus* Domigidaceae fam. nov.

Candidatus Domigidaceae (NL. fem. n. *Domigidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-32-17.* The type genus for the taxon is *Candidatus* Domigida .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Domigida lapicatica sp. nov.

Candidatus Domigida lapicatica (NL. fem. n. *lapicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-32-17 sp903872185*. The type genome for the species is the GenBank assembly GCA_903913035.1. The GC content of the type genome is 31.09 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Domigida patibax sp. nov.

Candidatus Domigida patibax (NL. fem. n. *patibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-32-17 sp001769035*. The type genome for the species is the

GenBank assembly GCA_001769035.1. The GC content of the type genome is 30.96 % and the genome length is 4.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Domigida rorififorma sp. nov.

Candidatus Domigida rorififorma (NL. fem. n. *rorififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-32-17 sp903837285*. The type genome for the species is the GenBank assembly GCA_903940465.1. The GC content of the type genome is 31.41 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Domigosa recumitia sp. nov.

Candidatus Domigosa recumitia (NL. fem. n. *recumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10199 sp001797365*. The type genome for the species is the GenBank assembly GCA_001797365.1. The GC content of the type genome is 45.24 % and the genome length is 2.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Domigosa gen. nov.

Candidatus Domigosa (NL. fem. n. *Domigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10199*. The type species for the genus is *Candidatus* Domigosa recumitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domigosaceae.

Description of *Candidatus* Domigosaceae fam. nov.

Candidatus Domigosaceae (NL. fem. n. *Domigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10199.* The type genus for the taxon is *Candidatus* Domigosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domigosales.

Description of *Candidatus* Domigosales ord. nov.

Candidatus Domigosales (NL. fem. n. *Domigosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10199.* The type genus for the taxon is *Candidatus* Domigosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Domigosae.

Description of *Candidatus* Domigosae class. nov.

Candidatus Domigosae (NL. fem. n. *c__Domigosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10199.* The type genus for the taxon is *Candidatus* Domigosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Domigosota.

Description of *Candidatus* Domigosota phyl. nov.

Candidatus Domigosota (NL. fem. n. *Domigosota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10199.* The type genus for the taxon is *Candidatus* Domigosa .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Domigula unetvicula sp. nov.

Candidatus Domigula unetvicula (NL. fem. n. *unetvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLWR01 sp012103495*. The type genome for the species is the GenBank assembly GCA_012103495.1. The GC content of the type genome is 43.6 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Domigula gen. nov.

Candidatus Domigula (NL. fem. n. *Domigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLWR01*. The type species for the genus is *Candidatus* Domigula unetvicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WLWR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domigulaceae.

Description of *Candidatus* Domigulaceae fam. nov.

Candidatus Domigulaceae (NL. fem. n. *Domigulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WLWR01.* The type genus for the taxon is *Candidatus* Domigula .

According to the original version of GTDB R06-RS202, this family belongs to the order *WLWR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domigulales.

Description of *Candidatus* Domigulales ord. nov.

Candidatus Domigulales (NL. fem. n. *Domigulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WLWR01.* The type genus for the taxon is *Candidatus* Domigula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Domipana exsanifica sp. nov.

Candidatus Domipana exsanifica (NL. fem. n. *exsanifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU049 sp001603615*. The type genome for the species is the GenBank assembly GCA_001603615.1. The GC content of the type genome is 29.11 % and the genome length is 1.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Domipana gen. nov.

Candidatus Domipana (NL. fem. n. *Domipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU049*. The type species for the genus is *Candidatus* Domipana exsanifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domipanaceae.

Description of *Candidatus* Domipanaceae fam. nov.

Candidatus Domipanaceae (NL. fem. n. *Domipanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU049.* The type genus for the taxon is *Candidatus* Domipana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Domipana senipax sp. nov.

Candidatus Domipana senipax (NL. fem. n. *senipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU049 sp001513285*. The type genome for the species is the GenBank assembly GCA_012727615.1. The GC content of the type genome is 28.97 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Domipana viginastra sp. nov.

Candidatus Domipana viginastra (NL. fem. n. *viginastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU049 sp001512885*. The type genome for the species is the GenBank assembly GCA_012840645.1. The GC content of the type genome is 28.81 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Domiparia carunisca sp. nov.

Candidatus Domiparia carunisca (NL. fem. n. *carunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1563 sp001871325*. The type genome for the species is the GenBank assembly GCA_002322495.1. The GC content of the type genome is 37.36 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Domiparia gen. nov.

Candidatus Domiparia (NL. fem. n. *Domiparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1563*. The type species for the genus is *Candidatus* Domiparia carunisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Domipella peracimonas sp. nov.

Candidatus Domipella peracimonas (NL. fem. n. *peracimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Sam29DG08-bin30 sp003045995*. The type genome for the species is the GenBank assembly GCA_003045995.1. The GC content of the type genome is 50.25 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Domipella gen. nov.

Candidatus Domipella (NL. fem. n. *Domipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Sam29DG08-bin30*. The type species for the genus is *Candidatus* Domipella peracimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Domipia secunitoga sp. nov.

Candidatus Domipia secunitoga (NL. fem. n. *secunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJMU01 sp903821875*. The type genome for the species is the GenBank assembly GCA_903821875.1. The GC content of the type genome is 61.0 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Domipia gen. nov.

Candidatus Domipia (NL. fem. n. *Domipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJMU01*. The type species for the genus is *Candidatus* Domipia secunitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponosaceae.

Description of *Candidatus* Domipida catapicella sp. nov.

Candidatus Domipida catapicella (NL. fem. n. *catapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC2-FULL-46-14 sp001771585*. The type genome for the species is the GenBank assembly GCA_001771585.1. The GC content of the type genome is 46.32 % and the genome length is 1.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Domipida gen. nov.

Candidatus Domipida (NL. fem. n. *Domipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYC2-FULL-46-14*. The type species for the genus is *Candidatus*

Domipida catapicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-46-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domipidaceae.

Description of *Candidatus* Domipidaceae fam. nov.

Candidatus Domipidaceae (NL. fem. n. *Domipidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYC2-FULL-46-14.* The type genus for the taxon is *Candidatus* Domipida .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYC2-FULL-46-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domipidales.

Description of *Candidatus* Domipidales ord. nov.

Candidatus Domipidales (NL. fem. n. *Domipidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYC2-FULL-46-14.* The type genus for the taxon is *Candidatus* Domipida .

According to the original version of GTDB R06-RS202, this family belongs to the class *WOR-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Detesanae.

Description of *Candidatus* Domiposa armicago sp. nov.

Candidatus Domiposa armicago (NL. fem. n. *armicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-451 sp900758495*. The type genome for the species is the GenBank assembly RS_GCF_900758495.1. The GC content of the type genome is 28.01 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Domiposa gen. nov.

Candidatus Domiposa (NL. fem. n. *Domiposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-451*. The type species for the genus is *Candidatus* Domiposa armicago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Domiposa detunentia sp. nov.

Candidatus Domiposa detunentia (NL. fem. n. *detunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-451 sp000438295*. The type genome for the species is the GenBank assembly GCA_000438295.1. The GC content of the type genome is 27.77 % and the genome length is 1.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Domiposa occucago sp. nov.

Candidatus Domiposa occucago (NL. fem. n. *occucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-451 sp900760545*. The type genome for the species is the GenBank assembly RS_GCF_900760545.1. The GC content of the type genome is 27.51 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Domipula dirititrix sp. nov.

Candidatus Domipula dirititrix (NL. fem. n. *dirititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS172 sp900539855*. The type genome for the species is the GenBank assembly RS_GCF_900763555.1. The GC content of the type genome is 48.23 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Domipula gen. nov.

Candidatus Domipula (NL. fem. n. *Domipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS172*. The type species for the genus is *Candidatus* Domipula dirititrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Donghicola pocilitio sp. nov.

Candidatus Donghicola pocilitio (NL. fem. n. *pocilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Donghicola sp013377555*. The type genome for the species is the GenBank assembly RS_GCF_013377535.1. The GC content of the type genome is 60.97 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Dongia illibitica sp. nov.

Candidatus Dongia illibitica (NL. fem. n. *illibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dongia sp000620685*. The type genome for the species is the GenBank assembly RS_GCF_000620685.1. The GC content of the type genome is 63.67 % and the genome length is 6.07 Mbp.

Description of *Candidatus* Dorea excamentia sp. nov.

Candidatus Dorea excamentia (NL. fem. n. *excamentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dorea_A sp900550865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900550865.1. The GC content of the type genome is 42.5 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Dormibacter astipitudo sp. nov.

Candidatus Dormibacter astipitudo (NL. fem. n. *astipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dormibacter sp003244185*. The type genome for the species is the GenBank assembly GCA_003244185.1. The GC content of the type genome is 66.67 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Doxolana detumitura sp. nov.

Candidatus Doxolana detumitura (NL. fem. n. *detumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B21-G16 sp003644825*. The type genome for the species is the GenBank assembly GCA_003644825.1. The GC content of the type genome is 33.68 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Doxolana gen. nov.

Candidatus Doxolana (NL. fem. n. *Doxolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B21-G16*. The type species for the genus is *Candidatus* Doxolana detumitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B21-G16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolanaceae.

Description of *Candidatus* Doxolanaceae fam. nov.

Candidatus Doxolanaceae (NL. fem. n. *Doxolanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B21-G16.* The type genus for the taxon is *Candidatus* Doxolana .

According to the original version of GTDB R06-RS202, this family belongs to the order *B21-G16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Doxolanales.

Description of *Candidatus* Doxolanales ord. nov.

Candidatus Doxolanales (NL. fem. n. *Doxolanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B21-G16.* The type genus for the taxon is *Candidatus* Doxolana .

According to the original version of GTDB R06-RS202, this family belongs to the class *SM23-31*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Feditulae.

Description of *Candidatus* Doxolaria taraximonas sp. nov.

Candidatus Doxolaria taraximonas (NL. fem. n. *taraximonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6077 sp002436065*. The type genome for the species is the GenBank assembly GCA_002436065.1. The GC content of the type genome is 62.21 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Doxolaria gen. nov.

Candidatus Doxolaria (NL. fem. n. *Doxolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6077*. The type species for the genus is *Candidatus* Doxolaria taraximonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6077*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolariaceae.

Description of *Candidatus* Doxolariaceae fam. nov.

Candidatus Doxolariaceae (NL. fem. n. *Doxolariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6077.* The type genus for the taxon is *Candidatus* Doxolaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6077*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Doxolariales.

Description of *Candidatus* Doxolariales ord. nov.

Candidatus Doxolariales (NL. fem. n. *Doxolariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6077.* The type genus for the taxon is *Candidatus* Doxolaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6077*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Doxolariae.

Description of *Candidatus* Doxolariae class. nov.

Candidatus Doxolariae (NL. fem. n. *c__Doxolariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6077.* The type genus for the taxon is *Candidatus* Doxolaria .

According to GTDB R06-RS202, this class belongs to the phylum *Chloroflexota*.

Description of *Candidatus* Doxolella errabimonas sp. nov.

Candidatus Doxolella errabimonas (NL. fem. n. *errabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1908 sp002337525*. The type genome for the species is the GenBank assembly GCA_002337525.1. The GC content of the type genome is 41.03 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Doxolella gen. nov.

Candidatus Doxolella (NL. fem. n. *Doxolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1908*. The type species for the genus is *Candidatus* Doxolella errabimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1908*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolellaceae.

Description of *Candidatus* Doxolellaceae fam. nov.

Candidatus Doxolellaceae (NL. fem. n. *Doxolellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1908.* The type genus for the taxon is *Candidatus* Doxolella .

According to GTDB R06-RS202, this family belongs to the order *Caedimonadales*.

Description of *Candidatus* Doxolida novilibula sp. nov.

Candidatus Doxolida novilibula (NL. fem. n. *novilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2128 sp002402135*. The type genome for the species is the GenBank assembly GCA_002402135.1. The GC content of the type genome is 45.07 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Doxolida gen. nov.

Candidatus Doxolida (NL. fem. n. *Doxolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2128*. The type species for the genus is *Candidatus* Doxolida novilibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2128*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolidaceae.

Description of *Candidatus* Doxolidaceae fam. nov.

Candidatus Doxolidaceae (NL. fem. n. *Doxolidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2128.* The type genus for the taxon is *Candidatus* Doxolida .

According to GTDB R06-RS202, this family belongs to the order *Marinisomatales*.

Description of *Candidatus* Doxolida relecessa sp. nov.

Candidatus Doxolida relecessa (NL. fem. n. *relecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2128 sp002471865*. The type genome for the species is the

GenBank assembly GCA_002329065.1. The GC content of the type genome is 44.14 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Doxolosa dehisitas sp. nov.

Candidatus Doxolosa dehisitas (NL. fem. n. *dehisitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUUE01 sp012031635*. The type genome for the species is the GenBank assembly GCA_012031635.1. The GC content of the type genome is 45.31 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Doxolosa gen. nov.

Candidatus Doxolosa (NL. fem. n. *Doxolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUUE01*. The type species for the genus is *Candidatus* Doxolosa dehisitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAUUE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolosaceae.

Description of *Candidatus* Doxolosaceae fam. nov.

Candidatus Doxolosaceae (NL. fem. n. *Doxolosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAUUE01.* The type genus for the taxon is *Candidatus* Doxolosa .

According to GTDB R06-RS202, this family belongs to the order *Cyanobacteriales*.

Description of *Candidatus* Draconibacterium diluvastra sp. nov.

Candidatus Draconibacterium diluvastra (NL. fem. n. *diluvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Draconibacterium sp013203755*. The type genome for the species is the GenBank assembly GCA_013203755.1. The GC content of the type genome is 36.33 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Draconibacterium domicitoga sp. nov.

Candidatus Draconibacterium domicitoga (NL. fem. n. *domicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Draconibacterium sp011620585*. The type genome for the species is the GenBank assembly GCA_011620585.1. The GC content of the type genome is 42.06 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Draconibacterium immatimonia sp. nov.

Candidatus Draconibacterium immatimonia (NL. fem. n. *immatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Draconibacterium sp003516705*. The type genome for the species is the GenBank assembly GCA_003516705.1. The GC content of the type genome is 40.71 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Draconibacterium immobitura sp. nov.

Candidatus Draconibacterium immobitura (NL. fem. n. *immobitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Draconibacterium sp009773765*. The type genome for the species is the GenBank assembly GCA_009773765.1. The GC content of the type genome is 39.75 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Draconibacterium maxumessa sp. nov.

Candidatus Draconibacterium maxumessa (NL. fem. n. *maxumessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Draconibacterium sp011799805*. The type genome for the species is the GenBank assembly RS_GCF_011799805.1. The GC content of the type genome is 42.02 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Draconibacterium musulicula sp. nov.

Candidatus Draconibacterium musulicula (NL. fem. n. *musulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Draconibacterium sp010586825*. The type genome for the species is the GenBank assembly RS_GCF_010586825.1. The GC content of the type genome is 40.83 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Draconibacterium semigedo sp. nov.

Candidatus Draconibacterium semigedo (NL. fem. n. *semigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Draconibacterium sp010448835*. The type genome for the species is the GenBank assembly RS_GCF_010448835.1. The GC content of the type genome is 39.98 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Dubosiella depasicella sp. nov.

Candidatus Dubosiella depasicella (NL. fem. n. *depasicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dubosiella sp004793885*. The type genome for the species is the GenBank assembly RS_GCF_004793885.1. The GC content of the type genome is 50.62 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Dubosiella docibibra sp. nov.

Candidatus Dubosiella docibibra (NL. fem. n. *docibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dubosiella sp000403415*. The type genome for the species is the GenBank assembly RS_GCF_000403415.2. The GC content of the type genome is 40.49 % and the genome length is 2.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Ducilana inhonatica sp. nov.

Candidatus Ducilana inhonatica (NL. fem. n. *inhonatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-38-11 sp001790645*. The type genome for the species is the GenBank assembly GCA_001790645.1. The GC content of the type genome is 38.29 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Ducilana gen. nov.

Candidatus Ducilana (NL. fem. n. *Ducilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-38-11*. The type species for the genus is *Candidatus* Ducilana inhonatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-38-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilanaceae.

Description of *Candidatus* Ducilanaceae fam. nov.

Candidatus Ducilanaceae (NL. fem. n. *Ducilanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-38-11.* The type genus for the taxon is *Candidatus* Ducilana .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-38-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ducilanales.

Description of *Candidatus* Ducilanales ord. nov.

Candidatus Ducilanales (NL. fem. n. *Ducilanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-38-11.* The type genus for the taxon is *Candidatus* Ducilana .

According to the original version of GTDB R06-RS202, this family belongs to the class *GWA2-38-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ducilanae.

Description of *Candidatus* Ducilanae class. nov.

Candidatus Ducilanae (NL. fem. n. *c__Ducilanae* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-38-11.* The type genus for the taxon is *Candidatus* Ducilana .

According to GTDB R06-RS202, this class belongs to the phylum *Schekmanbacteria*.

Description of *Candidatus* Ducilana ininnastra sp. nov.

Candidatus Ducilana ininnastra (NL. fem. n. *ininnastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-38-11 sp001790715*. The type genome for the species is the GenBank assembly GCA_001790715.1. The GC content of the type genome is 38.79 % and the genome length is 2.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Ducilaria biparetta sp. nov.

Candidatus Ducilaria biparetta (NL. fem. n. *biparetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHLN01 sp004283105*. The type genome for the species is the GenBank assembly GCA_013043015.1. The GC content of the type genome is 65.13 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Ducilaria gen. nov.

Candidatus Ducilaria (NL. fem. n. *Ducilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHLN01*. The type species for the genus is *Candidatus* Ducilaria biparetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHLN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilariaceae.

Description of *Candidatus* Ducilariaceae fam. nov.

Candidatus Ducilariaceae (NL. fem. n. *Ducilariaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHLN01*. The type genus for the taxon is *Candidatus* Ducilaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rudicellales.

Description of *Candidatus* Ducilaria figiletta sp. nov.

Candidatus Ducilaria figiletta (NL. fem. n. *figiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHLN01 sp013002865*. The type genome for the species is the GenBank assembly GCA_013043405.1. The GC content of the type genome is 66.27 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Ducilella decitax sp. nov.

Candidatus Ducilella decitax (NL. fem. n. *decitax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLPV01 sp003558125*. The type genome for the species is the GenBank assembly GCA_007134575.1. The GC content of the type genome is 61.43 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Ducilella gen. nov.

Candidatus Ducilella (NL. fem. n. *Ducilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLPV01*. The type species for the genus is *Candidatus* Ducilella decitax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLND01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefosaceae.

Description of *Candidatus* Ducilella semificella sp. nov.

Candidatus Ducilella semificella (NL. fem. n. *semificella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLPV01 sp007131825*. The type genome for the species is the GenBank assembly GCA_007131825.1. The GC content of the type genome is 62.81 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Ducilia trocligena sp. nov.

Candidatus Ducilia trocligena (NL. fem. n. *trocligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-66-17 sp001803875*. The type genome for the species is the GenBank assembly GCA_001803875.1. The GC content of the type genome is 66.28 % and the genome length is 1.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Ducilia gen. nov.

Candidatus Ducilia (NL. fem. n. *Ducilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-66-17*. The type species for the genus is *Candidatus* Ducilia trocligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-66-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duciliaceae.

Description of *Candidatus* Duciliaceae fam. nov.

Candidatus Duciliaceae (NL. fem. n. *Duciliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-66-17.* The type genus for the taxon is *Candidatus* Ducilia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBBL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ceraridales.

Description of *Candidatus* Ducilida adsudax sp. nov.

Candidatus Ducilida adsudax (NL. fem. n. *adsudax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU010 sp012521335*. The type genome for the species is the GenBank assembly GCA_012521335.1. The GC content of the type genome is 57.36 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Ducilida gen. nov.

Candidatus Ducilida (NL. fem. n. *Ducilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU010*. The type species for the genus is *Candidatus* Ducilida adsudax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Ducilidaceae fam. nov.

Candidatus Ducilidaceae (NL. fem. n. *Ducilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU010.* The type genus for the taxon is *Candidatus* Ducilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ducilidales.

Description of *Candidatus* Ducilidales ord. nov.

Candidatus Ducilidales (NL. fem. n. *Ducilidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU010.* The type genus for the taxon is *Candidatus* Ducilida .

According to the GTDB R06-RS202, this order belongs to the class *Limnochordia*.

Description of *Candidatus* Ducilida delacifica sp. nov.

Candidatus Ducilida delacifica (NL. fem. n. *delacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU010 sp002391385*. The type genome for the species is the GenBank assembly GCA_001512825.1. The GC content of the type genome is 59.27 % and the genome length is 2.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Ducilida inconitoga sp. nov.

Candidatus Ducilida inconitoga (NL. fem. n. *inconitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU010 sp012837385*. The type genome for the species is the GenBank assembly GCA_012837385.1. The GC content of the type genome is 53.92 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Ducilida repuditia sp. nov.

Candidatus Ducilida repuditia (NL. fem. n. *repuditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU010 sp900018335*. The type genome for the species is the GenBank assembly GCA_900018335.1. The GC content of the type genome is 57.0 % and the genome length is 1.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "anaerobic digester metagenome".

Description of *Candidatus* Ducilida sonabessa sp. nov.

Candidatus Ducilida sonabessa (NL. fem. n. *sonabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU010 sp012840725*. The type genome for the species is the GenBank assembly GCA_012840725.1. The GC content of the type genome is 58.11 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Ducilosa aprugatica sp. nov.

Candidatus Ducilosa aprugatica (NL. fem. n. *aprugatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902761025*. The type genome for the species is the GenBank assembly GCA_902761025.1. The GC content of the type genome is 39.64 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Ducilosa gen. nov.

Candidatus Ducilosa (NL. fem. n. *Ducilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG592*. The type species for the genus is *Candidatus* Ducilosa aprugatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ducilosa chernicella sp. nov.

Candidatus Ducilosa chernicella (NL. fem. n. *chernicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902761345*. The type genome for the species is the GenBank assembly GCA_902761345.1. The GC content of the type genome is 40.63 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Ducilosa cicilicella sp. nov.

Candidatus Ducilosa cicilicella (NL. fem. n. *cicilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902763835*. The type genome for the species is the GenBank assembly GCA_902763835.1. The GC content of the type genome is 39.62 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Ducilosa cohurax sp. nov.

Candidatus Ducilosa cohurax (NL. fem. n. *cohurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp900313125*. The type genome for the species is the GenBank assembly GCA_900313125.1. The GC content of the type genome is 51.68 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Ducilosa conarax sp. nov.

Candidatus Ducilosa conarax (NL. fem. n. *conarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp900317815*. The type genome for the species is the GenBank assembly GCA_902759635.1. The GC content of the type genome is 47.9 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Ducilosa conipousia sp. nov.

Candidatus Ducilosa conipousia (NL. fem. n. *conipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902779615*. The type genome for the species is the GenBank assembly GCA_902779615.1. The GC content of the type genome is 46.43 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Ducilosa derelimonia sp. nov.

Candidatus Ducilosa derelimonia (NL. fem. n. *derelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902767285*. The type genome for the species is the GenBank assembly GCA_902767285.1. The GC content of the type genome is 39.61 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Ducilosa docibicula sp. nov.

Candidatus Ducilosa docibicula (NL. fem. n. *docibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp900317025*. The type genome for the species is the GenBank assembly GCA_902795375.1. The GC content of the type genome is 51.92 %

and the genome length is 1.96 Mbp.

Description of *Candidatus* Ducilosa docibitas sp. nov.

Candidatus Ducilosa docibitas (NL. fem. n. *docibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp900320535*. The type genome for the species is the GenBank assembly GCA_902773385.1. The GC content of the type genome is 39.71 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Ducilosa echogibra sp. nov.

Candidatus Ducilosa echogibra (NL. fem. n. *echogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902797065*. The type genome for the species is the GenBank assembly GCA_902797065.1. The GC content of the type genome is 44.98 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Ducilosa gemebilega sp. nov.

Candidatus Ducilosa gemebilega (NL. fem. n. *gemebilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp900315715*. The type genome for the species is the GenBank assembly GCA_900315715.1. The GC content of the type genome is 38.83 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Ducilosa infirentia sp. nov.

Candidatus Ducilosa infirentia (NL. fem. n. *infirentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902773395*. The type genome for the species is the GenBank assembly GCA_902773395.1. The GC content of the type genome is 39.71 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Ducilosa lenocitia sp. nov.

Candidatus Ducilosa lenocitia (NL. fem. n. *lenocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp900315255*. The type genome for the species is the GenBank assembly GCA_902790555.1. The GC content of the type genome is 44.56 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Ducilosa notacigena sp. nov.

Candidatus Ducilosa notacigena (NL. fem. n. *notacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902801245*. The type genome for the species is the GenBank assembly GCA_902801245.1. The GC content of the type genome is 39.91 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Ducilosa obtenicula sp. nov.

Candidatus Ducilosa obtenicula (NL. fem. n. *obtenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902773045*. The type genome for the species is the GenBank assembly GCA_902773045.1. The GC content of the type genome is 43.07 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Ducilosa omnipousia sp. nov.

Candidatus Ducilosa omnipousia (NL. fem. n. *omnipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902802975*. The type genome for the species is the GenBank assembly GCA_902802975.1. The GC content of the type genome is 43.27 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Ducilosa repepatica sp. nov.

Candidatus Ducilosa repepatica (NL. fem. n. *repepatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902792115*. The type genome for the species is the GenBank assembly GCA_902792115.1. The GC content of the type genome is 53.45 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Ducilosa semivitudo sp. nov.

Candidatus Ducilosa semivitudo (NL. fem. n. *semivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902773165*. The type genome for the species is the GenBank assembly GCA_902773165.1. The GC content of the type genome is 45.47 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Ducilosa sicinisca sp. nov.

Candidatus Ducilosa sicinisca (NL. fem. n. *sicinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902785425*. The type genome for the species is the GenBank assembly GCA_902785425.1. The GC content of the type genome is 46.28 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Ducilosa sugilicella sp. nov.

Candidatus Ducilosa sugilicella (NL. fem. n. *sugilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG592 sp902773245*. The type genome for the species is the GenBank assembly GCA_902773245.1. The GC content of the type genome is 42.39 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Ducilula ambidiforma sp. nov.

Candidatus Ducilula ambidiforma (NL. fem. n. *ambidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-390 sp002314565*. The type genome for the species is the GenBank assembly GCA_002314565.1. The GC content of the type genome is 47.76 %

and the genome length is 2.38 Mbp.

Description of *Candidatus* Ducilula gen. nov.

Candidatus Ducilula (NL. fem. n. *Ducilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-390*. The type species for the genus is *Candidatus* Ducilula ambidiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Ducilula malagiforma sp. nov.

Candidatus Ducilula malagiforma (NL. fem. n. *malagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-390 sp900753295*. The type genome for the species is the GenBank assembly RS_GCF_900753295.1. The GC content of the type genome is 53.89 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Ducilula malagitia sp. nov.

Candidatus Ducilula malagitia (NL. fem. n. *malagitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-390 sp000437015*. The type genome for the species is the GenBank assembly GCA_000437015.1. The GC content of the type genome is 54.08 % and the genome length is 2.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Ducilula metapimonas sp. nov.

Candidatus Ducilula metapimonas (NL. fem. n. *metapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-390 sp003523225*. The type genome for the species is the GenBank assembly GCA_003523225.1. The GC content of the type genome is 52.26 %

and the genome length is 2.0 Mbp.

Description of *Candidatus* Ducilula mutabago sp. nov.

Candidatus Ducilula mutabago (NL. fem. n. *mutabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-390 sp902803255*. The type genome for the species is the GenBank assembly GCA_902803255.1. The GC content of the type genome is 60.07 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Ducilula solacibra sp. nov.

Candidatus Ducilula solacibra (NL. fem. n. *solacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-390 sp900321265*. The type genome for the species is the GenBank assembly GCA_900321265.1. The GC content of the type genome is 57.04 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Ducilula tigurivita sp. nov.

Candidatus Ducilula tigurivita (NL. fem. n. *tigurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-390 sp902783905*. The type genome for the species is the GenBank assembly GCA_902783905.1. The GC content of the type genome is 55.58 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Duganella ambusitudo sp. nov.

Candidatus Duganella ambusitudo (NL. fem. n. *ambusitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp009857445*. The type genome for the species is the GenBank assembly RS_GCF_009857445.1. The GC content of the type genome is 60.75 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Duganella ancepetta sp. nov.

Candidatus Duganella ancepetta (NL. fem. n. *ancepetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp009380215*. The type genome for the species is the GenBank assembly RS_GCF_009380215.1. The GC content of the type genome is 63.78 % and the genome length is 7.23 Mbp.

Description of *Candidatus* Duganella antepugo sp. nov.

Candidatus Duganella antepugo (NL. fem. n. *antepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp004614165*. The type genome for the species is the GenBank assembly RS_GCF_004614165.1. The GC content of the type genome is 64.42 % and the genome length is 6.56 Mbp.

Description of *Candidatus* Duganella cacopatio sp. nov.

Candidatus Duganella cacopatio (NL. fem. n. *cacopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp013408245*. The type genome for the species is the GenBank assembly RS_GCF_013408245.1. The GC content of the type genome is 65.41 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Duganella carucifica sp. nov.

Candidatus Duganella carucifica (NL. fem. n. *carucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp003416895*. The type genome for the species is the GenBank assembly RS_GCF_003416945.1. The GC content of the type genome is 63.92 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Duganella catagiforma sp. nov.

Candidatus Duganella catagiforma (NL. fem. n. *catagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp013376005*. The type genome for the species is the GenBank assembly RS_GCF_013376005.1. The GC content of the type genome is 64.65 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Duganella curacibra sp. nov.

Candidatus Duganella curacibra (NL. fem. n. *curacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp003416985*. The type genome for the species is the GenBank assembly RS_GCF_009857645.1. The GC content of the type genome is 65.23 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Duganella curoticula sp. nov.

Candidatus Duganella curoticula (NL. fem. n. *curoticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp009857495*. The type genome for the species is the GenBank assembly RS_GCF_009857495.1. The GC content of the type genome is 63.75 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Duganella ducilisca sp. nov.

Candidatus Duganella ducilisca (NL. fem. n. *ducilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp013375995*. The type genome for the species is the GenBank assembly RS_GCF_013375995.1. The GC content of the type genome is 64.48 % and the genome length is 7.01 Mbp.

Description of *Candidatus* Duganella ephipastra sp. nov.

Candidatus Duganella ephipastra (NL. fem. n. *ephipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp009857435*. The type genome for the species is the GenBank assembly RS_GCF_009857435.1. The GC content of the type genome is 61.72

% and the genome length is 6.15 Mbp.

Description of *Candidatus* Duganella homagivita sp. nov.

Candidatus Duganella homagivita (NL. fem. n. *homagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp003217375*. The type genome for the species is the GenBank assembly RS_GCF_003385995.1. The GC content of the type genome is 62.67 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Duganella homunicula sp. nov.

Candidatus Duganella homunicula (NL. fem. n. *homunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp009674535*. The type genome for the species is the GenBank assembly RS_GCF_009674535.1. The GC content of the type genome is 62.43 % and the genome length is 7.55 Mbp.

Description of *Candidatus* Duganella inpudigena sp. nov.

Candidatus Duganella inpudigena (NL. fem. n. *inpudigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp011090165*. The type genome for the species is the GenBank assembly RS_GCF_011090165.1. The GC content of the type genome is 64.85 % and the genome length is 6.9 Mbp.

Description of *Candidatus* Duganella rubefisca sp. nov.

Candidatus Duganella rubefisca (NL. fem. n. *rubefisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp009857915*. The type genome for the species is the GenBank assembly RS_GCF_009857915.1. The GC content of the type genome is 60.62 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Duganella selibicella sp. nov.

Candidatus Duganella selibicella (NL. fem. n. *selibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp001423125*. The type genome for the species is the GenBank assembly RS_GCF_001423125.1. The GC content of the type genome is 65.11 % and the genome length is 5.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Duganella semivigena sp. nov.

Candidatus Duganella semivigena (NL. fem. n. *semivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp000381565*. The type genome for the species is the GenBank assembly RS_GCF_000381565.1. The GC content of the type genome is 64.47 % and the genome length is 7.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sediment".

Description of *Candidatus* Duganella subacax sp. nov.

Candidatus Duganella subacax (NL. fem. n. *subacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp900109645*. The type genome for the species is the GenBank assembly RS_GCF_900109645.1. The GC content of the type genome is 62.93 % and the genome length is 6.24 Mbp.

Description of *Candidatus* Duganella thessibula sp. nov.

Candidatus Duganella thessibula (NL. fem. n. *thessibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp900110275*. The type genome for the species is the GenBank assembly RS_GCF_900110275.1. The GC content of the type genome is 65.13 % and the genome length is 7.06 Mbp.

Description of *Candidatus* Duganella velifousia sp. nov.

Candidatus Duganella velifousia (NL. fem. n. *velifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp900100205*. The type genome for the species is the GenBank assembly RS_GCF_900100675.1. The GC content of the type genome is 62.24 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Duganella viburigena sp. nov.

Candidatus Duganella viburigena (NL. fem. n. *viburigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duganella sp000335815*. The type genome for the species is the GenBank assembly RS_GCF_001758545.1. The GC content of the type genome is 64.08 % and the genome length is 7.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water rainwater-tap Botanic Garden Hamburg".

Description of *Candidatus* Duncaniella abrepastra sp. nov.

Candidatus Duncaniella abrepastra (NL. fem. n. *abrepastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duncaniella sp001689495*. The type genome for the species is the GenBank assembly GCA_001689495.1. The GC content of the type genome is 55.95 % and the genome length is 3.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Feces".

Description of *Candidatus* Duncaniella cicilousia sp. nov.

Candidatus Duncaniella cicilousia (NL. fem. n. *cicilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duncaniella sp002494015*. The type genome for the species is the GenBank assembly GCA_002492245.1. The GC content of the type genome is 52.69 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Duncaniella diludastra sp. nov.

Candidatus Duncaniella diludastra (NL. fem. n. *diludastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duncaniella sp001689575*. The type genome for the species is the GenBank assembly GCA_003979465.1. The GC content of the type genome is 54.14 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Duncaniella insalessa sp. nov.

Candidatus Duncaniella insalessa (NL. fem. n. *insalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duncaniella sp900544535*. The type genome for the species is the GenBank assembly GCA_900544535.1. The GC content of the type genome is 52.61 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Duncaniella monocentia sp. nov.

Candidatus Duncaniella monocentia (NL. fem. n. *monocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duncaniella sp001701225*. The type genome for the species is the GenBank assembly GCA_900552025.1. The GC content of the type genome is 57.68 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Duncaniella obsuricula sp. nov.

Candidatus Duncaniella obsuricula (NL. fem. n. *obsuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duncaniella sp900762315*. The type genome for the species is the GenBank assembly RS_GCF_900762315.1. The GC content of the type genome is 51.23 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Duncaniella vinacugo sp. nov.

Candidatus Duncaniella vinacugo (NL. fem. n. *vinacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duncaniella sp900549445*. The type genome for the species is the GenBank assembly RS_GCF_900764265.1. The GC content of the type genome is 53.21

% and the genome length is 2.63 Mbp.

Description of *Candidatus* Duodenibacillus corocitio sp. nov.

Candidatus Duodenibacillus corocitio (NL. fem. n. *corocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp900544255*. The type genome for the species is the GenBank assembly GCA_900762965.1. The GC content of the type genome is 57.2 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Duodenibacillus decitisca sp. nov.

Candidatus Duodenibacillus decitisca (NL. fem. n. *decitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp003472385*. The type genome for the species is the GenBank assembly RS_GCF_003472385.1. The GC content of the type genome is 55.62 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Duodenibacillus exurrilega sp. nov.

Candidatus Duodenibacillus exurrilega (NL. fem. n. *exurrilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp900767875*. The type genome for the species is the GenBank assembly GCA_900767875.1. The GC content of the type genome is 62.06 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Duodenibacillus facunicella sp. nov.

Candidatus Duodenibacillus facunicella (NL. fem. n. *facunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp900552915*. The type genome for the species is the GenBank assembly GCA_900552915.1. The GC content of the type genome is 56.71 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Duodenibacillus gasomago sp. nov.

Candidatus Duodenibacillus gasomago (NL. fem. n. *gasomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp900542805*. The type genome for the species is the GenBank assembly GCA_900542805.1. The GC content of the type genome is 52.55 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Duodenibacillus legifitas sp. nov.

Candidatus Duodenibacillus legifitas (NL. fem. n. *legifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp900538905*. The type genome for the species is the GenBank assembly GCA_900765885.1. The GC content of the type genome is 54.54 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Duodenibacillus monopivita sp. nov.

Candidatus Duodenibacillus monopivita (NL. fem. n. *monopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp900552545*. The type genome for the species is the GenBank assembly GCA_900552545.1. The GC content of the type genome is 61.23 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Duodenibacillus navicago sp. nov.

Candidatus Duodenibacillus navicago (NL. fem. n. *navicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp900315045*. The type genome for the species is the GenBank assembly GCA_902784795.1. The GC content of the type genome is 60.39 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Duodenibacillus papilimonia sp. nov.

Candidatus Duodenibacillus papilimonia (NL. fem. n. *papilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp002404465*. The type genome for the species is the GenBank assembly GCA_002404465.1. The GC content of the type genome is 51.32 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Duodenibacillus scombitas sp. nov.

Candidatus Duodenibacillus scombitas (NL. fem. n. *scombitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp900762555*. The type genome for the species is the GenBank assembly GCA_900762555.1. The GC content of the type genome is 61.8 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Duodenibacillus stercicula sp. nov.

Candidatus Duodenibacillus stercicula (NL. fem. n. *stercicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp003488465*. The type genome for the species is the GenBank assembly GCA_003488465.1. The GC content of the type genome is 60.47 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Duodenibacillus vagabifica sp. nov.

Candidatus Duodenibacillus vagabifica (NL. fem. n. *vagabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Duodenibacillus sp900544335*. The type genome for the species is the GenBank assembly GCA_900768985.1. The GC content of the type genome is 52.81 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Duponana nucifitica sp. nov.

Candidatus Duponana nucifitica (NL. fem. n. *nucifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12480 sp003477045*. The type genome for the species is the GenBank assembly GCA_003477045.1. The GC content of the type genome is 39.44 %

and the genome length is 2.74 Mbp.

Description of *Candidatus* Duponana gen. nov.

Candidatus Duponana (NL. fem. n. *Duponana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12480*. The type species for the genus is *Candidatus* Duponana nucifitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4055*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecariaceae.

Description of *Candidatus* Duponaria recomilenta sp. nov.

Candidatus Duponaria recomilenta (NL. fem. n. *recomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-44-16 sp001798185*. The type genome for the species is the GenBank assembly GCA_001799065.1. The GC content of the type genome is 44.13 % and the genome length is 2.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Duponaria gen. nov.

Candidatus Duponaria (NL. fem. n. *Duponaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-44-16*. The type species for the genus is *Candidatus* Duponaria recomilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-44-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponariaceae.

Description of *Candidatus* Duponariaceae fam. nov.

Candidatus Duponariaceae (NL. fem. n. *Duponariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *2-02-FULL-44-16.* The type genus for the taxon is *Candidatus* Duponaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-44-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Duponariales.

Description of *Candidatus* Duponariales ord. nov.

Candidatus Duponariales (NL. fem. n. *Duponariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-44-16.* The type genus for the taxon is *Candidatus* Duponaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Domigosae.

Description of *Candidatus* Duponella adobrivita sp. nov.

Candidatus Duponella adobrivita (NL. fem. n. *adobrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU089 sp002069015*. The type genome for the species is the GenBank assembly GCA_002069015.1. The GC content of the type genome is 42.86 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Duponella gen. nov.

Candidatus Duponella (NL. fem. n. *Duponella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU089*. The type species for the genus is *Candidatus* Duponella adobrivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Duponella conigax sp. nov.

Candidatus Duponella conigax (NL. fem. n. *conigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU089 sp002440045*. The type genome for the species is the GenBank assembly GCA_900546015.1. The GC content of the type genome is 45.19 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Duponella effemousia sp. nov.

Candidatus Duponella effemousia (NL. fem. n. *effemousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU089 sp012511005*. The type genome for the species is the GenBank assembly GCA_012511005.1. The GC content of the type genome is 39.94 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Duponella mahelago sp. nov.

Candidatus Duponella mahelago (NL. fem. n. *mahelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU089 sp001513045*. The type genome for the species is the GenBank assembly GCA_001513045.1. The GC content of the type genome is 48.63 % and the genome length is 2.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Duponia masociforma sp. nov.

Candidatus Duponia masociforma (NL. fem. n. *masociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG38 sp003242505*. The type genome for the species is the GenBank assembly GCA_003242505.1. The GC content of the type genome is 70.97 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Duponia gen. nov.

Candidatus Duponia (NL. fem. n. *Duponia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *ZC4RG38*. The type species for the genus is *Candidatus* Duponia masociforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ZC4RG38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponiaceae.

Description of *Candidatus* Duponiaceae fam. nov.

Candidatus Duponiaceae (NL. fem. n. *Duponiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ZC4RG38.* The type genus for the taxon is *Candidatus* Duponia .

According to GTDB R06-RS202, this family belongs to the order *Symbiobacteriales*.

Description of *Candidatus* Duponida infesilenta sp. nov.

Candidatus Duponida infesilenta (NL. fem. n. *infesilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-95 sp002085375*. The type genome for the species is the GenBank assembly GCA_002085375.1. The GC content of the type genome is 40.9 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Duponida gen. nov.

Candidatus Duponida (NL. fem. n. *Duponida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-95*. The type species for the genus is *Candidatus* Duponida infesilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-95*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponidaceae.

Description of *Candidatus* Duponidaceae fam. nov.

Candidatus Duponidaceae (NL. fem. n. *Duponidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *4484-95*. The type genus for the taxon is *Candidatus* Duponida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10806*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rosarariales.

Description of *Candidatus* Duponula resupitica sp. nov.

Candidatus Duponula resupitica (NL. fem. n. *resupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN25 sp002898615*. The type genome for the species is the GenBank assembly GCA_011054135.1. The GC content of the type genome is 68.96 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Duponula gen. nov.

Candidatus Duponula (NL. fem. n. *Duponula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN25*. The type species for the genus is *Candidatus* Duponula resupitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRbin24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadellaceae.

Description of *Candidatus* Dupunana inpasilenta sp. nov.

Candidatus Dupunana inpasilenta (NL. fem. n. *inpasilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2699445 sp002699445*. The type genome for the species is the GenBank assembly GCA_002699445.1. The GC content of the type genome is 56.88 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Dupunana gen. nov.

Candidatus Dupunana (NL. fem. n. *Dupunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *GCA-2699445*. The type species for the genus is *Candidatus* Dupunana inpasilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2699445*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dupunanaceae.

Description of *Candidatus* Dupunanaceae fam. nov.

Candidatus Dupunanaceae (NL. fem. n. *Dupunanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2699445.* The type genus for the taxon is *Candidatus* Dupunana .

According to GTDB R06-RS202, this family belongs to the order *Nanopelagicales*.

Description of *Candidatus* Dupunaria ratifessa sp. nov.

Candidatus Dupunaria ratifessa (NL. fem. n. *ratifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *59-46-T64 sp003205515*. The type genome for the species is the GenBank assembly RS_GCF_003205515.1. The GC content of the type genome is 58.69 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Dupunaria gen. nov.

Candidatus Dupunaria (NL. fem. n. *Dupunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *59-46-T64*. The type species for the genus is *Candidatus* Dupunaria ratifessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Dupunella tiguritudo sp. nov.

Candidatus Dupunella tiguritudo (NL. fem. n. *tiguritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4821 sp002402315*. The type genome for the species is the

GenBank assembly GCA_002402315.1. The GC content of the type genome is 37.13 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Dupunella gen. nov.

Candidatus Dupunella (NL. fem. n. *Dupunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4821*. The type species for the genus is *Candidatus* Dupunella tiguritudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4821*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dupunellaceae.

Description of *Candidatus* Dupunellaceae fam. nov.

Candidatus Dupunellaceae (NL. fem. n. *Dupunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4821.* The type genus for the taxon is *Candidatus* Dupunella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4821*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dupunellales.

Description of *Candidatus* Dupunellales ord. nov.

Candidatus Dupunellales (NL. fem. n. *Dupunellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4821.* The type genus for the taxon is *Candidatus* Dupunella .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Dupunida milipitas sp. nov.

Candidatus Dupunida milipitas (NL. fem. n. *milipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADFP01 sp013152825*. The type genome for the species is the GenBank assembly GCA_013152825.1. The GC content of the type genome is 44.3 %

and the genome length is 1.54 Mbp.

Description of *Candidatus* Dupunida gen. nov.

Candidatus Dupunida (NL. fem. n. *Dupunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFP01*. The type species for the genus is *Candidatus* Dupunida milipitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADFP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dupunidaceae.

Description of *Candidatus* Dupunidaceae fam. nov.

Candidatus Dupunidaceae (NL. fem. n. *Dupunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADFP01.* The type genus for the taxon is *Candidatus* Dupunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIJMQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deforanales.

Description of *Candidatus* Dupunosa siminedo sp. nov.

Candidatus Dupunosa siminedo (NL. fem. n. *siminedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITUY01 sp903895695*. The type genome for the species is the GenBank assembly GCA_903895695.1. The GC content of the type genome is 63.57 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Dupunosa gen. nov.

Candidatus Dupunosa (NL. fem. n. *Dupunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITUY01*. The type species for the genus is *Candidatus* Dupunosa siminedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITUY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dupunosaceae.

Description of *Candidatus* Dupunosaceae fam. nov.

Candidatus Dupunosaceae (NL. fem. n. *Dupunosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAITUY01.* The type genus for the taxon is *Candidatus* Dupunosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIKKV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defacanales.

Description of *Candidatus* Dupunula buxifimonas sp. nov.

Candidatus Dupunula buxifimonas (NL. fem. n. *buxifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPT01 sp903856525*. The type genome for the species is the GenBank assembly GCA_903929745.1. The GC content of the type genome is 69.03 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Dupunula gen. nov.

Candidatus Dupunula (NL. fem. n. *Dupunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QWPT01*. The type species for the genus is *Candidatus* Dupunula buxifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Dupunula dimidatio sp. nov.

Candidatus Dupunula dimidatio (NL. fem. n. *dimidatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPT01 sp003671075*. The type genome for the species is the GenBank assembly GCA_903865135.1. The GC content of the type genome is 63.05 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Dupunula dupunicula sp. nov.

Candidatus Dupunula dupunicula (NL. fem. n. *dupunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPT01 sp003671025*. The type genome for the species is the GenBank assembly GCA_003671025.1. The GC content of the type genome is 60.29 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Dupunula inlacitica sp. nov.

Candidatus Dupunula inlacitica (NL. fem. n. *inlacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPT01 sp903918555*. The type genome for the species is the GenBank assembly GCA_903918555.1. The GC content of the type genome is 68.79 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Dupunula nugigago sp. nov.

Candidatus Dupunula nugigago (NL. fem. n. *nugigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPT01 sp903891095*. The type genome for the species is the GenBank assembly GCA_903930825.1. The GC content of the type genome is 67.98 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Dupunula perexitudo sp. nov.

Candidatus Dupunula perexitudo (NL. fem. n. *perexitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPT01 sp003671065*. The type genome for the species is the GenBank assembly GCA_003671065.1. The GC content of the type genome is 58.5 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Dupunula procribula sp. nov.

Candidatus Dupunula procribula (NL. fem. n. *procribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWPT01 sp903911205*. The type genome for the species is the GenBank assembly GCA_903911205.1. The GC content of the type genome is 61.78 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Duricana inpeliforma sp. nov.

Candidatus Duricana inpeliforma (NL. fem. n. *inpeliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1206 sp902772845*. The type genome for the species is the GenBank assembly GCA_902772845.1. The GC content of the type genome is 52.68 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Duricana gen. nov.

Candidatus Duricana (NL. fem. n. *Duricana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1206*. The type species for the genus is *Candidatus* Duricana inpeliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Duricana monogedo sp. nov.

Candidatus Duricana monogedo (NL. fem. n. *monogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1206 sp000433115*. The type genome for the species is the GenBank assembly GCA_000433115.1. The GC content of the type genome is 49.61 % and the genome length is 1.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Duricana nocenedo sp. nov.

Candidatus Duricana nocenedo (NL. fem. n. *nocenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1206 sp002310055*. The type genome for the species is the GenBank assembly GCA_002310055.1. The GC content of the type genome is 53.93 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Duricana volubifica sp. nov.

Candidatus Duricana volubifica (NL. fem. n. *volubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1206 sp002305335*. The type genome for the species is the GenBank assembly GCA_002305335.1. The GC content of the type genome is 47.25 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Duricella acratitica sp. nov.

Candidatus Duricella acratitica (NL. fem. n. *acratitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2701885 sp002701885*. The type genome for the species is the GenBank assembly GCA_002701885.1. The GC content of the type genome is 31.95 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Duricella gen. nov.

Candidatus Duricella (NL. fem. n. *Duricella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2701885*. The type species for the genus is *Candidatus* Duricella acratitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2701885*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricellaceae.

Description of *Candidatus* Duricellaceae fam. nov.

Candidatus Duricellaceae (NL. fem. n. *Duricellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2701885.* The type genus for the taxon is *Candidatus* Duricella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2701885*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Duricellales.

Description of *Candidatus* Duricellales ord. nov.

Candidatus Duricellales (NL. fem. n. *Duricellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2701885.* The type genus for the taxon is *Candidatus* Duricella .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Duricella adsibicella sp. nov.

Candidatus Duricella adsibicella (NL. fem. n. *adsibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2701885 sp002938125*. The type genome for the species is the GenBank assembly GCA_002938125.1. The GC content of the type genome is 31.16 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Duricella obtesibra sp. nov.

Candidatus Duricella obtesibra (NL. fem. n. *obtesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2701885 sp002722055*. The type genome for the species is the GenBank assembly GCA_002722055.1. The GC content of the type genome is 31.03 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Duricia cituvitudo sp. nov.

Candidatus Duricia cituvitudo (NL. fem. n. *cituvitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002713455 sp002701875*. The type genome for the species is the GenBank assembly GCA_002703325.1. The GC content of the type genome is 34.14 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Duricia gen. nov.

Candidatus Duricia (NL. fem. n. *Duricia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002713455*. The type species for the genus is *Candidatus* Duricia cituvitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufidaceae.

Description of *Candidatus* Duricia dilibimonia sp. nov.

Candidatus Duricia dilibimonia (NL. fem. n. *dilibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002713455 sp902581045*. The type genome for the species is the GenBank assembly GCA_902581045.1. The GC content of the type genome is 32.88 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Duricia peropiforma sp. nov.

Candidatus Duricia peropiforma (NL. fem. n. *peropiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002713455 sp002713455*. The type genome for the species is the GenBank assembly GCA_002713455.1. The GC content of the type genome is 32.55 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Duricida canacitas sp. nov.

Candidatus Duricida canacitas (NL. fem. n. *canacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL11 sp002730985*. The type genome for the species is the GenBank assembly GCA_002730985.1. The GC content of the type genome is 32.93 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Duricida gen. nov.

Candidatus Duricida (NL. fem. n. *Duricida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BACL11*. The type species for the genus is *Candidatus* Duricida canacitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Duricidaceae fam. nov.

Candidatus Duricidaceae (NL. fem. n. *Duricidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BACL11.* The type genus for the taxon is *Candidatus* Duricida .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Duricida locupugo sp. nov.

Candidatus Duricida locupugo (NL. fem. n. *locupugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BACL11 sp002693745*. The type genome for the species is the GenBank assembly GCA_002700335.1. The GC content of the type genome is 30.39 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Duricula adhosibra sp. nov.

Candidatus Duricula adhosibra (NL. fem. n. *adhosibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10677 sp900760475*. The type genome for the species is the

GenBank assembly RS_GCF_900760475.1. The GC content of the type genome is 48.99 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Duricula gen. nov.

Candidatus Duricula (NL. fem. n. *Duricula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10677*. The type species for the genus is *Candidatus* Duricula adhosibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Duricula ceromibula sp. nov.

Candidatus Duricula ceromibula (NL. fem. n. *ceromibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10677 sp003533505*. The type genome for the species is the GenBank assembly GCA_003533505.1. The GC content of the type genome is 54.13 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Duricula decuniforma sp. nov.

Candidatus Duricula decuniforma (NL. fem. n. *decuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10677 sp900553005*. The type genome for the species is the GenBank assembly RS_GCF_900762735.1. The GC content of the type genome is 47.79 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Duricula lavabousia sp. nov.

Candidatus Duricula lavabousia (NL. fem. n. *lavabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10677 sp900543755*. The type genome for the species is the GenBank assembly GCA_900543755.1. The GC content of the type genome is 46.91 %

and the genome length is 1.88 Mbp.

Description of *Candidatus* Duricula nucifibra sp. nov.

Candidatus Duricula nucifibra (NL. fem. n. *nucifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10677 sp900762945*. The type genome for the species is the GenBank assembly RS_GCF_900762945.1. The GC content of the type genome is 53.3 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Duricula obvalitudo sp. nov.

Candidatus Duricula obvalitudo (NL. fem. n. *obvalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10677 sp900767465*. The type genome for the species is the GenBank assembly RS_GCF_900767465.1. The GC content of the type genome is 51.51 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Dwaynesavagella adsulago sp. nov.

Candidatus Dwaynesavagella adsulago (NL. fem. n. *adsulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dwaynesavagella sp001655775*. The type genome for the species is the GenBank assembly RS_GCF_001655775.1. The GC content of the type genome is 26.14 % and the genome length is 1.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "commercial turkey ileum".

Description of *Candidatus* Dwaynesavagella deculilenta sp. nov.

Candidatus Dwaynesavagella deculilenta (NL. fem. n. *deculilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dwaynesavagella sp000270205*. The type genome for the species is the GenBank assembly GCA_000252665.2. The GC content of the type genome is 28.04 % and the genome length is 1.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces".

Description of *Candidatus* Dwaynesavagella supelitura sp. nov.

Candidatus Dwaynesavagella supelitura (NL. fem. n. *supelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dwaynesavagella sp000283555*. The type genome for the species is the GenBank assembly RS_GCF_000283555.1. The GC content of the type genome is 27.98 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Dyadobacter benifitas sp. nov.

Candidatus Dyadobacter benifitas (NL. fem. n. *benifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyadobacter sp001898145*. The type genome for the species is the GenBank assembly GCA_002482895.1. The GC content of the type genome is 50.58 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Dyadobacter diludedo sp. nov.

Candidatus Dyadobacter diludedo (NL. fem. n. *diludedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyadobacter sp009801115*. The type genome for the species is the GenBank assembly RS_GCF_009801115.1. The GC content of the type genome is 39.73 % and the genome length is 7.39 Mbp.

Description of *Candidatus* Dyadobacter fecunicula sp. nov.

Candidatus Dyadobacter fecunicula (NL. fem. n. *fecunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyadobacter sp900109045*. The type genome for the species is the GenBank assembly RS_GCF_900109045.1. The GC content of the type genome is 50.23 % and the genome length is 8.48 Mbp.

Description of *Candidatus* Dyadobacter labecago sp. nov.

Candidatus Dyadobacter labecago (NL. fem. n. *labecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyadobacter sp001424405*. The type genome for the species is the GenBank assembly RS_GCF_001424405.1. The GC content of the type genome is 47.0 % and the genome length is 6.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Dyadobacter mutabatica sp. nov.

Candidatus Dyadobacter mutabatica (NL. fem. n. *mutabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyadobacter sp008369915*. The type genome for the species is the GenBank assembly RS_GCF_008369915.1. The GC content of the type genome is 46.5 % and the genome length is 6.93 Mbp.

Description of *Candidatus* Dyella admoricella sp. nov.

Candidatus Dyella admoricella (NL. fem. n. *admoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp003332825*. The type genome for the species is the GenBank assembly RS_GCF_003332825.1. The GC content of the type genome is 65.96 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Dyella alsulentia sp. nov.

Candidatus Dyella alsulentia (NL. fem. n. *alsulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp003977665*. The type genome for the species is the GenBank assembly RS_GCF_003977665.1. The GC content of the type genome is 61.7 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Dyella appacigena sp. nov.

Candidatus Dyella appacigena (NL. fem. n. *appacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp004114615*. The type genome for the species is the GenBank assembly RS_GCF_004114615.1. The GC content of the type genome is 59.08 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Dyella apsimetta sp. nov.

Candidatus Dyella apsimetta (NL. fem. n. *apsimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp003363155*. The type genome for the species is the GenBank assembly RS_GCF_003363155.1. The GC content of the type genome is 60.43 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Dyella arcipilega sp. nov.

Candidatus Dyella arcipilega (NL. fem. n. *arcipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp003363265*. The type genome for the species is the GenBank assembly RS_GCF_003363265.1. The GC content of the type genome is 61.28 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Dyella bugilicella sp. nov.

Candidatus Dyella bugilicella (NL. fem. n. *bugilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp003350925*. The type genome for the species is the GenBank assembly RS_GCF_003350925.1. The GC content of the type genome is 60.47 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Dyella calipitica sp. nov.

Candidatus Dyella calipitica (NL. fem. n. *calipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp900114495*. The type genome for the species is the GenBank assembly RS_GCF_900114495.1. The GC content of the type genome is 63.03 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Dyella cerevedo sp. nov.

Candidatus Dyella cerevedo (NL. fem. n. *cerevedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp003121485*. The type genome for the species is the GenBank assembly RS_GCF_003121485.1. The GC content of the type genome is 63.28 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Dyella cnestibula sp. nov.

Candidatus Dyella cnestibula (NL. fem. n. *cnestibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp003977615*. The type genome for the species is the GenBank assembly RS_GCF_003977615.1. The GC content of the type genome is 59.09 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Dyella effosousia sp. nov.

Candidatus Dyella effosousia (NL. fem. n. *effosousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp903970555*. The type genome for the species is the GenBank assembly GCA_903970555.1. The GC content of the type genome is 59.63 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Dyella fatilitura sp. nov.

Candidatus Dyella fatilitura (NL. fem. n. *fatilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp003688835*. The type genome for the species is the GenBank assembly RS_GCF_003688835.1. The GC content of the type genome is 63.96 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Dyella funebatio sp. nov.

Candidatus Dyella funebatio (NL. fem. n. *funebatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp004296575*. The type genome for the species is the GenBank assembly RS_GCF_004296575.1. The GC content of the type genome is 64.56 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Dyella immodimonas sp. nov.

Candidatus Dyella immodimonas (NL. fem. n. *immodimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp014297575*. The type genome for the species is the GenBank assembly RS_GCF_014297575.1. The GC content of the type genome is 64.67 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Dyella maligitura sp. nov.

Candidatus Dyella maligitura (NL. fem. n. *maligitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp012275375*. The type genome for the species is the GenBank assembly RS_GCF_012275375.1. The GC content of the type genome is 67.44 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Dyella recomitudo sp. nov.

Candidatus Dyella recomitudo (NL. fem. n. *recomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella sp002878475*. The type genome for the species is the GenBank assembly RS_GCF_002878475.1. The GC content of the type genome is 62.49 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Dyella visifibra sp. nov.

Candidatus Dyella visifibra (NL. fem. n. *visifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Dyella sp003351225*. The type genome for the species is the GenBank assembly RS_GCF_003351225.1. The GC content of the type genome is 65.36 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Dyella bicalitio sp. nov.

Candidatus Dyella bicalitio (NL. fem. n. *bicalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dyella_A sp002279065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002279065.1. The GC content of the type genome is 68.27 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Dysgonomonas acrocitica sp. nov.

Candidatus Dysgonomonas acrocitica (NL. fem. n. *acrocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp900079725*. The type genome for the species is the GenBank assembly GCA_900079725.1. The GC content of the type genome is 39.38 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Dysgonomonas adpugessa sp. nov.

Candidatus Dysgonomonas adpugessa (NL. fem. n. *adpugessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp900343125*. The type genome for the species is the GenBank assembly RS_GCF_900343125.1. The GC content of the type genome is 36.55 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Dysgonomonas conifastra sp. nov.

Candidatus Dysgonomonas conifastra (NL. fem. n. *conifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp900079735*. The type genome for the species is the GenBank assembly GCA_002482615.1. The GC content of the type genome is 37.55 %

and the genome length is 4.44 Mbp.

Description of *Candidatus* Dysgonomonas feditedo sp. nov.

Candidatus Dysgonomonas feditedo (NL. fem. n. *feditedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp001261735*. The type genome for the species is the GenBank assembly RS_GCF_001261735.1. The GC content of the type genome is 37.12 % and the genome length is 4.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Reticulitermes flavipes hindgut".

Description of *Candidatus* Dysgonomonas filificella sp. nov.

Candidatus Dysgonomonas filificella (NL. fem. n. *filificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp002409595*. The type genome for the species is the GenBank assembly GCA_002409595.1. The GC content of the type genome is 36.72 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Dysgonomonas homicastra sp. nov.

Candidatus Dysgonomonas homicastra (NL. fem. n. *homicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp002482385*. The type genome for the species is the GenBank assembly GCA_002482385.1. The GC content of the type genome is 40.16 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Dysgonomonas inbecibula sp. nov.

Candidatus Dysgonomonas inbecibula (NL. fem. n. *inbecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp900556485*. The type genome for the species is the GenBank assembly GCA_900556485.1. The GC content of the type genome is 36.21 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Dysgonomonas inlocitica sp. nov.

Candidatus Dysgonomonas inlocitica (NL. fem. n. *inlocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp000711235*. The type genome for the species is the GenBank assembly RS_GCF_000711235.1. The GC content of the type genome is 39.38 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Dysgonomonas locupimonas sp. nov.

Candidatus Dysgonomonas locupimonas (NL. fem. n. *locupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp010501095*. The type genome for the species is the GenBank assembly RS_GCF_010501095.1. The GC content of the type genome is 38.91 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Dysgonomonas malagitrix sp. nov.

Candidatus Dysgonomonas malagitrix (NL. fem. n. *malagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp011039205*. The type genome for the species is the GenBank assembly RS_GCF_011039205.1. The GC content of the type genome is 37.09 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Dysgonomonas malogimonia sp. nov.

Candidatus Dysgonomonas malogimonia (NL. fem. n. *malogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp010501065*. The type genome for the species is the GenBank assembly RS_GCF_010501065.1. The GC content of the type genome is 37.37 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Dysgonomonas nitelitrix sp. nov.

Candidatus Dysgonomonas nitelitrix (NL. fem. n. *nitelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp011299555*. The type genome for the species is the GenBank assembly RS_GCF_011299335.1. The GC content of the type genome is 36.52 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Dysgonomonas nocumitia sp. nov.

Candidatus Dysgonomonas nocumitia (NL. fem. n. *nocumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp003523545*. The type genome for the species is the GenBank assembly GCA_003523545.1. The GC content of the type genome is 39.2 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Dysgonomonas relecitudo sp. nov.

Candidatus Dysgonomonas relecitudo (NL. fem. n. *relecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp010501075*. The type genome for the species is the GenBank assembly RS_GCF_010501075.1. The GC content of the type genome is 42.54 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Dysgonomonas rutabicella sp. nov.

Candidatus Dysgonomonas rutabicella (NL. fem. n. *rutabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp010501055*. The type genome for the species is the GenBank assembly RS_GCF_010501055.1. The GC content of the type genome is 40.76 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Dysgonomonas tenebiforma sp. nov.

Candidatus Dysgonomonas tenebiforma (NL. fem. n. *tenebiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp010501105*. The type genome for the species is the GenBank assembly RS_GCF_010501105.1. The GC content of the type genome is 41.69

% and the genome length is 3.75 Mbp.

Description of *Candidatus* Dysgonomonas vanidax sp. nov.

Candidatus Dysgonomonas vanidax (NL. fem. n. *vanidax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysgonomonas sp001261715*. The type genome for the species is the GenBank assembly RS_GCF_001261715.1. The GC content of the type genome is 35.92 % and the genome length is 4.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Reticulitermes flavipes hindgut".

Description of *Candidatus* Dysosmobacter aggesatio sp. nov.

Candidatus Dysosmobacter aggesatio (NL. fem. n. *aggesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900544955*. The type genome for the species is the GenBank assembly GCA_900544955.1. The GC content of the type genome is 64.86 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Dysosmobacter aggubentia sp. nov.

Candidatus Dysosmobacter aggubentia (NL. fem. n. *aggubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp004553545*. The type genome for the species is the GenBank assembly GCA_004553545.1. The GC content of the type genome is 64.32 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Dysosmobacter allubastra sp. nov.

Candidatus Dysosmobacter allubastra (NL. fem. n. *allubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900556925*. The type genome for the species is the GenBank assembly GCA_900556925.1. The GC content of the type genome is 63.65 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Dysosmobacter antecimonas sp. nov.

Candidatus Dysosmobacter antecimonas (NL. fem. n. *antecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900548505*. The type genome for the species is the GenBank assembly GCA_900548505.1. The GC content of the type genome is 60.63 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Dysosmobacter cilibitura sp. nov.

Candidatus Dysosmobacter cilibitura (NL. fem. n. *cilibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp014297375*. The type genome for the species is the GenBank assembly GCA_900763345.1. The GC content of the type genome is 55.94 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Dysosmobacter curabiforma sp. nov.

Candidatus Dysosmobacter curabiforma (NL. fem. n. *curabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900770295*. The type genome for the species is the GenBank assembly GCA_900770295.1. The GC content of the type genome is 59.81 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Dysosmobacter ducilastra sp. nov.

Candidatus Dysosmobacter ducilastra (NL. fem. n. *ducilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900752075*. The type genome for the species is the GenBank assembly GCA_900752075.1. The GC content of the type genome is 58.49 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Dysosmobacter dupunitica sp. nov.

Candidatus Dysosmobacter dupunitica (NL. fem. n. *dupunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900544105*. The type genome for the species is the GenBank assembly GCA_900544105.1. The GC content of the type genome is 57.37 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Dysosmobacter fameligena sp. nov.

Candidatus Dysosmobacter fameligena (NL. fem. n. *fameligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900544615*. The type genome for the species is the GenBank assembly GCA_900544615.1. The GC content of the type genome is 57.49 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Dysosmobacter hemiditura sp. nov.

Candidatus Dysosmobacter hemiditura (NL. fem. n. *hemiditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900554425*. The type genome for the species is the GenBank assembly GCA_900554425.1. The GC content of the type genome is 61.29 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Dysosmobacter hibisilega sp. nov.

Candidatus Dysosmobacter hibisilega (NL. fem. n. *hibisilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp009773995*. The type genome for the species is the GenBank assembly GCA_009773995.1. The GC content of the type genome is 62.37 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Dysosmobacter illepousia sp. nov.

Candidatus Dysosmobacter illepousia (NL. fem. n. *illepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900115635*. The type genome for the species is the GenBank assembly RS_GCF_900115635.1. The GC content of the type genome is 54.56

% and the genome length is 2.79 Mbp.

Description of *Candidatus* Dysosmobacter inmitatica sp. nov.

Candidatus Dysosmobacter inmitatica (NL. fem. n. *inmitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900550685*. The type genome for the species is the GenBank assembly GCA_900550685.1. The GC content of the type genome is 59.67 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Dysosmobacter megalibula sp. nov.

Candidatus Dysosmobacter megalibula (NL. fem. n. *megalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp001916835*. The type genome for the species is the GenBank assembly GCA_001916835.1. The GC content of the type genome is 58.25 % and the genome length is 1.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Dysosmobacter munimitica sp. nov.

Candidatus Dysosmobacter munimitica (NL. fem. n. *munimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900551885*. The type genome for the species is the GenBank assembly GCA_900551885.1. The GC content of the type genome is 60.67 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Dysosmobacter obsuretta sp. nov.

Candidatus Dysosmobacter obsuretta (NL. fem. n. *obsuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp009774015*. The type genome for the species is the GenBank assembly GCA_009774015.1. The GC content of the type genome is 60.86 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Dysosmobacter pedifibra sp. nov.

Candidatus Dysosmobacter pedifibra (NL. fem. n. *pedifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900546705*. The type genome for the species is the GenBank assembly GCA_900546705.1. The GC content of the type genome is 61.41 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Dysosmobacter rorifivita sp. nov.

Candidatus Dysosmobacter rorifivita (NL. fem. n. *rorifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp000403435*. The type genome for the species is the GenBank assembly RS_GCF_000403435.2. The GC content of the type genome is 58.36 % and the genome length is 4.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Dysosmobacter solipessa sp. nov.

Candidatus Dysosmobacter solipessa (NL. fem. n. *solipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900542115*. The type genome for the species is the GenBank assembly GCA_900542115.1. The GC content of the type genome is 58.01 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Dysosmobacter sotulatica sp. nov.

Candidatus Dysosmobacter sotulatica (NL. fem. n. *sotulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp000436875*. The type genome for the species is the GenBank assembly GCA_000436875.1. The GC content of the type genome is 59.35 % and the genome length is 2.28 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Dysosmobacter visocilega sp. nov.

Candidatus Dysosmobacter visocilega (NL. fem. n. *visocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp900763685*. The type genome for the species is the GenBank assembly GCA_900763685.1. The GC content of the type genome is 65.24 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Dysosmobacter vivifivita sp. nov.

Candidatus Dysosmobacter vivifivita (NL. fem. n. *vivifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Dysosmobacter sp004558115*. The type genome for the species is the GenBank assembly GCA_004558115.1. The GC content of the type genome is 61.71 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Ecastana demigitura sp. nov.

Candidatus Ecastana demigitura (NL. fem. n. *demigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6159 sp002422345*. The type genome for the species is the GenBank assembly GCA_002422345.1. The GC content of the type genome is 66.49 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Ecastana gen. nov.

Candidatus Ecastana (NL. fem. n. *Ecastana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6159*. The type species for the genus is *Candidatus* Ecastana demigitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecastaria maxumax sp. nov.

Candidatus Ecastaria maxumax (NL. fem. n. *maxumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *N074bin45 sp004357415*. The type genome for the species is the GenBank assembly GCA_004357415.1. The GC content of the type genome is 65.04 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Ecastaria gen. nov.

Candidatus Ecastaria (NL. fem. n. *Ecastaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *N074bin45*. The type species for the genus is *Candidatus* Ecastaria maxumax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Ecastella annecatio sp. nov.

Candidatus Ecastella annecatio (NL. fem. n. *annecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-53 sp003232915*. The type genome for the species is the GenBank assembly GCA_003232915.1. The GC content of the type genome is 36.7 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Ecastella gen. nov.

Candidatus Ecastella (NL. fem. n. *Ecastella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-53*. The type species for the genus is *Candidatus* Ecastella annecatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Ecastia nutabicula sp. nov.

Candidatus Ecastia nutabicula (NL. fem. n. *nutabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1851 sp900555605*. The type genome for the species is the GenBank assembly GCA_900555605.1. The GC content of the type genome is 48.26 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Ecastia gen. nov.

Candidatus Ecastia (NL. fem. n. *Ecastia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1851*. The type species for the genus is *Candidatus* Ecastia nutabicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1255*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Butubariaceae.

Description of *Candidatus* Ecastosa gen. nov.

Candidatus Ecastosa (NL. fem. n. *Ecastosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFXW01*. The type species for the genus is *Candidatus* Ecastosa lacus_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecastula unetvedo sp. nov.

Candidatus Ecastula unetvedo (NL. fem. n. *unetvedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINFA01 sp903847955*. The type genome for the species is the GenBank assembly GCA_903847955.1. The GC content of the type genome is 67.03 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Ecastula gen. nov.

Candidatus Ecastula (NL. fem. n. *Ecastula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINFA01*. The type species for the genus is *Candidatus* Ecastula

unetvedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Eccilana masocifica sp. nov.

Candidatus Eccilana masocifica (NL. fem. n. *masocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCVT01 sp902806215*. The type genome for the species is the GenBank assembly GCA_902806215.1. The GC content of the type genome is 72.24 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Eccilana gen. nov.

Candidatus Eccilana (NL. fem. n. *Eccilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCVT01*. The type species for the genus is *Candidatus* Eccilana masocifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eccilaria nubecastra sp. nov.

Candidatus Eccilaria nubecastra (NL. fem. n. *nubecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WX04 sp007995215*. The type genome for the species is the GenBank assembly RS_GCF_007995215.1. The GC content of the type genome is 58.78 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Eccilaria gen. nov.

Candidatus Eccilaria (NL. fem. n. *Eccilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WX04*. The type species for the genus is *Candidatus* Eccilaria nubecastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eccilella citivitoga sp. nov.

Candidatus Eccilella citivitoga (NL. fem. n. *citivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJC01 sp013003395*. The type genome for the species is the GenBank assembly GCA_013003395.1. The GC content of the type genome is 62.24 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Eccilella gen. nov.

Candidatus Eccilella (NL. fem. n. *Eccilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJC01*. The type species for the genus is *Candidatus* Eccilella citivitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicellaceae.

Description of *Candidatus* Eccilida ignicedo sp. nov.

Candidatus Eccilida ignicedo (NL. fem. n. *ignicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIXC01 sp014360685*. The type genome for the species is the GenBank assembly GCA_014360685.1. The GC content of the type genome is 63.88 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Eccilida gen. nov.

Candidatus Eccilida (NL. fem. n. *Eccilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIXC01*. The type species for the genus is *Candidatus* Eccilida ignicedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

RBG-13-55-18. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Salubiaceae.

Description of *Candidatus* Eccilida lanifivita sp. nov.

Candidatus Eccilida lanifivita (NL. fem. n. *lanifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIXC01 sp011337865*. The type genome for the species is the GenBank assembly GCA_011337865.1. The GC content of the type genome is 64.4 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Eccilida obfirisca sp. nov.

Candidatus Eccilida obfirisca (NL. fem. n. *obfirisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIXC01 sp014360655*. The type genome for the species is the GenBank assembly GCA_014360655.1. The GC content of the type genome is 64.64 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Eccilosa recogatica sp. nov.

Candidatus Eccilosa recogatica (NL. fem. n. *recogatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDK01 sp013817025*. The type genome for the species is the GenBank assembly GCA_013817025.1. The GC content of the type genome is 63.24 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Eccilosa gen. nov.

Candidatus Eccilosa (NL. fem. n. *Eccilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDDK01*. The type species for the genus is *Candidatus* Eccilosa recogatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eccilula tetenitura sp. nov.

Candidatus Eccilula tetenitura (NL. fem. n. *tetenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIQ01 sp012800795*. The type genome for the species is the GenBank assembly GCA_012800795.1. The GC content of the type genome is 42.61 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Eccilula gen. nov.

Candidatus Eccilula (NL. fem. n. *Eccilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZIQ01*. The type species for the genus is *Candidatus* Eccilula tetenitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eccilula turibentia sp. nov.

Candidatus Eccilula turibentia (NL. fem. n. *turibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIQ01 sp012800215*. The type genome for the species is the GenBank assembly GCA_012800215.1. The GC content of the type genome is 41.88 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Eccisana eviscessa sp. nov.

Candidatus Eccisana eviscessa (NL. fem. n. *eviscessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPRC01 sp009668975*. The type genome for the species is the GenBank assembly GCA_009668975.1. The GC content of the type genome is 53.02 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Eccisana gen. nov.

Candidatus Eccisana (NL. fem. n. *Eccisana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPRC01*. The type species for the genus is *Candidatus* Eccisana eviscessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eccisana lucubastra sp. nov.

Candidatus Eccisana lucubastra (NL. fem. n. *lucubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPRC01 sp003857395*. The type genome for the species is the GenBank assembly GCA_003857395.1. The GC content of the type genome is 51.31 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Eccisia bonifitica sp. nov.

Candidatus Eccisia bonifitica (NL. fem. n. *bonifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5157 sp002415335*. The type genome for the species is the GenBank assembly GCA_002415335.1. The GC content of the type genome is 59.15 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Eccisia gen. nov.

Candidatus Eccisia (NL. fem. n. *Eccisia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5157*. The type species for the genus is *Candidatus* Eccisia bonifitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eccisida vitabiforma sp. nov.

Candidatus Eccisida vitabiforma (NL. fem. n. *vitabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RBG-16-52-11 sp001779095*. The type genome for the species is the GenBank assembly GCA_001779095.1. The GC content of the type genome is 51.58 % and the genome length is 1.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Eccisida gen. nov.

Candidatus Eccisida (NL. fem. n. *Eccisida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-52-11*. The type species for the genus is *Candidatus* Eccisida vitabiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA927*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigellaceae.

Description of *Candidatus* Eccisosa admulicella sp. nov.

Candidatus Eccisosa admulicella (NL. fem. n. *admulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HUN007 sp000712055*. The type genome for the species is the GenBank assembly RS_GCF_000712055.1. The GC content of the type genome is 42.01 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Eccisosa gen. nov.

Candidatus Eccisosa (NL. fem. n. *Eccisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HUN007*. The type species for the genus is *Candidatus* Eccisosa admulicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eccisosa advinisca sp. nov.

Candidatus Eccisosa advinisca (NL. fem. n. *advinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HUN007 sp002315235*. The type genome for the species is the GenBank assembly GCA_002315235.1. The GC content of the type genome is 42.04 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Eccisosa noninisca sp. nov.

Candidatus Eccisosa noninisca (NL. fem. n. *noninisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HUN007 sp902789705*. The type genome for the species is the GenBank assembly GCA_902789705.1. The GC content of the type genome is 43.25 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Eccisula artolisca sp. nov.

Candidatus Eccisula artolisca (NL. fem. n. *artolisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUGE01 sp903898645*. The type genome for the species is the GenBank assembly GCA_903898645.1. The GC content of the type genome is 46.09 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Eccisula gen. nov.

Candidatus Eccisula (NL. fem. n. *Eccisula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUGE01*. The type species for the genus is *Candidatus* Eccisula artolisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Ecfacaria tabitago sp. nov.

Candidatus Ecfacaria tabitago (NL. fem. n. *tabitago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *VMFU01 sp007376205*. The type genome for the species is the GenBank assembly GCA_007376205.1. The GC content of the type genome is 61.74 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Ecfacaria gen. nov.

Candidatus Ecfacaria (NL. fem. n. *Ecfacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMFU01*. The type species for the genus is *Candidatus* Ecfacaria tabitago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecfacia indivibra sp. nov.

Candidatus Ecfacia indivibra (NL. fem. n. *indivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAEY01 sp013388605*. The type genome for the species is the GenBank assembly GCA_013388605.1. The GC content of the type genome is 36.7 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Ecfacia gen. nov.

Candidatus Ecfacia (NL. fem. n. *Ecfacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAEY01*. The type species for the genus is *Candidatus* Ecfacia indivibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peridulaceae.

Description of *Candidatus* Ecfacosa agricibula sp. nov.

Candidatus Ecfacosa agricibula (NL. fem. n. *agricibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7640 sp012519765*. The type genome for the species is the

GenBank assembly GCA_012519765.1. The GC content of the type genome is 45.58 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Ecfacosa gen. nov.

Candidatus Ecfacosa (NL. fem. n. *Ecfacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7640*. The type species for the genus is *Candidatus* Ecfacosa agricibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecfacosa verecetta sp. nov.

Candidatus Ecfacosa verecetta (NL. fem. n. *verecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7640 sp002483765*. The type genome for the species is the GenBank assembly GCA_002483765.1. The GC content of the type genome is 41.99 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Ecfunana exadvifica sp. nov.

Candidatus Ecfunana exadvifica (NL. fem. n. *exadvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGJ01 sp013286075*. The type genome for the species is the GenBank assembly GCA_013286075.1. The GC content of the type genome is 38.6 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Ecfunana gen. nov.

Candidatus Ecfunana (NL. fem. n. *Ecfunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDGJ01*. The type species for the genus is *Candidatus* Ecfunana exadvifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecfunaria istinibra sp. nov.

Candidatus Ecfunaria istinibra (NL. fem. n. *istinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RH1A sp012221805*. The type genome for the species is the GenBank assembly RS_GCF_012221805.1. The GC content of the type genome is 47.92 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Ecfunaria gen. nov.

Candidatus Ecfunaria (NL. fem. n. *Ecfunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RH1A*. The type species for the genus is *Candidatus* Ecfunaria istinibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecfunella deteniforma sp. nov.

Candidatus Ecfunella deteniforma (NL. fem. n. *deteniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYA01 sp009693055*. The type genome for the species is the GenBank assembly GCA_009693055.1. The GC content of the type genome is 65.5 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Ecfunella gen. nov.

Candidatus Ecfunella (NL. fem. n. *Ecfunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYA01*. The type species for the genus is *Candidatus* Ecfunella deteniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deniculaceae.

Description of *Candidatus* Ecfunia decenitica sp. nov.

Candidatus Ecfunia decenitica (NL. fem. n. *decenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LJ137 sp003730295*. The type genome for the species is the GenBank assembly RS_GCF_003730295.1. The GC content of the type genome is 39.35 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Ecfunia gen. nov.

Candidatus Ecfunia (NL. fem. n. *Ecfunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LJ137*. The type species for the genus is *Candidatus* Ecfunia decenitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecfunida loraritura sp. nov.

Candidatus Ecfunida loraritura (NL. fem. n. *loraritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSGW-16 sp004769085*. The type genome for the species is the GenBank assembly GCA_004769085.1. The GC content of the type genome is 34.45 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Ecfunida gen. nov.

Candidatus Ecfunida (NL. fem. n. *Ecfunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSGW-16*. The type species for the genus is *Candidatus* Ecfunida loraritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-35-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colopariaceae.

Description of *Candidatus* Ecfunosa sanabedo sp. nov.

Candidatus Ecfunosa sanabedo (NL. fem. n. *sanabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZGC01 sp012511425*. The type genome for the species is the GenBank assembly GCA_012511425.1. The GC content of the type genome is 50.17 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Ecfunosa gen. nov.

Candidatus Ecfunosa (NL. fem. n. *Ecfunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZGC01*. The type species for the genus is *Candidatus* Ecfunosa sanabedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Ecfunosa saxifitas sp. nov.

Candidatus Ecfunosa saxifitas (NL. fem. n. *saxifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZGC01 sp012841635*. The type genome for the species is the GenBank assembly GCA_012841635.1. The GC content of the type genome is 51.34 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Ecfunosa tenilitia sp. nov.

Candidatus Ecfunosa tenilitia (NL. fem. n. *tenilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZGC01 sp012800735*. The type genome for the species is the GenBank assembly GCA_012800735.1. The GC content of the type genome is 48.26 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Ecfunula delecitoga sp. nov.

Candidatus Ecfunula delecitoga (NL. fem. n. *delecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGY01 sp011338165*. The type genome for the species is the GenBank assembly GCA_011338165.1. The GC content of the type genome is 49.39 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Ecfunula gen. nov.

Candidatus Ecfunula (NL. fem. n. *Ecfunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTGY01*. The type species for the genus is *Candidatus* Ecfunula delecitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIRTM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagulaceae.

Description of *Candidatus* Echidana turilitrix sp. nov.

Candidatus Echidana turilitrix (NL. fem. n. *turilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4626 sp002406115*. The type genome for the species is the GenBank assembly GCA_002406115.1. The GC content of the type genome is 36.33 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Echidana gen. nov.

Candidatus Echidana (NL. fem. n. *Echidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4626*. The type species for the genus is *Candidatus* Echidana turilitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Echidia demogousia sp. nov.

Candidatus Echidia demogousia (NL. fem. n. *demogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12817 sp902782895*. The type genome for the species is the GenBank assembly GCA_902782895.1. The GC content of the type genome is 54.18 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Echidia gen. nov.

Candidatus Echidia (NL. fem. n. *Echidia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12817*. The type species for the genus is *Candidatus* Echidia demogousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1390*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibiaceae.

Description of *Candidatus* Echidosa adnaricula sp. nov.

Candidatus Echidosa adnaricula (NL. fem. n. *adnaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWND01 sp003557965*. The type genome for the species is the GenBank assembly GCA_003557965.1. The GC content of the type genome is 35.43 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Echidosa gen. nov.

Candidatus Echidosa (NL. fem. n. *Echidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWND01*. The type species for the genus is *Candidatus* Echidosa adnaricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Echidula assibitio sp. nov.

Candidatus Echidula assibitio (NL. fem. n. *assibitio* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SDU3-3 sp009268125*. The type genome for the species is the GenBank assembly RS_GCF_009268125.1. The GC content of the type genome is 65.77 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Echidula gen. nov.

Candidatus Echidula (NL. fem. n. *Echidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SDU3-3*. The type species for the genus is *Candidatus* Echidula assibitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Echinicola cerucitica sp. nov.

Candidatus Echinicola cerucitica (NL. fem. n. *cerucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Echinicola sp006575665*. The type genome for the species is the GenBank assembly RS_GCF_006575665.1. The GC content of the type genome is 43.97 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Echinicola invoricula sp. nov.

Candidatus Echinicola invoricula (NL. fem. n. *invoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Echinicola sp014280965*. The type genome for the species is the GenBank assembly RS_GCF_014280965.1. The GC content of the type genome is 38.93 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Echogana insibitrix sp. nov.

Candidatus Echogana insibitrix (NL. fem. n. *insibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ATBO01 sp000472285*. The type genome for the species is the GenBank assembly RS_GCF_000472285.1. The GC content of the type genome is 58.66 % and the genome length is 4.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "tidal flat".

Description of *Candidatus* Echogana gen. nov.

Candidatus Echogana (NL. fem. n. *Echogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ATBO01*. The type species for the genus is *Candidatus* Echogana insibitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Echogaria carecitura sp. nov.

Candidatus Echogaria carecitura (NL. fem. n. *carecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-63-12 sp002789955*. The type genome for the species is the GenBank assembly GCA_002789955.1. The GC content of the type genome is 63.28 % and the genome length is 8.3 Mbp.

Description of *Candidatus* Echogaria gen. nov.

Candidatus Echogaria (NL. fem. n. *Echogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-63-12*. The type species for the genus is *Candidatus* Echogaria carecitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicarulaceae.

Description of *Candidatus* Echogia buxifitio sp. nov.

Candidatus Echogia buxifitio (NL. fem. n. *buxifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWO01 sp902806435*. The type genome for the species is the GenBank assembly GCA_902806435.1. The GC content of the type genome is 49.4 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Echogia gen. nov.

Candidatus Echogia (NL. fem. n. *Echogia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWO01*. The type species for the genus is *Candidatus* Echogia buxifitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Echogida adrotimonas sp. nov.

Candidatus Echogida adrotimonas (NL. fem. n. *adrotimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACHHO01 sp902579545*. The type genome for the species is the GenBank assembly RS_GCF_902579545.1. The GC content of the type genome is 28.63 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Echogida gen. nov.

Candidatus Echogida (NL. fem. n. *Echogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACHHO01*. The type species for the genus is *Candidatus* Echogida adrotimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citoculaceae.

Description of *Candidatus* Echogula oppugetta sp. nov.

Candidatus Echogula oppugetta (NL. fem. n. *oppugetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAZNF01 sp012798435*. The type genome for the species is the GenBank assembly GCA_012798435.1. The GC content of the type genome is 68.12 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Echogula gen. nov.

Candidatus Echogula (NL. fem. n. *Echogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZNF01*. The type species for the genus is *Candidatus* Echogula oppugetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B64-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navifanaceae.

Description of *Candidatus* Echogula sicubitoga sp. nov.

Candidatus Echogula sicubitoga (NL. fem. n. *sicubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZNF01 sp011368045*. The type genome for the species is the GenBank assembly GCA_011368045.1. The GC content of the type genome is 67.59 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Eclecana plostilega sp. nov.

Candidatus Eclecana plostilega (NL. fem. n. *plostilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-30-66 sp000989195*. The type genome for the species is the GenBank assembly GCA_000989195.1. The GC content of the type genome is 30.51 % and the genome length is 1.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Eclecana gen. nov.

Candidatus Eclecana (NL. fem. n. *Eclecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-30-66*. The type species for the genus is *Candidatus* Eclecana

plostilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eclecaria conibimonas sp. nov.

Candidatus Eclecaria conibimonas (NL. fem. n. *conibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC2150 sp000169395*. The type genome for the species is the GenBank assembly RS_GCF_000169395.1. The GC content of the type genome is 49.05 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Eclecaria gen. nov.

Candidatus Eclecaria (NL. fem. n. *Eclecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HTCC2150*. The type species for the genus is *Candidatus* Eclecaria conibimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eclecella cuticedo sp. nov.

Candidatus Eclecella cuticedo (NL. fem. n. *cuticedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS-49 sp002049495*. The type genome for the species is the GenBank assembly GCA_002049495.1. The GC content of the type genome is 49.78 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Eclecella gen. nov.

Candidatus Eclecella (NL. fem. n. *Eclecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TCS-49*. The type species for the genus is *Candidatus* Eclecella cuticedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eclecia pragmisca sp. nov.

Candidatus Eclecia pragmisca (NL. fem. n. *pragmisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HMF7410 sp009754915*. The type genome for the species is the GenBank assembly RS_GCF_009754915.1. The GC content of the type genome is 38.39 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Eclecia gen. nov.

Candidatus Eclecia (NL. fem. n. *Eclecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HMF7410*. The type species for the genus is *Candidatus* Eclecia pragmisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eclecia timefilega sp. nov.

Candidatus Eclecia timefilega (NL. fem. n. *timefilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HMF7410 sp903642215*. The type genome for the species is the GenBank assembly RS_GCF_903642215.1. The GC content of the type genome is 39.23 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Eclecida adsucax sp. nov.

Candidatus Eclecida adsucax (NL. fem. n. *adsucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOZW01 sp903862855*. The type genome for the species is the GenBank assembly GCA_903862855.1. The GC content of the type genome is 56.74 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Eclecida gen. nov.

Candidatus Eclecida (NL. fem. n. *Eclecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOZW01*. The type species for the genus is *Candidatus* Eclecida adsucax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBC074*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirunanaceae.

Description of *Candidatus* Eclecida cocolibra sp. nov.

Candidatus Eclecida cocolibra (NL. fem. n. *cocolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOZW01 sp903828635*. The type genome for the species is the GenBank assembly GCA_903828635.1. The GC content of the type genome is 58.56 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Eclecula vagabax sp. nov.

Candidatus Eclecula vagabax (NL. fem. n. *vagabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMIM01 sp014381165*. The type genome for the species is the GenBank assembly GCA_014381165.1. The GC content of the type genome is 61.04 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Eclecula gen. nov.

Candidatus Eclecula (NL. fem. n. *Eclecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMIM01*. The type species for the genus is *Candidatus* Eclecula vagabax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecligana furibitrix sp. nov.

Candidatus Ecligana furibitrix (NL. fem. n. *furibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTX01 sp009377505*. The type genome for the species is the GenBank assembly GCA_009377505.1. The GC content of the type genome is 72.91 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Ecligana gen. nov.

Candidatus Ecligana (NL. fem. n. *Ecligana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTX01*. The type species for the genus is *Candidatus* Ecligana furibitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIXPF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicubariaceae.

Description of *Candidatus* Ecligaria inbeciforma sp. nov.

Candidatus Ecligaria inbeciforma (NL. fem. n. *inbeciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUNJ01 sp003551705*. The type genome for the species is the GenBank assembly GCA_003551705.1. The GC content of the type genome is 55.63 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Ecligaria gen. nov.

Candidatus Ecligaria (NL. fem. n. *Ecligaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUNJ01*. The type species for the genus is *Candidatus* Ecligaria inbeciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-53-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reforidaceae.

Description of *Candidatus* Ecligella cerarivita sp. nov.

Candidatus Ecligella cerarivita (NL. fem. n. *cerarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYEB01 sp012728995*. The type genome for the species is the GenBank assembly GCA_012728995.1. The GC content of the type genome is 37.81 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Ecligella gen. nov.

Candidatus Ecligella (NL. fem. n. *Ecligella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYEB01*. The type species for the genus is *Candidatus* Ecligella cerarivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecligia secunitica sp. nov.

Candidatus Ecligia secunitica (NL. fem. n. *secunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACGMS01 sp902574205*. The type genome for the species is the GenBank assembly GCA_902574205.1. The GC content of the type genome is 54.02 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Ecligia gen. nov.

Candidatus Ecligia (NL. fem. n. *Ecligia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACGMS01*. The type species for the genus is *Candidatus* Ecligia secunitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexaposaceae.

Description of *Candidatus* Ecligosa clancicula sp. nov.

Candidatus Ecligosa clancicula (NL. fem. n. *clancicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20-14-all-45-10 sp002772325*. The type genome for the species is the GenBank assembly GCA_002772325.1. The GC content of the type genome is 45.37 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Ecligosa gen. nov.

Candidatus Ecligosa (NL. fem. n. *Ecligosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *20-14-all-45-10*. The type species for the genus is *Candidatus* Ecligosa clancicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Ecligosa nutametta sp. nov.

Candidatus Ecligosa nutametta (NL. fem. n. *nutametta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20-14-all-45-10 sp009619075*. The type genome for the species is the GenBank assembly GCA_009619075.1. The GC content of the type genome is 45.3 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Ecligula allubatio sp. nov.

Candidatus Ecligula allubatio (NL. fem. n. *allubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MUGG01 sp002148405*. The type genome for the species is the GenBank assembly GCA_002148405.1. The GC content of the type genome is 49.68 % and the genome length is 6.46 Mbp.

Description of *Candidatus* Ecligula gen. nov.

Candidatus Ecligula (NL. fem. n. *Ecligula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *MUGG01*. The type species for the genus is *Candidatus* Ecligula allubatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eclipella embamilega sp. nov.

Candidatus Eclipella embamilega (NL. fem. n. *embamilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSH01 sp007130555*. The type genome for the species is the GenBank assembly GCA_007130555.1. The GC content of the type genome is 33.76 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Eclipella gen. nov.

Candidatus Eclipella (NL. fem. n. *Eclipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLSH01*. The type species for the genus is *Candidatus* Eclipella embamilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ML635J-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carucariaceae.

Description of *Candidatus* Eclipia decenilega sp. nov.

Candidatus Eclipia decenilega (NL. fem. n. *decenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTME01 sp011389155*. The type genome for the species is the GenBank assembly GCA_011389155.1. The GC content of the type genome is 36.64 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Eclipia gen. nov.

Candidatus Eclipia (NL. fem. n. *Eclipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTME01*. The type species for the genus is *Candidatus* Eclipia

decenilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabanaceae.

Description of *Candidatus* Ecliposa agratitia sp. nov.

Candidatus Ecliposa agratitia (NL. fem. n. *agratitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BGMRC-2031 sp010131535*. The type genome for the species is the GenBank assembly RS_GCF_010131535.1. The GC content of the type genome is 57.04 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Ecliposa gen. nov.

Candidatus Ecliposa (NL. fem. n. *Ecliposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BGMRC-2031*. The type species for the genus is *Candidatus* Ecliposa agratitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecliposa solipimonas sp. nov.

Candidatus Ecliposa solipimonas (NL. fem. n. *solipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BGMRC-2031 sp005217455*. The type genome for the species is the GenBank assembly RS_GCF_005217455.1. The GC content of the type genome is 55.44 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Ecliposa virecedo sp. nov.

Candidatus Ecliposa virecedo (NL. fem. n. *virecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BGMRC-2031 sp004346745*. The type genome for the species is the

GenBank assembly RS_GCF_004346745.1. The GC content of the type genome is 54.98 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Eclipula accenatio sp. nov.

Candidatus Eclipula accenatio (NL. fem. n. *accenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQB01 sp013203525*. The type genome for the species is the GenBank assembly GCA_013203525.1. The GC content of the type genome is 34.78 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Eclipula gen. nov.

Candidatus Eclipula (NL. fem. n. *Eclipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQB01*. The type species for the genus is *Candidatus* Eclipula accenatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eclipula penecicella sp. nov.

Candidatus Eclipula penecicella (NL. fem. n. *penecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQB01 sp013152355*. The type genome for the species is the GenBank assembly GCA_013152355.1. The GC content of the type genome is 40.77 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Ecnepana adlubibra sp. nov.

Candidatus Ecnepana adlubibra (NL. fem. n. *adlubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-415 sp003245815*. The type genome for the species is the GenBank assembly GCA_003245815.1. The GC content of the type genome is 60.16 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Ecnepana gen. nov.

Candidatus Ecnepana (NL. fem. n. *Ecnepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-415*. The type species for the genus is *Candidatus* Ecnepana adlubibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ecnepella aruspitas sp. nov.

Candidatus Ecnepella aruspitas (NL. fem. n. *aruspitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-10-A sp001782515*. The type genome for the species is the GenBank assembly GCA_001782515.1. The GC content of the type genome is 37.8 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Ecnepella gen. nov.

Candidatus Ecnepella (NL. fem. n. *Ecnepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-10-A*. The type species for the genus is *Candidatus* Ecnepella aruspitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Ecnepia desomifica sp. nov.

Candidatus Ecnepia desomifica (NL. fem. n. *desomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMFQ01 sp007376125*. The type genome for the species is the GenBank assembly GCA_007376125.1. The GC content of the type genome is 45.82 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Ecnepia gen. nov.

Candidatus Ecnepia (NL. fem. n. *Ecnepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMFQ01*. The type species for the genus is *Candidatus* Ecnepia desomifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-52-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vanitellaceae.

Description of *Candidatus* Ecnepida dicabibra sp. nov.

Candidatus Ecnepida dicabibra (NL. fem. n. *dicabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1153 sp003153195*. The type genome for the species is the GenBank assembly GCA_003153195.1. The GC content of the type genome is 60.72 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Ecnepida gen. nov.

Candidatus Ecnepida (NL. fem. n. *Ecnepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1153*. The type species for the genus is *Candidatus* Ecnepida dicabibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1104*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Effigidaceae.

Description of *Candidatus* Ecneposa colopitica sp. nov.

Candidatus Ecneposa colopitica (NL. fem. n. *colopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMX01 sp012798565*. The type genome for the species is the GenBank assembly GCA_012798565.1. The GC content of the type genome is 42.3 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Ecneposa gen. nov.

Candidatus Ecneposa (NL. fem. n. *Ecneposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZMX01*. The type species for the genus is *Candidatus* Ecneposa colopitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-42-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodidaceae.

Description of *Candidatus* Ecneposa taxililenta sp. nov.

Candidatus Ecneposa taxililenta (NL. fem. n. *taxililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMX01 sp012797775*. The type genome for the species is the GenBank assembly GCA_012797775.1. The GC content of the type genome is 40.7 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Ectenana edulcicella sp. nov.

Candidatus Ectenana edulcicella (NL. fem. n. *edulcicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXDR01 sp003566335*. The type genome for the species is the GenBank assembly GCA_003566335.1. The GC content of the type genome is 56.63 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Ectenana gen. nov.

Candidatus Ectenana (NL. fem. n. *Ectenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXDR01*. The type species for the genus is *Candidatus* Ectenana edulcicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ectenaria inpurago sp. nov.

Candidatus Ectenaria inpurago (NL. fem. n. *inpurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UDEA-SF1 sp002995625*. The type genome for the species is the GenBank assembly GCA_002995625.1. The GC content of the type genome is 71.41 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Ectenaria gen. nov.

Candidatus Ectenaria (NL. fem. n. *Ectenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UDEA-SF1*. The type species for the genus is *Candidatus* Ectenaria inpurago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ectenosa abrelatio sp. nov.

Candidatus Ectenosa abrelatio (NL. fem. n. *abrelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M1806 sp006226545*. The type genome for the species is the GenBank assembly GCA_006226545.1. The GC content of the type genome is 44.37 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Ectenosa gen. nov.

Candidatus Ectenosa (NL. fem. n. *Ectenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M1806*. The type species for the genus is *Candidatus* Ectenosa abrelatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8524*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabanaceae.

Description of *Candidatus* Ectenula irrevitudo sp. nov.

Candidatus Ectenula irrevitudo (NL. fem. n. *irrevitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002724395 sp002715005*. The type genome for the species is the GenBank assembly GCA_002715005.1. The GC content of the type genome is 47.9 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Ectenula gen. nov.

Candidatus Ectenula (NL. fem. n. *Ectenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002724395*. The type species for the genus is *Candidatus* Ectenula irrevitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8366*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decenellaceae.

Description of *Candidatus* Ectenula volubedo sp. nov.

Candidatus Ectenula volubedo (NL. fem. n. *volubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002724395 sp002724395*. The type genome for the species is the GenBank assembly GCA_002724395.1. The GC content of the type genome is 48.33 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Ectothiorhodospira exsisago sp. nov.

Candidatus Ectothiorhodospira exsisago (NL. fem. n. *exsisago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ectothiorhodospira sp000225005*. The type genome for the species is the GenBank assembly RS_GCF_000225005.1. The GC content of the type genome is 63.73 % and the genome length is 2.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hot spring microbial mat on Paoha Island in Mono Lake; CA".

Description of *Candidatus* Ectothiorhodospira retecentia sp. nov.

Candidatus Ectothiorhodospira retecentia (NL. fem. n. *retecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ectothiorhodospira sp001632845*. The type genome for the species is the GenBank assembly RS_GCF_001632845.1. The GC content of the type genome is 62.95 % and the genome length is 3.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Big Soda Lake; Nevada".

Description of *Candidatus* Edaphobacter actutitio sp. nov.

Candidatus Edaphobacter actutitio (NL. fem. n. *actutitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp000688615*. The type genome for the species is the GenBank assembly RS_GCF_000688615.1. The GC content of the type genome is 56.74 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Edaphobacter advigicella sp. nov.

Candidatus Edaphobacter advigicella (NL. fem. n. *advigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp001897435*. The type genome for the species is the GenBank assembly GCA_001897435.1. The GC content of the type genome is 58.9 % and the genome length is 4.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Edaphobacter atropisca sp. nov.

Candidatus Edaphobacter atropisca (NL. fem. n. *atropisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp003751275*. The type genome for the species is the GenBank assembly RS_GCF_003751275.1. The GC content of the type genome is 57.95 % and the genome length is 6.24 Mbp.

Description of *Candidatus* Edaphobacter cerebigena sp. nov.

Candidatus Edaphobacter cerebigena (NL. fem. n. *cerebigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp014274685*. The type genome for the species is the GenBank assembly RS_GCF_014274685.1. The GC content of the type genome is 55.03 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Edaphobacter decacousia sp. nov.

Candidatus Edaphobacter decacousia (NL. fem. n. *decacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp010093025*. The type genome for the species is the GenBank assembly RS_GCF_010093025.1. The GC content of the type genome is 57.96 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Edaphobacter decenitura sp. nov.

Candidatus Edaphobacter decenitura (NL. fem. n. *decenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp002197545*. The type genome for the species is the GenBank assembly GCA_002197545.1. The GC content of the type genome is 57.64 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Edaphobacter dehisitio sp. nov.

Candidatus Edaphobacter dehisitio (NL. fem. n. *dehisitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp009765835*. The type genome for the species is the GenBank assembly RS_GCF_009765835.1. The GC content of the type genome is 57.23 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Edaphobacter irrecastra sp. nov.

Candidatus Edaphobacter irrecastra (NL. fem. n. *irrecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Edaphobacter sp009781125*. The type genome for the species is the GenBank assembly GCA_009781125.1. The GC content of the type genome is 58.32 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Edaphobacter menapago sp. nov.

Candidatus Edaphobacter menapago (NL. fem. n. *menapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp009765825*. The type genome for the species is the GenBank assembly RS_GCF_009765825.1. The GC content of the type genome is 57.54 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Edaphobacter utrinax sp. nov.

Candidatus Edaphobacter utrinax (NL. fem. n. *utrinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp000421065*. The type genome for the species is the GenBank assembly RS_GCF_000421065.1. The GC content of the type genome is 58.83 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Edaphobacter vaciletta sp. nov.

Candidatus Edaphobacter vaciletta (NL. fem. n. *vaciletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp009766095*. The type genome for the species is the GenBank assembly RS_GCF_009766095.1. The GC content of the type genome is 57.21 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Edaphobacter viburibula sp. nov.

Candidatus Edaphobacter viburibula (NL. fem. n. *viburibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphobacter sp000381605*. The type genome for the species is the GenBank assembly RS_GCF_000381605.1. The GC content of the type genome is 57.55 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Edaphocola apposimonia sp. nov.

Candidatus Edaphocola apposimonia (NL. fem. n. *apposimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphocola sp003852495*. The type genome for the species is the GenBank assembly RS_GCF_003852495.1. The GC content of the type genome is 41.72 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Edaphocola bigemastra sp. nov.

Candidatus Edaphocola bigemastra (NL. fem. n. *bigemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphocola sp001897155*. The type genome for the species is the GenBank assembly GCA_001897155.1. The GC content of the type genome is 47.18 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Edaphocola exsufimonia sp. nov.

Candidatus Edaphocola exsufimonia (NL. fem. n. *exsufimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphocola sp003545695*. The type genome for the species is the GenBank assembly RS_GCF_003545695.1. The GC content of the type genome is 51.33 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Edaphocola inlacisca sp. nov.

Candidatus Edaphocola inlacisca (NL. fem. n. *inlacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphocola sp008629695*. The type genome for the species is the GenBank assembly RS_GCF_008629695.1. The GC content of the type genome is 38.92 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Edaphocola insicitudo sp. nov.

Candidatus Edaphocola insicitudo (NL. fem. n. *insicitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Edaphocola sp001897525*. The type genome for the species is the GenBank assembly GCA_001897525.1. The GC content of the type genome is 43.04 % and the genome length is 4.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Edissana homicimonas sp. nov.

Candidatus Edissana homicimonas (NL. fem. n. *homicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABUEY01 sp013314815*. The type genome for the species is the GenBank assembly GCA_013314815.1. The GC content of the type genome is 56.92 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Edissana gen. nov.

Candidatus Edissana (NL. fem. n. *Edissana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABUEY01*. The type species for the genus is *Candidatus* Edissana homicimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Edissaria anxifatica sp. nov.

Candidatus Edissaria anxifatica (NL. fem. n. *anxifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-35 sp003962875*. The type genome for the species is the GenBank assembly GCA_003962875.1. The GC content of the type genome is 70.85 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Edissaria gen. nov.

Candidatus Edissaria (NL. fem. n. *Edissaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AWTP1-35*. The type species for the genus is *Candidatus* Edissaria anxifatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Edissella ciminimonia sp. nov.

Candidatus Edissella ciminimonia (NL. fem. n. *ciminimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBLI01 sp002084535*. The type genome for the species is the GenBank assembly GCA_002084535.1. The GC content of the type genome is 38.48 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Edissella gen. nov.

Candidatus Edissella (NL. fem. n. *Edissella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NBLI01*. The type species for the genus is *Candidatus* Edissella ciminimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AABM5-25-91*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Filifidaceae.

Description of *Candidatus* Edissia metucago sp. nov.

Candidatus Edissia metucago (NL. fem. n. *metucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUNV01 sp012728375*. The type genome for the species is the GenBank assembly GCA_012728375.1. The GC content of the type genome is 45.82 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Edissia gen. nov.

Candidatus Edissia (NL. fem. n. *Edissia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DUNV01*. The type species for the genus is *Candidatus* Edissia metucago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubiaceae.

Description of *Candidatus* Edissia relapicula sp. nov.

Candidatus Edissia relapicula (NL. fem. n. *relapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUNV01 sp012839215*. The type genome for the species is the GenBank assembly GCA_012839215.1. The GC content of the type genome is 47.34 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Edissida socagedo sp. nov.

Candidatus Edissida socagedo (NL. fem. n. *socagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J085 sp003695085*. The type genome for the species is the GenBank assembly GCA_003695085.1. The GC content of the type genome is 59.58 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Edissida gen. nov.

Candidatus Edissida (NL. fem. n. *Edissida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J085*. The type species for the genus is *Candidatus* Edissida socagedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Edissosa vitupatio sp. nov.

Candidatus Edissosa vitupatio (NL. fem. n. *vitupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZDF01 sp012512905*. The type genome for the species is the

GenBank assembly GCA_012512905.1. The GC content of the type genome is 30.16 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Edissosa gen. nov.

Candidatus Edissosa (NL. fem. n. *Edissosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZDF01*. The type species for the genus is *Candidatus* Edissosa vitupatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Edulcana momoricella sp. nov.

Candidatus Edulcana momoricella (NL. fem. n. *momoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IPMB12 sp011745665*. The type genome for the species is the GenBank assembly RS_GCF_011745665.1. The GC content of the type genome is 39.26 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Edulcana gen. nov.

Candidatus Edulcana (NL. fem. n. *Edulcana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IPMB12*. The type species for the genus is *Candidatus* Edulcana momoricella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Edulcaria depacitrix sp. nov.

Candidatus Edulcaria depacitrix (NL. fem. n. *depacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-88 sp007116145*. The type genome for the species is the GenBank assembly GCA_007116145.1. The GC content of the type genome is 42.9 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Edulcaria gen. nov.

Candidatus Edulcaria (NL. fem. n. *Edulcaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBR16-88*. The type species for the genus is *Candidatus* Edulcaria depacitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU012*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homolellaceae.

Description of *Candidatus* Edulcella abnepitura sp. nov.

Candidatus Edulcella abnepitura (NL. fem. n. *abnepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYVR01 sp011333855*. The type genome for the species is the GenBank assembly GCA_011333855.1. The GC content of the type genome is 56.87 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Edulcella gen. nov.

Candidatus Edulcella (NL. fem. n. *Edulcella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYVR01*. The type species for the genus is *Candidatus* Edulcella abnepitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J093*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelosaceae.

Description of *Candidatus* Edulcella feculitura sp. nov.

Candidatus Edulcella feculitura (NL. fem. n. *feculitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYVR01 sp012517065*. The type genome for the species is the GenBank assembly GCA_012517065.1. The GC content of the type genome is 57.11 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Edulcia semidibra sp. nov.

Candidatus Edulcia semidibra (NL. fem. n. *semidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRLB01 sp009777815*. The type genome for the species is the GenBank assembly GCA_009777815.1. The GC content of the type genome is 31.01 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Edulcia gen. nov.

Candidatus Edulcia (NL. fem. n. *Edulcia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRLB01*. The type species for the genus is *Candidatus* Edulcia semidibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Edulcida lutulivita sp. nov.

Candidatus Edulcida lutulivita (NL. fem. n. *lutulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS822 sp900545825*. The type genome for the species is the GenBank assembly GCA_900545825.1. The GC content of the type genome is 67.21 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Edulcida gen. nov.

Candidatus Edulcida (NL. fem. n. *Edulcida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS822*. The type species for the genus is *Candidatus* Edulcida lutulivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Edulcosa sicubessa sp. nov.

Candidatus Edulcosa sicubessa (NL. fem. n. *sicubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YIM-98839 sp010993955*. The type genome for the species is the GenBank assembly RS_GCF_010993955.1. The GC content of the type genome is 37.01 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Edulcosa gen. nov.

Candidatus Edulcosa (NL. fem. n. *Edulcosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YIM-98839*. The type species for the genus is *Candidatus* Edulcosa sicubessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effacana acustitia sp. nov.

Candidatus Effacana acustitia (NL. fem. n. *acustitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM506 sp002868945*. The type genome for the species is the GenBank assembly GCA_002868945.1. The GC content of the type genome is 56.29 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Effacana gen. nov.

Candidatus Effacana (NL. fem. n. *Effacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM506*. The type species for the genus is *Candidatus* Effacana acustitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effacaria abantitica sp. nov.

Candidatus Effacaria abantitica (NL. fem. n. *abantitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFT01 sp009776385*. The type genome for the species is the GenBank assembly GCA_009776385.1. The GC content of the type genome is 51.56 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Effacaria gen. nov.

Candidatus Effacaria (NL. fem. n. *Effacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFT01*. The type species for the genus is *Candidatus* Effacaria abantitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Effacia artopastra sp. nov.

Candidatus Effacia artopastra (NL. fem. n. *artopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GP183 sp900104695*. The type genome for the species is the GenBank assembly RS_GCF_900104695.1. The GC content of the type genome is 45.3 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Effacia gen. nov.

Candidatus Effacia (NL. fem. n. *Effacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GP183*. The type species for the genus is *Candidatus* Effacia artopastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effacida desonitrix sp. nov.

Candidatus Effacida desonitrix (NL. fem. n. *desonitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAABSX01 sp011390205*. The type genome for the species is the GenBank assembly GCA_011390205.1. The GC content of the type genome is 40.34 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Effacida gen. nov.

Candidatus Effacida (NL. fem. n. *Effacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABSX01*. The type species for the genus is *Candidatus* Effacida desonitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effacula ingigatio sp. nov.

Candidatus Effacula ingigatio (NL. fem. n. *ingigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPG01 sp013203855*. The type genome for the species is the GenBank assembly GCA_013203855.1. The GC content of the type genome is 60.28 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Effacula gen. nov.

Candidatus Effacula (NL. fem. n. *Effacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPG01*. The type species for the genus is *Candidatus* Effacula ingigatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8349*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turilariaceae.

Description of *Candidatus* Effarana inobsessa sp. nov.

Candidatus Effarana inobsessa (NL. fem. n. *inobsessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHQ01 sp013820975*. The type genome for the species is the

GenBank assembly GCA_013820975.1. The GC content of the type genome is 68.66 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Effarana gen. nov.

Candidatus Effarana (NL. fem. n. *Effarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDHQ01*. The type species for the genus is *Candidatus* Effarana inobsessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effararia decunicula sp. nov.

Candidatus Effararia decunicula (NL. fem. n. *decunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVVS01 sp903909415*. The type genome for the species is the GenBank assembly GCA_903909415.1. The GC content of the type genome is 69.45 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Effararia gen. nov.

Candidatus Effararia (NL. fem. n. *Effararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVVS01*. The type species for the genus is *Candidatus* Effararia decunicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Effarella inorniforma sp. nov.

Candidatus Effarella inorniforma (NL. fem. n. *inorniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUVT01 sp012840905*. The type genome for the species is the GenBank assembly GCA_012840905.1. The GC content of the type genome is 29.75 %

and the genome length is 1.25 Mbp.

Description of *Candidatus* Effarella gen. nov.

Candidatus Effarella (NL. fem. n. *Effarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUVT01*. The type species for the genus is *Candidatus* Effarella inorniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Effaria exsisousia sp. nov.

Candidatus Effaria exsisousia (NL. fem. n. *exsisousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNXT01 sp003973505*. The type genome for the species is the GenBank assembly GCA_003973505.1. The GC content of the type genome is 36.17 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Effaria gen. nov.

Candidatus Effaria (NL. fem. n. *Effaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNXT01*. The type species for the genus is *Candidatus* Effaria exsisousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1556*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depopellaceae.

Description of *Candidatus* Effarida necopifica sp. nov.

Candidatus Effarida necopifica (NL. fem. n. *necopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQUK01 sp008501655*. The type genome for the species is the

GenBank assembly GCA_008501655.1. The GC content of the type genome is 39.55 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Effarida gen. nov.

Candidatus Effarida (NL. fem. n. *Effarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QQUK01*. The type species for the genus is *Candidatus* Effarida necopifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEB-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanugulaceae.

Description of *Candidatus* Effarosa rudicitoga sp. nov.

Candidatus Effarosa rudicitoga (NL. fem. n. *rudicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSRF01 sp013215275*. The type genome for the species is the GenBank assembly GCA_013215275.1. The GC content of the type genome is 42.45 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Effarosa gen. nov.

Candidatus Effarosa (NL. fem. n. *Effarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSRF01*. The type species for the genus is *Candidatus* Effarosa rudicitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bog-1112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Adsusariaceae.

Description of *Candidatus* Effarula venunentia sp. nov.

Candidatus Effarula venunentia (NL. fem. n. *venunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JACCYP01 sp013696425*. The type genome for the species is the GenBank assembly GCA_013696425.1. The GC content of the type genome is 70.12 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Effarula gen. nov.

Candidatus Effarula (NL. fem. n. *Effarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCYP01*. The type species for the genus is *Candidatus* Effarula venunentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effemana nugivimonas sp. nov.

Candidatus Effemana nugivimonas (NL. fem. n. *nugivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWK01 sp902806375*. The type genome for the species is the GenBank assembly GCA_902806375.1. The GC content of the type genome is 69.09 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Effemana gen. nov.

Candidatus Effemana (NL. fem. n. *Effemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWK01*. The type species for the genus is *Candidatus* Effemana nugivimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Effemaria penuribula sp. nov.

Candidatus Effemaria penuribula (NL. fem. n. *penuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOZ01 sp012838555*. The type genome for the species is the

GenBank assembly GCA_012838555.1. The GC content of the type genome is 29.31 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Effemaria gen. nov.

Candidatus Effemaria (NL. fem. n. *Effemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOZ01*. The type species for the genus is *Candidatus* Effemaria penuribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1709*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bonifanaceae.

Description of *Candidatus* Effemella occalitura sp. nov.

Candidatus Effemella occalitura (NL. fem. n. *occalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JB111 sp900163555*. The type genome for the species is the GenBank assembly RS_GCF_900163555.1. The GC content of the type genome is 72.16 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Effemella gen. nov.

Candidatus Effemella (NL. fem. n. *Effemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JB111*. The type species for the genus is *Candidatus* Effemella occalitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effemia atricifica sp. nov.

Candidatus Effemia atricifica (NL. fem. n. *atricifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733185 sp002713705*. The type genome for the species is the GenBank assembly GCA_002713705.1. The GC content of the type genome is 31.28 %

and the genome length is 2.55 Mbp.

Description of *Candidatus* Effemia gen. nov.

Candidatus Effemia (NL. fem. n. *Effemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002733185*. The type species for the genus is *Candidatus* Effemia atricifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effemia impugivita sp. nov.

Candidatus Effemia impugivita (NL. fem. n. *impugivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733185 sp004213605*. The type genome for the species is the GenBank assembly GCA_004213605.1. The GC content of the type genome is 32.85 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Effemia luxurastra sp. nov.

Candidatus Effemia luxurastra (NL. fem. n. *luxurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733185 sp004214175*. The type genome for the species is the GenBank assembly GCA_004214175.1. The GC content of the type genome is 31.12 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Effemia sicubentia sp. nov.

Candidatus Effemia sicubentia (NL. fem. n. *sicubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733185 sp002733185*. The type genome for the species is the GenBank assembly GCA_002733185.1. The GC content of the type genome is 32.27 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Effemula dehinitio sp. nov.

Candidatus Effemula dehinitio (NL. fem. n. *dehinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3081 sp012800885*. The type genome for the species is the GenBank assembly GCA_012800885.1. The GC content of the type genome is 34.0 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Effemula gen. nov.

Candidatus Effemula (NL. fem. n. *Effemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3081*. The type species for the genus is *Candidatus* Effemula dehinitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Effemula duponentia sp. nov.

Candidatus Effemula duponentia (NL. fem. n. *duponentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3081 sp002366615*. The type genome for the species is the GenBank assembly GCA_002366615.1. The GC content of the type genome is 33.67 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Effigaria betacifica sp. nov.

Candidatus Effigaria betacifica (NL. fem. n. *betacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-68 sp013215685*. The type genome for the species is the GenBank assembly GCA_013215685.1. The GC content of the type genome is 26.98 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Effigaria gen. nov.

Candidatus Effigaria (NL. fem. n. *Effigaria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-68*. The type species for the genus is *Candidatus* Effigaria betacifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effigella manupibra sp. nov.

Candidatus Effigella manupibra (NL. fem. n. *manupibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYZX01 sp012514635*. The type genome for the species is the GenBank assembly GCA_012514635.1. The GC content of the type genome is 59.29 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Effigella gen. nov.

Candidatus Effigella (NL. fem. n. *Effigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZX01*. The type species for the genus is *Candidatus* Effigella manupibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demululaceae.

Description of *Candidatus* Effigida avuncitura sp. nov.

Candidatus Effigida avuncitura (NL. fem. n. *avuncitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1104 sp003170275*. The type genome for the species is the GenBank assembly GCA_003170275.1. The GC content of the type genome is 68.37 % and the genome length is 8.17 Mbp.

Description of *Candidatus* Effigida gen. nov.

Candidatus Effigida (NL. fem. n. *Effigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1104*. The type species for the genus is *Candidatus* Effigida avuncitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1104*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Effigidaceae.

Description of *Candidatus* Effigidaceae fam. nov.

Candidatus Effigidaceae (NL. fem. n. *Effigidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1104.* The type genus for the taxon is *Candidatus* Effigida .

According to the original version of GTDB R06-RS202, this family belongs to the order *Palsa-1104*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Effigidales.

Description of *Candidatus* Effigidales ord. nov.

Candidatus Effigidales (NL. fem. n. *Effigidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1104.* The type genus for the taxon is *Candidatus* Effigida .

According to the GTDB R06-RS202, this order belongs to the class *Polyangia*.

Description of *Candidatus* Effigosa crusmifica sp. nov.

Candidatus Effigosa crusmifica (NL. fem. n. *crusmifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCWD01 sp013697825*. The type genome for the species is the GenBank assembly GCA_013697825.1. The GC content of the type genome is 62.71 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Effigosa gen. nov.

Candidatus Effigosa (NL. fem. n. *Effigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCWD01*. The type species for the genus is *Candidatus* Effigosa crusmifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effigosa inornastra sp. nov.

Candidatus Effigosa inornastra (NL. fem. n. *inornastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCWD01 sp013695475*. The type genome for the species is the GenBank assembly GCA_013695475.1. The GC content of the type genome is 62.01 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Effigula inmenax sp. nov.

Candidatus Effigula inmenax (NL. fem. n. *inmenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUM01 sp012841565*. The type genome for the species is the GenBank assembly GCA_012841565.1. The GC content of the type genome is 35.32 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Effigula gen. nov.

Candidatus Effigula (NL. fem. n. *Effigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUUM01*. The type species for the genus is *Candidatus* Effigula inmenax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effinaria attegibula sp. nov.

Candidatus Effinaria attegibula (NL. fem. n. *attegibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHO01 sp009992505*. The type genome for the species is the

GenBank assembly GCA_009992505.1. The GC content of the type genome is 69.37 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Effinaria gen. nov.

Candidatus Effinaria (NL. fem. n. *Effinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHO01*. The type species for the genus is *Candidatus* Effinaria attegibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benivosaceae.

Description of *Candidatus* Effinaria luxurigena sp. nov.

Candidatus Effinaria luxurigena (NL. fem. n. *luxurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHO01 sp013151775*. The type genome for the species is the GenBank assembly GCA_013151775.1. The GC content of the type genome is 68.26 % and the genome length is 6.05 Mbp.

Description of *Candidatus* Effinella hirudivita sp. nov.

Candidatus Effinella hirudivita (NL. fem. n. *hirudivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5532 sp002426885*. The type genome for the species is the GenBank assembly GCA_002426885.1. The GC content of the type genome is 43.49 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Effinella gen. nov.

Candidatus Effinella (NL. fem. n. *Effinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5532*. The type species for the genus is *Candidatus* Effinella hirudivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA2023. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visifosaceae.

Description of *Candidatus* Effinia ininnibra sp. nov.

Candidatus Effinia ininnibra (NL. fem. n. *ininnibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2687015 sp002687015*. The type genome for the species is the GenBank assembly GCA_002687015.1. The GC content of the type genome is 69.77 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Effinia gen. nov.

Candidatus Effinia (NL. fem. n. *Effinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2687015*. The type species for the genus is *Candidatus* Effinia ininnibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6930*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homiculaceae.

Description of *Candidatus* Effinida defaratica sp. nov.

Candidatus Effinida defaratica (NL. fem. n. *defaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLZORAL124-38-8 sp002747745*. The type genome for the species is the GenBank assembly GCA_002747745.1. The GC content of the type genome is 37.88 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Effinida gen. nov.

Candidatus Effinida (NL. fem. n. *Effinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLZORAL124-38-8*. The type species for the genus is *Candidatus* Effinida defaratica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4473*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depocosaceae.

Description of *Candidatus* Effinosa prognitoga sp. nov.

Candidatus Effinosa prognitoga (NL. fem. n. *prognitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BGMRC6574 sp006516965*. The type genome for the species is the GenBank assembly RS_GCF_006516965.1. The GC content of the type genome is 64.67 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Effinosa gen. nov.

Candidatus Effinosa (NL. fem. n. *Effinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BGMRC6574*. The type species for the genus is *Candidatus* Effinosa prognitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effosana adpacilenta sp. nov.

Candidatus Effosana adpacilenta (NL. fem. n. *adpacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIOZ-UU36 sp014382535*. The type genome for the species is the GenBank assembly GCA_014382535.1. The GC content of the type genome is 47.91 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Effosana gen. nov.

Candidatus Effosana (NL. fem. n. *Effosana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NIOZ-UU36*. The type species for the genus is *Candidatus* Effosana adpacilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family

EnvOPS12. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Effosana hibisitio sp. nov.

Candidatus Effosana hibisitio (NL. fem. n. *hibisitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIOZ-UU36 sp013152325*. The type genome for the species is the GenBank assembly GCA_013152325.1. The GC content of the type genome is 59.33 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Effosaria armipicella sp. nov.

Candidatus Effosaria armipicella (NL. fem. n. *armipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FW021-bin31 sp004299085*. The type genome for the species is the GenBank assembly GCA_004299085.1. The GC content of the type genome is 40.28 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Effosaria gen. nov.

Candidatus Effosaria (NL. fem. n. *Effosaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FW021-bin31*. The type species for the genus is *Candidatus* Effosaria armipicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effosaria bucolousia sp. nov.

Candidatus Effosaria bucolousia (NL. fem. n. *bucolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FW021-bin31 sp004322015*. The type genome for the species is the GenBank assembly GCA_004322015.1. The GC content of the type genome is 41.92 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Effosella adrotago sp. nov.

Candidatus Effosella adrotago (NL. fem. n. *adrotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GLO-3 sp003354135*. The type genome for the species is the GenBank assembly GCA_003354135.1. The GC content of the type genome is 58.77 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Effosella gen. nov.

Candidatus Effosella (NL. fem. n. *Effosella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GLO-3*. The type species for the genus is *Candidatus* Effosella adrotago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effososa ascenilenta sp. nov.

Candidatus Effososa ascenilenta (NL. fem. n. *ascenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-33 sp003597945*. The type genome for the species is the GenBank assembly GCA_003597945.1. The GC content of the type genome is 52.78 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Effososa gen. nov.

Candidatus Effososa (NL. fem. n. *Effososa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-33*. The type species for the genus is *Candidatus* Effososa ascenilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarulaceae.

Description of *Candidatus* Effosula abinvimonas sp. nov.

Candidatus Effosula abinvimonas (NL. fem. n. *abinvimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULK01 sp902812385*. The type genome for the species is the GenBank assembly RS_GCF_902812385.1. The GC content of the type genome is 53.9 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Effosula gen. nov.

Candidatus Effosula (NL. fem. n. *Effosula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DULK01*. The type species for the genus is *Candidatus* Effosula abinvimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effosula adgenigena sp. nov.

Candidatus Effosula adgenigena (NL. fem. n. *adgenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULK01 sp902812435*. The type genome for the species is the GenBank assembly RS_GCF_902812435.1. The GC content of the type genome is 53.54 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Effosula adsenentia sp. nov.

Candidatus Effosula adsenentia (NL. fem. n. *adsenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULK01 sp012840385*. The type genome for the species is the GenBank assembly GCA_012840385.1. The GC content of the type genome is 53.27 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Effularia invesibula sp. nov.

Candidatus Effularia invesibula (NL. fem. n. *invesibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQUE01 sp008501545*. The type genome for the species is the GenBank assembly GCA_008501545.1. The GC content of the type genome is 44.02 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Effularia gen. nov.

Candidatus Effularia (NL. fem. n. *Effularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QQUE01*. The type species for the genus is *Candidatus* Effularia invesibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRLW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forinellaceae.

Description of *Candidatus* Effularia negidax sp. nov.

Candidatus Effularia negidax (NL. fem. n. *negidax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQUE01 sp008501765*. The type genome for the species is the GenBank assembly GCA_008501765.1. The GC content of the type genome is 43.05 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Effulella vehemifica sp. nov.

Candidatus Effulella vehemifica (NL. fem. n. *vehemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAK01 sp005788935*. The type genome for the species is the GenBank assembly GCA_005788935.1. The GC content of the type genome is 71.19 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Effulella gen. nov.

Candidatus Effulella (NL. fem. n. *Effulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SYAK01*. The type species for the genus is *Candidatus* Effulella vehemifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHBI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colepariaceae.

Description of *Candidatus* Effulia forabilega sp. nov.

Candidatus Effulia forabilega (NL. fem. n. *forabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFRJ01 sp013141255*. The type genome for the species is the GenBank assembly GCA_013141255.1. The GC content of the type genome is 56.54 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Effulia gen. nov.

Candidatus Effulia (NL. fem. n. *Effulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFRJ01*. The type species for the genus is *Candidatus* Effulia forabilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effulida ellipitio sp. nov.

Candidatus Effulida ellipitio (NL. fem. n. *ellipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKSI01 sp007570905*. The type genome for the species is the GenBank assembly GCA_007570905.1. The GC content of the type genome is 65.28 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Effulida gen. nov.

Candidatus Effulida (NL. fem. n. *Effulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RKSI01*. The type species for the genus is *Candidatus* Effulida ellipitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SP5GCR1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paropidaceae.

Description of *Candidatus* Effulosa istinisca sp. nov.

Candidatus Effulosa istinisca (NL. fem. n. *istinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747325 sp002747325*. The type genome for the species is the GenBank assembly GCA_002747325.1. The GC content of the type genome is 62.18 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Effulosa gen. nov.

Candidatus Effulosa (NL. fem. n. *Effulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2747325*. The type species for the genus is *Candidatus* Effulosa istinisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effulula adaggatio sp. nov.

Candidatus Effulula adaggatio (NL. fem. n. *adaggatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704665 sp002704665*. The type genome for the species is the GenBank assembly GCA_002704665.1. The GC content of the type genome is 40.17 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Effulula gen. nov.

Candidatus Effulula (NL. fem. n. *Effulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2704665*. The type species for the genus is *Candidatus* Effulula adaggatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA3031. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabellaceae.

Description of *Candidatus* Effulula inergiforma sp. nov.

Candidatus Effulula inergiforma (NL. fem. n. *inergiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704665 sp902601765*. The type genome for the species is the GenBank assembly RS_GCF_902601765.1. The GC content of the type genome is 39.49 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Effulula pepenitica sp. nov.

Candidatus Effulula pepenitica (NL. fem. n. *pepenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704665 sp902627495*. The type genome for the species is the GenBank assembly RS_GCF_902627495.1. The GC content of the type genome is 40.58 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Effunana impiletta sp. nov.

Candidatus Effunana impiletta (NL. fem. n. *impiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWAH01 sp903910585*. The type genome for the species is the GenBank assembly GCA_903910585.1. The GC content of the type genome is 65.62 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Effunana gen. nov.

Candidatus Effunana (NL. fem. n. *Effunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWAH01*. The type species for the genus is *Candidatus* Effunana impiletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9464*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Vatilariaceae.

Description of *Candidatus* Effunana metapilega sp. nov.

Candidatus Effunana metapilega (NL. fem. n. *metapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWAH01 sp903821635*. The type genome for the species is the GenBank assembly GCA_903821635.1. The GC content of the type genome is 63.27 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Effunaria palifatica sp. nov.

Candidatus Effunaria palifatica (NL. fem. n. *palifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2230 sp002348005*. The type genome for the species is the GenBank assembly GCA_002348005.1. The GC content of the type genome is 58.4 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Effunaria gen. nov.

Candidatus Effunaria (NL. fem. n. *Effunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2230*. The type species for the genus is *Candidatus* Effunaria palifatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effunella adsulimonia sp. nov.

Candidatus Effunella adsulimonia (NL. fem. n. *adsulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6140 sp002842435*. The type genome for the species is the GenBank assembly GCA_002842435.1. The GC content of the type genome is 54.84 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Effunella gen. nov.

Candidatus Effunella (NL. fem. n. *Effunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6140*. The type species for the genus is *Candidatus* Effunella adsulimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effunella depasessa sp. nov.

Candidatus Effunella depasessa (NL. fem. n. *depasessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6140 sp002842255*. The type genome for the species is the GenBank assembly GCA_002842255.1. The GC content of the type genome is 54.92 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Effunella encepitura sp. nov.

Candidatus Effunella encepitura (NL. fem. n. *encepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6140 sp001704575*. The type genome for the species is the GenBank assembly RS_GCF_001704575.1. The GC content of the type genome is 55.19 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "coastal water".

Description of *Candidatus* Effunella fecunitura sp. nov.

Candidatus Effunella fecunitura (NL. fem. n. *fecunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6140 sp002423265*. The type genome for the species is the GenBank assembly GCA_002423265.1. The GC content of the type genome is 56.26 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Effunella hirunilega sp. nov.

Candidatus Effunella hirunilega (NL. fem. n. *hirunilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6140 sp002842135*. The type genome for the species is the GenBank assembly GCA_002842135.1. The GC content of the type genome is 53.6 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Effunella octoditas sp. nov.

Candidatus Effunella octoditas (NL. fem. n. *octoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6140 sp002479405*. The type genome for the species is the GenBank assembly GCA_002479405.1. The GC content of the type genome is 55.23 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Effunia laxitousia sp. nov.

Candidatus Effunia laxitousia (NL. fem. n. *laxitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RSCCF101 sp008807075*. The type genome for the species is the GenBank assembly RS_GCF_008807075.1. The GC content of the type genome is 67.98 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Effunia gen. nov.

Candidatus Effunia (NL. fem. n. *Effunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RSCCF101*. The type species for the genus is *Candidatus* Effunia laxitousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effunida armipimonas sp. nov.

Candidatus Effunida armipimonas (NL. fem. n. *armipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2697505 sp002728175*. The type genome for the species is the GenBank assembly GCA_002728175.1. The GC content of the type genome is 28.84 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Effunida gen. nov.

Candidatus Effunida (NL. fem. n. *Effunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2697505*. The type species for the genus is *Candidatus* Effunida armipimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Effunida impiretta sp. nov.

Candidatus Effunida impiretta (NL. fem. n. *impiretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2697505 sp002697505*. The type genome for the species is the GenBank assembly GCA_002697505.1. The GC content of the type genome is 30.18 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Effunosa errabatica sp. nov.

Candidatus Effunosa errabatica (NL. fem. n. *errabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J048 sp003695825*. The type genome for the species is the GenBank assembly GCA_003695825.1. The GC content of the type genome is 69.15 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Effunosa gen. nov.

Candidatus Effunosa (NL. fem. n. *Effunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J048*. The type species for the genus is *Candidatus* Effunosa errabatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Effunula arbavitura sp. nov.

Candidatus Effunula arbavitura (NL. fem. n. *arbavitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-FULL-40-15 sp001821555*. The type genome for the species is the GenBank assembly GCA_001821555.1. The GC content of the type genome is 39.67 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Effunula gen. nov.

Candidatus Effunula (NL. fem. n. *Effunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB1-FULL-40-15*. The type species for the genus is *Candidatus* Effunula arbavitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-38-27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citiviaceae.

Description of *Candidatus* Eggerthella renavibula sp. nov.

Candidatus Eggerthella renavibula (NL. fem. n. *renavibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eggerthella sp014287365*. The type genome for the species is the GenBank assembly RS_GCF_014287365.1. The GC content of the type genome is 66.22 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Egregana assefibula sp. nov.

Candidatus Egregana assefibula (NL. fem. n. *assefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA11940 sp003979335*. The type genome for the species is the GenBank assembly GCA_003979335.1. The GC content of the type genome is 43.79 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Egregana gen. nov.

Candidatus Egregana (NL. fem. n. *Egregana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11940*. The type species for the genus is *Candidatus* Egregana assefibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Egregana dibucibra sp. nov.

Candidatus Egregana dibucibra (NL. fem. n. *dibucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11940 sp900549005*. The type genome for the species is the GenBank assembly GCA_900549005.1. The GC content of the type genome is 51.52 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Egregana infesilega sp. nov.

Candidatus Egregana infesilega (NL. fem. n. *infesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11940 sp003503945*. The type genome for the species is the GenBank assembly GCA_003503945.1. The GC content of the type genome is 48.27 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Egregana intolivita sp. nov.

Candidatus Egregana intolivita (NL. fem. n. *intolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11940 sp013316055*. The type genome for the species is the GenBank assembly GCA_013316055.1. The GC content of the type genome is 48.78 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Egregaria penecimonas sp. nov.

Candidatus Egregaria penecimonas (NL. fem. n. *penecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-001939115 sp001939115*. The type genome for the species is the GenBank assembly RS_GCF_001939115.1. The GC content of the type genome is 52.32 % and the genome length is 5.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pinnacle phototroph mat".

Description of *Candidatus* Egregaria gen. nov.

Candidatus Egregaria (NL. fem. n. *Egregaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-001939115*. The type species for the genus is *Candidatus* Egregaria penecimonas .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Egregella nubigitudo sp. nov.

Candidatus Egregella nubigitudo (NL. fem. n. *nubigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2706205 sp002706205*. The type genome for the species is the GenBank assembly GCA_002706205.1. The GC content of the type genome is 34.05 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Egregella gen. nov.

Candidatus Egregella (NL. fem. n. *Egregella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2706205*. The type species for the genus is *Candidatus* Egregella nubigitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Egregida adnicivita sp. nov.

Candidatus Egregida adnicivita (NL. fem. n. *adnicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11377 sp900755035*. The type genome for the species is the GenBank assembly RS_GCF_900755035.1. The GC content of the type genome is 37.74 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Egregida gen. nov.

Candidatus Egregida (NL. fem. n. *Egregida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11377*. The type species for the genus is *Candidatus* Egregida adnicivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadanaceae.

Description of *Candidatus* Egregosa pepenisca sp. nov.

Candidatus Egregosa pepenisca (NL. fem. n. *pepenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRIY01 sp009782515*. The type genome for the species is the GenBank assembly GCA_009782515.1. The GC content of the type genome is 46.27 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Egregosa gen. nov.

Candidatus Egregosa (NL. fem. n. *Egregosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRIY01*. The type species for the genus is *Candidatus* Egregosa pepenisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Egritana exsisastra sp. nov.

Candidatus Egritana exsisastra (NL. fem. n. *exsisastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYMS01 sp012521295*. The type genome for the species is the GenBank assembly GCA_012521295.1. The GC content of the type genome is 50.76 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Egritana gen. nov.

Candidatus Egritana (NL. fem. n. *Egritana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYMS01*. The type species for the genus is *Candidatus* Egritana exsisastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Egritaria adremastra sp. nov.

Candidatus Egritaria adremastra (NL. fem. n. *adremastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0058 sp000163695*. The type genome for the species is the GenBank assembly RS_GCF_000163695.1. The GC content of the type genome is 43.05 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Egritaria gen. nov.

Candidatus Egritaria (NL. fem. n. *Egritaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F0058*. The type species for the genus is *Candidatus* Egritaria adremastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Egritaria agricax sp. nov.

Candidatus Egritaria agricax (NL. fem. n. *agricax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0058 sp000768855*. The type genome for the species is the GenBank assembly RS_GCF_000768855.1. The GC content of the type genome is 37.62 % and the genome length is 2.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dog mouth".

Description of *Candidatus* Egritella scorbitoga sp. nov.

Candidatus Egritella scorbitoga (NL. fem. n. *scorbitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCRW01 sp013813345*. The type genome for the species is the GenBank assembly GCA_013813345.1. The GC content of the type genome is 69.84 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Egritella gen. nov.

Candidatus Egritella (NL. fem. n. *Egritella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCRW01*. The type species for the genus is *Candidatus* Egritella scorbitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Egritosa bimetitoga sp. nov.

Candidatus Egritosa bimetitoga (NL. fem. n. *bimetitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTF01 sp009379725*. The type genome for the species is the GenBank assembly GCA_009379725.1. The GC content of the type genome is 54.19 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Egritosa gen. nov.

Candidatus Egritosa (NL. fem. n. *Egritosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTF01*. The type species for the genus is *Candidatus* Egritosa bimetitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigosaceae.

Description of *Candidatus* Egritula anancibula sp. nov.

Candidatus Egritula anancibula (NL. fem. n. *anancibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-0-20-51-18 sp002774685*. The type genome for the species is the GenBank assembly GCA_002774685.1. The GC content of the type genome is 51.33 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Egritula gen. nov.

Candidatus Egritula (NL. fem. n. *Egritula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-0-20-51-18*. The type species for the genus is *Candidatus* Egritula anancibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9959*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvidaceae.

Description of *Candidatus* Ehrlichia exsorax sp. nov.

Candidatus Ehrlichia exsorax (NL. fem. n. *exsorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ehrlichia sp000632845*. The type genome for the species is the GenBank assembly RS_GCF_000632845.1. The GC content of the type genome is 29.65 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Eisenbergiella adcogastra sp. nov.

Candidatus Eisenbergiella adcogastra (NL. fem. n. *adcogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eisenbergiella sp900544445*. The type genome for the species is the GenBank assembly GCA_900544445.1. The GC content of the type genome is 52.37 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Eisenbergiella adpecedo sp. nov.

Candidatus Eisenbergiella adpecedo (NL. fem. n. *adpecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eisenbergiella sp002361095*. The type genome for the species is the GenBank assembly GCA_002361095.1. The GC content of the type genome is 51.37 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Eisenbergiella aglasivita sp. nov.

Candidatus Eisenbergiella aglasivita (NL. fem. n. *aglasivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eisenbergiella sp003343625*. The type genome for the species is the GenBank assembly GCA_003343625.1. The GC content of the type genome is 53.51 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Eisenbergiella cenobifica sp. nov.

Candidatus Eisenbergiella cenobifica (NL. fem. n. *cenobifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eisenbergiella sp900555195*. The type genome for the species is the GenBank assembly GCA_900555195.1. The GC content of the type genome is 51.08 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Eisenbergiella genufimonia sp. nov.

Candidatus Eisenbergiella genufimonia (NL. fem. n. *genufimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Eisenbergiella sp900539715*. The type genome for the species is the GenBank assembly GCA_900539715.1. The GC content of the type genome is 48.19 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Eisenbergiella pedepitoga sp. nov.

Candidatus Eisenbergiella pedepitoga (NL. fem. n. *pedepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eisenbergiella sp003478085*. The type genome for the species is the GenBank assembly GCA_900548555.1. The GC content of the type genome is 48.21 % and the genome length is 6.71 Mbp.

Description of *Candidatus* Eisenbergiella risibicella sp. nov.

Candidatus Eisenbergiella risibicella (NL. fem. n. *risibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eisenbergiella sp900066775*. The type genome for the species is the GenBank assembly RS_GCF_003477655.1. The GC content of the type genome is 48.2 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Eisenbergiella siticedo sp. nov.

Candidatus Eisenbergiella siticedo (NL. fem. n. *siticedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eisenbergiella sp900550285*. The type genome for the species is the GenBank assembly GCA_900550285.1. The GC content of the type genome is 52.66 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Eisenbergiella venucastra sp. nov.

Candidatus Eisenbergiella venucastra (NL. fem. n. *venucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eisenbergiella sp900548905*. The type genome for the species is the GenBank assembly GCA_900548905.1. The GC content of the type genome is 48.26 % and the genome length is 6.99 Mbp.

Description of *Candidatus* Ekhidna baditicula sp. nov.

Candidatus Ekhidna baditicula (NL. fem. n. *baditicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ekhidna sp006969745*. The type genome for the species is the GenBank assembly GCA_006969745.1. The GC content of the type genome is 40.12 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Ekhidna cunabastra sp. nov.

Candidatus Ekhidna cunabastra (NL. fem. n. *cunabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ekhidna sp014323825*. The type genome for the species is the GenBank assembly GCA_014323985.1. The GC content of the type genome is 39.63 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Ekhidna desomessa sp. nov.

Candidatus Ekhidna desomessa (NL. fem. n. *desomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ekhidna sp013214445*. The type genome for the species is the GenBank assembly GCA_013214445.1. The GC content of the type genome is 40.72 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Elainella detotimonia sp. nov.

Candidatus Elainella detotimonia (NL. fem. n. *detotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Elainella sp000733415*. The type genome for the species is the GenBank assembly GCA_003724315.1. The GC content of the type genome is 50.83 % and the genome length is 8.17 Mbp.

Description of *Candidatus* Elainella viragibra sp. nov.

Candidatus Elainella viragibra (NL. fem. n. *viragibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Elainella sp012033495*. The type genome for the species is the GenBank assembly GCA_012033495.1. The GC content of the type genome is 49.82 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Elastana inpelitia sp. nov.

Candidatus Elastana inpelitia (NL. fem. n. *inpelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCS01 sp013288005*. The type genome for the species is the GenBank assembly GCA_013288005.1. The GC content of the type genome is 41.86 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Elastana gen. nov.

Candidatus Elastana (NL. fem. n. *Elastana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCS01*. The type species for the genus is *Candidatus* Elastana inpelitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Elastaria adrenitoga sp. nov.

Candidatus Elastaria adrenitoga (NL. fem. n. *adrenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMG01 sp009777435*. The type genome for the species is the GenBank assembly GCA_009777435.1. The GC content of the type genome is 58.42 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Elastaria gen. nov.

Candidatus Elastaria (NL. fem. n. *Elastaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRMG01*. The type species for the genus is *Candidatus* Elastaria

adrenitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Elastaria errabitio sp. nov.

Candidatus Elastaria errabitio (NL. fem. n. *errabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMG01 sp009777255*. The type genome for the species is the GenBank assembly GCA_009777255.1. The GC content of the type genome is 57.08 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Elastaria impacax sp. nov.

Candidatus Elastaria impacax (NL. fem. n. *impacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMG01 sp009782385*. The type genome for the species is the GenBank assembly GCA_009782385.1. The GC content of the type genome is 48.6 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Elastella abrepugo sp. nov.

Candidatus Elastella abrepugo (NL. fem. n. *abrepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJM01 sp013002475*. The type genome for the species is the GenBank assembly GCA_013002475.1. The GC content of the type genome is 43.38 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Elastella gen. nov.

Candidatus Elastella (NL. fem. n. *Elastella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJM01*. The type species for the genus is *Candidatus* Elastella abrepugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Elastia ignosimonas sp. nov.

Candidatus Elastia ignosimonas (NL. fem. n. *ignosimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *A373 sp011176685*. The type genome for the species is the GenBank assembly GCA_011176685.1. The GC content of the type genome is 42.02 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Elastia gen. nov.

Candidatus Elastia (NL. fem. n. *Elastia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *A373*. The type species for the genus is *Candidatus* Elastia ignosimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Elastida semidicella sp. nov.

Candidatus Elastida semidicella (NL. fem. n. *semidicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFRY01 sp013140955*. The type genome for the species is the GenBank assembly GCA_013140955.1. The GC content of the type genome is 69.69 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Elastida gen. nov.

Candidatus Elastida (NL. fem. n. *Elastida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFRY01*. The type species for the genus is *Candidatus* Elastida semidicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Elastosa subinicula sp. nov.

Candidatus Elastosa subinicula (NL. fem. n. *subinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUH01 sp012517755*. The type genome for the species is the GenBank assembly GCA_012517755.1. The GC content of the type genome is 27.88 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Elastosa gen. nov.

Candidatus Elastosa (NL. fem. n. *Elastosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUH01*. The type species for the genus is *Candidatus* Elastosa subinicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B22-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repuriaceae.

Description of *Candidatus* Elastula abnocisca sp. nov.

Candidatus Elastula abnocisca (NL. fem. n. *abnocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNRH01 sp902622825*. The type genome for the species is the GenBank assembly GCA_902622825.1. The GC content of the type genome is 30.66 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Elastula gen. nov.

Candidatus Elastula (NL. fem. n. *Elastula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACNRH01*. The type species for the genus is *Candidatus* Elastula abnocisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Elastula ambacentia sp. nov.

Candidatus Elastula ambacentia (NL. fem. n. *ambacentia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNRH01 sp002692325*. The type genome for the species is the GenBank assembly GCA_002692325.1. The GC content of the type genome is 29.63 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Elastula arcitilenta sp. nov.

Candidatus Elastula arcitilenta (NL. fem. n. *arcitilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNRH01 sp902573865*. The type genome for the species is the GenBank assembly GCA_902573865.1. The GC content of the type genome is 29.71 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Elastula indubicella sp. nov.

Candidatus Elastula indubicella (NL. fem. n. *indubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNRH01 sp902563575*. The type genome for the species is the GenBank assembly GCA_902563575.1. The GC content of the type genome is 30.27 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Elastula vinulago sp. nov.

Candidatus Elastula vinulago (NL. fem. n. *vinulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNRH01 sp902584365*. The type genome for the species is the GenBank assembly GCA_902584365.1. The GC content of the type genome is 29.58 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Electronema legifigena sp. nov.

Candidatus Electronema legifigena (NL. fem. n. *legifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Electronema sp002413355*. The type genome for the species is the GenBank assembly GCA_002413355.1. The GC content of the type genome is 55.35 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Electronema mirifago sp. nov.

Candidatus Electronema mirifago (NL. fem. n. *mirifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Electronema sp011391865*. The type genome for the species is the GenBank assembly GCA_011391865.1. The GC content of the type genome is 57.29 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Electronema octodentia sp. nov.

Candidatus Electronema octodentia (NL. fem. n. *octodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Electronema sp004284765*. The type genome for the species is the GenBank assembly GCA_004284765.1. The GC content of the type genome is 51.86 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Electrothrix habacimonas sp. nov.

Candidatus Electrothrix habacimonas (NL. fem. n. *habacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Electrothrix sp011389815*. The type genome for the species is the GenBank assembly GCA_011389815.1. The GC content of the type genome is 47.27 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Elioraea locelitia sp. nov.

Candidatus Elioraea locelitia (NL. fem. n. *locelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Elioraea sp006704265*. The type genome for the species is the GenBank assembly RS_GCF_006704265.1. The GC content of the type genome is 72.44 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Elizabethkingia capudessa sp. nov.

Candidatus Elizabethkingia capudessa (NL. fem. n. *capudessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Elizabethkingia sp003058195*. The type genome for the species is the GenBank assembly RS_GCF_003058195.1. The GC content of the type genome is 35.61 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Elizabethkingia errabitura sp. nov.

Candidatus Elizabethkingia errabitura (NL. fem. n. *errabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Elizabethkingia sp003852805*. The type genome for the species is the GenBank assembly GCA_003852805.1. The GC content of the type genome is 47.27 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Elizabethkingia maxilivita sp. nov.

Candidatus Elizabethkingia maxilivita (NL. fem. n. *maxilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Elizabethkingia sp006088815*. The type genome for the species is the GenBank assembly RS_GCF_006088815.1. The GC content of the type genome is 35.19 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Ellagibacter relenitudo sp. nov.

Candidatus Ellagibacter relenitudo (NL. fem. n. *relenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ellagibacter sp900554945*. The type genome for the species is the GenBank assembly GCA_900554945.1. The GC content of the type genome is 61.87 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Ellebana bovicitica sp. nov.

Candidatus Ellebana bovicitica (NL. fem. n. *bovicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMU01 sp012798645*. The type genome for the species is the GenBank assembly GCA_012798645.1. The GC content of the type genome is 32.41 % and the genome length is 0.5 Mbp.

Description of *Candidatus* Ellebana gen. nov.

Candidatus Ellebana (NL. fem. n. *Ellebana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZMU01*. The type species for the genus is *Candidatus* Ellebana bovicitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5633*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carecosaceae.

Description of *Candidatus* Ellebaria algebivita sp. nov.

Candidatus Ellebaria algebivita (NL. fem. n. *algebivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *X156 sp004006015*. The type genome for the species is the GenBank assembly RS_GCF_004006015.1. The GC content of the type genome is 72.19 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Ellebaria gen. nov.

Candidatus Ellebaria (NL. fem. n. *Ellebaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *X156*. The type species for the genus is *Candidatus* Ellebaria algebivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ellebella canacimonas sp. nov.

Candidatus Ellebella canacimonas (NL. fem. n. *canacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUR01 sp012517645*. The type genome for the species is the GenBank assembly GCA_012517645.1. The GC content of the type genome is 65.35 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Ellebella gen. nov.

Candidatus Ellebella (NL. fem. n. *Ellebella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUR01*. The type species for the genus is *Candidatus* Ellebella canacimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12059*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubicanaceae.

Description of *Candidatus* Ellebosa inobsatica sp. nov.

Candidatus Ellebosa inobsatica (NL. fem. n. *inobsatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPBW01 sp004525685*. The type genome for the species is the GenBank assembly GCA_004525685.1. The GC content of the type genome is 56.04 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Ellebosa gen. nov.

Candidatus Ellebosa (NL. fem. n. *Ellebosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPBW01*. The type species for the genus is *Candidatus* Ellebosa inobsatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9294*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semodosaceae.

Description of *Candidatus* Ellebula detunatica sp. nov.

Candidatus Ellebula detunatica (NL. fem. n. *detunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYQE01 sp012519455*. The type genome for the species is the GenBank assembly GCA_012519455.1. The GC content of the type genome is 44.49 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Ellebula gen. nov.

Candidatus Ellebula (NL. fem. n. *Ellebula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYQE01*. The type species for the genus is *Candidatus* Ellebula detunatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosiganaceae.

Description of *Candidatus* Ellipana caselilega sp. nov.

Candidatus Ellipana caselilega (NL. fem. n. *caselilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J119 sp003694545*. The type genome for the species is the GenBank assembly GCA_003694545.1. The GC content of the type genome is 55.17 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Ellipana gen. nov.

Candidatus Ellipana (NL. fem. n. *Ellipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J119*. The type species for the genus is *Candidatus* Ellipana caselilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Ellipia fatifitudo sp. nov.

Candidatus Ellipia fatifitudo (NL. fem. n. *fatifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2402105 sp002402105*. The type genome for the species is the GenBank assembly GCA_002402105.1. The GC content of the type genome is 29.92 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Ellipia gen. nov.

Candidatus Ellipia (NL. fem. n. *Ellipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2402105*. The type species for the genus is *Candidatus* Ellipia fatifitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6191*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubefellaceae.

Description of *Candidatus* Ellipida paracitura sp. nov.

Candidatus Ellipida paracitura (NL. fem. n. *paracitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZCI01 sp012513365*. The type genome for the species is the GenBank assembly GCA_012513365.1. The GC content of the type genome is 45.21 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Ellipida gen. nov.

Candidatus Ellipida (NL. fem. n. *Ellipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZCI01*. The type species for the genus is *Candidatus* Ellipida paracitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ellipula vacilitura sp. nov.

Candidatus Ellipula vacilitura (NL. fem. n. *vacilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSQW01 sp013215605*. The type genome for the species is the GenBank assembly GCA_013215605.1. The GC content of the type genome is 66.55 % and the genome length is 6.74 Mbp.

Description of *Candidatus* Ellipula gen. nov.

Candidatus Ellipula (NL. fem. n. *Ellipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSQW01*. The type species for the genus is *Candidatus* Ellipula vacilitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMWR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penicellaceae.

Description of *Candidatus* Elstera adfanastra sp. nov.

Candidatus Elstera adfanastra (NL. fem. n. *adfanastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Elstera sp013298565*. The type genome for the species is the GenBank assembly GCA_013298565.1. The GC content of the type genome is 59.28 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Elusimicrobium aggenentia sp. nov.

Candidatus Elusimicrobium aggenentia (NL. fem. n. *aggenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Elusimicrobium sp009778915*. The type genome for the species is the GenBank assembly GCA_009778915.1. The GC content of the type genome is 47.43 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Emancana omnifilenta sp. nov.

Candidatus Emancana omnifilenta (NL. fem. n. *omnifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKX01 sp009885285*. The type genome for the species is the GenBank assembly GCA_009885285.1. The GC content of the type genome is 42.48 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Emancana gen. nov.

Candidatus Emancana (NL. fem. n. *Emancana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKX01*. The type species for the genus is *Candidatus* Emancana omnifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Emancaria obfusentia sp. nov.

Candidatus Emancaria obfusentia (NL. fem. n. *obfusentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14186 sp902796565*. The type genome for the species is the GenBank assembly GCA_902796565.1. The GC content of the type genome is 54.6 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Emancaria gen. nov.

Candidatus Emancaria (NL. fem. n. *Emancaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14186*. The type species for the genus is *Candidatus* Emancaria obfusentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Emancia adlubiforma sp. nov.

Candidatus Emancia adlubiforma (NL. fem. n. *adlubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAZBA01 sp012514045*. The type genome for the species is the GenBank assembly GCA_012514045.1. The GC content of the type genome is 47.35 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Emancia gen. nov.

Candidatus Emancia (NL. fem. n. *Emancia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZBA01*. The type species for the genus is *Candidatus* Emancia adlubiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Emancida blactimonia sp. nov.

Candidatus Emancida blactimonia (NL. fem. n. *blactimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1799 sp002319815*. The type genome for the species is the GenBank assembly GCA_002319815.1. The GC content of the type genome is 49.62 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Emancida gen. nov.

Candidatus Emancida (NL. fem. n. *Emancida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1799*. The type species for the genus is *Candidatus* Emancida blactimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Emancosa cocolitura sp. nov.

Candidatus Emancosa cocolitura (NL. fem. n. *cocolitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTOV01 sp011388995*. The type genome for the species is the GenBank assembly GCA_011388995.1. The GC content of the type genome is 36.89 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Emancosa gen. nov.

Candidatus Emancosa (NL. fem. n. *Emancosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTOV01*. The type species for the genus is *Candidatus* Emancosa cocolitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Emancula obtemigena sp. nov.

Candidatus Emancula obtemigena (NL. fem. n. *obtemigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAO01 sp012719335*. The type genome for the species is the GenBank assembly GCA_012719335.1. The GC content of the type genome is 68.85 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Emancula gen. nov.

Candidatus Emancula (NL. fem. n. *Emancula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAO01*. The type species for the genus is *Candidatus* Emancula obtemigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Embamana accapatio sp. nov.

Candidatus Embamana accapatio (NL. fem. n. *accapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-762 sp000432575*. The type genome for the species is the GenBank assembly GCA_000432575.1. The GC content of the type genome is 27.46 % and the genome length is 1.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Embamana gen. nov.

Candidatus Embamana (NL. fem. n. *Embamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-762*. The type species for the genus is *Candidatus* Embamana accapatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Embamana inpuribra sp. nov.

Candidatus Embamana inpuribra (NL. fem. n. *inpuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-762 sp900551315*. The type genome for the species is the GenBank assembly GCA_900551315.1. The GC content of the type genome is 27.35 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Embamella cosigitio sp. nov.

Candidatus Embamella cosigitio (NL. fem. n. *cosigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSGK01 sp008015855*. The type genome for the species is the GenBank assembly GCA_008015855.1. The GC content of the type genome is 37.69 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Embamella gen. nov.

Candidatus Embamella (NL. fem. n. *Embamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSGK01*. The type species for the genus is *Candidatus* Embamella cosigitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visifosaceae.

Description of *Candidatus* Embamia adcogitudo sp. nov.

Candidatus Embamia adcogitudo (NL. fem. n. *adcogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52909 sp013815575*. The type genome for the species is the GenBank assembly GCA_013815575.1. The GC content of the type genome is 66.51 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Embamia gen. nov.

Candidatus Embamia (NL. fem. n. *Embamia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCSIO-52909*. The type species for the genus is *Candidatus* Embamia adcogitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Embamia appecedo sp. nov.

Candidatus Embamia appecedo (NL. fem. n. *appecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52909 sp902805985*. The type genome for the species is the GenBank assembly GCA_902805985.1. The GC content of the type genome is 67.43 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Embamia attegentia sp. nov.

Candidatus Embamia attegentia (NL. fem. n. *attegentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52909 sp902812425*. The type genome for the species is the GenBank assembly RS_GCF_902812425.1. The GC content of the type genome is 63.53 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Embamia ciciliforma sp. nov.

Candidatus Embamia ciciliforma (NL. fem. n. *ciciliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52909 sp013696435*. The type genome for the species is the GenBank assembly GCA_013696435.1. The GC content of the type genome is 66.52 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Embamia colepitio sp. nov.

Candidatus Embamia colepitio (NL. fem. n. *colepitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52909 sp902805975*. The type genome for the species is the GenBank assembly GCA_902805975.1. The GC content of the type genome is 67.55 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Embamia defanetta sp. nov.

Candidatus Embamia defanetta (NL. fem. n. *defanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52909 sp902806015*. The type genome for the species is the GenBank assembly GCA_902806015.1. The GC content of the type genome is 67.27 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Embamia depopifica sp. nov.

Candidatus Embamia depopifica (NL. fem. n. *depopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52909 sp013698525*. The type genome for the species is the GenBank assembly GCA_013698525.1. The GC content of the type genome is 63.32 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Embamia tametitudo sp. nov.

Candidatus Embamia tametitudo (NL. fem. n. *tametitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SCSIO-52909 sp011492945*. The type genome for the species is the GenBank assembly RS_GCF_011492945.1. The GC content of the type genome is 66.95 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Embamia taxilicula sp. nov.

Candidatus Embamia taxilicula (NL. fem. n. *taxilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52909 sp902806085*. The type genome for the species is the GenBank assembly GCA_902806085.1. The GC content of the type genome is 68.2 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Embamia tetenilega sp. nov.

Candidatus Embamia tetenilega (NL. fem. n. *tetenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52909 sp902806095*. The type genome for the species is the GenBank assembly GCA_902806095.1. The GC content of the type genome is 63.15 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Embamida adsibitura sp. nov.

Candidatus Embamida adsibitura (NL. fem. n. *adsibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYJ01 sp013696015*. The type genome for the species is the GenBank assembly GCA_013696015.1. The GC content of the type genome is 69.39 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Embamida gen. nov.

Candidatus Embamida (NL. fem. n. *Embamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCYJ01*. The type species for the genus is *Candidatus* Embamida adsibitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Embamida milifisca sp. nov.

Candidatus Embamida milifisca (NL. fem. n. *milifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYJ01 sp013696555*. The type genome for the species is the GenBank assembly GCA_013696555.1. The GC content of the type genome is 67.53 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Embamosa rubicivita sp. nov.

Candidatus Embamosa rubicivita (NL. fem. n. *rubicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40-19 sp001898075*. The type genome for the species is the GenBank assembly GCA_001898075.1. The GC content of the type genome is 39.82 % and the genome length is 0.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Embamosa gen. nov.

Candidatus Embamosa (NL. fem. n. *Embamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40-19*. The type species for the genus is *Candidatus* Embamosa rubicivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Emcibacter siligigena sp. nov.

Candidatus Emcibacter siligigena (NL. fem. n. *siligigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emcibacter sp002380195*. The type genome for the species is the GenBank assembly RS_GCF_005849285.1. The GC content of the type genome is 54.65 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Emcibacter aminnitio sp. nov.

Candidatus Emcibacter aminnitio (NL. fem. n. *aminnitio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emcibacter_A sp002401455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002401455.1. The GC content of the type genome is 52.08 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Emcibacter antefigena sp. nov.

Candidatus Emcibacter antefigena (NL. fem. n. *antefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emcibacter_A sp013152755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013152755.1. The GC content of the type genome is 50.7 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Emcibacter appicicula sp. nov.

Candidatus Emcibacter appicicula (NL. fem. n. *appicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emcibacter_A sp002749135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002749135.1. The GC content of the type genome is 50.36 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Emcibacter defosisca sp. nov.

Candidatus Emcibacter defosisca (NL. fem. n. *defosisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emcibacter_A sp011051815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011051815.1. The GC

content of the type genome is 51.56 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Emcibacter defulimonia sp. nov.

Candidatus Emcibacter defulimonia (NL. fem. n. *defulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emcibacter_A sp002402225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002402225.1. The GC content of the type genome is 47.23 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Emcibacter demociforma sp. nov.

Candidatus Emcibacter demociforma (NL. fem. n. *demociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emcibacter_A sp002401545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002401545.1. The GC content of the type genome is 49.38 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Emcibacter invecifica sp. nov.

Candidatus Emcibacter invecifica (NL. fem. n. *invecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emcibacter_A sp013152615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013152615.1. The GC content of the type genome is 52.69 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Emergencia accomitas sp. nov.

Candidatus Emergencia accomitas (NL. fem. n. *accomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Emergencia sp009935805*. The type genome for the species is the GenBank assembly RS_GCF_009935805.1. The GC content of the type genome is 45.1 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Emergencia decenibra sp. nov.

Candidatus Emergencia decenibra (NL. fem. n. *decenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emergencia sp900551775*. The type genome for the species is the GenBank assembly GCA_900551775.1. The GC content of the type genome is 46.24 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Emergencia horomicella sp. nov.

Candidatus Emergencia horomicella (NL. fem. n. *horomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emergencia sp009936045*. The type genome for the species is the GenBank assembly RS_GCF_009910895.1. The GC content of the type genome is 43.87 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Emergencia metapimonia sp. nov.

Candidatus Emergencia metapimonia (NL. fem. n. *metapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emergencia sp900066695*. The type genome for the species is the GenBank assembly GCA_900066695.1. The GC content of the type genome is 45.12 % and the genome length is 4.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Emortana forinimonas sp. nov.

Candidatus Emortana forinimonas (NL. fem. n. *forinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA700 sp002298885*. The type genome for the species is the GenBank assembly GCA_002298885.1. The GC content of the type genome is 59.24 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Emortana gen. nov.

Candidatus Emortana (NL. fem. n. *Emortana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA700*. The type species for the genus is *Candidatus* Emortana forinimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Emortaria bicubisca sp. nov.

Candidatus Emortaria bicubisca (NL. fem. n. *bicubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYIB01 sp005798965*. The type genome for the species is the GenBank assembly GCA_005798965.1. The GC content of the type genome is 67.02 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Emortaria gen. nov.

Candidatus Emortaria (NL. fem. n. *Emortaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYIB01*. The type species for the genus is *Candidatus* Emortaria bicubisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Emortaria perabentia sp. nov.

Candidatus Emortaria perabentia (NL. fem. n. *perabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYIB01 sp903927725*. The type genome for the species is the GenBank assembly GCA_903927725.1. The GC content of the type genome is 67.72 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Emortella adaggibula sp. nov.

Candidatus Emortella adaggibula (NL. fem. n. *adaggibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SB10 sp008933835*. The type genome for the species is the GenBank assembly GCA_008933835.1. The GC content of the type genome is 62.99 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Emortella gen. nov.

Candidatus Emortella (NL. fem. n. *Emortella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SB10*. The type species for the genus is *Candidatus* Emortella adaggibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8401*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rurigellaceae.

Description of *Candidatus* Emortia exurrimonia sp. nov.

Candidatus Emortia exurrimonia (NL. fem. n. *exurrimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6688 sp002454845*. The type genome for the species is the GenBank assembly GCA_002454845.1. The GC content of the type genome is 55.19 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Emortia gen. nov.

Candidatus Emortia (NL. fem. n. *Emortia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6688*. The type species for the genus is *Candidatus* Emortia exurrimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabanaceae.

Description of *Candidatus* Emortida sicaredo sp. nov.

Candidatus Emortida sicaredo (NL. fem. n. *sicaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-28 sp005881825*. The type genome for the species is the GenBank assembly GCA_005881825.1. The GC content of the type genome is 69.55 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Emortida gen. nov.

Candidatus Emortida (NL. fem. n. *Emortida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-28*. The type species for the genus is *Candidatus* Emortida sicaredo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Emortosa ludimivita sp. nov.

Candidatus Emortosa ludimivita (NL. fem. n. *ludimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B22-G1 sp003641405*. The type genome for the species is the GenBank assembly GCA_003641405.1. The GC content of the type genome is 51.36 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Emortosa gen. nov.

Candidatus Emortosa (NL. fem. n. *Emortosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B22-G1*. The type species for the genus is *Candidatus* Emortosa ludimivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEB-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanugulaceae.

Description of *Candidatus* Emortula exindifica sp. nov.

Candidatus Emortula exindifica (NL. fem. n. *exindifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSN01 sp013140575*. The type genome for the species is the GenBank assembly GCA_013140575.1. The GC content of the type genome is 63.37 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Emortula gen. nov.

Candidatus Emortula (NL. fem. n. *Emortula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFSN01*. The type species for the genus is *Candidatus* Emortula exindifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomariaceae.

Description of *Candidatus* Empedobacter nutamicula sp. nov.

Candidatus Empedobacter nutamicula (NL. fem. n. *nutamicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Empedobacter sp002378465*. The type genome for the species is the GenBank assembly RS_GCF_900447295.1. The GC content of the type genome is 31.76 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Emticicia baditago sp. nov.

Candidatus Emticicia baditago (NL. fem. n. *baditago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emticicia sp002855535*. The type genome for the species is the GenBank assembly RS_GCF_002855535.1. The GC content of the type genome is 41.73 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Emticicia infatibra sp. nov.

Candidatus Emticicia infatibra (NL. fem. n. *infatibra* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emticicia sp003418935*. The type genome for the species is the GenBank assembly RS_GCF_003418935.1. The GC content of the type genome is 38.11 % and the genome length is 6.64 Mbp.

Description of *Candidatus* Emticicia infiretta sp. nov.

Candidatus Emticicia infiretta (NL. fem. n. *infiretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emticicia sp013912375*. The type genome for the species is the GenBank assembly RS_GCF_013912375.1. The GC content of the type genome is 37.74 % and the genome length is 6.57 Mbp.

Description of *Candidatus* Emticicia irreditica sp. nov.

Candidatus Emticicia irreditica (NL. fem. n. *irreditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Emticicia sp004168285*. The type genome for the species is the GenBank assembly RS_GCF_004168285.1. The GC content of the type genome is 38.56 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Encenana intoliforma sp. nov.

Candidatus Encenana intoliforma (NL. fem. n. *intoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDRL01 sp013041765*. The type genome for the species is the GenBank assembly GCA_013041765.1. The GC content of the type genome is 69.28 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Encenana gen. nov.

Candidatus Encenana (NL. fem. n. *Encenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JABDRL01*. The type species for the genus is *Candidatus* Encenana intoliforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Encenella adpericella sp. nov.

Candidatus Encenella adpericella (NL. fem. n. *adpericella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXA01 sp009786195*. The type genome for the species is the GenBank assembly GCA_009786195.1. The GC content of the type genome is 44.17 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Encenella gen. nov.

Candidatus Encenella (NL. fem. n. *Encenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQXA01*. The type species for the genus is *Candidatus* Encenella adpericella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Encenella duricibra sp. nov.

Candidatus Encenella duricibra (NL. fem. n. *duricibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXA01 sp009776375*. The type genome for the species is the GenBank assembly GCA_009776375.1. The GC content of the type genome is 47.9 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Encenella figilago sp. nov.

Candidatus Encenella figilago (NL. fem. n. *figilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXA01 sp009785095*. The type genome for the species is the GenBank assembly GCA_009785095.1. The GC content of the type genome is 50.81 %

and the genome length is 0.78 Mbp.

Description of *Candidatus* Encenida fetulousia sp. nov.

Candidatus Encenida fetulousia (NL. fem. n. *fetulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XY-R5 sp001660395*. The type genome for the species is the GenBank assembly RS_GCF_001660395.1. The GC content of the type genome is 47.22 % and the genome length is 5.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Kandelia candel root sediment".

Description of *Candidatus* Encenida gen. nov.

Candidatus Encenida (NL. fem. n. *Encenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XY-R5*. The type species for the genus is *Candidatus* Encenida fetulousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Encenosa inoffilega sp. nov.

Candidatus Encenosa inoffilega (NL. fem. n. *inoffilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLGQ01 sp007136595*. The type genome for the species is the GenBank assembly GCA_007136595.1. The GC content of the type genome is 38.66 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Encenosa gen. nov.

Candidatus Encenosa (NL. fem. n. *Encenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLGQ01*. The type species for the genus is *Candidatus* Encenosa inoffilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1177*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caselidaceae.

Description of *Candidatus* Encenosa irrotitoga sp. nov.

Candidatus Encenosa irrotitoga (NL. fem. n. *irrotitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLGQ01 sp007132725*. The type genome for the species is the GenBank assembly GCA_007132725.1. The GC content of the type genome is 38.55 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Encenula annifessa sp. nov.

Candidatus Encenula annifessa (NL. fem. n. *annifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHY01 sp013151585*. The type genome for the species is the GenBank assembly GCA_013151585.1. The GC content of the type genome is 61.08 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Encenula gen. nov.

Candidatus Encenula (NL. fem. n. *Encenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHY01*. The type species for the genus is *Candidatus* Encenula annifessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Encepana cenodentia sp. nov.

Candidatus Encepana cenodentia (NL. fem. n. *cenodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYPD01 sp007279775*. The type genome for the species is the GenBank assembly GCA_007279775.1. The GC content of the type genome is 39.99 % and the genome length is 0.43 Mbp.

Description of *Candidatus* Encepana gen. nov.

Candidatus Encepana (NL. fem. n. *Encepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QYPD01*. The type species for the genus is *Candidatus* Encepana cenodentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9933*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capilanaceae.

Description of *Candidatus* Enceparia adaggifica sp. nov.

Candidatus Enceparia adaggifica (NL. fem. n. *adaggifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABZJG01 sp902512685*. The type genome for the species is the GenBank assembly RS_GCF_902512685.1. The GC content of the type genome is 49.22 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Enceparia gen. nov.

Candidatus Enceparia (NL. fem. n. *Enceparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABZJG01*. The type species for the genus is *Candidatus* Enceparia adaggifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enceparia apograx sp. nov.

Candidatus Enceparia apograx (NL. fem. n. *apograx* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABZJG01 sp902525995*. The type genome for the species is the GenBank assembly RS_GCF_902525995.1. The GC content of the type genome is 50.53 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Enceparia diminitrix sp. nov.

Candidatus Enceparia diminitrix (NL. fem. n. *diminitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABZJG01 sp002726375*. The type genome for the species is the GenBank assembly GCA_002726375.1. The GC content of the type genome is 51.01 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Enceparia indipax sp. nov.

Candidatus Enceparia indipax (NL. fem. n. *indipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABZJG01 sp004213125*. The type genome for the species is the GenBank assembly GCA_004213125.1. The GC content of the type genome is 50.2 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Enceparia tomogax sp. nov.

Candidatus Enceparia tomogax (NL. fem. n. *tomogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABZJG01 sp002684715*. The type genome for the species is the GenBank assembly GCA_002684715.1. The GC content of the type genome is 49.87 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Encepella abrepetta sp. nov.

Candidatus Encepella abrepetta (NL. fem. n. *abrepetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WSTA01 sp009789225*. The type genome for the species is the GenBank assembly RS_GCF_009789225.1. The GC content of the type genome is 72.07 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Encepella gen. nov.

Candidatus Encepella (NL. fem. n. *Encepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WSTA01*. The type species for the genus is *Candidatus* Encepella abrepetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Encepia arcubibula sp. nov.

Candidatus Encepia arcubibula (NL. fem. n. *arcubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYRO01 sp012518735*. The type genome for the species is the GenBank assembly GCA_012518735.1. The GC content of the type genome is 44.62 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Encepia gen. nov.

Candidatus Encepia (NL. fem. n. *Encepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYRO01*. The type species for the genus is *Candidatus* Encepia arcubibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Encepida affunibula sp. nov.

Candidatus Encepida affunibula (NL. fem. n. *affunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730795 sp002730795*. The type genome for the species is the GenBank assembly GCA_002730795.1. The GC content of the type genome is 38.53 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Encepida gen. nov.

Candidatus Encepida (NL. fem. n. *Encepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2730795*. The type species for the genus is *Candidatus* Encepida affunibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

Bin127. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelanaceae.

Description of *Candidatus* Enceposa adfanentia sp. nov.

Candidatus Enceposa adfanentia (NL. fem. n. *adfanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKV01 sp009785505*. The type genome for the species is the GenBank assembly GCA_009785505.1. The GC content of the type genome is 41.24 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Enceposa gen. nov.

Candidatus Enceposa (NL. fem. n. *Enceposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKV01*. The type species for the genus is *Candidatus* Enceposa adfanentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucosaceae.

Description of *Candidatus* Enceposa celumitudo sp. nov.

Candidatus Enceposa celumitudo (NL. fem. n. *celumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKV01 sp009785425*. The type genome for the species is the GenBank assembly GCA_009785425.1. The GC content of the type genome is 41.04 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Enceposa exaggifica sp. nov.

Candidatus Enceposa exaggifica (NL. fem. n. *exaggifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKV01 sp009783885*. The type genome for the species is the

GenBank assembly GCA_009783885.1. The GC content of the type genome is 39.41 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Enceposa resulifica sp. nov.

Candidatus Enceposa resulifica (NL. fem. n. *resulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKV01 sp009777915*. The type genome for the species is the GenBank assembly GCA_009777915.1. The GC content of the type genome is 42.0 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Encepula adseliforma sp. nov.

Candidatus Encepula adseliforma (NL. fem. n. *adseliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXIE01 sp005772945*. The type genome for the species is the GenBank assembly GCA_005772945.1. The GC content of the type genome is 70.32 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Encepula gen. nov.

Candidatus Encepula (NL. fem. n. *Encepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXIE01*. The type species for the genus is *Candidatus* Encepula adseliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHBI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colepariaceae.

Description of *Candidatus* Encolana adfunastra sp. nov.

Candidatus Encolana adfunastra (NL. fem. n. *adfunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDEI01 sp013287145*. The type genome for the species is the GenBank assembly GCA_013287145.1. The GC content of the type genome is 40.92 %

and the genome length is 2.17 Mbp.

Description of *Candidatus* Encolana gen. nov.

Candidatus Encolana (NL. fem. n. *Encolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDEI01*. The type species for the genus is *Candidatus* Encolana adfunastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Encolaria adcumilenta sp. nov.

Candidatus Encolaria adcumilenta (NL. fem. n. *adcumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRIG01 sp011052815*. The type genome for the species is the GenBank assembly GCA_011052815.1. The GC content of the type genome is 44.27 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Encolaria gen. nov.

Candidatus Encolaria (NL. fem. n. *Encolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRIG01*. The type species for the genus is *Candidatus* Encolaria adcumilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-42*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Labeciaceae.

Description of *Candidatus* Encolida favonisca sp. nov.

Candidatus Encolida favonisca (NL. fem. n. *favonisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-13 sp001603035*. The type genome for the species is the GenBank assembly GCA_001603035.1. The GC content of the type genome is 51.63 % and the genome length is 1.68 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Encolida gen. nov.

Candidatus Encolida (NL. fem. n. *Encolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Firm-13*. The type species for the genus is *Candidatus* Encolida favonisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Encolida ingigago sp. nov.

Candidatus Encolida ingigago (NL. fem. n. *ingigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-13 sp002418705*. The type genome for the species is the GenBank assembly GCA_002418705.1. The GC content of the type genome is 46.1 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Encolosa inturitura sp. nov.

Candidatus Encolosa inturitura (NL. fem. n. *inturitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLC01 sp011333365*. The type genome for the species is the GenBank assembly GCA_011333365.1. The GC content of the type genome is 54.84 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Encolosa gen. nov.

Candidatus Encolosa (NL. fem. n. *Encolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLC01*. The type species for the genus is *Candidatus* Encolosa inturitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTNQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimetulaceae.

Description of *Candidatus* Encomella hiruditoga sp. nov.

Candidatus Encomella hiruditoga (NL. fem. n. *hiruditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6049 sp002429085*. The type genome for the species is the GenBank assembly GCA_002429085.1. The GC content of the type genome is 37.7 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Encomella gen. nov.

Candidatus Encomella (NL. fem. n. *Encomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6049*. The type species for the genus is *Candidatus* Encomella hiruditoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Encomida gasomitia sp. nov.

Candidatus Encomida gasomitia (NL. fem. n. *gasomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA925 sp002293705*. The type genome for the species is the GenBank assembly GCA_002293705.1. The GC content of the type genome is 40.96 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Encomida gen. nov.

Candidatus Encomida (NL. fem. n. *Encomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA925*. The type species for the genus is *Candidatus* Encomida gasomitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Endivaria absoressa sp. nov.

Candidatus Endivaria absoressa (NL. fem. n. *absoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABLXZ01 sp013177935*. The type genome for the species is the GenBank assembly GCA_013177935.1. The GC content of the type genome is 50.92 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Endivaria gen. nov.

Candidatus Endivaria (NL. fem. n. *Endivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABLXZ01*. The type species for the genus is *Candidatus* Endivaria absoressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homulosaceae.

Description of *Candidatus* Endivella infesibula sp. nov.

Candidatus Endivella infesibula (NL. fem. n. *infesibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12270 sp003485185*. The type genome for the species is the GenBank assembly GCA_003485185.1. The GC content of the type genome is 65.79 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Endivella gen. nov.

Candidatus Endivella (NL. fem. n. *Endivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12270*. The type species for the genus is *Candidatus* Endivella infesibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Endivosa dapififorma sp. nov.

Candidatus Endivosa dapififorma (NL. fem. n. *dapififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-P01 sp003215335*. The type genome for the species is the GenBank assembly GCA_003215335.1. The GC content of the type genome is 41.89 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Endivosa gen. nov.

Candidatus Endivosa (NL. fem. n. *Endivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-P01*. The type species for the genus is *Candidatus* Endivosa dapififorma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Endivula bicinatica sp. nov.

Candidatus Endivula bicinatica (NL. fem. n. *bicinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCY01 sp013817305*. The type genome for the species is the GenBank assembly GCA_013817305.1. The GC content of the type genome is 64.67 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Endivula gen. nov.

Candidatus Endivula (NL. fem. n. *Endivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDCY01*. The type species for the genus is *Candidatus* Endivula bicinatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Endobugula redacicula sp. nov.

Candidatus Endobugula redacicula (NL. fem. n. *redacicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Endobugula sp000209515*. The type genome for the species is the GenBank assembly RS_GCF_000209515.1. The GC content of the type genome is 42.06 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Endomicrobium daducilenta sp. nov.

Candidatus Endomicrobium daducilenta (NL. fem. n. *daducilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Endomicrobium sp009778965*. The type genome for the species is the GenBank assembly GCA_009779605.1. The GC content of the type genome is 38.25 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Endomicrobium ephipatio sp. nov.

Candidatus Endomicrobium ephipatio (NL. fem. n. *ephipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Endomicrobium sp009782015*. The type genome for the species is the GenBank assembly GCA_009782015.1. The GC content of the type genome is 44.47 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Endomicrobium inhabitrix sp. nov.

Candidatus Endomicrobium inhabitrix (NL. fem. n. *inhabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Endomicrobium sp009778325*. The type genome for the species is the GenBank assembly GCA_009778325.1. The GC content of the type genome is 39.7 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Endomicrobium pavicisca sp. nov.

Candidatus Endomicrobium pavicisca (NL. fem. n. *pavicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Endomicrobium sp009781315*. The type genome for the species is the GenBank assembly GCA_009781315.1. The GC content of the type genome is 39.56 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Endomicrobium semapatica sp. nov.

Candidatus Endomicrobium semapatica (NL. fem. n. *semapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Endomicrobium sp009776745*. The type genome for the species is the GenBank assembly GCA_009776745.1. The GC content of the type genome is 40.33 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Endozoicomonas adpicifica sp. nov.

Candidatus Endozoicomonas adpicifica (NL. fem. n. *adpicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Endozoicomonas sp900299555*. The type genome for the species is the GenBank assembly GCA_900299555.1. The GC content of the type genome is 46.8 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Endozoicomonas delubicella sp. nov.

Candidatus Endozoicomonas delubicella (NL. fem. n. *delubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Endozoicomonas sp004762125*. The type genome for the species is the GenBank assembly RS_GCF_004762125.1. The GC content of the type genome is 44.9 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Endozoicomonas semibilega sp. nov.

Candidatus Endozoicomonas semibilega (NL. fem. n. *semibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Endozoicomonas sp009653635*. The type genome for the species is the GenBank assembly RS_GCF_009653635.1. The GC content of the type genome is 46.84 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Energana effunibra sp. nov.

Candidatus Energana effunibra (NL. fem. n. *effunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAALKW01 sp009995425*. The type genome for the species is the GenBank assembly GCA_009995425.1. The GC content of the type genome is 42.87 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Energana gen. nov.

Candidatus Energana (NL. fem. n. *Energana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAALKW01*. The type species for the genus is *Candidatus* Energana effunibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Energana hexamilenta sp. nov.

Candidatus Energana hexamilenta (NL. fem. n. *hexamilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAALKW01 sp011087865*. The type genome for the species is the GenBank assembly GCA_011087865.1. The GC content of the type genome is 40.83 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Energaria desoritica sp. nov.

Candidatus Energaria desoritica (NL. fem. n. *desoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULV01 sp012840505*. The type genome for the species is the GenBank assembly GCA_012840505.1. The GC content of the type genome is 53.87 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Energaria gen. nov.

Candidatus Energaria (NL. fem. n. *Energaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DULV01*. The type species for the genus is *Candidatus* Energaria desoritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicatosaceae.

Description of *Candidatus* Energella ammodifica sp. nov.

Candidatus Energella ammodifica (NL. fem. n. *ammodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAM01 sp012719355*. The type genome for the species is the GenBank assembly GCA_012719355.1. The GC content of the type genome is 56.41 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Energella gen. nov.

Candidatus Energella (NL. fem. n. *Energella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAM01*. The type species for the genus is *Candidatus* Energella ammodifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6911*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decomulaceae.

Description of *Candidatus* Energida homilugo sp. nov.

Candidatus Energida homilugo (NL. fem. n. *homilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVY01 sp011368205*. The type genome for the species is the GenBank assembly GCA_011368205.1. The GC content of the type genome is 43.33 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Energida gen. nov.

Candidatus Energida (NL. fem. n. *Energida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVY01*. The type species for the genus is *Candidatus* Energida homilugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12108*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ranunidaceae.

Description of *Candidatus* Energosa attegitoga sp. nov.

Candidatus Energosa attegitoga (NL. fem. n. *attegitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRDL01 sp009781565*. The type genome for the species is the GenBank assembly GCA_009781565.1. The GC content of the type genome is 55.39 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Energosa gen. nov.

Candidatus Energosa (NL. fem. n. *Energosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRDL01*. The type species for the genus is *Candidatus* Energosa attegitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRKU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubellaceae.

Description of *Candidatus* Energosa emortifica sp. nov.

Candidatus Energosa emortifica (NL. fem. n. *emortifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRDL01 sp009784095*. The type genome for the species is the GenBank assembly GCA_009784095.1. The GC content of the type genome is 54.98 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Energula decenessa sp. nov.

Candidatus Energula decenessa (NL. fem. n. *decenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSSZ01 sp009469675*. The type genome for the species is the GenBank assembly GCA_009469675.1. The GC content of the type genome is 66.23 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Energula gen. nov.

Candidatus Energula (NL. fem. n. *Energula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSSZ01*. The type species for the genus is *Candidatus* Energula decenessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Energula defosifica sp. nov.

Candidatus Energula defosifica (NL. fem. n. *defosifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSSZ01 sp009469685*. The type genome for the species is the GenBank assembly GCA_009469685.1. The GC content of the type genome is 63.68 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Energula effaritia sp. nov.

Candidatus Energula effaritia (NL. fem. n. *effaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSSZ01 sp009469665*. The type genome for the species is the GenBank assembly GCA_009469665.1. The GC content of the type genome is 64.12 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Enhararia chancitas sp. nov.

Candidatus Enhararia chancitas (NL. fem. n. *chancitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD2-FULL-41-14 sp001784435*. The type genome for the species is the GenBank assembly GCA_001784435.1. The GC content of the type genome is 41.87 % and the genome length is 1.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Enhararia gen. nov.

Candidatus Enhararia (NL. fem. n. *Enhararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD2-FULL-41-14*. The type species for the genus is *Candidatus* Enhararia chancitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-37-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocariaceae.

Description of *Candidatus* Enhararia illuvousia sp. nov.

Candidatus Enhararia illuvousia (NL. fem. n. *illuvousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD2-FULL-41-14 sp001784475*. The type genome for the species is the GenBank assembly GCA_001784475.1. The GC content of the type genome is 40.66 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Enharia octopisca sp. nov.

Candidatus Enharia octopisca (NL. fem. n. *octopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZNP01 sp012798235*. The type genome for the species is the GenBank assembly GCA_012798235.1. The GC content of the type genome is 32.93 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Enharia gen. nov.

Candidatus Enharia (NL. fem. n. *Enharia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZNP01*. The type species for the genus is *Candidatus* Enharia octopisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denomulaceae.

Description of *Candidatus* Enharida expecago sp. nov.

Candidatus Enharida expecago (NL. fem. n. *expecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS2068 sp900769635*. The type genome for the species is the GenBank assembly RS_GCF_900769635.1. The GC content of the type genome is 31.09 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Enharida gen. nov.

Candidatus Enharida (NL. fem. n. *Enharida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS2068*. The type species for the genus is *Candidatus* Enharida expecago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Enharida inconastra sp. nov.

Candidatus Enharida inconastra (NL. fem. n. *inconastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS2068 sp900557675*. The type genome for the species is the GenBank assembly GCA_900557675.1. The GC content of the type genome is 31.88 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Enharosa aggubicula sp. nov.

Candidatus Enharosa aggubicula (NL. fem. n. *aggubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYOI01 sp012520435*. The type genome for the species is the GenBank assembly GCA_012520435.1. The GC content of the type genome is 25.97 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Enharosa gen. nov.

Candidatus Enharosa (NL. fem. n. *Enharosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYOI01*. The type species for the genus is *Candidatus* Enharosa aggubicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Enharula pulegitia sp. nov.

Candidatus Enharula pulegitia (NL. fem. n. *pulegitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYQR01 sp012519205*. The type genome for the species is the GenBank assembly GCA_012519205.1. The GC content of the type genome is 34.51 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Enharula gen. nov.

Candidatus Enharula (NL. fem. n. *Enharula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYQR01*. The type species for the genus is *Candidatus* Enharula pulegitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enigmia accenilega sp. nov.

Candidatus Enigmia accenilega (NL. fem. n. *accenilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEVI01 sp013044085*. The type genome for the species is the GenBank assembly GCA_013044085.1. The GC content of the type genome is 65.7 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Enigmia gen. nov.

Candidatus Enigmia (NL. fem. n. *Enigmia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEVI01*. The type species for the genus is *Candidatus* Enigmia accenilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enigmida astipimonas sp. nov.

Candidatus Enigmida astipimonas (NL. fem. n. *astipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KK5 sp001984095*. The type genome for the species is the GenBank assembly RS_GCF_001984095.1. The GC content of the type genome is 69.02 % and the genome length is 6.88 Mbp.

Description of *Candidatus* Enigmida gen. nov.

Candidatus Enigmida (NL. fem. n. *Enigmida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KK5*. The type species for the genus is *Candidatus* Enigmida astipimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enigmosa selibax sp. nov.

Candidatus Enigmosa selibax (NL. fem. n. *selibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-39-12b sp001780955*. The type genome for the species is the GenBank assembly GCA_001780955.1. The GC content of the type genome is 37.86 % and the genome length is 1.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Enigmosa gen. nov.

Candidatus Enigmosa (NL. fem. n. *Enigmosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-39-12b*. The type species for the genus is *Candidatus* Enigmosa selibax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefiaceae.

Description of *Candidatus* Enigmula exsuritrix sp. nov.

Candidatus Enigmula exsuritrix (NL. fem. n. *exsuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1279 sp003158365*. The type genome for the species is the GenBank assembly GCA_003158365.1. The GC content of the type genome is 35.52 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Enigmula gen. nov.

Candidatus Enigmula (NL. fem. n. *Enigmula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1279*. The type species for the genus is *Candidatus* Enigmula exsuritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-1AR*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufosaceae.

Description of *Candidatus* Enimvana satacitica sp. nov.

Candidatus Enimvana satacitica (NL. fem. n. *satacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPQ01 sp011046615*. The type genome for the species is the GenBank assembly GCA_011046615.1. The GC content of the type genome is 70.05 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Enimvana gen. nov.

Candidatus Enimvana (NL. fem. n. *Enimvana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPQ01*. The type species for the genus is *Candidatus* Enimvana satacitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Binocidaceae.

Description of *Candidatus* Enimvaria adcesibra sp. nov.

Candidatus Enimvaria adcesibra (NL. fem. n. *adcesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABHON01 sp902168255*. The type genome for the species is the GenBank assembly GCA_902168255.1. The GC content of the type genome is 37.18 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Enimvaria gen. nov.

Candidatus Enimvaria (NL. fem. n. *Enimvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABHON01*. The type species for the genus is *Candidatus* Enimvaria adcesibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enimvida abantigena sp. nov.

Candidatus Enimvida abantigena (NL. fem. n. *abantigena* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXSP01 sp005792225*. The type genome for the species is the GenBank assembly GCA_005792225.1. The GC content of the type genome is 55.02 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Enimvida gen. nov.

Candidatus Enimvida (NL. fem. n. *Enimvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXSP01*. The type species for the genus is *Candidatus* Enimvida abantigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enimvula panopisca sp. nov.

Candidatus Enimvula panopisca (NL. fem. n. *panopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSDT01 sp011048615*. The type genome for the species is the GenBank assembly GCA_011048615.1. The GC content of the type genome is 62.32 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Enimvula gen. nov.

Candidatus Enimvula (NL. fem. n. *Enimvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSDT01*. The type species for the genus is *Candidatus* Enimvula panopisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B4-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubulaceae.

Description of *Candidatus* Enorma locelessa sp. nov.

Candidatus Enorma locelessa (NL. fem. n. *locelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enorma sp900751795*. The type genome for the species is the GenBank assembly GCA_900751795.1. The GC content of the type genome is 62.4 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Enorma nivometta sp. nov.

Candidatus Enorma nivometta (NL. fem. n. *nivometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enorma sp900538305*. The type genome for the species is the GenBank assembly GCA_900538305.1. The GC content of the type genome is 62.27 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Ensicida penurimonia sp. nov.

Candidatus Ensicida penurimonia (NL. fem. n. *penurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNLN01 sp014381485*. The type genome for the species is the GenBank assembly GCA_014381485.1. The GC content of the type genome is 40.32 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Ensicida gen. nov.

Candidatus Ensicida (NL. fem. n. *Ensicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNLN01*. The type species for the genus is *Candidatus* Ensicida penurimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCKK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigariaceae.

Description of *Candidatus* Ensifana apsolitudo sp. nov.

Candidatus Ensifana apsolitudo (NL. fem. n. *apsolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3291 sp002361595*. The type genome for the species is the GenBank assembly GCA_002361595.1. The GC content of the type genome is 29.97 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Ensifana gen. nov.

Candidatus Ensifana (NL. fem. n. *Ensifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3291*. The type species for the genus is *Candidatus* Ensifana apsolitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *X112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Ensifaria anaclentia sp. nov.

Candidatus Ensifaria anaclentia (NL. fem. n. *anaclentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYOL01 sp903927855*. The type genome for the species is the GenBank assembly GCA_903927855.1. The GC content of the type genome is 47.61 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Ensifaria gen. nov.

Candidatus Ensifaria (NL. fem. n. *Ensifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYOL01*. The type species for the genus is *Candidatus* Ensifaria anaclentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Ensifella smegmedo sp. nov.

Candidatus Ensifella smegmedo (NL. fem. n. *smegmedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSY01 sp012518235*. The type genome for the species is the GenBank assembly GCA_012518235.1. The GC content of the type genome is 33.68 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Ensifella gen. nov.

Candidatus Ensifella (NL. fem. n. *Ensifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSY01*. The type species for the genus is *Candidatus* Ensifella smegmedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ensifer caravigena sp. nov.

Candidatus Ensifer caravigena (NL. fem. n. *caravigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ensifer sp900469595*. The type genome for the species is the GenBank assembly RS_GCF_900469595.1. The GC content of the type genome is 62.23 % and the genome length is 7.37 Mbp.

Description of *Candidatus* Ensifer demagatica sp. nov.

Candidatus Ensifer demagatica (NL. fem. n. *demagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ensifer sp002002725*. The type genome for the species is the GenBank assembly RS_GCF_002002725.1. The GC content of the type genome is 61.77 % and the genome length is 6.85 Mbp.

Description of *Candidatus* Ensifer mirifilenta sp. nov.

Candidatus Ensifer mirifilenta (NL. fem. n. *mirifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Ensifer sp001429285*. The type genome for the species is the GenBank assembly RS_GCF_001429285.1. The GC content of the type genome is 62.06 % and the genome length is 7.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Ensifer musulago sp. nov.

Candidatus Ensifer musulago (NL. fem. n. *musulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ensifer sp900469625*. The type genome for the species is the GenBank assembly RS_GCF_900472085.1. The GC content of the type genome is 62.64 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Ensifer recomicella sp. nov.

Candidatus Ensifer recomicella (NL. fem. n. *recomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ensifer sp001695855*. The type genome for the species is the GenBank assembly RS_GCF_001695855.1. The GC content of the type genome is 62.0 % and the genome length is 6.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "cave".

Description of *Candidatus* Ensifer recoritrix sp. nov.

Candidatus Ensifer recoritrix (NL. fem. n. *recoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ensifer sp001695835*. The type genome for the species is the GenBank assembly RS_GCF_001695895.1. The GC content of the type genome is 62.22 % and the genome length is 6.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "cave".

Description of *Candidatus* Ensifer saxifousia sp. nov.

Candidatus Ensifer saxifousia (NL. fem. n. *saxifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ensifer sp000799055*. The type genome for the species is the GenBank

assembly RS_GCF_000799055.1. The GC content of the type genome is 62.77 % and the genome length is 6.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "organic material".

Description of *Candidatus* Ensifer subofago sp. nov.

Candidatus Ensifer subofago (NL. fem. n. *subofago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ensifer sp013371465*. The type genome for the species is the GenBank assembly RS_GCF_013371465.1. The GC content of the type genome is 61.7 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Ensifer tomacivita sp. nov.

Candidatus Ensifer tomacivita (NL. fem. n. *tomacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ensifer_A sp900466575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900465985.1. The GC content of the type genome is 61.08 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Ensifer viripedo sp. nov.

Candidatus Ensifer viripedo (NL. fem. n. *viripedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ensifer_A sp900467685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900465635.1. The GC content of the type genome is 61.31 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Ensifia omnifimonas sp. nov.

Candidatus Ensifia omnifimonas (NL. fem. n. *omnifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2686265 sp002686265*. The type genome for the species is the GenBank assembly GCA_002686265.1. The GC content of the type genome is 68.35 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Ensifia gen. nov.

Candidatus Ensifia (NL. fem. n. *Ensifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2686265*. The type species for the genus is *Candidatus* Ensifia omnifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Ensifida perexentia sp. nov.

Candidatus Ensifida perexentia (NL. fem. n. *perexentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-46-23 sp002771135*. The type genome for the species is the GenBank assembly GCA_002771135.1. The GC content of the type genome is 45.86 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Ensifida gen. nov.

Candidatus Ensifida (NL. fem. n. *Ensifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-46-23*. The type species for the genus is *Candidatus* Ensifida perexentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *IGHO2-12-FULL-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricariaceae.

Description of *Candidatus* Ensifosa infunax sp. nov.

Candidatus Ensifosa infunax (NL. fem. n. *infunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVRW01 sp014534235*. The type genome for the species is the GenBank assembly GCA_014534235.1. The GC content of the type genome is 71.22 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Ensifosa gen. nov.

Candidatus Ensifosa (NL. fem. n. *Ensifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACVRW01*. The type species for the genus is *Candidatus* Ensifosa infunax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ensifosa paralastra sp. nov.

Candidatus Ensifosa paralastra (NL. fem. n. *paralastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVRW01 sp013813135*. The type genome for the species is the GenBank assembly GCA_013813135.1. The GC content of the type genome is 70.69 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Ensifula cerebitica sp. nov.

Candidatus Ensifula cerebitica (NL. fem. n. *cerebitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NP136 sp002730475*. The type genome for the species is the GenBank assembly GCA_002730475.1. The GC content of the type genome is 35.35 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Ensifula gen. nov.

Candidatus Ensifula (NL. fem. n. *Ensifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NP136*. The type species for the genus is *Candidatus* Ensifula cerebitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA1144. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conifellaceae.

Description of *Candidatus* Ensigana egrititas sp. nov.

Candidatus Ensigana egrititas (NL. fem. n. *egrititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMH01 sp903850745*. The type genome for the species is the GenBank assembly GCA_903850745.1. The GC content of the type genome is 59.69 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Ensigana gen. nov.

Candidatus Ensigana (NL. fem. n. *Ensigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINMH01*. The type species for the genus is *Candidatus* Ensigana egrititas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Ensigana essonitica sp. nov.

Candidatus Ensigana essonitica (NL. fem. n. *essonitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINMH01 sp009699315*. The type genome for the species is the GenBank assembly GCA_009699315.1. The GC content of the type genome is 59.94 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Ensigaria nugacetta sp. nov.

Candidatus Ensigaria nugacetta (NL. fem. n. *nugacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-49-15 sp001797695*. The type genome for the species is the

GenBank assembly GCA_001797695.1. The GC content of the type genome is 49.16 % and the genome length is 2.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Ensigaria gen. nov.

Candidatus Ensigaria (NL. fem. n. *Ensigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-49-15*. The type species for the genus is *Candidatus* Ensigaria nugacetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2156*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coniganaceae.

Description of *Candidatus* Ensigella odontedo sp. nov.

Candidatus Ensigella odontedo (NL. fem. n. *odontedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PTLJ01 sp002938045*. The type genome for the species is the GenBank assembly GCA_002938045.1. The GC content of the type genome is 58.33 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Ensigella gen. nov.

Candidatus Ensigella (NL. fem. n. *Ensigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PTLJ01*. The type species for the genus is *Candidatus* Ensigella odontedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Casp-alpha2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninidaceae.

Description of *Candidatus* Ensigia fetutilega sp. nov.

Candidatus Ensigia fetutilega (NL. fem. n. *fetutilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2715305 sp002706585*. The type genome for the species is the GenBank assembly GCA_002706585.1. The GC content of the type genome is 29.09 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Ensigia gen. nov.

Candidatus Ensigia (NL. fem. n. *Ensigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2715305*. The type species for the genus is *Candidatus* Ensigia fetutilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Ensigia irradibra sp. nov.

Candidatus Ensigia irradibra (NL. fem. n. *irradibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2715305 sp002715305*. The type genome for the species is the GenBank assembly GCA_002715305.1. The GC content of the type genome is 29.44 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Ensigida alsulitas sp. nov.

Candidatus Ensigida alsulitas (NL. fem. n. *alsulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4116 sp002381645*. The type genome for the species is the GenBank assembly GCA_002381645.1. The GC content of the type genome is 39.91 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Ensigida gen. nov.

Candidatus Ensigida (NL. fem. n. *Ensigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA4116*. The type species for the genus is *Candidatus* Ensigida alsulitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ensigosa resuledo sp. nov.

Candidatus Ensigosa resuledo (NL. fem. n. *resuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7177 sp002491225*. The type genome for the species is the GenBank assembly GCA_002491225.1. The GC content of the type genome is 64.63 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Ensigosa gen. nov.

Candidatus Ensigosa (NL. fem. n. *Ensigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7177*. The type species for the genus is *Candidatus* Ensigosa resuledo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ensigula annifitudo sp. nov.

Candidatus Ensigula annifitudo (NL. fem. n. *annifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADFY01 sp013152625*. The type genome for the species is the GenBank assembly GCA_013152625.1. The GC content of the type genome is 59.17 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Ensigula gen. nov.

Candidatus Ensigula (NL. fem. n. *Ensigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFY01*. The type species for the genus is *Candidatus* Ensigula annifitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enterobacter defaritia sp. nov.

Candidatus Enterobacter defaritia (NL. fem. n. *defaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterobacter sp000568095*. The type genome for the species is the GenBank assembly RS_GCF_000568095.1. The GC content of the type genome is 55.58 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Enterobacter peracitia sp. nov.

Candidatus Enterobacter peracitia (NL. fem. n. *peracitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterobacter sp000762975*. The type genome for the species is the GenBank assembly RS_GCF_000762975.1. The GC content of the type genome is 55.76 % and the genome length is 4.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Enterobacter rutabitoga sp. nov.

Candidatus Enterobacter rutabitoga (NL. fem. n. *rutabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterobacter sp000493015*. The type genome for the species is the GenBank assembly RS_GCF_000733275.2. The GC content of the type genome is 55.66 % and the genome length is 4.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Loktak Lake".

Description of *Candidatus* Enterobacter semilatio sp. nov.

Candidatus Enterobacter semilatio (NL. fem. n. *semilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterobacter sp003057745*. The type genome for the species is the GenBank assembly RS_GCF_003057745.1. The GC content of the type genome is 56.98 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Enterobacter utpotitura sp. nov.

Candidatus Enterobacter utpotitura (NL. fem. n. *utpotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterobacter sp013927005*. The type genome for the species is the GenBank assembly RS_GCF_013927005.1. The GC content of the type genome is 53.14 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Enterobacter dimaditia sp. nov.

Candidatus Enterobacter dimaditia (NL. fem. n. *dimaditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterobacter_D sp001888805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001888805.2. The GC content of the type genome is 56.02 % and the genome length is 4.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "roots of desert plants".

Description of *Candidatus* Enterobacter subodilega sp. nov.

Candidatus Enterobacter subodilega (NL. fem. n. *subodilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterobacter_D sp900116015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002429775.1. The GC content of the type genome is 54.96 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Enterocloster ammatigena sp. nov.

Candidatus Enterocloster ammatigena (NL. fem. n. *ammatigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900555045*. The type genome for the species is the

GenBank assembly GCA_900555045.1. The GC content of the type genome is 57.65 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Enterocloster assucivita sp. nov.

Candidatus Enterocloster assucivita (NL. fem. n. *assucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900770345*. The type genome for the species is the GenBank assembly RS_GCF_900770345.1. The GC content of the type genome is 48.37 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Enterocloster benemiforma sp. nov.

Candidatus Enterocloster benemiforma (NL. fem. n. *benemiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900547035*. The type genome for the species is the GenBank assembly RS_GCF_900759635.1. The GC content of the type genome is 50.93 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Enterocloster bicinentia sp. nov.

Candidatus Enterocloster bicinentia (NL. fem. n. *bicinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp000155435*. The type genome for the species is the GenBank assembly RS_GCF_003603825.1. The GC content of the type genome is 50.04 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Enterocloster bonifigena sp. nov.

Candidatus Enterocloster bonifigena (NL. fem. n. *bonifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900759225*. The type genome for the species is the GenBank assembly RS_GCF_900759225.1. The GC content of the type genome is 47.86 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Enterocloster casabibra sp. nov.

Candidatus Enterocloster casabibra (NL. fem. n. *casabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900540675*. The type genome for the species is the GenBank assembly RS_GCF_900764065.1. The GC content of the type genome is 47.12 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Enterocloster dimidentia sp. nov.

Candidatus Enterocloster dimidentia (NL. fem. n. *dimidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp005845215*. The type genome for the species is the GenBank assembly RS_GCF_900753375.1. The GC content of the type genome is 50.17 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Enterocloster filificula sp. nov.

Candidatus Enterocloster filificula (NL. fem. n. *filificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp001304855*. The type genome for the species is the GenBank assembly GCA_001304855.1. The GC content of the type genome is 49.29 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Enterocloster ludimedo sp. nov.

Candidatus Enterocloster ludimedo (NL. fem. n. *ludimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp000431375*. The type genome for the species is the GenBank assembly RS_GCF_003480345.1. The GC content of the type genome is 43.87 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Enterocloster monimitoga sp. nov.

Candidatus Enterocloster monimitoga (NL. fem. n. *monimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900555905*. The type genome for the species is the GenBank assembly GCA_900555905.1. The GC content of the type genome is 58.03 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Enterocloster negotigena sp. nov.

Candidatus Enterocloster negotigena (NL. fem. n. *negotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900551225*. The type genome for the species is the GenBank assembly GCA_900551225.1. The GC content of the type genome is 53.43 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Enterocloster pecunentia sp. nov.

Candidatus Enterocloster pecunentia (NL. fem. n. *pecunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900753815*. The type genome for the species is the GenBank assembly RS_GCF_900753815.1. The GC content of the type genome is 50.36 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Enterocloster pedifousia sp. nov.

Candidatus Enterocloster pedifousia (NL. fem. n. *pedifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900543885*. The type genome for the species is the GenBank assembly GCA_900543885.1. The GC content of the type genome is 43.24 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Enterocloster refocastra sp. nov.

Candidatus Enterocloster refocastra (NL. fem. n. *refocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp001517625*. The type genome for the species is the GenBank assembly GCA_008679565.1. The GC content of the type genome is 46.7 %

and the genome length is 3.4 Mbp.

Description of *Candidatus* Enterocloster saxifificа sp. nov.

Candidatus Enterocloster saxifificа (NL. fem. n. *saxifificа* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900549235*. The type genome for the species is the GenBank assembly GCA_900766175.1. The GC content of the type genome is 50.05 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Enterocloster semivetta sp. nov.

Candidatus Enterocloster semivetta (NL. fem. n. *semivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900538485*. The type genome for the species is the GenBank assembly GCA_900538485.1. The GC content of the type genome is 48.96 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Enterocloster vicecitio sp. nov.

Candidatus Enterocloster vicecitio (NL. fem. n. *vicecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterocloster sp900541315*. The type genome for the species is the GenBank assembly GCA_900541315.1. The GC content of the type genome is 43.08 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Enterococcus desacetta sp. nov.

Candidatus Enterococcus desacetta (NL. fem. n. *desacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus sp002140975*. The type genome for the species is the GenBank assembly RS_GCF_002140975.1. The GC content of the type genome is 39.85 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Enterococcus macilitas sp. nov.

Candidatus Enterococcus macilitas (NL. fem. n. *macilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus sp002148425*. The type genome for the species is the GenBank assembly RS_GCF_002140835.1. The GC content of the type genome is 36.25 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Enterococcus momorifica sp. nov.

Candidatus Enterococcus momorifica (NL. fem. n. *momorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus sp002140715*. The type genome for the species is the GenBank assembly RS_GCF_002140715.1. The GC content of the type genome is 35.58 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Enterococcus subucicella sp. nov.

Candidatus Enterococcus subucicella (NL. fem. n. *subucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus sp002141365*. The type genome for the species is the GenBank assembly RS_GCF_002141365.1. The GC content of the type genome is 36.09 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Enterococcus vitigibula sp. nov.

Candidatus Enterococcus vitigibula (NL. fem. n. *vitigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus sp002174455*. The type genome for the species is the GenBank assembly RS_GCF_002174455.1. The GC content of the type genome is 37.72 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Enterococcus agravitura sp. nov.

Candidatus Enterococcus agravitura (NL. fem. n. *agravitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_A sp005405225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005405225.1. The GC content of the type genome is 37.82 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Enterococcus inrepibula sp. nov.

Candidatus Enterococcus inrepibula (NL. fem. n. *inrepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_A sp902706605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902706605.1. The GC content of the type genome is 41.9 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Enterococcus peripatio sp. nov.

Candidatus Enterococcus peripatio (NL. fem. n. *peripatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_A sp005405205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005405205.1. The GC content of the type genome is 40.09 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Enterococcus vinulicula sp. nov.

Candidatus Enterococcus vinulicula (NL. fem. n. *vinulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_A sp002140655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005405485.1. The GC content of the type genome is 40.33 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Enterococcus laxititica sp. nov.

Candidatus Enterococcus laxititica (NL. fem. n. *laxititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_B sp002140175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002140175.1. The GC content of the type genome is 36.79 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Enterococcus lucubedo sp. nov.

Candidatus Enterococcus lucubedo (NL. fem. n. *lucubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_B sp011038845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011038855.1. The GC content of the type genome is 40.66 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Enterococcus occenisca sp. nov.

Candidatus Enterococcus occenisca (NL. fem. n. *occenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_B sp009933175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009933175.1. The GC content of the type genome is 38.56 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Enterococcus saxopifica sp. nov.

Candidatus Enterococcus saxopifica (NL. fem. n. *saxopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_C sp009933135*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009933135.1. The GC content of the type genome is 43.77 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Enterococcus adbelitas sp. nov.

Candidatus Enterococcus adbelitas (NL. fem. n. *adbelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_D sp002140915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002140915.1. The GC content of the type genome is 41.48 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Enterococcus remulastra sp. nov.

Candidatus Enterococcus remulastra (NL. fem. n. *remulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_D sp002850555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002140695.1. The GC content of the type genome is 42.02 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Enterococcus subucatio sp. nov.

Candidatus Enterococcus subucatio (NL. fem. n. *subucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_D sp001297065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002337935.1. The GC content of the type genome is 41.71 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Enterococcus adtagitura sp. nov.

Candidatus Enterococcus adtagitura (NL. fem. n. *adtagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_F sp009933335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009933335.1. The GC content of the type genome is 36.57 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Enterococcus deparatio sp. nov.

Candidatus Enterococcus deparatio (NL. fem. n. *deparatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_I sp012521695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012521695.1. The GC content of the type genome is 36.69 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Enterococcus exorbilega sp. nov.

Candidatus Enterococcus exorbilega (NL. fem. n. *exorbilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterococcus_J sp005405245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005405245.1. The GC content of the type genome is 41.41 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Enteroscipio mureligena sp. nov.

Candidatus Enteroscipio mureligena (NL. fem. n. *mureligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enteroscipio sp000270285*. The type genome for the species is the GenBank assembly RS_GCF_000270285.1. The GC content of the type genome is 56.2 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Adult Human Intestine".

Description of *Candidatus* Enterovibrio adporitia sp. nov.

Candidatus Enterovibrio adporitia (NL. fem. n. *adporitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterovibrio sp011045095*. The type genome for the species is the GenBank assembly RS_GCF_011045095.1. The GC content of the type genome is 48.85 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Enterovibrio aggubimonas sp. nov.

Candidatus Enterovibrio aggubimonas (NL. fem. n. *aggubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterovibrio sp001310415*. The type genome for the species is the GenBank assembly GCA_001310415.1. The GC content of the type genome is 50.79 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Enterovibrio lucifibra sp. nov.

Candidatus Enterovibrio lucifibra (NL. fem. n. *lucifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterovibrio sp004116385*. The type genome for the species is the GenBank assembly RS_GCF_004116385.1. The GC content of the type genome is 45.95 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Enterovirga immobitia sp. nov.

Candidatus Enterovirga immobitia (NL. fem. n. *immobitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterovirga sp013044135*. The type genome for the species is the GenBank assembly RS_GCF_013044135.1. The GC content of the type genome is 68.78 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Enterovirga nosocatio sp. nov.

Candidatus Enterovirga nosocatio (NL. fem. n. *nosocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Enterovirga sp903644085*. The type genome for the species is the GenBank assembly RS_GCF_903644085.1. The GC content of the type genome is 68.92 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Entomana pedifatio sp. nov.

Candidatus Entomana pedifatio (NL. fem. n. *pedifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFI01 sp004556925*. The type genome for the species is the GenBank assembly GCA_004556925.1. The GC content of the type genome is 50.14 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Entomana gen. nov.

Candidatus Entomana (NL. fem. n. *Entomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFFI01*. The type species for the genus is *Candidatus* Entomana pedifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decunariaceae.

Description of *Candidatus* Entomida assudimonia sp. nov.

Candidatus Entomida assudimonia (NL. fem. n. *assudimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWRV01 sp000504185*. The type genome for the species is the GenBank assembly RS_GCF_000504185.2. The GC content of the type genome is 65.96 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Entomida gen. nov.

Candidatus Entomida (NL. fem. n. *Entomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AWRV01*. The type species for the genus is *Candidatus* Entomida assudimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Entomosa incomax sp. nov.

Candidatus Entomosa incomax (NL. fem. n. *incomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSOP01 sp011055735*. The type genome for the species is the GenBank assembly GCA_011055735.1. The GC content of the type genome is 75.39 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Entomosa gen. nov.

Candidatus Entomosa (NL. fem. n. *Entomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSOP01*. The type species for the genus is *Candidatus* Entomosa incomax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6930*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homiculaceae.

Description of *Candidatus* Entomula abrumago sp. nov.

Candidatus Entomula abrumago (NL. fem. n. *abrumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686945 sp002686945*. The type genome for the species is the GenBank assembly GCA_002686945.1. The GC content of the type genome is 60.86 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Entomula gen. nov.

Candidatus Entomula (NL. fem. n. *Entomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *GCA-2686945*. The type species for the genus is *Candidatus* Entomula abrumago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Entomula extinicula sp. nov.

Candidatus Entomula extinicula (NL. fem. n. *extinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686945 sp011524785*. The type genome for the species is the GenBank assembly GCA_011524785.1. The GC content of the type genome is 72.44 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Entomula inargugo sp. nov.

Candidatus Entomula inargugo (NL. fem. n. *inargugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686945 sp014238415*. The type genome for the species is the GenBank assembly GCA_014238415.1. The GC content of the type genome is 60.24 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Entomula proclastra sp. nov.

Candidatus Entomula proclastra (NL. fem. n. *proclastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686945 sp012960475*. The type genome for the species is the GenBank assembly GCA_012960475.1. The GC content of the type genome is 60.86 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Enuclella adhinitica sp. nov.

Candidatus Enuclella adhinitica (NL. fem. n. *adhinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-002707245 sp002707245*. The type genome for the species is the GenBank assembly GCA_002707245.1. The GC content of the type genome is 30.91 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Enuclella gen. nov.

Candidatus Enuclella (NL. fem. n. *Enuclella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002707245*. The type species for the genus is *Candidatus* Enuclella adhinitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fusifulaceae.

Description of *Candidatus* Enuclella cisoretta sp. nov.

Candidatus Enuclella cisoretta (NL. fem. n. *cisoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002707245 sp002698365*. The type genome for the species is the GenBank assembly GCA_002698365.1. The GC content of the type genome is 30.75 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Enuclida bifarugo sp. nov.

Candidatus Enuclida bifarugo (NL. fem. n. *bifarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHU01 sp013151645*. The type genome for the species is the GenBank assembly GCA_013151645.1. The GC content of the type genome is 55.73 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Enuclida gen. nov.

Candidatus Enuclida (NL. fem. n. *Enuclida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHU01*. The type species for the genus is *Candidatus* Enuclida bifarugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enuclosa saxopax sp. nov.

Candidatus Enuclosa saxopax (NL. fem. n. *saxopax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-40-17 sp002790195*. The type genome for the species is the GenBank assembly GCA_002790195.1. The GC content of the type genome is 40.37 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Enuclosa gen. nov.

Candidatus Enuclosa (NL. fem. n. *Enuclosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-40-17*. The type species for the genus is *Candidatus* Enuclosa saxopax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enuclosa subofugo sp. nov.

Candidatus Enuclosa subofugo (NL. fem. n. *subofugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-40-17 sp002841025*. The type genome for the species is the GenBank assembly GCA_002841025.1. The GC content of the type genome is 40.29 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Enuclula monodicella sp. nov.

Candidatus Enuclula monodicella (NL. fem. n. *monodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DURK01 sp012837325*. The type genome for the species is the GenBank assembly GCA_012837325.1. The GC content of the type genome is 45.5 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Enuclula gen. nov.

Candidatus Enuclula (NL. fem. n. *Enuclula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DURK01*. The type species for the genus is *Candidatus* Enuclula monodicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU083*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petulellaceae.

Description of *Candidatus* Enuntana intacessa sp. nov.

Candidatus Enuntana intacessa (NL. fem. n. *intacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINWE01 sp903854365*. The type genome for the species is the GenBank assembly GCA_903854365.1. The GC content of the type genome is 49.02 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Enuntana gen. nov.

Candidatus Enuntana (NL. fem. n. *Enuntana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINWE01*. The type species for the genus is *Candidatus* Enuntana intacessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Enuntaria adrenedo sp. nov.

Candidatus Enuntaria adrenedo (NL. fem. n. *adrenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6118 sp002422525*. The type genome for the species is the GenBank assembly GCA_002422525.1. The GC content of the type genome is 67.12 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Enuntaria gen. nov.

Candidatus Enuntaria (NL. fem. n. *Enuntaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6118*. The type species for the genus is *Candidatus* Enuntaria adrenedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLHB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegulaceae.

Description of *Candidatus* Enuntella xeramicula sp. nov.

Candidatus Enuntella xeramicula (NL. fem. n. *xeramicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1466 sp002325605*. The type genome for the species is the GenBank assembly GCA_002325605.1. The GC content of the type genome is 50.25 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Enuntella gen. nov.

Candidatus Enuntella (NL. fem. n. *Enuntella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1466*. The type species for the genus is *Candidatus* Enuntella xeramicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Enuntida sacopastra sp. nov.

Candidatus Enuntida sacopastra (NL. fem. n. *sacopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2725915 sp002725915*. The type genome for the species is the GenBank assembly GCA_002725915.1. The GC content of the type genome is 62.74 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Enuntida gen. nov.

Candidatus Enuntida (NL. fem. n. *Enuntida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2725915*. The type species for the genus is *Candidatus* Enuntida sacopastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8231*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatosaceae.

Description of *Candidatus* Enuntula repuritura sp. nov.

Candidatus Enuntula repuritura (NL. fem. n. *repuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-02-FULL-57-9 sp001800015*. The type genome for the species is the GenBank assembly GCA_001800015.1. The GC content of the type genome is 57.39 % and the genome length is 2.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Enuntula gen. nov.

Candidatus Enuntula (NL. fem. n. *Enuntula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-02-FULL-57-9*. The type species for the genus is *Candidatus* Enuntula repuritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9628*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recorariaceae.

Description of *Candidatus* Eoetvoesia vanidousia sp. nov.

Candidatus Eoetvoesia vanidousia (NL. fem. n. *vanidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eoetvoesia sp004322135*. The type genome for the species is the GenBank assembly GCA_004298105.1. The GC content of the type genome is 58.3 %

and the genome length is 3.05 Mbp.

Description of *Candidatus* Ephemana exculax sp. nov.

Candidatus Ephemana exculax (NL. fem. n. *exculax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1760 sp002314775*. The type genome for the species is the GenBank assembly GCA_002314775.1. The GC content of the type genome is 39.48 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Ephemana gen. nov.

Candidatus Ephemana (NL. fem. n. *Ephemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1760*. The type species for the genus is *Candidatus* Ephemana exculax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ephemaria encolitas sp. nov.

Candidatus Ephemaria encolitas (NL. fem. n. *encolitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBO01 sp013694885*. The type genome for the species is the GenBank assembly GCA_013694885.1. The GC content of the type genome is 66.19 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Ephemaria gen. nov.

Candidatus Ephemaria (NL. fem. n. *Ephemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDBO01*. The type species for the genus is *Candidatus* Ephemaria encolitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Ephemella relapilenta sp. nov.

Candidatus Ephemella relapilenta (NL. fem. n. *relapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3103 sp002365855*. The type genome for the species is the GenBank assembly GCA_002365855.1. The GC content of the type genome is 47.53 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Ephemella gen. nov.

Candidatus Ephemella (NL. fem. n. *Ephemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3103*. The type species for the genus is *Candidatus* Ephemella relapilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ephemia expopax sp. nov.

Candidatus Ephemia expopax (NL. fem. n. *expopax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCI01 sp013288215*. The type genome for the species is the GenBank assembly GCA_013288215.1. The GC content of the type genome is 52.62 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Ephemia gen. nov.

Candidatus Ephemia (NL. fem. n. *Ephemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCI01*. The type species for the genus is *Candidatus* Ephemia expopax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABWAM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maledulaceae.

Description of *Candidatus* Ephemula laxitentia sp. nov.

Candidatus Ephemula laxitentia (NL. fem. n. *laxitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pan44 sp007745175*. The type genome for the species is the GenBank assembly RS_GCF_007745175.1. The GC content of the type genome is 63.21 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Ephemula gen. nov.

Candidatus Ephemula (NL. fem. n. *Ephemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pan44*. The type species for the genus is *Candidatus* Ephemula laxitentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ephipana adtumitura sp. nov.

Candidatus Ephipana adtumitura (NL. fem. n. *adtumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G138 sp004213565*. The type genome for the species is the GenBank assembly GCA_004213565.1. The GC content of the type genome is 71.87 % and the genome length is 9.12 Mbp.

Description of *Candidatus* Ephipana gen. nov.

Candidatus Ephipana (NL. fem. n. *Ephipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G138*. The type species for the genus is *Candidatus* Ephipana adtumitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ephiparia fefelisca sp. nov.

Candidatus Ephiparia fefelisca (NL. fem. n. *fefelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1189 sp002309805*. The type genome for the species is the GenBank assembly GCA_002309805.1. The GC content of the type genome is 53.23 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Ephiparia gen. nov.

Candidatus Ephiparia (NL. fem. n. *Ephiparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1189*. The type species for the genus is *Candidatus* Ephiparia fefelisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ephipella defacimonas sp. nov.

Candidatus Ephipella defacimonas (NL. fem. n. *defacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHWB01 sp009691025*. The type genome for the species is the GenBank assembly GCA_009691025.1. The GC content of the type genome is 68.89 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Ephipella gen. nov.

Candidatus Ephipella (NL. fem. n. *Ephipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHWB01*. The type species for the genus is *Candidatus* Ephipella defacimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifariaceae.

Description of *Candidatus* Ephipia relenitura sp. nov.

Candidatus Ephipia relenitura (NL. fem. n. *relenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1306 sp002307245*. The type genome for the species is the GenBank assembly GCA_002307245.1. The GC content of the type genome is 65.2 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Ephipia gen. nov.

Candidatus Ephipia (NL. fem. n. *Ephipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1306*. The type species for the genus is *Candidatus* Ephipia relenitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponosaceae.

Description of *Candidatus* Ephipida appugitura sp. nov.

Candidatus Ephipida appugitura (NL. fem. n. *appugitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RHAI01 sp010028705*. The type genome for the species is the GenBank assembly GCA_010028705.1. The GC content of the type genome is 46.62 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Ephipida gen. nov.

Candidatus Ephipida (NL. fem. n. *Ephipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RHAI01*. The type species for the genus is *Candidatus* Ephipida appugitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXXA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisalanaceae.

Description of *Candidatus* Epibacterium accapitica sp. nov.

Candidatus Epibacterium accapitica (NL. fem. n. *accapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epibacterium sp009617595*. The type genome for the species is the GenBank assembly RS_GCF_009617595.1. The GC content of the type genome is 56.35 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Epibacterium affabastra sp. nov.

Candidatus Epibacterium affabastra (NL. fem. n. *affabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epibacterium sp006265095*. The type genome for the species is the GenBank assembly RS_GCF_006265095.1. The GC content of the type genome is 61.23 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Epibacterium anarratica sp. nov.

Candidatus Epibacterium anarratica (NL. fem. n. *anarratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epibacterium sp001874255*. The type genome for the species is the GenBank assembly GCA_001874255.1. The GC content of the type genome is 61.73 % and the genome length is 4.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mediterranean seawater enriched with a specific particulate matter".

Description of *Candidatus* Epibacterium curacessa sp. nov.

Candidatus Epibacterium curacessa (NL. fem. n. *curacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epibacterium sp004566265*. The type genome for the species is the GenBank assembly GCA_013215045.1. The GC content of the type genome is 56.29 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Epibacterium inrecivita sp. nov.

Candidatus Epibacterium inrecivita (NL. fem. n. *inrecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Epibacterium sp000014065*. The type genome for the species is the GenBank assembly RS_GCF_000014065.1. The GC content of the type genome is 60.06 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Epibacterium manomentia sp. nov.

Candidatus Epibacterium manomentia (NL. fem. n. *manomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epibacterium sp009496005*. The type genome for the species is the GenBank assembly RS_GCF_009496005.1. The GC content of the type genome is 57.53 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Epibacterium taxilitudo sp. nov.

Candidatus Epibacterium taxilitudo (NL. fem. n. *taxilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epibacterium sp011806385*. The type genome for the species is the GenBank assembly RS_GCF_011806385.1. The GC content of the type genome is 62.21 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Epiclana eccilimonia sp. nov.

Candidatus Epiclana eccilimonia (NL. fem. n. *eccilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RECG01 sp007692425*. The type genome for the species is the GenBank assembly GCA_007692425.1. The GC content of the type genome is 49.47 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Epiclana gen. nov.

Candidatus Epiclana (NL. fem. n. *Epiclana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RECG01*. The type species for the genus is *Candidatus* Epiclana eccilimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epiclaria vavasugo sp. nov.

Candidatus Epiclaria vavasugo (NL. fem. n. *vavasugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2715465 sp002715465*. The type genome for the species is the GenBank assembly GCA_002715465.1. The GC content of the type genome is 34.19 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Epiclaria gen. nov.

Candidatus Epiclaria (NL. fem. n. *Epiclaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2715465*. The type species for the genus is *Candidatus* Epiclaria vavasugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S15-B10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minagulaceae.

Description of *Candidatus* Epiclella dehisiforma sp. nov.

Candidatus Epiclella dehisiforma (NL. fem. n. *dehisiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-08 sp001604045*. The type genome for the species is the GenBank assembly GCA_001604045.1. The GC content of the type genome is 55.19 % and the genome length is 1.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Epiclella gen. nov.

Candidatus Epiclella (NL. fem. n. *Epiclella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Firm-08*. The type species for the genus is *Candidatus* Epiclella dehisiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QAKW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Milipariaceae.

Description of *Candidatus* Epiclida uxorcicella sp. nov.

Candidatus Epiclida uxorcicella (NL. fem. n. *uxorcicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLJD01 sp007135295*. The type genome for the species is the GenBank assembly GCA_007135295.1. The GC content of the type genome is 64.09 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Epiclida gen. nov.

Candidatus Epiclida (NL. fem. n. *Epiclida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLJD01*. The type species for the genus is *Candidatus* Epiclida uxorcicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Epiclosa conopitica sp. nov.

Candidatus Epiclosa conopitica (NL. fem. n. *conopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4311 sp002394665*. The type genome for the species is the GenBank assembly GCA_002394665.1. The GC content of the type genome is 33.43 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Epiclosa gen. nov.

Candidatus Epiclosa (NL. fem. n. *Epiclosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4311*. The type species for the genus is *Candidatus* Epiclosa conopitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epiclosa semipatio sp. nov.

Candidatus Epiclosa semipatio (NL. fem. n. *semipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4311 sp002395105*. The type genome for the species is the GenBank assembly GCA_002395105.1. The GC content of the type genome is 27.62 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Epiclula bipenibra sp. nov.

Candidatus Epiclula bipenibra (NL. fem. n. *bipenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-44-17 sp001794195*. The type genome for the species is the GenBank assembly GCA_001794195.1. The GC content of the type genome is 43.67 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Epiclula gen. nov.

Candidatus Epiclula (NL. fem. n. *Epiclula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-44-17*. The type species for the genus is *Candidatus* Epiclula bipenibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *IGHO2-01-FULL-4-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisulaceae.

Description of *Candidatus* Epicraria abligitica sp. nov.

Candidatus Epicraria abligitica (NL. fem. n. *abligitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCVQ01 sp902806175*. The type genome for the species is the GenBank assembly GCA_902806175.1. The GC content of the type genome is 71.51 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Epicraria gen. nov.

Candidatus Epicraria (NL. fem. n. *Epicraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCVQ01*. The type species for the genus is *Candidatus* Epicraria abligitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epicraria apsolilenta sp. nov.

Candidatus Epicraria apsolilenta (NL. fem. n. *apsolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCVQ01 sp013813955*. The type genome for the species is the GenBank assembly GCA_013813955.1. The GC content of the type genome is 72.16 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Epicrida musulugo sp. nov.

Candidatus Epicrida musulugo (NL. fem. n. *musulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWUB01 sp003563755*. The type genome for the species is the GenBank assembly GCA_003563755.1. The GC content of the type genome is 61.53 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Epicrida gen. nov.

Candidatus Epicrida (NL. fem. n. *Epicrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWUB01*. The type species for the genus is *Candidatus* Epicrida musulugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUMD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reforariaceae.

Description of *Candidatus* Epicrosa apporimonas sp. nov.

Candidatus Epicrosa apporimonas (NL. fem. n. *apporimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQIY01 sp903871975*. The type genome for the species is the GenBank assembly GCA_903871975.1. The GC content of the type genome is 67.13 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Epicrosa gen. nov.

Candidatus Epicrosa (NL. fem. n. *Epicrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQIY01*. The type species for the genus is *Candidatus* Epicrosa apporimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epigrana proslitia sp. nov.

Candidatus Epigrana proslitia (NL. fem. n. *proslitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *12-FULL-45-19b sp001794605*. The type genome for the species is the GenBank assembly GCA_001794605.1. The GC content of the type genome is 44.55 % and the genome length is 0.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Epigrana gen. nov.

Candidatus Epigrana (NL. fem. n. *Epigrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *12-FULL-45-19b*. The type species for the genus is *Candidatus* Epigrana proslitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *IGHO2-12-FULL-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricariaceae.

Description of *Candidatus* Epigraria acculitoga sp. nov.

Candidatus Epigraria acculitoga (NL. fem. n. *acculitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACRUB01 sp014305015*. The type genome for the species is the GenBank assembly GCA_014305015.1. The GC content of the type genome is 58.11 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Epigraria gen. nov.

Candidatus Epigraria (NL. fem. n. *Epigraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACRUB01*. The type species for the genus is *Candidatus* Epigraria acculitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epigrella capudedo sp. nov.

Candidatus Epigrella capudedo (NL. fem. n. *capudedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch48 sp012512865*. The type genome for the species is the GenBank assembly GCA_012512865.1. The GC content of the type genome is 41.8 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Epigrella gen. nov.

Candidatus Epigrella (NL. fem. n. *Epigrella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch48*. The type species for the genus is *Candidatus* Epigrella capudedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notacidaceae.

Description of *Candidatus* Epigrella tigurimonas sp. nov.

Candidatus Epigrella tigurimonas (NL. fem. n. *tigurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch48 sp013314855*. The type genome for the species is the GenBank assembly GCA_013314855.1. The GC content of the type genome is 38.13 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Epigrida carunitura sp. nov.

Candidatus Epigrida carunitura (NL. fem. n. *carunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGV01 sp900696645*. The type genome for the species is the GenBank assembly GCA_900696645.1. The GC content of the type genome is 51.34 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Epigrida gen. nov.

Candidatus Epigrida (NL. fem. n. *Epigrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAADGV01*. The type species for the genus is *Candidatus* Epigrida carunitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6906*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibellaceae.

Description of *Candidatus* Epigrosa antipimonas sp. nov.

Candidatus Epigrosa antipimonas (NL. fem. n. *antipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6230 sp002441565*. The type genome for the species is the GenBank assembly GCA_002441565.1. The GC content of the type genome is 40.55 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Epigrosa gen. nov.

Candidatus Epigrosa (NL. fem. n. *Epigrosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6230*. The type species for the genus is *Candidatus* Epigrosa antipimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epigrula apsenitrix sp. nov.

Candidatus Epigrula apsenitrix (NL. fem. n. *apsenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-50-9 sp001772255*. The type genome for the species is the GenBank assembly GCA_001772255.1. The GC content of the type genome is 50.83 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Epigrula gen. nov.

Candidatus Epigrula (NL. fem. n. *Epigrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-50-9*. The type species for the genus is *Candidatus* Epigrula apsenitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10110*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pacifosaceae.

Description of *Candidatus* Epilithonimonas accerigena sp. nov.

Candidatus Epilithonimonas accerigena (NL. fem. n. *accerigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp001898785*. The type genome for the species is the GenBank assembly GCA_001898785.1. The GC content of the type genome is 35.68 % and the genome length is 3.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Epilithonimonas appacastra sp. nov.

Candidatus Epilithonimonas appacastra (NL. fem. n. *appacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp002476905*. The type genome for the species is the GenBank assembly GCA_002476905.1. The GC content of the type genome is 35.64 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Epilithonimonas asporicella sp. nov.

Candidatus Epilithonimonas asporicella (NL. fem. n. *asporicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp003248755*. The type genome for the species is the GenBank assembly GCA_003248755.1. The GC content of the type genome is 35.01 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Epilithonimonas desupimonia sp. nov.

Candidatus Epilithonimonas desupimonia (NL. fem. n. *desupimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp002345565*. The type genome for the species is the GenBank assembly GCA_002345565.1. The GC content of the type genome is 35.03 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Epilithonimonas dimiditia sp. nov.

Candidatus Epilithonimonas dimiditia (NL. fem. n. *dimiditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp002391865*. The type genome for the species is the GenBank assembly GCA_002391865.1. The GC content of the type genome is 35.89 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Epilithonimonas enuntastra sp. nov.

Candidatus Epilithonimonas enuntastra (NL. fem. n. *enuntastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp003932955*. The type genome for the species is the GenBank assembly RS_GCF_003932955.1. The GC content of the type genome is 40.32 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Epilithonimonas estovitrix sp. nov.

Candidatus Epilithonimonas estovitrix (NL. fem. n. *estovitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp001643375*. The type genome for the species is the GenBank assembly RS_GCF_001643375.1. The GC content of the type genome is 37.06 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Epilithonimonas fecunifica sp. nov.

Candidatus Epilithonimonas fecunifica (NL. fem. n. *fecunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp002297505*. The type genome for the species is the GenBank assembly GCA_002297505.1. The GC content of the type genome is 40.37 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Epilithonimonas oblocifica sp. nov.

Candidatus Epilithonimonas oblocifica (NL. fem. n. *oblocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp000735135*. The type genome for the species is the GenBank assembly RS_GCF_000735135.1. The GC content of the type genome is 36.89 % and the genome length is 3.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater creek".

Description of *Candidatus* Epilithonimonas retunibula sp. nov.

Candidatus Epilithonimonas retunibula (NL. fem. n. *retunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epilithonimonas sp002383165*. The type genome for the species is the GenBank assembly GCA_002383165.1. The GC content of the type genome is 35.55 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Episcaria arcatitura sp. nov.

Candidatus Episcaria arcatitura (NL. fem. n. *arcatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch128a sp013348845*. The type genome for the species is the GenBank assembly GCA_013348845.1. The GC content of the type genome is 29.88 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Episcaria gen. nov.

Candidatus Episcaria (NL. fem. n. *Episcaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch128a*. The type species for the genus is *Candidatus* Episcaria arcatitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-1AR*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufosaceae.

Description of *Candidatus* Episcida adnunimonas sp. nov.

Candidatus Episcida adnunimonas (NL. fem. n. *adnunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin52 sp002238645*. The type genome for the species is the GenBank assembly GCA_002238645.1. The GC content of the type genome is 66.54 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Episcida gen. nov.

Candidatus Episcida (NL. fem. n. *Episcida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin52*. The type species for the genus is *Candidatus* Episcida

adnunimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Episcosa defaritica sp. nov.

Candidatus Episcosa defaritica (NL. fem. n. *defaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSDE01 sp011049095*. The type genome for the species is the GenBank assembly GCA_011049095.1. The GC content of the type genome is 44.72 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Episcosa gen. nov.

Candidatus Episcosa (NL. fem. n. *Episcosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSDE01*. The type species for the genus is *Candidatus* Episcosa defaritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *46-47*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilariaceae.

Description of *Candidatus* Epistana ammurilenta sp. nov.

Candidatus Epistana ammurilenta (NL. fem. n. *ammurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCVG01 sp013698335*. The type genome for the species is the GenBank assembly GCA_013698335.1. The GC content of the type genome is 68.58 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Epistana gen. nov.

Candidatus Epistana (NL. fem. n. *Epistana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCVG01*. The type species for the genus is *Candidatus* Epistana ammurilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epistaria gen. nov.

Candidatus Epistaria (NL. fem. n. *Epistaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBBV01*. The type species for the genus is *Candidatus* Epistaria thessalonicensis_A .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin65*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manubulaceae.

Description of *Candidatus* Epistia incunedo sp. nov.

Candidatus Epistia incunedo (NL. fem. n. *incunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2717225 sp002717225*. The type genome for the species is the GenBank assembly GCA_002717225.1. The GC content of the type genome is 53.67 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Epistia gen. nov.

Candidatus Epistia (NL. fem. n. *Epistia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2717225*. The type species for the genus is *Candidatus* Epistia incunedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA828*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hegumosaceae.

Description of *Candidatus* Epitrana cenacitrix sp. nov.

Candidatus Epitrana cenacitrix (NL. fem. n. *cenacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *F1-80-MAGs030 sp005798285*. The type genome for the species is the GenBank assembly GCA_005798285.1. The GC content of the type genome is 64.46 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Epitrana gen. nov.

Candidatus Epitrana (NL. fem. n. *Epitrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-80-MAGs030*. The type species for the genus is *Candidatus* Epitrana cenacitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SYMT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenariaceae.

Description of *Candidatus* Epitraria exsatimonia sp. nov.

Candidatus Epitraria exsatimonia (NL. fem. n. *exsatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REBA01 sp013297765*. The type genome for the species is the GenBank assembly GCA_013297765.1. The GC content of the type genome is 36.96 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Epitraria gen. nov.

Candidatus Epitraria (NL. fem. n. *Epitraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REBA01*. The type species for the genus is *Candidatus* Epitraria exsatimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epitraria inrefentia sp. nov.

Candidatus Epitraria inrefentia (NL. fem. n. *inrefentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REBA01 sp004294225*. The type genome for the species is the

GenBank assembly GCA_004294225.1. The GC content of the type genome is 33.03 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Epitria cohuritas sp. nov.

Candidatus Epitria cohuritas (NL. fem. n. *cohuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSFR01 sp903859135*. The type genome for the species is the GenBank assembly GCA_903859135.1. The GC content of the type genome is 38.99 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Epitria gen. nov.

Candidatus Epitria (NL. fem. n. *Epitria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSFR01*. The type species for the genus is *Candidatus* Epitria cohuritas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epitria invesitio sp. nov.

Candidatus Epitria invesitio (NL. fem. n. *invesitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSFR01 sp008015505*. The type genome for the species is the GenBank assembly GCA_008015505.1. The GC content of the type genome is 38.97 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Epitrida nosocifica sp. nov.

Candidatus Epitrida nosocifica (NL. fem. n. *nosocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12867 sp902783405*. The type genome for the species is the GenBank assembly GCA_902783405.1. The GC content of the type genome is 26.5 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Epitrida gen. nov.

Candidatus Epitrida (NL. fem. n. *Epitrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12867*. The type species for the genus is *Candidatus* Epitrida nosocifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Epitrosa crabritura sp. nov.

Candidatus Epitrosa crabritura (NL. fem. n. *crabritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-47-12 sp001790455*. The type genome for the species is the GenBank assembly GCA_001790455.1. The GC content of the type genome is 46.79 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Epitrosa gen. nov.

Candidatus Epitrosa (NL. fem. n. *Epitrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-47-12*. The type species for the genus is *Candidatus* Epitrosa crabritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10212_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Geruniaceae.

Description of *Candidatus* Epitrula totidicula sp. nov.

Candidatus Epitrula totidicula (NL. fem. n. *totidicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLOG01 sp007132635*. The type genome for the species is the GenBank assembly GCA_007132635.1. The GC content of the type genome is 53.83 %

and the genome length is 2.72 Mbp.

Description of *Candidatus* Epitrula gen. nov.

Candidatus Epitrula (NL. fem. n. *Epitrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLOG01*. The type species for the genus is *Candidatus* Epitrula totidicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricosaceae.

Description of *Candidatus* Epogdaria infabedo sp. nov.

Candidatus Epogdaria infabedo (NL. fem. n. *infabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADCZ01 sp013154175*. The type genome for the species is the GenBank assembly GCA_013154175.1. The GC content of the type genome is 49.27 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Epogdaria gen. nov.

Candidatus Epogdaria (NL. fem. n. *Epogdaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADCZ01*. The type species for the genus is *Candidatus* Epogdaria infabedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QOAL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonipidaceae.

Description of *Candidatus* Epogdella indotisca sp. nov.

Candidatus Epogdella indotisca (NL. fem. n. *indotisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFPW01 sp009922405*. The type genome for the species is the

GenBank assembly GCA_009922405.1. The GC content of the type genome is 58.54 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Epogdella gen. nov.

Candidatus Epogdella (NL. fem. n. *Epogdella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFPW01*. The type species for the genus is *Candidatus* Epogdella indotisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epogdella obvolilenta sp. nov.

Candidatus Epogdella obvolilenta (NL. fem. n. *obvolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFPW01 sp009925965*. The type genome for the species is the GenBank assembly GCA_009925965.1. The GC content of the type genome is 59.51 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Epogdella penuritura sp. nov.

Candidatus Epogdella penuritura (NL. fem. n. *penuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFPW01 sp903864485*. The type genome for the species is the GenBank assembly GCA_903864485.1. The GC content of the type genome is 59.32 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Epogdia bugilicula sp. nov.

Candidatus Epogdia bugilicula (NL. fem. n. *bugilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ALPHA2B sp003671765*. The type genome for the species is the GenBank assembly RS_GCF_003671765.1. The GC content of the type genome is 69.03 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Epogdia gen. nov.

Candidatus Epogdia (NL. fem. n. *Epogdia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ALPHA2B*. The type species for the genus is *Candidatus* Epogdia bugilicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Epogdia sicunedo sp. nov.

Candidatus Epogdia sicunedo (NL. fem. n. *sicunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ALPHA2B sp005503065*. The type genome for the species is the GenBank assembly RS_GCF_005503065.1. The GC content of the type genome is 68.72 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Epogdida artifilega sp. nov.

Candidatus Epogdida artifilega (NL. fem. n. *artifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXWF01 sp013335095*. The type genome for the species is the GenBank assembly GCA_013335095.1. The GC content of the type genome is 42.18 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Epogdida gen. nov.

Candidatus Epogdida (NL. fem. n. *Epogdida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXWF01*. The type species for the genus is *Candidatus* Epogdida artifilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002791395*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vecorosaceae.

Description of *Candidatus* Epogdula timefitio sp. nov.

Candidatus Epogdula timefitio (NL. fem. n. *timefitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1238 sp002309015*. The type genome for the species is the GenBank assembly GCA_002309015.1. The GC content of the type genome is 55.98 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Epogdula gen. nov.

Candidatus Epogdula (NL. fem. n. *Epogdula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1238*. The type species for the genus is *Candidatus* Epogdula timefitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Democellaceae.

Description of *Candidatus* Epulopiscium benemugo sp. nov.

Candidatus Epulopiscium benemugo (NL. fem. n. *benemugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_A sp001983455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001983535.1. The GC content of the type genome is 31.14 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Epulopiscium detepifica sp. nov.

Candidatus Epulopiscium detepifica (NL. fem. n. *detepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_A sp002007285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002007285.1. The GC content of the type genome is 29.34 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Epulopiscium nugacatio sp. nov.

Candidatus Epulopiscium nugacatio (NL. fem. n. *nugacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_A sp001983475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001983475.1. The GC content of the type genome is 30.0 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Epulopiscium cenodicella sp. nov.

Candidatus Epulopiscium cenodicella (NL. fem. n. *cenodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_B sp002007295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002007295.1. The GC content of the type genome is 33.94 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Epulopiscium imbelitas sp. nov.

Candidatus Epulopiscium imbelitas (NL. fem. n. *imbelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_B sp001995005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001995005.1. The GC content of the type genome is 32.46 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Epulopiscium obsecicella sp. nov.

Candidatus Epulopiscium obsecicella (NL. fem. n. *obsecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_B sp000171335*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000171335.1. The GC content of the type genome is 38.15 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Epulopiscium paropibra sp. nov.

Candidatus Epulopiscium paropibra (NL. fem. n. *paropibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_B sp001983555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001983555.1. The GC content of the type genome is 30.36 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Epulopiscium effulilega sp. nov.

Candidatus Epulopiscium effulilega (NL. fem. n. *effulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_C sp002007315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002007315.1. The GC content of the type genome is 34.52 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Epulopiscium resupiforma sp. nov.

Candidatus Epulopiscium resupiforma (NL. fem. n. *resupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_C sp001994995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001994995.1. The GC content of the type genome is 34.48 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Epulopiscium adcogimonas sp. nov.

Candidatus Epulopiscium adcogimonas (NL. fem. n. *adcogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Epulopiscium_D sp002007365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002007365.1. The GC content of the type genome is 32.3 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Ereboglobus adperitica sp. nov.

Candidatus Ereboglobus adperitica (NL. fem. n. *adperitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ereboglobus sp001650175*. The type genome for the species is the GenBank assembly RS_GCF_001650175.1. The GC content of the type genome is 62.88 % and the genome length is 7.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gut".

Description of *Candidatus* Ermelana murelilenta sp. nov.

Candidatus Ermelana murelilenta (NL. fem. n. *murelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYXU01 sp012515725*. The type genome for the species is the GenBank assembly GCA_012515725.1. The GC content of the type genome is 60.65 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Ermelana gen. nov.

Candidatus Ermelana (NL. fem. n. *Ermelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYXU01*. The type species for the genus is *Candidatus* Ermelana murelilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Corocanaceae.

Description of *Candidatus* Ermelaria cnestastra sp. nov.

Candidatus Ermelaria cnestastra (NL. fem. n. *cnestastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSSF01 sp011362645*. The type genome for the species is the GenBank assembly GCA_011362645.1. The GC content of the type genome is 58.26 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Ermelaria gen. nov.

Candidatus Ermelaria (NL. fem. n. *Ermelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSSF01*. The type species for the genus is *Candidatus* Ermelaria cnestastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ermelia cicariforma sp. nov.

Candidatus Ermelia cicariforma (NL. fem. n. *cicariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VLXZ01 sp007293315*. The type genome for the species is the GenBank assembly RS_GCF_007293315.1. The GC content of the type genome is 40.81 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Ermelia gen. nov.

Candidatus Ermelia (NL. fem. n. *Ermelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VLXZ01*. The type species for the genus is *Candidatus* Ermelia cicariforma .

According to GTDB R06-RS202, this genus belongs to the family _D.

Description of *Candidatus* Ermelida elastetta sp. nov.

Candidatus Ermelida elastetta (NL. fem. n. *elastetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHF01 sp012727485*. The type genome for the species is the GenBank assembly GCA_012727485.1. The GC content of the type genome is 47.73 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Ermelida gen. nov.

Candidatus Ermelida (NL. fem. n. *Ermelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHF01*. The type species for the genus is *Candidatus* Ermelida elastetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ermelosa gasifitia sp. nov.

Candidatus Ermelosa gasifitia (NL. fem. n. *gasifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JL08 sp003352045*. The type genome for the species is the GenBank assembly RS_GCF_003352045.1. The GC content of the type genome is 57.52 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Ermelosa gen. nov.

Candidatus Ermelosa (NL. fem. n. *Ermelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JL08*. The type species for the genus is *Candidatus* Ermelosa gasifitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Errabaria armicax sp. nov.

Candidatus Errabaria armicax (NL. fem. n. *armicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PDOX01 sp002746475*. The type genome for the species is the GenBank assembly GCA_002746475.1. The GC content of the type genome is 32.02 %

and the genome length is 0.56 Mbp.

Description of *Candidatus* Errabaria gen. nov.

Candidatus Errabaria (NL. fem. n. *Errabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PDOX01*. The type species for the genus is *Candidatus* Errabaria armicax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *X112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Errabia inordatica sp. nov.

Candidatus Errabia inordatica (NL. fem. n. *inordatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-44-25 sp001816455*. The type genome for the species is the GenBank assembly GCA_001816455.1. The GC content of the type genome is 44.1 % and the genome length is 0.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Errabia gen. nov.

Candidatus Errabia (NL. fem. n. *Errabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-44-25*. The type species for the genus is *Candidatus* Errabia inordatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sotulanaceae.

Description of *Candidatus* Errabosa cadurentia sp. nov.

Candidatus Errabosa cadurentia (NL. fem. n. *cadurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUJ01 sp012517315*. The type genome for the species is the GenBank assembly GCA_012517315.1. The GC content of the type genome is 57.87 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Errabosa gen. nov.

Candidatus Errabosa (NL. fem. n. *Errabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUJ01*. The type species for the genus is *Candidatus* Errabosa cadurentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Errabosa nimiritia sp. nov.

Candidatus Errabosa nimiritia (NL. fem. n. *nimiritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUJ01 sp012517775*. The type genome for the species is the GenBank assembly GCA_012517775.1. The GC content of the type genome is 54.29 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Errabula alsisicula sp. nov.

Candidatus Errabula alsisicula (NL. fem. n. *alsisicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6492 sp002436485*. The type genome for the species is the GenBank assembly GCA_002436485.1. The GC content of the type genome is 48.86 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Errabula gen. nov.

Candidatus Errabula (NL. fem. n. *Errabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6492*. The type species for the genus is *Candidatus* Errabula alsisicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA6429. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubosaceae.

Description of *Candidatus* Erwinia bonifitudo sp. nov.

Candidatus Erwinia bonifitudo (NL. fem. n. *bonifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp003512805*. The type genome for the species is the GenBank assembly GCA_003512805.1. The GC content of the type genome is 54.67 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Erwinia catecilenta sp. nov.

Candidatus Erwinia catecilenta (NL. fem. n. *catecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp009738185*. The type genome for the species is the GenBank assembly RS_GCF_009707715.1. The GC content of the type genome is 53.15 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Erwinia cuticifica sp. nov.

Candidatus Erwinia cuticifica (NL. fem. n. *cuticifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp003751505*. The type genome for the species is the GenBank assembly RS_GCF_003751505.1. The GC content of the type genome is 56.52 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Erwinia genufatio sp. nov.

Candidatus Erwinia genufatio (NL. fem. n. *genufatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp001422605*. The type genome for the species is the GenBank assembly RS_GCF_002865965.1. The GC content of the type genome is 59.09 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Erwinia ignigitica sp. nov.

Candidatus Erwinia ignigitica (NL. fem. n. *ignigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp007981265*. The type genome for the species is the GenBank assembly RS_GCF_007981265.1. The GC content of the type genome is 52.8 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Erwinia imbelibra sp. nov.

Candidatus Erwinia imbelibra (NL. fem. n. *imbelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp900068895*. The type genome for the species is the GenBank assembly RS_GCF_900068895.1. The GC content of the type genome is 54.61 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Erwinia oppanitrix sp. nov.

Candidatus Erwinia oppanitrix (NL. fem. n. *oppanitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp003937915*. The type genome for the species is the GenBank assembly RS_GCF_003937915.1. The GC content of the type genome is 55.6 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Erwinia pinigago sp. nov.

Candidatus Erwinia pinigago (NL. fem. n. *pinigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp009765445*. The type genome for the species is the GenBank assembly RS_GCF_009765445.1. The GC content of the type genome is 54.16 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Erwinia resupigena sp. nov.

Candidatus Erwinia resupigena (NL. fem. n. *resupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp000599885*. The type genome for the species is the GenBank assembly RS_GCF_000599885.1. The GC content of the type genome is 54.75 % and the genome length is 4.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Erwinia subabentia sp. nov.

Candidatus Erwinia subabentia (NL. fem. n. *subabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erwinia sp004022165*. The type genome for the species is the GenBank assembly RS_GCF_014155785.1. The GC content of the type genome is 50.11 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Erysipelatoclostridium citivitudo sp. nov.

Candidatus Erysipelatoclostridium citivitudo (NL. fem. n. *citivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelatoclostridium sp002160495*. The type genome for the species is the GenBank assembly RS_GCF_002160675.1. The GC content of the type genome is 30.2 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Erysipelatoclostridium irregitoga sp. nov.

Candidatus Erysipelatoclostridium irregitoga (NL. fem. n. *irregitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelatoclostridium sp000508865*. The type genome for the species is the GenBank assembly RS_GCF_000508865.1. The GC content of the type genome is 30.58 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Erysipelothrix catabitas sp. nov.

Candidatus Erysipelothrix catabitas (NL. fem. n. *catabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelothrix sp011400295*. The type genome for the species is the GenBank assembly RS_GCF_011400295.1. The GC content of the type genome is 35.28 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Erysipelothrix ciminitio sp. nov.

Candidatus Erysipelothrix ciminitio (NL. fem. n. *ciminitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelothrix sp009828835*. The type genome for the species is the GenBank assembly RS_GCF_009828835.1. The GC content of the type genome is 34.45 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Erysipelothrix hecatimonia sp. nov.

Candidatus Erysipelothrix hecatimonia (NL. fem. n. *hecatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelothrix sp011301115*. The type genome for the species is the GenBank assembly RS_GCF_011301115.1. The GC content of the type genome is 38.18 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Erysipelothrix homolatica sp. nov.

Candidatus Erysipelothrix homolatica (NL. fem. n. *homolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelothrix sp011299615*. The type genome for the species is the GenBank assembly RS_GCF_011299615.1. The GC content of the type genome is 39.44 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Erysipelothrix inforitas sp. nov.

Candidatus Erysipelothrix inforitas (NL. fem. n. *inforitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelothrix sp012520695*. The type genome for the species is the GenBank assembly GCA_012520695.1. The GC content of the type genome is 38.72 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Erysipelothrix murilitica sp. nov.

Candidatus Erysipelothrix murilitica (NL. fem. n. *murilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelothrix sp002359085*. The type genome for the species is the GenBank assembly GCA_002359085.1. The GC content of the type genome is 37.15 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Erysipelothrix occucastra sp. nov.

Candidatus Erysipelothrix occucastra (NL. fem. n. *occucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelothrix sp012727815*. The type genome for the species is the GenBank assembly GCA_012727815.1. The GC content of the type genome is 33.04 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Erysipelothrix volunitio sp. nov.

Candidatus Erysipelothrix volunitio (NL. fem. n. *volunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelothrix sp002358955*. The type genome for the species is the GenBank assembly GCA_002358955.1. The GC content of the type genome is 36.46 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Erysipelothrix xenopitio sp. nov.

Candidatus Erysipelothrix xenopitio (NL. fem. n. *xenopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erysipelothrix sp009828765*. The type genome for the species is the GenBank assembly RS_GCF_009828765.1. The GC content of the type genome is 38.16 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Erythrobacter acistitia sp. nov.

Candidatus Erythrobacter acistitia (NL. fem. n. *acistitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp002855495*. The type genome for the species is the GenBank assembly RS_GCF_002855495.1. The GC content of the type genome is 64.08 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Erythrobacter adnaricella sp. nov.

Candidatus Erythrobacter adnaricella (NL. fem. n. *adnaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp013214365*. The type genome for the species is the GenBank assembly GCA_013214365.1. The GC content of the type genome is 59.05 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Erythrobacter adrenago sp. nov.

Candidatus Erythrobacter adrenago (NL. fem. n. *adrenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp007004095*. The type genome for the species is the GenBank assembly RS_GCF_007004095.1. The GC content of the type genome is 57.0 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Erythrobacter adsigitrix sp. nov.

Candidatus Erythrobacter adsigitrix (NL. fem. n. *adsigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp006542605*. The type genome for the species is the GenBank assembly RS_GCF_006542605.1. The GC content of the type genome is 65.84 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Erythrobacter adsusilega sp. nov.

Candidatus Erythrobacter adsusilega (NL. fem. n. *adsusilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Erythrobacter sp002706445*. The type genome for the species is the GenBank assembly GCA_002706445.1. The GC content of the type genome is 62.2 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Erythrobacter agrapiforma sp. nov.

Candidatus Erythrobacter agrapiforma (NL. fem. n. *agrapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp009363635*. The type genome for the species is the GenBank assembly RS_GCF_009363635.1. The GC content of the type genome is 61.16 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Erythrobacter apsoritas sp. nov.

Candidatus Erythrobacter apsoritas (NL. fem. n. *apsoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp001296025*. The type genome for the species is the GenBank assembly RS_GCF_001296025.1. The GC content of the type genome is 62.73 % and the genome length is 3.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Erythrobacter caduretta sp. nov.

Candidatus Erythrobacter caduretta (NL. fem. n. *caduretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp003724185*. The type genome for the species is the GenBank assembly GCA_003724185.1. The GC content of the type genome is 64.3 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Erythrobacter capilitia sp. nov.

Candidatus Erythrobacter capilitia (NL. fem. n. *capilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp000714765*. The type genome for the species is the GenBank assembly GCA_000714765.1. The GC content of the type genome is 61.77 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Erythrobacter ceracitoga sp. nov.

Candidatus Erythrobacter ceracitoga (NL. fem. n. *ceracitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp013911835*. The type genome for the species is the GenBank assembly GCA_013911835.1. The GC content of the type genome is 65.95 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Erythrobacter colopilega sp. nov.

Candidatus Erythrobacter colopilega (NL. fem. n. *colopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp011765465*. The type genome for the species is the GenBank assembly GCA_011765465.1. The GC content of the type genome is 66.62 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Erythrobacter decomessa sp. nov.

Candidatus Erythrobacter decomessa (NL. fem. n. *decomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp001720465*. The type genome for the species is the GenBank assembly RS_GCF_001720465.1. The GC content of the type genome is 64.72 % and the genome length is 2.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "littoral zone".

Description of *Candidatus* Erythrobacter depacivita sp. nov.

Candidatus Erythrobacter depacivita (NL. fem. n. *depacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp903934325*. The type genome for the species is the GenBank assembly GCA_903934325.1. The GC content of the type genome is 65.67 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Erythrobacter desonicula sp. nov.

Candidatus Erythrobacter desonicula (NL. fem. n. *desonicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp900105095*. The type genome for the species is the GenBank assembly GCA_001314765.1. The GC content of the type genome is 68.36 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-O from microbial mat sample; contains cyanobacterium Phormidium OSCR and associated heterotrophs".

Description of *Candidatus* Erythrobacter dilecitas sp. nov.

Candidatus Erythrobacter dilecitas (NL. fem. n. *dilecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp009995225*. The type genome for the species is the GenBank assembly GCA_009995225.1. The GC content of the type genome is 62.94 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Erythrobacter dilibatio sp. nov.

Candidatus Erythrobacter dilibatio (NL. fem. n. *dilibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp002482865*. The type genome for the species is the GenBank assembly GCA_002482865.1. The GC content of the type genome is 64.53 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Erythrobacter documatica sp. nov.

Candidatus Erythrobacter documatica (NL. fem. n. *documatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp000744895*. The type genome for the species is the GenBank assembly RS_GCF_000744895.1. The GC content of the type genome is 64.18 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Erythrobacter domigitura sp. nov.

Candidatus Erythrobacter domigitura (NL. fem. n. *domigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp000152865*. The type genome for the species is the GenBank assembly RS_GCF_000152865.1. The GC content of the type genome is 60.97 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Erythrobacter eccilicella sp. nov.

Candidatus Erythrobacter eccilicella (NL. fem. n. *eccilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp002842925*. The type genome for the species is the GenBank assembly GCA_002842925.1. The GC content of the type genome is 62.16 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Erythrobacter exsufibula sp. nov.

Candidatus Erythrobacter exsufibula (NL. fem. n. *exsufibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp002215495*. The type genome for the species is the GenBank assembly RS_GCF_002215495.1. The GC content of the type genome is 67.57 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Erythrobacter exsusentia sp. nov.

Candidatus Erythrobacter exsusentia (NL. fem. n. *exsusentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp001542875*. The type genome for the species is the GenBank assembly RS_GCF_001542875.1. The GC content of the type genome is 56.87 % and the genome length is 3.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea water".

Description of *Candidatus* Erythrobacter gerunimonia sp. nov.

Candidatus Erythrobacter gerunimonia (NL. fem. n. *gerunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp001464915*. The type genome for the species is the GenBank assembly GCA_001464915.1. The GC content of the type genome is 62.95 % and the genome length is 2.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Erythrobacter humecitoga sp. nov.

Candidatus Erythrobacter humecitoga (NL. fem. n. *humecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp002952215*. The type genome for the species is the GenBank assembly RS_GCF_002952215.1. The GC content of the type genome is 64.3 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Erythrobacter illuvisca sp. nov.

Candidatus Erythrobacter illuvisca (NL. fem. n. *illuvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp009905735*. The type genome for the species is the GenBank assembly RS_GCF_009905735.1. The GC content of the type genome is 64.56 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Erythrobacter infabax sp. nov.

Candidatus Erythrobacter infabax (NL. fem. n. *infabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp000331285*. The type genome for the species is the GenBank assembly RS_GCF_000331285.1. The GC content of the type genome is 67.35 % and the genome length is 2.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water of the Huguangyan Maar Lake".

Description of *Candidatus* Erythrobacter inremicella sp. nov.

Candidatus Erythrobacter inremicella (NL. fem. n. *inremicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp001724215*. The type genome for the species is the GenBank assembly GCA_001724215.1. The GC content of the type genome is 61.96 % and the genome length is 2.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Erythrobacter maxumitoga sp. nov.

Candidatus Erythrobacter maxumitoga (NL. fem. n. *maxumitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp003264115*. The type genome for the species is the GenBank assembly RS_GCF_003264115.1. The GC content of the type genome is 60.77 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Erythrobacter melopastra sp. nov.

Candidatus Erythrobacter melopastra (NL. fem. n. *melopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp900149685*. The type genome for the species is the GenBank assembly GCA_900149685.1. The GC content of the type genome is 56.24 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Erythrobacter renaviforma sp. nov.

Candidatus Erythrobacter renaviforma (NL. fem. n. *renaviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp004292705*. The type genome for the species is the GenBank assembly GCA_004292705.1. The GC content of the type genome is 64.87 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Erythrobacter tegimimonas sp. nov.

Candidatus Erythrobacter tegimimonas (NL. fem. n. *tegimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp002842735*. The type genome for the species is the GenBank assembly GCA_002842735.1. The GC content of the type genome is 62.38 %

and the genome length is 2.66 Mbp.

Description of *Candidatus* Erythrobacter vacilivita sp. nov.

Candidatus Erythrobacter vacilivita (NL. fem. n. *vacilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp001556995*. The type genome for the species is the GenBank assembly RS_GCF_001556995.1. The GC content of the type genome is 63.82 % and the genome length is 3.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Erythrobacter vehemicella sp. nov.

Candidatus Erythrobacter vehemicella (NL. fem. n. *vehemicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp013822695*. The type genome for the species is the GenBank assembly GCA_013822445.1. The GC content of the type genome is 66.07 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Erythrobacter vehicastra sp. nov.

Candidatus Erythrobacter vehicastra (NL. fem. n. *vehicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp011054555*. The type genome for the species is the GenBank assembly GCA_011054555.1. The GC content of the type genome is 67.12 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Erythrobacter venunugo sp. nov.

Candidatus Erythrobacter venunugo (NL. fem. n. *venunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter sp001557115*. The type genome for the species is the GenBank assembly RS_GCF_001557115.1. The GC content of the type genome is 66.38 % and the genome length is 4.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Erythrobacter adfamilega sp. nov.

Candidatus Erythrobacter adfamilega (NL. fem. n. *adfamilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp000181515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000181515.1. The GC content of the type genome is 62.86 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Erythrobacter advinago sp. nov.

Candidatus Erythrobacter advinago (NL. fem. n. *advinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp013001165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013001165.1. The GC content of the type genome is 62.35 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Erythrobacter algebimonas sp. nov.

Candidatus Erythrobacter algebimonas (NL. fem. n. *algebimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp013911865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013911865.1. The GC content of the type genome is 61.03 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Erythrobacter dilibessa sp. nov.

Candidatus Erythrobacter dilibessa (NL. fem. n. *dilibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp001635685*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001626365.1. The GC content of the type genome is 63.54 % and the genome length is 2.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 169 - depth 100m".

Description of *Candidatus* Erythrobacter elastitio sp. nov.

Candidatus Erythrobacter elastitio (NL. fem. n. *elastitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp001542855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001542855.1. The GC content of the type genome is 63.11 % and the genome length is 3.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Erythrobacter holisicula sp. nov.

Candidatus Erythrobacter holisicula (NL. fem. n. *holisicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp001678665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001678665.1. The GC content of the type genome is 63.5 % and the genome length is 3.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "quartz stone sublith biofilm".

Description of *Candidatus* Erythrobacter notacugo sp. nov.

Candidatus Erythrobacter notacugo (NL. fem. n. *notacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp002695185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_002695185.1. The GC content of the type genome is 60.7 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Erythrobacter occenitoga sp. nov.

Candidatus Erythrobacter occenitoga (NL. fem. n. *occenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp003248395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003248395.1. The GC content of the type genome is 62.33 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Erythrobacter tenilentia sp. nov.

Candidatus Erythrobacter tenilentia (NL. fem. n. *tenilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp002895025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003447855.1. The GC content of the type genome is 60.85 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Erythrobacter tribratio sp. nov.

Candidatus Erythrobacter tribratio (NL. fem. n. *tribratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Erythrobacter_A sp009993605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009993605.1. The GC content of the type genome is 63.96 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Escherichia adcogitia sp. nov.

Candidatus Escherichia adcogitia (NL. fem. n. *adcogitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Escherichia sp002965065*. The type genome for the species is the GenBank assembly RS_GCF_002965065.1. The GC content of the type genome is 50.07 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Escherichia colapitas sp. nov.

Candidatus Escherichia colapitas (NL. fem. n. *colapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Escherichia sp001660175*. The type genome for the species is the GenBank assembly RS_GCF_001660175.1. The GC content of the type genome is 50.61 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Escherichia cucuritia sp. nov.

Candidatus Escherichia cucuritia (NL. fem. n. *cucuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Escherichia sp004211955*. The type genome for the species is the GenBank assembly RS_GCF_004323655.1. The GC content of the type genome is 50.61 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Escherichia detesifica sp. nov.

Candidatus Escherichia detesifica (NL. fem. n. *detesifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Escherichia sp000208585*. The type genome for the species is the GenBank assembly RS_GCF_000398885.1. The GC content of the type genome is 50.66 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Escherichia favonifica sp. nov.

Candidatus Escherichia favonifica (NL. fem. n. *favonifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Escherichia sp005843885*. The type genome for the species is the GenBank assembly RS_GCF_005781255.1. The GC content of the type genome is 50.61 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Esculana homagitura sp. nov.

Candidatus Esculana homagitura (NL. fem. n. *homagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W2P13-069 sp004553405*. The type genome for the species is the GenBank assembly GCA_004553405.1. The GC content of the type genome is 65.94 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Esculana gen. nov.

Candidatus Esculana (NL. fem. n. *Esculana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W2P13-069*. The type species for the genus is *Candidatus* Esculana homagitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QAMH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decuniaceae.

Description of *Candidatus* Esculella vinacitia sp. nov.

Candidatus Esculella vinacitia (NL. fem. n. *vinacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1448 sp003151315*. The type genome for the species is the GenBank assembly GCA_003151315.1. The GC content of the type genome is 46.03 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Esculella gen. nov.

Candidatus Esculella (NL. fem. n. *Esculella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1448*. The type species for the genus is *Candidatus* Esculella vinacitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Esculia expopimonas sp. nov.

Candidatus Esculia expopimonas (NL. fem. n. *expopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACVK01 sp009991595*. The type genome for the species is the GenBank assembly GCA_009991595.1. The GC content of the type genome is 44.0 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Esculia gen. nov.

Candidatus Esculia (NL. fem. n. *Esculia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACVK01*. The type species for the genus is *Candidatus* Esculia expopimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2428*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denaviaceae.

Description of *Candidatus* Esculida semapitura sp. nov.

Candidatus Esculida semapitura (NL. fem. n. *semapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXOX01 sp005776585*. The type genome for the species is the GenBank assembly GCA_005776585.1. The GC content of the type genome is 68.56 % and the genome length is 7.0 Mbp.

Description of *Candidatus* Esculida gen. nov.

Candidatus Esculida (NL. fem. n. *Esculida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXOX01*. The type species for the genus is *Candidatus* Esculida semapitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2863065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimitosaceae.

Description of *Candidatus* Esculula desacessa sp. nov.

Candidatus Esculula desacessa (NL. fem. n. *desacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JADDHL01 sp013151875*. The type genome for the species is the GenBank assembly GCA_013151875.1. The GC content of the type genome is 61.25 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Esculula gen. nov.

Candidatus Esculula (NL. fem. n. *Esculula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JADDHL01*. The type species for the genus is *Candidatus* Esculula desacessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTJE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucelulaceae.

Description of *Candidatus* Essonana alcibago sp. nov.

Candidatus Essonana alcibago (NL. fem. n. *alcibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10118 sp003524845*. The type genome for the species is the GenBank assembly GCA_003524845.1. The GC content of the type genome is 43.44 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Essonana gen. nov.

Candidatus Essonana (NL. fem. n. *Essonana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10118*. The type species for the genus is *Candidatus* Essonana alcibago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10105*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lupanellaceae.

Description of *Candidatus* Essonaria arunditia sp. nov.

Candidatus Essonaria arunditia (NL. fem. n. *arunditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVS01 sp009991955*. The type genome for the species is the GenBank assembly GCA_009991955.1. The GC content of the type genome is 49.41 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Essonaria gen. nov.

Candidatus Essonaria (NL. fem. n. *Essonaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKVS01*. The type species for the genus is *Candidatus* Essonaria arunditia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Essonaria cenacimonia sp. nov.

Candidatus Essonaria cenacimonia (NL. fem. n. *cenacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVS01 sp007129335*. The type genome for the species is the GenBank assembly GCA_007129335.1. The GC content of the type genome is 48.36 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Essonella accumilega sp. nov.

Candidatus Essonella accumilega (NL. fem. n. *accumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGD01 sp007376405*. The type genome for the species is the GenBank assembly GCA_007376405.1. The GC content of the type genome is 38.52 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Essonella gen. nov.

Candidatus Essonella (NL. fem. n. *Essonella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGD01*. The type species for the genus is *Candidatus* Essonella accumilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Essonia funamigena sp. nov.

Candidatus Essonia funamigena (NL. fem. n. *funamigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFX01 sp009787445*. The type genome for the species is the GenBank assembly GCA_009787445.1. The GC content of the type genome is 39.53 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Essonia gen. nov.

Candidatus Essonia (NL. fem. n. *Essonia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFX01*. The type species for the genus is *Candidatus* Essonia funamigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Essonia insemicula sp. nov.

Candidatus Essonia insemicula (NL. fem. n. *insemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFX01 sp009779925*. The type genome for the species is the GenBank assembly GCA_009779925.1. The GC content of the type genome is 42.58 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Essonida cohonilega sp. nov.

Candidatus Essonida cohonilega (NL. fem. n. *cohonilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDPQ01 sp013042695*. The type genome for the species is the GenBank assembly GCA_013042695.1. The GC content of the type genome is 45.52 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Essonida gen. nov.

Candidatus Essonida (NL. fem. n. *Essonida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDPQ01*. The type species for the genus is *Candidatus* Essonida cohonilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Essonosa paralitrix sp. nov.

Candidatus Essonosa paralitrix (NL. fem. n. *paralitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACPNW01 sp902635455*. The type genome for the species is the GenBank assembly GCA_902635455.1. The GC content of the type genome is 28.74 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Essonosa gen. nov.

Candidatus Essonosa (NL. fem. n. *Essonosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACPNW01*. The type species for the genus is *Candidatus* Essonosa paralitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002718135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defululaceae.

Description of *Candidatus* Essonula tribrago sp. nov.

Candidatus Essonula tribrago (NL. fem. n. *tribrago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *USCg-Taylor sp002007425*. The type genome for the species is the GenBank assembly GCA_002007425.1. The GC content of the type genome is 60.03 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Essonula gen. nov.

Candidatus Essonula (NL. fem. n. *Essonula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *USCg-Taylor*. The type species for the genus is *Candidatus* Essonula tribrago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACCXJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vilipariaceae.

Description of *Candidatus* Estovana adsudimonas sp. nov.

Candidatus Estovana adsudimonas (NL. fem. n. *adsudimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1073 sp003141675*. The type genome for the species is the GenBank assembly GCA_003141675.1. The GC content of the type genome is 58.12 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Estovana gen. nov.

Candidatus Estovana (NL. fem. n. *Estovana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1073*. The type species for the genus is *Candidatus* Estovana adsudimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-43*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisoranaceae.

Description of *Candidatus* Estovella notacivita sp. nov.

Candidatus Estovella notacivita (NL. fem. n. *notacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCUB01 sp004297465*. The type genome for the species is the GenBank assembly GCA_004297465.1. The GC content of the type genome is 66.16 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Estovella gen. nov.

Candidatus Estovella (NL. fem. n. *Estovella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCUB01*. The type species for the genus is *Candidatus* Estovella notacivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Estovia adposifica sp. nov.

Candidatus Estovia adposifica (NL. fem. n. *adposifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-57 sp013360865*. The type genome for the species is the GenBank assembly GCA_013360865.1. The GC content of the type genome is 43.93 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Estovia gen. nov.

Candidatus Estovia (NL. fem. n. *Estovia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-57*. The type species for the genus is *Candidatus* Estovia adposifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9983*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifosaceae.

Description of *Candidatus* Estovia nubecatica sp. nov.

Candidatus Estovia nubecatica (NL. fem. n. *nubecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-57 sp003599625*. The type genome for the species is the GenBank assembly GCA_003599625.1. The GC content of the type genome is 43.58 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Estovida bifisigena sp. nov.

Candidatus Estovida bifisigena (NL. fem. n. *bifisigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-45-5 sp001816645*. The type genome for the species is the GenBank assembly GCA_001816645.1. The GC content of the type genome is 43.65 % and the genome length is 0.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 2 / B; 5m depth; 0.1 filter".

Description of *Candidatus* Estovida gen. nov.

Candidatus Estovida (NL. fem. n. *Estovida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-45-5*. The type species for the genus is *Candidatus* Estovida bifisigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-39-9b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perexellaceae.

Description of *Candidatus* Estovosa antacitrix sp. nov.

Candidatus Estovosa antacitrix (NL. fem. n. *antacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CUG-92003 sp013618635*. The type genome for the species is the GenBank assembly RS_GCF_013618635.1. The GC content of the type genome is 43.92 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Estovosa gen. nov.

Candidatus Estovosa (NL. fem. n. *Estovosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CUG-92003*. The type species for the genus is *Candidatus* Estovosa antacitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ethanoligenens obfusiforma sp. nov.

Candidatus Ethanoligenens obfusiforma (NL. fem. n. *obfusiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ethanoligenens sp003518885*. The type genome for the species is the GenBank assembly GCA_003518885.1. The GC content of the type genome is 42.78 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Eubacterium acropitio sp. nov.

Candidatus Eubacterium acropitio (NL. fem. n. *acropitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_A sp001940235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001940235.1. The GC content of the type genome is 52.29 % and the genome length is 2.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces".

Description of *Candidatus* Eubacterium conabitrix sp. nov.

Candidatus Eubacterium conabitrix (NL. fem. n. *conabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_A sp900321685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900314185.1. The GC content of the type genome is 51.95 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Eubacterium coturentia sp. nov.

Candidatus Eubacterium coturentia (NL. fem. n. *coturentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_A sp900315125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900315125.1. The GC content of the type genome is 52.66 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Eubacterium resacilega sp. nov.

Candidatus Eubacterium resacilega (NL. fem. n. *resacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_A sp000688015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000688015.1. The GC content of the type genome is 52.97 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Eubacterium repagentia sp. nov.

Candidatus Eubacterium repagentia (NL. fem. n. *repagentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_B sp002472145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002472335.1. The GC content of the type genome is 55.14 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Eubacterium tresvicula sp. nov.

Candidatus Eubacterium tresvicula (NL. fem. n. *tresvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_B sp902803185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902803185.1. The GC content of the type genome is 61.76 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Eubacterium adcubicella sp. nov.

Candidatus Eubacterium adcubicella (NL. fem. n. *adcubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp002431395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002431395.1. The GC content of the type genome is 42.4 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Eubacterium admigimonas sp. nov.

Candidatus Eubacterium admigimonas (NL. fem. n. *admigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp003453515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003453515.1. The GC content of the type genome is 48.47 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Eubacterium adtilatio sp. nov.

Candidatus Eubacterium adtilatio (NL. fem. n. *adtilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp000687695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000687695.1. The GC content of the type genome is 45.82 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Eubacterium bigemousia sp. nov.

Candidatus Eubacterium bigemousia (NL. fem. n. *bigemousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp900319095*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900319095.1. The GC content of the type genome is 44.38 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Eubacterium devecicella sp. nov.

Candidatus Eubacterium devecicella (NL. fem. n. *devecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp000434115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000434115.1. The GC content of the type genome is 43.19 % and the genome length is 2.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Eubacterium dibucitia sp. nov.

Candidatus Eubacterium dibucitia (NL. fem. n. *dibucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp002362575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002362575.1. The GC content of the type genome is 42.84 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Eubacterium dilacimonia sp. nov.

Candidatus Eubacterium dilacimonia (NL. fem. n. *dilacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp002435545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002435545.1. The GC content of the type genome is 43.15 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Eubacterium dilogivita sp. nov.

Candidatus Eubacterium dilogivita (NL. fem. n. *dilogivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp003491505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900538975.1. The GC content of the type genome is 40.73 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Eubacterium munifibula sp. nov.

Candidatus Eubacterium munifibula (NL. fem. n. *munifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp000433735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900539785.1. The GC content of the type genome is 43.84 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Eubacterium regigitura sp. nov.

Candidatus Eubacterium regigitura (NL. fem. n. *regigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp900318295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902755855.1. The GC content of the type genome is 45.71 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Eubacterium susicicula sp. nov.

Candidatus Eubacterium susicicula (NL. fem. n. *susicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp900539115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_900758065.1. The GC content of the type genome is 42.43 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Eubacterium vilipitia sp. nov.

Candidatus Eubacterium vilipitia (NL. fem. n. *vilipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_F sp002490465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002490465.1. The GC content of the type genome is 42.88 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Eubacterium adrumetta sp. nov.

Candidatus Eubacterium adrumetta (NL. fem. n. *adrumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp902783775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902783775.1. The GC content of the type genome is 34.47 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Eubacterium cereventia sp. nov.

Candidatus Eubacterium cereventia (NL. fem. n. *cereventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp000432355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003479405.1. The GC content of the type genome is 35.82 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Eubacterium cinipitio sp. nov.

Candidatus Eubacterium cinipitio (NL. fem. n. *cinipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp900550135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900550135.1. The GC content of the type genome is 33.38 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Eubacterium cnestessa sp. nov.

Candidatus Eubacterium cnestessa (NL. fem. n. *cnestessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp900764695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900764695.1. The GC content of the type genome is 33.44 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Eubacterium conopilega sp. nov.

Candidatus Eubacterium conopilega (NL. fem. n. *conopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp900548465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900761595.1. The GC content of the type genome is 35.35 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Eubacterium lavabimonas sp. nov.

Candidatus Eubacterium lavabimonas (NL. fem. n. *lavabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp902774125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902774125.1. The GC content of the type genome is 38.32 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Eubacterium mavoritia sp. nov.

Candidatus Eubacterium mavoritia (NL. fem. n. *mavoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp002369135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002369135.1. The GC content of the type genome is 36.66 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Eubacterium mirifugo sp. nov.

Candidatus Eubacterium mirifugo (NL. fem. n. *mirifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp900552275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900552275.1. The GC content of the type genome is 33.81 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Eubacterium penecastra sp. nov.

Candidatus Eubacterium penecastra (NL. fem. n. *penecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp902793045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902793045.1. The GC content of the type genome is 36.78 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Eubacterium rinocousia sp. nov.

Candidatus Eubacterium rinocousia (NL. fem. n. *rinocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp000435815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_900538775.1. The GC content of the type genome is 33.09 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Eubacterium satacatio sp. nov.

Candidatus Eubacterium satacatio (NL. fem. n. *satacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp902766735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902766735.1. The GC content of the type genome is 38.58 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Eubacterium secunivita sp. nov.

Candidatus Eubacterium secunivita (NL. fem. n. *secunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp000434315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000434315.1. The GC content of the type genome is 32.27 % and the genome length is 2.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Eubacterium thessatica sp. nov.

Candidatus Eubacterium thessatica (NL. fem. n. *thessatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_G sp900556905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900556905.1. The GC content of the type genome is 33.71 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Eubacterium accumitia sp. nov.

Candidatus Eubacterium accumitia (NL. fem. n. *accumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp902783945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902783945.1. The GC content of the type genome is 50.74 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Eubacterium adsicentia sp. nov.

Candidatus Eubacterium adsicentia (NL. fem. n. *adsicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp002368795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002368795.1. The GC content of the type genome is 54.06 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Eubacterium catilibra sp. nov.

Candidatus Eubacterium catilibra (NL. fem. n. *catilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp002371335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002371335.1. The GC content of the type genome is 46.68 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Eubacterium catilitrix sp. nov.

Candidatus Eubacterium catilitrix (NL. fem. n. *catilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp900314295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900314295.1. The GC content of the type genome is 50.47 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Eubacterium divoritia sp. nov.

Candidatus Eubacterium divoritia (NL. fem. n. *divoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp009696005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903789605.1. The GC content of the type genome is 50.89 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Eubacterium ephipousia sp. nov.

Candidatus Eubacterium ephipousia (NL. fem. n. *ephipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp903789595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903789595.1. The GC content of the type genome is 50.99 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Eubacterium fibicetta sp. nov.

Candidatus Eubacterium fibicetta (NL. fem. n. *fibicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp902797025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797025.1. The GC content of the type genome is 53.71 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Eubacterium homunisca sp. nov.

Candidatus Eubacterium homunisca (NL. fem. n. *homunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp002394235*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002372215.1. The GC content of the type genome is 50.59 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Eubacterium horomentia sp. nov.

Candidatus Eubacterium horomentia (NL. fem. n. *horomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp000702845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000702845.1. The GC content of the type genome is 48.71 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Eubacterium idciredo sp. nov.

Candidatus Eubacterium idciredo (NL. fem. n. *idciredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp900770225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900770225.1. The GC content of the type genome is 51.57 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Eubacterium menapatio sp. nov.

Candidatus Eubacterium menapatio (NL. fem. n. *menapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp900318405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900318405.1. The GC content of the type genome is 52.67 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Eubacterium navififica sp. nov.

Candidatus Eubacterium navififica (NL. fem. n. *navififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp902795835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902795835.1. The GC content of the type genome is 53.78 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Eubacterium purulentia sp. nov.

Candidatus Eubacterium purulentia (NL. fem. n. *purulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp900318755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900318755.1. The GC content of the type genome is 55.55 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Eubacterium retunago sp. nov.

Candidatus Eubacterium retunago (NL. fem. n. *retunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp003488475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003488475.1. The GC content of the type genome is 50.85 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Eubacterium tegumetta sp. nov.

Candidatus Eubacterium tegumetta (NL. fem. n. *tegumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp900319355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902790655.1. The GC content of the type genome is 52.81 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Eubacterium vocamitrix sp. nov.

Candidatus Eubacterium vocamitrix (NL. fem. n. *vocamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_H sp900317175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902782315.1. The GC content of the type genome is 50.91 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Eubacterium biparitas sp. nov.

Candidatus Eubacterium biparitas (NL. fem. n. *biparitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_I sp000270305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902795565.1. The GC content of the type genome is 51.98 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Eubacterium decamiforma sp. nov.

Candidatus Eubacterium decamiforma (NL. fem. n. *decamiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_I sp001941025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001941025.1. The GC content of the type genome is 55.93 % and the genome length is 1.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Zagget the koala".

Description of *Candidatus* Eubacterium denecugo sp. nov.

Candidatus Eubacterium denecugo (NL. fem. n. *denecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_I sp900546495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900755345.1. The GC content of the type genome is 42.15 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Eubacterium penecentia sp. nov.

Candidatus Eubacterium penecentia (NL. fem. n. *penecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_I sp902797015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797015.1. The GC content of the type genome is 47.37 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Eubacterium tenemifica sp. nov.

Candidatus Eubacterium tenemifica (NL. fem. n. *tenemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_I sp900066595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902362715.1. The GC content of the type genome is 42.48 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Eubacterium turifitudo sp. nov.

Candidatus Eubacterium turifitudo (NL. fem. n. *turifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_I sp900557275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900557275.1. The GC content of the type genome is 42.33 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Eubacterium annicitio sp. nov.

Candidatus Eubacterium annicitio (NL. fem. n. *annicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_J sp004562765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004562765.1. The GC content of the type genome is 48.04 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Eubacterium imbelitio sp. nov.

Candidatus Eubacterium imbelitio (NL. fem. n. *imbelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_J sp009774535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009774535.1. The GC content of the type genome is 46.1 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Eubacterium facunimonia sp. nov.

Candidatus Eubacterium facunimonia (NL. fem. n. *facunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_M sp900540015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900540015.1. The GC content of the type genome is 40.49 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Eubacterium accumicula sp. nov.

Candidatus Eubacterium accumicula (NL. fem. n. *accumicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902797155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_902797155.1. The GC content of the type genome is 52.08 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Eubacterium affunousia sp. nov.

Candidatus Eubacterium affunousia (NL. fem. n. *affunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp900110635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900110635.1. The GC content of the type genome is 40.77 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Eubacterium armidimonia sp. nov.

Candidatus Eubacterium armidimonia (NL. fem. n. *armidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902772925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902772925.1. The GC content of the type genome is 41.66 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Eubacterium canacigena sp. nov.

Candidatus Eubacterium canacigena (NL. fem. n. *canacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902777655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902774915.1. The GC content of the type genome is 38.62 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Eubacterium capabilenta sp. nov.

Candidatus Eubacterium capabilenta (NL. fem. n. *capabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp900314445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002299995.1. The GC content of the type genome is 41.46 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Eubacterium cohorastra sp. nov.

Candidatus Eubacterium cohorastra (NL. fem. n. *cohorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp002372755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002372755.1. The GC content of the type genome is 39.44 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Eubacterium colimiforma sp. nov.

Candidatus Eubacterium colimiforma (NL. fem. n. *colimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902783605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902783605.1. The GC content of the type genome is 37.94 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Eubacterium detumago sp. nov.

Candidatus Eubacterium detumago (NL. fem. n. *detumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp000687975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000687975.1. The GC content of the type genome is 39.47 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Eubacterium dimiditica sp. nov.

Candidatus Eubacterium dimiditica (NL. fem. n. *dimiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902796375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902796375.1. The GC content of the type genome is 51.53 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Eubacterium diritedo sp. nov.

Candidatus Eubacterium diritedo (NL. fem. n. *diritedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp002368685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002368685.1. The GC content of the type genome is 38.89 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Eubacterium domicastra sp. nov.

Candidatus Eubacterium domicastra (NL. fem. n. *domicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp900321505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900321505.1. The GC content of the type genome is 48.12 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Eubacterium dupunedo sp. nov.

Candidatus Eubacterium dupunedo (NL. fem. n. *dupunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902760755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_902760755.1. The GC content of the type genome is 52.82 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Eubacterium effigimonas sp. nov.

Candidatus Eubacterium effigimonas (NL. fem. n. *effigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp003520205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003520205.1. The GC content of the type genome is 37.72 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Eubacterium excetimonas sp. nov.

Candidatus Eubacterium excetimonas (NL. fem. n. *excetimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902776395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902776395.1. The GC content of the type genome is 38.97 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Eubacterium expugigena sp. nov.

Candidatus Eubacterium expugigena (NL. fem. n. *expugigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902775555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902775555.1. The GC content of the type genome is 50.43 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Eubacterium fiducibula sp. nov.

Candidatus Eubacterium fiducibula (NL. fem. n. *fiducibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp002350525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002350525.1. The GC content of the type genome is 41.36 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Eubacterium fumacentia sp. nov.

Candidatus Eubacterium fumacentia (NL. fem. n. *fumacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp000702245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902795455.1. The GC content of the type genome is 44.29 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Eubacterium funivivita sp. nov.

Candidatus Eubacterium funivivita (NL. fem. n. *funivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp900316715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902794685.1. The GC content of the type genome is 41.5 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Eubacterium impilatica sp. nov.

Candidatus Eubacterium impilatica (NL. fem. n. *impilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp900199595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900199595.1. The GC content of the type genome is 38.76 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Eubacterium insinatio sp. nov.

Candidatus Eubacterium insinatio (NL. fem. n. *insinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp002372545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002372545.1. The GC content of the type genome is 50.49 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Eubacterium irrotivita sp. nov.

Candidatus Eubacterium irrotivita (NL. fem. n. *irrotivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902796385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902796385.1. The GC content of the type genome is 49.05 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Eubacterium luculago sp. nov.

Candidatus Eubacterium luculago (NL. fem. n. *luculago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902782695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902782695.1. The GC content of the type genome is 39.18 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Eubacterium malagedo sp. nov.

Candidatus Eubacterium malagedo (NL. fem. n. *malagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp002371025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_002371025.1. The GC content of the type genome is 35.8 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Eubacterium melopitrix sp. nov.

Candidatus Eubacterium melopitrix (NL. fem. n. *melopitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp900321215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003499345.1. The GC content of the type genome is 42.24 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Eubacterium milipax sp. nov.

Candidatus Eubacterium milipax (NL. fem. n. *milipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp002391105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002392425.1. The GC content of the type genome is 40.3 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Eubacterium occucicella sp. nov.

Candidatus Eubacterium occucicella (NL. fem. n. *occucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902789175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902789175.1. The GC content of the type genome is 36.09 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Eubacterium problicula sp. nov.

Candidatus Eubacterium problicula (NL. fem. n. *problicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902792005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902792005.1. The GC content of the type genome is 51.26 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Eubacterium refuledo sp. nov.

Candidatus Eubacterium refuledo (NL. fem. n. *refuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp000703065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000703065.1. The GC content of the type genome is 49.86 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Eubacterium satacicula sp. nov.

Candidatus Eubacterium satacicula (NL. fem. n. *satacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902782965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902782965.1. The GC content of the type genome is 39.32 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Eubacterium scintugo sp. nov.

Candidatus Eubacterium scintugo (NL. fem. n. *scintugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp003520105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003520105.1. The GC content of the type genome is 43.07 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Eubacterium semibastra sp. nov.

Candidatus Eubacterium semibastra (NL. fem. n. *semibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp002392655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002392655.1. The GC content of the type genome is 40.55 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Eubacterium serotitia sp. nov.

Candidatus Eubacterium serotitia (NL. fem. n. *serotitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp002349225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002349225.1. The GC content of the type genome is 39.25 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Eubacterium siligitrix sp. nov.

Candidatus Eubacterium siligitrix (NL. fem. n. *siligitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902773185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902773185.1. The GC content of the type genome is 49.2 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Eubacterium solifilenta sp. nov.

Candidatus Eubacterium solifilenta (NL. fem. n. *solifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902795855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_902795855.1. The GC content of the type genome is 40.11 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Eubacterium tametimonia sp. nov.

Candidatus Eubacterium tametimonia (NL. fem. n. *tametimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp000687655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002395545.1. The GC content of the type genome is 41.04 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Eubacterium tenilifica sp. nov.

Candidatus Eubacterium tenilifica (NL. fem. n. *tenilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902780985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902780985.1. The GC content of the type genome is 44.06 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Eubacterium vehemitura sp. nov.

Candidatus Eubacterium vehemitura (NL. fem. n. *vehemitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902781895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902781895.1. The GC content of the type genome is 40.61 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Eubacterium vitififorma sp. nov.

Candidatus Eubacterium vitififorma (NL. fem. n. *vitififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_Q sp902774725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902781115.1. The GC content of the type genome is 40.46 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Eubacterium ablacitas sp. nov.

Candidatus Eubacterium ablacitas (NL. fem. n. *ablacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp009774735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009774735.1. The GC content of the type genome is 39.09 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Eubacterium adfiricula sp. nov.

Candidatus Eubacterium adfiricula (NL. fem. n. *adfiricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900547915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900547915.1. The GC content of the type genome is 40.76 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Eubacterium benepicula sp. nov.

Candidatus Eubacterium benepicula (NL. fem. n. *benepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp002329285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002329285.1. The GC content of the type genome is 44.0 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Eubacterium catabisca sp. nov.

Candidatus Eubacterium catabisca (NL. fem. n. *catabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900540305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900540305.1. The GC content of the type genome is 40.14 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Eubacterium cerarousia sp. nov.

Candidatus Eubacterium cerarousia (NL. fem. n. *cerarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp011958665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011958665.1. The GC content of the type genome is 37.82 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Eubacterium cilicivita sp. nov.

Candidatus Eubacterium cilicivita (NL. fem. n. *cilicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp002361935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002490985.1. The GC content of the type genome is 39.34 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Eubacterium cilotago sp. nov.

Candidatus Eubacterium cilotago (NL. fem. n. *cilotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900539845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_900771725.1. The GC content of the type genome is 44.62 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Eubacterium cnestitica sp. nov.

Candidatus Eubacterium cnestitica (NL. fem. n. *cnestitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp014465955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014465955.1. The GC content of the type genome is 39.32 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Eubacterium demogitura sp. nov.

Candidatus Eubacterium demogitura (NL. fem. n. *demogitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp002494125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002494125.1. The GC content of the type genome is 41.39 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Eubacterium denicimonia sp. nov.

Candidatus Eubacterium denicimonia (NL. fem. n. *denicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp000431535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014465915.1. The GC content of the type genome is 46.51 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Eubacterium detepitio sp. nov.

Candidatus Eubacterium detepitio (NL. fem. n. *detepitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp003526845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900539615.1. The GC content of the type genome is 41.73 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Eubacterium dilicimonas sp. nov.

Candidatus Eubacterium dilicimonas (NL. fem. n. *dilicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp002493595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002493595.1. The GC content of the type genome is 38.22 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Eubacterium direcibra sp. nov.

Candidatus Eubacterium direcibra (NL. fem. n. *direcibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900539165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900539165.1. The GC content of the type genome is 41.08 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Eubacterium documitura sp. nov.

Candidatus Eubacterium documitura (NL. fem. n. *documitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900539775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014465855.1. The GC content of the type genome is 41.57 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Eubacterium estovessa sp. nov.

Candidatus Eubacterium estovessa (NL. fem. n. *estovessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900555015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900555015.1. The GC content of the type genome is 36.21 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Eubacterium exaggiforma sp. nov.

Candidatus Eubacterium exaggiforma (NL. fem. n. *exaggiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900766895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900766895.1. The GC content of the type genome is 41.56 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Eubacterium excinimonas sp. nov.

Candidatus Eubacterium excinimonas (NL. fem. n. *excinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900764665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900764665.1. The GC content of the type genome is 42.56 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Eubacterium funivetta sp. nov.

Candidatus Eubacterium funivetta (NL. fem. n. *funivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp000436835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_000436835.1. The GC content of the type genome is 38.13 % and the genome length is 1.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Eubacterium gasifibula sp. nov.

Candidatus Eubacterium gasifibula (NL. fem. n. *gasifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900540235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900540235.1. The GC content of the type genome is 38.27 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Eubacterium hexagugo sp. nov.

Candidatus Eubacterium hexagugo (NL. fem. n. *hexagugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp009774715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009774715.1. The GC content of the type genome is 38.47 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Eubacterium hirudibula sp. nov.

Candidatus Eubacterium hirudibula (NL. fem. n. *hirudibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp002493325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002490925.1. The GC content of the type genome is 40.16 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Eubacterium illapetta sp. nov.

Candidatus Eubacterium illapetta (NL. fem. n. *illapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900544515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900544515.1. The GC content of the type genome is 39.49 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Eubacterium inperilenta sp. nov.

Candidatus Eubacterium inperilenta (NL. fem. n. *inperilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900316345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900316345.1. The GC content of the type genome is 43.84 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Eubacterium ludimigena sp. nov.

Candidatus Eubacterium ludimigena (NL. fem. n. *ludimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp002371215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002371215.1. The GC content of the type genome is 43.32 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Eubacterium luticibra sp. nov.

Candidatus Eubacterium luticibra (NL. fem. n. *luticibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900543795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900753605.1. The GC content of the type genome is 40.77 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Eubacterium murelivita sp. nov.

Candidatus Eubacterium murelivita (NL. fem. n. *murelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp000434995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900538955.1. The GC content of the type genome is 36.27 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Eubacterium patibugo sp. nov.

Candidatus Eubacterium patibugo (NL. fem. n. *patibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900542875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900757955.1. The GC content of the type genome is 41.17 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Eubacterium pinigitoga sp. nov.

Candidatus Eubacterium pinigitoga (NL. fem. n. *pinigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900767025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900767025.1. The GC content of the type genome is 41.67 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Eubacterium resulitrix sp. nov.

Candidatus Eubacterium resulitrix (NL. fem. n. *resulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900539425*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900756045.1. The GC content of the type genome is 41.7 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Eubacterium retunicella sp. nov.

Candidatus Eubacterium retunicella (NL. fem. n. *retunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp000433975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014465985.1. The GC content of the type genome is 43.31 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Eubacterium ridibitoga sp. nov.

Candidatus Eubacterium ridibitoga (NL. fem. n. *ridibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900761545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900761545.1. The GC content of the type genome is 36.77 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Eubacterium senacimonas sp. nov.

Candidatus Eubacterium senacimonas (NL. fem. n. *senacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900772705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900772705.1. The GC content of the type genome is 42.59 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Eubacterium seposago sp. nov.

Candidatus Eubacterium seposago (NL. fem. n. *seposago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900548085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900548085.1. The GC content of the type genome is 42.1 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Eubacterium subinimonas sp. nov.

Candidatus Eubacterium subinimonas (NL. fem. n. *subinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900321905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900321905.1. The GC content of the type genome is 44.77 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Eubacterium vacilibra sp. nov.

Candidatus Eubacterium vacilibra (NL. fem. n. *vacilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900539325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900539325.1. The GC content of the type genome is 39.76 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Eubacterium viliticella sp. nov.

Candidatus Eubacterium viliticella (NL. fem. n. *viliticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_R sp900546785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900546785.1. The GC content of the type genome is 46.68 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Eubacterium aprugago sp. nov.

Candidatus Eubacterium aprugago (NL. fem. n. *aprugago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_T sp903789635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903789635.1. The GC content of the type genome is 56.51 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Eubacterium cenoditio sp. nov.

Candidatus Eubacterium cenoditio (NL. fem. n. *cenoditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_T sp900318155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900318155.1. The GC content of the type genome is 47.83 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Eubacterium indivatio sp. nov.

Candidatus Eubacterium indivatio (NL. fem. n. *indivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_T sp900766045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900766045.1. The GC content of the type genome is 49.89 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Eubacterium indomedo sp. nov.

Candidatus Eubacterium indomedo (NL. fem. n. *indomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eubacterium_T sp902784035*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902784035.1. The GC content of the type genome is 60.55 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Eudoraea cadavedo sp. nov.

Candidatus Eudoraea cadavedo (NL. fem. n. *cadavedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eudoraea sp013042925*. The type genome for the species is the GenBank assembly GCA_013042925.1. The GC content of the type genome is 37.43 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Eudoraea recogedo sp. nov.

Candidatus Eudoraea recogedo (NL. fem. n. *recogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Eudoraea sp013041785*. The type genome for the species is the GenBank assembly GCA_013041785.1. The GC content of the type genome is 44.72 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Euzebya panifax sp. nov.

Candidatus Euzebya panifax (NL. fem. n. *panifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Euzebya sp003344865*. The type genome for the species is the GenBank assembly RS_GCF_003344865.1. The GC content of the type genome is 70.58 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Euzebyella emortibula sp. nov.

Candidatus Euzebyella emortibula (NL. fem. n. *emortibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Euzebyella sp014349235*. The type genome for the species is the GenBank assembly RS_GCF_014349235.1. The GC content of the type genome is 39.66 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Evangana obsativita sp. nov.

Candidatus Evangana obsativita (NL. fem. n. *obsativita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWAZ01 sp013360775*. The type genome for the species is the GenBank assembly GCA_013360775.1. The GC content of the type genome is 61.73 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Evangana gen. nov.

Candidatus Evangana (NL. fem. n. *Evangana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWAZ01*. The type species for the genus is *Candidatus* Evangana obsativita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinanaceae.

Description of *Candidatus* Evangaria detesousia sp. nov.

Candidatus Evangaria detesousia (NL. fem. n. *detesousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQZK01 sp009780765*. The type genome for the species is the GenBank assembly GCA_009780765.1. The GC content of the type genome is 35.08 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Evangaria gen. nov.

Candidatus Evangaria (NL. fem. n. *Evangaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQZK01*. The type species for the genus is *Candidatus* Evangaria detesousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5962*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenoculaceae.

Description of *Candidatus* Evangella colutitica sp. nov.

Candidatus Evangella colutitica (NL. fem. n. *colutitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-575 sp003249645*. The type genome for the species is the GenBank assembly GCA_003249645.1. The GC content of the type genome is 45.85 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Evangella gen. nov.

Candidatus Evangella (NL. fem. n. *Evangella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-575*. The type species for the genus is *Candidatus* Evangella colutitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Evangia adnicitio sp. nov.

Candidatus Evangia adnicitio (NL. fem. n. *adnicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7703 sp013824375*. The type genome for the species is the GenBank assembly GCA_013824375.1. The GC content of the type genome is 54.76 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Evangia gen. nov.

Candidatus Evangia (NL. fem. n. *Evangia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7703*. The type species for the genus is *Candidatus* Evangia adnicitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Evangia ascelitio sp. nov.

Candidatus Evangia ascelitio (NL. fem. n. *ascelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7703 sp002482505*. The type genome for the species is the GenBank assembly GCA_002482505.1. The GC content of the type genome is 54.28 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Evangia assicastra sp. nov.

Candidatus Evangia assicastra (NL. fem. n. *assicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7703 sp003486785*. The type genome for the species is the GenBank assembly GCA_003486785.1. The GC content of the type genome is 56.74 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Evangia domabago sp. nov.

Candidatus Evangia domabago (NL. fem. n. *domabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7703 sp012517905*. The type genome for the species is the GenBank assembly GCA_012517905.1. The GC content of the type genome is 58.66 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Evangia inmitilenta sp. nov.

Candidatus Evangia inmitilenta (NL. fem. n. *inmitilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7703 sp002841395*. The type genome for the species is the GenBank assembly GCA_002841395.1. The GC content of the type genome is 54.36 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Evangia istinicella sp. nov.

Candidatus Evangia istinicella (NL. fem. n. *istinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7703 sp003246365*. The type genome for the species is the GenBank assembly GCA_003246365.1. The GC content of the type genome is 50.36 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Evangosa idipsimonas sp. nov.

Candidatus Evangosa idipsimonas (NL. fem. n. *idipsimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ES-bin-26 sp014379925*. The type genome for the species is the GenBank assembly GCA_014379925.1. The GC content of the type genome is 57.92 % and the genome length is 5.43 Mbp.

Description of *Candidatus* Evangosa gen. nov.

Candidatus Evangosa (NL. fem. n. *Evangosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ES-bin-26*. The type species for the genus is *Candidatus* Evangosa idipsimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *172606-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Horomosaceae.

Description of *Candidatus* Evangula antepax sp. nov.

Candidatus Evangula antepax (NL. fem. n. *antepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUSA01 sp012031975*. The type genome for the species is the GenBank assembly GCA_012031975.1. The GC content of the type genome is 54.03 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Evangula gen. nov.

Candidatus Evangula (NL. fem. n. *Evangula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAUSA01*. The type species for the genus is *Candidatus* Evangula antepax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Everbana accapitia sp. nov.

Candidatus Everbana accapitia (NL. fem. n. *accapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDBL01 sp013288645*. The type genome for the species is the GenBank assembly GCA_013288645.1. The GC content of the type genome is 41.34 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Everbana gen. nov.

Candidatus Everbana (NL. fem. n. *Everbana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDBL01*. The type species for the genus is *Candidatus* Everbana accapitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Everbaria cohonilenta sp. nov.

Candidatus Everbaria cohonilenta (NL. fem. n. *cohonilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYZY01 sp012514615*. The type genome for the species is the GenBank assembly GCA_012514615.1. The GC content of the type genome is 67.98 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Everbaria gen. nov.

Candidatus Everbaria (NL. fem. n. *Everbaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZY01*. The type species for the genus is *Candidatus* Everbaria cohonilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTPP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malogosaceae.

Description of *Candidatus* Everbella cocolousia sp. nov.

Candidatus Everbella cocolousia (NL. fem. n. *cocolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITSE01 sp903894975*. The type genome for the species is the GenBank assembly GCA_903894975.1. The GC content of the type genome is 63.41 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Everbella gen. nov.

Candidatus Everbella (NL. fem. n. *Everbella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITSE01*. The type species for the genus is *Candidatus* Everbella cocolousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITYL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Podagosaceae.

Description of *Candidatus* Everbia duponisca sp. nov.

Candidatus Everbia duponisca (NL. fem. n. *duponisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3361 sp002360535*. The type genome for the species is the GenBank assembly GCA_002360535.1. The GC content of the type genome is 65.8 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Everbia gen. nov.

Candidatus Everbia (NL. fem. n. *Everbia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3361*. The type species for the genus is *Candidatus* Everbia

duponisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Everbosa sanabifica sp. nov.

Candidatus Everbosa sanabifica (NL. fem. n. *sanabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SH-1 sp003008555*. The type genome for the species is the GenBank assembly RS_GCF_003008555.2. The GC content of the type genome is 65.64 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Everbosa gen. nov.

Candidatus Everbosa (NL. fem. n. *Everbosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SH-1*. The type species for the genus is *Candidatus* Everbosa sanabifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eviscana inorditudo sp. nov.

Candidatus Eviscana inorditudo (NL. fem. n. *inorditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VISM01 sp007827455*. The type genome for the species is the GenBank assembly RS_GCF_007827455.1. The GC content of the type genome is 30.15 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Eviscana gen. nov.

Candidatus Eviscana (NL. fem. n. *Eviscana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VISM01*. The type species for the genus is *Candidatus* Eviscana inorditudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eviscaria ammatitudo sp. nov.

Candidatus Eviscaria ammatitudo (NL. fem. n. *ammatitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *32O-W sp001465275*. The type genome for the species is the GenBank assembly RS_GCF_001465275.1. The GC content of the type genome is 56.34 % and the genome length is 5.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Eviscaria gen. nov.

Candidatus Eviscaria (NL. fem. n. *Eviscaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *32O-W*. The type species for the genus is *Candidatus* Eviscaria ammatitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Eviscida humecago sp. nov.

Candidatus Eviscida humecago (NL. fem. n. *humecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-51-14 sp001802375*. The type genome for the species is the GenBank assembly GCA_001802375.1. The GC content of the type genome is 51.06 % and the genome length is 2.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Eviscida gen. nov.

Candidatus Eviscida (NL. fem. n. *Eviscida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-51-14*. The type species for the genus is *Candidatus* Eviscida humecago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Evtepia catagetta sp. nov.

Candidatus Evtepia catagetta (NL. fem. n. *catagetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Evtepia sp004556345*. The type genome for the species is the GenBank assembly GCA_004556345.1. The GC content of the type genome is 60.82 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Evtepia cicatatio sp. nov.

Candidatus Evtepia cicatatio (NL. fem. n. *cicatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Evtepia sp900758955*. The type genome for the species is the GenBank assembly GCA_900758955.1. The GC content of the type genome is 56.27 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Evtepia derecago sp. nov.

Candidatus Evtepia derecago (NL. fem. n. *derecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Evtepia sp004554585*. The type genome for the species is the GenBank assembly GCA_004554585.1. The GC content of the type genome is 61.3 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Evtepia funebimonia sp. nov.

Candidatus Evtepia funebimonia (NL. fem. n. *funebimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Evtepia sp900546255*. The type genome for the species is the GenBank assembly GCA_900759135.1. The GC content of the type genome is 62.76 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Evtepia peropitoga sp. nov.

Candidatus Evtepia peropitoga (NL. fem. n. *peropitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Evtepia sp004551945*. The type genome for the species is the GenBank assembly GCA_004559955.1. The GC content of the type genome is 61.63 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Ewingella exsuritas sp. nov.

Candidatus Ewingella exsuritas (NL. fem. n. *exsuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ewingella sp003864575*. The type genome for the species is the GenBank assembly GCA_003864575.1. The GC content of the type genome is 52.86 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Exadvana detunimonas sp. nov.

Candidatus Exadvana detunimonas (NL. fem. n. *detunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAT2731 sp002707585*. The type genome for the species is the GenBank assembly GCA_002707585.1. The GC content of the type genome is 28.11 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Exadvana gen. nov.

Candidatus Exadvana (NL. fem. n. *Exadvana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SAT2731*. The type species for the genus is *Candidatus* Exadvana detunimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1997*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decapiaceae.

Description of *Candidatus* Exadvaria octacitura sp. nov.

Candidatus Exadvaria octacitura (NL. fem. n. *octacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIRX01 sp004563715*. The type genome for the species is the GenBank assembly GCA_004563715.1. The GC content of the type genome is 66.7 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Exadvaria gen. nov.

Candidatus Exadvaria (NL. fem. n. *Exadvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIRX01*. The type species for the genus is *Candidatus* Exadvaria octacitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exadvella occumicella sp. nov.

Candidatus Exadvella occumicella (NL. fem. n. *occumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12461 sp902779355*. The type genome for the species is the GenBank assembly GCA_902779355.1. The GC content of the type genome is 50.09 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Exadvella gen. nov.

Candidatus Exadvella (NL. fem. n. *Exadvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12461*. The type species for the genus is *Candidatus* Exadvella occumicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exadvia citivatio sp. nov.

Candidatus Exadvia citivatio (NL. fem. n. *citivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSA01 sp012518455*. The type genome for the species is the

GenBank assembly GCA_012518455.1. The GC content of the type genome is 32.95 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Exadvia gen. nov.

Candidatus Exadvia (NL. fem. n. *Exadvia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSA01*. The type species for the genus is *Candidatus* Exadvia citivatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Exadvida ficulousia sp. nov.

Candidatus Exadvida ficulousia (NL. fem. n. *ficulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-61-13 sp001801865*. The type genome for the species is the GenBank assembly GCA_001801865.1. The GC content of the type genome is 61.25 % and the genome length is 3.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Exadvida gen. nov.

Candidatus Exadvida (NL. fem. n. *Exadvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-61-13*. The type species for the genus is *Candidatus* Exadvida ficulousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Exadvosa adsocitura sp. nov.

Candidatus Exadvosa adsocitura (NL. fem. n. *adsocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HG15A2 sp007741515*. The type genome for the species is the GenBank assembly RS_GCF_007741515.1. The GC content of the type genome is 55.06 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Exadvosa gen. nov.

Candidatus Exadvosa (NL. fem. n. *Exadvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HG15A2*. The type species for the genus is *Candidatus* Exadvosa adsocitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelariaceae.

Description of *Candidatus* Exaggaria buxanilega sp. nov.

Candidatus Exaggaria buxanilega (NL. fem. n. *buxanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-478 sp011329105*. The type genome for the species is the GenBank assembly GCA_011329105.1. The GC content of the type genome is 33.58 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Exaggaria gen. nov.

Candidatus Exaggaria (NL. fem. n. *Exaggaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-478*. The type species for the genus is *Candidatus* Exaggaria buxanilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Exaggella adpecitudo sp. nov.

Candidatus Exaggella adpecitudo (NL. fem. n. *adpecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1719 sp002317145*. The type genome for the species is the GenBank assembly GCA_002317145.1. The GC content of the type genome is 29.52 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Exaggella gen. nov.

Candidatus Exaggella (NL. fem. n. *Exaggella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1719*. The type species for the genus is *Candidatus* Exaggella adpecitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Exaggida vicecitica sp. nov.

Candidatus Exaggida vicecitica (NL. fem. n. *vicecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABACD01 sp014237855*. The type genome for the species is the GenBank assembly GCA_014237855.1. The GC content of the type genome is 61.73 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Exaggida gen. nov.

Candidatus Exaggida (NL. fem. n. *Exaggida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABACD01*. The type species for the genus is *Candidatus* Exaggida vicecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Exaggosa innecago sp. nov.

Candidatus Exaggosa innecago (NL. fem. n. *innecago* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEEV01 sp902826455*. The type genome for the species is the GenBank assembly GCA_902826455.1. The GC content of the type genome is 70.78 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Exaggosa gen. nov.

Candidatus Exaggosa (NL. fem. n. *Exaggosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEEV01*. The type species for the genus is *Candidatus* Exaggosa innecago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Exsanellaceae.

Description of *Candidatus* Exaggula tametisca sp. nov.

Candidatus Exaggula tametisca (NL. fem. n. *tametisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1796 sp002319795*. The type genome for the species is the GenBank assembly GCA_002319795.1. The GC content of the type genome is 44.75 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Exaggula gen. nov.

Candidatus Exaggula (NL. fem. n. *Exaggula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1796*. The type species for the genus is *Candidatus* Exaggula tametisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exaspella arnacitica sp. nov.

Candidatus Exaspella arnacitica (NL. fem. n. *arnacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002727735 sp902536695*. The type genome for the species is the GenBank assembly GCA_902536695.1. The GC content of the type genome is 33.27 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Exaspella gen. nov.

Candidatus Exaspella (NL. fem. n. *Exaspella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002727735*. The type species for the genus is *Candidatus* Exaspella arnacitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favonellaceae.

Description of *Candidatus* Exaspella ascaliforma sp. nov.

Candidatus Exaspella ascaliforma (NL. fem. n. *ascaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002727735 sp002727735*. The type genome for the species is the GenBank assembly GCA_002727735.1. The GC content of the type genome is 32.15 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Exaspella catecicula sp. nov.

Candidatus Exaspella catecicula (NL. fem. n. *catecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002727735 sp002694645*. The type genome for the species is the GenBank assembly GCA_002694645.1. The GC content of the type genome is 33.17 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Exaspella deparentia sp. nov.

Candidatus Exaspella deparentia (NL. fem. n. *deparentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002727735 sp902597025*. The type genome for the species is the GenBank assembly GCA_902597025.1. The GC content of the type genome is 33.48 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Exaspida astapisca sp. nov.

Candidatus Exaspida astapisca (NL. fem. n. *astapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZDD01 sp012512955*. The type genome for the species is the GenBank assembly GCA_012512955.1. The GC content of the type genome is 49.64 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Exaspida gen. nov.

Candidatus Exaspida (NL. fem. n. *Exaspida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZDD01*. The type species for the genus is *Candidatus* Exaspida astapisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DULZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelellaceae.

Description of *Candidatus* Exaspida corocetta sp. nov.

Candidatus Exaspida corocetta (NL. fem. n. *corocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZDD01 sp012520135*. The type genome for the species is the GenBank assembly GCA_012520135.1. The GC content of the type genome is 46.17 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Exasposa turicatio sp. nov.

Candidatus Exasposa turicatio (NL. fem. n. *turicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTOP01 sp011337885*. The type genome for the species is the GenBank assembly GCA_011337885.1. The GC content of the type genome is 45.76 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Exasposa gen. nov.

Candidatus Exasposa (NL. fem. n. *Exasposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTOP01*. The type species for the genus is *Candidatus* Exasposa turicatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRUE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vivifariaceae.

Description of *Candidatus* Exaspula peripibra sp. nov.

Candidatus Exaspula peripibra (NL. fem. n. *peripibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLWS01 sp012103475*. The type genome for the species is the GenBank assembly GCA_012103475.1. The GC content of the type genome is 46.06 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Exaspula gen. nov.

Candidatus Exaspula (NL. fem. n. *Exaspula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLWS01*. The type species for the genus is *Candidatus* Exaspula peripibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Excalaria fiducifica sp. nov.

Candidatus Excalaria fiducifica (NL. fem. n. *fiducifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MGML01 sp011191975*. The type genome for the species is the GenBank assembly GCA_011191975.1. The GC content of the type genome is 44.97 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Excalaria gen. nov.

Candidatus Excalaria (NL. fem. n. *Excalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MGML01*. The type species for the genus is *Candidatus* Excalaria fiducifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2162*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifosaceae.

Description of *Candidatus* Excalaria maliviforma sp. nov.

Candidatus Excalaria maliviforma (NL. fem. n. *maliviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MGML01 sp001796415*. The type genome for the species is the GenBank assembly GCA_001796415.1. The GC content of the type genome is 46.43 % and the genome length is 1.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Excalia urbicitura sp. nov.

Candidatus Excalia urbicitura (NL. fem. n. *urbicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WYBA01 sp011526095*. The type genome for the species is the GenBank assembly GCA_011526095.1. The GC content of the type genome is 74.07 % and the genome length is 9.53 Mbp.

Description of *Candidatus* Excalia gen. nov.

Candidatus Excalia (NL. fem. n. *Excalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WYBA01*. The type species for the genus is *Candidatus* Excalia urbicitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excalosa apoplifica sp. nov.

Candidatus Excalosa apoplifica (NL. fem. n. *apoplifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKWV01 sp013697735*. The type genome for the species is the GenBank assembly GCA_013697735.1. The GC content of the type genome is 69.73 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Excalosa gen. nov.

Candidatus Excalosa (NL. fem. n. *Excalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKWV01*. The type species for the genus is *Candidatus* Excalosa apoplifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excalosa tibicimonia sp. nov.

Candidatus Excalosa tibicimonia (NL. fem. n. *tibicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKWV01 sp007128755*. The type genome for the species is the GenBank assembly GCA_007128755.1. The GC content of the type genome is 71.49 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Excalula demigibra sp. nov.

Candidatus Excalula demigibra (NL. fem. n. *demigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SLSW01 sp007130245*. The type genome for the species is the GenBank assembly GCA_007130245.1. The GC content of the type genome is 71.34 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Excalula gen. nov.

Candidatus Excalula (NL. fem. n. *Excalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLSW01*. The type species for the genus is *Candidatus* Excalula demigibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excalula medimibula sp. nov.

Candidatus Excalula medimibula (NL. fem. n. *medimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSW01 sp009377645*. The type genome for the species is the GenBank assembly GCA_009377645.1. The GC content of the type genome is 72.88 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Excamana tenemilega sp. nov.

Candidatus Excamana tenemilega (NL. fem. n. *tenemilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXG01 sp004292785*. The type genome for the species is the GenBank assembly GCA_004292785.1. The GC content of the type genome is 34.5 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Excamana gen. nov.

Candidatus Excamana (NL. fem. n. *Excamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDXG01*. The type species for the genus is *Candidatus* Excamana tenemilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excamaria anarritura sp. nov.

Candidatus Excamaria anarritura (NL. fem. n. *anarritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1839 sp900555545*. The type genome for the species is the GenBank assembly GCA_900555545.1. The GC content of the type genome is 54.08 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Excamaria gen. nov.

Candidatus Excamaria (NL. fem. n. *Excamaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1839*. The type species for the genus is *Candidatus* Excamaria anarritura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excamella duponitas sp. nov.

Candidatus Excamella duponitas (NL. fem. n. *duponitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFP01 sp011065005*. The type genome for the species is the GenBank assembly GCA_011065005.1. The GC content of the type genome is 43.37 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Excamella gen. nov.

Candidatus Excamella (NL. fem. n. *Excamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFP01*. The type species for the genus is *Candidatus* Excamella duponitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excamida homilatio sp. nov.

Candidatus Excamida homilatio (NL. fem. n. *homilatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-245 sp003551325*. The type genome for the species is the GenBank assembly GCA_003551325.1. The GC content of the type genome is 62.45 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Excamida gen. nov.

Candidatus Excamida (NL. fem. n. *Excamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1SED10-245*. The type species for the genus is *Candidatus* Excamida homilatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excamida utrinousia sp. nov.

Candidatus Excamida utrinousia (NL. fem. n. *utrinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-245 sp003552425*. The type genome for the species is the GenBank assembly GCA_003552425.1. The GC content of the type genome is 63.42 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Excamosa latibibula sp. nov.

Candidatus Excamosa latibibula (NL. fem. n. *latibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-467 sp003252455*. The type genome for the species is the GenBank assembly GCA_003252455.1. The GC content of the type genome is 65.08 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Excamosa gen. nov.

Candidatus Excamosa (NL. fem. n. *Excamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SZUA-467*. The type species for the genus is *Candidatus* Excamosa latibibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excanana amatrimonas sp. nov.

Candidatus Excanana amatrimonas (NL. fem. n. *amatrimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDDC01 sp013287815*. The type genome for the species is the GenBank assembly GCA_013287815.1. The GC content of the type genome is 42.58 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Excanana gen. nov.

Candidatus Excanana (NL. fem. n. *Excanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDC01*. The type species for the genus is *Candidatus* Excanana amatrimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excanaria antevibra sp. nov.

Candidatus Excanaria antevibra (NL. fem. n. *antevibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OACT-916 sp003260275*. The type genome for the species is the GenBank assembly RS_GCF_003260275.1. The GC content of the type genome is 63.91 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Excanaria gen. nov.

Candidatus Excanaria (NL. fem. n. *Excanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OACT-916*. The type species for the genus is *Candidatus* Excanaria antevibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excanella medimicella sp. nov.

Candidatus Excanella medimicella (NL. fem. n. *medimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-23 sp001801465*. The type genome for the species is the GenBank assembly GCA_001801465.1. The GC content of the type genome is 35.05 % and the genome length is 2.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Excanella gen. nov.

Candidatus Excanella (NL. fem. n. *Excanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-35-23*. The type species for the genus is *Candidatus* Excanella medimicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12402*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pimenosaceae.

Description of *Candidatus* Excania dilibastra sp. nov.

Candidatus Excania dilibastra (NL. fem. n. *dilibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TKL69 sp007301515*. The type genome for the species is the GenBank assembly RS_GCF_007301515.1. The GC content of the type genome is 38.53 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Excania gen. nov.

Candidatus Excania (NL. fem. n. *Excania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TKL69*. The type species for the genus is *Candidatus* Excania dilibastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excanida dinupisca sp. nov.

Candidatus Excanida dinupisca (NL. fem. n. *dinupisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUU01 sp012841485*. The type genome for the species is the GenBank assembly GCA_012841485.1. The GC content of the type genome is 66.16 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Excanida gen. nov.

Candidatus Excanida (NL. fem. n. *Excanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUUU01*. The type species for the genus is *Candidatus* Excanida dinupisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZEB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasifulaceae.

Description of *Candidatus* Excanida inobsibula sp. nov.

Candidatus Excanida inobsibula (NL. fem. n. *inobsibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUU01 sp012512265*. The type genome for the species is the GenBank assembly GCA_012512265.1. The GC content of the type genome is 65.89 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Excanosa depocitrix sp. nov.

Candidatus Excanosa depocitrix (NL. fem. n. *depocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1770 sp002315325*. The type genome for the species is the GenBank assembly GCA_002315325.1. The GC content of the type genome is 51.96 %

and the genome length is 2.29 Mbp.

Description of *Candidatus* Excanosa gen. nov.

Candidatus Excanosa (NL. fem. n. *Excanosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1770*. The type species for the genus is *Candidatus* Excanosa depocitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Excanula prodritoga sp. nov.

Candidatus Excanula prodritoga (NL. fem. n. *prodritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6715 sp004005965*. The type genome for the species is the GenBank assembly RS_GCF_004005965.1. The GC content of the type genome is 35.77 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Excanula gen. nov.

Candidatus Excanula (NL. fem. n. *Excanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6715*. The type species for the genus is *Candidatus* Excanula prodritoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excararia duricessa sp. nov.

Candidatus Excararia duricessa (NL. fem. n. *duricessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pla175 sp007750855*. The type genome for the species is the GenBank assembly RS_GCF_007750855.1. The GC content of the type genome is 66.45 % and the genome length is 6.62 Mbp.

Description of *Candidatus* Excararia gen. nov.

Candidatus Excararia (NL. fem. n. *Excararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pla175*. The type species for the genus is *Candidatus* Excararia duricessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelariaceae.

Description of *Candidatus* Excarella codifitoga sp. nov.

Candidatus Excarella codifitoga (NL. fem. n. *codifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTQ01 sp013812265*. The type genome for the species is the GenBank assembly GCA_013812265.1. The GC content of the type genome is 68.05 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Excarella gen. nov.

Candidatus Excarella (NL. fem. n. *Excarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCTQ01*. The type species for the genus is *Candidatus* Excarella codifitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excarida istinitura sp. nov.

Candidatus Excarida istinitura (NL. fem. n. *istinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E29-bin15 sp004377275*. The type genome for the species is the GenBank assembly GCA_004377275.1. The GC content of the type genome is 54.37 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Excarida gen. nov.

Candidatus Excarida (NL. fem. n. *Excarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E29-bin15*. The type species for the genus is *Candidatus* Excarida istinitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogellaceae.

Description of *Candidatus* Excarosa lavacicella sp. nov.

Candidatus Excarosa lavacicella (NL. fem. n. *lavacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MZ-XQ sp002838205*. The type genome for the species is the GenBank assembly RS_GCF_002838205.1. The GC content of the type genome is 32.07 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Excarosa gen. nov.

Candidatus Excarosa (NL. fem. n. *Excarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MZ-XQ*. The type species for the genus is *Candidatus* Excarosa lavacicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excarosa ruricentia sp. nov.

Candidatus Excarosa ruricentia (NL. fem. n. *ruricentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MZ-XQ sp002838185*. The type genome for the species is the GenBank assembly RS_GCF_002838185.1. The GC content of the type genome is 31.59 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Excarosa solifigena sp. nov.

Candidatus Excarosa solifigena (NL. fem. n. *solifigena* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MZ-XQ sp013282175*. The type genome for the species is the GenBank assembly RS_GCF_013282175.1. The GC content of the type genome is 30.05 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Excarula catapago sp. nov.

Candidatus Excarula catapago (NL. fem. n. *catapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J029 sp014382465*. The type genome for the species is the GenBank assembly GCA_014382465.1. The GC content of the type genome is 71.55 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Excarula gen. nov.

Candidatus Excarula (NL. fem. n. *Excarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J029*. The type species for the genus is *Candidatus* Excarula catapago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacellaceae.

Description of *Candidatus* Excarula curacilenta sp. nov.

Candidatus Excarula curacilenta (NL. fem. n. *curacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J029 sp003696625*. The type genome for the species is the GenBank assembly GCA_003696625.1. The GC content of the type genome is 72.6 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Excerana affunilega sp. nov.

Candidatus Excerana affunilega (NL. fem. n. *affunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKXD01 sp903831265*. The type genome for the species is the GenBank assembly GCA_903831265.1. The GC content of the type genome is 34.14 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Excerana gen. nov.

Candidatus Excerana (NL. fem. n. *Excerana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKXD01*. The type species for the genus is *Candidatus* Excerana affunilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4408*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vavasanaceae.

Description of *Candidatus* Exceraria oppanax sp. nov.

Candidatus Exceraria oppanax (NL. fem. n. *oppanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCIF01 sp903970355*. The type genome for the species is the GenBank assembly GCA_903970355.1. The GC content of the type genome is 47.03 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Exceraria gen. nov.

Candidatus Exceraria (NL. fem. n. *Exceraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCIF01*. The type species for the genus is *Candidatus* Exceraria oppanax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excerella ablacitica sp. nov.

Candidatus Excerella ablacitica (NL. fem. n. *ablacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8529 sp003531155*. The type genome for the species is the GenBank assembly GCA_003531155.1. The GC content of the type genome is 36.42 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Excerella gen. nov.

Candidatus Excerella (NL. fem. n. *Excerella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8529*. The type species for the genus is *Candidatus* Excerella ablacitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BBW3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribiaceae.

Description of *Candidatus* Excerella cenobicula sp. nov.

Candidatus Excerella cenobicula (NL. fem. n. *cenobicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8529 sp013376985*. The type genome for the species is the GenBank assembly GCA_013376985.1. The GC content of the type genome is 35.33 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Excerella inobsilega sp. nov.

Candidatus Excerella inobsilega (NL. fem. n. *inobsilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8529 sp003818205*. The type genome for the species is the GenBank assembly GCA_003818205.1. The GC content of the type genome is 37.95 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Excerella problitoga sp. nov.

Candidatus Excerella problitoga (NL. fem. n. *problitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA8529 sp013141385*. The type genome for the species is the GenBank assembly GCA_013141385.1. The GC content of the type genome is 35.26 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Exceria ecnepicula sp. nov.

Candidatus Exceria ecnepicula (NL. fem. n. *ecnepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-7502 sp000317085*. The type genome for the species is the GenBank assembly RS_GCF_000317085.1. The GC content of the type genome is 40.62 % and the genome length is 3.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sphagnum bog".

Description of *Candidatus* Exceria gen. nov.

Candidatus Exceria (NL. fem. n. *Exceria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-7502*. The type species for the genus is *Candidatus* Exceria ecnepicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excerosa masocitoga sp. nov.

Candidatus Excerosa masocitoga (NL. fem. n. *masocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCO01 sp012729725*. The type genome for the species is the GenBank assembly GCA_012729725.1. The GC content of the type genome is 59.65 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Excerosa gen. nov.

Candidatus Excerosa (NL. fem. n. *Excerosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYCO01*. The type species for the genus is *Candidatus* Excerosa masocitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SM23-33. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Excerula immaditica sp. nov.

Candidatus Excerula immaditica (NL. fem. n. *immaditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSXL01 sp011367845*. The type genome for the species is the GenBank assembly GCA_011367845.1. The GC content of the type genome is 65.49 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Excerula gen. nov.

Candidatus Excerula (NL. fem. n. *Excerula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSXL01*. The type species for the genus is *Candidatus* Excerula immaditica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excetana maligitrix sp. nov.

Candidatus Excetana maligitrix (NL. fem. n. *maligitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Aalborg-AAW-1 sp001007975*. The type genome for the species is the GenBank assembly GCA_001007975.1. The GC content of the type genome is 33.33 % and the genome length is 1.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Enrichment reactor seeded with activated sludge".

Description of *Candidatus* Excetana gen. nov.

Candidatus Excetana (NL. fem. n. *Excetana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Aalborg-AAW-1*. The type species for the genus is *Candidatus* Excetana maligitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *X112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Excetaria perexifica sp. nov.

Candidatus Excetaria perexifica (NL. fem. n. *perexifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2385 sp013152105*. The type genome for the species is the GenBank assembly GCA_013152105.1. The GC content of the type genome is 67.28 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Excetaria gen. nov.

Candidatus Excetaria (NL. fem. n. *Excetaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2385*. The type species for the genus is *Candidatus* Excetaria perexifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilanaceae.

Description of *Candidatus* Excetaria stercicella sp. nov.

Candidatus Excetaria stercicella (NL. fem. n. *stercicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2385 sp002343455*. The type genome for the species is the GenBank assembly GCA_002343455.1. The GC content of the type genome is 71.4 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Excetella delubago sp. nov.

Candidatus Excetella delubago (NL. fem. n. *delubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RFNJ01 sp009927255*. The type genome for the species is the GenBank assembly GCA_009927255.1. The GC content of the type genome is 56.47 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Excetella gen. nov.

Candidatus Excetella (NL. fem. n. *Excetella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFNJ01*. The type species for the genus is *Candidatus* Excetella delubago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6156*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenotidaceae.

Description of *Candidatus* Excetia agnomatio sp. nov.

Candidatus Excetia agnomatio (NL. fem. n. *agnomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMMS01 sp014378915*. The type genome for the species is the GenBank assembly GCA_014378915.1. The GC content of the type genome is 40.64 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Excetia gen. nov.

Candidatus Excetia (NL. fem. n. *Excetia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMMS01*. The type species for the genus is *Candidatus* Excetia agnomatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excetida ermelousia sp. nov.

Candidatus Excetida ermelousia (NL. fem. n. *ermelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAURD01 sp012034075*. The type genome for the species is the

GenBank assembly GCA_012034075.1. The GC content of the type genome is 54.53 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Excetida gen. nov.

Candidatus Excetida (NL. fem. n. *Excetida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAURD01*. The type species for the genus is *Candidatus* Excetida ermelousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excetula habacimonia sp. nov.

Candidatus Excetula habacimonia (NL. fem. n. *habacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5287 sp002411345*. The type genome for the species is the GenBank assembly GCA_002411345.1. The GC content of the type genome is 35.72 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Excetula gen. nov.

Candidatus Excetula (NL. fem. n. *Excetula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5287*. The type species for the genus is *Candidatus* Excetula habacimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excinana maledentia sp. nov.

Candidatus Excinana maledentia (NL. fem. n. *maledentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBME01 sp903954065*. The type genome for the species is the GenBank assembly GCA_903954065.1. The GC content of the type genome is 59.92 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Excinana gen. nov.

Candidatus Excinana (NL. fem. n. *Excinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBME01*. The type species for the genus is *Candidatus* Excinana maledentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *V1-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifulaceae.

Description of *Candidatus* Excinaria advinitudo sp. nov.

Candidatus Excinaria advinitudo (NL. fem. n. *advinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYVH01 sp012517255*. The type genome for the species is the GenBank assembly GCA_012517255.1. The GC content of the type genome is 64.56 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Excinaria gen. nov.

Candidatus Excinaria (NL. fem. n. *Excinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYVH01*. The type species for the genus is *Candidatus* Excinaria advinitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBBX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senipanaceae.

Description of *Candidatus* Excinella obvolitio sp. nov.

Candidatus Excinella obvolitio (NL. fem. n. *obvolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2709075 sp002709075*. The type genome for the species is the GenBank assembly GCA_002709075.1. The GC content of the type genome is 40.38 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Excinella gen. nov.

Candidatus Excinella (NL. fem. n. *Excinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2709075*. The type species for the genus is *Candidatus* Excinella obvolitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2964*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibidaceae.

Description of *Candidatus* Excinia conipitrix sp. nov.

Candidatus Excinia conipitrix (NL. fem. n. *conipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUKX01 sp903899795*. The type genome for the species is the GenBank assembly GCA_903899795.1. The GC content of the type genome is 36.17 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Excinia gen. nov.

Candidatus Excinia (NL. fem. n. *Excinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUKX01*. The type species for the genus is *Candidatus* Excinia conipitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excinida adtesibula sp. nov.

Candidatus Excinida adtesibula (NL. fem. n. *adtesibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-10 sp001793015*. The type genome for the species is the GenBank assembly GCA_001793015.1. The GC content of the type genome is 38.09 % and the genome length is 1.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Excinida gen. nov.

Candidatus Excinida (NL. fem. n. *Excinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-10*. The type species for the genus is *Candidatus* Excinida adtesibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Excinosa ammuligena sp. nov.

Candidatus Excinosa ammuligena (NL. fem. n. *ammuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4789 sp012518875*. The type genome for the species is the GenBank assembly GCA_012518875.1. The GC content of the type genome is 47.34 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Excinosa gen. nov.

Candidatus Excinosa (NL. fem. n. *Excinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4789*. The type species for the genus is *Candidatus* Excinosa ammuligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excinosa exhilatio sp. nov.

Candidatus Excinosa exhilatio (NL. fem. n. *exhilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4789 sp013201395*. The type genome for the species is the GenBank assembly GCA_013201395.1. The GC content of the type genome is 47.1 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Excinosa macilatio sp. nov.

Candidatus Excinosa macilatio (NL. fem. n. *macilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4789 sp002402945*. The type genome for the species is the GenBank assembly GCA_002402945.1. The GC content of the type genome is 49.19 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Excocida socagilenta sp. nov.

Candidatus Excocida socagilenta (NL. fem. n. *socagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Leaf443 sp001425575*. The type genome for the species is the GenBank assembly RS_GCF_001425575.1. The GC content of the type genome is 69.92 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Excocida gen. nov.

Candidatus Excocida (NL. fem. n. *Excocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Leaf443*. The type species for the genus is *Candidatus* Excocida socagilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excocosa innulisca sp. nov.

Candidatus Excocosa innulisca (NL. fem. n. *innulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOSQ01 sp903860935*. The type genome for the species is the GenBank assembly GCA_903860935.1. The GC content of the type genome is 69.06 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Excocosa gen. nov.

Candidatus Excocosa (NL. fem. n. *Excocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOSQ01*. The type species for the genus is *Candidatus* Excocosa innulisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACIAM-22H2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelosaceae.

Description of *Candidatus* Excocula esculitio sp. nov.

Candidatus Excocula esculitio (NL. fem. n. *esculitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-6406 sp012032425*. The type genome for the species is the GenBank assembly GCA_012032425.1. The GC content of the type genome is 56.13 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Excocula gen. nov.

Candidatus Excocula (NL. fem. n. *Excocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-6406*. The type species for the genus is *Candidatus* Excocula esculitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excocula forinax sp. nov.

Candidatus Excocula forinax (NL. fem. n. *forinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-6406 sp000332095*. The type genome for the species is the GenBank assembly RS_GCF_000332095.2. The GC content of the type genome is 55.18 % and the genome length is 5.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Fresh water; California; USA; 1964".

Description of *Candidatus* Excogana aruspilega sp. nov.

Candidatus Excogana aruspilega (NL. fem. n. *aruspilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6627 sp002455955*. The type genome for the species is the GenBank assembly GCA_002455955.1. The GC content of the type genome is 50.76 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Excogana gen. nov.

Candidatus Excogana (NL. fem. n. *Excogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6627*. The type species for the genus is *Candidatus* Excogana aruspilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Excogana saburitura sp. nov.

Candidatus Excogana saburitura (NL. fem. n. *saburitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6627 sp009391845*. The type genome for the species is the GenBank assembly GCA_009391845.1. The GC content of the type genome is 67.77 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Excogia domicitura sp. nov.

Candidatus Excogia domicitura (NL. fem. n. *domicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZYG01 sp014239775*. The type genome for the species is the GenBank assembly GCA_014239775.1. The GC content of the type genome is 34.81 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Excogia gen. nov.

Candidatus Excogia (NL. fem. n. *Excogia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZYG01*. The type species for the genus is *Candidatus* Excogia domicitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Excogida bigemedo sp. nov.

Candidatus Excogida bigemedo (NL. fem. n. *bigemedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA791 sp002297005*. The type genome for the species is the GenBank assembly GCA_002297005.1. The GC content of the type genome is 31.22 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Excogida gen. nov.

Candidatus Excogida (NL. fem. n. *Excogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA791*. The type species for the genus is *Candidatus* Excogida bigemedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Excogida inpasatica sp. nov.

Candidatus Excogida inpasatica (NL. fem. n. *inpasatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA791 sp902803265*. The type genome for the species is the GenBank assembly GCA_902803265.1. The GC content of the type genome is 30.66 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Excogida sarabitas sp. nov.

Candidatus Excogida sarabitas (NL. fem. n. *sarabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA791 sp902783785*. The type genome for the species is the GenBank assembly GCA_902783785.1. The GC content of the type genome is 29.17 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Excomaria pimenitrix sp. nov.

Candidatus Excomaria pimenitrix (NL. fem. n. *pimenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJZ01 sp013003255*. The type genome for the species is the GenBank assembly GCA_013003255.1. The GC content of the type genome is 62.47 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Excomaria gen. nov.

Candidatus Excomaria (NL. fem. n. *Excomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJZ01*. The type species for the genus is *Candidatus* Excomaria pimenitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10348*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divorosaceae.

Description of *Candidatus* Excomella ammatessa sp. nov.

Candidatus Excomella ammatessa (NL. fem. n. *ammatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRGV01 sp011049955*. The type genome for the species is the GenBank assembly GCA_011049955.1. The GC content of the type genome is 44.25 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Excomella gen. nov.

Candidatus Excomella (NL. fem. n. *Excomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRGV01*. The type species for the genus is *Candidatus* Excomella

ammatessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7526*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirabulaceae.

Description of *Candidatus* Excomia cinipiforma sp. nov.

Candidatus Excomia cinipiforma (NL. fem. n. *cinipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9040 sp003452475*. The type genome for the species is the GenBank assembly GCA_003452475.1. The GC content of the type genome is 47.64 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Excomia gen. nov.

Candidatus Excomia (NL. fem. n. *Excomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9040*. The type species for the genus is *Candidatus* Excomia cinipiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TK06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaculaceae.

Description of *Candidatus* Excomia impinitas sp. nov.

Candidatus Excomia impinitas (NL. fem. n. *impinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9040 sp002731665*. The type genome for the species is the GenBank assembly GCA_002731665.1. The GC content of the type genome is 47.8 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Excomida licenentia sp. nov.

Candidatus Excomida licenentia (NL. fem. n. *licenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVHJ01 sp903905665*. The type genome for the species is the GenBank assembly GCA_903905665.1. The GC content of the type genome is 54.33 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Excomida gen. nov.

Candidatus Excomida (NL. fem. n. *Excomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVHJ01*. The type species for the genus is *Candidatus* Excomida licenentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomariaceae.

Description of *Candidatus* Excomosa abnocitrix sp. nov.

Candidatus Excomosa abnocitrix (NL. fem. n. *abnocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2224 sp007130675*. The type genome for the species is the GenBank assembly GCA_007130675.1. The GC content of the type genome is 60.11 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Excomosa gen. nov.

Candidatus Excomosa (NL. fem. n. *Excomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2224*. The type species for the genus is *Candidatus* Excomosa abnocitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLHB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegulaceae.

Description of *Candidatus* Excomosa indepitas sp. nov.

Candidatus Excomosa indepitas (NL. fem. n. *indepitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2224 sp012719295*. The type genome for the species is the GenBank assembly GCA_012719295.1. The GC content of the type genome is 64.5 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Excomosa recorax sp. nov.

Candidatus Excomosa recorax (NL. fem. n. *recorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2224 sp002348185*. The type genome for the species is the GenBank assembly GCA_002348185.1. The GC content of the type genome is 63.85 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Excorana atlaniforma sp. nov.

Candidatus Excorana atlaniforma (NL. fem. n. *atlaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TK10-74A sp003228175*. The type genome for the species is the GenBank assembly GCA_003228175.2. The GC content of the type genome is 68.5 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Excorana gen. nov.

Candidatus Excorana (NL. fem. n. *Excorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TK10-74A*. The type species for the genus is *Candidatus* Excorana atlaniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin125*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilogulaceae.

Description of *Candidatus* Excorella apsenugo sp. nov.

Candidatus Excorella apsenugo (NL. fem. n. *apsenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSTH01 sp011329435*. The type genome for the species is the GenBank assembly GCA_011329435.1. The GC content of the type genome is 39.04 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Excorella gen. nov.

Candidatus Excorella (NL. fem. n. *Excorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSTH01*. The type species for the genus is *Candidatus* Excorella apsenugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-47-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuridaceae.

Description of *Candidatus* Excorida telefibra sp. nov.

Candidatus Excorida telefibra (NL. fem. n. *telefibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVZ01 sp009785595*. The type genome for the species is the GenBank assembly GCA_009785595.1. The GC content of the type genome is 48.08 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Excorida gen. nov.

Candidatus Excorida (NL. fem. n. *Excorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVZ01*. The type species for the genus is *Candidatus* Excorida telefibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRAX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibulaceae.

Description of *Candidatus* Excucella depetiforma sp. nov.

Candidatus Excucella depetiforma (NL. fem. n. *depetiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14267 sp902797415*. The type genome for the species is the GenBank assembly GCA_902797415.1. The GC content of the type genome is 28.25 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Excucella gen. nov.

Candidatus Excucella (NL. fem. n. *Excucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14267*. The type species for the genus is *Candidatus* Excucella depetiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Excucia inhosetta sp. nov.

Candidatus Excucia inhosetta (NL. fem. n. *inhosetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7236 sp002473275*. The type genome for the species is the GenBank assembly GCA_002473275.1. The GC content of the type genome is 35.44 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Excucia gen. nov.

Candidatus Excucia (NL. fem. n. *Excucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7236*. The type species for the genus is *Candidatus* Excucia inhosetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecellaceae.

Description of *Candidatus* Excucida anaclago sp. nov.

Candidatus Excucida anaclago (NL. fem. n. *anaclago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTT01 sp004322435*. The type genome for the species is the GenBank assembly GCA_004322435.1. The GC content of the type genome is 70.7 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Excucida gen. nov.

Candidatus Excucida (NL. fem. n. *Excucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTT01*. The type species for the genus is *Candidatus* Excucida anaclago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papiliaceae.

Description of *Candidatus* Excucula accorimonia sp. nov.

Candidatus Excucula accorimonia (NL. fem. n. *accorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11126 sp902766015*. The type genome for the species is the GenBank assembly GCA_902766015.1. The GC content of the type genome is 53.1 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Excucula gen. nov.

Candidatus Excucula (NL. fem. n. *Excucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11126*. The type species for the genus is *Candidatus* Excucula accorimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exculana assucessa sp. nov.

Candidatus Exculana assucessa (NL. fem. n. *assucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINDI01 sp903847335*. The type genome for the species is the GenBank assembly GCA_903847335.1. The GC content of the type genome is 53.66 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Exculana gen. nov.

Candidatus Exculana (NL. fem. n. *Exculana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINDI01*. The type species for the genus is *Candidatus* Exculana assucessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipalanaceae.

Description of *Candidatus* Excularia ephipessa sp. nov.

Candidatus Excularia ephipessa (NL. fem. n. *ephipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J032 sp003696955*. The type genome for the species is the GenBank assembly GCA_003696955.1. The GC content of the type genome is 70.36 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Excularia gen. nov.

Candidatus Excularia (NL. fem. n. *Excularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J032*. The type species for the genus is *Candidatus* Excularia ephipessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exculella tenebilega sp. nov.

Candidatus Exculella tenebilega (NL. fem. n. *tenebilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CADDZP01 sp902812475*. The type genome for the species is the GenBank assembly RS_GCF_902812475.1. The GC content of the type genome is 69.34 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Exculella gen. nov.

Candidatus Exculella (NL. fem. n. *Exculella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDZP01*. The type species for the genus is *Candidatus* Exculella tenebilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AC-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desonosaceae.

Description of *Candidatus* Exculia encenicella sp. nov.

Candidatus Exculia encenicella (NL. fem. n. *encenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-004216475 sp004216475*. The type genome for the species is the GenBank assembly RS_GCF_004216475.1. The GC content of the type genome is 60.98 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Exculia gen. nov.

Candidatus Exculia (NL. fem. n. *Exculia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-004216475*. The type species for the genus is *Candidatus* Exculia encenicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exculida luceritoga sp. nov.

Candidatus Exculida luceritoga (NL. fem. n. *luceritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSSA01 sp011331335*. The type genome for the species is the

GenBank assembly GCA_011331335.1. The GC content of the type genome is 66.15 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Exculida gen. nov.

Candidatus Exculida (NL. fem. n. *Exculida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSSA01*. The type species for the genus is *Candidatus* Exculida luceritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Exculosa siminitica sp. nov.

Candidatus Exculosa siminitica (NL. fem. n. *siminitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-7 sp005877775*. The type genome for the species is the GenBank assembly GCA_005877775.1. The GC content of the type genome is 58.5 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Exculosa gen. nov.

Candidatus Exculosa (NL. fem. n. *Exculosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NS-7*. The type species for the genus is *Candidatus* Exculosa siminitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exculula exsusitia sp. nov.

Candidatus Exculula exsusitia (NL. fem. n. *exsusitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MD308 sp010206225*. The type genome for the species is the GenBank assembly GCA_010206225.2. The GC content of the type genome is 42.77 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Exculula gen. nov.

Candidatus Exculula (NL. fem. n. *Exculula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MD308*. The type species for the genus is *Candidatus* Exculula exsusitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exculula saburetta sp. nov.

Candidatus Exculula saburetta (NL. fem. n. *saburetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MD308 sp000403475*. The type genome for the species is the GenBank assembly RS_GCF_000403475.2. The GC content of the type genome is 44.96 % and the genome length is 4.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Exentana colimibra sp. nov.

Candidatus Exentana colimibra (NL. fem. n. *colimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCUC01 sp013812065*. The type genome for the species is the GenBank assembly GCA_013812065.1. The GC content of the type genome is 70.98 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Exentana gen. nov.

Candidatus Exentana (NL. fem. n. *Exentana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCUC01*. The type species for the genus is *Candidatus* Exentana colimibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exentana galacimonia sp. nov.

Candidatus Exentana galacimonia (NL. fem. n. *galacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCUC01 sp013812485*. The type genome for the species is the GenBank assembly GCA_013812485.1. The GC content of the type genome is 71.44 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Exentana velivisca sp. nov.

Candidatus Exentana velivisca (NL. fem. n. *velivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCUC01 sp902806245*. The type genome for the species is the GenBank assembly GCA_902806245.1. The GC content of the type genome is 72.14 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Exentaria macilifica sp. nov.

Candidatus Exentaria macilifica (NL. fem. n. *macilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-54-11 sp001797905*. The type genome for the species is the GenBank assembly GCA_001797905.1. The GC content of the type genome is 53.8 % and the genome length is 2.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Exentaria gen. nov.

Candidatus Exentaria (NL. fem. n. *Exentaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-54-11*. The type species for the genus is *Candidatus* Exentaria macilifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-54-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funivariaceae.

Description of *Candidatus* Exentella paropousia sp. nov.

Candidatus Exentella paropousia (NL. fem. n. *paropousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-330 sp003137035*. The type genome for the species is the GenBank assembly GCA_003137035.1. The GC content of the type genome is 64.59 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Exentella gen. nov.

Candidatus Exentella (NL. fem. n. *Exentella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-330*. The type species for the genus is *Candidatus* Exentella paropousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exentella tomogitia sp. nov.

Candidatus Exentella tomogitia (NL. fem. n. *tomogitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-330 sp003154855*. The type genome for the species is the GenBank assembly GCA_003154855.1. The GC content of the type genome is 64.77 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Exentida homilitas sp. nov.

Candidatus Exentida homilitas (NL. fem. n. *homilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-12-FULL-51-8 sp001805895*. The type genome for the species is the GenBank assembly GCA_001805895.1. The GC content of the type genome is 50.73 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Exentida gen. nov.

Candidatus Exentida (NL. fem. n. *Exentida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-12-FULL-51-8*. The type species for the genus is *Candidatus* Exentida homilitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Exentula ciminibra sp. nov.

Candidatus Exentula ciminibra (NL. fem. n. *ciminibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XBB2008 sp900102235*. The type genome for the species is the GenBank assembly RS_GCF_900102235.1. The GC content of the type genome is 47.43 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Exentula gen. nov.

Candidatus Exentula (NL. fem. n. *Exentula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XBB2008*. The type species for the genus is *Candidatus* Exentula ciminibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exforaria peripousia sp. nov.

Candidatus Exforaria peripousia (NL. fem. n. *peripousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14223 sp902796955*. The type genome for the species is the GenBank assembly GCA_902796955.1. The GC content of the type genome is 41.39 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Exforaria gen. nov.

Candidatus Exforaria (NL. fem. n. *Exforaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14223*. The type species for the genus is *Candidatus* Exforaria peripousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exforella hecatitudo sp. nov.

Candidatus Exforella hecatitudo (NL. fem. n. *hecatitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTL01 sp013812395*. The type genome for the species is the GenBank assembly GCA_013812395.1. The GC content of the type genome is 70.07 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Exforella gen. nov.

Candidatus Exforella (NL. fem. n. *Exforella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCTL01*. The type species for the genus is *Candidatus* Exforella hecatitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exforella homulugo sp. nov.

Candidatus Exforella homulugo (NL. fem. n. *homulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTL01 sp013698135*. The type genome for the species is the GenBank assembly GCA_013698135.1. The GC content of the type genome is 70.09 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Exforia utillitoga sp. nov.

Candidatus Exforia utillitoga (NL. fem. n. *utillitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAYLO01 sp012521855*. The type genome for the species is the GenBank assembly GCA_012521855.1. The GC content of the type genome is 38.98 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Exforia gen. nov.

Candidatus Exforia (NL. fem. n. *Exforia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYLO01*. The type species for the genus is *Candidatus* Exforia utillitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desacanaceae.

Description of *Candidatus* Exforida exaspetta sp. nov.

Candidatus Exforida exaspetta (NL. fem. n. *exaspetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFA01 sp013286795*. The type genome for the species is the GenBank assembly GCA_013286795.1. The GC content of the type genome is 30.11 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Exforida gen. nov.

Candidatus Exforida (NL. fem. n. *Exforida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDFA01*. The type species for the genus is *Candidatus* Exforida exaspetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDEC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depupidaceae.

Description of *Candidatus* Exforosa citipitudo sp. nov.

Candidatus Exforosa citipitudo (NL. fem. n. *citipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSS01 sp013140485*. The type genome for the species is the GenBank assembly GCA_013140485.1. The GC content of the type genome is 56.37 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Exforosa gen. nov.

Candidatus Exforosa (NL. fem. n. *Exforosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFSS01*. The type species for the genus is *Candidatus* Exforosa citipitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exforosa lucubatio sp. nov.

Candidatus Exforosa lucubatio (NL. fem. n. *lucubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFSS01 sp009691305*. The type genome for the species is the GenBank assembly GCA_009691305.1. The GC content of the type genome is 57.12 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Exforula lutuledo sp. nov.

Candidatus Exforula lutuledo (NL. fem. n. *lutuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDD01 sp007693725*. The type genome for the species is the GenBank assembly GCA_007693725.1. The GC content of the type genome is 64.83 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Exforula gen. nov.

Candidatus Exforula (NL. fem. n. *Exforula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REDD01*. The type species for the genus is *Candidatus* Exforula lutuledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SM1A02. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Exhedana conigivita sp. nov.

Candidatus Exhedana conigivita (NL. fem. n. *conigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-43-15b sp001816385*. The type genome for the species is the GenBank assembly GCA_001816385.1. The GC content of the type genome is 43.02 % and the genome length is 0.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Exhedana gen. nov.

Candidatus Exhedana (NL. fem. n. *Exhedana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-43-15b*. The type species for the genus is *Candidatus* Exhedana conigivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sotulanaceae.

Description of *Candidatus* Exhedella detepedo sp. nov.

Candidatus Exhedella detepedo (NL. fem. n. *detepedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-34-10 sp002790395*. The type genome for the species is the GenBank assembly GCA_002790395.1. The GC content of the type genome is 33.59 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Exhedella gen. nov.

Candidatus Exhedella (NL. fem. n. *Exhedella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UM-FILTER-34-10*. The type species for the genus is *Candidatus* Exhedella detepedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exhedia nosocivita sp. nov.

Candidatus Exhedia nosocivita (NL. fem. n. *nosocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLOWO2-12-38-17 sp001830285*. The type genome for the species is the GenBank assembly GCA_001830285.1. The GC content of the type genome is 37.88 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; 10% subassembly".

Description of *Candidatus* Exhedia gen. nov.

Candidatus Exhedia (NL. fem. n. *Exhedia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PLOWO2-12-38-17*. The type species for the genus is *Candidatus* Exhedia nosocivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exhedosa salubitudo sp. nov.

Candidatus Exhedosa salubitudo (NL. fem. n. *salubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSM01 sp009380105*. The type genome for the species is the GenBank assembly GCA_009380105.1. The GC content of the type genome is 70.63 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Exhedosa gen. nov.

Candidatus Exhedosa (NL. fem. n. *Exhedosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSM01*. The type species for the genus is *Candidatus* Exhedosa

salubitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exhedula catalax sp. nov.

Candidatus Exhedula catalax (NL. fem. n. *catalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLD01 sp011333355*. The type genome for the species is the GenBank assembly GCA_011333355.1. The GC content of the type genome is 36.49 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Exhedula gen. nov.

Candidatus Exhedula (NL. fem. n. *Exhedula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLD01*. The type species for the genus is *Candidatus* Exhedula catalax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponidaceae.

Description of *Candidatus* Exheraria velivitoga sp. nov.

Candidatus Exheraria velivitoga (NL. fem. n. *velivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFRY01 sp004562065*. The type genome for the species is the GenBank assembly GCA_004562065.1. The GC content of the type genome is 50.25 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Exheraria gen. nov.

Candidatus Exheraria (NL. fem. n. *Exheraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFRY01*. The type species for the genus is *Candidatus* Exheraria velivitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exherella culilugo sp. nov.

Candidatus Exherella culilugo (NL. fem. n. *culilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4081 sp002383615*. The type genome for the species is the GenBank assembly GCA_002383615.1. The GC content of the type genome is 51.04 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Exherella gen. nov.

Candidatus Exherella (NL. fem. n. *Exherella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4081*. The type species for the genus is *Candidatus* Exherella culilugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exheria ellebitudo sp. nov.

Candidatus Exheria ellebitudo (NL. fem. n. *ellebitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-921 sp003153975*. The type genome for the species is the GenBank assembly GCA_003153975.1. The GC content of the type genome is 62.07 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Exheria gen. nov.

Candidatus Exheria (NL. fem. n. *Exheria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-921*. The type species for the genus is *Candidatus* Exheria ellebitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exherosa aggenitio sp. nov.

Candidatus Exherosa aggenitio (NL. fem. n. *aggenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKD01 sp009778255*. The type genome for the species is the GenBank assembly GCA_009778255.1. The GC content of the type genome is 42.86 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Exherosa gen. nov.

Candidatus Exherosa (NL. fem. n. *Exherosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKD01*. The type species for the genus is *Candidatus* Exherosa aggenitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4068*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divulosaceae.

Description of *Candidatus* Exherosa minurimonia sp. nov.

Candidatus Exherosa minurimonia (NL. fem. n. *minurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKD01 sp009782975*. The type genome for the species is the GenBank assembly GCA_009782975.1. The GC content of the type genome is 52.17 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Exhilana acratitrix sp. nov.

Candidatus Exhilana acratitrix (NL. fem. n. *acratitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMD01 sp009777315*. The type genome for the species is the GenBank assembly GCA_009777315.1. The GC content of the type genome is 53.8 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Exhilana gen. nov.

Candidatus Exhilana (NL. fem. n. *Exhilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRMD01*. The type species for the genus is *Candidatus* Exhilana acratitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exhilaria depubitudo sp. nov.

Candidatus Exhilaria depubitudo (NL. fem. n. *depubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSDH01 sp011055475*. The type genome for the species is the GenBank assembly GCA_011055475.1. The GC content of the type genome is 64.48 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Exhilaria gen. nov.

Candidatus Exhilaria (NL. fem. n. *Exhilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSDH01*. The type species for the genus is *Candidatus* Exhilaria depubitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exhilella conubibra sp. nov.

Candidatus Exhilella conubibra (NL. fem. n. *conubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDLV01 sp013001815*. The type genome for the species is the GenBank assembly GCA_013001815.1. The GC content of the type genome is 35.54 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Exhilella gen. nov.

Candidatus Exhilella (NL. fem. n. *Exhilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDLV01*. The type species for the genus is *Candidatus* Exhilella conubibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehiciaceae.

Description of *Candidatus* Exhilia induvilenta sp. nov.

Candidatus Exhilia induvilenta (NL. fem. n. *induvilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1296 sp003151215*. The type genome for the species is the GenBank assembly GCA_003151215.1. The GC content of the type genome is 44.21 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Exhilia gen. nov.

Candidatus Exhilia (NL. fem. n. *Exhilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1296*. The type species for the genus is *Candidatus* Exhilia induvilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1295*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Antegiaceae.

Description of *Candidatus* Exhilida gasifica sp. nov.

Candidatus Exhilida gasifica (NL. fem. n. *gasifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7692 sp001897535*. The type genome for the species is the GenBank assembly GCA_001897535.1. The GC content of the type genome is 37.04 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Exhilida gen. nov.

Candidatus Exhilida (NL. fem. n. *Exhilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7692*. The type species for the genus is *Candidatus* Exhilida gasifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LD1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalidaceae.

Description of *Candidatus* Exhilida ossucitoga sp. nov.

Candidatus Exhilida ossucitoga (NL. fem. n. *ossucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7692 sp002482725*. The type genome for the species is the GenBank assembly GCA_002482725.1. The GC content of the type genome is 44.26 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Exhilosa effulitoga sp. nov.

Candidatus Exhilosa effulitoga (NL. fem. n. *effulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11372 sp900767715*. The type genome for the species is the GenBank assembly RS_GCF_900767715.1. The GC content of the type genome is 41.69 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Exhilosa gen. nov.

Candidatus Exhilosa (NL. fem. n. *Exhilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11372*. The type species for the genus is *Candidatus* Exhilosa effulitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Exhilula binocatica sp. nov.

Candidatus Exhilula binocatica (NL. fem. n. *binocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXJ01 sp009784895*. The type genome for the species is the GenBank assembly GCA_009784895.1. The GC content of the type genome is 62.4 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Exhilula gen. nov.

Candidatus Exhilula (NL. fem. n. *Exhilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQXJ01*. The type species for the genus is *Candidatus* Exhilula binocatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exhonaria pragmetta sp. nov.

Candidatus Exhonaria pragmetta (NL. fem. n. *pragmetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-14 sp013216135*. The type genome for the species is the GenBank assembly GCA_013216135.1. The GC content of the type genome is 33.64 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Exhonaria gen. nov.

Candidatus Exhonaria (NL. fem. n. *Exhonaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-14*. The type species for the genus is *Candidatus* Exhonaria pragmetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LMEP-6097*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumiaceae.

Description of *Candidatus* Exhonella ancipitica sp. nov.

Candidatus Exhonella ancipitica (NL. fem. n. *ancipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIBU01 sp009695005*. The type genome for the species is the GenBank assembly GCA_009695005.1. The GC content of the type genome is 39.94 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Exhonella gen. nov.

Candidatus Exhonella (NL. fem. n. *Exhonella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIBU01*. The type species for the genus is *Candidatus* Exhonella ancipitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBMK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumosaceae.

Description of *Candidatus* Exhonia subadedo sp. nov.

Candidatus Exhonia subadedo (NL. fem. n. *subadedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDIN01 sp013003715*. The type genome for the species is the GenBank assembly GCA_013003715.1. The GC content of the type genome is 50.56 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Exhonia gen. nov.

Candidatus Exhonia (NL. fem. n. *Exhonia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDIN01*. The type species for the genus is *Candidatus* Exhonia subadedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exhonosa apsolitrix sp. nov.

Candidatus Exhonosa apsolitrix (NL. fem. n. *apsolitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-37 sp003232015*. The type genome for the species is the GenBank assembly GCA_003232015.1. The GC content of the type genome is 42.41 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Exhonosa gen. nov.

Candidatus Exhonosa (NL. fem. n. *Exhonosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-37*. The type species for the genus is *Candidatus* Exhonosa apsolitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubosaceae.

Description of *Candidatus* Exhorana acricifica sp. nov.

Candidatus Exhorana acricifica (NL. fem. n. *acricifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFTH01 sp004563405*. The type genome for the species is the GenBank assembly GCA_004563405.1. The GC content of the type genome is 62.7 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Exhorana gen. nov.

Candidatus Exhorana (NL. fem. n. *Exhorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFTH01*. The type species for the genus is *Candidatus* Exhorana acricifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Exhorana arcelitio sp. nov.

Candidatus Exhorana arcelitio (NL. fem. n. *arcelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFTH01 sp004554085*. The type genome for the species is the GenBank assembly GCA_004554085.1. The GC content of the type genome is 61.69 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Exhorana inpenilenta sp. nov.

Candidatus Exhorana inpenilenta (NL. fem. n. *inpenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFTH01 sp004557125*. The type genome for the species is the GenBank assembly GCA_004557125.1. The GC content of the type genome is 61.37 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Exhoraria inabsibula sp. nov.

Candidatus Exhoraria inabsibula (NL. fem. n. *inabsibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEVA01 sp013044065*. The type genome for the species is the GenBank assembly GCA_013044065.1. The GC content of the type genome is 56.7 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Exhoraria gen. nov.

Candidatus Exhoraria (NL. fem. n. *Exhoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEVA01*. The type species for the genus is *Candidatus* Exhoraria inabsibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WQYP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludidaceae.

Description of *Candidatus* Exhorella subaditrix sp. nov.

Candidatus Exhorella subaditrix (NL. fem. n. *subaditrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAAOJ01 sp009908915*. The type genome for the species is the GenBank assembly GCA_009908915.1. The GC content of the type genome is 64.3 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Exhorella gen. nov.

Candidatus Exhorella (NL. fem. n. *Exhorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAAOJ01*. The type species for the genus is *Candidatus* Exhorella subaditrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Exhoria nugivitica sp. nov.

Candidatus Exhoria nugivitica (NL. fem. n. *nugivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2706885 sp002706885*. The type genome for the species is the GenBank assembly GCA_002706885.1. The GC content of the type genome is 65.91 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Exhoria gen. nov.

Candidatus Exhoria (NL. fem. n. *Exhoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2706885*. The type species for the genus is *Candidatus* Exhoria nugivitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Exhorida televitica sp. nov.

Candidatus Exhorida televitica (NL. fem. n. *televitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-612 sp003134505*. The type genome for the species is the GenBank assembly GCA_003134505.1. The GC content of the type genome is 70.32 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Exhorida gen. nov.

Candidatus Exhorida (NL. fem. n. *Exhorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-612*. The type species for the genus is *Candidatus* Exhorida televitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exhorula thessitoga sp. nov.

Candidatus Exhorula thessitoga (NL. fem. n. *thessitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPI01 sp011046695*. The type genome for the species is the GenBank assembly GCA_011046695.1. The GC content of the type genome is 57.45 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Exhorula gen. nov.

Candidatus Exhorula (NL. fem. n. *Exhorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPI01*. The type species for the genus is *Candidatus* Exhorula thessitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Exiguobacterium cerofibra sp. nov.

Candidatus Exiguobacterium cerofibra (NL. fem. n. *cerofibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium sp902362975*. The type genome for the species is the GenBank assembly RS_GCF_902362975.1. The GC content of the type genome is 47.85 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Exiguobacterium coninitio sp. nov.

Candidatus Exiguobacterium coninitio (NL. fem. n. *coninitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium sp001908175*. The type genome for the species is the GenBank assembly RS_GCF_001908175.1. The GC content of the type genome is 47.49 % and the genome length is 2.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "blood".

Description of *Candidatus* Exiguobacterium cruppibula sp. nov.

Candidatus Exiguobacterium cruppibula (NL. fem. n. *cruppibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium sp003331145*. The type genome for the species is the GenBank assembly RS_GCF_003331145.1. The GC content of the type genome is 51.63 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Exiguobacterium deleciforma sp. nov.

Candidatus Exiguobacterium deleciforma (NL. fem. n. *deleciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium sp003467445*. The type genome for the species is the GenBank assembly RS_GCF_902364895.1. The GC content of the type genome is 51.21 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Exiguobacterium vehicitoga sp. nov.

Candidatus Exiguobacterium vehicitoga (NL. fem. n. *vehicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium sp004336985*. The type genome for the species is the GenBank assembly RS_GCF_004337025.1. The GC content of the type genome is 51.52 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Exiguobacterium afranago sp. nov.

Candidatus Exiguobacterium afranago (NL. fem. n. *afranago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium_A sp902363455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902363455.1. The GC content of the type genome is 47.0 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Exiguobacterium altifetta sp. nov.

Candidatus Exiguobacterium altifetta (NL. fem. n. *altifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium_A sp001870785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001870785.1. The GC content of the type genome is 46.88 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment from Tibetan glacier".

Description of *Candidatus* Exiguobacterium conibax sp. nov.

Candidatus Exiguobacterium conibax (NL. fem. n. *conibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium_A sp003339585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003339585.1. The GC content of the type genome is 47.25 % and the genome

length is 3.09 Mbp.

Description of *Candidatus* Exiguobacterium essonilenta sp. nov.

Candidatus Exiguobacterium essonilenta (NL. fem. n. *essonilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium_A sp001275385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001275385.1. The GC content of the type genome is 45.92 % and the genome length is 3.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "apartment interior at Bryn Mawr College".

Description of *Candidatus* Exiguobacterium ludibitoga sp. nov.

Candidatus Exiguobacterium ludibitoga (NL. fem. n. *ludibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium_A sp001423965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002380785.1. The GC content of the type genome is 47.18 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Exiguobacterium pinifessa sp. nov.

Candidatus Exiguobacterium pinifessa (NL. fem. n. *pinifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exiguobacterium_A sp004339505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004339505.1. The GC content of the type genome is 47.04 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Exilispira serotibula sp. nov.

Candidatus Exilispira serotibula (NL. fem. n. *serotibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exilispira sp012517545*. The type genome for the species is the GenBank assembly GCA_012517545.1. The GC content of the type genome is 30.43 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Exilispira undeviforma sp. nov.

Candidatus Exilispira undeviforma (NL. fem. n. *undeviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Exilispira sp012797605*. The type genome for the species is the GenBank assembly GCA_012797605.1. The GC content of the type genome is 28.04 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Exindana baropimonas sp. nov.

Candidatus Exindana baropimonas (NL. fem. n. *baropimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFEE01 sp002793745*. The type genome for the species is the GenBank assembly GCA_002793745.1. The GC content of the type genome is 44.73 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Exindana gen. nov.

Candidatus Exindana (NL. fem. n. *Exindana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PFEE01*. The type species for the genus is *Candidatus* Exindana baropimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1406*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Molecanaceae.

Description of *Candidatus* Exindella recogitoga sp. nov.

Candidatus Exindella recogitoga (NL. fem. n. *recogitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADID01 sp013151505*. The type genome for the species is the GenBank assembly GCA_013151505.1. The GC content of the type genome is 43.33 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Exindella gen. nov.

Candidatus Exindella (NL. fem. n. *Exindella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADID01*. The type species for the genus is *Candidatus* Exindella recogitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Exindia divulatica sp. nov.

Candidatus Exindia divulatica (NL. fem. n. *divulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSCZ01 sp011048855*. The type genome for the species is the GenBank assembly GCA_011048855.1. The GC content of the type genome is 52.74 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Exindia gen. nov.

Candidatus Exindia (NL. fem. n. *Exindia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSCZ01*. The type species for the genus is *Candidatus* Exindia divulatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exindida adlenago sp. nov.

Candidatus Exindida adlenago (NL. fem. n. *adlenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FREY01 sp900143635*. The type genome for the species is the GenBank assembly RS_GCF_900143635.1. The GC content of the type genome is 59.64 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Exindida gen. nov.

Candidatus Exindida (NL. fem. n. *Exindida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FREY01*. The type species for the genus is *Candidatus* Exindida adlenago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exindosa saburatio sp. nov.

Candidatus Exindosa saburatio (NL. fem. n. *saburatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B140-G9 sp003644295*. The type genome for the species is the GenBank assembly GCA_003644295.1. The GC content of the type genome is 45.73 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Exindosa gen. nov.

Candidatus Exindosa (NL. fem. n. *Exindosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B140-G9*. The type species for the genus is *Candidatus* Exindosa saburatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Exorbana bigaritia sp. nov.

Candidatus Exorbana bigaritia (NL. fem. n. *bigaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CADEFF01 sp902826565*. The type genome for the species is the GenBank assembly GCA_902826565.1. The GC content of the type genome is 67.84 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Exorbana gen. nov.

Candidatus Exorbana (NL. fem. n. *Exorbana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEFF01*. The type species for the genus is *Candidatus* Exorbana bigaritia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exorbaria necopitia sp. nov.

Candidatus Exorbaria necopitia (NL. fem. n. *necopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GW928-bin9 sp004296785*. The type genome for the species is the GenBank assembly GCA_004296785.1. The GC content of the type genome is 72.15 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Exorbaria gen. nov.

Candidatus Exorbaria (NL. fem. n. *Exorbaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GW928-bin9*. The type species for the genus is *Candidatus* Exorbaria necopitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Exorbella arcititica sp. nov.

Candidatus Exorbella arcititica (NL. fem. n. *arcititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZPQ01 sp012510305*. The type genome for the species is the

GenBank assembly GCA_012510305.1. The GC content of the type genome is 57.67 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Exorbella gen. nov.

Candidatus Exorbella (NL. fem. n. *Exorbella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZPQ01*. The type species for the genus is *Candidatus* Exorbella arcititica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Exorbella cenodimonia sp. nov.

Candidatus Exorbella cenodimonia (NL. fem. n. *cenodimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZPQ01 sp012797095*. The type genome for the species is the GenBank assembly GCA_012797095.1. The GC content of the type genome is 58.11 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Exorbella elastatio sp. nov.

Candidatus Exorbella elastatio (NL. fem. n. *elastatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZPQ01 sp012510325*. The type genome for the species is the GenBank assembly GCA_012510325.1. The GC content of the type genome is 57.32 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Exorbella inbelibra sp. nov.

Candidatus Exorbella inbelibra (NL. fem. n. *inbelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZPQ01 sp012797175*. The type genome for the species is the GenBank assembly GCA_012797175.1. The GC content of the type genome is 52.61 %

and the genome length is 1.94 Mbp.

Description of *Candidatus* Exorbella inorditoga sp. nov.

Candidatus Exorbella inorditoga (NL. fem. n. *inorditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZPQ01 sp012840855*. The type genome for the species is the GenBank assembly GCA_012840855.1. The GC content of the type genome is 57.07 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Exorbia asbesatio sp. nov.

Candidatus Exorbia asbesatio (NL. fem. n. *asbesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-18-A sp001776475*. The type genome for the species is the GenBank assembly GCA_001776475.1. The GC content of the type genome is 40.51 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Exorbia gen. nov.

Candidatus Exorbia (NL. fem. n. *Exorbia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-41-18-A*. The type species for the genus is *Candidatus* Exorbia asbesatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-41-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Exorbida cimitimonas sp. nov.

Candidatus Exorbida cimitimonas (NL. fem. n. *cimitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYXE01 sp012516075*. The type genome for the species is the

GenBank assembly GCA_012516075.1. The GC content of the type genome is 60.06 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Exorbida gen. nov.

Candidatus Exorbida (NL. fem. n. *Exorbida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYXE01*. The type species for the genus is *Candidatus* Exorbida cimitimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Exorbosa adsigentia sp. nov.

Candidatus Exorbosa adsigentia (NL. fem. n. *adsigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVZN01 sp002069125*. The type genome for the species is the GenBank assembly GCA_002069125.1. The GC content of the type genome is 57.27 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Exorbosa gen. nov.

Candidatus Exorbosa (NL. fem. n. *Exorbosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MVZN01*. The type species for the genus is *Candidatus* Exorbosa adsigentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5368*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuferariaceae.

Description of *Candidatus* Exorbula luticifica sp. nov.

Candidatus Exorbula luticifica (NL. fem. n. *luticifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIRYW01 sp903882905*. The type genome for the species is the GenBank assembly GCA_903882905.1. The GC content of the type genome is 34.82 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Exorbula gen. nov.

Candidatus Exorbula (NL. fem. n. *Exorbula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRYW01*. The type species for the genus is *Candidatus* Exorbula luticifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIZIN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinulellaceae.

Description of *Candidatus* Exorcaria aciscitio sp. nov.

Candidatus Exorcaria aciscitio (NL. fem. n. *aciscitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYKT01 sp012522255*. The type genome for the species is the GenBank assembly GCA_012522255.1. The GC content of the type genome is 36.73 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Exorcaria gen. nov.

Candidatus Exorcaria (NL. fem. n. *Exorcaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYKT01*. The type species for the genus is *Candidatus* Exorcaria aciscitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exorcella negiditura sp. nov.

Candidatus Exorcella negiditura (NL. fem. n. *negiditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQZC01 sp009780925*. The type genome for the species is the

GenBank assembly GCA_009780925.1. The GC content of the type genome is 70.43 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Exorcella gen. nov.

Candidatus Exorcella (NL. fem. n. *Exorcella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQZC01*. The type species for the genus is *Candidatus* Exorcella negiditura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exorcida manufilega sp. nov.

Candidatus Exorcida manufilega (NL. fem. n. *manufilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2712715 sp002712715*. The type genome for the species is the GenBank assembly GCA_002712715.1. The GC content of the type genome is 29.54 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Exorcida gen. nov.

Candidatus Exorcida (NL. fem. n. *Exorcida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2712715*. The type species for the genus is *Candidatus* Exorcida manufilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Exorcula abascimonia sp. nov.

Candidatus Exorcula abascimonia (NL. fem. n. *abascimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-0-10-35-9 sp002773835*. The type genome for the species is the GenBank assembly GCA_002773835.1. The GC content of the type genome is 35.13 %

and the genome length is 1.74 Mbp.

Description of *Candidatus* Exorcula gen. nov.

Candidatus Exorcula (NL. fem. n. *Exorcula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-0-10-35-9*. The type species for the genus is *Candidatus* Exorcula abascimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Exoscana sicunicula sp. nov.

Candidatus Exoscana sicunicula (NL. fem. n. *sicunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KACC-21507 sp009906835*. The type genome for the species is the GenBank assembly RS_GCF_009906835.1. The GC content of the type genome is 43.21 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Exoscana gen. nov.

Candidatus Exoscana (NL. fem. n. *Exoscana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KACC-21507*. The type species for the genus is *Candidatus* Exoscana sicunicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exoscaria aminnitoga sp. nov.

Candidatus Exoscaria aminnitoga (NL. fem. n. *aminnitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUY01 sp013044175*. The type genome for the species is the GenBank assembly GCA_013044175.1. The GC content of the type genome is 45.6 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Exoscaria gen. nov.

Candidatus Exoscaria (NL. fem. n. *Exoscaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEUY01*. The type species for the genus is *Candidatus* Exoscaria aminnitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exoscia detenigena sp. nov.

Candidatus Exoscia detenigena (NL. fem. n. *detenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHE01 sp012735505*. The type genome for the species is the GenBank assembly GCA_012735505.1. The GC content of the type genome is 50.42 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Exoscia gen. nov.

Candidatus Exoscia (NL. fem. n. *Exoscia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHE01*. The type species for the genus is *Candidatus* Exoscia detenigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecosaceae.

Description of *Candidatus* Expalaria anacletta sp. nov.

Candidatus Expalaria anacletta (NL. fem. n. *anacletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACSU01 sp010119145*. The type genome for the species is the GenBank assembly GCA_010119145.1. The GC content of the type genome is 31.78 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Expalaria gen. nov.

Candidatus Expalaria (NL. fem. n. *Expalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACSU01*. The type species for the genus is *Candidatus* Expalaria anacletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6164*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifellaceae.

Description of *Candidatus* Expalella cisalifica sp. nov.

Candidatus Expalella cisalifica (NL. fem. n. *cisalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSBA01 sp011046145*. The type genome for the species is the GenBank assembly GCA_011046145.1. The GC content of the type genome is 36.09 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Expalella gen. nov.

Candidatus Expalella (NL. fem. n. *Expalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSBA01*. The type species for the genus is *Candidatus* Expalella cisalifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIXNZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicarariaceae.

Description of *Candidatus* Expalia solifastra sp. nov.

Candidatus Expalia solifastra (NL. fem. n. *solifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAHJWL01 sp903642235*. The type genome for the species is the GenBank assembly RS_GCF_903642235.1. The GC content of the type genome is 61.3 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Expalia gen. nov.

Candidatus Expalia (NL. fem. n. *Expalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAHJWL01*. The type species for the genus is *Candidatus* Expalia solifastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expalida immusitura sp. nov.

Candidatus Expalida immusitura (NL. fem. n. *immusitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-19 sp001789725*. The type genome for the species is the GenBank assembly GCA_001789725.1. The GC content of the type genome is 38.1 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Expalida gen. nov.

Candidatus Expalida (NL. fem. n. *Expalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-19*. The type species for the genus is *Candidatus* Expalida immusitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-37-13b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifidaceae.

Description of *Candidatus* Expalosa bicinicula sp. nov.

Candidatus Expalosa bicinicula (NL. fem. n. *bicinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11386 sp900761915*. The type genome for the species is the GenBank assembly RS_GCF_900761915.1. The GC content of the type genome is 59.46 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Expalosa gen. nov.

Candidatus Expalosa (NL. fem. n. *Expalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11386*. The type species for the genus is *Candidatus* Expalosa bicinicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Expanana ratififica sp. nov.

Candidatus Expanana ratififica (NL. fem. n. *ratififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1613 sp900553395*. The type genome for the species is the GenBank assembly GCA_900553395.1. The GC content of the type genome is 27.18 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Expanana gen. nov.

Candidatus Expanana (NL. fem. n. *Expanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1613*. The type species for the genus is *Candidatus* Expanana ratififica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Expanaria sicunitura sp. nov.

Candidatus Expanaria sicunitura (NL. fem. n. *sicunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXZ01 sp009776725*. The type genome for the species is the GenBank assembly GCA_009776725.1. The GC content of the type genome is 51.98 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Expanaria gen. nov.

Candidatus Expanaria (NL. fem. n. *Expanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQXZ01*. The type species for the genus is *Candidatus* Expanaria sicunitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumanaceae.

Description of *Candidatus* Expanaria vanitugo sp. nov.

Candidatus Expanaria vanitugo (NL. fem. n. *vanitugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXZ01 sp009781525*. The type genome for the species is the GenBank assembly GCA_009781525.1. The GC content of the type genome is 50.84 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Expanella infatigena sp. nov.

Candidatus Expanella infatigena (NL. fem. n. *infatigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMJR01 sp900299355*. The type genome for the species is the GenBank assembly GCA_900299355.1. The GC content of the type genome is 60.62 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Expanella gen. nov.

Candidatus Expanella (NL. fem. n. *Expanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OMJR01*. The type species for the genus is *Candidatus* Expanella infatigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11579*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirabosaceae.

Description of *Candidatus* Expanosa agripitio sp. nov.

Candidatus Expanosa agripitio (NL. fem. n. *agripitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin90 sp009838595*. The type genome for the species is the GenBank assembly GCA_009838595.1. The GC content of the type genome is 57.32 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Expanosa gen. nov.

Candidatus Expanosa (NL. fem. n. *Expanosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin90*. The type species for the genus is *Candidatus* Expanosa agripitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resupellaceae.

Description of *Candidatus* Expanosa ludimimonia sp. nov.

Candidatus Expanosa ludimimonia (NL. fem. n. *ludimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin90 sp002238855*. The type genome for the species is the GenBank assembly GCA_002238855.1. The GC content of the type genome is 57.14 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Expanosa octipousia sp. nov.

Candidatus Expanosa octipousia (NL. fem. n. *octipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin90 sp009840355*. The type genome for the species is the GenBank assembly GCA_009840355.1. The GC content of the type genome is 58.0 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Expasana cosidifica sp. nov.

Candidatus Expasana cosidifica (NL. fem. n. *cosidifica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-43-42 sp002793915*. The type genome for the species is the GenBank assembly GCA_002793915.1. The GC content of the type genome is 43.0 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Expasana gen. nov.

Candidatus Expasana (NL. fem. n. *Expasana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-43-42*. The type species for the genus is *Candidatus* Expasana cosidifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-48-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifariaceae.

Description of *Candidatus* Expasaria obnunicula sp. nov.

Candidatus Expasaria obnunicula (NL. fem. n. *obnunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDBE01 sp013288805*. The type genome for the species is the GenBank assembly GCA_013288805.1. The GC content of the type genome is 56.13 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Expasaria gen. nov.

Candidatus Expasaria (NL. fem. n. *Expasaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDBE01*. The type species for the genus is *Candidatus* Expasaria obnunicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expasida arvecessa sp. nov.

Candidatus Expasida arvecessa (NL. fem. n. *arvecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYSU-D60009 sp003574735*. The type genome for the species is the GenBank assembly RS_GCF_003574735.1. The GC content of the type genome is 63.63 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Expasida gen. nov.

Candidatus Expasida (NL. fem. n. *Expasida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYSU-D60009*. The type species for the genus is *Candidatus* Expasida arvecessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expasida recogigena sp. nov.

Candidatus Expasida recogigena (NL. fem. n. *recogigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYSU-D60009 sp013822765*. The type genome for the species is the GenBank assembly GCA_013822765.1. The GC content of the type genome is 65.32 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Expasosa dibapedo sp. nov.

Candidatus Expasosa dibapedo (NL. fem. n. *dibapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACQG01 sp009995045*. The type genome for the species is the GenBank assembly GCA_009995045.1. The GC content of the type genome is 47.38 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Expasosa gen. nov.

Candidatus Expasosa (NL. fem. n. *Expasosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACQG01*. The type species for the genus is *Candidatus* Expasosa

dibapedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expasula pragmessa sp. nov.

Candidatus Expasula pragmessa (NL. fem. n. *pragmessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1349 sp003153915*. The type genome for the species is the GenBank assembly GCA_003153915.1. The GC content of the type genome is 62.38 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Expasula gen. nov.

Candidatus Expasula (NL. fem. n. *Expasula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1349*. The type species for the genus is *Candidatus* Expasula pragmessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Expecana domicibra sp. nov.

Candidatus Expecana domicibra (NL. fem. n. *domicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2689465 sp002689465*. The type genome for the species is the GenBank assembly GCA_002689465.1. The GC content of the type genome is 54.6 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Expecana gen. nov.

Candidatus Expecana (NL. fem. n. *Expecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2689465*. The type species for the genus is *Candidatus* Expecana domicibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MPNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Meridellaceae.

Description of *Candidatus* Expecella cilotitia sp. nov.

Candidatus Expecella cilotitia (NL. fem. n. *cilotitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA937 sp002293455*. The type genome for the species is the GenBank assembly GCA_002293455.1. The GC content of the type genome is 44.63 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Expecella gen. nov.

Candidatus Expecella (NL. fem. n. *Expecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA937*. The type species for the genus is *Candidatus* Expecella cilotitia .

According to GTDB R06-RS202, this genus belongs to the family _B.

Description of *Candidatus* Expecia adluvitrix sp. nov.

Candidatus Expecia adluvitrix (NL. fem. n. *adluvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-744 sp005885515*. The type genome for the species is the GenBank assembly GCA_005885515.1. The GC content of the type genome is 70.3 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Expecia gen. nov.

Candidatus Expecia (NL. fem. n. *Expecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-744*. The type species for the genus is *Candidatus* Expecia adluvitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expecia adnubigena sp. nov.

Candidatus Expecia adnubigena (NL. fem. n. *adnubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-744 sp005884115*. The type genome for the species is the GenBank assembly GCA_005884115.1. The GC content of the type genome is 69.33 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Expecia adpacax sp. nov.

Candidatus Expecia adpacax (NL. fem. n. *adpacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-744 sp003151895*. The type genome for the species is the GenBank assembly GCA_003151895.1. The GC content of the type genome is 67.72 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Expecia conigilega sp. nov.

Candidatus Expecia conigilega (NL. fem. n. *conigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-744 sp009781575*. The type genome for the species is the GenBank assembly GCA_009781575.1. The GC content of the type genome is 72.06 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Expecia coturitoga sp. nov.

Candidatus Expecia coturitoga (NL. fem. n. *coturitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-744 sp903970315*. The type genome for the species is the GenBank assembly GCA_903970315.1. The GC content of the type genome is 68.06 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Expecia holovicula sp. nov.

Candidatus Expecia holovicula (NL. fem. n. *holovicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-744 sp903970125*. The type genome for the species is the GenBank assembly GCA_903970125.1. The GC content of the type genome is 66.87 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Expecia immobatio sp. nov.

Candidatus Expecia immobatio (NL. fem. n. *immobatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-744 sp013815355*. The type genome for the species is the GenBank assembly GCA_013815355.1. The GC content of the type genome is 68.66 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Expecia notacimonia sp. nov.

Candidatus Expecia notacimonia (NL. fem. n. *notacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-744 sp003134675*. The type genome for the species is the GenBank assembly GCA_003134675.1. The GC content of the type genome is 67.39 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Expenaria amnigimonia sp. nov.

Candidatus Expenaria amnigimonia (NL. fem. n. *amnigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAN01 sp009780185*. The type genome for the species is the GenBank assembly GCA_009780185.1. The GC content of the type genome is 43.77 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Expenaria gen. nov.

Candidatus Expenaria (NL. fem. n. *Expenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAN01*. The type species for the genus is *Candidatus* Expenaria

amnigimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Expenaria ludimitudo sp. nov.

Candidatus Expenaria ludimitudo (NL. fem. n. *ludimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAN01 sp009781725*. The type genome for the species is the GenBank assembly GCA_009781725.1. The GC content of the type genome is 45.27 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Expenaria regifibula sp. nov.

Candidatus Expenaria regifibula (NL. fem. n. *regifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAN01 sp009785605*. The type genome for the species is the GenBank assembly GCA_009785605.1. The GC content of the type genome is 45.58 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Expenella defenessa sp. nov.

Candidatus Expenella defenessa (NL. fem. n. *defenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYVF01 sp012517325*. The type genome for the species is the GenBank assembly GCA_012517325.1. The GC content of the type genome is 61.48 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Expenella gen. nov.

Candidatus Expenella (NL. fem. n. *Expenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYVF01*. The type species for the genus is *Candidatus* Expenella defenessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1099*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cululosaceae.

Description of *Candidatus* Expenia omnipitoga sp. nov.

Candidatus Expenia omnipitoga (NL. fem. n. *omnipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-154 sp005879655*. The type genome for the species is the GenBank assembly GCA_005879655.1. The GC content of the type genome is 49.76 % and the genome length is 5.89 Mbp.

Description of *Candidatus* Expenia gen. nov.

Candidatus Expenia (NL. fem. n. *Expenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-154*. The type species for the genus is *Candidatus* Expenia omnipitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expenida tirunousia sp. nov.

Candidatus Expenida tirunousia (NL. fem. n. *tirunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMOA01 sp014378225*. The type genome for the species is the GenBank assembly GCA_014378225.1. The GC content of the type genome is 55.79 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Expenida gen. nov.

Candidatus Expenida (NL. fem. n. *Expenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMOA01*. The type species for the genus is *Candidatus* Expenida tirunousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expenosa defesitoga sp. nov.

Candidatus Expenosa defesitoga (NL. fem. n. *defesitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSHX01 sp011055965*. The type genome for the species is the GenBank assembly GCA_011055965.1. The GC content of the type genome is 70.51 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Expenosa gen. nov.

Candidatus Expenosa (NL. fem. n. *Expenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSHX01*. The type species for the genus is *Candidatus* Expenosa defesitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expenula colubibra sp. nov.

Candidatus Expenula colubibra (NL. fem. n. *colubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHEG01 sp002842835*. The type genome for the species is the GenBank assembly GCA_002842835.1. The GC content of the type genome is 68.56 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Expenula gen. nov.

Candidatus Expenula (NL. fem. n. *Expenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHEG01*. The type species for the genus is *Candidatus* Expenula colubibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expisaria cerevousia sp. nov.

Candidatus Expisaria cerevousia (NL. fem. n. *cerevousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA999 sp012031145*. The type genome for the species is the GenBank assembly GCA_012031145.1. The GC content of the type genome is 53.55 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Expisaria gen. nov.

Candidatus Expisaria (NL. fem. n. *Expisaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA999*. The type species for the genus is *Candidatus* Expisaria cerevousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expisaria divoledo sp. nov.

Candidatus Expisaria divoledo (NL. fem. n. *divoledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA999 sp002291895*. The type genome for the species is the GenBank assembly GCA_002291895.1. The GC content of the type genome is 56.99 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Expisella secunessa sp. nov.

Candidatus Expisella secunessa (NL. fem. n. *secunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1418 sp900551595*. The type genome for the species is the GenBank assembly GCA_900551595.1. The GC content of the type genome is 49.49 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Expisella gen. nov.

Candidatus Expisella (NL. fem. n. *Expisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UMGS1418*. The type species for the genus is *Candidatus* Expisella secunessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expisida defesatica sp. nov.

Candidatus Expisida defesatica (NL. fem. n. *defesatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDAZ01 sp013695175*. The type genome for the species is the GenBank assembly GCA_013695175.1. The GC content of the type genome is 35.58 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Expisida gen. nov.

Candidatus Expisida (NL. fem. n. *Expisida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDAZ01*. The type species for the genus is *Candidatus* Expisida defesatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expisosa lanigimonas sp. nov.

Candidatus Expisosa lanigimonas (NL. fem. n. *lanigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABYJX01 sp902519405*. The type genome for the species is the GenBank assembly GCA_902519405.1. The GC content of the type genome is 42.18 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Expisosa gen. nov.

Candidatus Expisosa (NL. fem. n. *Expisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABYJX01*. The type species for the genus is *Candidatus* Expisosa lanigimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expisula accumicella sp. nov.

Candidatus Expisula accumicella (NL. fem. n. *accumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWF01 sp903864575*. The type genome for the species is the GenBank assembly GCA_903864575.1. The GC content of the type genome is 67.33 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Expisula gen. nov.

Candidatus Expisula (NL. fem. n. *Expisula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWF01*. The type species for the genus is *Candidatus* Expisula accumicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Expisula betacatio sp. nov.

Candidatus Expisula betacatio (NL. fem. n. *betacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWF01 sp902806345*. The type genome for the species is the GenBank assembly GCA_902806345.1. The GC content of the type genome is 71.22 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Expopana viginimonas sp. nov.

Candidatus Expopana viginimonas (NL. fem. n. *viginimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J017 sp003695915*. The type genome for the species is the GenBank assembly GCA_003695915.1. The GC content of the type genome is 54.77 % and the

genome length is 3.71 Mbp.

Description of *Candidatus* Expopana gen. nov.

Candidatus Expopana (NL. fem. n. *Expopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J017*. The type species for the genus is *Candidatus* Expopana viginimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8639*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locelidaceae.

Description of *Candidatus* Expoparia invesilega sp. nov.

Candidatus Expoparia invesilega (NL. fem. n. *invesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMPS01 sp014377395*. The type genome for the species is the GenBank assembly GCA_014377395.1. The GC content of the type genome is 52.21 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Expoparia gen. nov.

Candidatus Expoparia (NL. fem. n. *Expoparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMPS01*. The type species for the genus is *Candidatus* Expoparia invesilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expopella excerigena sp. nov.

Candidatus Expopella excerigena (NL. fem. n. *excerigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACTMI01 sp014584695*. The type genome for the species is the GenBank assembly GCA_014584695.1. The GC content of the type genome is 71.9 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Expopella gen. nov.

Candidatus Expopella (NL. fem. n. *Expopella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACTMI01*. The type species for the genus is *Candidatus* Expopella excerigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5704*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovidaceae.

Description of *Candidatus* Expopella viragax sp. nov.

Candidatus Expopella viragax (NL. fem. n. *viragax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACTMI01 sp011525905*. The type genome for the species is the GenBank assembly GCA_011525905.1. The GC content of the type genome is 73.41 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Expopia pedificula sp. nov.

Candidatus Expopia pedificula (NL. fem. n. *pedificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LN3S51 sp007855645*. The type genome for the species is the GenBank assembly RS_GCF_007855645.1. The GC content of the type genome is 59.07 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Expopia gen. nov.

Candidatus Expopia (NL. fem. n. *Expopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LN3S51*. The type species for the genus is *Candidatus* Expopia pedificula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expopida recucifica sp. nov.

Candidatus Expopida recucifica (NL. fem. n. *recucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11710 sp003510435*. The type genome for the species is the GenBank assembly GCA_003510435.1. The GC content of the type genome is 34.82 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Expopida gen. nov.

Candidatus Expopida (NL. fem. n. *Expopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11710*. The type species for the genus is *Candidatus* Expopida recucifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Expoposa argitatica sp. nov.

Candidatus Expoposa argitatica (NL. fem. n. *argitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WYBT01 sp011525785*. The type genome for the species is the GenBank assembly GCA_011525785.1. The GC content of the type genome is 70.14 % and the genome length is 6.82 Mbp.

Description of *Candidatus* Expoposa gen. nov.

Candidatus Expoposa (NL. fem. n. *Expoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WYBT01*. The type species for the genus is *Candidatus* Expoposa argitatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Expopula visocessa sp. nov.

Candidatus Expopula visocessa (NL. fem. n. *visocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R4HLG17 sp003012345*. The type genome for the species is the GenBank assembly RS_GCF_003012345.1. The GC content of the type genome is 55.07 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Expopula gen. nov.

Candidatus Expopula (NL. fem. n. *Expopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *R4HLG17*. The type species for the genus is *Candidatus* Expopula visocessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expugella subadibula sp. nov.

Candidatus Expugella subadibula (NL. fem. n. *subadibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSM105185 sp009695605*. The type genome for the species is the GenBank assembly RS_GCF_009695605.1. The GC content of the type genome is 30.57 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Expugella gen. nov.

Candidatus Expugella (NL. fem. n. *Expugella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSM105185*. The type species for the genus is *Candidatus* Expugella subadibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expugida insuritio sp. nov.

Candidatus Expugida insuritio (NL. fem. n. *insuritio* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWI01 sp902806355*. The type genome for the species is the GenBank assembly GCA_902806355.1. The GC content of the type genome is 62.7 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Expugida gen. nov.

Candidatus Expugida (NL. fem. n. *Expugida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWI01*. The type species for the genus is *Candidatus* Expugida insuritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Expugosa octodilega sp. nov.

Candidatus Expugosa octodilega (NL. fem. n. *octodilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RCIZ01 sp003666685*. The type genome for the species is the GenBank assembly RS_GCF_003666685.1. The GC content of the type genome is 64.45 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Expugosa gen. nov.

Candidatus Expugosa (NL. fem. n. *Expugosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RCIZ01*. The type species for the genus is *Candidatus* Expugosa octodilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expugula diluvax sp. nov.

Candidatus Expugula diluvax (NL. fem. n. *diluvax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-12 sp001787455*. The type genome for the species is the GenBank assembly GCA_001787455.1. The GC content of the type genome is 38.78 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Expugula gen. nov.

Candidatus Expugula (NL. fem. n. *Expugula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-12*. The type species for the genus is *Candidatus* Expugula diluvax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LOWO2-01-FULL-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifanaceae.

Description of *Candidatus* Expurosa adporilega sp. nov.

Candidatus Expurosa adporilega (NL. fem. n. *adporilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZCR01 sp012516175*. The type genome for the species is the GenBank assembly GCA_012516175.1. The GC content of the type genome is 33.51 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Expurosa gen. nov.

Candidatus Expurosa (NL. fem. n. *Expurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZCR01*. The type species for the genus is *Candidatus* Expurosa adporilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Expurosa conigicula sp. nov.

Candidatus Expurosa conigicula (NL. fem. n. *conigicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZCR01 sp012513195*. The type genome for the species is the GenBank assembly GCA_012513195.1. The GC content of the type genome is 33.28 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Expurula delecago sp. nov.

Candidatus Expurula delecago (NL. fem. n. *delecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2701545 sp002701545*. The type genome for the species is the GenBank assembly GCA_002701545.1. The GC content of the type genome is 56.07 % and the genome length is 7.8 Mbp.

Description of *Candidatus* Expurula gen. nov.

Candidatus Expurula (NL. fem. n. *Expurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2701545*. The type species for the genus is *Candidatus* Expurula delecago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsanana rorulastra sp. nov.

Candidatus Exsanana rorulastra (NL. fem. n. *rorulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MGR-bin208 sp013696395*. The type genome for the species is the GenBank assembly GCA_013696395.1. The GC content of the type genome is 38.1 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Exsanana gen. nov.

Candidatus Exsanana (NL. fem. n. *Exsanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *MGR-bin208*. The type species for the genus is *Candidatus* Exsanana rorulastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsanaria vehicicula sp. nov.

Candidatus Exsanaria vehicicula (NL. fem. n. *vehicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITDR01 sp903891165*. The type genome for the species is the GenBank assembly GCA_903891165.1. The GC content of the type genome is 62.99 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Exsanaria gen. nov.

Candidatus Exsanaria (NL. fem. n. *Exsanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITDR01*. The type species for the genus is *Candidatus* Exsanaria vehicicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXON01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucellaceae.

Description of *Candidatus* Exsanella exorbitudo sp. nov.

Candidatus Exsanella exorbitudo (NL. fem. n. *exorbitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-336 sp003155335*. The type genome for the species is the GenBank assembly GCA_003155335.1. The GC content of the type genome is 66.93 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Exsanella gen. nov.

Candidatus Exsanella (NL. fem. n. *Exsanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-336*. The type species for the genus is *Candidatus* Exsanella

exorbitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Exsanellaceae.

Description of *Candidatus* Exsanellaceae fam. nov.

Candidatus Exsanellaceae (NL. fem. n. *Exsanellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-336.* The type genus for the taxon is *Candidatus* Exsanella .

According to the original version of GTDB R06-RS202, this family belongs to the order *Fen-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Exsanellales.

Description of *Candidatus* Exsanellales ord. nov.

Candidatus Exsanellales (NL. fem. n. *Exsanellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-336.* The type genus for the taxon is *Candidatus* Exsanella .

According to the GTDB R06-RS202, this order belongs to the class *Vicinamibacteria*.

Description of *Candidatus* Exsanida bisulatio sp. nov.

Candidatus Exsanida bisulatio (NL. fem. n. *bisulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1952 sp004144185*. The type genome for the species is the GenBank assembly GCA_004144185.1. The GC content of the type genome is 52.43 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Exsanida gen. nov.

Candidatus Exsanida (NL. fem. n. *Exsanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1952*. The type species for the genus is *Candidatus* Exsanida bisulatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsanida peracousia sp. nov.

Candidatus Exsanida peracousia (NL. fem. n. *peracousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1952 sp002336725*. The type genome for the species is the GenBank assembly GCA_002336725.1. The GC content of the type genome is 53.69 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Exsanosa pinigedo sp. nov.

Candidatus Exsanosa pinigedo (NL. fem. n. *pinigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-FULL-44-23 sp001773775*. The type genome for the species is the GenBank assembly GCA_001773775.1. The GC content of the type genome is 43.74 % and the genome length is 1.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Exsanosa gen. nov.

Candidatus Exsanosa (NL. fem. n. *Exsanosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB1-FULL-44-23*. The type species for the genus is *Candidatus* Exsanosa pinigedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsanula levidousia sp. nov.

Candidatus Exsanula levidousia (NL. fem. n. *levidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABXJW01 sp013375395*. The type genome for the species is the GenBank assembly GCA_013375395.1. The GC content of the type genome is 49.54 %

and the genome length is 4.25 Mbp.

Description of *Candidatus* Exsanula gen. nov.

Candidatus Exsanula (NL. fem. n. *Exsanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABXJW01*. The type species for the genus is *Candidatus* Exsanula levidousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *C00003060*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubidaceae.

Description of *Candidatus* Exsataria anxifibra sp. nov.

Candidatus Exsataria anxifibra (NL. fem. n. *anxifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2685965 sp002685965*. The type genome for the species is the GenBank assembly GCA_002685965.1. The GC content of the type genome is 65.06 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Exsataria gen. nov.

Candidatus Exsataria (NL. fem. n. *Exsataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2685965*. The type species for the genus is *Candidatus* Exsataria anxifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002748355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisiaceae.

Description of *Candidatus* Exsatia domabitrix sp. nov.

Candidatus Exsatia domabitrix (NL. fem. n. *domabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIULK01 sp903899885*. The type genome for the species is the

GenBank assembly GCA_903899885.1. The GC content of the type genome is 64.36 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Exsatia gen. nov.

Candidatus Exsatia (NL. fem. n. *Exsatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIULK01*. The type species for the genus is *Candidatus* Exsatia domabitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsatida adsenitudo sp. nov.

Candidatus Exsatida adsenitudo (NL. fem. n. *adsenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUAL01 sp012960835*. The type genome for the species is the GenBank assembly GCA_012960835.1. The GC content of the type genome is 33.71 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Exsatida gen. nov.

Candidatus Exsatida (NL. fem. n. *Exsatida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUAL01*. The type species for the genus is *Candidatus* Exsatida adsenitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Exsatida vitabimonia sp. nov.

Candidatus Exsatida vitabimonia (NL. fem. n. *vitabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUAL01 sp014381465*. The type genome for the species is the GenBank assembly GCA_014381465.1. The GC content of the type genome is 32.38 %

and the genome length is 1.98 Mbp.

Description of *Candidatus* Exsatosa immobitica sp. nov.

Candidatus Exsatosa immobitica (NL. fem. n. *immobitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTJO01 sp011524805*. The type genome for the species is the GenBank assembly GCA_011524805.1. The GC content of the type genome is 49.38 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Exsatosa gen. nov.

Candidatus Exsatosa (NL. fem. n. *Exsatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTJO01*. The type species for the genus is *Candidatus* Exsatosa immobitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsatula vacilisca sp. nov.

Candidatus Exsatula vacilisca (NL. fem. n. *vacilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *A37T11 sp900109895*. The type genome for the species is the GenBank assembly RS_GCF_900109895.1. The GC content of the type genome is 43.07 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Exsatula gen. nov.

Candidatus Exsatula (NL. fem. n. *Exsatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *A37T11*. The type species for the genus is *Candidatus* Exsatula vacilisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsisana anamnousia sp. nov.

Candidatus Exsisana anamnousia (NL. fem. n. *anamnousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6054 sp002429045*. The type genome for the species is the GenBank assembly GCA_002429045.1. The GC content of the type genome is 67.59 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Exsisana gen. nov.

Candidatus Exsisana (NL. fem. n. *Exsisana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6054*. The type species for the genus is *Candidatus* Exsisana anamnousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Exsisana antegousia sp. nov.

Candidatus Exsisana antegousia (NL. fem. n. *antegousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6054 sp003696675*. The type genome for the species is the GenBank assembly GCA_003696675.1. The GC content of the type genome is 66.0 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Exsisaria colubitura sp. nov.

Candidatus Exsisaria colubitura (NL. fem. n. *colubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUUB01 sp012031215*. The type genome for the species is the GenBank assembly GCA_012031215.1. The GC content of the type genome is 48.21 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Exsisaria gen. nov.

Candidatus Exsisaria (NL. fem. n. *Exsisaria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUUB01*. The type species for the genus is *Candidatus* Exsisaria colubitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsisella algebigena sp. nov.

Candidatus Exsisella algebigena (NL. fem. n. *algebigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9264 sp002709225*. The type genome for the species is the GenBank assembly GCA_002709225.1. The GC content of the type genome is 56.25 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Exsisella gen. nov.

Candidatus Exsisella (NL. fem. n. *Exsisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9264*. The type species for the genus is *Candidatus* Exsisella algebigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsisella detumimonas sp. nov.

Candidatus Exsisella detumimonas (NL. fem. n. *detumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9264 sp002724245*. The type genome for the species is the GenBank assembly GCA_002724245.1. The GC content of the type genome is 56.56 % and the genome length is 7.79 Mbp.

Description of *Candidatus* Exsisella rumifessa sp. nov.

Candidatus Exsisella rumifessa (NL. fem. n. *rumifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9264 sp002702965*. The type genome for the species is the GenBank assembly GCA_002702965.1. The GC content of the type genome is 60.01 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Exsisia cituvigena sp. nov.

Candidatus Exsisia cituvigena (NL. fem. n. *cituvigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-190-2 sp002050025*. The type genome for the species is the GenBank assembly GCA_002050025.1. The GC content of the type genome is 45.82 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Exsisia gen. nov.

Candidatus Exsisia (NL. fem. n. *Exsisia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-190-2*. The type species for the genus is *Candidatus* Exsisia cituvigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsisosa recocitas sp. nov.

Candidatus Exsisosa recocitas (NL. fem. n. *recocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTFU01 sp011389435*. The type genome for the species is the GenBank assembly GCA_011389435.1. The GC content of the type genome is 42.16 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Exsisosa gen. nov.

Candidatus Exsisosa (NL. fem. n. *Exsisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTFU01*. The type species for the genus is *Candidatus* Exsisosa recocitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1551*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidariaceae.

Description of *Candidatus* Exsisula occalitia sp. nov.

Candidatus Exsisula occalitia (NL. fem. n. *occalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDQZ01 sp013041975*. The type genome for the species is the GenBank assembly GCA_013041975.1. The GC content of the type genome is 46.44 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Exsisula gen. nov.

Candidatus Exsisula (NL. fem. n. *Exsisula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDQZ01*. The type species for the genus is *Candidatus* Exsisula occalitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsolana apraritura sp. nov.

Candidatus Exsolana apraritura (NL. fem. n. *apraritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHP01 sp013151785*. The type genome for the species is the GenBank assembly GCA_013151785.1. The GC content of the type genome is 43.37 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Exsolana gen. nov.

Candidatus Exsolana (NL. fem. n. *Exsolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHP01*. The type species for the genus is *Candidatus* Exsolana apraritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family

JdFR-85. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benepiaceae.

Description of *Candidatus* Exsolana intesigena sp. nov.

Candidatus Exsolana intesigena (NL. fem. n. *intesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHP01 sp011321725*. The type genome for the species is the GenBank assembly GCA_011321725.1. The GC content of the type genome is 47.38 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Exsolaria revecessa sp. nov.

Candidatus Exsolaria revecessa (NL. fem. n. *revecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-378 sp003246295*. The type genome for the species is the GenBank assembly GCA_003246295.1. The GC content of the type genome is 36.21 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Exsolaria gen. nov.

Candidatus Exsolaria (NL. fem. n. *Exsolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-378*. The type species for the genus is *Candidatus* Exsolaria revecessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsolella halucitoga sp. nov.

Candidatus Exsolella halucitoga (NL. fem. n. *halucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUSB01 sp012840625*. The type genome for the species is the GenBank assembly GCA_012840625.1. The GC content of the type genome is 44.68 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Exsolella gen. nov.

Candidatus Exsolella (NL. fem. n. *Exsolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUSB01*. The type species for the genus is *Candidatus* Exsolella halucitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsolida insusitio sp. nov.

Candidatus Exsolida insusitio (NL. fem. n. *insusitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RHKY01 sp008363385*. The type genome for the species is the GenBank assembly GCA_008363385.1. The GC content of the type genome is 73.1 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Exsolida gen. nov.

Candidatus Exsolida (NL. fem. n. *Exsolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RHKY01*. The type species for the genus is *Candidatus* Exsolida insusitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenebosaceae.

Description of *Candidatus* Exsolosa exsupigena sp. nov.

Candidatus Exsolosa exsupigena (NL. fem. n. *exsupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J078 sp003695205*. The type genome for the species is the GenBank assembly GCA_003695205.1. The GC content of the type genome is 61.79 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Exsolosa gen. nov.

Candidatus Exsolosa (NL. fem. n. *Exsolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J078*. The type species for the genus is *Candidatus* Exsolosa exsupigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsolula nubigisca sp. nov.

Candidatus Exsolula nubigisca (NL. fem. n. *nubigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1540 sp900552775*. The type genome for the species is the GenBank assembly GCA_900552775.1. The GC content of the type genome is 43.77 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Exsolula gen. nov.

Candidatus Exsolula (NL. fem. n. *Exsolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1540*. The type species for the genus is *Candidatus* Exsolula nubigisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1883*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defasiaceae.

Description of *Candidatus* Exsomana ammixitoga sp. nov.

Candidatus Exsomana ammixitoga (NL. fem. n. *ammixitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJNA01 sp903821805*. The type genome for the species is the GenBank assembly GCA_903821805.1. The GC content of the type genome is 31.23 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Exsomana gen. nov.

Candidatus Exsomana (NL. fem. n. *Exsomana* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJNA01*. The type species for the genus is *Candidatus* Exsomana ammixitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsomaria invicivita sp. nov.

Candidatus Exsomaria invicivita (NL. fem. n. *invicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PR03 sp003576805*. The type genome for the species is the GenBank assembly GCA_003576805.1. The GC content of the type genome is 73.14 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Exsomaria gen. nov.

Candidatus Exsomaria (NL. fem. n. *Exsomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PR03*. The type species for the genus is *Candidatus* Exsomaria invicivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifiaceae.

Description of *Candidatus* Exsomia adlecitica sp. nov.

Candidatus Exsomia adlecitica (NL. fem. n. *adlecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNFI01 sp014384665*. The type genome for the species is the GenBank assembly GCA_014384665.1. The GC content of the type genome is 32.72 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Exsomia gen. nov.

Candidatus Exsomia (NL. fem. n. *Exsomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNFI01*. The type species for the genus is *Candidatus* Exsomia adlecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JGIOTU-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimetanaceae.

Description of *Candidatus* Exsomida detenitura sp. nov.

Candidatus Exsomida detenitura (NL. fem. n. *detenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin107 sp009839615*. The type genome for the species is the GenBank assembly GCA_009839615.1. The GC content of the type genome is 61.08 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Exsomida gen. nov.

Candidatus Exsomida (NL. fem. n. *Exsomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin107*. The type species for the genus is *Candidatus* Exsomida detenitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turifosaceae.

Description of *Candidatus* Exsomida feficigena sp. nov.

Candidatus Exsomida feficigena (NL. fem. n. *feficigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin107 sp002238965*. The type genome for the species is the GenBank assembly GCA_002238965.1. The GC content of the type genome is 59.46 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Exsomida risibastra sp. nov.

Candidatus Exsomida risibastra (NL. fem. n. *risibastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin107 sp011523725*. The type genome for the species is the GenBank assembly GCA_011523725.1. The GC content of the type genome is 60.79 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Exsomula ammulisca sp. nov.

Candidatus Exsomula ammulisca (NL. fem. n. *ammulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PSRL01 sp003176035*. The type genome for the species is the GenBank assembly GCA_003176035.1. The GC content of the type genome is 48.54 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Exsomula gen. nov.

Candidatus Exsomula (NL. fem. n. *Exsomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PSRL01*. The type species for the genus is *Candidatus* Exsomula ammulisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsorana vacilitas sp. nov.

Candidatus Exsorana vacilitas (NL. fem. n. *vacilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-544 sp003251175*. The type genome for the species is the GenBank assembly GCA_003251175.1. The GC content of the type genome is 69.88 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Exsorana gen. nov.

Candidatus Exsorana (NL. fem. n. *Exsorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SZUA-544*. The type species for the genus is *Candidatus* Exsorana vacilitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Exsoria inrefisca sp. nov.

Candidatus Exsoria inrefisca (NL. fem. n. *inrefisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVSF01 sp014534085*. The type genome for the species is the GenBank assembly GCA_014534085.1. The GC content of the type genome is 54.75 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Exsoria gen. nov.

Candidatus Exsoria (NL. fem. n. *Exsoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACVSF01*. The type species for the genus is *Candidatus* Exsoria inrefisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsoria tranvedo sp. nov.

Candidatus Exsoria tranvedo (NL. fem. n. *tranvedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVSF01 sp014534385*. The type genome for the species is the GenBank assembly GCA_014534385.1. The GC content of the type genome is 56.79 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Exsorula dimidigena sp. nov.

Candidatus Exsorula dimidigena (NL. fem. n. *dimidigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *AG-363-P08 sp003278365*. The type genome for the species is the GenBank assembly GCA_003278365.1. The GC content of the type genome is 39.96 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Exsorula gen. nov.

Candidatus Exsorula (NL. fem. n. *Exsorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-363-P08*. The type species for the genus is *Candidatus* Exsorula dimidigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsorula luceletta sp. nov.

Candidatus Exsorula luceletta (NL. fem. n. *luceletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-P08 sp003280185*. The type genome for the species is the GenBank assembly GCA_003280185.1. The GC content of the type genome is 40.73 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Exsorula nidificella sp. nov.

Candidatus Exsorula nidificella (NL. fem. n. *nidificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-P08 sp003280055*. The type genome for the species is the GenBank assembly GCA_003280055.1. The GC content of the type genome is 39.72 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Exsorula venunicula sp. nov.

Candidatus Exsorula venunicula (NL. fem. n. *venunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-P08 sp003278195*. The type genome for the species is the GenBank assembly GCA_003278195.1. The GC content of the type genome is 39.62 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Exsufaria ecastimonia sp. nov.

Candidatus Exsufaria ecastimonia (NL. fem. n. *ecastimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACOMS01 sp014324115*. The type genome for the species is the GenBank assembly GCA_014324115.1. The GC content of the type genome is 54.64 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Exsufaria gen. nov.

Candidatus Exsufaria (NL. fem. n. *Exsufaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACOMS01*. The type species for the genus is *Candidatus* Exsufaria ecastimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsufaria echidibra sp. nov.

Candidatus Exsufaria echidibra (NL. fem. n. *echidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACOMS01 sp013002305*. The type genome for the species is the GenBank assembly GCA_013002305.1. The GC content of the type genome is 50.72 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Exsufaria taxilax sp. nov.

Candidatus Exsufaria taxilax (NL. fem. n. *taxilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACOMS01 sp014238285*. The type genome for the species is the GenBank assembly GCA_014238285.1. The GC content of the type genome is 47.07 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Exsufia demigitica sp. nov.

Candidatus Exsufia demigitica (NL. fem. n. *demigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OR-1 sp000813145*. The type genome for the species is the GenBank assembly RS_GCF_000813145.1. The GC content of the type genome is 54.18 % and the genome length is 4.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Exsufia gen. nov.

Candidatus Exsufia (NL. fem. n. *Exsufia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OR-1*. The type species for the genus is *Candidatus* Exsufia demigitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsufia tomacibula sp. nov.

Candidatus Exsufia tomacibula (NL. fem. n. *tomacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OR-1 sp009684525*. The type genome for the species is the GenBank assembly GCA_009684525.1. The GC content of the type genome is 58.06 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Exsufosa capabastra sp. nov.

Candidatus Exsufosa capabastra (NL. fem. n. *capabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ATWF01 sp000421105*. The type genome for the species is the GenBank assembly RS_GCF_000421105.1. The GC content of the type genome is 48.53 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Exsufosa gen. nov.

Candidatus Exsufosa (NL. fem. n. *Exsufosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ATWF01*. The type species for the genus is *Candidatus* Exsufosa

capabastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsufula vitabatio sp. nov.

Candidatus Exsufula vitabatio (NL. fem. n. *vitabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPNT01 sp004959855*. The type genome for the species is the GenBank assembly RS_GCF_004959855.1. The GC content of the type genome is 61.85 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Exsufula gen. nov.

Candidatus Exsufula (NL. fem. n. *Exsufula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPNT01*. The type species for the genus is *Candidatus* Exsufula vitabatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsupana adpecax sp. nov.

Candidatus Exsupana adpecax (NL. fem. n. *adpecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2862085 sp007751475*. The type genome for the species is the GenBank assembly RS_GCF_007751475.1. The GC content of the type genome is 67.03 % and the genome length is 7.72 Mbp.

Description of *Candidatus* Exsupana gen. nov.

Candidatus Exsupana (NL. fem. n. *Exsupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2862085*. The type species for the genus is *Candidatus* Exsupana adpecax .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GCA-002686595. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Exsupana favilago sp. nov.

Candidatus Exsupana favilago (NL. fem. n. *favilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2862085 sp002862085*. The type genome for the species is the GenBank assembly GCA_002862085.1. The GC content of the type genome is 70.79 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Exsuparia arancentia sp. nov.

Candidatus Exsuparia arancentia (NL. fem. n. *arancentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVT01 sp009785715*. The type genome for the species is the GenBank assembly GCA_009785715.1. The GC content of the type genome is 69.24 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Exsuparia gen. nov.

Candidatus Exsuparia (NL. fem. n. *Exsuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVT01*. The type species for the genus is *Candidatus* Exsuparia arancentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-688*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Attubulaceae.

Description of *Candidatus* Exsuposa humecessa sp. nov.

Candidatus Exsuposa humecessa (NL. fem. n. *humecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZFZ01 sp012511485*. The type genome for the species is the

GenBank assembly GCA_012511485.1. The GC content of the type genome is 44.06 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Exsuposa gen. nov.

Candidatus Exsuposa (NL. fem. n. *Exsuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZFZ01*. The type species for the genus is *Candidatus* Exsuposa humecessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsurana divoriforma sp. nov.

Candidatus Exsurana divoriforma (NL. fem. n. *divoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6178 sp002422205*. The type genome for the species is the GenBank assembly GCA_002422205.1. The GC content of the type genome is 52.75 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Exsurana gen. nov.

Candidatus Exsurana (NL. fem. n. *Exsurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6178*. The type species for the genus is *Candidatus* Exsurana divoriforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipariaceae.

Description of *Candidatus* Exsuraria utricessa sp. nov.

Candidatus Exsuraria utricessa (NL. fem. n. *utricessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2022 sp002335495*. The type genome for the species is the GenBank assembly GCA_002335495.1. The GC content of the type genome is 38.08 %

and the genome length is 0.82 Mbp.

Description of *Candidatus* Exsuraria gen. nov.

Candidatus Exsuraria (NL. fem. n. *Exsuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2022*. The type species for the genus is *Candidatus* Exsuraria utricessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Exsuria admutatica sp. nov.

Candidatus Exsuria admutatica (NL. fem. n. *admutatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBAK01 sp005882445*. The type genome for the species is the GenBank assembly GCA_005882445.1. The GC content of the type genome is 68.87 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Exsuria gen. nov.

Candidatus Exsuria (NL. fem. n. *Exsuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBAK01*. The type species for the genus is *Candidatus* Exsuria admutatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NP-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notabosaceae.

Description of *Candidatus* Exsuria cicarigena sp. nov.

Candidatus Exsuria cicarigena (NL. fem. n. *cicarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBAK01 sp005882275*. The type genome for the species is the

GenBank assembly GCA_005882275.1. The GC content of the type genome is 68.94 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Exsurida impinago sp. nov.

Candidatus Exsurida impinago (NL. fem. n. *impinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-33 sp003233175*. The type genome for the species is the GenBank assembly GCA_003233175.1. The GC content of the type genome is 57.8 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Exsurida gen. nov.

Candidatus Exsurida (NL. fem. n. *Exsurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-33*. The type species for the genus is *Candidatus* Exsurida impinago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsurula tranvugo sp. nov.

Candidatus Exsurula tranvugo (NL. fem. n. *tranvugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1976 sp900556765*. The type genome for the species is the GenBank assembly GCA_900556765.1. The GC content of the type genome is 49.13 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Exsurula gen. nov.

Candidatus Exsurula (NL. fem. n. *Exsurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1976*. The type species for the genus is *Candidatus* Exsurula tranvugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exsurula vitifitura sp. nov.

Candidatus Exsurula vitifitura (NL. fem. n. *vitifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1976 sp900769535*. The type genome for the species is the GenBank assembly RS_GCF_900769535.1. The GC content of the type genome is 43.73 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Exsusana vanitibra sp. nov.

Candidatus Exsusana vanitibra (NL. fem. n. *vanitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2724185 sp002724185*. The type genome for the species is the GenBank assembly GCA_002724185.1. The GC content of the type genome is 44.59 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Exsusana gen. nov.

Candidatus Exsusana (NL. fem. n. *Exsusana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2724185*. The type species for the genus is *Candidatus* Exsusana vanitibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA868*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotanaceae.

Description of *Candidatus* Exsusaria arrugitica sp. nov.

Candidatus Exsusaria arrugitica (NL. fem. n. *arrugitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1Sed10-231 sp003551305*. The type genome for the species is the GenBank assembly GCA_003551305.1. The GC content of the type genome is 66.44 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Exsusaria gen. nov.

Candidatus Exsusaria (NL. fem. n. *Exsusaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1Sed10-231*. The type species for the genus is *Candidatus* Exsusaria arrugitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rarefulaceae.

Description of *Candidatus* Exsusia elastiforma sp. nov.

Candidatus Exsusia elastiforma (NL. fem. n. *elastiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDYX01 sp902810735*. The type genome for the species is the GenBank assembly RS_GCF_902810735.1. The GC content of the type genome is 61.13 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Exsusia gen. nov.

Candidatus Exsusia (NL. fem. n. *Exsusia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDYX01*. The type species for the genus is *Candidatus* Exsusia elastiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Exsusida delecimonas sp. nov.

Candidatus Exsusida delecimonas (NL. fem. n. *delecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAEQ01 sp013388755*. The type genome for the species is the GenBank assembly GCA_013388755.1. The GC content of the type genome is 62.32 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Exsusida gen. nov.

Candidatus Exsusida (NL. fem. n. *Exsusida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAEQ01*. The type species for the genus is *Candidatus* Exsusida delecimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Extibacter depecousia sp. nov.

Candidatus Extibacter depecousia (NL. fem. n. *depecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Extibacter sp001185345*. The type genome for the species is the GenBank assembly RS_GCF_001185345.1. The GC content of the type genome is 48.6 % and the genome length is 3.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Intestinal epithelium".

Description of *Candidatus* Extinaria ecastax sp. nov.

Candidatus Extinaria ecastax (NL. fem. n. *ecastax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYWY01 sp012516165*. The type genome for the species is the GenBank assembly GCA_012516165.1. The GC content of the type genome is 47.09 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Extinaria gen. nov.

Candidatus Extinaria (NL. fem. n. *Extinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYWY01*. The type species for the genus is *Candidatus* Extinaria ecastax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vaciliaceae.

Description of *Candidatus* Extinella hecatetta sp. nov.

Candidatus Extinella hecatetta (NL. fem. n. *hecatetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20-14-0-80-50-8 sp002779345*. The type genome for the species is the GenBank assembly GCA_002779345.1. The GC content of the type genome is 49.66 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Extinella gen. nov.

Candidatus Extinella (NL. fem. n. *Extinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *20-14-0-80-50-8*. The type species for the genus is *Candidatus* Extinella hecatetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-51-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenodulaceae.

Description of *Candidatus* Extinia dimacax sp. nov.

Candidatus Extinia dimacax (NL. fem. n. *dimacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-41-20 sp001801575*. The type genome for the species is the GenBank assembly GCA_001801575.1. The GC content of the type genome is 40.81 % and the genome length is 2.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Extinia gen. nov.

Candidatus Extinia (NL. fem. n. *Extinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-41-20*. The type species for the genus is *Candidatus* Extinia dimacax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Extinosa anatressa sp. nov.

Candidatus Extinosa anatressa (NL. fem. n. *anatressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1768 sp002315335*. The type genome for the species is the GenBank assembly GCA_002315335.1. The GC content of the type genome is 42.74 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Extinosa gen. nov.

Candidatus Extinosa (NL. fem. n. *Extinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1768*. The type species for the genus is *Candidatus* Extinosa anatressa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Extipana lacinicula sp. nov.

Candidatus Extipana lacinicula (NL. fem. n. *lacinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACTMJ01 sp014584705*. The type genome for the species is the GenBank assembly GCA_014584705.1. The GC content of the type genome is 61.44 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Extipana gen. nov.

Candidatus Extipana (NL. fem. n. *Extipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACTMJ01*. The type species for the genus is *Candidatus* Extipana lacinicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Extiparia desomousia sp. nov.

Candidatus Extiparia desomousia (NL. fem. n. *desomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W498 sp011170285*. The type genome for the species is the GenBank assembly GCA_011170285.1. The GC content of the type genome is 45.79 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Extiparia gen. nov.

Candidatus Extiparia (NL. fem. n. *Extiparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W498*. The type species for the genus is *Candidatus* Extiparia desomousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5760*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisellaceae.

Description of *Candidatus* Extiparia incocilenta sp. nov.

Candidatus Extiparia incocilenta (NL. fem. n. *incocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W498 sp011191875*. The type genome for the species is the GenBank assembly GCA_011191875.1. The GC content of the type genome is 46.08 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Extipella totidatio sp. nov.

Candidatus Extipella totidatio (NL. fem. n. *totidatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUOZ01 sp012034655*. The type genome for the species is the GenBank assembly GCA_012034655.1. The GC content of the type genome is 49.5 % and the genome length is 6.32 Mbp.

Description of *Candidatus* Extipella gen. nov.

Candidatus Extipella (NL. fem. n. *Extipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUOZ01*. The type species for the genus is *Candidatus* Extipella totidatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Extipia ecastitoga sp. nov.

Candidatus Extipia ecastitoga (NL. fem. n. *ecastitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDGP01 sp013821605*. The type genome for the species is the GenBank assembly GCA_013821605.1. The GC content of the type genome is 57.47 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Extipia gen. nov.

Candidatus Extipia (NL. fem. n. *Extipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDGP01*. The type species for the genus is *Candidatus* Extipia ecastitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Extipida ficulibula sp. nov.

Candidatus Extipida ficulibula (NL. fem. n. *ficulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSNA01 sp011047485*. The type genome for the species is the GenBank assembly GCA_011047485.1. The GC content of the type genome is 42.57 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Extipida gen. nov.

Candidatus Extipida (NL. fem. n. *Extipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSNA01*. The type species for the genus is *Candidatus* Extipida ficulibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solifidaceae.

Description of *Candidatus* Extiposa lapilago sp. nov.

Candidatus Extiposa lapilago (NL. fem. n. *lapilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B14-G9 sp003643935*. The type genome for the species is the GenBank assembly GCA_003643935.1. The GC content of the type genome is 46.38 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Extiposa gen. nov.

Candidatus Extiposa (NL. fem. n. *Extiposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B14-G9*. The type species for the genus is *Candidatus* Extiposa lapilago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1062*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexapariaceae.

Description of *Candidatus* Extorana indifivita sp. nov.

Candidatus Extorana indifivita (NL. fem. n. *indifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJL01 sp013298865*. The type genome for the species is the GenBank assembly GCA_013298865.1. The GC content of the type genome is 36.11 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Extorana gen. nov.

Candidatus Extorana (NL. fem. n. *Extorana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFJL01*. The type species for the genus is *Candidatus* Extorana indifivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Extoraria turifago sp. nov.

Candidatus Extoraria turifago (NL. fem. n. *turifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-299 sp003157675*. The type genome for the species is the GenBank assembly GCA_003157675.1. The GC content of the type genome is 68.78 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Extoraria gen. nov.

Candidatus Extoraria (NL. fem. n. *Extoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-299*. The type species for the genus is *Candidatus* Extoraria turifago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-181*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divorellaceae.

Description of *Candidatus* Extorella abambitudo sp. nov.

Candidatus Extorella abambitudo (NL. fem. n. *abambitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR8 sp003220195*. The type genome for the species is the GenBank assembly GCA_003220195.1. The GC content of the type genome is 68.29 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Extorella gen. nov.

Candidatus Extorella (NL. fem. n. *Extorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AR8*. The type species for the genus is *Candidatus* Extorella abambitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Extorosa novilimonia sp. nov.

Candidatus Extorosa novilimonia (NL. fem. n. *novilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAAOL01 sp009908885*. The type genome for the species is the GenBank assembly GCA_009908885.1. The GC content of the type genome is 66.48 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Extorosa gen. nov.

Candidatus Extorosa (NL. fem. n. *Extorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAAOL01*. The type species for the genus is *Candidatus* Extorosa novilimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Extunana accucessa sp. nov.

Candidatus Extunana accucessa (NL. fem. n. *accucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYE01 sp009692935*. The type genome for the species is the GenBank assembly GCA_009692935.1. The GC content of the type genome is 64.61 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Extunana gen. nov.

Candidatus Extunana (NL. fem. n. *Extunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYE01*. The type species for the genus is *Candidatus* Extunana accucessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomiaceae.

Description of *Candidatus* Extunaria invecitrix sp. nov.

Candidatus Extunaria invecitrix (NL. fem. n. *invecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2715565 sp002715565*. The type genome for the species is the GenBank assembly GCA_002715565.1. The GC content of the type genome is 28.17 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Extunaria gen. nov.

Candidatus Extunaria (NL. fem. n. *Extunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2715565*. The type species for the genus is *Candidatus* Extunaria invecitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Extunella acrobitrix sp. nov.

Candidatus Extunella acrobitrix (NL. fem. n. *acrobitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9300 sp011050615*. The type genome for the species is the GenBank assembly GCA_011050615.1. The GC content of the type genome is 42.13 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Extunella gen. nov.

Candidatus Extunella (NL. fem. n. *Extunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9300*. The type species for the genus is *Candidatus* Extunella acrobitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VadinHA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categariaceae.

Description of *Candidatus* Extunella indubimonas sp. nov.

Candidatus Extunella indubimonas (NL. fem. n. *indubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9300 sp003518245*. The type genome for the species is the GenBank assembly GCA_003518245.1. The GC content of the type genome is 39.31 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Extunia cerevitio sp. nov.

Candidatus Extunia cerevitio (NL. fem. n. *cerevitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDBO01 sp013288575*. The type genome for the species is the GenBank assembly GCA_013288575.1. The GC content of the type genome is 43.45 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Extunia gen. nov.

Candidatus Extunia (NL. fem. n. *Extunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDBO01*. The type species for the genus is *Candidatus* Extunia cerevitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *21-14-0-20-44-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monaciaceae.

Description of *Candidatus* Extunula acrolifica sp. nov.

Candidatus Extunula acrolifica (NL. fem. n. *acrolifica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YC2-7 sp012932915*. The type genome for the species is the GenBank assembly RS_GCF_012932915.1. The GC content of the type genome is 63.81 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Extunula gen. nov.

Candidatus Extunula (NL. fem. n. *Extunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YC2-7*. The type species for the genus is *Candidatus* Extunula acrolifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Extunula exheritas sp. nov.

Candidatus Extunula exheritas (NL. fem. n. *exheritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YC2-7 sp008297975*. The type genome for the species is the GenBank assembly RS_GCF_008297975.1. The GC content of the type genome is 64.3 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Exturana inlibicula sp. nov.

Candidatus Exturana inlibicula (NL. fem. n. *inlibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOJT01 sp004376485*. The type genome for the species is the GenBank assembly GCA_004376485.1. The GC content of the type genome is 45.41 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Exturana gen. nov.

Candidatus Exturana (NL. fem. n. *Exturana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SOJT01*. The type species for the genus is *Candidatus* Exturana inlibicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AE-B3A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ciminariaceae.

Description of *Candidatus* Exturana maxilugo sp. nov.

Candidatus Exturana maxilugo (NL. fem. n. *maxilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOJT01 sp004376185*. The type genome for the species is the GenBank assembly GCA_004376185.1. The GC content of the type genome is 44.8 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Exturaria capilitrix sp. nov.

Candidatus Exturaria capilitrix (NL. fem. n. *capilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHA01 sp013821315*. The type genome for the species is the GenBank assembly GCA_013821315.1. The GC content of the type genome is 35.89 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Exturaria gen. nov.

Candidatus Exturaria (NL. fem. n. *Exturaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDHA01*. The type species for the genus is *Candidatus* Exturaria capilitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exturella adtemilenta sp. nov.

Candidatus Exturella adtemilenta (NL. fem. n. *adtemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DUNF01 sp012838635*. The type genome for the species is the GenBank assembly GCA_012838635.1. The GC content of the type genome is 30.47 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Exturella gen. nov.

Candidatus Exturella (NL. fem. n. *Exturella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUNF01*. The type species for the genus is *Candidatus* Exturella adtemilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Exturella exsoritudo sp. nov.

Candidatus Exturella exsoritudo (NL. fem. n. *exsoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUNF01 sp012839485*. The type genome for the species is the GenBank assembly GCA_012839485.1. The GC content of the type genome is 29.91 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Exturia denicitica sp. nov.

Candidatus Exturia denicitica (NL. fem. n. *denicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM516 sp002869275*. The type genome for the species is the GenBank assembly GCA_002869275.1. The GC content of the type genome is 56.41 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Exturia gen. nov.

Candidatus Exturia (NL. fem. n. *Exturia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM516*. The type species for the genus is *Candidatus* Exturia denicitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-365*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipinariaceae.

Description of *Candidatus* Exturosa bonifilega sp. nov.

Candidatus Exturosa bonifilega (NL. fem. n. *bonifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-1165 sp011053085*. The type genome for the species is the GenBank assembly GCA_011053085.1. The GC content of the type genome is 51.47 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Exturosa gen. nov.

Candidatus Exturosa (NL. fem. n. *Exturosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-1165*. The type species for the genus is *Candidatus* Exturosa bonifilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exturosa scorbibra sp. nov.

Candidatus Exturosa scorbibra (NL. fem. n. *scorbibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-1165 sp013314735*. The type genome for the species is the GenBank assembly GCA_013314735.1. The GC content of the type genome is 53.89 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Exturula infelilenta sp. nov.

Candidatus Exturula infelilenta (NL. fem. n. *infelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYZF01 sp012514975*. The type genome for the species is the GenBank assembly GCA_012514975.1. The GC content of the type genome is 64.53 %

and the genome length is 4.12 Mbp.

Description of *Candidatus* Exturula gen. nov.

Candidatus Exturula (NL. fem. n. *Exturula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZF01*. The type species for the genus is *Candidatus* Exturula infelilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B51-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peracariaceae.

Description of *Candidatus* Exurrana atropicella sp. nov.

Candidatus Exurrana atropicella (NL. fem. n. *atropicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-36-11 sp002778535*. The type genome for the species is the GenBank assembly GCA_002778535.1. The GC content of the type genome is 36.19 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Exurrana gen. nov.

Candidatus Exurrana (NL. fem. n. *Exurrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-36-11*. The type species for the genus is *Candidatus* Exurrana atropicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2196*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidulaceae.

Description of *Candidatus* Exurraria malivedo sp. nov.

Candidatus Exurraria malivedo (NL. fem. n. *malivedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-250 sp003235605*. The type genome for the species is the

GenBank assembly GCA_003235605.1. The GC content of the type genome is 65.43 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Exurraria gen. nov.

Candidatus Exurraria (NL. fem. n. *Exurraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-250*. The type species for the genus is *Candidatus* Exurraria malivedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifulaceae.

Description of *Candidatus* Exurria abagmastra sp. nov.

Candidatus Exurria abagmastra (NL. fem. n. *abagmastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PD-1 sp013285385*. The type genome for the species is the GenBank assembly RS_GCF_013285385.1. The GC content of the type genome is 52.14 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Exurria gen. nov.

Candidatus Exurria (NL. fem. n. *Exurria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PD-1*. The type species for the genus is *Candidatus* Exurria abagmastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exurrida cadavetta sp. nov.

Candidatus Exurrida cadavetta (NL. fem. n. *cadavetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUGU01 sp903898785*. The type genome for the species is the GenBank assembly GCA_903898785.1. The GC content of the type genome is 65.31 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Exurrida gen. nov.

Candidatus Exurrida (NL. fem. n. *Exurrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUGU01*. The type species for the genus is *Candidatus* Exurrida cadavetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Exurrida pedepugo sp. nov.

Candidatus Exurrida pedepugo (NL. fem. n. *pedepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUGU01 sp903884105*. The type genome for the species is the GenBank assembly GCA_903884105.1. The GC content of the type genome is 62.89 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Exurrosa obtecitoga sp. nov.

Candidatus Exurrosa obtecitoga (NL. fem. n. *obtecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMNW01 sp014378345*. The type genome for the species is the GenBank assembly GCA_014378345.1. The GC content of the type genome is 57.56 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Exurrosa gen. nov.

Candidatus Exurrosa (NL. fem. n. *Exurrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMNW01*. The type species for the genus is *Candidatus* Exurrosa obtecitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ezakiella cilotitica sp. nov.

Candidatus Ezakiella cilotitica (NL. fem. n. *cilotitica* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ezakiella sp900540185*. The type genome for the species is the GenBank assembly GCA_900540185.1. The GC content of the type genome is 37.3 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Fabibacter ablepago sp. nov.

Candidatus Fabibacter ablepago (NL. fem. n. *ablepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fabibacter sp001747095*. The type genome for the species is the GenBank assembly RS_GCF_001747095.1. The GC content of the type genome is 41.74 % and the genome length is 4.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sea surface microlayer".

Description of *Candidatus* Fabibacter dinupago sp. nov.

Candidatus Fabibacter dinupago (NL. fem. n. *dinupago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fabibacter sp002477595*. The type genome for the species is the GenBank assembly GCA_002387525.1. The GC content of the type genome is 40.67 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Fabibacter insalimonia sp. nov.

Candidatus Fabibacter insalimonia (NL. fem. n. *insalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fabibacter sp013373005*. The type genome for the species is the GenBank assembly GCA_013373005.1. The GC content of the type genome is 41.79 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Fabibacter remulago sp. nov.

Candidatus Fabibacter remulago (NL. fem. n. *remulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fabibacter sp002427755*. The type genome for the species is the GenBank assembly GCA_002427755.1. The GC content of the type genome is 39.04 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Fabibacter refunatio sp. nov.

Candidatus Fabibacter refunatio (NL. fem. n. *refunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fabibacter_A sp012926615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012926615.1. The GC content of the type genome is 34.84 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Facklamia sifunitura sp. nov.

Candidatus Facklamia sifunitura (NL. fem. n. *sifunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Facklamia_A sp014049385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014049385.1. The GC content of the type genome is 36.34 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Facunana amatribula sp. nov.

Candidatus Facunana amatribula (NL. fem. n. *amatribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12499 sp001788415*. The type genome for the species is the GenBank assembly GCA_001788415.1. The GC content of the type genome is 71.12 % and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Facunana gen. nov.

Candidatus Facunana (NL. fem. n. *Facunana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12499*. The type species for the genus is *Candidatus* Facunana amatribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Facunana duponitrix sp. nov.

Candidatus Facunana duponitrix (NL. fem. n. *duponitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12499 sp001788395*. The type genome for the species is the GenBank assembly GCA_001788395.1. The GC content of the type genome is 70.17 % and the genome length is 4.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Facunaria humecentia sp. nov.

Candidatus Facunaria humecentia (NL. fem. n. *humecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUEN01 sp903898185*. The type genome for the species is the GenBank assembly GCA_903896475.1. The GC content of the type genome is 53.72 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Facunaria gen. nov.

Candidatus Facunaria (NL. fem. n. *Facunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUEN01*. The type species for the genus is *Candidatus* Facunaria humecentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunulaceae.

Description of *Candidatus* Facunella fetutetta sp. nov.

Candidatus Facunella fetutetta (NL. fem. n. *fetutetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZGX01 sp903932685*. The type genome for the species is the GenBank assembly GCA_903932685.1. The GC content of the type genome is 41.94 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Facunella gen. nov.

Candidatus Facunella (NL. fem. n. *Facunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZGX01*. The type species for the genus is *Candidatus* Facunella fetutetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UA16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilosaceae.

Description of *Candidatus* Facunia denoritoga sp. nov.

Candidatus Facunia denoritoga (NL. fem. n. *denoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2161 sp002730525*. The type genome for the species is the GenBank assembly GCA_002730525.1. The GC content of the type genome is 67.05 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Facunia gen. nov.

Candidatus Facunia (NL. fem. n. *Facunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2161*. The type species for the genus is *Candidatus* Facunia denoritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Metapiaceae.

Description of *Candidatus* Facunia galacitia sp. nov.

Candidatus Facunia galacitia (NL. fem. n. *galacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2161 sp002328835*. The type genome for the species is the GenBank assembly GCA_002687695.1. The GC content of the type genome is 63.7 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Facunida ceromivita sp. nov.

Candidatus Facunida ceromivita (NL. fem. n. *ceromivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LSJC7 sp005671395*. The type genome for the species is the GenBank assembly RS_GCF_013359925.1. The GC content of the type genome is 55.89 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Facunida gen. nov.

Candidatus Facunida (NL. fem. n. *Facunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LSJC7*. The type species for the genus is *Candidatus* Facunida ceromivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Facunida excalessa sp. nov.

Candidatus Facunida excalessa (NL. fem. n. *excalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LSJC7 sp010092695*. The type genome for the species is the GenBank assembly RS_GCF_010092695.1. The GC content of the type genome is 54.58 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Facunida fiducitas sp. nov.

Candidatus Facunida fiducitas (NL. fem. n. *fiducitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LSJC7 sp000302695*. The type genome for the species is the GenBank assembly RS_GCF_000302695.1. The GC content of the type genome is 54.83 % and the genome length is 4.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "antimony tailing".

Description of *Candidatus* Facunosa minuritura sp. nov.

Candidatus Facunosa minuritura (NL. fem. n. *minuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4363 sp002393965*. The type genome for the species is the GenBank assembly GCA_002396045.1. The GC content of the type genome is 49.43 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Facunosa gen. nov.

Candidatus Facunosa (NL. fem. n. *Facunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4363*. The type species for the genus is *Candidatus* Facunosa minuritura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Facunula errabedo sp. nov.

Candidatus Facunula errabedo (NL. fem. n. *errabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4486 sp002389045*. The type genome for the species is the GenBank assembly GCA_002389045.1. The GC content of the type genome is 54.0 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Facunula gen. nov.

Candidatus Facunula (NL. fem. n. *Facunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA4486*. The type species for the genus is *Candidatus* Facunula errabedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Facunulaceae fam. nov.

Candidatus Facunulaceae (NL. fem. n. *Facunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4486.* The type genus for the taxon is *Candidatus* Facunula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Facunulales.

Description of *Candidatus* Facunulales ord. nov.

Candidatus Facunulales (NL. fem. n. *Facunulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4486.* The type genus for the taxon is *Candidatus* Facunula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Faecalibacillus democago sp. nov.

Candidatus Faecalibacillus democago (NL. fem. n. *democago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacillus sp003480255*. The type genome for the species is the GenBank assembly GCA_900758515.1. The GC content of the type genome is 30.09 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Faecalibacillus denunibra sp. nov.

Candidatus Faecalibacillus denunibra (NL. fem. n. *denunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacillus sp900544435*. The type genome for the species is the GenBank assembly GCA_900758025.1. The GC content of the type genome is 28.92 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Faecalibacterium carecigena sp. nov.

Candidatus Faecalibacterium carecigena (NL. fem. n. *carecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp900551435*. The type genome for the species is the GenBank assembly GCA_900771915.1. The GC content of the type genome is 58.59 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Faecalibacterium cocibimonia sp. nov.

Candidatus Faecalibacterium cocibimonia (NL. fem. n. *cocibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp900765105*. The type genome for the species is the GenBank assembly GCA_900765105.1. The GC content of the type genome is 58.49 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Faecalibacterium colapicula sp. nov.

Candidatus Faecalibacterium colapicula (NL. fem. n. *colapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp900765705*. The type genome for the species is the GenBank assembly GCA_900765705.1. The GC content of the type genome is 55.56 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Faecalibacterium hemititoga sp. nov.

Candidatus Faecalibacterium hemititoga (NL. fem. n. *hemititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp900772565*. The type genome for the species is the GenBank assembly GCA_900772565.1. The GC content of the type genome is 58.34 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Faecalibacterium hexamitura sp. nov.

Candidatus Faecalibacterium hexamitura (NL. fem. n. *hexamitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp900539945*. The type genome for the species is the GenBank assembly GCA_900756745.1. The GC content of the type genome is 60.05 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Faecalibacterium renavessa sp. nov.

Candidatus Faecalibacterium renavessa (NL. fem. n. *renavessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp002160915*. The type genome for the species is the GenBank assembly RS_GCF_002161515.1. The GC content of the type genome is 60.68 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Faecalibacterium repagatica sp. nov.

Candidatus Faecalibacterium repagatica (NL. fem. n. *repagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp900539885*. The type genome for the species is the GenBank assembly GCA_900760515.1. The GC content of the type genome is 58.0 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Faecalibacterium semigitas sp. nov.

Candidatus Faecalibacterium semigitas (NL. fem. n. *semigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp900758465*. The type genome for the species is the GenBank assembly GCA_900758465.1. The GC content of the type genome is 60.56 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Faecalibacterium subadimonas sp. nov.

Candidatus Faecalibacterium subadimonas (NL. fem. n. *subadimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp003449675*. The type genome for the species is the GenBank assembly GCA_900766095.1. The GC content of the type genome is 58.84 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Faecalibacterium tegimibra sp. nov.

Candidatus Faecalibacterium tegimibra (NL. fem. n. *tegimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp900540455*. The type genome for the species is the GenBank assembly GCA_900540455.1. The GC content of the type genome is 58.19 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Faecalibacterium vigenatica sp. nov.

Candidatus Faecalibacterium vigenatica (NL. fem. n. *vigenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalibacterium sp002160895*. The type genome for the species is the GenBank assembly RS_GCF_002161315.1. The GC content of the type genome is 59.6 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Faecalicoccus melilessa sp. nov.

Candidatus Faecalicoccus melilessa (NL. fem. n. *melilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalicoccus sp900546545*. The type genome for the species is the GenBank assembly RS_GCF_012843735.1. The GC content of the type genome is 38.45 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Faecalimonas cibaritoga sp. nov.

Candidatus Faecalimonas cibaritoga (NL. fem. n. *cibaritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Faecalimonas sp900556835*. The type genome for the species is the GenBank assembly GCA_900556835.1. The GC content of the type genome is 38.24 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Faecalimonas cuferitoga sp. nov.

Candidatus Faecalimonas cuferitoga (NL. fem. n. *cuferitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalimonas sp900550235*. The type genome for the species is the GenBank assembly GCA_900550235.1. The GC content of the type genome is 38.5 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Faecalimonas forinitoga sp. nov.

Candidatus Faecalimonas forinitoga (NL. fem. n. *forinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalimonas sp900550975*. The type genome for the species is the GenBank assembly GCA_900550975.1. The GC content of the type genome is 40.77 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Faecalimonas fusifimonas sp. nov.

Candidatus Faecalimonas fusifimonas (NL. fem. n. *fusifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalimonas sp900555395*. The type genome for the species is the GenBank assembly GCA_900555395.1. The GC content of the type genome is 42.98 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Faecalimonas mirabitura sp. nov.

Candidatus Faecalimonas mirabitura (NL. fem. n. *mirabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalimonas sp900316755*. The type genome for the species is the GenBank assembly GCA_900316755.1. The GC content of the type genome is 43.94 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Faecalimonas murelastra sp. nov.

Candidatus Faecalimonas murelastra (NL. fem. n. *murelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalimonas sp000209385*. The type genome for the species is the GenBank assembly RS_GCF_902381685.1. The GC content of the type genome is 38.77 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Faecalimonas obtenitica sp. nov.

Candidatus Faecalimonas obtenitica (NL. fem. n. *obtenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalimonas sp900546325*. The type genome for the species is the GenBank assembly GCA_900546325.1. The GC content of the type genome is 43.99 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Faecalimonas roruliforma sp. nov.

Candidatus Faecalimonas roruliforma (NL. fem. n. *roruliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Faecalimonas sp900551895*. The type genome for the species is the GenBank assembly GCA_900551895.1. The GC content of the type genome is 38.1 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Falsibacillus obteniforma sp. nov.

Candidatus Falsibacillus obteniforma (NL. fem. n. *obteniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Falsibacillus sp003668575*. The type genome for the species is the GenBank assembly RS_GCF_003668575.1. The GC content of the type genome is 42.29 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Falsirhodobacter munimitoga sp. nov.

Candidatus Falsirhodobacter munimitoga (NL. fem. n. *munimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Falsirhodobacter sp000739715*. The type genome for the species is the GenBank assembly RS_GCF_000739715.2. The GC content of the type genome is 60.25 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Falsochrobactrum vitupigena sp. nov.

Candidatus Falsochrobactrum vitupigena (NL. fem. n. *vitupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Falsochrobactrum sp003149535*. The type genome for the species is the GenBank assembly RS_GCF_003149535.1. The GC content of the type genome is 56.92 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Famelana arillastra sp. nov.

Candidatus Famelana arillastra (NL. fem. n. *arillastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG163 sp009930305*. The type genome for the species is the GenBank assembly GCA_009930305.1. The GC content of the type genome is 34.64 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Famelana gen. nov.

Candidatus Famelana (NL. fem. n. *Famelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG163*. The type species for the genus is *Candidatus* Famelana arillastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Famelana dibapitia sp. nov.

Candidatus Famelana dibapitia (NL. fem. n. *dibapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RUG163 sp900316125*. The type genome for the species is the GenBank assembly GCA_902755145.1. The GC content of the type genome is 44.86 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Famelana exsatousia sp. nov.

Candidatus Famelana exsatousia (NL. fem. n. *exsatousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG163 sp002069025*. The type genome for the species is the GenBank assembly GCA_002069025.1. The GC content of the type genome is 34.93 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Famelana levifitio sp. nov.

Candidatus Famelana levifitio (NL. fem. n. *levifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG163 sp900316995*. The type genome for the species is the GenBank assembly GCA_902795655.1. The GC content of the type genome is 43.52 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Famelaria binocitoga sp. nov.

Candidatus Famelaria binocitoga (NL. fem. n. *binocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMP01 sp009841105*. The type genome for the species is the GenBank assembly GCA_009839965.1. The GC content of the type genome is 66.01 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Famelaria gen. nov.

Candidatus Famelaria (NL. fem. n. *Famelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXMP01*. The type species for the genus is *Candidatus* Famelaria binocitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-232*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Viceciaceae.

Description of *Candidatus* Famelaria caselitas sp. nov.

Candidatus Famelaria caselitas (NL. fem. n. *caselitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMP01 sp009841075*. The type genome for the species is the GenBank assembly GCA_009843905.1. The GC content of the type genome is 60.75 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Famelaria homagiforma sp. nov.

Candidatus Famelaria homagiforma (NL. fem. n. *homagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMP01 sp009838635*. The type genome for the species is the GenBank assembly GCA_009843115.1. The GC content of the type genome is 66.96 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Famelaria illuviforma sp. nov.

Candidatus Famelaria illuviforma (NL. fem. n. *illuviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMP01 sp011523395*. The type genome for the species is the GenBank assembly GCA_011523395.1. The GC content of the type genome is 66.8 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Famelaria repepitia sp. nov.

Candidatus Famelaria repepitia (NL. fem. n. *repepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMP01 sp011523635*. The type genome for the species is the GenBank assembly GCA_011523635.1. The GC content of the type genome is 66.61 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Famelella deparitura sp. nov.

Candidatus Famelella deparitura (NL. fem. n. *deparitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAAEEV01 sp013185065*. The type genome for the species is the GenBank assembly RS_GCF_011038995.1. The GC content of the type genome is 65.34 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Famelella gen. nov.

Candidatus Famelella (NL. fem. n. *Famelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAAEEV01*. The type species for the genus is *Candidatus* Famelella deparitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Famelella indubilenta sp. nov.

Candidatus Famelella indubilenta (NL. fem. n. *indubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAAEEV01 sp900754955*. The type genome for the species is the GenBank assembly RS_GCF_900754955.1. The GC content of the type genome is 64.9 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Famelella tameticula sp. nov.

Candidatus Famelella tameticula (NL. fem. n. *tameticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAAEEV01 sp011038975*. The type genome for the species is the GenBank assembly RS_GCF_011038955.1. The GC content of the type genome is 64.64 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Famelia siminivita sp. nov.

Candidatus Famelia siminivita (NL. fem. n. *siminivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKWO01 sp007128895*. The type genome for the species is the GenBank assembly GCA_007128895.1. The GC content of the type genome is 65.77 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Famelia gen. nov.

Candidatus Famelia (NL. fem. n. *Famelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKWO01*. The type species for the genus is *Candidatus* Famelia siminivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Famelida viginilenta sp. nov.

Candidatus Famelida viginilenta (NL. fem. n. *viginilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YC12-FULL-57-11 sp903843045*. The type genome for the species is the GenBank assembly GCA_903825955.1. The GC content of the type genome is 61.8 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Famelida gen. nov.

Candidatus Famelida (NL. fem. n. *Famelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YC12-FULL-57-11*. The type species for the genus is *Candidatus* Famelida viginilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Famelida vivifimonas sp. nov.

Candidatus Famelida vivifimonas (NL. fem. n. *vivifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YC12-FULL-57-11 sp001791645*. The type genome for the species is the GenBank assembly GCA_001791645.1. The GC content of the type genome is 57.68 % and the genome length is 1.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point B".

Description of *Candidatus* Famelosa abnocimonas sp. nov.

Candidatus Famelosa abnocimonas (NL. fem. n. *abnocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXTV01 sp903922465*. The type genome for the species is the GenBank assembly GCA_903922465.1. The GC content of the type genome is 35.98 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Famelosa gen. nov.

Candidatus Famelosa (NL. fem. n. *Famelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXTV01*. The type species for the genus is *Candidatus* Famelosa abnocimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIXTV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Famelosaceae.

Description of *Candidatus* Famelosaceae fam. nov.

Candidatus Famelosaceae (NL. fem. n. *Famelosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIXTV01.* The type genus for the taxon is *Candidatus* Famelosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Famelula absoritudo sp. nov.

Candidatus Famelula absoritudo (NL. fem. n. *absoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWVN01 sp007136165*. The type genome for the species is the GenBank assembly GCA_007136165.1. The GC content of the type genome is 55.4 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Famelula gen. nov.

Candidatus Famelula (NL. fem. n. *Famelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWVN01*. The type species for the genus is *Candidatus* Famelula absoritudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWVN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Famelulaceae.

Description of *Candidatus* Famelulaceae fam. nov.

Candidatus Famelulaceae (NL. fem. n. *Famelulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWVN01.* The type genus for the taxon is *Candidatus* Famelula .

According to the original version of GTDB R06-RS202, this family belongs to the order *PWVN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Famelulales.

Description of *Candidatus* Famelulales ord. nov.

Candidatus Famelulales (NL. fem. n. *Famelulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWVN01.* The type genus for the taxon is *Candidatus* Famelula .

According to the GTDB R06-RS202, this order belongs to the class *Dethiobacteria*.

Description of *Candidatus* Famelula ecfacilega sp. nov.

Candidatus Famelula ecfacilega (NL. fem. n. *ecfacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *PWVN01 sp003561835*. The type genome for the species is the GenBank assembly GCA_003561835.1. The GC content of the type genome is 59.37 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Famelula regigetta sp. nov.

Candidatus Famelula regigetta (NL. fem. n. *regigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWVN01 sp003567935*. The type genome for the species is the GenBank assembly GCA_003567935.1. The GC content of the type genome is 55.11 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Faticana curabatio sp. nov.

Candidatus Faticana curabatio (NL. fem. n. *curabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG740 sp902797445*. The type genome for the species is the GenBank assembly GCA_902773205.1. The GC content of the type genome is 58.92 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Faticana gen. nov.

Candidatus Faticana (NL. fem. n. *Faticana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG740*. The type species for the genus is *Candidatus* Faticana curabatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Faticana dicanitia sp. nov.

Candidatus Faticana dicanitia (NL. fem. n. *dicanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG740 sp900321945*. The type genome for the species is the

GenBank assembly GCA_902759775.1. The GC content of the type genome is 60.99 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Faticana encometta sp. nov.

Candidatus Faticana encometta (NL. fem. n. *encometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG740 sp902778055*. The type genome for the species is the GenBank assembly GCA_902778055.1. The GC content of the type genome is 58.36 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Faticana pabilitica sp. nov.

Candidatus Faticana pabilitica (NL. fem. n. *pabilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG740 sp900316415*. The type genome for the species is the GenBank assembly GCA_902756005.1. The GC content of the type genome is 60.71 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Faticaria colubetta sp. nov.

Candidatus Faticaria colubetta (NL. fem. n. *colubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11712 sp000995965*. The type genome for the species is the GenBank assembly GCA_001784795.1. The GC content of the type genome is 43.39 % and the genome length is 0.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point A".

Description of *Candidatus* Faticaria gen. nov.

Candidatus Faticaria (NL. fem. n. *Faticaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11712*. The type species for the genus is *Candidatus* Faticaria colubetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA11712. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Faticariaceae.

Description of *Candidatus* Faticariaceae fam. nov.

Candidatus Faticariaceae (NL. fem. n. *Faticariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11712.* The type genus for the taxon is *Candidatus* Faticaria .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Faticaria manubicella sp. nov.

Candidatus Faticaria manubicella (NL. fem. n. *manubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11712 sp001784875*. The type genome for the species is the GenBank assembly GCA_001784975.1. The GC content of the type genome is 43.59 % and the genome length is 1.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Faticella adsocastra sp. nov.

Candidatus Faticella adsocastra (NL. fem. n. *adsocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G09 sp002170885*. The type genome for the species is the GenBank assembly GCA_002170885.2. The GC content of the type genome is 31.43 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Faticella gen. nov.

Candidatus Faticella (NL. fem. n. *Faticella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G09*. The type species for the genus is *Candidatus* Faticella adsocastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family

TMED25. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citipiaceae.

Description of *Candidatus* Faticella arrecessa sp. nov.

Candidatus Faticella arrecessa (NL. fem. n. *arrecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G09 sp002723035*. The type genome for the species is the GenBank assembly GCA_002723035.1. The GC content of the type genome is 31.89 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Faticella bigarentia sp. nov.

Candidatus Faticella bigarentia (NL. fem. n. *bigarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G09 sp902626605*. The type genome for the species is the GenBank assembly GCA_902626605.1. The GC content of the type genome is 31.83 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Faticella capudimonas sp. nov.

Candidatus Faticella capudimonas (NL. fem. n. *capudimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G09 sp002683015*. The type genome for the species is the GenBank assembly GCA_002683015.1. The GC content of the type genome is 31.89 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Faticella codifimonas sp. nov.

Candidatus Faticella codifimonas (NL. fem. n. *codifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G09 sp902537725*. The type genome for the species is the GenBank assembly GCA_902537725.1. The GC content of the type genome is 31.79 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Faticella denecimonia sp. nov.

Candidatus Faticella denecimonia (NL. fem. n. *denecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G09 sp003278145*. The type genome for the species is the GenBank assembly GCA_902596725.1. The GC content of the type genome is 32.23 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Faticella furibitudo sp. nov.

Candidatus Faticella furibitudo (NL. fem. n. *furibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G09 sp003279705*. The type genome for the species is the GenBank assembly GCA_003279705.1. The GC content of the type genome is 31.71 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Faticella homililenta sp. nov.

Candidatus Faticella homililenta (NL. fem. n. *homililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G09 sp002704345*. The type genome for the species is the GenBank assembly GCA_002457395.1. The GC content of the type genome is 32.66 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Faticia cunabitica sp. nov.

Candidatus Faticia cunabitica (NL. fem. n. *cunabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11704 sp903834855*. The type genome for the species is the GenBank assembly GCA_903821935.1. The GC content of the type genome is 35.02 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Faticia gen. nov.

Candidatus Faticia (NL. fem. n. *Faticia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11704*. The type species for the genus is *Candidatus* Faticia cunabitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deforariaceae.

Description of *Candidatus* Faticia insubatio sp. nov.

Candidatus Faticia insubatio (NL. fem. n. *insubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11704 sp003518045*. The type genome for the species is the GenBank assembly GCA_003518045.1. The GC content of the type genome is 35.78 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Faticia molecitica sp. nov.

Candidatus Faticia molecitica (NL. fem. n. *molecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11704 sp903875555*. The type genome for the species is the GenBank assembly GCA_903890235.1. The GC content of the type genome is 33.05 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Faticida hemidiforma sp. nov.

Candidatus Faticida hemidiforma (NL. fem. n. *hemidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12088 sp007116405*. The type genome for the species is the GenBank assembly GCA_007121795.1. The GC content of the type genome is 53.78 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Faticida gen. nov.

Candidatus Faticida (NL. fem. n. *Faticida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12088*. The type species for the genus is *Candidatus* Faticida hemidiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Faticida infenisca sp. nov.

Candidatus Faticida infenisca (NL. fem. n. *infenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12088 sp003252295*. The type genome for the species is the GenBank assembly GCA_003252295.1. The GC content of the type genome is 42.58 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Faticida munifibra sp. nov.

Candidatus Faticida munifibra (NL. fem. n. *munifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12088 sp000998045*. The type genome for the species is the GenBank assembly GCA_003518505.1. The GC content of the type genome is 42.06 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Faticida rorulitura sp. nov.

Candidatus Faticida rorulitura (NL. fem. n. *rorulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12088 sp000998805*. The type genome for the species is the GenBank assembly GCA_000998805.1. The GC content of the type genome is 42.22 % and the genome length is 0.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Faticula conamitica sp. nov.

Candidatus Faticula conamitica (NL. fem. n. *conamitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-56-15 sp004297165*. The type genome for the species is the GenBank assembly GCA_004297165.1. The GC content of the type genome is 59.12 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Faticula gen. nov.

Candidatus Faticula (NL. fem. n. *Faticula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-56-15*. The type species for the genus is *Candidatus* Faticula conamitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Faticula ephemugo sp. nov.

Candidatus Faticula ephemugo (NL. fem. n. *ephemugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-56-15 sp001801825*. The type genome for the species is the GenBank assembly GCA_001801825.1. The GC content of the type genome is 55.39 % and the genome length is 2.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Fatifana immobugo sp. nov.

Candidatus Fatifana immobugo (NL. fem. n. *immobugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11393 sp002791835*. The type genome for the species is the GenBank assembly GCA_002791835.1. The GC content of the type genome is 36.61 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Fatifana gen. nov.

Candidatus Fatifana (NL. fem. n. *Fatifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11393*. The type species for the genus is *Candidatus* Fatifana immobugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11393*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifanaceae.

Description of *Candidatus* Fatifanaceae fam. nov.

Candidatus Fatifanaceae (NL. fem. n. *Fatifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11393.* The type genus for the taxon is *Candidatus* Fatifana .

According to GTDB R06-RS202, this family belongs to the order *Paracaedibacterales*.

Description of *Candidatus* Fatifana periciforma sp. nov.

Candidatus Fatifana periciforma (NL. fem. n. *periciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11393 sp003542655*. The type genome for the species is the GenBank assembly GCA_003542655.1. The GC content of the type genome is 36.54 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Fatifaria metapicula sp. nov.

Candidatus Fatifaria metapicula (NL. fem. n. *metapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1058 sp003154115*. The type genome for the species is the GenBank assembly GCA_003154115.1. The GC content of the type genome is 57.59 % and the genome length is 7.7 Mbp.

Description of *Candidatus* Fatifaria gen. nov.

Candidatus Fatifaria (NL. fem. n. *Fatifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Fen-1058*. The type species for the genus is *Candidatus* Fatifaria metapicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1058*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifariaceae.

Description of *Candidatus* Fatifariaceae fam. nov.

Candidatus Fatifariaceae (NL. fem. n. *Fatifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-1058.* The type genus for the taxon is *Candidatus* Fatifaria .

According to GTDB R06-RS202, this family belongs to the order *Thermoflexales*.

Description of *Candidatus* Fatifella defanicella sp. nov.

Candidatus Fatifella defanicella (NL. fem. n. *defanicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-40-11 sp002780305*. The type genome for the species is the GenBank assembly GCA_002788915.1. The GC content of the type genome is 39.64 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Fatifella gen. nov.

Candidatus Fatifella (NL. fem. n. *Fatifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-40-11*. The type species for the genus is *Candidatus* Fatifella defanicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-40-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifellaceae.

Description of *Candidatus* Fatifellaceae fam. nov.

Candidatus Fatifellaceae (NL. fem. n. *Fatifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UM-FILTER-40-11*. The type genus for the taxon is *Candidatus* Fatifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UM-FILTER-40-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fatifellales.

Description of *Candidatus* Fatifellales ord. nov.

Candidatus Fatifellales (NL. fem. n. *Fatifellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-40-11*. The type genus for the taxon is *Candidatus* Fatifella .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Fatifia cicaredo sp. nov.

Candidatus Fatifia cicaredo (NL. fem. n. *cicaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG11 sp003223455*. The type genome for the species is the GenBank assembly GCA_003223455.1. The GC content of the type genome is 68.5 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Fatifia gen. nov.

Candidatus Fatifia (NL. fem. n. *Fatifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG11*. The type species for the genus is *Candidatus* Fatifia cicaredo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fatifia corocibula sp. nov.

Candidatus Fatifia corocibula (NL. fem. n. *corocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG11 sp002215645*. The type genome for the species is the GenBank

assembly GCA_002215645.1. The GC content of the type genome is 64.99 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Fatifia saxifibula sp. nov.

Candidatus Fatifia saxifibula (NL. fem. n. *saxifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG11 sp013361335*. The type genome for the species is the GenBank assembly GCA_013361605.1. The GC content of the type genome is 69.89 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Fatifia sicunivita sp. nov.

Candidatus Fatifia sicunivita (NL. fem. n. *sicunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG11 sp014378185*. The type genome for the species is the GenBank assembly GCA_014378185.1. The GC content of the type genome is 65.73 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Fatifida susicivita sp. nov.

Candidatus Fatifida susicivita (NL. fem. n. *susicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5409 sp002410615*. The type genome for the species is the GenBank assembly GCA_002397505.1. The GC content of the type genome is 33.04 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Fatifida gen. nov.

Candidatus Fatifida (NL. fem. n. *Fatifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5409*. The type species for the genus is *Candidatus* Fatifida susicivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5453*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifosaceae.

Description of *Candidatus* Fatifosa decunibula sp. nov.

Candidatus Fatifosa decunibula (NL. fem. n. *decunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1212 sp902792515*. The type genome for the species is the GenBank assembly GCA_902792515.1. The GC content of the type genome is 54.37 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Fatifosa gen. nov.

Candidatus Fatifosa (NL. fem. n. *Fatifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1212*. The type species for the genus is *Candidatus* Fatifosa decunibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1212*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifosaceae.

Description of *Candidatus* Fatifosaceae fam. nov.

Candidatus Fatifosaceae (NL. fem. n. *Fatifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1212.* The type genus for the taxon is *Candidatus* Fatifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1212*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fatifosales.

Description of *Candidatus* Fatifosales ord. nov.

Candidatus Fatifosales (NL. fem. n. *Fatifosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1212.* The type genus for the taxon is *Candidatus* Fatifosa .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Fatifosa defalago sp. nov.

Candidatus Fatifosa defalago (NL. fem. n. *defalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1212 sp002309655*. The type genome for the species is the GenBank assembly GCA_002309655.1. The GC content of the type genome is 54.83 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Fatifosa illepatio sp. nov.

Candidatus Fatifosa illepatio (NL. fem. n. *illepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1212 sp902782645*. The type genome for the species is the GenBank assembly GCA_902782645.1. The GC content of the type genome is 49.83 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Fatifosa oppugitoga sp. nov.

Candidatus Fatifosa oppugitoga (NL. fem. n. *oppugitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1212 sp002308595*. The type genome for the species is the GenBank assembly GCA_002308595.1. The GC content of the type genome is 51.29 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Fatifula inculago sp. nov.

Candidatus Fatifula inculago (NL. fem. n. *inculago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZOE01 sp012797915*. The type genome for the species is the GenBank assembly GCA_012797915.1. The GC content of the type genome is 59.08 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Fatifula gen. nov.

Candidatus Fatifula (NL. fem. n. *Fatifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZOE01*. The type species for the genus is *Candidatus* Fatifula inculago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZOE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifulaceae.

Description of *Candidatus* Fatifulaceae fam. nov.

Candidatus Fatifulaceae (NL. fem. n. *Fatifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZOE01.* The type genus for the taxon is *Candidatus* Fatifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GN15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Solacidales.

Description of *Candidatus* Fatilaria irregifica sp. nov.

Candidatus Fatilaria irregifica (NL. fem. n. *irregifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-47 sp002452555*. The type genome for the species is the GenBank assembly GCA_002452555.1. The GC content of the type genome is 42.09 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Fatilaria gen. nov.

Candidatus Fatilaria (NL. fem. n. *Fatilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *46-47*. The type species for the genus is *Candidatus* Fatilaria irregifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *46-47*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilariaceae.

Description of *Candidatus* Fatilariaceae fam. nov.

Candidatus Fatilariaceae (NL. fem. n. *Fatilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *46-47*. The type genus for the taxon is *Candidatus* Fatilaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *AB16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tomogidales.

Description of *Candidatus* Fatilaria obtesilenta sp. nov.

Candidatus Fatilaria obtesilenta (NL. fem. n. *obtesilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-47 sp003644575*. The type genome for the species is the GenBank assembly GCA_003644575.1. The GC content of the type genome is 45.55 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Fatilaria visifatio sp. nov.

Candidatus Fatilaria visifatio (NL. fem. n. *visifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-47 sp001509335*. The type genome for the species is the GenBank assembly GCA_001509335.1. The GC content of the type genome is 45.9 % and the genome length is 2.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample SB2".

Description of *Candidatus* Fatilella lacinastra sp. nov.

Candidatus Fatilella lacinastra (NL. fem. n. *lacinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9655 sp013815465*. The type genome for the species is the GenBank assembly GCA_013815465.1. The GC content of the type genome is 42.31 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Fatilella gen. nov.

Candidatus Fatilella (NL. fem. n. *Fatilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9655*. The type species for the genus is *Candidatus* Fatilella lacinastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9655*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilellaceae.

Description of *Candidatus* Fatilellaceae fam. nov.

Candidatus Fatilellaceae (NL. fem. n. *Fatilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9655.* The type genus for the taxon is *Candidatus* Fatilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9655*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fatilellales.

Description of *Candidatus* Fatilellales ord. nov.

Candidatus Fatilellales (NL. fem. n. *Fatilellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9655.* The type genus for the taxon is *Candidatus* Fatilella .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Fatilella necopetta sp. nov.

Candidatus Fatilella necopetta (NL. fem. n. *necopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9655 sp013287665*. The type genome for the species is the GenBank assembly GCA_013287665.1. The GC content of the type genome is 43.47 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Fatilella recumedo sp. nov.

Candidatus Fatilella recumedo (NL. fem. n. *recumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9655 sp001767835*. The type genome for the species is the GenBank assembly GCA_001768775.1. The GC content of the type genome is 42.28 % and the genome length is 1.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Fatilella subabitio sp. nov.

Candidatus Fatilella subabitio (NL. fem. n. *subabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9655 sp001897795*. The type genome for the species is the GenBank assembly GCA_001897795.1. The GC content of the type genome is 40.58 % and the genome length is 2.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Fatilia expenilenta sp. nov.

Candidatus Fatilia expenilenta (NL. fem. n. *expenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin16 sp002238425*. The type genome for the species is the GenBank assembly GCA_002238425.1. The GC content of the type genome is 65.63 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Fatilia gen. nov.

Candidatus Fatilia (NL. fem. n. *Fatilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin16*. The type species for the genus is *Candidatus* Fatilia expenilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2963*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nimirellaceae.

Description of *Candidatus* Fatilia saxififorma sp. nov.

Candidatus Fatilia saxififorma (NL. fem. n. *saxififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin16 sp009838965*. The type genome for the species is the GenBank assembly GCA_009838965.1. The GC content of the type genome is 65.94 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Fatilida bigarifica sp. nov.

Candidatus Fatilida bigarifica (NL. fem. n. *bigarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-28 sp003554105*. The type genome for the species is the GenBank assembly GCA_007122415.1. The GC content of the type genome is 41.99 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Fatilida gen. nov.

Candidatus Fatilida (NL. fem. n. *Fatilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1SED10-28*. The type species for the genus is *Candidatus* Fatilida bigarifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *T1SED10-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilidaceae.

Description of *Candidatus* Fatilidaceae fam. nov.

Candidatus Fatilidaceae (NL. fem. n. *Fatilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T1SED10-28.* The type genus for the taxon is *Candidatus* Fatilida .

According to GTDB R06-RS202, this family belongs to the order *Peptostreptococcales*.

Description of *Candidatus* Fatilosa bimotisca sp. nov.

Candidatus Fatilosa bimotisca (NL. fem. n. *bimotisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JABDMD01 sp014075255*. The type genome for the species is the GenBank assembly GCA_014075255.1. The GC content of the type genome is 39.55 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Fatilosa gen. nov.

Candidatus Fatilosa (NL. fem. n. *Fatilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDMD01*. The type species for the genus is *Candidatus* Fatilosa bimotisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paraciaceae.

Description of *Candidatus* Fatilosa fumififica sp. nov.

Candidatus Fatilosa fumififica (NL. fem. n. *fumififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDMD01 sp013001685*. The type genome for the species is the GenBank assembly GCA_013001685.1. The GC content of the type genome is 38.78 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Fatilula alsulitoga sp. nov.

Candidatus Fatilula alsulitoga (NL. fem. n. *alsulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITNO01 sp903822375*. The type genome for the species is the GenBank assembly GCA_903822375.1. The GC content of the type genome is 61.5 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Fatilula gen. nov.

Candidatus Fatilula (NL. fem. n. *Fatilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITNO01*. The type species for the genus is *Candidatus* Fatilula alsulitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilulaceae.

Description of *Candidatus* Fatilulaceae fam. nov.

Candidatus Fatilulaceae (NL. fem. n. *Fatilulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAITNO01.* The type genus for the taxon is *Candidatus* Fatilula .

According to GTDB R06-RS202, this family belongs to the order *Hydrogenedentiales*.

Description of *Candidatus* Fatilula arillax sp. nov.

Candidatus Fatilula arillax (NL. fem. n. *arillax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITNO01 sp903893795*. The type genome for the species is the GenBank assembly GCA_903893795.1. The GC content of the type genome is 61.48 % and the genome length is 7.02 Mbp.

Description of *Candidatus* Favilana bimetisca sp. nov.

Candidatus Favilana bimetisca (NL. fem. n. *bimetisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9455 sp002313245*. The type genome for the species is the GenBank assembly GCA_003451055.1. The GC content of the type genome is 57.72 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Favilana gen. nov.

Candidatus Favilana (NL. fem. n. *Favilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9455*. The type species for the genus is *Candidatus* Favilana bimetisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelanaceae.

Description of *Candidatus* Favilaria adpagessa sp. nov.

Candidatus Favilaria adpagessa (NL. fem. n. *adpagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-20 sp009693345*. The type genome for the species is the GenBank assembly GCA_009693345.1. The GC content of the type genome is 64.77 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Favilaria gen. nov.

Candidatus Favilaria (NL. fem. n. *Favilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-66-20*. The type species for the genus is *Candidatus* Favilaria adpagessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Favilaria dicimilenta sp. nov.

Candidatus Favilaria dicimilenta (NL. fem. n. *dicimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-20 sp009693335*. The type genome for the species is the GenBank assembly GCA_009693335.1. The GC content of the type genome is 63.01 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Favilaria immobitio sp. nov.

Candidatus Favilaria immobitio (NL. fem. n. *immobitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-20 sp005240145*. The type genome for the species is the GenBank assembly GCA_005240145.1. The GC content of the type genome is 65.41 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Favilaria inpuritica sp. nov.

Candidatus Favilaria inpuritica (NL. fem. n. *inpuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-20 sp001770285*. The type genome for the species is the GenBank assembly GCA_001770285.1. The GC content of the type genome is 66.31 % and the genome length is 2.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Favilaria saburicula sp. nov.

Candidatus Favilaria saburicula (NL. fem. n. *saburicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-20 sp005777205*. The type genome for the species is the GenBank assembly GCA_005777205.1. The GC content of the type genome is 67.09 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Favilella ancepugo sp. nov.

Candidatus Favilella ancepugo (NL. fem. n. *ancepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-40-11 sp001798105*. The type genome for the species is the GenBank assembly GCA_001798105.1. The GC content of the type genome is 40.2 % and the genome length is 1.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Favilella gen. nov.

Candidatus Favilella (NL. fem. n. *Favilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-40-11*. The type species for the genus is *Candidatus* Favilella ancepugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-40-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favilellaceae.

Description of *Candidatus* Favilellaceae fam. nov.

Candidatus Favilellaceae (NL. fem. n. *Favilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-40-11.* The type genus for the taxon is *Candidatus* Favilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-40-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Favilellales.

Description of *Candidatus* Favilellales ord. nov.

Candidatus Favilellales (NL. fem. n. *Favilellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-40-11.* The type genus for the taxon is *Candidatus* Favilella .

According to the original version of GTDB R06-RS202, this family belongs to the class *O2-12-FULL-43-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Colepidae.

Description of *Candidatus* Favilia apseniforma sp. nov.

Candidatus Favilia apseniforma (NL. fem. n. *apseniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXSE01 sp903912585*. The type genome for the species is the GenBank assembly GCA_903912585.1. The GC content of the type genome is 70.3 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Favilia gen. nov.

Candidatus Favilia (NL. fem. n. *Favilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXSE01*. The type species for the genus is *Candidatus* Favilia apseniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA2241. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocariaceae.

Description of *Candidatus* Favilia depecitica sp. nov.

Candidatus Favilia depecitica (NL. fem. n. *depecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXSE01 sp012514235*. The type genome for the species is the GenBank assembly GCA_012514235.1. The GC content of the type genome is 70.6 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Favilia omnifigena sp. nov.

Candidatus Favilia omnifigena (NL. fem. n. *omnifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXSE01 sp903927755*. The type genome for the species is the GenBank assembly GCA_903927755.1. The GC content of the type genome is 69.68 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Favilia secunicella sp. nov.

Candidatus Favilia secunicella (NL. fem. n. *secunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXSE01 sp903921965*. The type genome for the species is the GenBank assembly GCA_903921965.1. The GC content of the type genome is 71.88 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Favilia sugilimonas sp. nov.

Candidatus Favilia sugilimonas (NL. fem. n. *sugilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXSE01 sp012719015*. The type genome for the species is the GenBank assembly GCA_012719015.1. The GC content of the type genome is 70.91 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Favilia vigenifica sp. nov.

Candidatus Favilia vigenifica (NL. fem. n. *vigenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXSE01 sp903862845*. The type genome for the species is the GenBank assembly GCA_903928885.1. The GC content of the type genome is 68.93 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Favilida agratentia sp. nov.

Candidatus Favilida agratentia (NL. fem. n. *agratentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5542 sp002426825*. The type genome for the species is the GenBank assembly GCA_002426825.1. The GC content of the type genome is 41.57 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Favilida gen. nov.

Candidatus Favilida (NL. fem. n. *Favilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5542*. The type species for the genus is *Candidatus* Favilida agratentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5542*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favilidaceae.

Description of *Candidatus* Favilidaceae fam. nov.

Candidatus Favilidaceae (NL. fem. n. *Favilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5542.* The type genus for the taxon is *Candidatus* Favilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7879*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Gabinosales.

Description of *Candidatus* Favilosa adhinivita sp. nov.

Candidatus Favilosa adhinivita (NL. fem. n. *adhinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6192 sp009773165*. The type genome for the species is the GenBank assembly GCA_009773165.1. The GC content of the type genome is 39.33 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Favilosa gen. nov.

Candidatus Favilosa (NL. fem. n. *Favilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6192*. The type species for the genus is *Candidatus* Favilosa adhinivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Favilosa adtilitas sp. nov.

Candidatus Favilosa adtilitas (NL. fem. n. *adtilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6192 sp903891085*. The type genome for the species is the GenBank assembly GCA_903891085.1. The GC content of the type genome is 39.86 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Favilosa licenifica sp. nov.

Candidatus Favilosa licenifica (NL. fem. n. *licenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6192 sp903957365*. The type genome for the species is the GenBank assembly GCA_903957365.1. The GC content of the type genome is 38.56 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Favilosa musuligena sp. nov.

Candidatus Favilosa musuligena (NL. fem. n. *musuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6192 sp002422725*. The type genome for the species is the GenBank assembly GCA_002422725.1. The GC content of the type genome is 42.4 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Favilosa peripitica sp. nov.

Candidatus Favilosa peripitica (NL. fem. n. *peripitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6192 sp002421995*. The type genome for the species is the GenBank assembly GCA_002421995.1. The GC content of the type genome is 43.82 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Favilosa utpotiforma sp. nov.

Candidatus Favilosa utpotiforma (NL. fem. n. *utpotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6192 sp002842755*. The type genome for the species is the GenBank assembly GCA_002842755.1. The GC content of the type genome is 37.95 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Favilosa velifimonia sp. nov.

Candidatus Favilosa velifimonia (NL. fem. n. *velifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6192 sp013141455*. The type genome for the species is the GenBank assembly GCA_013141455.1. The GC content of the type genome is 39.74 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Favilula canacatio sp. nov.

Candidatus Favilula canacatio (NL. fem. n. *canacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp011391215*. The type genome for the species is the GenBank assembly GCA_011391215.1. The GC content of the type genome is 60.21 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Favilula gen. nov.

Candidatus Favilula (NL. fem. n. *Favilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2250*. The type species for the genus is *Candidatus* Favilula canacatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Favilula cicarimonas sp. nov.

Candidatus Favilula cicarimonas (NL. fem. n. *cicarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp903930805*. The type genome for the species is the GenBank assembly GCA_903930805.1. The GC content of the type genome is 58.87 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Favilula curabitas sp. nov.

Candidatus Favilula curabitas (NL. fem. n. *curabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp011330945*. The type genome for the species is the GenBank assembly GCA_011330945.1. The GC content of the type genome is 65.17 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Favilula dececitoga sp. nov.

Candidatus Favilula dececitoga (NL. fem. n. *dececitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp004323595*. The type genome for the species is the

GenBank assembly RS_GCF_004323595.1. The GC content of the type genome is 63.59 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Favilula indevitura sp. nov.

Candidatus Favilula indevitura (NL. fem. n. *indevitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp013426785*. The type genome for the species is the GenBank assembly GCA_013426785.1. The GC content of the type genome is 60.8 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Favilula luticastra sp. nov.

Candidatus Favilula luticastra (NL. fem. n. *luticastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp903950295*. The type genome for the species is the GenBank assembly GCA_903950295.1. The GC content of the type genome is 60.36 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Favilula malogicula sp. nov.

Candidatus Favilula malogicula (NL. fem. n. *malogicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp003966565*. The type genome for the species is the GenBank assembly RS_GCF_003966565.1. The GC content of the type genome is 62.44 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Favilula pavimetta sp. nov.

Candidatus Favilula pavimetta (NL. fem. n. *pavimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp002347405*. The type genome for the species is the GenBank assembly GCA_002347405.1. The GC content of the type genome is 61.77 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Favilula semipiforma sp. nov.

Candidatus Favilula semipiforma (NL. fem. n. *semipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp002347285*. The type genome for the species is the GenBank assembly GCA_002347285.1. The GC content of the type genome is 66.93 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Favilula turicicula sp. nov.

Candidatus Favilula turicicula (NL. fem. n. *turicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2250 sp013791905*. The type genome for the species is the GenBank assembly GCA_013791905.1. The GC content of the type genome is 60.76 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Favonana volunessa sp. nov.

Candidatus Favonana volunessa (NL. fem. n. *volunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6929 sp002448815*. The type genome for the species is the GenBank assembly GCA_003525465.1. The GC content of the type genome is 47.67 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Favonana gen. nov.

Candidatus Favonana (NL. fem. n. *Favonana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6929*. The type species for the genus is *Candidatus* Favonana volunessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Favonaria decunatica sp. nov.

Candidatus Favonaria decunatica (NL. fem. n. *decunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGE01 sp013153575*. The type genome for the species is the GenBank assembly GCA_013153575.1. The GC content of the type genome is 29.11 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Favonaria gen. nov.

Candidatus Favonaria (NL. fem. n. *Favonaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGE01*. The type species for the genus is *Candidatus* Favonaria decunatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADGE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favonariaceae.

Description of *Candidatus* Favonariaceae fam. nov.

Candidatus Favonariaceae (NL. fem. n. *Favonariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADGE01.* The type genus for the taxon is *Candidatus* Favonaria .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Favonaria inremitia sp. nov.

Candidatus Favonaria inremitia (NL. fem. n. *inremitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGE01 sp013153865*. The type genome for the species is the GenBank assembly GCA_013153865.1. The GC content of the type genome is 35.86 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Favonaria monocibra sp. nov.

Candidatus Favonaria monocibra (NL. fem. n. *monocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAADGE01 sp013152535*. The type genome for the species is the GenBank assembly GCA_013152535.1. The GC content of the type genome is 31.86 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Favonella bicubifica sp. nov.

Candidatus Favonella bicubifica (NL. fem. n. *bicubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10066 sp003448535*. The type genome for the species is the GenBank assembly GCA_011522795.1. The GC content of the type genome is 41.19 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Favonella gen. nov.

Candidatus Favonella (NL. fem. n. *Favonella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10066*. The type species for the genus is *Candidatus* Favonella bicubifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favonellaceae.

Description of *Candidatus* Favonellaceae fam. nov.

Candidatus Favonellaceae (NL. fem. n. *Favonellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10066.* The type genus for the taxon is *Candidatus* Favonella .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Favonella minurastra sp. nov.

Candidatus Favonella minurastra (NL. fem. n. *minurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10066 sp014239715*. The type genome for the species is the GenBank assembly GCA_014239715.1. The GC content of the type genome is 41.65 %

and the genome length is 2.25 Mbp.

Description of *Candidatus* Favonida nutabisca sp. nov.

Candidatus Favonida nutabisca (NL. fem. n. *nutabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-40-16 sp002791475*. The type genome for the species is the GenBank assembly GCA_002787835.1. The GC content of the type genome is 39.77 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Favonida gen. nov.

Candidatus Favonida (NL. fem. n. *Favonida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-40-16*. The type species for the genus is *Candidatus* Favonida nutabisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Favonosa denavitrix sp. nov.

Candidatus Favonosa denavitrix (NL. fem. n. *denavitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AU392 sp003443635*. The type genome for the species is the GenBank assembly RS_GCF_003443635.1. The GC content of the type genome is 30.66 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Favonosa gen. nov.

Candidatus Favonosa (NL. fem. n. *Favonosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AU392*. The type species for the genus is *Candidatus* Favonosa denavitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Favonula apsegitio sp. nov.

Candidatus Favonula apsegitio (NL. fem. n. *apsegitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1447 sp003164715*. The type genome for the species is the GenBank assembly GCA_003164715.1. The GC content of the type genome is 66.99 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Favonula gen. nov.

Candidatus Favonula (NL. fem. n. *Favonula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1447*. The type species for the genus is *Candidatus* Favonula apsegitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Favonula bicalibra sp. nov.

Candidatus Favonula bicalibra (NL. fem. n. *bicalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1447 sp003168315*. The type genome for the species is the GenBank assembly GCA_003168315.1. The GC content of the type genome is 66.69 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Favonula dupunitrix sp. nov.

Candidatus Favonula dupunitrix (NL. fem. n. *dupunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1447 sp003140665*. The type genome for the species is the GenBank assembly GCA_003133585.1. The GC content of the type genome is 66.47 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Favonula nidifedo sp. nov.

Candidatus Favonula nidifedo (NL. fem. n. *nidifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1447 sp903919205*. The type genome for the species is the GenBank assembly GCA_903896945.1. The GC content of the type genome is 68.83 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Favonula senipastra sp. nov.

Candidatus Favonula senipastra (NL. fem. n. *senipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1447 sp903890485*. The type genome for the species is the GenBank assembly GCA_903825185.1. The GC content of the type genome is 64.74 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Favonula vavasibra sp. nov.

Candidatus Favonula vavasibra (NL. fem. n. *vavasibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1447 sp003151515*. The type genome for the species is the GenBank assembly GCA_003151515.1. The GC content of the type genome is 67.03 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Favonula volunax sp. nov.

Candidatus Favonula volunax (NL. fem. n. *volunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1447 sp903887455*. The type genome for the species is the GenBank assembly GCA_903887455.1. The GC content of the type genome is 66.27 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Favonula volunibula sp. nov.

Candidatus Favonula volunibula (NL. fem. n. *volunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1447 sp003151495*. The type genome for the species is the GenBank assembly GCA_003151495.1. The GC content of the type genome is 66.51 %

and the genome length is 4.12 Mbp.

Description of *Candidatus* Feculana saburitudo sp. nov.

Candidatus Feculana saburitudo (NL. fem. n. *saburitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002773005 sp002771215*. The type genome for the species is the GenBank assembly GCA_002771215.1. The GC content of the type genome is 39.89 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Feculana gen. nov.

Candidatus Feculana (NL. fem. n. *Feculana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002773005*. The type species for the genus is *Candidatus* Feculana saburitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002773005*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feculanaceae.

Description of *Candidatus* Feculanaceae fam. nov.

Candidatus Feculanaceae (NL. fem. n. *Feculanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002773005.* The type genus for the taxon is *Candidatus* Feculana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA12157_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nocumiales.

Description of *Candidatus* Fecularia bipenitica sp. nov.

Candidatus Fecularia bipenitica (NL. fem. n. *bipenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVVG01 sp903909295*. The type genome for the species is the GenBank assembly GCA_903866725.1. The GC content of the type genome is 51.32 %

and the genome length is 1.43 Mbp.

Description of *Candidatus* Fecularia gen. nov.

Candidatus Fecularia (NL. fem. n. *Fecularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVVG01*. The type species for the genus is *Candidatus* Fecularia bipenitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Feculella pavicimonas sp. nov.

Candidatus Feculella pavicimonas (NL. fem. n. *pavicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWFE01 sp002071445*. The type genome for the species is the GenBank assembly GCA_012516865.1. The GC content of the type genome is 44.08 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Feculella gen. nov.

Candidatus Feculella (NL. fem. n. *Feculella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWFE01*. The type species for the genus is *Candidatus* Feculella pavicimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BBW3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribiaceae.

Description of *Candidatus* Feculida democisca sp. nov.

Candidatus Feculida democisca (NL. fem. n. *democisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B5-G15 sp003645825*. The type genome for the species is the

GenBank assembly GCA_003645825.1. The GC content of the type genome is 39.93 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Feculida gen. nov.

Candidatus Feculida (NL. fem. n. *Feculida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B5-G15*. The type species for the genus is *Candidatus* Feculida democisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B5-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feculidaceae.

Description of *Candidatus* Feculidaceae fam. nov.

Candidatus Feculidaceae (NL. fem. n. *Feculidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B5-G15.* The type genus for the taxon is *Candidatus* Feculida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semunellales.

Description of *Candidatus* Feculosa deforifica sp. nov.

Candidatus Feculosa deforifica (NL. fem. n. *deforifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA845 sp002711995*. The type genome for the species is the GenBank assembly GCA_002295955.1. The GC content of the type genome is 40.15 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Feculosa gen. nov.

Candidatus Feculosa (NL. fem. n. *Feculosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA845*. The type species for the genus is *Candidatus* Feculosa deforifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Feculosa dicimigena sp. nov.

Candidatus Feculosa dicimigena (NL. fem. n. *dicimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA845 sp002718735*. The type genome for the species is the GenBank assembly GCA_002716305.1. The GC content of the type genome is 38.84 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Feculula pedififorma sp. nov.

Candidatus Feculula pedififorma (NL. fem. n. *pedififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1319 sp002306985*. The type genome for the species is the GenBank assembly GCA_002306985.1. The GC content of the type genome is 57.59 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Feculula gen. nov.

Candidatus Feculula (NL. fem. n. *Feculula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1319*. The type species for the genus is *Candidatus* Feculula pedififorma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1319*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecululaceae.

Description of *Candidatus* Fecululaceae fam. nov.

Candidatus Fecululaceae (NL. fem. n. *Fecululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1319.* The type genus for the taxon is *Candidatus* Feculula .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Fecunana bucelitudo sp. nov.

Candidatus Fecunana bucelitudo (NL. fem. n. *bucelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINNR01 sp903851235*. The type genome for the species is the GenBank assembly GCA_903851235.1. The GC content of the type genome is 41.9 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Fecunana gen. nov.

Candidatus Fecunana (NL. fem. n. *Fecunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINNR01*. The type species for the genus is *Candidatus* Fecunana bucelitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAINNR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecunanaceae.

Description of *Candidatus* Fecunanaceae fam. nov.

Candidatus Fecunanaceae (NL. fem. n. *Fecunanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAINNR01.* The type genus for the taxon is *Candidatus* Fecunana .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYA2-FULL-43-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denavulales.

Description of *Candidatus* Fecunaria malogax sp. nov.

Candidatus Fecunaria malogax (NL. fem. n. *malogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7797 sp002480645*. The type genome for the species is the GenBank assembly GCA_002453215.1. The GC content of the type genome is 42.93 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Fecunaria gen. nov.

Candidatus Fecunaria (NL. fem. n. *Fecunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7797*. The type species for the genus is *Candidatus* Fecunaria malogax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fecunella conigago sp. nov.

Candidatus Fecunella conigago (NL. fem. n. *conigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6898 sp003252075*. The type genome for the species is the GenBank assembly GCA_003252075.1. The GC content of the type genome is 52.15 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Fecunella gen. nov.

Candidatus Fecunella (NL. fem. n. *Fecunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6898*. The type species for the genus is *Candidatus* Fecunella conigago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6898*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecunellaceae.

Description of *Candidatus* Fecunellaceae fam. nov.

Candidatus Fecunellaceae (NL. fem. n. *Fecunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6898.* The type genus for the taxon is *Candidatus* Fecunella .

According to GTDB R06-RS202, this family belongs to the order *Thermodesulfovibrionales*.

Description of *Candidatus* Fecunella direpitio sp. nov.

Candidatus Fecunella direpitio (NL. fem. n. *direpitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6898 sp002451165*. The type genome for the species is the GenBank assembly GCA_002451165.1. The GC content of the type genome is 51.5 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Fecunella telegifica sp. nov.

Candidatus Fecunella telegifica (NL. fem. n. *telegifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6898 sp012026685*. The type genome for the species is the GenBank assembly GCA_012026685.1. The GC content of the type genome is 53.77 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Fecunella turilatio sp. nov.

Candidatus Fecunella turilatio (NL. fem. n. *turilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6898 sp002448975*. The type genome for the species is the GenBank assembly GCA_002448975.1. The GC content of the type genome is 52.37 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Fecunia amatricella sp. nov.

Candidatus Fecunia amatricella (NL. fem. n. *amatricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-68-16 sp003133645*. The type genome for the species is the GenBank assembly GCA_003133645.1. The GC content of the type genome is 69.45 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Fecunia gen. nov.

Candidatus Fecunia (NL. fem. n. *Fecunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-68-16*. The type species for the genus is *Candidatus* Fecunia amatricella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fecunia deforiforma sp. nov.

Candidatus Fecunia deforiforma (NL. fem. n. *deforiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-68-16 sp001766905*. The type genome for the species is the GenBank assembly GCA_001766905.1. The GC content of the type genome is 67.63 % and the genome length is 3.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Fecunia monacugo sp. nov.

Candidatus Fecunia monacugo (NL. fem. n. *monacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-68-16 sp004298115*. The type genome for the species is the GenBank assembly GCA_004298115.1. The GC content of the type genome is 71.18 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Fecunia nubifastra sp. nov.

Candidatus Fecunia nubifastra (NL. fem. n. *nubifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-68-16 sp002279285*. The type genome for the species is the GenBank assembly GCA_002279205.1. The GC content of the type genome is 70.0 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Fecunia vinacibra sp. nov.

Candidatus Fecunia vinacibra (NL. fem. n. *vinacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-68-16 sp003158745*. The type genome for the species is the GenBank assembly GCA_003154505.1. The GC content of the type genome is 66.89 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Fecunida monumigena sp. nov.

Candidatus Fecunida monumigena (NL. fem. n. *monumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKPM01 sp903829325*. The type genome for the species is the GenBank assembly GCA_903829325.1. The GC content of the type genome is 55.14 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Fecunida gen. nov.

Candidatus Fecunida (NL. fem. n. *Fecunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKPM01*. The type species for the genus is *Candidatus* Fecunida monumigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fecunosa tegimicella sp. nov.

Candidatus Fecunosa tegimicella (NL. fem. n. *tegimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHBQ01 sp003243865*. The type genome for the species is the GenBank assembly GCA_003243865.1. The GC content of the type genome is 60.54 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Fecunosa gen. nov.

Candidatus Fecunosa (NL. fem. n. *Fecunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHBQ01*. The type species for the genus is *Candidatus* Fecunosa tegimicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family

QHBQ01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecunosaceae.

Description of *Candidatus* Fecunosaceae fam. nov.

Candidatus Fecunosaceae (NL. fem. n. *Fecunosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QHBQ01.* The type genus for the taxon is *Candidatus* Fecunosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *54-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curacidales.

Description of *Candidatus* Fecunula supelitrix sp. nov.

Candidatus Fecunula supelitrix (NL. fem. n. *supelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-5 sp003598085*. The type genome for the species is the GenBank assembly GCA_003598085.1. The GC content of the type genome is 54.76 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Fecunula gen. nov.

Candidatus Fecunula (NL. fem. n. *Fecunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-5*. The type species for the genus is *Candidatus* Fecunula supelitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecunulaceae.

Description of *Candidatus* Fecunulaceae fam. nov.

Candidatus Fecunulaceae (NL. fem. n. *Fecunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-5.* The type genus for the taxon is *Candidatus* Fecunula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SURF-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fecunulales.

Description of *Candidatus* Fecunulales ord. nov.

Candidatus Fecunulales (NL. fem. n. *Fecunulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-5.* The type genus for the taxon is *Candidatus* Fecunula .

According to the original version of GTDB R06-RS202, this family belongs to the class *SURF-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Fecunulae.

Description of *Candidatus* Fecunulae class. nov.

Candidatus Fecunulae (NL. fem. n. *c__Fecunulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-5.* The type genus for the taxon is *Candidatus* Fecunula .

According to GTDB R06-RS202, this class belongs to the phylum *Abyssubacteria*.

Description of *Candidatus* Feditana amnenifica sp. nov.

Candidatus Feditana amnenifica (NL. fem. n. *amnenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WOZS01 sp011620135*. The type genome for the species is the GenBank assembly GCA_011620135.1. The GC content of the type genome is 62.11 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Feditana gen. nov.

Candidatus Feditana (NL. fem. n. *Feditana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WOZS01*. The type species for the genus is *Candidatus* Feditana amnenifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

WOZS01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feditanaceae.

Description of *Candidatus* Feditanaceae fam. nov.

Candidatus Feditanaceae (NL. fem. n. *Feditanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WOZS01*. The type genus for the taxon is *Candidatus* Feditana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2770*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Detenellales.

Description of *Candidatus* Feditaria laxitax sp. nov.

Candidatus Feditaria laxitax (NL. fem. n. *laxitax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPUP01 sp903868285*. The type genome for the species is the GenBank assembly GCA_903921815.1. The GC content of the type genome is 61.66 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Feditaria gen. nov.

Candidatus Feditaria (NL. fem. n. *Feditaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPUP01*. The type species for the genus is *Candidatus* Feditaria laxitax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Feditella rinocivita sp. nov.

Candidatus Feditella rinocivita (NL. fem. n. *rinocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIQBE01 sp903870015*. The type genome for the species is the GenBank assembly GCA_903870015.1. The GC content of the type genome is 43.05 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Feditella gen. nov.

Candidatus Feditella (NL. fem. n. *Feditella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQBE01*. The type species for the genus is *Candidatus* Feditella rinocivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIQBE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feditellaceae.

Description of *Candidatus* Feditellaceae fam. nov.

Candidatus Feditellaceae (NL. fem. n. *Feditellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIQBE01.* The type genus for the taxon is *Candidatus* Feditella .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIQBE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Feditellales.

Description of *Candidatus* Feditellales ord. nov.

Candidatus Feditellales (NL. fem. n. *Feditellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIQBE01.* The type genus for the taxon is *Candidatus* Feditella .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Feditida defesimonia sp. nov.

Candidatus Feditida defesimonia (NL. fem. n. *defesimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RUG12999 sp902784685*. The type genome for the species is the GenBank assembly GCA_902784685.1. The GC content of the type genome is 41.46 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Feditida gen. nov.

Candidatus Feditida (NL. fem. n. *Feditida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12999*. The type species for the genus is *Candidatus* Feditida defesimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RUG12999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feditidaceae.

Description of *Candidatus* Feditidaceae fam. nov.

Candidatus Feditidaceae (NL. fem. n. *Feditidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG12999.* The type genus for the taxon is *Candidatus* Feditida .

According to the original version of GTDB R06-RS202, this family belongs to the order *RUG12999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Feditidales.

Description of *Candidatus* Feditidales ord. nov.

Candidatus Feditidales (NL. fem. n. *Feditidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG12999.* The type genus for the taxon is *Candidatus* Feditida .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Feditida invecivita sp. nov.

Candidatus Feditida invecivita (NL. fem. n. *invecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12999 sp902783995*. The type genome for the species is the

GenBank assembly GCA_902783995.1. The GC content of the type genome is 41.05 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Feditida monumastra sp. nov.

Candidatus Feditida monumastra (NL. fem. n. *monumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12999 sp902784805*. The type genome for the species is the GenBank assembly GCA_902784805.1. The GC content of the type genome is 40.9 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Feditosa adlociforma sp. nov.

Candidatus Feditosa adlociforma (NL. fem. n. *adlociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2466 sp900299195*. The type genome for the species is the GenBank assembly GCA_900299195.1. The GC content of the type genome is 42.57 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Feditosa gen. nov.

Candidatus Feditosa (NL. fem. n. *Feditosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2466*. The type species for the genus is *Candidatus* Feditosa adlociforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2466*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feditosaceae.

Description of *Candidatus* Feditosaceae fam. nov.

Candidatus Feditosaceae (NL. fem. n. *Feditosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2466.* The type genus for the taxon is *Candidatus* Feditosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2466*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Feditosales.

Description of *Candidatus* Feditosales ord. nov.

Candidatus Feditosales (NL. fem. n. *Feditosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2466.* The type genus for the taxon is *Candidatus* Feditosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *FAC87*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Desurosae.

Description of *Candidatus* Feditosa adsesitia sp. nov.

Candidatus Feditosa adsesitia (NL. fem. n. *adsesitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2466 sp013205415*. The type genome for the species is the GenBank assembly GCA_013205415.1. The GC content of the type genome is 41.44 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Feditosa casigivita sp. nov.

Candidatus Feditosa casigivita (NL. fem. n. *casigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2466 sp009692515*. The type genome for the species is the GenBank assembly GCA_009692515.1. The GC content of the type genome is 40.9 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Feditosa furibugo sp. nov.

Candidatus Feditosa furibugo (NL. fem. n. *furibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2466 sp002342225*. The type genome for the species is the GenBank assembly GCA_009926805.1. The GC content of the type genome is 42.47 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Feditosa obtenitia sp. nov.

Candidatus Feditosa obtenitia (NL. fem. n. *obtenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2466 sp005776395*. The type genome for the species is the GenBank assembly GCA_005776395.1. The GC content of the type genome is 40.76 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Feditula horomivita sp. nov.

Candidatus Feditula horomivita (NL. fem. n. *horomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-31 sp001304035*. The type genome for the species is the GenBank assembly GCA_001304035.1. The GC content of the type genome is 40.33 % and the genome length is 2.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Feditula gen. nov.

Candidatus Feditula (NL. fem. n. *Feditula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-31*. The type species for the genus is *Candidatus* Feditula horomivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-31*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feditulaceae.

Description of *Candidatus* Feditulaceae fam. nov.

Candidatus Feditulaceae (NL. fem. n. *Feditulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-31.* The type genus for the taxon is *Candidatus* Feditula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-31*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Feditulales.

Description of *Candidatus* Feditulales ord. nov.

Candidatus Feditulales (NL. fem. n. *Feditulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-31.* The type genus for the taxon is *Candidatus* Feditula .

According to the original version of GTDB R06-RS202, this family belongs to the class *SM23-31*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Feditulae.

Description of *Candidatus* Feditulae class. nov.

Candidatus Feditulae (NL. fem. n. *c__Feditulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-31.* The type genus for the taxon is *Candidatus* Feditula .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *SM23-31*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Feditulota.

Description of *Candidatus* Feditulota phyl. nov.

Candidatus Feditulota (NL. fem. n. *Feditulota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-31.* The type genus for the taxon is *Candidatus* Feditula .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Fefelana anaplatica sp. nov.

Candidatus Fefelana anaplatica (NL. fem. n. *anaplatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R2A130 sp013214695*. The type genome for the species is the GenBank assembly GCA_013214695.1. The GC content of the type genome is 56.9 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Fefelana gen. nov.

Candidatus Fefelana (NL. fem. n. *Fefelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *R2A130*. The type species for the genus is *Candidatus* Fefelana anaplatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fefelana bisulitura sp. nov.

Candidatus Fefelana bisulitura (NL. fem. n. *bisulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R2A130 sp000179775*. The type genome for the species is the GenBank assembly RS_GCF_000179775.1. The GC content of the type genome is 56.93 % and the genome length is 3.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Subsurface (10-m) water samples were collected in Niskinbottles at a station located 8 km west of the mouth of Yaquina Bay; Oregon".

Description of *Candidatus* Fefelana detositas sp. nov.

Candidatus Fefelana detositas (NL. fem. n. *detositas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R2A130 sp011087605*. The type genome for the species is the GenBank assembly GCA_011087605.1. The GC content of the type genome is 52.7 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Fefelana sacomitura sp. nov.

Candidatus Fefelana sacomitura (NL. fem. n. *sacomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R2A130 sp014238155*. The type genome for the species is the GenBank assembly GCA_014238155.1. The GC content of the type genome is 52.21 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Fefelana utricibula sp. nov.

Candidatus Fefelana utricibula (NL. fem. n. *utricibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R2A130 sp003233475*. The type genome for the species is the GenBank assembly GCA_003233475.1. The GC content of the type genome is 50.04 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Fefelaria dimadisca sp. nov.

Candidatus Fefelaria dimadisca (NL. fem. n. *dimadisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMVM01 sp903844895*. The type genome for the species is the GenBank assembly GCA_903844895.1. The GC content of the type genome is 43.6 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Fefelaria gen. nov.

Candidatus Fefelaria (NL. fem. n. *Fefelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMVM01*. The type species for the genus is *Candidatus* Fefelaria dimadisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIMVM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fefelariaceae.

Description of *Candidatus* Fefelariaceae fam. nov.

Candidatus Fefelariaceae (NL. fem. n. *Fefelariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIMVM01.* The type genus for the taxon is *Candidatus* Fefelaria .

According to GTDB R06-RS202, this family belongs to the order *Oligoflexales*.

Description of *Candidatus* Fefelella catecitia sp. nov.

Candidatus Fefelella catecitia (NL. fem. n. *catecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS680 sp900544525*. The type genome for the species is the GenBank assembly GCA_900544525.1. The GC content of the type genome is 34.67 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Fefelella gen. nov.

Candidatus Fefelella (NL. fem. n. *Fefelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS680*. The type species for the genus is *Candidatus* Fefelella catecitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fefelia colimax sp. nov.

Candidatus Fefelia colimax (NL. fem. n. *colimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMP01 sp003557485*. The type genome for the species is the GenBank assembly GCA_003557485.1. The GC content of the type genome is 44.05 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Fefelia gen. nov.

Candidatus Fefelia (NL. fem. n. *Fefelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWMP01*. The type species for the genus is *Candidatus* Fefelia colimax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWQF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colapiaceae.

Description of *Candidatus* Fefelia detunibra sp. nov.

Candidatus Fefelia detunibra (NL. fem. n. *detunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMP01 sp003558145*. The type genome for the species is the GenBank assembly GCA_003565465.1. The GC content of the type genome is 44.08 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Fefelida detotousia sp. nov.

Candidatus Fefelida detotousia (NL. fem. n. *detotousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CS4-C045 sp011772275*. The type genome for the species is the GenBank assembly GCA_011773715.1. The GC content of the type genome is 61.41 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Fefelida gen. nov.

Candidatus Fefelida (NL. fem. n. *Fefelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CS4-C045*. The type species for the genus is *Candidatus* Fefelida detotousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7805*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ficulariaceae.

Description of *Candidatus* Fefelosa dibucifica sp. nov.

Candidatus Fefelosa dibucifica (NL. fem. n. *dibucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPYM01 sp903869345*. The type genome for the species is the GenBank assembly GCA_903958145.1. The GC content of the type genome is 61.25 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Fefelosa gen. nov.

Candidatus Fefelosa (NL. fem. n. *Fefelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CAIPYM01*. The type species for the genus is *Candidatus* Fefelosa dibucifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9219*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luticidaceae.

Description of *Candidatus* Fefelula semibisca sp. nov.

Candidatus Fefelula semibisca (NL. fem. n. *semibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6729 sp002454015*. The type genome for the species is the GenBank assembly GCA_002454015.1. The GC content of the type genome is 60.72 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Fefelula gen. nov.

Candidatus Fefelula (NL. fem. n. *Fefelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6729*. The type species for the genus is *Candidatus* Fefelula semibisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6729*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fefelulaceae.

Description of *Candidatus* Fefelulaceae fam. nov.

Candidatus Fefelulaceae (NL. fem. n. *Fefelulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6729.* The type genus for the taxon is *Candidatus* Fefelula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6729*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fefelulales.

Description of *Candidatus* Fefelulales ord. nov.

Candidatus Fefelulales (NL. fem. n. *Fefelulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6729.* The type genus for the taxon is *Candidatus* Fefelula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Feficana cacalibra sp. nov.

Candidatus Feficana cacalibra (NL. fem. n. *cacalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUMH01 sp903900235*. The type genome for the species is the GenBank assembly GCA_903869705.1. The GC content of the type genome is 65.22 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Feficana gen. nov.

Candidatus Feficana (NL. fem. n. *Feficana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUMH01*. The type species for the genus is *Candidatus* Feficana cacalibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Feficana desepifica sp. nov.

Candidatus Feficana desepifica (NL. fem. n. *desepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUMH01 sp009699875*. The type genome for the species is the GenBank assembly GCA_009700605.1. The GC content of the type genome is 55.07 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Feficana forabastra sp. nov.

Candidatus Feficana forabastra (NL. fem. n. *forabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUMH01 sp903825895*. The type genome for the species is the GenBank assembly GCA_903824745.1. The GC content of the type genome is 56.21 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Feficana retunousia sp. nov.

Candidatus Feficana retunousia (NL. fem. n. *retunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUMH01 sp903893955*. The type genome for the species is the GenBank assembly GCA_903902025.1. The GC content of the type genome is 65.99 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Feficaria obfenigena sp. nov.

Candidatus Feficaria obfenigena (NL. fem. n. *obfenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11386 sp003532715*. The type genome for the species is the GenBank assembly GCA_003532715.1. The GC content of the type genome is 61.56 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Feficaria gen. nov.

Candidatus Feficaria (NL. fem. n. *Feficaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11386*. The type species for the genus is *Candidatus* Feficaria obfenigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feficariaceae.

Description of *Candidatus* Feficariaceae fam. nov.

Candidatus Feficariaceae (NL. fem. n. *Feficariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA11386.* The type genus for the taxon is *Candidatus* Feficaria .

According to GTDB R06-RS202, this family belongs to the order *Pirellulales*.

Description of *Candidatus* Feficella semiletta sp. nov.

Candidatus Feficella semiletta (NL. fem. n. *semiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5745 sp002435905*. The type genome for the species is the GenBank assembly GCA_003536815.1. The GC content of the type genome is 50.51 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Feficella gen. nov.

Candidatus Feficella (NL. fem. n. *Feficella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5745*. The type species for the genus is *Candidatus* Feficella semiletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5745*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feficellaceae.

Description of *Candidatus* Feficellaceae fam. nov.

Candidatus Feficellaceae (NL. fem. n. *Feficellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5745.* The type genus for the taxon is *Candidatus* Feficella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRI-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Latibellales.

Description of *Candidatus* Feficia pinifastra sp. nov.

Candidatus Feficia pinifastra (NL. fem. n. *pinifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *39-52-133 sp002278935*. The type genome for the species is the GenBank assembly GCA_002281365.1. The GC content of the type genome is 52.53 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Feficia gen. nov.

Candidatus Feficia (NL. fem. n. *Feficia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *39-52-133*. The type species for the genus is *Candidatus* Feficia pinifastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Feficida forabousia sp. nov.

Candidatus Feficida forabousia (NL. fem. n. *forabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8649 sp002708985*. The type genome for the species is the GenBank assembly GCA_002708985.1. The GC content of the type genome is 41.7 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Feficida gen. nov.

Candidatus Feficida (NL. fem. n. *Feficida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8649*. The type species for the genus is *Candidatus* Feficida forabousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8649*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feficidaceae.

Description of *Candidatus* Feficidaceae fam. nov.

Candidatus Feficidaceae (NL. fem. n. *Feficidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8649*. The type genus for the taxon is *Candidatus* Feficida .

According to GTDB R06-RS202, this family belongs to the order *Chitinophagales*.

Description of *Candidatus* Feficida holisisca sp. nov.

Candidatus Feficida holisisca (NL. fem. n. *holisisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8649 sp003447535*. The type genome for the species is the GenBank assembly GCA_003447535.1. The GC content of the type genome is 42.41 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Feficida rubecimonia sp. nov.

Candidatus Feficida rubecimonia (NL. fem. n. *rubecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8649 sp002862745*. The type genome for the species is the GenBank assembly GCA_003331825.1. The GC content of the type genome is 42.97 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Feficosa episcago sp. nov.

Candidatus Feficosa episcago (NL. fem. n. *episcago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7950 sp003535305*. The type genome for the species is the GenBank assembly GCA_003535305.1. The GC content of the type genome is 49.86 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Feficosa gen. nov.

Candidatus Feficosa (NL. fem. n. *Feficosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7950*. The type species for the genus is *Candidatus* Feficosa episcago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7950*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feficosaceae.

Description of *Candidatus* Feficosaceae fam. nov.

Candidatus Feficosaceae (NL. fem. n. *Feficosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7950.* The type genus for the taxon is *Candidatus* Feficosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7950*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Feficosales.

Description of *Candidatus* Feficosales ord. nov.

Candidatus Feficosales (NL. fem. n. *Feficosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7950.* The type genus for the taxon is *Candidatus* Feficosa .

According to the GTDB R06-RS202, this order belongs to the class *Bipolaricaulia*.

Description of *Candidatus* Feficula desupitrix sp. nov.

Candidatus Feficula desupitrix (NL. fem. n. *desupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS692 sp900544545*. The type genome for the species is the GenBank assembly GCA_900544545.1. The GC content of the type genome is 48.29 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Feficula gen. nov.

Candidatus Feficula (NL. fem. n. *Feficula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS692*. The type species for the genus is *Candidatus* Feficula desupitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-314*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurariaceae.

Description of *Candidatus* Femelana monimimonia sp. nov.

Candidatus Femelana monimimonia (NL. fem. n. *monimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-60-27 sp001873115*. The type genome for the species is the GenBank assembly GCA_002772305.1. The GC content of the type genome is 59.92 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Femelana gen. nov.

Candidatus Femelana (NL. fem. n. *Femelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-60-27*. The type species for the genus is *Candidatus* Femelana monimimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Femelaria lacinibula sp. nov.

Candidatus Femelaria lacinibula (NL. fem. n. *lacinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2766 sp002352645*. The type genome for the species is the GenBank assembly GCA_002352645.1. The GC content of the type genome is 54.07 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Femelaria gen. nov.

Candidatus Femelaria (NL. fem. n. *Femelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2766*. The type species for the genus is *Candidatus* Femelaria lacinibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2766*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Femelariaceae.

Description of *Candidatus* Femelariaceae fam. nov.

Candidatus Femelariaceae (NL. fem. n. *Femelariaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2766.* The type genus for the taxon is *Candidatus* Femelaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2766*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Femelariales.

Description of *Candidatus* Femelariales ord. nov.

Candidatus Femelariales (NL. fem. n. *Femelariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2766.* The type genus for the taxon is *Candidatus* Femelaria .

According to the GTDB R06-RS202, this order belongs to the class *Acidimicrobiia*.

Description of *Candidatus* Femelella patibisca sp. nov.

Candidatus Femelella patibisca (NL. fem. n. *patibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIGHO2-12-38-15 sp001801745*. The type genome for the species is the GenBank assembly GCA_001802425.1. The GC content of the type genome is 38.26 % and the genome length is 1.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Femelella gen. nov.

Candidatus Femelella (NL. fem. n. *Femelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HIGHO2-12-38-15*. The type species for the genus is *Candidatus* Femelella patibisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAISUE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Piniganaceae.

Description of *Candidatus* Femelia cilotatica sp. nov.

Candidatus Femelia cilotatica (NL. fem. n. *cilotatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-40 sp003599745*. The type genome for the species is the GenBank assembly GCA_003599745.1. The GC content of the type genome is 55.94 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Femelia gen. nov.

Candidatus Femelia (NL. fem. n. *Femelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-40*. The type species for the genus is *Candidatus* Femelia cilotatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-40*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Femeliaceae.

Description of *Candidatus* Femeliaceae fam. nov.

Candidatus Femeliaceae (NL. fem. n. *Femeliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-40.* The type genus for the taxon is *Candidatus* Femelia .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Femelida conabibula sp. nov.

Candidatus Femelida conabibula (NL. fem. n. *conabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G85 sp003331505*. The type genome for the species is the GenBank assembly GCA_902577165.1. The GC content of the type genome is 31.36 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Femelida gen. nov.

Candidatus Femelida (NL. fem. n. *Femelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G85*. The type species for the genus is *Candidatus* Femelida conabibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Femelosa infesigena sp. nov.

Candidatus Femelosa infesigena (NL. fem. n. *infesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDGC01 sp013815535*. The type genome for the species is the GenBank assembly GCA_013815535.1. The GC content of the type genome is 60.61 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Femelosa gen. nov.

Candidatus Femelosa (NL. fem. n. *Femelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDGC01*. The type species for the genus is *Candidatus* Femelosa infesigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACDGC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Femelosaceae.

Description of *Candidatus* Femelosaceae fam. nov.

Candidatus Femelosaceae (NL. fem. n. *Femelosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACDGC01.* The type genus for the taxon is *Candidatus* Femelosa .

According to GTDB R06-RS202, this family belongs to the order *Ktedonobacterales*.

Description of *Candidatus* Femelula repuditoga sp. nov.

Candidatus Femelula repuditoga (NL. fem. n. *repuditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-39-44 sp002789815*. The type genome for the species is the GenBank assembly GCA_001872695.1. The GC content of the type genome is 39.33 % and the genome length is 0.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Femelula gen. nov.

Candidatus Femelula (NL. fem. n. *Femelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-39-44*. The type species for the genus is *Candidatus* Femelula repuditoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-39-44*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Femelulaceae.

Description of *Candidatus* Femelulaceae fam. nov.

Candidatus Femelulaceae (NL. fem. n. *Femelulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-39-44.* The type genus for the taxon is *Candidatus* Femelula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-35-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fidenellales.

Description of *Candidatus* Fenollaria antirilenta sp. nov.

Candidatus Fenollaria antirilenta (NL. fem. n. *antirilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fenollaria sp900539225*. The type genome for the species is the GenBank assembly GCA_900539225.1. The GC content of the type genome is 36.11 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Fenollaria inretastra sp. nov.

Candidatus Fenollaria inretastra (NL. fem. n. *inretastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fenollaria sp900539725*. The type genome for the species is the GenBank assembly GCA_900539725.1. The GC content of the type genome is 36.4 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Ferdinandcohnia sacomisca sp. nov.

Candidatus Ferdinandcohnia sacomisca (NL. fem. n. *sacomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferdinandcohnia sp003400205*. The type genome for the species is the GenBank assembly RS_GCF_003400205.1. The GC content of the type genome is 37.75 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Fermentimonas affanax sp. nov.

Candidatus Fermentimonas affanax (NL. fem. n. *affanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fermentimonas sp012518155*. The type genome for the species is the GenBank assembly GCA_012518155.1. The GC content of the type genome is 48.41 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Fermentimonas indecilenta sp. nov.

Candidatus Fermentimonas indecilenta (NL. fem. n. *indecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fermentimonas sp012839475*. The type genome for the species is the GenBank assembly GCA_012839475.1. The GC content of the type genome is 49.23 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Fermentimonas inretago sp. nov.

Candidatus Fermentimonas inretago (NL. fem. n. *inretago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fermentimonas sp012513315*. The type genome for the species is the GenBank assembly GCA_012513315.1. The GC content of the type genome is 36.5 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Fermentimonas locupastra sp. nov.

Candidatus Fermentimonas locupastra (NL. fem. n. *locupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fermentimonas sp002398875*. The type genome for the species is the GenBank assembly GCA_002424205.1. The GC content of the type genome is 37.67 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Fermentimonas ludifitica sp. nov.

Candidatus Fermentimonas ludifitica (NL. fem. n. *ludifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fermentimonas sp012838585*. The type genome for the species is the GenBank assembly GCA_012838585.1. The GC content of the type genome is 50.44 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Fermentimonas mahelisca sp. nov.

Candidatus Fermentimonas mahelisca (NL. fem. n. *mahelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fermentimonas sp012841425*. The type genome for the species is the GenBank assembly GCA_012841425.1. The GC content of the type genome is 36.32 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Ferrimonas bovicatica sp. nov.

Candidatus Ferrimonas bovicatica (NL. fem. n. *bovicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferrimonas sp005116665*. The type genome for the species is the GenBank assembly RS_GCF_005116665.1. The GC content of the type genome is 51.8

% and the genome length is 4.75 Mbp.

Description of *Candidatus* Ferrimonas pudibitia sp. nov.

Candidatus Ferrimonas pudibitia (NL. fem. n. *pudibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferrimonas sp012295575*. The type genome for the species is the GenBank assembly RS_GCF_012295575.1. The GC content of the type genome is 49.35 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Ferrimonas visocugo sp. nov.

Candidatus Ferrimonas visocugo (NL. fem. n. *visocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferrimonas sp005116715*. The type genome for the species is the GenBank assembly RS_GCF_005116715.1. The GC content of the type genome is 61.01 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Ferriphaselus admutastra sp. nov.

Candidatus Ferriphaselus admutastra (NL. fem. n. *admutastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferriphaselus sp000746095*. The type genome for the species is the GenBank assembly RS_GCF_000746095.1. The GC content of the type genome is 60.65 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Ferrovibrio depetivita sp. nov.

Candidatus Ferrovibrio depetivita (NL. fem. n. *depetivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferrovibrio sp002796975*. The type genome for the species is the GenBank assembly GCA_002796975.1. The GC content of the type genome is 63.03 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Ferrovibrio entomedo sp. nov.

Candidatus Ferrovibrio entomedo (NL. fem. n. *entomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferrovibrio sp002482765*. The type genome for the species is the GenBank assembly GCA_002482765.1. The GC content of the type genome is 62.47 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Ferrovum dilacatio sp. nov.

Candidatus Ferrovum dilacatio (NL. fem. n. *dilacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferrovum sp010435995*. The type genome for the species is the GenBank assembly GCA_010435995.1. The GC content of the type genome is 53.85 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Ferruginibacter ablacitio sp. nov.

Candidatus Ferruginibacter ablacitio (NL. fem. n. *ablacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp903871575*. The type genome for the species is the GenBank assembly GCA_903871575.1. The GC content of the type genome is 37.87 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Ferruginibacter acontimonia sp. nov.

Candidatus Ferruginibacter acontimonia (NL. fem. n. *acontimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp002336815*. The type genome for the species is the GenBank assembly GCA_002336815.1. The GC content of the type genome is 43.91 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Ferruginibacter acrimifica sp. nov.

Candidatus Ferruginibacter acrimifica (NL. fem. n. *acrimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp014377385*. The type genome for the species is the GenBank assembly GCA_014377385.1. The GC content of the type genome is 40.66 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Ferruginibacter anamnitrix sp. nov.

Candidatus Ferruginibacter anamnitrix (NL. fem. n. *anamnitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp903831575*. The type genome for the species is the GenBank assembly GCA_903831575.1. The GC content of the type genome is 34.36 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Ferruginibacter cocoditio sp. nov.

Candidatus Ferruginibacter cocoditio (NL. fem. n. *cocoditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp013288745*. The type genome for the species is the GenBank assembly GCA_013288745.1. The GC content of the type genome is 36.83 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Ferruginibacter conabugo sp. nov.

Candidatus Ferruginibacter conabugo (NL. fem. n. *conabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp013141435*. The type genome for the species is the GenBank assembly GCA_013141435.1. The GC content of the type genome is 32.0 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Ferruginibacter defesitio sp. nov.

Candidatus Ferruginibacter defesitio (NL. fem. n. *defesitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp001898465*. The type genome for the species is the GenBank assembly GCA_001724485.1. The GC content of the type genome is 39.32 %

and the genome length is 3.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Ferruginibacter delacivita sp. nov.

Candidatus Ferruginibacter delacivita (NL. fem. n. *delacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp903858475*. The type genome for the species is the GenBank assembly GCA_903889855.1. The GC content of the type genome is 37.92 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Ferruginibacter dicanastra sp. nov.

Candidatus Ferruginibacter dicanastra (NL. fem. n. *dicanastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp009885535*. The type genome for the species is the GenBank assembly GCA_009885535.1. The GC content of the type genome is 34.06 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Ferruginibacter dilogitrix sp. nov.

Candidatus Ferruginibacter dilogitrix (NL. fem. n. *dilogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp003534175*. The type genome for the species is the GenBank assembly GCA_003534175.1. The GC content of the type genome is 44.48 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Ferruginibacter filifisca sp. nov.

Candidatus Ferruginibacter filifisca (NL. fem. n. *filifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp014377975*. The type genome for the species is the GenBank assembly GCA_014377975.1. The GC content of the type genome is 38.12 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Ferruginibacter infatitio sp. nov.

Candidatus Ferruginibacter infatitio (NL. fem. n. *infatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp003455235*. The type genome for the species is the GenBank assembly GCA_003455235.1. The GC content of the type genome is 47.3 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Ferruginibacter lugubessa sp. nov.

Candidatus Ferruginibacter lugubessa (NL. fem. n. *lugubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp002343985*. The type genome for the species is the GenBank assembly GCA_002425015.1. The GC content of the type genome is 47.52 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Ferruginibacter musulitrix sp. nov.

Candidatus Ferruginibacter musulitrix (NL. fem. n. *musulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp002352045*. The type genome for the species is the GenBank assembly GCA_002455285.1. The GC content of the type genome is 37.67 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Ferruginibacter obmutifica sp. nov.

Candidatus Ferruginibacter obmutifica (NL. fem. n. *obmutifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp013141115*. The type genome for the species is the GenBank assembly GCA_013141115.1. The GC content of the type genome is 37.11 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Ferruginibacter optumicella sp. nov.

Candidatus Ferruginibacter optumicella (NL. fem. n. *optumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp903837525*. The type genome for the species is the GenBank assembly GCA_903837525.1. The GC content of the type genome is 33.24 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Ferruginibacter propribula sp. nov.

Candidatus Ferruginibacter propribula (NL. fem. n. *propribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp014379905*. The type genome for the species is the GenBank assembly GCA_014379905.1. The GC content of the type genome is 40.41 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Ferruginibacter repepitoga sp. nov.

Candidatus Ferruginibacter repepitoga (NL. fem. n. *repepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp014379625*. The type genome for the species is the GenBank assembly GCA_014379625.1. The GC content of the type genome is 40.89 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Ferruginibacter risibiforma sp. nov.

Candidatus Ferruginibacter risibiforma (NL. fem. n. *risibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp002400445*. The type genome for the species is the GenBank assembly GCA_002400445.1. The GC content of the type genome is 43.08 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Ferruginibacter robigentia sp. nov.

Candidatus Ferruginibacter robigentia (NL. fem. n. *robigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp002381005*. The type genome for the species is the GenBank assembly GCA_003456255.1. The GC content of the type genome is 38.18 %

and the genome length is 2.34 Mbp.

Description of *Candidatus* Ferruginibacter tenementia sp. nov.

Candidatus Ferruginibacter tenementia (NL. fem. n. *tenementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp903878475*. The type genome for the species is the GenBank assembly GCA_903864605.1. The GC content of the type genome is 43.0 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Ferruginibacter vitupiforma sp. nov.

Candidatus Ferruginibacter vitupiforma (NL. fem. n. *vitupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ferruginibacter sp013298665*. The type genome for the species is the GenBank assembly GCA_013298665.1. The GC content of the type genome is 47.54 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Fervidobacterium detotimonas sp. nov.

Candidatus Fervidobacterium detotimonas (NL. fem. n. *detotimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fervidobacterium sp003526765*. The type genome for the species is the GenBank assembly GCA_012516815.1. The GC content of the type genome is 39.88 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Fervidobacterium inoblimonia sp. nov.

Candidatus Fervidobacterium inoblimonia (NL. fem. n. *inoblimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fervidobacterium sp003522805*. The type genome for the species is the GenBank assembly GCA_003522805.1. The GC content of the type genome is 39.1 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Fervidobacterium taxilastra sp. nov.

Candidatus Fervidobacterium taxilastra (NL. fem. n. *taxilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fervidobacterium sp002432805*. The type genome for the species is the GenBank assembly GCA_002417795.1. The GC content of the type genome is 39.72 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Fetifana recogousia sp. nov.

Candidatus Fetifana recogousia (NL. fem. n. *recogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11236 sp003455335*. The type genome for the species is the GenBank assembly GCA_003455335.1. The GC content of the type genome is 55.42 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Fetifana gen. nov.

Candidatus Fetifana (NL. fem. n. *Fetifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11236*. The type species for the genus is *Candidatus* Fetifana recogousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11236*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifanaceae.

Description of *Candidatus* Fetifanaceae fam. nov.

Candidatus Fetifanaceae (NL. fem. n. *Fetifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11236.* The type genus for the taxon is *Candidatus* Fetifana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11236*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetifanales.

Description of *Candidatus* Fetifanales ord. nov.

Candidatus Fetifanales (NL. fem. n. *Fetifanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11236.* The type genus for the taxon is *Candidatus* Fetifana .

According to the GTDB R06-RS202, this order belongs to the class *Fibrobacteria*.

Description of *Candidatus* Fetifaria levifugo sp. nov.

Candidatus Fetifaria levifugo (NL. fem. n. *levifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAU01 sp007126675*. The type genome for the species is the GenBank assembly GCA_007126675.1. The GC content of the type genome is 42.52 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Fetifaria gen. nov.

Candidatus Fetifaria (NL. fem. n. *Fetifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLAU01*. The type species for the genus is *Candidatus* Fetifaria levifugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fetifella cacalitudo sp. nov.

Candidatus Fetifella cacalitudo (NL. fem. n. *cacalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXS01 sp005791235*. The type genome for the species is the GenBank assembly GCA_005791235.1. The GC content of the type genome is 33.76 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Fetifella gen. nov.

Candidatus Fetifella (NL. fem. n. *Fetifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXXS01*. The type species for the genus is *Candidatus* Fetifella cacalitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fetifella umbilisca sp. nov.

Candidatus Fetifella umbilisca (NL. fem. n. *umbilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXS01 sp903828265*. The type genome for the species is the GenBank assembly GCA_903828265.1. The GC content of the type genome is 33.41 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Fetifia arundentia sp. nov.

Candidatus Fetifia arundentia (NL. fem. n. *arundentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG695 sp902797455*. The type genome for the species is the GenBank assembly GCA_902797455.1. The GC content of the type genome is 59.84 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Fetifia gen. nov.

Candidatus Fetifia (NL. fem. n. *Fetifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG695*. The type species for the genus is *Candidatus* Fetifia arundentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fetifia everbitrix sp. nov.

Candidatus Fetifia everbitrix (NL. fem. n. *everbitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG695 sp902766935*. The type genome for the species is the

GenBank assembly GCA_902766935.1. The GC content of the type genome is 60.46 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Fetifia hegumetta sp. nov.

Candidatus Fetifia hegumetta (NL. fem. n. *hegumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG695 sp900321495*. The type genome for the species is the GenBank assembly GCA_900321495.1. The GC content of the type genome is 59.09 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Fetifia triscisca sp. nov.

Candidatus Fetifia triscisca (NL. fem. n. *triscisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG695 sp902796885*. The type genome for the species is the GenBank assembly GCA_902796885.1. The GC content of the type genome is 57.98 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Fetifosa sonipax sp. nov.

Candidatus Fetifosa sonipax (NL. fem. n. *sonipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MHYJ01 sp001828445*. The type genome for the species is the GenBank assembly GCA_001828445.1. The GC content of the type genome is 43.34 % and the genome length is 2.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Fetifosa gen. nov.

Candidatus Fetifosa (NL. fem. n. *Fetifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MHYJ01*. The type species for the genus is *Candidatus* Fetifosa sonipax .

According to the original version of GTDB R06-RS202, this genus belongs to the family

MHYJ01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifosaceae.

Description of *Candidatus* Fetifosaceae fam. nov.

Candidatus Fetifosaceae (NL. fem. n. *Fetifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MHYJ01.* The type genus for the taxon is *Candidatus* Fetifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *MHYJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetifosales.

Description of *Candidatus* Fetifosales ord. nov.

Candidatus Fetifosales (NL. fem. n. *Fetifosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MHYJ01.* The type genus for the taxon is *Candidatus* Fetifosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *MHYJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Fetifosae.

Description of *Candidatus* Fetifosae class. nov.

Candidatus Fetifosae (NL. fem. n. *c__Fetifosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MHYJ01.* The type genus for the taxon is *Candidatus* Fetifosa .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Fetifula acrufugo sp. nov.

Candidatus Fetifula acrufugo (NL. fem. n. *acrufugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2386 sp005776475*. The type genome for the species is the GenBank assembly GCA_005776475.1. The GC content of the type genome is 68.81 %

and the genome length is 5.22 Mbp.

Description of *Candidatus* Fetifula gen. nov.

Candidatus Fetifula (NL. fem. n. *Fetifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2386*. The type species for the genus is *Candidatus* Fetifula acrufugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifulaceae.

Description of *Candidatus* Fetifulaceae fam. nov.

Candidatus Fetifulaceae (NL. fem. n. *Fetifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2386.* The type genus for the taxon is *Candidatus* Fetifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetifulales.

Description of *Candidatus* Fetifulales ord. nov.

Candidatus Fetifulales (NL. fem. n. *Fetifulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2386.* The type genus for the taxon is *Candidatus* Fetifula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Didacellae.

Description of *Candidatus* Fetifula expanentia sp. nov.

Candidatus Fetifula expanentia (NL. fem. n. *expanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2386 sp002343845*. The type genome for the species is the

GenBank assembly GCA_002343845.1. The GC content of the type genome is 71.19 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Fetulana refulentia sp. nov.

Candidatus Fetulana refulentia (NL. fem. n. *refulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3212 sp002363615*. The type genome for the species is the GenBank assembly GCA_002363615.1. The GC content of the type genome is 39.57 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Fetulana gen. nov.

Candidatus Fetulana (NL. fem. n. *Fetulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3212*. The type species for the genus is *Candidatus* Fetulana refulentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fetularia vitigastra sp. nov.

Candidatus Fetularia vitigastra (NL. fem. n. *vitigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1077 sp003141235*. The type genome for the species is the GenBank assembly GCA_003141385.1. The GC content of the type genome is 50.01 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Fetularia gen. nov.

Candidatus Fetularia (NL. fem. n. *Fetularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1077*. The type species for the genus is *Candidatus* Fetularia vitigastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-60-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunidaceae.

Description of *Candidatus* Fetulella anactigena sp. nov.

Candidatus Fetulella anactigena (NL. fem. n. *anactigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp002816585*. The type genome for the species is the GenBank assembly GCA_002816585.1. The GC content of the type genome is 58.28 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Fetulella gen. nov.

Candidatus Fetulella (NL. fem. n. *Fetulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9611*. The type species for the genus is *Candidatus* Fetulella anactigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Fetulella cnestax sp. nov.

Candidatus Fetulella cnestax (NL. fem. n. *cnestax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp002730485*. The type genome for the species is the GenBank assembly GCA_002730485.1. The GC content of the type genome is 56.34 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Fetulella conubiforma sp. nov.

Candidatus Fetulella conubiforma (NL. fem. n. *conubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp009391975*. The type genome for the species is the GenBank assembly GCA_009391975.1. The GC content of the type genome is 57.75 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Fetulella defesentia sp. nov.

Candidatus Fetulella defesentia (NL. fem. n. *defesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp002746355*. The type genome for the species is the GenBank assembly GCA_003973495.1. The GC content of the type genome is 58.94 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Fetulella demigax sp. nov.

Candidatus Fetulella demigax (NL. fem. n. *demigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp002328185*. The type genome for the species is the GenBank assembly GCA_009391395.1. The GC content of the type genome is 58.64 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Fetulella evangibra sp. nov.

Candidatus Fetulella evangibra (NL. fem. n. *evangibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp002697005*. The type genome for the species is the GenBank assembly GCA_002697005.1. The GC content of the type genome is 54.4 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Fetulella inlumetta sp. nov.

Candidatus Fetulella inlumetta (NL. fem. n. *inlumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp012959605*. The type genome for the species is the GenBank assembly GCA_012959605.1. The GC content of the type genome is 54.72 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Fetulella innoxatio sp. nov.

Candidatus Fetulella innoxatio (NL. fem. n. *innoxatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp013204585*. The type genome for the species is the GenBank assembly GCA_013204585.1. The GC content of the type genome is 55.76 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Fetulella locupitas sp. nov.

Candidatus Fetulella locupitas (NL. fem. n. *locupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp002816575*. The type genome for the species is the GenBank assembly GCA_002816575.1. The GC content of the type genome is 61.04 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Fetulella redacilenta sp. nov.

Candidatus Fetulella redacilenta (NL. fem. n. *redacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp002721995*. The type genome for the species is the GenBank assembly GCA_002721995.1. The GC content of the type genome is 60.65 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Fetulella relecimonas sp. nov.

Candidatus Fetulella relecimonas (NL. fem. n. *relecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp002698265*. The type genome for the species is the GenBank assembly GCA_009392435.1. The GC content of the type genome is 58.9 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Fetulella vicecitoga sp. nov.

Candidatus Fetulella vicecitoga (NL. fem. n. *vicecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp002816355*. The type genome for the species is the GenBank assembly GCA_002816355.1. The GC content of the type genome is 56.97 %

and the genome length is 1.55 Mbp.

Description of *Candidatus* Fetulella vitifibra sp. nov.

Candidatus Fetulella vitifibra (NL. fem. n. *vitifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9611 sp009392075*. The type genome for the species is the GenBank assembly GCA_009392075.1. The GC content of the type genome is 57.54 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Fetulia nubigigena sp. nov.

Candidatus Fetulia nubigigena (NL. fem. n. *nubigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUPP01 sp903901045*. The type genome for the species is the GenBank assembly GCA_903901045.1. The GC content of the type genome is 63.42 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Fetulia gen. nov.

Candidatus Fetulia (NL. fem. n. *Fetulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUPP01*. The type species for the genus is *Candidatus* Fetulia nubigigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIUPP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetuliaceae.

Description of *Candidatus* Fetuliaceae fam. nov.

Candidatus Fetuliaceae (NL. fem. n. *Fetuliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIUPP01.* The type genus for the taxon is *Candidatus* Fetulia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIUPP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetuliales.

Description of *Candidatus* Fetuliales ord. nov.

Candidatus Fetuliales (NL. fem. n. *Fetuliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIUPP01.* The type genus for the taxon is *Candidatus* Fetulia .

According to the GTDB R06-RS202, this order belongs to the class *Brocadiae*.

Description of *Candidatus* Fetulida cunabitudo sp. nov.

Candidatus Fetulida cunabitudo (NL. fem. n. *cunabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTPRO1 sp002050235*. The type genome for the species is the GenBank assembly GCA_014584405.1. The GC content of the type genome is 69.72 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Fetulida gen. nov.

Candidatus Fetulida (NL. fem. n. *Fetulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UTPRO1*. The type species for the genus is *Candidatus* Fetulida cunabitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UTPRO1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetulidaceae.

Description of *Candidatus* Fetulidaceae fam. nov.

Candidatus Fetulidaceae (NL. fem. n. *Fetulidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UTPRO1.* The type genus for the taxon is *Candidatus* Fetulida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UTPRO1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetulidales.

Description of *Candidatus* Fetulidales ord. nov.

Candidatus Fetulidales (NL. fem. n. *Fetulidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UTPRO1*. The type genus for the taxon is *Candidatus* Fetulida .

According to the GTDB R06-RS202, this order belongs to the class *Binatia*.

Description of *Candidatus* Fetulosa citipentia sp. nov.

Candidatus Fetulosa citipentia (NL. fem. n. *citipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS263 sp900540535*. The type genome for the species is the GenBank assembly GCA_902406065.1. The GC content of the type genome is 41.21 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Fetulosa gen. nov.

Candidatus Fetulosa (NL. fem. n. *Fetulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS263*. The type species for the genus is *Candidatus* Fetulosa citipentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fetulula denecigena sp. nov.

Candidatus Fetulula denecigena (NL. fem. n. *denecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QUBU01 sp011526045*. The type genome for the species is the GenBank assembly GCA_011526045.1. The GC content of the type genome is 66.52 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Fetulula gen. nov.

Candidatus Fetulula (NL. fem. n. *Fetulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QUBU01*. The type species for the genus is *Candidatus* Fetulula denecigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2729495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulidaceae.

Description of *Candidatus* Fetulula denometta sp. nov.

Candidatus Fetulula denometta (NL. fem. n. *denometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QUBU01 sp014337915*. The type genome for the species is the GenBank assembly GCA_008363175.1. The GC content of the type genome is 68.35 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Fetutana ceromentia sp. nov.

Candidatus Fetutana ceromentia (NL. fem. n. *ceromentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9339 sp001801345*. The type genome for the species is the GenBank assembly GCA_001801345.1. The GC content of the type genome is 37.12 % and the genome length is 1.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Fetutana gen. nov.

Candidatus Fetutana (NL. fem. n. *Fetutana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9339*. The type species for the genus is *Candidatus* Fetutana ceromentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9339*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetutanaceae.

Description of *Candidatus* Fetutanaceae fam. nov.

Candidatus Fetutanaceae (NL. fem. n. *Fetutanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9339.* The type genus for the taxon is *Candidatus* Fetutana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9339*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetutanales.

Description of *Candidatus* Fetutanales ord. nov.

Candidatus Fetutanales (NL. fem. n. *Fetutanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9339.* The type genus for the taxon is *Candidatus* Fetutana .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Fetutaria lavacatica sp. nov.

Candidatus Fetutaria lavacatica (NL. fem. n. *lavacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12026 sp000990005*. The type genome for the species is the GenBank assembly GCA_000989845.1. The GC content of the type genome is 32.92 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Fetutaria gen. nov.

Candidatus Fetutaria (NL. fem. n. *Fetutaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12026*. The type species for the genus is *Candidatus* Fetutaria lavacatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Fetutaria lenunitrix sp. nov.

Candidatus Fetutaria lenunitrix (NL. fem. n. *lenunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12026 sp000989765*. The type genome for the species is the GenBank assembly GCA_000989595.1. The GC content of the type genome is 32.92 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Fetutella affabitica sp. nov.

Candidatus Fetutella affabitica (NL. fem. n. *affabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp013316535*. The type genome for the species is the GenBank assembly GCA_013316535.1. The GC content of the type genome is 52.56 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Fetutella gen. nov.

Candidatus Fetutella (NL. fem. n. *Fetutella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7173*. The type species for the genus is *Candidatus* Fetutella affabitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fetutella apograstra sp. nov.

Candidatus Fetutella apograstra (NL. fem. n. *apograstra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp900759895*. The type genome for the species is the GenBank assembly RS_GCF_900759895.1. The GC content of the type genome is 55.94 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Fetutella bicoritoga sp. nov.

Candidatus Fetutella bicoritoga (NL. fem. n. *bicoritoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp900555165*. The type genome for the species is the GenBank assembly GCA_900555165.1. The GC content of the type genome is 57.53 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Fetutella capuditoga sp. nov.

Candidatus Fetutella capuditoga (NL. fem. n. *capuditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp001689485*. The type genome for the species is the GenBank assembly GCA_009774915.1. The GC content of the type genome is 50.72 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Fetutella cenacessa sp. nov.

Candidatus Fetutella cenacessa (NL. fem. n. *cenacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp900768685*. The type genome for the species is the GenBank assembly RS_GCF_900768685.1. The GC content of the type genome is 43.09 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Fetutella ciminitrix sp. nov.

Candidatus Fetutella ciminitrix (NL. fem. n. *ciminitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp001689685*. The type genome for the species is the GenBank assembly GCA_003979065.1. The GC content of the type genome is 57.18 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Fetutella cisalax sp. nov.

Candidatus Fetutella cisalax (NL. fem. n. *cisalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp900548705*. The type genome for the species is the GenBank assembly RS_GCF_900753055.1. The GC content of the type genome is 52.87 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Fetutella defulitica sp. nov.

Candidatus Fetutella defulitica (NL. fem. n. *defulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp013316675*. The type genome for the species is the GenBank assembly GCA_013316675.1. The GC content of the type genome is 50.93 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Fetutella dibucastra sp. nov.

Candidatus Fetutella dibucastra (NL. fem. n. *dibucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp001915385*. The type genome for the species is the GenBank assembly GCA_001915385.1. The GC content of the type genome is 50.93 % and the genome length is 2.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Fetutella duponitoga sp. nov.

Candidatus Fetutella duponitoga (NL. fem. n. *duponitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp004102805*. The type genome for the species is the GenBank assembly GCA_009774935.1. The GC content of the type genome is 51.38 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Fetutella lenocibula sp. nov.

Candidatus Fetutella lenocibula (NL. fem. n. *lenocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp002491305*. The type genome for the species is the GenBank assembly GCA_002491305.1. The GC content of the type genome is 56.85 %

and the genome length is 2.17 Mbp.

Description of *Candidatus* Fetutella ludifousia sp. nov.

Candidatus Fetutella ludifousia (NL. fem. n. *ludifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp900546835*. The type genome for the species is the GenBank assembly GCA_900546835.1. The GC content of the type genome is 54.79 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Fetutella malivago sp. nov.

Candidatus Fetutella malivago (NL. fem. n. *malivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp900540205*. The type genome for the species is the GenBank assembly RS_GCF_900760135.1. The GC content of the type genome is 53.39 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Fetutella siligatica sp. nov.

Candidatus Fetutella siligatica (NL. fem. n. *siligatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp004557825*. The type genome for the species is the GenBank assembly GCA_004557825.1. The GC content of the type genome is 55.14 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Fetutella subinimonia sp. nov.

Candidatus Fetutella subinimonia (NL. fem. n. *subinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp900545955*. The type genome for the species is the GenBank assembly GCA_900545955.1. The GC content of the type genome is 55.26 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Fetutella subucax sp. nov.

Candidatus Fetutella subucax (NL. fem. n. *subucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp001701135*. The type genome for the species is the GenBank assembly GCA_001701135.1. The GC content of the type genome is 54.27 % and the genome length is 2.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Feces".

Description of *Candidatus* Fetutella tubicisca sp. nov.

Candidatus Fetutella tubicisca (NL. fem. n. *tubicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7173 sp900552325*. The type genome for the species is the GenBank assembly GCA_900552325.1. The GC content of the type genome is 55.27 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Fetutia cosidibra sp. nov.

Candidatus Fetutia cosidibra (NL. fem. n. *cosidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1660 sp002320815*. The type genome for the species is the GenBank assembly GCA_002320815.1. The GC content of the type genome is 71.56 % and the genome length is 7.98 Mbp.

Description of *Candidatus* Fetutia gen. nov.

Candidatus Fetutia (NL. fem. n. *Fetutia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1660*. The type species for the genus is *Candidatus* Fetutia cosidibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benivosaceae.

Description of *Candidatus* Fetutida fusifisca sp. nov.

Candidatus Fetutida fusifisca (NL. fem. n. *fusifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBAT01 sp005240105*. The type genome for the species is the GenBank assembly GCA_005240105.1. The GC content of the type genome is 47.92 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Fetutida gen. nov.

Candidatus Fetutida (NL. fem. n. *Fetutida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBAT01*. The type species for the genus is *Candidatus* Fetutida fusifisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBAT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetutidaceae.

Description of *Candidatus* Fetutidaceae fam. nov.

Candidatus Fetutidaceae (NL. fem. n. *Fetutidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBAT01.* The type genus for the taxon is *Candidatus* Fetutida .

According to GTDB R06-RS202, this family belongs to the order *Obscuribacterales*.

Description of *Candidatus* Fetutosa adsenilenta sp. nov.

Candidatus Fetutosa adsenilenta (NL. fem. n. *adsenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBI01 sp013360565*. The type genome for the species is the GenBank assembly GCA_013360565.1. The GC content of the type genome is 68.42 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Fetutosa gen. nov.

Candidatus Fetutosa (NL. fem. n. *Fetutosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBI01*. The type species for the genus is *Candidatus* Fetutosa adsenilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABWBI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetutosaceae.

Description of *Candidatus* Fetutosaceae fam. nov.

Candidatus Fetutosaceae (NL. fem. n. *Fetutosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWBI01.* The type genus for the taxon is *Candidatus* Fetutosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABWBI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetutosales.

Description of *Candidatus* Fetutosales ord. nov.

Candidatus Fetutosales (NL. fem. n. *Fetutosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWBI01.* The type genus for the taxon is *Candidatus* Fetutosa .

According to the GTDB R06-RS202, this order belongs to the class *Sumerlaeia*.

Description of *Candidatus* Fibicana armipiforma sp. nov.

Candidatus Fibicana armipiforma (NL. fem. n. *armipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-51-40 sp003599015*. The type genome for the species is the GenBank assembly GCA_003599015.1. The GC content of the type genome is 49.3 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Fibicana gen. nov.

Candidatus Fibicana (NL. fem. n. *Fibicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-51-40*. The type species for the genus is *Candidatus* Fibicana armipiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fibicana susicousia sp. nov.

Candidatus Fibicana susicousia (NL. fem. n. *susicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-51-40 sp001874005*. The type genome for the species is the GenBank assembly GCA_002784205.1. The GC content of the type genome is 50.83 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Fibicaria omnivetta sp. nov.

Candidatus Fibicaria omnivetta (NL. fem. n. *omnivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11417 sp900761895*. The type genome for the species is the GenBank assembly RS_GCF_900761895.1. The GC content of the type genome is 55.65 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Fibicaria gen. nov.

Candidatus Fibicaria (NL. fem. n. *Fibicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11417*. The type species for the genus is *Candidatus* Fibicaria omnivetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGM11417*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibicariaceae.

Description of *Candidatus* Fibicariaceae fam. nov.

Candidatus Fibicariaceae (NL. fem. n. *Fibicariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *HGM11417*. The type genus for the taxon is *Candidatus* Fibicaria .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Fibicella adsecivita sp. nov.

Candidatus Fibicella adsecivita (NL. fem. n. *adsecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOGO01 sp903859225*. The type genome for the species is the GenBank assembly GCA_903859225.1. The GC content of the type genome is 65.66 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Fibicella gen. nov.

Candidatus Fibicella (NL. fem. n. *Fibicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOGO01*. The type species for the genus is *Candidatus* Fibicella adsecivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9294*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semodosaceae.

Description of *Candidatus* Fibicella pedifitrix sp. nov.

Candidatus Fibicella pedifitrix (NL. fem. n. *pedifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOGO01 sp903839615*. The type genome for the species is the GenBank assembly GCA_903930365.1. The GC content of the type genome is 64.2 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Fibicella solacitica sp. nov.

Candidatus Fibicella solacitica (NL. fem. n. *solacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOGO01 sp903857865*. The type genome for the species is the

GenBank assembly GCA_903898825.1. The GC content of the type genome is 64.68 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Fibicia delucitio sp. nov.

Candidatus Fibicia delucitio (NL. fem. n. *delucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-73-35 sp001788495*. The type genome for the species is the GenBank assembly GCA_001790345.1. The GC content of the type genome is 73.44 % and the genome length is 4.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Fibicia gen. nov.

Candidatus Fibicia (NL. fem. n. *Fibicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-73-35*. The type species for the genus is *Candidatus* Fibicia delucitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Fibiciaceae fam. nov.

Candidatus Fibiciaceae (NL. fem. n. *Fibiciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-73-35.* The type genus for the taxon is *Candidatus* Fibicia .

According to GTDB R06-RS202, this family belongs to the order *Rokubacteriales*.

Description of *Candidatus* Fibicia detecitrix sp. nov.

Candidatus Fibicia detecitrix (NL. fem. n. *detecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-73-35 sp001790205*. The type genome for the species is the

GenBank assembly GCA_001790205.1. The GC content of the type genome is 73.0 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Fibicia venucimonas sp. nov.

Candidatus Fibicia venucimonas (NL. fem. n. *venucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-73-35 sp001790315*. The type genome for the species is the GenBank assembly GCA_001790335.1. The GC content of the type genome is 71.52 % and the genome length is 3.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Fibicida dilogifica sp. nov.

Candidatus Fibicida dilogifica (NL. fem. n. *dilogifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-38-69 sp001803205*. The type genome for the species is the GenBank assembly GCA_003504255.1. The GC content of the type genome is 37.54 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Fibicida gen. nov.

Candidatus Fibicida (NL. fem. n. *Fibicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-38-69*. The type species for the genus is *Candidatus* Fibicida dilogifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-38-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibicidaceae.

Description of *Candidatus* Fibicidaceae fam. nov.

Candidatus Fibicidaceae (NL. fem. n. *Fibicidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-38-69.* The type genus for the taxon is *Candidatus* Fibicida .

According to GTDB R06-RS202, this family belongs to the order *Victivallales*.

Description of *Candidatus* Fibicosa insusatio sp. nov.

Candidatus Fibicosa insusatio (NL. fem. n. *insusatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKAP01 sp011373785*. The type genome for the species is the GenBank assembly GCA_011373785.1. The GC content of the type genome is 59.23 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Fibicosa gen. nov.

Candidatus Fibicosa (NL. fem. n. *Fibicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKAP01*. The type species for the genus is *Candidatus* Fibicosa insusatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipalanaceae.

Description of *Candidatus* Fibicosa malagilega sp. nov.

Candidatus Fibicosa malagilega (NL. fem. n. *malagilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKAP01 sp903825435*. The type genome for the species is the GenBank assembly GCA_903914795.1. The GC content of the type genome is 58.98 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Fibrella sicubitica sp. nov.

Candidatus Fibrella sicubitica (NL. fem. n. *sicubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Fibrella sp002108455*. The type genome for the species is the GenBank assembly RS_GCF_002108455.1. The GC content of the type genome is 52.78 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Fibrobacter admoratica sp. nov.

Candidatus Fibrobacter admoratica (NL. fem. n. *admoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900142545*. The type genome for the species is the GenBank assembly RS_GCF_900142545.1. The GC content of the type genome is 50.23 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Fibrobacter democimonas sp. nov.

Candidatus Fibrobacter democimonas (NL. fem. n. *democimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp002210285*. The type genome for the species is the GenBank assembly RS_GCF_002210285.1. The GC content of the type genome is 53.4 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Fibrobacter desomibra sp. nov.

Candidatus Fibrobacter desomibra (NL. fem. n. *desomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900177805*. The type genome for the species is the GenBank assembly RS_GCF_900177805.1. The GC content of the type genome is 47.93 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Fibrobacter desomilenta sp. nov.

Candidatus Fibrobacter desomilenta (NL. fem. n. *desomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900142475*. The type genome for the species is the GenBank assembly GCA_004560505.1. The GC content of the type genome is 52.01 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Fibrobacter dilogiforma sp. nov.

Candidatus Fibrobacter dilogiforma (NL. fem. n. *dilogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp002210345*. The type genome for the species is the GenBank assembly RS_GCF_902770285.1. The GC content of the type genome is 48.77 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Fibrobacter epiclimonia sp. nov.

Candidatus Fibrobacter epiclimonia (NL. fem. n. *epiclimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900141705*. The type genome for the species is the GenBank assembly RS_GCF_900141705.1. The GC content of the type genome is 53.44 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Fibrobacter excucitudo sp. nov.

Candidatus Fibrobacter excucitudo (NL. fem. n. *excucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp002391195*. The type genome for the species is the GenBank assembly GCA_002391195.1. The GC content of the type genome is 52.25 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Fibrobacter haricedo sp. nov.

Candidatus Fibrobacter haricedo (NL. fem. n. *haricedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900142535*. The type genome for the species is the GenBank assembly GCA_002317455.1. The GC content of the type genome is 49.78 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Fibrobacter haricivita sp. nov.

Candidatus Fibrobacter haricivita (NL. fem. n. *haricivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900143015*. The type genome for the species is the GenBank assembly RS_GCF_900143015.1. The GC content of the type genome is 46.82 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Fibrobacter herinitura sp. nov.

Candidatus Fibrobacter herinitura (NL. fem. n. *herinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900313675*. The type genome for the species is the GenBank assembly RS_GCF_902757465.1. The GC content of the type genome is 52.6 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Fibrobacter homogax sp. nov.

Candidatus Fibrobacter homogax (NL. fem. n. *homogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900215325*. The type genome for the species is the GenBank assembly GCA_900318925.1. The GC content of the type genome is 49.04 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Fibrobacter horomitica sp. nov.

Candidatus Fibrobacter horomitica (NL. fem. n. *horomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900143055*. The type genome for the species is the GenBank assembly RS_GCF_900230125.1. The GC content of the type genome is 53.82 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Fibrobacter insepilega sp. nov.

Candidatus Fibrobacter insepilega (NL. fem. n. *insepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Fibrobacter sp002210295*. The type genome for the species is the GenBank assembly RS_GCF_002210295.1. The GC content of the type genome is 50.94 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Fibrobacter invetibula sp. nov.

Candidatus Fibrobacter invetibula (NL. fem. n. *invetibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp002395745*. The type genome for the species is the GenBank assembly GCA_002395745.1. The GC content of the type genome is 54.23 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Fibrobacter lapicitio sp. nov.

Candidatus Fibrobacter lapicitio (NL. fem. n. *lapicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp002382975*. The type genome for the species is the GenBank assembly GCA_002382975.1. The GC content of the type genome is 51.64 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Fibrobacter monocessa sp. nov.

Candidatus Fibrobacter monocessa (NL. fem. n. *monocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp003149045*. The type genome for the species is the GenBank assembly RS_GCF_003253655.1. The GC content of the type genome is 48.69 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Fibrobacter reduventia sp. nov.

Candidatus Fibrobacter reduventia (NL. fem. n. *reduventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp002449765*. The type genome for the species is the GenBank assembly GCA_002342555.1. The GC content of the type genome is 53.91 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Fibrobacter refunitia sp. nov.

Candidatus Fibrobacter refunitia (NL. fem. n. *refunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900142465*. The type genome for the species is the GenBank assembly RS_GCF_002210365.1. The GC content of the type genome is 48.92 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Fibrobacter semibessa sp. nov.

Candidatus Fibrobacter semibessa (NL. fem. n. *semibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900316465*. The type genome for the species is the GenBank assembly RS_GCF_902755055.1. The GC content of the type genome is 50.62 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Fibrobacter solifimonia sp. nov.

Candidatus Fibrobacter solifimonia (NL. fem. n. *solifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900142495*. The type genome for the species is the GenBank assembly GCA_001603925.1. The GC content of the type genome is 50.17 % and the genome length is 3.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Fibrobacter vacilifica sp. nov.

Candidatus Fibrobacter vacilifica (NL. fem. n. *vacilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp001603905*. The type genome for the species is the GenBank assembly GCA_001462305.1. The GC content of the type genome is 51.36 % and the genome length is 3.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "cellulose fed anaerobic digester inoculated with sludge".

Description of *Candidatus* Fibrobacter vagabibra sp. nov.

Candidatus Fibrobacter vagabibra (NL. fem. n. *vagabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp002394865*. The type genome for the species is the GenBank assembly GCA_002372655.1. The GC content of the type genome is 48.08 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Fibrobacter vigenivita sp. nov.

Candidatus Fibrobacter vigenivita (NL. fem. n. *vigenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter sp900177705*. The type genome for the species is the GenBank assembly RS_GCF_900177705.1. The GC content of the type genome is 50.23 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Fibrobacter defarilega sp. nov.

Candidatus Fibrobacter defarilega (NL. fem. n. *defarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter_A sp002390045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902791455.1. The GC content of the type genome is 48.82 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Fibrobacter turibicella sp. nov.

Candidatus Fibrobacter turibicella (NL. fem. n. *turibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter_A sp002797675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003014635.1. The GC content of the type genome is 48.94 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Fibrobacter vitupessa sp. nov.

Candidatus Fibrobacter vitupessa (NL. fem. n. *vitupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibrobacter_A sp003003115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003003115.1. The GC content of the type genome is 44.84 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Fibromonas adcucatio sp. nov.

Candidatus Fibromonas adcucatio (NL. fem. n. *adcucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibromonas sp001462225*. The type genome for the species is the GenBank assembly GCA_001462225.1. The GC content of the type genome is 43.25 % and the genome length is 3.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "termite gut".

Description of *Candidatus* Fibromonas docibitica sp. nov.

Candidatus Fibromonas docibitica (NL. fem. n. *docibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibromonas sp009788135*. The type genome for the species is the GenBank assembly GCA_009788135.1. The GC content of the type genome is 43.21 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Fibromonas eviscicula sp. nov.

Candidatus Fibromonas eviscicula (NL. fem. n. *eviscicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibromonas sp001462235*. The type genome for the species is the GenBank assembly GCA_001462235.1. The GC content of the type genome is 41.49 % and the genome length is 2.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "termite gut".

Description of *Candidatus* Fibromonas obtecisca sp. nov.

Candidatus Fibromonas obtecisca (NL. fem. n. *obtecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibromonas sp009777135*. The type genome for the species is the GenBank assembly GCA_009777135.1. The GC content of the type genome is 42.13 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Fibromonas selecago sp. nov.

Candidatus Fibromonas selecago (NL. fem. n. *selecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibromonas sp009786285*. The type genome for the species is the GenBank assembly GCA_009786285.1. The GC content of the type genome is 42.24 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Fibromonas tabitiforma sp. nov.

Candidatus Fibromonas tabitiforma (NL. fem. n. *tabitiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fibromonas sp009787645*. The type genome for the species is the GenBank assembly GCA_009787645.1. The GC content of the type genome is 42.63 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Ficedaria visocifica sp. nov.

Candidatus Ficedaria visocifica (NL. fem. n. *visocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002717915 sp002717915*. The type genome for the species is the GenBank assembly GCA_002695075.1. The GC content of the type genome is 41.33 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Ficedaria gen. nov.

Candidatus Ficedaria (NL. fem. n. *Ficedaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002717915*. The type species for the genus is *Candidatus* Ficedaria visocifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1611*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilariaceae.

Description of *Candidatus* Ficedella bisacibra sp. nov.

Candidatus Ficedella bisacibra (NL. fem. n. *bisacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3305 sp902796405*. The type genome for the species is the GenBank assembly GCA_902796405.1. The GC content of the type genome is 55.07 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Ficedella gen. nov.

Candidatus Ficedella (NL. fem. n. *Ficedella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3305*. The type species for the genus is *Candidatus* Ficedella bisacibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ficedella conaritica sp. nov.

Candidatus Ficedella conaritica (NL. fem. n. *conaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3305 sp902783295*. The type genome for the species is the GenBank assembly GCA_902783295.1. The GC content of the type genome is 52.83 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Ficedella monopicella sp. nov.

Candidatus Ficedella monopicella (NL. fem. n. *monopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3305 sp002373555*. The type genome for the species is the GenBank assembly GCA_002373555.1. The GC content of the type genome is 54.36 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Ficedia visifigena sp. nov.

Candidatus Ficedia visifigena (NL. fem. n. *visifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11327 sp900759935*. The type genome for the species is the GenBank assembly RS_GCF_900759935.1. The GC content of the type genome is 44.25 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Ficedia gen. nov.

Candidatus Ficedia (NL. fem. n. *Ficedia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11327*. The type species for the genus is *Candidatus* Ficedia visifigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGM11327*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ficediaceae.

Description of *Candidatus* Ficediaceae fam. nov.

Candidatus Ficediaceae (NL. fem. n. *Ficediaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HGM11327.* The type genus for the taxon is *Candidatus* Ficedia .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Ficedida indipiforma sp. nov.

Candidatus Ficedida indipiforma (NL. fem. n. *indipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAINVV01 sp903881215*. The type genome for the species is the GenBank assembly GCA_903881215.1. The GC content of the type genome is 41.96 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Ficedida gen. nov.

Candidatus Ficedida (NL. fem. n. *Ficedida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINVV01*. The type species for the genus is *Candidatus* Ficedida indipiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ficedida monacivita sp. nov.

Candidatus Ficedida monacivita (NL. fem. n. *monacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINVV01 sp903902325*. The type genome for the species is the GenBank assembly GCA_903899285.1. The GC content of the type genome is 44.72 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Ficedida verecastra sp. nov.

Candidatus Ficedida verecastra (NL. fem. n. *verecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINVV01 sp903854235*. The type genome for the species is the GenBank assembly GCA_903866555.1. The GC content of the type genome is 46.39 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Ficedosa exhoribra sp. nov.

Candidatus Ficedosa exhoribra (NL. fem. n. *exhoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMRA01 sp014376695*. The type genome for the species is the GenBank assembly GCA_014376695.1. The GC content of the type genome is 39.43 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Ficedosa gen. nov.

Candidatus Ficedosa (NL. fem. n. *Ficedosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMRA01*. The type species for the genus is *Candidatus* Ficedosa exhoribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACMRA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ficedosaceae.

Description of *Candidatus* Ficedosaceae fam. nov.

Candidatus Ficedosaceae (NL. fem. n. *Ficedosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACMRA01.* The type genus for the taxon is *Candidatus* Ficedosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACMRA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedosales.

Description of *Candidatus* Ficedosales ord. nov.

Candidatus Ficedosales (NL. fem. n. *Ficedosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACMRA01.* The type genus for the taxon is *Candidatus* Ficedosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *JACMRA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ficedosae.

Description of *Candidatus* Ficedosae class. nov.

Candidatus Ficedosae (NL. fem. n. *c__Ficedosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACMRA01.* The type genus for the taxon is *Candidatus* Ficedosa .

According to GTDB R06-RS202, this class belongs to the phylum *Patescibacteria*.

Description of *Candidatus* Fictibacillus deculifica sp. nov.

Candidatus Fictibacillus deculifica (NL. fem. n. *deculifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fictibacillus sp004216955*. The type genome for the species is the GenBank assembly RS_GCF_004216955.1. The GC content of the type genome is 39.76 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Fictibacillus hemitousia sp. nov.

Candidatus Fictibacillus hemitousia (NL. fem. n. *hemitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fictibacillus sp005503015*. The type genome for the species is the GenBank assembly RS_GCF_005503015.1. The GC content of the type genome is 39.25 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Fictibacillus semimastra sp. nov.

Candidatus Fictibacillus semimastra (NL. fem. n. *semimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fictibacillus_C sp001510655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900112635.1. The GC content of the type genome is 43.04 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Ficulana ablacetta sp. nov.

Candidatus Ficulana ablacetta (NL. fem. n. *ablacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9159 sp003453735*. The type genome for the species is the GenBank assembly GCA_003453735.1. The GC content of the type genome is 48.26 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Ficulana gen. nov.

Candidatus Ficulana (NL. fem. n. *Ficulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9159*. The type species for the genus is *Candidatus* Ficulana ablacetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9159*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ficulanaceae.

Description of *Candidatus* Ficulanaceae fam. nov.

Candidatus Ficulanaceae (NL. fem. n. *Ficulanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9159.* The type genus for the taxon is *Candidatus* Ficulana .

According to GTDB R06-RS202, this family belongs to the order *Thermodesulfovibrionales*.

Description of *Candidatus* Ficularia insuritoga sp. nov.

Candidatus Ficularia insuritoga (NL. fem. n. *insuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7805 sp902630355*. The type genome for the species is the GenBank assembly RS_GCF_902630355.1. The GC content of the type genome is 54.73 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Ficularia gen. nov.

Candidatus Ficularia (NL. fem. n. *Ficularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7805*. The type species for the genus is *Candidatus* Ficularia insuritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7805*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ficulariaceae.

Description of *Candidatus* Ficulariaceae fam. nov.

Candidatus Ficulariaceae (NL. fem. n. *Ficulariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7805.* The type genus for the taxon is *Candidatus* Ficularia .

According to GTDB R06-RS202, this family belongs to the order *Pirellulales*.

Description of *Candidatus* Ficularia intenibra sp. nov.

Candidatus Ficularia intenibra (NL. fem. n. *intenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7805 sp002168195*. The type genome for the species is the GenBank assembly GCA_002168195.1. The GC content of the type genome is 50.51 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Ficularia nubecicella sp. nov.

Candidatus Ficularia nubecicella (NL. fem. n. *nubecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7805 sp014237955*. The type genome for the species is the GenBank assembly GCA_014237955.1. The GC content of the type genome is 51.58 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Ficularia solacitia sp. nov.

Candidatus Ficularia solacitia (NL. fem. n. *solacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7805 sp002480485*. The type genome for the species is the GenBank assembly GCA_002480485.1. The GC content of the type genome is 51.66 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Ficulella visifitoga sp. nov.

Candidatus Ficulella visifitoga (NL. fem. n. *visifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1864 sp900555835*. The type genome for the species is the GenBank assembly GCA_900555835.1. The GC content of the type genome is 29.13 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Ficulella gen. nov.

Candidatus Ficulella (NL. fem. n. *Ficulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1864*. The type species for the genus is *Candidatus* Ficulella visifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Ficulia pedifedo sp. nov.

Candidatus Ficulia pedifedo (NL. fem. n. *pedifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQRY01 sp903874345*. The type genome for the species is the GenBank assembly GCA_903874345.1. The GC content of the type genome is 41.48 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Ficulia gen. nov.

Candidatus Ficulia (NL. fem. n. *Ficulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQRY01*. The type species for the genus is *Candidatus* Ficulia pedifedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Ficulida asbesatica sp. nov.

Candidatus Ficulida asbesatica (NL. fem. n. *asbesatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYCW01 sp009840695*. The type genome for the species is the GenBank assembly GCA_009840695.1. The GC content of the type genome is 68.47 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Ficulida gen. nov.

Candidatus Ficulida (NL. fem. n. *Ficulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VYCW01*. The type species for the genus is *Candidatus* Ficulida asbesatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11606*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifanaceae.

Description of *Candidatus* Ficulida cuticetta sp. nov.

Candidatus Ficulida cuticetta (NL. fem. n. *cuticetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYCW01 sp009843915*. The type genome for the species is the GenBank assembly GCA_009843915.1. The GC content of the type genome is 68.97 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Ficulida denorentia sp. nov.

Candidatus Ficulida denorentia (NL. fem. n. *denorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYCW01 sp009843735*. The type genome for the species is the GenBank assembly GCA_009843735.1. The GC content of the type genome is 69.62 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Ficulida dibucetta sp. nov.

Candidatus Ficulida dibucetta (NL. fem. n. *dibucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYCW01 sp009842325*. The type genome for the species is the GenBank assembly GCA_009845195.1. The GC content of the type genome is 68.87 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Ficulida menapitudo sp. nov.

Candidatus Ficulida menapitudo (NL. fem. n. *menapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYCW01 sp009835735*. The type genome for the species is the GenBank assembly GCA_009844235.1. The GC content of the type genome is 67.1 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Ficulida nocumitica sp. nov.

Candidatus Ficulida nocumitica (NL. fem. n. *nocumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYCW01 sp009844405*. The type genome for the species is the GenBank assembly GCA_009845665.1. The GC content of the type genome is 69.17 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Ficulida resacitica sp. nov.

Candidatus Ficulida resacitica (NL. fem. n. *resacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYCW01 sp009837445*. The type genome for the species is the GenBank assembly GCA_009845185.1. The GC content of the type genome is 69.42 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Ficulosa culibitrix sp. nov.

Candidatus Ficulosa culibitrix (NL. fem. n. *culibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2699365 sp002699365*. The type genome for the species is the GenBank assembly GCA_003533285.1. The GC content of the type genome is 42.56 %

and the genome length is 1.43 Mbp.

Description of *Candidatus* Ficulosa gen. nov.

Candidatus Ficulosa (NL. fem. n. *Ficulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2699365*. The type species for the genus is *Candidatus* Ficulosa culibitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-45221*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamiaceae.

Description of *Candidatus* Ficulula tiguritas sp. nov.

Candidatus Ficulula tiguritas (NL. fem. n. *tiguritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYA2-FULL-35-8 sp001778235*. The type genome for the species is the GenBank assembly GCA_001778235.1. The GC content of the type genome is 35.25 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Ficulula gen. nov.

Candidatus Ficulula (NL. fem. n. *Ficulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYA2-FULL-35-8*. The type species for the genus is *Candidatus* Ficulula tiguritas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11705*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenanaceae.

Description of *Candidatus* Fidenana homilatica sp. nov.

Candidatus Fidenana homilatica (NL. fem. n. *homilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPQ01 sp012838235*. The type genome for the species is the GenBank assembly GCA_012838235.1. The GC content of the type genome is 39.83 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Fidenana gen. nov.

Candidatus Fidenana (NL. fem. n. *Fidenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPQ01*. The type species for the genus is *Candidatus* Fidenana homilatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUPQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenanaceae.

Description of *Candidatus* Fidenanaceae fam. nov.

Candidatus Fidenanaceae (NL. fem. n. *Fidenanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUPQ01.* The type genus for the taxon is *Candidatus* Fidenana .

According to the original version of GTDB R06-RS202, this family belongs to the order *DUPQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fidenanales.

Description of *Candidatus* Fidenanales ord. nov.

Candidatus Fidenanales (NL. fem. n. *Fidenanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUPQ01.* The type genus for the taxon is *Candidatus* Fidenana .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Fidenana proscitura sp. nov.

Candidatus Fidenana proscitura (NL. fem. n. *proscitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DUPQ01 sp002070475*. The type genome for the species is the GenBank assembly GCA_002070475.1. The GC content of the type genome is 35.36 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Fidenana resalitica sp. nov.

Candidatus Fidenana resalitica (NL. fem. n. *resalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPQ01 sp012729955*. The type genome for the species is the GenBank assembly GCA_012729955.1. The GC content of the type genome is 36.38 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Fidenaria giganitas sp. nov.

Candidatus Fidenaria giganitas (NL. fem. n. *giganitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4092 sp002428325*. The type genome for the species is the GenBank assembly GCA_002428325.1. The GC content of the type genome is 43.46 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Fidenaria gen. nov.

Candidatus Fidenaria (NL. fem. n. *Fidenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4092*. The type species for the genus is *Candidatus* Fidenaria giganitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4092*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenariaceae.

Description of *Candidatus* Fidenariaceae fam. nov.

Candidatus Fidenariaceae (NL. fem. n. *Fidenariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4092.* The type genus for the taxon is *Candidatus* Fidenaria .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA4092. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fidenariales.

Description of *Candidatus* Fidenariales ord. nov.

Candidatus Fidenariales (NL. fem. n. *Fidenariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4092.* The type genus for the taxon is *Candidatus* Fidenaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4092*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Fidenariae.

Description of *Candidatus* Fidenariae class. nov.

Candidatus Fidenariae (NL. fem. n. *c__Fidenariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4092.* The type genus for the taxon is *Candidatus* Fidenaria .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBP4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Retecidota.

Description of *Candidatus* Fidenella bipatax sp. nov.

Candidatus Fidenella bipatax (NL. fem. n. *bipatax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-35-9 sp002793435*. The type genome for the species is the GenBank assembly GCA_002793435.1. The GC content of the type genome is 33.2 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Fidenella gen. nov.

Candidatus Fidenella (NL. fem. n. *Fidenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-35-9*. The type species for the genus is *Candidatus* Fidenella bipatax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-35-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenellaceae.

Description of *Candidatus* Fidenellaceae fam. nov.

Candidatus Fidenellaceae (NL. fem. n. *Fidenellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-35-9.* The type genus for the taxon is *Candidatus* Fidenella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-35-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fidenellales.

Description of *Candidatus* Fidenellales ord. nov.

Candidatus Fidenellales (NL. fem. n. *Fidenellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-35-9.* The type genus for the taxon is *Candidatus* Fidenella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Panifidae.

Description of *Candidatus* Fidenella intenisca sp. nov.

Candidatus Fidenella intenisca (NL. fem. n. *intenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-35-9 sp000991185*. The type genome for the species is the GenBank assembly GCA_000991185.1. The GC content of the type genome is 33.98 % and the genome length is 0.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Fidenia buxaniforma sp. nov.

Candidatus Fidenia buxaniforma (NL. fem. n. *buxaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2720975 sp002720975*. The type genome for the species is the GenBank assembly GCA_002720975.1. The GC content of the type genome is 63.98 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Fidenia gen. nov.

Candidatus Fidenia (NL. fem. n. *Fidenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2720975*. The type species for the genus is *Candidatus* Fidenia buxaniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Fidenia robigago sp. nov.

Candidatus Fidenia robigago (NL. fem. n. *robigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2720975 sp012959525*. The type genome for the species is the GenBank assembly GCA_012959525.1. The GC content of the type genome is 63.93 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Fidenosa aprucatio sp. nov.

Candidatus Fidenosa aprucatio (NL. fem. n. *aprucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1181 sp902784425*. The type genome for the species is the GenBank assembly GCA_902784425.1. The GC content of the type genome is 40.15 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Fidenosa gen. nov.

Candidatus Fidenosa (NL. fem. n. *Fidenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1181*. The type species for the genus is *Candidatus* Fidenosa

aprucatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fidenosa denunitrix sp. nov.

Candidatus Fidenosa denunitrix (NL. fem. n. *denunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1181 sp002310215*. The type genome for the species is the GenBank assembly GCA_002366915.1. The GC content of the type genome is 48.72 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Fidenosa desulivita sp. nov.

Candidatus Fidenosa desulivita (NL. fem. n. *desulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1181 sp902766045*. The type genome for the species is the GenBank assembly GCA_902766045.1. The GC content of the type genome is 38.98 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Fidenosa encomisca sp. nov.

Candidatus Fidenosa encomisca (NL. fem. n. *encomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1181 sp900769555*. The type genome for the species is the GenBank assembly RS_GCF_900769555.1. The GC content of the type genome is 35.46 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Fidenula ensicivita sp. nov.

Candidatus Fidenula ensicivita (NL. fem. n. *ensicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1002 sp012727435*. The type genome for the species is the GenBank assembly GCA_012727435.1. The GC content of the type genome is 53.39 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Fidenula gen. nov.

Candidatus Fidenula (NL. fem. n. *Fidenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1002*. The type species for the genus is *Candidatus* Fidenula ensicivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Fidenula obmuritica sp. nov.

Candidatus Fidenula obmuritica (NL. fem. n. *obmuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1002 sp012837425*. The type genome for the species is the GenBank assembly GCA_012837425.1. The GC content of the type genome is 53.87 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Fidenula pinifimonia sp. nov.

Candidatus Fidenula pinifimonia (NL. fem. n. *pinifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1002 sp900547565*. The type genome for the species is the GenBank assembly RS_GCF_900753155.1. The GC content of the type genome is 51.14 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Fiducana defaritoga sp. nov.

Candidatus Fiducana defaritoga (NL. fem. n. *defaritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-64-13 sp001800095*. The type genome for the species is the GenBank assembly GCA_001799925.1. The GC content of the type genome is 63.92 % and the genome length is 1.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Fiducana gen. nov.

Candidatus Fiducana (NL. fem. n. *Fiducana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-64-13*. The type species for the genus is *Candidatus* Fiducana defaritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirocanaceae.

Description of *Candidatus* Fiducaria conarivita sp. nov.

Candidatus Fiducaria conarivita (NL. fem. n. *conarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6927 sp002717725*. The type genome for the species is the GenBank assembly GCA_002450815.1. The GC content of the type genome is 36.82 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Fiducaria gen. nov.

Candidatus Fiducaria (NL. fem. n. *Fiducaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6927*. The type species for the genus is *Candidatus* Fiducaria conarivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6927*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fiducariaceae.

Description of *Candidatus* Fiducariaceae fam. nov.

Candidatus Fiducariaceae (NL. fem. n. *Fiducariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6927.* The type genus for the taxon is *Candidatus* Fiducaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Defulidales.

Description of *Candidatus* Fiducella effunatica sp. nov.

Candidatus Fiducella effunatica (NL. fem. n. *effunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN23 sp002923335*. The type genome for the species is the GenBank assembly GCA_002923335.1. The GC content of the type genome is 65.62 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Fiducella gen. nov.

Candidatus Fiducella (NL. fem. n. *Fiducella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN23*. The type species for the genus is *Candidatus* Fiducella effunatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fiducellaceae.

Description of *Candidatus* Fiducellaceae fam. nov.

Candidatus Fiducellaceae (NL. fem. n. *Fiducellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN23.* The type genus for the taxon is *Candidatus* Fiducella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nivomellales.

Description of *Candidatus* Fiducida benifatica sp. nov.

Candidatus Fiducida benifatica (NL. fem. n. *benifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQUY01 sp013003295*. The type genome for the species is the

GenBank assembly GCA_013003295.1. The GC content of the type genome is 47.09 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Fiducida gen. nov.

Candidatus Fiducida (NL. fem. n. *Fiducida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QQUY01*. The type species for the genus is *Candidatus* Fiducida benifatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fiducida corocimonia sp. nov.

Candidatus Fiducida corocimonia (NL. fem. n. *corocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQUY01 sp003385635*. The type genome for the species is the GenBank assembly GCA_003385625.1. The GC content of the type genome is 53.51 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Fiducida ficulimonas sp. nov.

Candidatus Fiducida ficulimonas (NL. fem. n. *ficulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQUY01 sp013003215*. The type genome for the species is the GenBank assembly GCA_013003215.1. The GC content of the type genome is 49.48 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Fiducosa taraxicula sp. nov.

Candidatus Fiducosa taraxicula (NL. fem. n. *taraxicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-45-11 sp001803465*. The type genome for the species is the GenBank assembly GCA_001803465.1. The GC content of the type genome is 45.66 % and the genome length is 1.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2

conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Fiducosa gen. nov.

Candidatus Fiducosa (NL. fem. n. *Fiducosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-45-11*. The type species for the genus is *Candidatus* Fiducosa taraxicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-45-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fiducosaceae.

Description of *Candidatus* Fiducosaceae fam. nov.

Candidatus Fiducosaceae (NL. fem. n. *Fiducosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-45-11.* The type genus for the taxon is *Candidatus* Fiducosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Fiducula nubifitoga sp. nov.

Candidatus Fiducula nubifitoga (NL. fem. n. *nubifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-43-9 sp001818315*. The type genome for the species is the GenBank assembly GCA_001818735.1. The GC content of the type genome is 42.69 % and the genome length is 1.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Fiducula gen. nov.

Candidatus Fiducula (NL. fem. n. *Fiducula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *WO2-43-9*. The type species for the genus is *Candidatus* Fiducula nubifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-48-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicubariaceae.

Description of *Candidatus* Figilana decititoga sp. nov.

Candidatus Figilana decititoga (NL. fem. n. *decititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIODY01 sp903857255*. The type genome for the species is the GenBank assembly GCA_903910525.1. The GC content of the type genome is 35.41 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Figilana gen. nov.

Candidatus Figilana (NL. fem. n. *Figilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIODY01*. The type species for the genus is *Candidatus* Figilana decititoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIODY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Figilanaceae.

Description of *Candidatus* Figilanaceae fam. nov.

Candidatus Figilanaceae (NL. fem. n. *Figilanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIODY01.* The type genus for the taxon is *Candidatus* Figilana .

According to GTDB R06-RS202, this family belongs to the order *Chitinophagales*.

Description of *Candidatus* Figilana recomicula sp. nov.

Candidatus Figilana recomicula (NL. fem. n. *recomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIODY01 sp903871715*. The type genome for the species is the GenBank assembly GCA_903871715.1. The GC content of the type genome is 35.95 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Figilaria allapago sp. nov.

Candidatus Figilaria allapago (NL. fem. n. *allapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3388 sp002358855*. The type genome for the species is the GenBank assembly GCA_002358855.1. The GC content of the type genome is 32.98 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Figilaria gen. nov.

Candidatus Figilaria (NL. fem. n. *Figilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3388*. The type species for the genus is *Candidatus* Figilaria allapago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucosaceae.

Description of *Candidatus* Figilaria cetaritia sp. nov.

Candidatus Figilaria cetaritia (NL. fem. n. *cetaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3388 sp004551865*. The type genome for the species is the GenBank assembly GCA_004551865.1. The GC content of the type genome is 42.32 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Figilaria irrelax sp. nov.

Candidatus Figilaria irrelax (NL. fem. n. *irrelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA3388 sp002358835*. The type genome for the species is the GenBank assembly GCA_002358835.1. The GC content of the type genome is 37.58 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Figilaria relenastra sp. nov.

Candidatus Figilaria relenastra (NL. fem. n. *relenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3388 sp900545215*. The type genome for the species is the GenBank assembly RS_GCF_900770905.1. The GC content of the type genome is 43.62 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Figilaria resupicula sp. nov.

Candidatus Figilaria resupicula (NL. fem. n. *resupicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3388 sp900546465*. The type genome for the species is the GenBank assembly GCA_900546465.1. The GC content of the type genome is 41.55 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Figilella capilicella sp. nov.

Candidatus Figilella capilicella (NL. fem. n. *capilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-1 sp903909505*. The type genome for the species is the GenBank assembly GCA_903909505.1. The GC content of the type genome is 50.75 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Figilella gen. nov.

Candidatus Figilella (NL. fem. n. *Figilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RAAP-1*. The type species for the genus is *Candidatus* Figilella capilicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Figilella colutifica sp. nov.

Candidatus Figilella colutifica (NL. fem. n. *colutifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-1 sp001443525*. The type genome for the species is the GenBank assembly GCA_001443525.1. The GC content of the type genome is 49.94 % and the genome length is 4.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "100% of the reads came from bioreactor sample SAMN04151528".

Description of *Candidatus* Figilella gasifitica sp. nov.

Candidatus Figilella gasifitica (NL. fem. n. *gasifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-1 sp903953895*. The type genome for the species is the GenBank assembly GCA_903955365.1. The GC content of the type genome is 50.11 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Figilella regifimonia sp. nov.

Candidatus Figilella regifimonia (NL. fem. n. *regifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RAAP-1 sp903839535*. The type genome for the species is the GenBank assembly GCA_903828875.1. The GC content of the type genome is 47.26 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Figilia acratugo sp. nov.

Candidatus Figilia acratugo (NL. fem. n. *acratugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp009774215*. The type genome for the species is the GenBank assembly GCA_009774215.1. The GC content of the type genome is 49.69 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Figilia gen. nov.

Candidatus Figilia (NL. fem. n. *Figilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3282*. The type species for the genus is *Candidatus* Figilia acratugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Figilia arbavessa sp. nov.

Candidatus Figilia arbavessa (NL. fem. n. *arbavessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp002492725*. The type genome for the species is the GenBank assembly GCA_002492725.1. The GC content of the type genome is 49.24 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Figilia bigaretta sp. nov.

Candidatus Figilia bigaretta (NL. fem. n. *bigaretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp002492525*. The type genome for the species is the GenBank assembly GCA_002493035.1. The GC content of the type genome is 44.69 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Figilia corocitia sp. nov.

Candidatus Figilia corocitia (NL. fem. n. *corocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp009774655*. The type genome for the species is the GenBank assembly GCA_009774655.1. The GC content of the type genome is 49.19 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Figilia decinicula sp. nov.

Candidatus Figilia decinicula (NL. fem. n. *decinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp002493835*. The type genome for the species is the GenBank assembly GCA_002493835.1. The GC content of the type genome is 46.1 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Figilia expugago sp. nov.

Candidatus Figilia expugago (NL. fem. n. *expugago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp002361735*. The type genome for the species is the GenBank assembly GCA_002361735.1. The GC content of the type genome is 49.1 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Figilia galacatica sp. nov.

Candidatus Figilia galacatica (NL. fem. n. *galacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp002490835*. The type genome for the species is the GenBank assembly GCA_002490835.1. The GC content of the type genome is 49.35 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Figilia istinilega sp. nov.

Candidatus Figilia istinilega (NL. fem. n. *istinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp002491905*. The type genome for the species is the GenBank assembly GCA_002491905.1. The GC content of the type genome is 49.75 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Figilia lametilenta sp. nov.

Candidatus Figilia lametilenta (NL. fem. n. *lametilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp002490705*. The type genome for the species is the GenBank assembly GCA_002491275.1. The GC content of the type genome is 48.71 %

and the genome length is 3.31 Mbp.

Description of *Candidatus* Figilia ludifatio sp. nov.

Candidatus Figilia ludifatio (NL. fem. n. *ludifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp003611805*. The type genome for the species is the GenBank assembly GCA_009774265.1. The GC content of the type genome is 49.09 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Figilia obvaligena sp. nov.

Candidatus Figilia obvaligena (NL. fem. n. *obvaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp003612405*. The type genome for the species is the GenBank assembly RS_GCF_003612405.1. The GC content of the type genome is 45.66 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Figilia oppugitio sp. nov.

Candidatus Figilia oppugitio (NL. fem. n. *oppugitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp009774585*. The type genome for the species is the GenBank assembly GCA_009774585.1. The GC content of the type genome is 44.33 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Figilia rurigicula sp. nov.

Candidatus Figilia rurigicula (NL. fem. n. *rurigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp002361355*. The type genome for the species is the GenBank assembly GCA_002361355.1. The GC content of the type genome is 48.99 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Figilia tubicitio sp. nov.

Candidatus Figilia tubicitio (NL. fem. n. *tubicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp009774175*. The type genome for the species is the GenBank assembly GCA_009774175.1. The GC content of the type genome is 48.58 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Figilia urbicago sp. nov.

Candidatus Figilia urbicago (NL. fem. n. *urbicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3282 sp009774575*. The type genome for the species is the GenBank assembly GCA_009774575.1. The GC content of the type genome is 48.54 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Figilida subacimonas sp. nov.

Candidatus Figilida subacimonas (NL. fem. n. *subacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-41-6 sp000997355*. The type genome for the species is the GenBank assembly GCA_000997495.1. The GC content of the type genome is 41.29 % and the genome length is 0.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Figilida gen. nov.

Candidatus Figilida (NL. fem. n. *Figilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-41-6*. The type species for the genus is *Candidatus* Figilida subacimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Figilosa holisago sp. nov.

Candidatus Figilosa holisago (NL. fem. n. *holisago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWXQ01 sp903916675*. The type genome for the species is the GenBank assembly GCA_903916675.1. The GC content of the type genome is 63.84 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Figilosa gen. nov.

Candidatus Figilosa (NL. fem. n. *Figilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWXQ01*. The type species for the genus is *Candidatus* Figilosa holisago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYNR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenariaceae.

Description of *Candidatus* Figilosa visifitura sp. nov.

Candidatus Figilosa visifitura (NL. fem. n. *visifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWXQ01 sp903861045*. The type genome for the species is the GenBank assembly GCA_903861045.1. The GC content of the type genome is 62.34 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Figilula nugigousia sp. nov.

Candidatus Figilula nugigousia (NL. fem. n. *nugigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5755 sp002419005*. The type genome for the species is the GenBank assembly GCA_002419005.1. The GC content of the type genome is 42.15 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Figilula gen. nov.

Candidatus Figilula (NL. fem. n. *Figilula* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5755*. The type species for the genus is *Candidatus* Figilula nugigousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5755*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Figilulaceae.

Description of *Candidatus* Figilulaceae fam. nov.

Candidatus Figilulaceae (NL. fem. n. *Figilulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5755.* The type genus for the taxon is *Candidatus* Figilula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4068*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Divulosales.

Description of *Candidatus* Filifana apogricula sp. nov.

Candidatus Filifana apogricula (NL. fem. n. *apogricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp902773085*. The type genome for the species is the GenBank assembly GCA_902773085.1. The GC content of the type genome is 27.88 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Filifana gen. nov.

Candidatus Filifana (NL. fem. n. *Filifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7642*. The type species for the genus is *Candidatus* Filifana apogricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-288*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropellaceae.

Description of *Candidatus* Filifana atricicula sp. nov.

Candidatus Filifana atricicula (NL. fem. n. *atricicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp900763245*. The type genome for the species is the GenBank assembly RS_GCF_900763245.1. The GC content of the type genome is 40.99 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Filifana bigementia sp. nov.

Candidatus Filifana bigementia (NL. fem. n. *bigementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp002297045*. The type genome for the species is the GenBank assembly GCA_002451385.1. The GC content of the type genome is 45.79 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Filifana catilimonia sp. nov.

Candidatus Filifana catilimonia (NL. fem. n. *catilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp002399505*. The type genome for the species is the GenBank assembly GCA_002399505.1. The GC content of the type genome is 41.29 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Filifana cetarigena sp. nov.

Candidatus Filifana cetarigena (NL. fem. n. *cetarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp900549915*. The type genome for the species is the GenBank assembly GCA_900549915.1. The GC content of the type genome is 41.99 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Filifana diponibra sp. nov.

Candidatus Filifana diponibra (NL. fem. n. *diponibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp900316035*. The type genome for the species is the GenBank assembly GCA_002481535.1. The GC content of the type genome is 45.46 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Filifana divolilega sp. nov.

Candidatus Filifana divolilega (NL. fem. n. *divolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp002404835*. The type genome for the species is the GenBank assembly GCA_002404835.1. The GC content of the type genome is 41.24 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Filifana foricedo sp. nov.

Candidatus Filifana foricedo (NL. fem. n. *foricedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp002483745*. The type genome for the species is the GenBank assembly GCA_002408745.1. The GC content of the type genome is 37.57 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Filifana nugivax sp. nov.

Candidatus Filifana nugivax (NL. fem. n. *nugivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp002404995*. The type genome for the species is the GenBank assembly GCA_002404995.1. The GC content of the type genome is 42.58 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Filifana rarefax sp. nov.

Candidatus Filifana rarefax (NL. fem. n. *rarefax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA7642 sp902771745*. The type genome for the species is the GenBank assembly GCA_902771745.1. The GC content of the type genome is 40.72 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Filifana robigastra sp. nov.

Candidatus Filifana robigastra (NL. fem. n. *robigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp900539865*. The type genome for the species is the GenBank assembly GCA_900539865.1. The GC content of the type genome is 38.21 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Filifana tabifibra sp. nov.

Candidatus Filifana tabifibra (NL. fem. n. *tabifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp900313465*. The type genome for the species is the GenBank assembly GCA_902757505.1. The GC content of the type genome is 40.43 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Filifana vitigedo sp. nov.

Candidatus Filifana vitigedo (NL. fem. n. *vitigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7642 sp900770925*. The type genome for the species is the GenBank assembly RS_GCF_900770925.1. The GC content of the type genome is 44.08 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Filifaria amercessa sp. nov.

Candidatus Filifaria amercessa (NL. fem. n. *amercessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA160-P02 sp000383355*. The type genome for the species is the GenBank assembly GCA_000383355.1. The GC content of the type genome is 31.79 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Filifaria gen. nov.

Candidatus Filifaria (NL. fem. n. *Filifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCGC-AAA160-P02*. The type species for the genus is *Candidatus* Filifaria amercessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Filifaria antevilenta sp. nov.

Candidatus Filifaria antevilenta (NL. fem. n. *antevilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA160-P02 sp013214275*. The type genome for the species is the GenBank assembly GCA_013214275.1. The GC content of the type genome is 37.0 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Filifaria bucelitica sp. nov.

Candidatus Filifaria bucelitica (NL. fem. n. *bucelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA160-P02 sp014075215*. The type genome for the species is the GenBank assembly GCA_011087845.1. The GC content of the type genome is 34.24 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Filifella necopitas sp. nov.

Candidatus Filifella necopitas (NL. fem. n. *necopitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-43-38 sp000997105*. The type genome for the species is the GenBank assembly GCA_000997105.1. The GC content of the type genome is 42.16 % and the genome length is 0.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Filifella gen. nov.

Candidatus Filifella (NL. fem. n. *Filifella* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-43-38*. The type species for the genus is *Candidatus* Filifella necopitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Filifia armififorma sp. nov.

Candidatus Filifia armififorma (NL. fem. n. *armififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-145 sp002320005*. The type genome for the species is the GenBank assembly GCA_002320005.1. The GC content of the type genome is 43.57 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Filifia gen. nov.

Candidatus Filifia (NL. fem. n. *Filifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-145*. The type species for the genus is *Candidatus* Filifia armififorma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Filifia butubiforma sp. nov.

Candidatus Filifia butubiforma (NL. fem. n. *butubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-145 sp900545135*. The type genome for the species is the GenBank assembly GCA_900545135.1. The GC content of the type genome is 46.39 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Filifia imbelitrix sp. nov.

Candidatus Filifia imbelitrix (NL. fem. n. *imbelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-145 sp003150015*. The type genome for the species is the GenBank assembly GCA_003150015.1. The GC content of the type genome is 41.85 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Filifia incenastra sp. nov.

Candidatus Filifia incenastra (NL. fem. n. *incenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-145 sp900542565*. The type genome for the species is the GenBank assembly GCA_900542565.1. The GC content of the type genome is 47.64 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Filifia metucastra sp. nov.

Candidatus Filifia metucastra (NL. fem. n. *metucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-145 sp900542295*. The type genome for the species is the GenBank assembly GCA_900542295.1. The GC content of the type genome is 39.42 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Filifia pulegicula sp. nov.

Candidatus Filifia pulegicula (NL. fem. n. *pulegicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-145 sp900754795*. The type genome for the species is the GenBank assembly RS_GCF_900754795.1. The GC content of the type genome is 48.04 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Filifia tenemago sp. nov.

Candidatus Filifia tenemago (NL. fem. n. *tenemago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-145 sp000435715*. The type genome for the species is the GenBank assembly GCA_000435715.1. The GC content of the type genome is 45.35 % and the genome length is 2.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Filifia vanitago sp. nov.

Candidatus Filifia vanitago (NL. fem. n. *vanitago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-145 sp900540145*. The type genome for the species is the GenBank assembly GCA_900540145.1. The GC content of the type genome is 41.86 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Filifosa advigago sp. nov.

Candidatus Filifosa advigago (NL. fem. n. *advigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-7 sp007130585*. The type genome for the species is the GenBank assembly GCA_007130585.1. The GC content of the type genome is 51.79 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Filifosa gen. nov.

Candidatus Filifosa (NL. fem. n. *Filifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3SED10-7*. The type species for the genus is *Candidatus* Filifosa advigago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Filifosa armifitura sp. nov.

Candidatus Filifosa armifitura (NL. fem. n. *armifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *T3SED10-7 sp007136055*. The type genome for the species is the GenBank assembly GCA_007136055.1. The GC content of the type genome is 46.51 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Filifosa cituvivita sp. nov.

Candidatus Filifosa cituvivita (NL. fem. n. *cituvivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-7 sp007119965*. The type genome for the species is the GenBank assembly GCA_007128785.1. The GC content of the type genome is 50.27 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Filifosa doxoligena sp. nov.

Candidatus Filifosa doxoligena (NL. fem. n. *doxoligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-7 sp003566935*. The type genome for the species is the GenBank assembly GCA_003566935.1. The GC content of the type genome is 46.37 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Filifosa ludibetta sp. nov.

Candidatus Filifosa ludibetta (NL. fem. n. *ludibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-7 sp007127255*. The type genome for the species is the GenBank assembly GCA_003561605.1. The GC content of the type genome is 45.39 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Filifosa necopigena sp. nov.

Candidatus Filifosa necopigena (NL. fem. n. *necopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-7 sp007126465*. The type genome for the species is the GenBank assembly GCA_007126465.1. The GC content of the type genome is 47.72 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Filifosa nutamilenta sp. nov.

Candidatus Filifosa nutamilenta (NL. fem. n. *nutamilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-7 sp003564055*. The type genome for the species is the GenBank assembly GCA_003564055.1. The GC content of the type genome is 45.68 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Filifosa sataciforma sp. nov.

Candidatus Filifosa sataciforma (NL. fem. n. *sataciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-7 sp003564505*. The type genome for the species is the GenBank assembly GCA_003564505.1. The GC content of the type genome is 44.87 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Filimonas betacentia sp. nov.

Candidatus Filimonas betacentia (NL. fem. n. *betacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Filimonas sp003097095*. The type genome for the species is the GenBank assembly RS_GCF_003097095.1. The GC content of the type genome is 44.81 % and the genome length is 7.78 Mbp.

Description of *Candidatus* Filomicrobium chernitrix sp. nov.

Candidatus Filomicrobium chernitrix (NL. fem. n. *chernitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Filomicrobium sp001516065*. The type genome for the species is the GenBank assembly GCA_001516065.1. The GC content of the type genome is 60.4 % and the genome length is 3.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Fimbriimonas adsicugo sp. nov.

Candidatus Fimbriimonas adsicugo (NL. fem. n. *adsicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fimbriimonas sp002336105*. The type genome for the species is the GenBank assembly GCA_002336105.1. The GC content of the type genome is 50.49 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Fimbriimonas benepitica sp. nov.

Candidatus Fimbriimonas benepitica (NL. fem. n. *benepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fimbriimonas sp903833215*. The type genome for the species is the GenBank assembly GCA_903910415.1. The GC content of the type genome is 53.77 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Fimbriimonas cerofifica sp. nov.

Candidatus Fimbriimonas cerofifica (NL. fem. n. *cerofifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fimbriimonas sp903899015*. The type genome for the species is the GenBank assembly GCA_903913995.1. The GC content of the type genome is 51.12 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Fimbriimonas culigitudo sp. nov.

Candidatus Fimbriimonas culigitudo (NL. fem. n. *culigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fimbriimonas sp903904815*. The type genome for the species is the GenBank assembly GCA_903904815.1. The GC content of the type genome is 56.53 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Fimbriimonas papilastra sp. nov.

Candidatus Fimbriimonas papilastra (NL. fem. n. *papilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fimbriimonas sp903927345*. The type genome for the species is the GenBank assembly GCA_903927345.1. The GC content of the type genome is 54.53 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Fimbriimonas televitas sp. nov.

Candidatus Fimbriimonas televitas (NL. fem. n. *televitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fimbriimonas sp903927025*. The type genome for the species is the GenBank assembly GCA_903919575.1. The GC content of the type genome is 55.66 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Finegoldia embamicula sp. nov.

Candidatus Finegoldia embamicula (NL. fem. n. *embamicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Finegoldia sp900766215*. The type genome for the species is the GenBank assembly GCA_900766215.1. The GC content of the type genome is 31.78 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Finniella resurimonia sp. nov.

Candidatus Finniella resurimonia (NL. fem. n. *resurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Finniella sp903905285*. The type genome for the species is the GenBank assembly GCA_903821505.1. The GC content of the type genome is 43.06 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Fischerella homicisca sp. nov.

Candidatus Fischerella homicisca (NL. fem. n. *homicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fischerella sp000447295*. The type genome for the species is the GenBank assembly RS_GCF_001275395.1. The GC content of the type genome is 40.21

% and the genome length is 7.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater reservoir".

Description of *Candidatus* Fischerella inpenedo sp. nov.

Candidatus Fischerella inpenedo (NL. fem. n. *inpenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fischerella sp002368315*. The type genome for the species is the GenBank assembly RS_GCF_002368315.1. The GC content of the type genome is 40.03 % and the genome length is 7.25 Mbp.

Description of *Candidatus* Fischerella pedepitia sp. nov.

Candidatus Fischerella pedepitia (NL. fem. n. *pedepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fischerella sp000517105*. The type genome for the species is the GenBank assembly GCA_013388695.1. The GC content of the type genome is 42.54 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Flammeovirga excamedo sp. nov.

Candidatus Flammeovirga excamedo (NL. fem. n. *excamedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flammeovirga sp014534745*. The type genome for the species is the GenBank assembly RS_GCF_014534745.1. The GC content of the type genome is 34.76 % and the genome length is 8.0 Mbp.

Description of *Candidatus* Flammeovirga invinicula sp. nov.

Candidatus Flammeovirga invinicula (NL. fem. n. *invinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flammeovirga sp012641475*. The type genome for the species is the GenBank assembly RS_GCF_012641475.1. The GC content of the type genome is 34.2 % and the genome length is 7.38 Mbp.

Description of *Candidatus* Flammeovirga retunitura sp. nov.

Candidatus Flammeovirga retunitura (NL. fem. n. *retunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flammeovirga sp001583495*. The type genome for the species is the GenBank assembly RS_GCF_001583495.1. The GC content of the type genome is 34.8 % and the genome length is 8.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Flammeovirga semimax sp. nov.

Candidatus Flammeovirga semimax (NL. fem. n. *semimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flammeovirga sp000812565*. The type genome for the species is the GenBank assembly RS_GCF_000812565.1. The GC content of the type genome is 34.87 % and the genome length is 8.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea".

Description of *Candidatus* Flaviaesturariibacter ancepitrix sp. nov.

Candidatus Flaviaesturariibacter ancepitrix (NL. fem. n. *ancepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flaviaesturariibacter sp004337505*. The type genome for the species is the GenBank assembly RS_GCF_004337505.1. The GC content of the type genome is 57.65 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Flaviaesturariibacter innasitura sp. nov.

Candidatus Flaviaesturariibacter innasitura (NL. fem. n. *innasitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flaviaesturariibacter sp004173235*. The type genome for the species is the GenBank assembly GCA_004173235.1. The GC content of the type genome is 56.65 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Flaviaesturariibacter insuredo sp. nov.

Candidatus Flaviaesturariibacter insuredo (NL. fem. n. *insuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flaviaesturariibacter sp004343705*. The type genome for the species is the GenBank assembly RS_GCF_004343705.1. The GC content of the type genome is 59.34 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Flavicella catecatio sp. nov.

Candidatus Flavicella catecatio (NL. fem. n. *catecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavicella sp002477565*. The type genome for the species is the GenBank assembly GCA_002477565.1. The GC content of the type genome is 41.08 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Flaviflexus agnicitrix sp. nov.

Candidatus Flaviflexus agnicitrix (NL. fem. n. *agnicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flaviflexus sp003971195*. The type genome for the species is the GenBank assembly RS_GCF_003971195.1. The GC content of the type genome is 59.47 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Flaviflexus mirabitica sp. nov.

Candidatus Flaviflexus mirabitica (NL. fem. n. *mirabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flaviflexus sp014069875*. The type genome for the species is the GenBank assembly RS_GCF_014525475.1. The GC content of the type genome is 63.05 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Flavihumibacter affunedo sp. nov.

Candidatus Flavihumibacter affunedo (NL. fem. n. *affunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Flavihumibacter sp014379785*. The type genome for the species is the GenBank assembly GCA_014379785.1. The GC content of the type genome is 45.67 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Flavihumibacter cerebessa sp. nov.

Candidatus Flavihumibacter cerebessa (NL. fem. n. *cerebessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavihumibacter sp004295245*. The type genome for the species is the GenBank assembly GCA_004295245.1. The GC content of the type genome is 39.73 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Flavihumibacter dedigivita sp. nov.

Candidatus Flavihumibacter dedigivita (NL. fem. n. *dedigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavihumibacter sp014380425*. The type genome for the species is the GenBank assembly GCA_014380425.1. The GC content of the type genome is 44.31 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Flavihumibacter extoritura sp. nov.

Candidatus Flavihumibacter extoritura (NL. fem. n. *extoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavihumibacter sp002483205*. The type genome for the species is the GenBank assembly GCA_002483205.1. The GC content of the type genome is 42.6 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Flavihumibacter indecicula sp. nov.

Candidatus Flavihumibacter indecicula (NL. fem. n. *indecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavihumibacter sp000814325*. The type genome for the species is the GenBank assembly RS_GCF_000814325.1. The GC content of the type genome is 43.35 % and the genome length is 4.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "coal mine powder".

Description of *Candidatus* Flavihumibacter refocousia sp. nov.

Candidatus Flavihumibacter refocousia (NL. fem. n. *refocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavihumibacter sp001601815*. The type genome for the species is the GenBank assembly GCA_001601815.1. The GC content of the type genome is 44.98 % and the genome length is 4.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "CACIAM 22 non-axenic culture of unicellular cyanobacterium started from water sample from Bolonha Lake".

Description of *Candidatus* Flavimaricola intamessa sp. nov.

Candidatus Flavimaricola intamessa (NL. fem. n. *intamessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavimaricola sp004000435*. The type genome for the species is the GenBank assembly RS_GCF_004000435.1. The GC content of the type genome is 63.31 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Flavimobilis carecitas sp. nov.

Candidatus Flavimobilis carecitas (NL. fem. n. *carecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavimobilis sp011300875*. The type genome for the species is the GenBank assembly RS_GCF_011300875.1. The GC content of the type genome is 72.31 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Flavipsychrobacter admigedo sp. nov.

Candidatus Flavipsychrobacter admigedo (NL. fem. n. *admigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903881585*. The type genome for the species is the GenBank assembly GCA_903881585.1. The GC content of the type genome is 45.98 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Flavipsychrobacter adnunessa sp. nov.

Candidatus Flavipsychrobacter adnunessa (NL. fem. n. *adnunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp013285905*. The type genome for the species is the GenBank assembly GCA_013285905.1. The GC content of the type genome is 41.37 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Flavipsychrobacter adrenentia sp. nov.

Candidatus Flavipsychrobacter adrenentia (NL. fem. n. *adrenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp001897835*. The type genome for the species is the GenBank assembly GCA_001897835.1. The GC content of the type genome is 45.58 % and the genome length is 4.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Flavipsychrobacter ambusicula sp. nov.

Candidatus Flavipsychrobacter ambusicula (NL. fem. n. *ambusicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp002423665*. The type genome for the species is the GenBank assembly GCA_002423665.1. The GC content of the type genome is 44.25 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Flavipsychrobacter atlanilega sp. nov.

Candidatus Flavipsychrobacter atlanilega (NL. fem. n. *atlanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903882965*. The type genome for the species is the GenBank assembly GCA_903882965.1. The GC content of the type genome is 41.01 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Flavipsychrobacter biveritas sp. nov.

Candidatus Flavipsychrobacter biveritas (NL. fem. n. *biveritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903853805*. The type genome for the species is the GenBank assembly GCA_903828935.1. The GC content of the type genome is 37.19 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Flavipsychrobacter blactitio sp. nov.

Candidatus Flavipsychrobacter blactitio (NL. fem. n. *blactitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp014377675*. The type genome for the species is the GenBank assembly GCA_014377675.1. The GC content of the type genome is 44.02 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Flavipsychrobacter chernitia sp. nov.

Candidatus Flavipsychrobacter chernitia (NL. fem. n. *chernitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp902168085*. The type genome for the species is the GenBank assembly GCA_902168085.1. The GC content of the type genome is 44.59 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Flavipsychrobacter denigivita sp. nov.

Candidatus Flavipsychrobacter denigivita (NL. fem. n. *denigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903824665*. The type genome for the species is the GenBank assembly GCA_903950175.1. The GC content of the type genome is 46.95 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Flavipsychrobacter derecicula sp. nov.

Candidatus Flavipsychrobacter derecicula (NL. fem. n. *derecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp002127285*. The type genome for the species is the GenBank assembly RS_GCF_002127285.1. The GC content of the type genome is

42.65 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Flavipsychrobacter dereligena sp. nov.

Candidatus Flavipsychrobacter dereligena (NL. fem. n. *dereligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp013287555*. The type genome for the species is the GenBank assembly GCA_013287555.1. The GC content of the type genome is 42.51 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Flavipsychrobacter detosastra sp. nov.

Candidatus Flavipsychrobacter detosastra (NL. fem. n. *detosastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903929655*. The type genome for the species is the GenBank assembly GCA_903929655.1. The GC content of the type genome is 40.39 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Flavipsychrobacter detotitoga sp. nov.

Candidatus Flavipsychrobacter detotitoga (NL. fem. n. *detotitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903851455*. The type genome for the species is the GenBank assembly GCA_903851455.1. The GC content of the type genome is 47.1 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Flavipsychrobacter detumifica sp. nov.

Candidatus Flavipsychrobacter detumifica (NL. fem. n. *detumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903839875*. The type genome for the species is the GenBank assembly GCA_903899265.1. The GC content of the type genome is 42.81 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Flavipsychrobacter encomitica sp. nov.

Candidatus Flavipsychrobacter encomitica (NL. fem. n. *encomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp013288285*. The type genome for the species is the GenBank assembly GCA_013288285.1. The GC content of the type genome is 46.03 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Flavipsychrobacter essonisca sp. nov.

Candidatus Flavipsychrobacter essonisca (NL. fem. n. *essonisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp001897855*. The type genome for the species is the GenBank assembly GCA_001897855.1. The GC content of the type genome is 42.91 % and the genome length is 3.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Flavipsychrobacter essonousia sp. nov.

Candidatus Flavipsychrobacter essonousia (NL. fem. n. *essonousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp013815385*. The type genome for the species is the GenBank assembly GCA_013815385.1. The GC content of the type genome is 43.2 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Flavipsychrobacter exorcousia sp. nov.

Candidatus Flavipsychrobacter exorcousia (NL. fem. n. *exorcousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903882805*. The type genome for the species is the GenBank assembly GCA_903882805.1. The GC content of the type genome is 44.28 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Flavipsychrobacter exsisessa sp. nov.

Candidatus Flavipsychrobacter exsisessa (NL. fem. n. *exsisessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903906615*. The type genome for the species is the GenBank assembly GCA_903906615.1. The GC content of the type genome is 47.66 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Flavipsychrobacter fumificula sp. nov.

Candidatus Flavipsychrobacter fumificula (NL. fem. n. *fumificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp002336915*. The type genome for the species is the GenBank assembly GCA_002336915.1. The GC content of the type genome is 45.7 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Flavipsychrobacter hibisousia sp. nov.

Candidatus Flavipsychrobacter hibisousia (NL. fem. n. *hibisousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903835005*. The type genome for the species is the GenBank assembly GCA_903889375.1. The GC content of the type genome is 42.19 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Flavipsychrobacter immemetta sp. nov.

Candidatus Flavipsychrobacter immemetta (NL. fem. n. *immemetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903887005*. The type genome for the species is the GenBank assembly GCA_903887005.1. The GC content of the type genome is 39.9 % and the genome length is 5.96 Mbp.

Description of *Candidatus* Flavipsychrobacter immuritia sp. nov.

Candidatus Flavipsychrobacter immuritia (NL. fem. n. *immuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp013285595*. The type genome for the species is the GenBank assembly GCA_013285595.1. The GC content of the type genome is 45.13

% and the genome length is 2.93 Mbp.

Description of *Candidatus* Flavipsychrobacter indilastra sp. nov.

Candidatus Flavipsychrobacter indilastra (NL. fem. n. *indilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp004144175*. The type genome for the species is the GenBank assembly GCA_004144175.1. The GC content of the type genome is 46.02 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Flavipsychrobacter indirimonas sp. nov.

Candidatus Flavipsychrobacter indirimonas (NL. fem. n. *indirimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903903635*. The type genome for the species is the GenBank assembly GCA_903903635.1. The GC content of the type genome is 41.95 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Flavipsychrobacter indubatio sp. nov.

Candidatus Flavipsychrobacter indubatio (NL. fem. n. *indubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp002421685*. The type genome for the species is the GenBank assembly GCA_002421685.1. The GC content of the type genome is 46.1 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Flavipsychrobacter indupifica sp. nov.

Candidatus Flavipsychrobacter indupifica (NL. fem. n. *indupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903926605*. The type genome for the species is the GenBank assembly GCA_903926605.1. The GC content of the type genome is 46.48 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Flavipsychrobacter inmoditoga sp. nov.

Candidatus Flavipsychrobacter inmoditoga (NL. fem. n. *inmoditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903929195*. The type genome for the species is the GenBank assembly GCA_903929195.1. The GC content of the type genome is 32.56 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Flavipsychrobacter inpudimonia sp. nov.

Candidatus Flavipsychrobacter inpudimonia (NL. fem. n. *inpudimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp013288445*. The type genome for the species is the GenBank assembly GCA_013288445.1. The GC content of the type genome is 45.4 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Flavipsychrobacter inretessa sp. nov.

Candidatus Flavipsychrobacter inretessa (NL. fem. n. *inretessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903821975*. The type genome for the species is the GenBank assembly GCA_903821975.1. The GC content of the type genome is 44.08 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Flavipsychrobacter lanugifica sp. nov.

Candidatus Flavipsychrobacter lanugifica (NL. fem. n. *lanugifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp002389765*. The type genome for the species is the GenBank assembly GCA_002389765.1. The GC content of the type genome is 42.29 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Flavipsychrobacter lucelatica sp. nov.

Candidatus Flavipsychrobacter lucelatica (NL. fem. n. *lucelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903829015*. The type genome for the species is the GenBank assembly GCA_903920285.1. The GC content of the type genome is 43.75 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Flavipsychrobacter lucubilenta sp. nov.

Candidatus Flavipsychrobacter lucubilenta (NL. fem. n. *lucubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp013286835*. The type genome for the species is the GenBank assembly GCA_013287035.1. The GC content of the type genome is 42.27 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Flavipsychrobacter maledicella sp. nov.

Candidatus Flavipsychrobacter maledicella (NL. fem. n. *maledicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903904855*. The type genome for the species is the GenBank assembly GCA_903831985.1. The GC content of the type genome is 41.74 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Flavipsychrobacter meridimonas sp. nov.

Candidatus Flavipsychrobacter meridimonas (NL. fem. n. *meridimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903905065*. The type genome for the species is the GenBank assembly GCA_903906415.1. The GC content of the type genome is 46.15 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Flavipsychrobacter nidifigena sp. nov.

Candidatus Flavipsychrobacter nidifigena (NL. fem. n. *nidifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp900299255*. The type genome for the species is the GenBank assembly GCA_900299255.1. The GC content of the type genome is 44.61

% and the genome length is 3.47 Mbp.

Description of *Candidatus* Flavipsychrobacter noninicula sp. nov.

Candidatus Flavipsychrobacter noninicula (NL. fem. n. *noninicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp002483105*. The type genome for the species is the GenBank assembly GCA_002483105.1. The GC content of the type genome is 43.94 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Flavipsychrobacter pecunastra sp. nov.

Candidatus Flavipsychrobacter pecunastra (NL. fem. n. *pecunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp013286485*. The type genome for the species is the GenBank assembly GCA_013286485.1. The GC content of the type genome is 38.68 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Flavipsychrobacter peripitio sp. nov.

Candidatus Flavipsychrobacter peripitio (NL. fem. n. *peripitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903877645*. The type genome for the species is the GenBank assembly GCA_903909445.1. The GC content of the type genome is 46.3 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Flavipsychrobacter recocatio sp. nov.

Candidatus Flavipsychrobacter recocatio (NL. fem. n. *recocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903916555*. The type genome for the species is the GenBank assembly GCA_903916555.1. The GC content of the type genome is 32.6 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Flavipsychrobacter sugilitoga sp. nov.

Candidatus Flavipsychrobacter sugilitoga (NL. fem. n. *sugilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903835145*. The type genome for the species is the GenBank assembly GCA_903900985.1. The GC content of the type genome is 44.0 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Flavipsychrobacter tirocugo sp. nov.

Candidatus Flavipsychrobacter tirocugo (NL. fem. n. *tirocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp013289355*. The type genome for the species is the GenBank assembly GCA_013289355.1. The GC content of the type genome is 42.36 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Flavipsychrobacter tirunitrix sp. nov.

Candidatus Flavipsychrobacter tirunitrix (NL. fem. n. *tirunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903905685*. The type genome for the species is the GenBank assembly GCA_903905685.1. The GC content of the type genome is 50.83 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Flavipsychrobacter vehicifica sp. nov.

Candidatus Flavipsychrobacter vehicifica (NL. fem. n. *vehicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp903887415*. The type genome for the species is the GenBank assembly GCA_903887415.1. The GC content of the type genome is 45.65 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Flavipsychrobacter volucentia sp. nov.

Candidatus Flavipsychrobacter volucentia (NL. fem. n. *volucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavipsychrobacter sp002337045*. The type genome for the species is the GenBank assembly GCA_002337045.1. The GC content of the type genome is 41.98 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Flaviramulus aciscicella sp. nov.

Candidatus Flaviramulus aciscicella (NL. fem. n. *aciscicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flaviramulus sp013001275*. The type genome for the species is the GenBank assembly GCA_013001275.1. The GC content of the type genome is 32.05 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Flaviramulus aglasousia sp. nov.

Candidatus Flaviramulus aglasousia (NL. fem. n. *aglasousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flaviramulus_A sp009498295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009498295.1. The GC content of the type genome is 34.96 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Flaviramulus vecorisca sp. nov.

Candidatus Flaviramulus vecorisca (NL. fem. n. *vecorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flaviramulus_A sp002741945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002741945.1. The GC content of the type genome is 31.56 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Flavisolibacter caselugo sp. nov.

Candidatus Flavisolibacter caselugo (NL. fem. n. *caselugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavisolibacter sp014163555*. The type genome for the species is the GenBank assembly RS_GCF_014163555.1. The GC content of the type genome is 47.17 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Flavisolibacter excarimonas sp. nov.

Candidatus Flavisolibacter excarimonas (NL. fem. n. *excarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavisolibacter sp003628535*. The type genome for the species is the GenBank assembly RS_GCF_003628535.1. The GC content of the type genome is 49.71 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Flavisolibacter peracatica sp. nov.

Candidatus Flavisolibacter peracatica (NL. fem. n. *peracatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavisolibacter sp013327885*. The type genome for the species is the GenBank assembly RS_GCF_013327885.1. The GC content of the type genome is 48.34 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Flavisolibacter utillax sp. nov.

Candidatus Flavisolibacter utillax (NL. fem. n. *utillax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavisolibacter sp002050435*. The type genome for the species is the GenBank assembly GCA_002050435.1. The GC content of the type genome is 41.8 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Flavivirga penecivita sp. nov.

Candidatus Flavivirga penecivita (NL. fem. n. *penecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavivirga sp012910715*. The type genome for the species is the GenBank assembly RS_GCF_012910715.1. The GC content of the type genome is 33.51

% and the genome length is 5.03 Mbp.

Description of *Candidatus* Flavobacterium abanticella sp. nov.

Candidatus Flavobacterium abanticella (NL. fem. n. *abanticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001975985*. The type genome for the species is the GenBank assembly RS_GCF_001975985.1. The GC content of the type genome is 33.26 % and the genome length is 5.68 Mbp.

Description of *Candidatus* Flavobacterium abnoritas sp. nov.

Candidatus Flavobacterium abnoritas (NL. fem. n. *abnoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004122105*. The type genome for the species is the GenBank assembly RS_GCF_004122105.1. The GC content of the type genome is 39.44 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Flavobacterium absuretta sp. nov.

Candidatus Flavobacterium absuretta (NL. fem. n. *absuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002483315*. The type genome for the species is the GenBank assembly GCA_002483315.1. The GC content of the type genome is 32.16 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Flavobacterium accucugo sp. nov.

Candidatus Flavobacterium accucugo (NL. fem. n. *accucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp014281985*. The type genome for the species is the GenBank assembly RS_GCF_014281985.1. The GC content of the type genome is 31.86 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Flavobacterium adfunibula sp. nov.

Candidatus Flavobacterium adfunibula (NL. fem. n. *adfunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002001005*. The type genome for the species is the GenBank assembly RS_GCF_002001005.1. The GC content of the type genome is 34.35 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Flavobacterium adgesitas sp. nov.

Candidatus Flavobacterium adgesitas (NL. fem. n. *adgesitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000708595*. The type genome for the species is the GenBank assembly RS_GCF_000708595.2. The GC content of the type genome is 33.26 % and the genome length is 4.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater Creek".

Description of *Candidatus* Flavobacterium admodiforma sp. nov.

Candidatus Flavobacterium admodiforma (NL. fem. n. *admodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000744835*. The type genome for the species is the GenBank assembly RS_GCF_000744835.1. The GC content of the type genome is 33.3 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Flavobacterium adselicella sp. nov.

Candidatus Flavobacterium adselicella (NL. fem. n. *adselicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp007109225*. The type genome for the species is the GenBank assembly RS_GCF_007109225.1. The GC content of the type genome is 37.58 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Flavobacterium agricigena sp. nov.

Candidatus Flavobacterium agricigena (NL. fem. n. *agricigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009711135*. The type genome for the species is the GenBank assembly RS_GCF_009711135.1. The GC content of the type genome is 33.9 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Flavobacterium alismitas sp. nov.

Candidatus Flavobacterium alismitas (NL. fem. n. *alismitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004016525*. The type genome for the species is the GenBank assembly RS_GCF_004016525.1. The GC content of the type genome is 34.21 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Flavobacterium ancipitas sp. nov.

Candidatus Flavobacterium ancipitas (NL. fem. n. *ancipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009826935*. The type genome for the species is the GenBank assembly RS_GCF_009826935.1. The GC content of the type genome is 39.93 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Flavobacterium antegatio sp. nov.

Candidatus Flavobacterium antegatio (NL. fem. n. *antegatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp012032075*. The type genome for the species is the GenBank assembly GCA_012032075.1. The GC content of the type genome is 29.78 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Flavobacterium argumitudo sp. nov.

Candidatus Flavobacterium argumitudo (NL. fem. n. *argumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003668995*. The type genome for the species is the GenBank assembly RS_GCF_003668995.1. The GC content of the type genome is 32.27

% and the genome length is 4.94 Mbp.

Description of *Candidatus* Flavobacterium ascenisca sp. nov.

Candidatus Flavobacterium ascenisca (NL. fem. n. *ascenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003634825*. The type genome for the species is the GenBank assembly RS_GCF_003634825.1. The GC content of the type genome is 32.66 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Flavobacterium atlanifica sp. nov.

Candidatus Flavobacterium atlanifica (NL. fem. n. *atlanifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903842575*. The type genome for the species is the GenBank assembly GCA_903842575.1. The GC content of the type genome is 33.91 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Flavobacterium bacifilenta sp. nov.

Candidatus Flavobacterium bacifilenta (NL. fem. n. *bacifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001874325*. The type genome for the species is the GenBank assembly GCA_001874325.1. The GC content of the type genome is 33.23 % and the genome length is 2.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mediterranean seawater enriched with a specific particulate matter".

Description of *Candidatus* Flavobacterium baropitica sp. nov.

Candidatus Flavobacterium baropitica (NL. fem. n. *baropitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp013401995*. The type genome for the species is the GenBank assembly RS_GCF_013366395.1. The GC content of the type genome is 47.11 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Flavobacterium bicapitica sp. nov.

Candidatus Flavobacterium bicapitica (NL. fem. n. *bicapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002422095*. The type genome for the species is the GenBank assembly GCA_002422095.1. The GC content of the type genome is 32.43 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Flavobacterium bifisetta sp. nov.

Candidatus Flavobacterium bifisetta (NL. fem. n. *bifisetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002862805*. The type genome for the species is the GenBank assembly GCA_002862805.1. The GC content of the type genome is 30.16 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Flavobacterium binocisca sp. nov.

Candidatus Flavobacterium binocisca (NL. fem. n. *binocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp011392115*. The type genome for the species is the GenBank assembly RS_GCF_011392115.1. The GC content of the type genome is 31.6 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Flavobacterium bipalugo sp. nov.

Candidatus Flavobacterium bipalugo (NL. fem. n. *bipalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903879645*. The type genome for the species is the GenBank assembly GCA_903879645.1. The GC content of the type genome is 33.02 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Flavobacterium bipenitoga sp. nov.

Candidatus Flavobacterium bipenitoga (NL. fem. n. *bipenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004339525*. The type genome for the species is the GenBank assembly RS_GCF_003633785.1. The GC content of the type genome is 33.33 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Flavobacterium brabricella sp. nov.

Candidatus Flavobacterium brabricella (NL. fem. n. *brabricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000264055*. The type genome for the species is the GenBank assembly RS_GCF_000264055.1. The GC content of the type genome is 34.83 % and the genome length is 3.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water from a saline meromictic lagoon".

Description of *Candidatus* Flavobacterium bugiliforma sp. nov.

Candidatus Flavobacterium bugiliforma (NL. fem. n. *bugiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp012932585*. The type genome for the species is the GenBank assembly RS_GCF_012932585.1. The GC content of the type genome is 38.85 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Flavobacterium camilitudo sp. nov.

Candidatus Flavobacterium camilitudo (NL. fem. n. *camilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp011742145*. The type genome for the species is the GenBank assembly RS_GCF_011742145.1. The GC content of the type genome is 37.76 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Flavobacterium carecibula sp. nov.

Candidatus Flavobacterium carecibula (NL. fem. n. *carecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002754315*. The type genome for the species is the GenBank assembly RS_GCF_003633605.1. The GC content of the type genome is 34.32 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Flavobacterium carunitica sp. nov.

Candidatus Flavobacterium carunitica (NL. fem. n. *carunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002454195*. The type genome for the species is the GenBank assembly GCA_002454195.1. The GC content of the type genome is 33.45 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Flavobacterium catabivita sp. nov.

Candidatus Flavobacterium catabivita (NL. fem. n. *catabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002296885*. The type genome for the species is the GenBank assembly GCA_002296885.1. The GC content of the type genome is 36.51 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Flavobacterium catagatio sp. nov.

Candidatus Flavobacterium catagatio (NL. fem. n. *catagatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp012911605*. The type genome for the species is the GenBank assembly RS_GCF_012911605.1. The GC content of the type genome is 33.07 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Flavobacterium cerifessa sp. nov.

Candidatus Flavobacterium cerifessa (NL. fem. n. *cerifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp007097145*. The type genome for the species is the GenBank assembly RS_GCF_007097145.1. The GC content of the type genome is 41.35 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Flavobacterium cibicentia sp. nov.

Candidatus Flavobacterium cibicentia (NL. fem. n. *cibicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004303025*. The type genome for the species is the GenBank assembly RS_GCF_004303025.1. The GC content of the type genome is 30.69 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Flavobacterium cicaricula sp. nov.

Candidatus Flavobacterium cicaricula (NL. fem. n. *cicaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009926065*. The type genome for the species is the GenBank assembly GCA_009926065.1. The GC content of the type genome is 31.8 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Flavobacterium cinipatica sp. nov.

Candidatus Flavobacterium cinipatica (NL. fem. n. *cinipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000439025*. The type genome for the species is the GenBank assembly GCA_000439025.2. The GC content of the type genome is 33.24 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Flavobacterium cobalitura sp. nov.

Candidatus Flavobacterium cobalitura (NL. fem. n. *cobalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004349315*. The type genome for the species is the GenBank assembly RS_GCF_004349315.1. The GC content of the type genome is 34.27 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Flavobacterium cocibatio sp. nov.

Candidatus Flavobacterium cocibatio (NL. fem. n. *cocibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp900129795*. The type genome for the species is the GenBank assembly RS_GCF_900129795.1. The GC content of the type genome is 33.56 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Flavobacterium cocibimonas sp. nov.

Candidatus Flavobacterium cocibimonas (NL. fem. n. *cocibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004119495*. The type genome for the species is the GenBank assembly RS_GCF_004119495.1. The GC content of the type genome is 33.48 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Flavobacterium colimilenta sp. nov.

Candidatus Flavobacterium colimilenta (NL. fem. n. *colimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903913315*. The type genome for the species is the GenBank assembly GCA_903950385.1. The GC content of the type genome is 33.17 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Flavobacterium conubago sp. nov.

Candidatus Flavobacterium conubago (NL. fem. n. *conubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002797935*. The type genome for the species is the GenBank assembly RS_GCF_002797935.1. The GC content of the type genome is 34.42 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Flavobacterium conubedo sp. nov.

Candidatus Flavobacterium conubedo (NL. fem. n. *conubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Flavobacterium sp009764685*. The type genome for the species is the GenBank assembly RS_GCF_009764685.1. The GC content of the type genome is 33.67 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Flavobacterium culilitoga sp. nov.

Candidatus Flavobacterium culilitoga (NL. fem. n. *culilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001422725*. The type genome for the species is the GenBank assembly RS_GCF_001422725.1. The GC content of the type genome is 33.35 % and the genome length is 5.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Flavobacterium cululicula sp. nov.

Candidatus Flavobacterium cululicula (NL. fem. n. *cululicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000812945*. The type genome for the species is the GenBank assembly RS_GCF_000812945.1. The GC content of the type genome is 33.57 % and the genome length is 3.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater Creek".

Description of *Candidatus* Flavobacterium daducitas sp. nov.

Candidatus Flavobacterium daducitas (NL. fem. n. *daducitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009826975*. The type genome for the species is the GenBank assembly RS_GCF_009826975.1. The GC content of the type genome is 34.36 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Flavobacterium decapax sp. nov.

Candidatus Flavobacterium decapax (NL. fem. n. *decapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp014305155*. The type genome for the species is the GenBank assembly RS_GCF_014305155.1. The GC content of the type genome is 34.51

% and the genome length is 4.16 Mbp.

Description of *Candidatus* Flavobacterium dececessa sp. nov.

Candidatus Flavobacterium dececessa (NL. fem. n. *dececessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp011392075*. The type genome for the species is the GenBank assembly RS_GCF_011392075.1. The GC content of the type genome is 31.81 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Flavobacterium defesitia sp. nov.

Candidatus Flavobacterium defesitia (NL. fem. n. *defesitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000813005*. The type genome for the species is the GenBank assembly RS_GCF_002156885.1. The GC content of the type genome is 32.54 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Flavobacterium defunibula sp. nov.

Candidatus Flavobacterium defunibula (NL. fem. n. *defunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004634195*. The type genome for the species is the GenBank assembly RS_GCF_004634195.1. The GC content of the type genome is 37.99 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Flavobacterium delucago sp. nov.

Candidatus Flavobacterium delucago (NL. fem. n. *delucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003312915*. The type genome for the species is the GenBank assembly RS_GCF_003312915.1. The GC content of the type genome is 33.87 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Flavobacterium demigimonas sp. nov.

Candidatus Flavobacterium demigimonas (NL. fem. n. *demigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002737105*. The type genome for the species is the GenBank assembly GCA_002737105.1. The GC content of the type genome is 31.84 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Flavobacterium demogicella sp. nov.

Candidatus Flavobacterium demogicella (NL. fem. n. *demogicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002256285*. The type genome for the species is the GenBank assembly GCA_002256285.1. The GC content of the type genome is 43.38 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Flavobacterium denavax sp. nov.

Candidatus Flavobacterium denavax (NL. fem. n. *denavax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp014305095*. The type genome for the species is the GenBank assembly RS_GCF_014305095.1. The GC content of the type genome is 34.3 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Flavobacterium depubitas sp. nov.

Candidatus Flavobacterium depubitas (NL. fem. n. *depubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp006491645*. The type genome for the species is the GenBank assembly RS_GCF_006491645.1. The GC content of the type genome is 31.24 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Flavobacterium derunitio sp. nov.

Candidatus Flavobacterium derunitio (NL. fem. n. *derunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000169355*. The type genome for the species is the GenBank assembly RS_GCF_009495795.1. The GC content of the type genome is 31.3 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Flavobacterium desoritrix sp. nov.

Candidatus Flavobacterium desoritrix (NL. fem. n. *desoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp007097285*. The type genome for the species is the GenBank assembly RS_GCF_007097285.1. The GC content of the type genome is 33.89 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Flavobacterium desuritica sp. nov.

Candidatus Flavobacterium desuritica (NL. fem. n. *desuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009495755*. The type genome for the species is the GenBank assembly RS_GCF_009495755.1. The GC content of the type genome is 32.12 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Flavobacterium detunifica sp. nov.

Candidatus Flavobacterium detunifica (NL. fem. n. *detunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003097655*. The type genome for the species is the GenBank assembly RS_GCF_003097655.1. The GC content of the type genome is 34.74 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Flavobacterium dibucitoga sp. nov.

Candidatus Flavobacterium dibucitoga (NL. fem. n. *dibucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002352205*. The type genome for the species is the GenBank assembly GCA_002352205.1. The GC content of the type genome is 33.76 %

and the genome length is 3.73 Mbp.

Description of *Candidatus* Flavobacterium diluvessa sp. nov.

Candidatus Flavobacterium diluvessa (NL. fem. n. *diluvessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003968755*. The type genome for the species is the GenBank assembly RS_GCF_003970305.1. The GC content of the type genome is 34.91 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Flavobacterium diminisca sp. nov.

Candidatus Flavobacterium diminisca (NL. fem. n. *diminisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp007097385*. The type genome for the species is the GenBank assembly RS_GCF_007097385.1. The GC content of the type genome is 34.36 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Flavobacterium diponitica sp. nov.

Candidatus Flavobacterium diponitica (NL. fem. n. *diponitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp013822155*. The type genome for the species is the GenBank assembly GCA_013822155.1. The GC content of the type genome is 33.67 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Flavobacterium direpiforma sp. nov.

Candidatus Flavobacterium direpiforma (NL. fem. n. *direpiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004368785*. The type genome for the species is the GenBank assembly RS_GCF_004368785.1. The GC content of the type genome is 33.75 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Flavobacterium divorisca sp. nov.

Candidatus Flavobacterium divorisca (NL. fem. n. *divorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001507425*. The type genome for the species is the GenBank assembly RS_GCF_001507425.1. The GC content of the type genome is 33.22 % and the genome length is 5.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater Creek".

Description of *Candidatus* Flavobacterium ducilitas sp. nov.

Candidatus Flavobacterium ducilitas (NL. fem. n. *ducilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903839195*. The type genome for the species is the GenBank assembly GCA_903885685.1. The GC content of the type genome is 34.65 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Flavobacterium ecfunibra sp. nov.

Candidatus Flavobacterium ecfunibra (NL. fem. n. *ecfunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001464475*. The type genome for the species is the GenBank assembly GCA_001464475.1. The GC content of the type genome is 31.47 % and the genome length is 3.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Flavobacterium ectenitia sp. nov.

Candidatus Flavobacterium ectenitia (NL. fem. n. *ectenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003350375*. The type genome for the species is the GenBank assembly RS_GCF_003350375.1. The GC content of the type genome is 38.42 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Flavobacterium ensicicula sp. nov.

Candidatus Flavobacterium ensicicula (NL. fem. n. *ensicicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903920835*. The type genome for the species is the GenBank assembly GCA_903920835.1. The GC content of the type genome is 34.59 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Flavobacterium enuntilega sp. nov.

Candidatus Flavobacterium enuntilega (NL. fem. n. *enuntilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp012270005*. The type genome for the species is the GenBank assembly GCA_012270005.1. The GC content of the type genome is 42.36 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Flavobacterium episcatio sp. nov.

Candidatus Flavobacterium episcatio (NL. fem. n. *episcatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009711165*. The type genome for the species is the GenBank assembly RS_GCF_009711165.1. The GC content of the type genome is 32.72 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Flavobacterium ermelago sp. nov.

Candidatus Flavobacterium ermelago (NL. fem. n. *ermelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004349195*. The type genome for the species is the GenBank assembly RS_GCF_004349195.1. The GC content of the type genome is 34.3 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Flavobacterium estovedo sp. nov.

Candidatus Flavobacterium estovedo (NL. fem. n. *estovedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009693635*. The type genome for the species is the GenBank assembly GCA_009693635.1. The GC content of the type genome is 32.47 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Flavobacterium excarago sp. nov.

Candidatus Flavobacterium excarago (NL. fem. n. *excarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003963025*. The type genome for the species is the GenBank assembly GCA_003963025.1. The GC content of the type genome is 32.37 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Flavobacterium excinedo sp. nov.

Candidatus Flavobacterium excinedo (NL. fem. n. *excinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp013298525*. The type genome for the species is the GenBank assembly GCA_013298525.1. The GC content of the type genome is 31.29 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Flavobacterium exindiforma sp. nov.

Candidatus Flavobacterium exindiforma (NL. fem. n. *exindiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp010365135*. The type genome for the species is the GenBank assembly GCA_010365135.1. The GC content of the type genome is 34.79 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Flavobacterium exindilega sp. nov.

Candidatus Flavobacterium exindilega (NL. fem. n. *exindilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002303885*. The type genome for the species is the GenBank assembly RS_GCF_002303885.1. The GC content of the type genome is 33.76 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Flavobacterium extinilega sp. nov.

Candidatus Flavobacterium extinilega (NL. fem. n. *extinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903824755*. The type genome for the species is the GenBank assembly GCA_903824755.1. The GC content of the type genome is 33.34 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Flavobacterium fetutibula sp. nov.

Candidatus Flavobacterium fetutibula (NL. fem. n. *fetutibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp014377455*. The type genome for the species is the GenBank assembly GCA_014377455.1. The GC content of the type genome is 31.04 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Flavobacterium fetutilenta sp. nov.

Candidatus Flavobacterium fetutilenta (NL. fem. n. *fetutilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002210235*. The type genome for the species is the GenBank assembly RS_GCF_002210235.1. The GC content of the type genome is 33.63 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Flavobacterium filifessa sp. nov.

Candidatus Flavobacterium filifessa (NL. fem. n. *filifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp013072765*. The type genome for the species is the GenBank assembly RS_GCF_013072765.1. The GC content of the type genome is 37.19 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Flavobacterium forinentia sp. nov.

Candidatus Flavobacterium forinentia (NL. fem. n. *forinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002754195*. The type genome for the species is the GenBank assembly RS_GCF_002754195.1. The GC content of the type genome is 33.18 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Flavobacterium fumacastra sp. nov.

Candidatus Flavobacterium fumacastra (NL. fem. n. *fumacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003105115*. The type genome for the species is the GenBank assembly RS_GCF_003105115.1. The GC content of the type genome is 34.72 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Flavobacterium gabinivita sp. nov.

Candidatus Flavobacterium gabinivita (NL. fem. n. *gabinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000745775*. The type genome for the species is the GenBank assembly RS_GCF_000745775.1. The GC content of the type genome is 33.43 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Flavobacterium gasomivita sp. nov.

Candidatus Flavobacterium gasomivita (NL. fem. n. *gasomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004362055*. The type genome for the species is the GenBank assembly RS_GCF_004362055.1. The GC content of the type genome is 33.65 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Flavobacterium halucugo sp. nov.

Candidatus Flavobacterium halucugo (NL. fem. n. *halucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Flavobacterium sp002413745*. The type genome for the species is the GenBank assembly GCA_002429185.1. The GC content of the type genome is 35.27 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Flavobacterium hecatigena sp. nov.

Candidatus Flavobacterium hecatigena (NL. fem. n. *hecatigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001429765*. The type genome for the species is the GenBank assembly RS_GCF_004339485.1. The GC content of the type genome is 34.17 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Flavobacterium humecedo sp. nov.

Candidatus Flavobacterium humecedo (NL. fem. n. *humecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp011392125*. The type genome for the species is the GenBank assembly RS_GCF_011392125.1. The GC content of the type genome is 41.49 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Flavobacterium idipsago sp. nov.

Candidatus Flavobacterium idipsago (NL. fem. n. *idipsago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002399805*. The type genome for the species is the GenBank assembly GCA_002399805.1. The GC content of the type genome is 33.39 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Flavobacterium immatugo sp. nov.

Candidatus Flavobacterium immatugo (NL. fem. n. *immatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903888655*. The type genome for the species is the GenBank assembly GCA_903888655.1. The GC content of the type genome is 32.69 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Flavobacterium incesedo sp. nov.

Candidatus Flavobacterium incesedo (NL. fem. n. *incesedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp005792865*. The type genome for the species is the GenBank assembly GCA_005792865.1. The GC content of the type genome is 53.22 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Flavobacterium inhumatio sp. nov.

Candidatus Flavobacterium inhumatio (NL. fem. n. *inhumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003525665*. The type genome for the species is the GenBank assembly GCA_003525665.1. The GC content of the type genome is 32.38 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Flavobacterium inmitibra sp. nov.

Candidatus Flavobacterium inmitibra (NL. fem. n. *inmitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000282055*. The type genome for the species is the GenBank assembly RS_GCF_000282055.1. The GC content of the type genome is 33.59 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Flavobacterium insorentia sp. nov.

Candidatus Flavobacterium insorentia (NL. fem. n. *insorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903837025*. The type genome for the species is the GenBank assembly GCA_903837025.1. The GC content of the type genome is 33.92 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Flavobacterium insurentia sp. nov.

Candidatus Flavobacterium insurentia (NL. fem. n. *insurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004959765*. The type genome for the species is the GenBank assembly RS_GCF_004959765.1. The GC content of the type genome is 34.25 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Flavobacterium irrefatica sp. nov.

Candidatus Flavobacterium irrefatica (NL. fem. n. *irrefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002304005*. The type genome for the species is the GenBank assembly RS_GCF_002304005.1. The GC content of the type genome is 33.76 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Flavobacterium irrelatica sp. nov.

Candidatus Flavobacterium irrelatica (NL. fem. n. *irrelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004295795*. The type genome for the species is the GenBank assembly GCA_004295795.1. The GC content of the type genome is 46.57 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Flavobacterium irreliforma sp. nov.

Candidatus Flavobacterium irreliforma (NL. fem. n. *irreliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002836475*. The type genome for the species is the GenBank assembly RS_GCF_002836475.1. The GC content of the type genome is 35.15 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Flavobacterium lacinibra sp. nov.

Candidatus Flavobacterium lacinibra (NL. fem. n. *lacinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Flavobacterium sp001027725*. The type genome for the species is the GenBank assembly RS_GCF_001027725.1. The GC content of the type genome is 35.12 % and the genome length is 5.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater Creek".

Description of *Candidatus* Flavobacterium lenimago sp. nov.

Candidatus Flavobacterium lenimago (NL. fem. n. *lenimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903838055*. The type genome for the species is the GenBank assembly GCA_903863075.1. The GC content of the type genome is 31.18 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Flavobacterium locelitura sp. nov.

Candidatus Flavobacterium locelitura (NL. fem. n. *locelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903889745*. The type genome for the species is the GenBank assembly GCA_903889745.1. The GC content of the type genome is 32.82 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Flavobacterium lugubitoga sp. nov.

Candidatus Flavobacterium lugubitoga (NL. fem. n. *lugubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp013294025*. The type genome for the species is the GenBank assembly RS_GCF_013294025.1. The GC content of the type genome is 34.59 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Flavobacterium mahemilenta sp. nov.

Candidatus Flavobacterium mahemilenta (NL. fem. n. *mahemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001898245*. The type genome for the species is the GenBank assembly GCA_002379575.1. The GC content of the type genome is 39.61 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Flavobacterium manibessa sp. nov.

Candidatus Flavobacterium manibessa (NL. fem. n. *manibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002382495*. The type genome for the species is the GenBank assembly GCA_002382495.1. The GC content of the type genome is 34.97 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Flavobacterium melopitura sp. nov.

Candidatus Flavobacterium melopitura (NL. fem. n. *melopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002256385*. The type genome for the species is the GenBank assembly GCA_002256385.1. The GC content of the type genome is 40.03 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Flavobacterium menapedo sp. nov.

Candidatus Flavobacterium menapedo (NL. fem. n. *menapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003403075*. The type genome for the species is the GenBank assembly RS_GCF_003403075.1. The GC content of the type genome is 41.18 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Flavobacterium milififica sp. nov.

Candidatus Flavobacterium milififica (NL. fem. n. *milififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004801375*. The type genome for the species is the GenBank assembly RS_GCF_004801375.1. The GC content of the type genome is 39.17 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Flavobacterium mirabentia sp. nov.

Candidatus Flavobacterium mirabentia (NL. fem. n. *mirabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003096795*. The type genome for the species is the GenBank assembly RS_GCF_013284035.1. The GC content of the type genome is 34.54 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Flavobacterium momorastra sp. nov.

Candidatus Flavobacterium momorastra (NL. fem. n. *momorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002482945*. The type genome for the species is the GenBank assembly RS_GCF_003634615.1. The GC content of the type genome is 36.2 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Flavobacterium monocatica sp. nov.

Candidatus Flavobacterium monocatica (NL. fem. n. *monocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp007097365*. The type genome for the species is the GenBank assembly RS_GCF_007097365.1. The GC content of the type genome is 34.18 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Flavobacterium monodentia sp. nov.

Candidatus Flavobacterium monodentia (NL. fem. n. *monodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009848495*. The type genome for the species is the GenBank assembly RS_GCF_009848495.1. The GC content of the type genome is 39.29 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Flavobacterium musulentia sp. nov.

Candidatus Flavobacterium musulentia (NL. fem. n. *musulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Flavobacterium sp014379405*. The type genome for the species is the GenBank assembly GCA_014379405.1. The GC content of the type genome is 35.43 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Flavobacterium mutabitio sp. nov.

Candidatus Flavobacterium mutabitio (NL. fem. n. *mutabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001529295*. The type genome for the species is the GenBank assembly RS_GCF_001529295.1. The GC content of the type genome is 34.36 % and the genome length is 3.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea water".

Description of *Candidatus* Flavobacterium navicetta sp. nov.

Candidatus Flavobacterium navicetta (NL. fem. n. *navicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002150205*. The type genome for the species is the GenBank assembly RS_GCF_002150205.1. The GC content of the type genome is 33.89 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Flavobacterium nosocitura sp. nov.

Candidatus Flavobacterium nosocitura (NL. fem. n. *nosocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp902506265*. The type genome for the species is the GenBank assembly RS_GCF_902506265.1. The GC content of the type genome is 30.11 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Flavobacterium obfenitas sp. nov.

Candidatus Flavobacterium obfenitas (NL. fem. n. *obfenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003449615*. The type genome for the species is the GenBank assembly GCA_003449615.1. The GC content of the type genome is 33.86 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Flavobacterium oblonigena sp. nov.

Candidatus Flavobacterium oblonigena (NL. fem. n. *oblonigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009707955*. The type genome for the species is the GenBank assembly RS_GCF_009707955.1. The GC content of the type genome is 32.96 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Flavobacterium obnoxitrix sp. nov.

Candidatus Flavobacterium obnoxitrix (NL. fem. n. *obnoxitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp013388355*. The type genome for the species is the GenBank assembly RS_GCF_013388355.1. The GC content of the type genome is 33.8 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Flavobacterium obtementia sp. nov.

Candidatus Flavobacterium obtementia (NL. fem. n. *obtementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003202405*. The type genome for the species is the GenBank assembly RS_GCF_003202405.1. The GC content of the type genome is 34.04 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Flavobacterium obtesitoga sp. nov.

Candidatus Flavobacterium obtesitoga (NL. fem. n. *obtesitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004293165*. The type genome for the species is the GenBank assembly GCA_004293165.1. The GC content of the type genome is 31.87 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Flavobacterium octinax sp. nov.

Candidatus Flavobacterium octinax (NL. fem. n. *octinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004211145*. The type genome for the species is the GenBank assembly GCA_004211145.1. The GC content of the type genome is 47.33 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Flavobacterium octupitica sp. nov.

Candidatus Flavobacterium octupitica (NL. fem. n. *octupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp013823965*. The type genome for the species is the GenBank assembly GCA_013823965.1. The GC content of the type genome is 36.8 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Flavobacterium omnifitas sp. nov.

Candidatus Flavobacterium omnifitas (NL. fem. n. *omnifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002813295*. The type genome for the species is the GenBank assembly RS_GCF_002813295.1. The GC content of the type genome is 32.54 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Flavobacterium panopitas sp. nov.

Candidatus Flavobacterium panopitas (NL. fem. n. *panopitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp902506345*. The type genome for the species is the GenBank assembly RS_GCF_902506345.1. The GC content of the type genome is 35.2 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Flavobacterium paropitura sp. nov.

Candidatus Flavobacterium paropitura (NL. fem. n. *paropitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Flavobacterium sp011305415*. The type genome for the species is the GenBank assembly RS_GCF_011305415.1. The GC content of the type genome is 30.89 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Flavobacterium penicitia sp. nov.

Candidatus Flavobacterium penicitia (NL. fem. n. *penicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001427905*. The type genome for the species is the GenBank assembly RS_GCF_001427905.1. The GC content of the type genome is 34.13 % and the genome length is 5.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Flavobacterium pimenilenta sp. nov.

Candidatus Flavobacterium pimenilenta (NL. fem. n. *pimenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001429295*. The type genome for the species is the GenBank assembly RS_GCF_001429295.1. The GC content of the type genome is 33.58 % and the genome length is 5.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Flavobacterium pinifilega sp. nov.

Candidatus Flavobacterium pinifilega (NL. fem. n. *pinifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004293045*. The type genome for the species is the GenBank assembly GCA_004293045.1. The GC content of the type genome is 31.91 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Flavobacterium pragmifica sp. nov.

Candidatus Flavobacterium pragmifica (NL. fem. n. *pragmifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp012837155*. The type genome for the species is the GenBank assembly GCA_012837155.1. The GC content of the type genome is 34.56 %

and the genome length is 3.1 Mbp.

Description of *Candidatus* Flavobacterium procrimonas sp. nov.

Candidatus Flavobacterium procrimonas (NL. fem. n. *procrimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009664855*. The type genome for the species is the GenBank assembly GCA_009664855.1. The GC content of the type genome is 34.28 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Flavobacterium redunentia sp. nov.

Candidatus Flavobacterium redunentia (NL. fem. n. *redunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903861155*. The type genome for the species is the GenBank assembly GCA_903874215.1. The GC content of the type genome is 35.17 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Flavobacterium redunivita sp. nov.

Candidatus Flavobacterium redunivita (NL. fem. n. *redunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003688345*. The type genome for the species is the GenBank assembly RS_GCF_003688345.1. The GC content of the type genome is 33.8 % and the genome length is 5.43 Mbp.

Description of *Candidatus* Flavobacterium refocicula sp. nov.

Candidatus Flavobacterium refocicula (NL. fem. n. *refocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002714575*. The type genome for the species is the GenBank assembly GCA_002714575.1. The GC content of the type genome is 41.47 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Flavobacterium relapedo sp. nov.

Candidatus Flavobacterium relapedo (NL. fem. n. *relapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903879875*. The type genome for the species is the GenBank assembly GCA_903879875.1. The GC content of the type genome is 33.47 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Flavobacterium repepatio sp. nov.

Candidatus Flavobacterium repepatio (NL. fem. n. *repepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003217415*. The type genome for the species is the GenBank assembly RS_GCF_003208535.1. The GC content of the type genome is 33.44 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Flavobacterium resulisca sp. nov.

Candidatus Flavobacterium resulisca (NL. fem. n. *resulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002428305*. The type genome for the species is the GenBank assembly GCA_002428305.1. The GC content of the type genome is 34.1 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Flavobacterium revecifica sp. nov.

Candidatus Flavobacterium revecifica (NL. fem. n. *revecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903902795*. The type genome for the species is the GenBank assembly GCA_903902795.1. The GC content of the type genome is 37.04 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Flavobacterium rorulibra sp. nov.

Candidatus Flavobacterium rorulibra (NL. fem. n. *rorulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp007097245*. The type genome for the species is the GenBank assembly RS_GCF_007097245.1. The GC content of the type genome is 35.74 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Flavobacterium sceptentia sp. nov.

Candidatus Flavobacterium sceptentia (NL. fem. n. *sceptentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004122165*. The type genome for the species is the GenBank assembly RS_GCF_004122165.1. The GC content of the type genome is 34.75 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Flavobacterium semapigena sp. nov.

Candidatus Flavobacterium semapigena (NL. fem. n. *semapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp011751075*. The type genome for the species is the GenBank assembly RS_GCF_011751075.1. The GC content of the type genome is 35.68 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Flavobacterium semapitica sp. nov.

Candidatus Flavobacterium semapitica (NL. fem. n. *semapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp004362015*. The type genome for the species is the GenBank assembly RS_GCF_004362015.1. The GC content of the type genome is 33.43 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Flavobacterium semigugo sp. nov.

Candidatus Flavobacterium semigugo (NL. fem. n. *semigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003497625*. The type genome for the species is the GenBank assembly GCA_003497625.1. The GC content of the type genome is 32.68 %

and the genome length is 2.54 Mbp.

Description of *Candidatus* Flavobacterium semimifica sp. nov.

Candidatus Flavobacterium semimifica (NL. fem. n. *semimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp012911565*. The type genome for the species is the GenBank assembly RS_GCF_012911565.1. The GC content of the type genome is 44.29 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Flavobacterium senipatio sp. nov.

Candidatus Flavobacterium senipatio (NL. fem. n. *senipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009909155*. The type genome for the species is the GenBank assembly RS_GCF_009909155.2. The GC content of the type genome is 33.79 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Flavobacterium sicinax sp. nov.

Candidatus Flavobacterium sicinax (NL. fem. n. *sicinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002715085*. The type genome for the species is the GenBank assembly GCA_002715085.1. The GC content of the type genome is 31.54 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Flavobacterium sicubicula sp. nov.

Candidatus Flavobacterium sicubicula (NL. fem. n. *sicubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002421645*. The type genome for the species is the GenBank assembly GCA_002421645.1. The GC content of the type genome is 32.48 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Flavobacterium sifunibra sp. nov.

Candidatus Flavobacterium sifunibra (NL. fem. n. *sifunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000426145*. The type genome for the species is the GenBank assembly RS_GCF_000426145.1. The GC content of the type genome is 33.72 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Flavobacterium sotuligena sp. nov.

Candidatus Flavobacterium sotuligena (NL. fem. n. *sotuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001800945*. The type genome for the species is the GenBank assembly GCA_001800945.1. The GC content of the type genome is 31.33 % and the genome length is 1.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Flavobacterium subadisca sp. nov.

Candidatus Flavobacterium subadisca (NL. fem. n. *subadisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp010119235*. The type genome for the species is the GenBank assembly RS_GCF_010119235.1. The GC content of the type genome is 37.47 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Flavobacterium subucigena sp. nov.

Candidatus Flavobacterium subucigena (NL. fem. n. *subucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002786385*. The type genome for the species is the GenBank assembly GCA_013821805.1. The GC content of the type genome is 38.99 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Flavobacterium tiguribra sp. nov.

Candidatus Flavobacterium tiguribra (NL. fem. n. *tiguribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp902804475*. The type genome for the species is the GenBank assembly RS_GCF_902804475.1. The GC content of the type genome is 34.09 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Flavobacterium tirociforma sp. nov.

Candidatus Flavobacterium tirociforma (NL. fem. n. *tirociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001800905*. The type genome for the species is the GenBank assembly GCA_001800905.1. The GC content of the type genome is 35.13 % and the genome length is 2.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Flavobacterium tomogousia sp. nov.

Candidatus Flavobacterium tomogousia (NL. fem. n. *tomogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003946915*. The type genome for the species is the GenBank assembly RS_GCF_003946915.1. The GC content of the type genome is 34.17 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Flavobacterium tresvilega sp. nov.

Candidatus Flavobacterium tresvilega (NL. fem. n. *tresvilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002482885*. The type genome for the species is the GenBank assembly GCA_002482885.1. The GC content of the type genome is 34.31 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Flavobacterium utilledo sp. nov.

Candidatus Flavobacterium utilledo (NL. fem. n. *utilledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp000967805*. The type genome for the species is the GenBank assembly RS_GCF_000967805.1. The GC content of the type genome is 29.3 % and the genome length is 3.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "brackish surface water".

Description of *Candidatus* Flavobacterium utralatio sp. nov.

Candidatus Flavobacterium utralatio (NL. fem. n. *utralatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp003202435*. The type genome for the species is the GenBank assembly RS_GCF_003202435.1. The GC content of the type genome is 34.07 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Flavobacterium vagabivita sp. nov.

Candidatus Flavobacterium vagabivita (NL. fem. n. *vagabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002482975*. The type genome for the species is the GenBank assembly GCA_002482975.1. The GC content of the type genome is 33.41 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Flavobacterium vavasedo sp. nov.

Candidatus Flavobacterium vavasedo (NL. fem. n. *vavasedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002280815*. The type genome for the species is the GenBank assembly GCA_002280815.1. The GC content of the type genome is 33.71 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Flavobacterium vehicitrix sp. nov.

Candidatus Flavobacterium vehicitrix (NL. fem. n. *vehicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009789235*. The type genome for the species is the

GenBank assembly RS_GCF_009789235.1. The GC content of the type genome is 34.79 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Flavobacterium velivicula sp. nov.

Candidatus Flavobacterium velivicula (NL. fem. n. *velivicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp903819815*. The type genome for the species is the GenBank assembly GCA_903819815.1. The GC content of the type genome is 32.76 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Flavobacterium verecitica sp. nov.

Candidatus Flavobacterium verecitica (NL. fem. n. *verecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp011365745*. The type genome for the species is the GenBank assembly RS_GCF_014305215.1. The GC content of the type genome is 35.24 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Flavobacterium veridousia sp. nov.

Candidatus Flavobacterium veridousia (NL. fem. n. *veridousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009674775*. The type genome for the species is the GenBank assembly RS_GCF_009674775.1. The GC content of the type genome is 36.48 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Flavobacterium vinacimonas sp. nov.

Candidatus Flavobacterium vinacimonas (NL. fem. n. *vinacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002483285*. The type genome for the species is the GenBank assembly GCA_002483285.1. The GC content of the type genome is 45.4 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Flavobacterium virecitio sp. nov.

Candidatus Flavobacterium virecitio (NL. fem. n. *virecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp013294005*. The type genome for the species is the GenBank assembly RS_GCF_013294075.1. The GC content of the type genome is 32.8 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Flavobacterium vitigisca sp. nov.

Candidatus Flavobacterium vitigisca (NL. fem. n. *vitigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp014378065*. The type genome for the species is the GenBank assembly GCA_014378065.1. The GC content of the type genome is 38.55 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Flavobacterium vivifessa sp. nov.

Candidatus Flavobacterium vivifessa (NL. fem. n. *vivifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp002862755*. The type genome for the species is the GenBank assembly GCA_002862755.1. The GC content of the type genome is 31.49 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Flavobacterium vocamax sp. nov.

Candidatus Flavobacterium vocamax (NL. fem. n. *vocamax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp009915155*. The type genome for the species is the GenBank assembly RS_GCF_009915155.1. The GC content of the type genome is 35.45 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Flavobacterium vocifibula sp. nov.

Candidatus Flavobacterium vocifibula (NL. fem. n. *vocifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavobacterium sp001428525*. The type genome for the species is the GenBank assembly RS_GCF_001428525.1. The GC content of the type genome is 33.74 % and the genome length is 5.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Flavonifractor admutitas sp. nov.

Candidatus Flavonifractor admutitas (NL. fem. n. *admutitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavonifractor sp002159455*. The type genome for the species is the GenBank assembly RS_GCF_002159455.1. The GC content of the type genome is 59.12 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Flavonifractor bicipedo sp. nov.

Candidatus Flavonifractor bicipedo (NL. fem. n. *bicipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavonifractor sp900549795*. The type genome for the species is the GenBank assembly RS_GCF_014287895.1. The GC content of the type genome is 60.31 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Flavonifractor catobilenta sp. nov.

Candidatus Flavonifractor catobilenta (NL. fem. n. *catobilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavonifractor sp002161085*. The type genome for the species is the GenBank assembly RS_GCF_002161085.1. The GC content of the type genome is 59.29 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Flavonifractor delecitio sp. nov.

Candidatus Flavonifractor delecitio (NL. fem. n. *delecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavonifractor sp002159265*. The type genome for the species is the

GenBank assembly RS_GCF_002159265.1. The GC content of the type genome is 58.87 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Flavonifractor duponitura sp. nov.

Candidatus Flavonifractor duponitura (NL. fem. n. *duponitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavonifractor sp000508885*. The type genome for the species is the GenBank assembly RS_GCF_004345805.1. The GC content of the type genome is 60.35 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Flavonifractor locelugo sp. nov.

Candidatus Flavonifractor locelugo (NL. fem. n. *locelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flavonifractor sp002161215*. The type genome for the species is the GenBank assembly RS_GCF_002161215.1. The GC content of the type genome is 61.7 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Flectobacillus favilitia sp. nov.

Candidatus Flectobacillus favilitia (NL. fem. n. *favilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flectobacillus sp002270355*. The type genome for the species is the GenBank assembly RS_GCF_002270355.1. The GC content of the type genome is 37.51 % and the genome length is 6.63 Mbp.

Description of *Candidatus* Flectobacillus inmemibula sp. nov.

Candidatus Flectobacillus inmemibula (NL. fem. n. *inmemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flectobacillus sp013298025*. The type genome for the species is the GenBank assembly GCA_013298025.1. The GC content of the type genome is 40.0 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Flectobacillus pepenitudo sp. nov.

Candidatus Flectobacillus pepenitudo (NL. fem. n. *pepenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flectobacillus sp009905545*. The type genome for the species is the GenBank assembly RS_GCF_009905545.1. The GC content of the type genome is 37.24 % and the genome length is 7.09 Mbp.

Description of *Candidatus* Flexilinea abnepugo sp. nov.

Candidatus Flexilinea abnepugo (NL. fem. n. *abnepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexilinea sp002407845*. The type genome for the species is the GenBank assembly GCA_002407845.1. The GC content of the type genome is 48.04 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Flexilinea celamiforma sp. nov.

Candidatus Flexilinea celamiforma (NL. fem. n. *celamiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexilinea sp002329625*. The type genome for the species is the GenBank assembly GCA_002329625.1. The GC content of the type genome is 43.2 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Flexilinea feficitoga sp. nov.

Candidatus Flexilinea feficitoga (NL. fem. n. *feficitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexilinea sp902786265*. The type genome for the species is the GenBank assembly GCA_902786265.1. The GC content of the type genome is 48.41 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Flexilinea illibimonia sp. nov.

Candidatus Flexilinea illibimonia (NL. fem. n. *illibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexilinea sp902774215*. The type genome for the species is the GenBank assembly GCA_902774215.1. The GC content of the type genome is 46.92 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Flexilinea mirifatica sp. nov.

Candidatus Flexilinea mirifatica (NL. fem. n. *mirifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexilinea sp902791025*. The type genome for the species is the GenBank assembly GCA_902791025.1. The GC content of the type genome is 47.39 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Flexilinea omnipastra sp. nov.

Candidatus Flexilinea omnipastra (NL. fem. n. *omnipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexilinea sp012799995*. The type genome for the species is the GenBank assembly GCA_012799995.1. The GC content of the type genome is 46.97 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Flexilinea pepenicula sp. nov.

Candidatus Flexilinea pepenicula (NL. fem. n. *pepenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexilinea sp001717545*. The type genome for the species is the GenBank assembly RS_GCF_001717545.1. The GC content of the type genome is 54.86 % and the genome length is 2.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Curette".

Description of *Candidatus* Flexilinea rarefifica sp. nov.

Candidatus Flexilinea rarefifica (NL. fem. n. *rarefifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexilinea sp902795255*. The type genome for the species is the

GenBank assembly GCA_902795255.1. The GC content of the type genome is 53.91 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Flexistipes inconilenta sp. nov.

Candidatus Flexistipes inconilenta (NL. fem. n. *inconilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexistipes sp002338145*. The type genome for the species is the GenBank assembly GCA_002338145.1. The GC content of the type genome is 36.87 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Flexivirga arilligena sp. nov.

Candidatus Flexivirga arilligena (NL. fem. n. *arilligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Flexivirga sp013002715*. The type genome for the species is the GenBank assembly RS_GCF_013002715.1. The GC content of the type genome is 69.8 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Fluviibacterium absegago sp. nov.

Candidatus Fluviibacterium absegago (NL. fem. n. *absegago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviibacterium sp003172915*. The type genome for the species is the GenBank assembly RS_GCF_003172915.1. The GC content of the type genome is 65.93 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Fluviibacterium obtecitio sp. nov.

Candidatus Fluviibacterium obtecitio (NL. fem. n. *obtecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviibacterium sp002119405*. The type genome for the species is the GenBank assembly RS_GCF_002119405.1. The GC content of the type genome is 60.16 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Fluviibacterium venunibula sp. nov.

Candidatus Fluviibacterium venunibula (NL. fem. n. *venunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviibacterium sp003254465*. The type genome for the species is the GenBank assembly RS_GCF_003254465.1. The GC content of the type genome is 66.96 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Fluviicola appicax sp. nov.

Candidatus Fluviicola appicax (NL. fem. n. *appicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviicola sp003856375*. The type genome for the species is the GenBank assembly RS_GCF_003856375.1. The GC content of the type genome is 40.81 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Fluviicola dicabibula sp. nov.

Candidatus Fluviicola dicabibula (NL. fem. n. *dicabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviicola sp902168135*. The type genome for the species is the GenBank assembly GCA_902168135.1. The GC content of the type genome is 41.64 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Fluviicola extinugo sp. nov.

Candidatus Fluviicola extinugo (NL. fem. n. *extinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviicola sp002483265*. The type genome for the species is the GenBank assembly GCA_002483265.1. The GC content of the type genome is 38.84 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Fluviicola faticitica sp. nov.

Candidatus Fluviicola faticitica (NL. fem. n. *faticitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviicola sp002432565*. The type genome for the species is the GenBank assembly GCA_002432565.1. The GC content of the type genome is 41.61 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Fluviicola xenodibra sp. nov.

Candidatus Fluviicola xenodibra (NL. fem. n. *xenodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviicola sp002432085*. The type genome for the species is the GenBank assembly GCA_002432085.1. The GC content of the type genome is 49.47 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Fluviispira funamedo sp. nov.

Candidatus Fluviispira funamedo (NL. fem. n. *funamedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviispira sp014281055*. The type genome for the species is the GenBank assembly RS_GCF_014281055.1. The GC content of the type genome is 33.14 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Fluviispira monodibra sp. nov.

Candidatus Fluviispira monodibra (NL. fem. n. *monodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fluviispira sp004295685*. The type genome for the species is the GenBank assembly RS_GCF_004295685.1. The GC content of the type genome is 33.56 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Fodinibius genocibra sp. nov.

Candidatus Fodinibius genocibra (NL. fem. n. *genocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fodinibius sp002287075*. The type genome for the species is the GenBank assembly RS_GCF_002287075.1. The GC content of the type genome is 42.24

% and the genome length is 3.58 Mbp.

Description of *Candidatus* Fonsibacter affulitrix sp. nov.

Candidatus Fonsibacter affulitrix (NL. fem. n. *affulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fonsibacter sp000371845*. The type genome for the species is the GenBank assembly GCA_000371845.1. The GC content of the type genome is 29.56 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Fonsibacter alcibimonas sp. nov.

Candidatus Fonsibacter alcibimonas (NL. fem. n. *alcibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fonsibacter sp009693745*. The type genome for the species is the GenBank assembly GCA_009693745.1. The GC content of the type genome is 29.39 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Fonsibacter bicubimonia sp. nov.

Candidatus Fonsibacter bicubimonia (NL. fem. n. *bicubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fonsibacter sp903869725*. The type genome for the species is the GenBank assembly GCA_903854225.1. The GC content of the type genome is 29.14 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Fonsibacter fumifisca sp. nov.

Candidatus Fonsibacter fumifisca (NL. fem. n. *fumifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fonsibacter sp000371825*. The type genome for the species is the GenBank assembly GCA_000371825.1. The GC content of the type genome is 29.76 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Fonsibacter innoxentia sp. nov.

Candidatus Fonsibacter innoxentia (NL. fem. n. *innoxentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fonsibacter sp000371745*. The type genome for the species is the GenBank assembly GCA_000371745.1. The GC content of the type genome is 29.85 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Fonsibacter oscilifica sp. nov.

Candidatus Fonsibacter oscilifica (NL. fem. n. *oscilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fonsibacter sp000419485*. The type genome for the species is the GenBank assembly GCA_000419485.1. The GC content of the type genome is 29.11 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Fonsibacter rarefitrix sp. nov.

Candidatus Fonsibacter rarefitrix (NL. fem. n. *rarefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fonsibacter sp000419465*. The type genome for the species is the GenBank assembly GCA_000419465.1. The GC content of the type genome is 29.53 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Fonsibacter tabitibula sp. nov.

Candidatus Fonsibacter tabitibula (NL. fem. n. *tabitibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fonsibacter sp000364545*. The type genome for the species is the GenBank assembly GCA_000364545.1. The GC content of the type genome is 29.61 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Fonsibacter vehemitas sp. nov.

Candidatus Fonsibacter vehemitas (NL. fem. n. *vehemitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fonsibacter sp000510845*. The type genome for the species is the GenBank assembly GCA_000419505.1. The GC content of the type genome is 29.38 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Forabana curabugo sp. nov.

Candidatus Forabana curabugo (NL. fem. n. *curabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG708 sp900321625*. The type genome for the species is the GenBank assembly GCA_900321625.1. The GC content of the type genome is 46.73 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Forabana gen. nov.

Candidatus Forabana (NL. fem. n. *Forabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG708*. The type species for the genus is *Candidatus* Forabana curabugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Forabaria cerucibula sp. nov.

Candidatus Forabaria cerucibula (NL. fem. n. *cerucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZT01 sp007127235*. The type genome for the species is the GenBank assembly GCA_003558945.1. The GC content of the type genome is 44.66 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Forabaria gen. nov.

Candidatus Forabaria (NL. fem. n. *Forabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKZT01*. The type species for the genus is *Candidatus* Forabaria cerucibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKZT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forabariaceae.

Description of *Candidatus* Forabariaceae fam. nov.

Candidatus Forabariaceae (NL. fem. n. *Forabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKZT01.* The type genus for the taxon is *Candidatus* Forabaria .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Forabaria defetifica sp. nov.

Candidatus Forabaria defetifica (NL. fem. n. *defetifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZT01 sp011389745*. The type genome for the species is the GenBank assembly GCA_011389745.1. The GC content of the type genome is 44.38 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Forabella extoritia sp. nov.

Candidatus Forabella extoritia (NL. fem. n. *extoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4661 sp002405405*. The type genome for the species is the GenBank assembly GCA_002405405.1. The GC content of the type genome is 43.57 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Forabella gen. nov.

Candidatus Forabella (NL. fem. n. *Forabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4661*. The type species for the genus is *Candidatus* Forabella extoritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4661*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Forabellaceae.

Description of *Candidatus* Forabellaceae fam. nov.

Candidatus Forabellaceae (NL. fem. n. *Forabellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4661.* The type genus for the taxon is *Candidatus* Forabella .

According to GTDB R06-RS202, this family belongs to the order *Kapabacteriales*.

Description of *Candidatus* Forabia cerucessa sp. nov.

Candidatus Forabia cerucessa (NL. fem. n. *cerucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-48-14 sp001787475*. The type genome for the species is the GenBank assembly GCA_001788715.1. The GC content of the type genome is 47.87 % and the genome length is 0.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Forabia gen. nov.

Candidatus Forabia (NL. fem. n. *Forabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-48-14*. The type species for the genus is *Candidatus* Forabia cerucessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-48-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forabiaceae.

Description of *Candidatus* Forabiaceae fam. nov.

Candidatus Forabiaceae (NL. fem. n. *Forabiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-48-14.* The type genus for the taxon is *Candidatus* Forabia .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA1369. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Forabida gemebitica sp. nov.

Candidatus Forabida gemebitica (NL. fem. n. *gemebitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5852 sp002432195*. The type genome for the species is the GenBank assembly GCA_002432195.1. The GC content of the type genome is 66.56 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Forabida gen. nov.

Candidatus Forabida (NL. fem. n. *Forabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5852*. The type species for the genus is *Candidatus* Forabida gemebitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5852*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forabidaceae.

Description of *Candidatus* Forabidaceae fam. nov.

Candidatus Forabidaceae (NL. fem. n. *Forabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5852.* The type genus for the taxon is *Candidatus* Forabida .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Forabosa cicilax sp. nov.

Candidatus Forabosa cicilax (NL. fem. n. *cicilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKMD01 sp903828515*. The type genome for the species is the GenBank assembly GCA_903909615.1. The GC content of the type genome is 63.32 %

and the genome length is 4.8 Mbp.

Description of *Candidatus* Forabosa gen. nov.

Candidatus Forabosa (NL. fem. n. *Forabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKMD01*. The type species for the genus is *Candidatus* Forabosa cicilax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Forabosa dehisentia sp. nov.

Candidatus Forabosa dehisentia (NL. fem. n. *dehisentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKMD01 sp903822185*. The type genome for the species is the GenBank assembly GCA_903886235.1. The GC content of the type genome is 61.02 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Forabula cunabatio sp. nov.

Candidatus Forabula cunabatio (NL. fem. n. *cunabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFGI01 sp012960105*. The type genome for the species is the GenBank assembly GCA_012960105.1. The GC content of the type genome is 38.91 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Forabula gen. nov.

Candidatus Forabula (NL. fem. n. *Forabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFGI01*. The type species for the genus is *Candidatus* Forabula cunabatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Forabula repudax sp. nov.

Candidatus Forabula repudax (NL. fem. n. *repudax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFGI01 sp013112535*. The type genome for the species is the GenBank assembly GCA_013112535.1. The GC content of the type genome is 38.6 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Foricana recomitica sp. nov.

Candidatus Foricana recomitica (NL. fem. n. *recomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RXIV01 sp903879705*. The type genome for the species is the GenBank assembly GCA_903879705.1. The GC content of the type genome is 57.6 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Foricana gen. nov.

Candidatus Foricana (NL. fem. n. *Foricana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RXIV01*. The type species for the genus is *Candidatus* Foricana recomitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Foricana sicubisca sp. nov.

Candidatus Foricana sicubisca (NL. fem. n. *sicubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RXIV01 sp003989085*. The type genome for the species is the GenBank assembly GCA_003989085.1. The GC content of the type genome is 57.98 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Foricaria defenilega sp. nov.

Candidatus Foricaria defenilega (NL. fem. n. *defenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG730 sp900321865*. The type genome for the species is the GenBank assembly GCA_900321865.1. The GC content of the type genome is 25.46 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Foricaria gen. nov.

Candidatus Foricaria (NL. fem. n. *Foricaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG730*. The type species for the genus is *Candidatus* Foricaria defenilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RUG730*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foricariaceae.

Description of *Candidatus* Foricariaceae fam. nov.

Candidatus Foricariaceae (NL. fem. n. *Foricariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG730.* The type genus for the taxon is *Candidatus* Foricaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *RUG730*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Foricariales.

Description of *Candidatus* Foricariales ord. nov.

Candidatus Foricariales (NL. fem. n. *Foricariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG730.* The type genus for the taxon is *Candidatus* Foricaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *RUG730*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Foricariae.

Description of *Candidatus* Foricariae class. nov.

Candidatus Foricariae (NL. fem. n. *c__Foricariae* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG730.* The type genus for the taxon is *Candidatus* Foricaria .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *RUG730*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Foricariota.

Description of *Candidatus* Foricariota phyl. nov.

Candidatus Foricariota (NL. fem. n. *Foricariota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG730.* The type genus for the taxon is *Candidatus* Foricaria .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Foricella adtemitio sp. nov.

Candidatus Foricella adtemitio (NL. fem. n. *adtemitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AA152 sp003222305*. The type genome for the species is the GenBank assembly GCA_003222305.1. The GC content of the type genome is 63.42 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Foricella gen. nov.

Candidatus Foricella (NL. fem. n. *Foricella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AA152*. The type species for the genus is *Candidatus* Foricella adtemitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AA152*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foricellaceae.

Description of *Candidatus* Foricellaceae fam. nov.

Candidatus Foricellaceae (NL. fem. n. *Foricellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AA152*. The type genus for the taxon is *Candidatus* Foricella .

According to the original version of GTDB R06-RS202, this family belongs to the order *Gp22-AA2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dilibosales.

Description of *Candidatus* Foricida appugax sp. nov.

Candidatus Foricida appugax (NL. fem. n. *appugax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1254 sp002308495*. The type genome for the species is the GenBank assembly GCA_002308495.1. The GC content of the type genome is 39.7 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Foricida gen. nov.

Candidatus Foricida (NL. fem. n. *Foricida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1254*. The type species for the genus is *Candidatus* Foricida appugax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-239*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobosaceae.

Description of *Candidatus* Foricida arcipetta sp. nov.

Candidatus Foricida arcipetta (NL. fem. n. *arcipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1254 sp902797315*. The type genome for the species is the GenBank assembly GCA_902797315.1. The GC content of the type genome is 36.7 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Foricida capucitrix sp. nov.

Candidatus Foricida capucitrix (NL. fem. n. *capucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1254 sp902785935*. The type genome for the species is the GenBank assembly GCA_902785935.1. The GC content of the type genome is 39.5 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Foricida depacicula sp. nov.

Candidatus Foricida depacicula (NL. fem. n. *depacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1254 sp902767055*. The type genome for the species is the GenBank assembly GCA_902767055.1. The GC content of the type genome is 39.69 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Foricida depasastra sp. nov.

Candidatus Foricida depasastra (NL. fem. n. *depasastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1254 sp002372275*. The type genome for the species is the GenBank assembly GCA_002372275.1. The GC content of the type genome is 38.68 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Foricida monimentia sp. nov.

Candidatus Foricida monimentia (NL. fem. n. *monimentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1254 sp900313355*. The type genome for the species is the GenBank assembly GCA_902759795.1. The GC content of the type genome is 38.98 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Foricida sicinitrix sp. nov.

Candidatus Foricida sicinitrix (NL. fem. n. *sicinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1254 sp003542415*. The type genome for the species is the GenBank assembly GCA_003542415.1. The GC content of the type genome is 39.82 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Foricosa desucousia sp. nov.

Candidatus Foricosa desucousia (NL. fem. n. *desucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002793575 sp002774055*. The type genome for the species is the GenBank assembly GCA_002774055.1. The GC content of the type genome is 40.59 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Foricosa gen. nov.

Candidatus Foricosa (NL. fem. n. *Foricosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002793575*. The type species for the genus is *Candidatus* Foricosa desucousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Forinana devecatio sp. nov.

Candidatus Forinana devecatio (NL. fem. n. *devecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-43-26 sp001872735*. The type genome for the species is the GenBank assembly GCA_002322915.1. The GC content of the type genome is 43.37 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Forinana gen. nov.

Candidatus Forinana (NL. fem. n. *Forinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-43-26*. The type species for the genus is *Candidatus* Forinana devecatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-43-26*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Forinanaceae.

Description of *Candidatus* Forinanaceae fam. nov.

Candidatus Forinanaceae (NL. fem. n. *Forinanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG1-02-43-26.* The type genus for the taxon is *Candidatus* Forinana .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Forinaria dimaditura sp. nov.

Candidatus Forinaria dimaditura (NL. fem. n. *dimaditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-40-15 sp001783185*. The type genome for the species is the GenBank assembly GCA_001784365.1. The GC content of the type genome is 40.59 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Forinaria gen. nov.

Candidatus Forinaria (NL. fem. n. *Forinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB1-40-15*. The type species for the genus is *Candidatus* Forinaria dimaditura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Forinaria turificella sp. nov.

Candidatus Forinaria turificella (NL. fem. n. *turificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-40-15 sp001782825*. The type genome for the species is the

GenBank assembly GCA_001782825.1. The GC content of the type genome is 32.88 % and the genome length is 1.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Forinella alcedago sp. nov.

Candidatus Forinella alcedago (NL. fem. n. *alcedago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRLW01 sp011375275*. The type genome for the species is the GenBank assembly GCA_011375275.1. The GC content of the type genome is 54.84 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Forinella gen. nov.

Candidatus Forinella (NL. fem. n. *Forinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRLW01*. The type species for the genus is *Candidatus* Forinella alcedago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRLW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forinellaceae.

Description of *Candidatus* Forinellaceae fam. nov.

Candidatus Forinellaceae (NL. fem. n. *Forinellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRLW01.* The type genus for the taxon is *Candidatus* Forinella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRLW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Forinellales.

Description of *Candidatus* Forinellales ord. nov.

Candidatus Forinellales (NL. fem. n. *Forinellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *DRLW01*. The type genus for the taxon is *Candidatus* Forinella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Renavosae.

Description of *Candidatus* Forinia adniletta sp. nov.

Candidatus Forinia adniletta (NL. fem. n. *adniletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU069 sp012730095*. The type genome for the species is the GenBank assembly GCA_012730095.1. The GC content of the type genome is 40.43 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Forinia gen. nov.

Candidatus Forinia (NL. fem. n. *Forinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU069*. The type species for the genus is *Candidatus* Forinia adniletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-8532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabidaceae.

Description of *Candidatus* Forinia fusifitia sp. nov.

Candidatus Forinia fusifitia (NL. fem. n. *fusifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU069 sp012516065*. The type genome for the species is the GenBank assembly GCA_012516065.1. The GC content of the type genome is 43.84 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Forinia xenodedo sp. nov.

Candidatus Forinia xenodedo (NL. fem. n. *xenodedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU069 sp001512485*. The type genome for the species is the GenBank assembly GCA_012521075.1. The GC content of the type genome is 42.2 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Forinida offunitoga sp. nov.

Candidatus Forinida offunitoga (NL. fem. n. *offunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLFE01 sp007124415*. The type genome for the species is the GenBank assembly GCA_007124415.1. The GC content of the type genome is 48.08 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Forinida gen. nov.

Candidatus Forinida (NL. fem. n. *Forinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLFE01*. The type species for the genus is *Candidatus* Forinida offunitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLFE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forinidaceae.

Description of *Candidatus* Forinidaceae fam. nov.

Candidatus Forinidaceae (NL. fem. n. *Forinidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLFE01.* The type genus for the taxon is *Candidatus* Forinida .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Forinosa adsigatio sp. nov.

Candidatus Forinosa adsigatio (NL. fem. n. *adsigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-61 sp013388675*. The type genome for the species is the

GenBank assembly GCA_013388675.1. The GC content of the type genome is 56.48 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Forinosa gen. nov.

Candidatus Forinosa (NL. fem. n. *Forinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-61*. The type species for the genus is *Candidatus* Forinosa adsigatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forinosaceae.

Description of *Candidatus* Forinosaceae fam. nov.

Candidatus Forinosaceae (NL. fem. n. *Forinosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-61.* The type genus for the taxon is *Candidatus* Forinosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Forinosales.

Description of *Candidatus* Forinosales ord. nov.

Candidatus Forinosales (NL. fem. n. *Forinosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-61.* The type genus for the taxon is *Candidatus* Forinosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *SM23-61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Forinosae.

Description of *Candidatus* Forinosae class. nov.

Candidatus Forinosae (NL. fem. n. *c__Forinosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-61.* The type genus for the taxon is *Candidatus* Forinosa .

According to GTDB R06-RS202, this class belongs to the phylum *Desulfobacterota*.

Description of *Candidatus* Forinosa incesicella sp. nov.

Candidatus Forinosa incesicella (NL. fem. n. *incesicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-61 sp001304105*. The type genome for the species is the GenBank assembly GCA_001304105.1. The GC content of the type genome is 56.18 % and the genome length is 4.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Forinosa negotisca sp. nov.

Candidatus Forinosa negotisca (NL. fem. n. *negotisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-61 sp003154025*. The type genome for the species is the GenBank assembly GCA_003154025.1. The GC content of the type genome is 56.46 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Forinula insusitoga sp. nov.

Candidatus Forinula insusitoga (NL. fem. n. *insusitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D1FN1-002 sp005774595*. The type genome for the species is the GenBank assembly GCA_005774595.1. The GC content of the type genome is 70.62 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Forinula gen. nov.

Candidatus Forinula (NL. fem. n. *Forinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *D1FN1-002*. The type species for the genus is *Candidatus* Forinula insusitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family

D1FN1-002. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forinulaceae.

Description of *Candidatus* Forinulaceae fam. nov.

Candidatus Forinulaceae (NL. fem. n. *Forinulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *D1FN1-002.* The type genus for the taxon is *Candidatus* Forinula .

According to the original version of GTDB R06-RS202, this family belongs to the order *OPB41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodanales.

Description of *Candidatus* Formosa tomogetta sp. nov.

Candidatus Formosa tomogetta (NL. fem. n. *tomogetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Formosa sp009796865*. The type genome for the species is the GenBank assembly RS_GCF_009796865.1. The GC content of the type genome is 32.22 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Fortiea invigilega sp. nov.

Candidatus Fortiea invigilega (NL. fem. n. *invigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fortiea sp000316575*. The type genome for the species is the GenBank assembly RS_GCF_000316575.1. The GC content of the type genome is 42.25 % and the genome length is 7.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sphagnum bog".

Description of *Candidatus* Fournierella accomousia sp. nov.

Candidatus Fournierella accomousia (NL. fem. n. *accomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fournierella sp002161595*. The type genome for the species is the

GenBank assembly RS_GCF_002161595.1. The GC content of the type genome is 58.69 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Fournierella affanentia sp. nov.

Candidatus Fournierella affanentia (NL. fem. n. *affanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fournierella sp002160145*. The type genome for the species is the GenBank assembly RS_GCF_002160145.1. The GC content of the type genome is 59.32 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Fournierella bipalibula sp. nov.

Candidatus Fournierella bipalibula (NL. fem. n. *bipalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fournierella sp002159185*. The type genome for the species is the GenBank assembly RS_GCF_002159185.1. The GC content of the type genome is 58.57 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Fournierella vehemedo sp. nov.

Candidatus Fournierella vehemedo (NL. fem. n. *vehemedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fournierella sp900543285*. The type genome for the species is the GenBank assembly RS_GCF_900762745.1. The GC content of the type genome is 61.0 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Fournierella vitupedo sp. nov.

Candidatus Fournierella vitupedo (NL. fem. n. *vitupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fournierella sp004558145*. The type genome for the species is the GenBank assembly RS_GCF_900759365.1. The GC content of the type genome is 64.31 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Frackibacter cinipivita sp. nov.

Candidatus Frackibacter cinipivita (NL. fem. n. *cinipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frackibacter sp900114655*. The type genome for the species is the GenBank assembly RS_GCF_900114655.1. The GC content of the type genome is 33.44 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Fraglana melopisca sp. nov.

Candidatus Fraglana melopisca (NL. fem. n. *melopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGC01 sp013152695*. The type genome for the species is the GenBank assembly GCA_013152695.1. The GC content of the type genome is 54.0 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Fraglana gen. nov.

Candidatus Fraglana (NL. fem. n. *Fraglana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGC01*. The type species for the genus is *Candidatus* Fraglana melopisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deparosaceae.

Description of *Candidatus* Fraglana utputitudo sp. nov.

Candidatus Fraglana utputitudo (NL. fem. n. *utputitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGC01 sp013152585*. The type genome for the species is the GenBank assembly GCA_013152585.1. The GC content of the type genome is 58.57 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Fraglella artifousia sp. nov.

Candidatus Fraglella artifousia (NL. fem. n. *artifousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAT01 sp014238615*. The type genome for the species is the GenBank assembly GCA_014238615.1. The GC content of the type genome is 64.02 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Fraglella gen. nov.

Candidatus Fraglella (NL. fem. n. *Fraglella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABAAT01*. The type species for the genus is *Candidatus* Fraglella artifousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6729*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fefelulaceae.

Description of *Candidatus* Fraglosa penuricella sp. nov.

Candidatus Fraglosa penuricella (NL. fem. n. *penuricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2693325 sp002693325*. The type genome for the species is the GenBank assembly GCA_002693325.1. The GC content of the type genome is 41.14 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Fraglosa gen. nov.

Candidatus Fraglosa (NL. fem. n. *Fraglosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2693325*. The type species for the genus is *Candidatus* Fraglosa penuricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8231*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatosaceae.

Description of *Candidatus* Fraglula amnigilenta sp. nov.

Candidatus Fraglula amnigilenta (NL. fem. n. *amnigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11867 sp902773365*. The type genome for the species is the GenBank assembly GCA_902773365.1. The GC content of the type genome is 30.21 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Fraglula gen. nov.

Candidatus Fraglula (NL. fem. n. *Fraglula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11867*. The type species for the genus is *Candidatus* Fraglula amnigilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Fraglula ermelimonia sp. nov.

Candidatus Fraglula ermelimonia (NL. fem. n. *ermelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11867 sp902795215*. The type genome for the species is the GenBank assembly GCA_902795215.1. The GC content of the type genome is 27.24 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Fragmana ambiditia sp. nov.

Candidatus Fragmana ambiditia (NL. fem. n. *ambiditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCWJ01 sp902806365*. The type genome for the species is the GenBank assembly GCA_902806365.1. The GC content of the type genome is 65.39 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Fragmana gen. nov.

Candidatus Fragmana (NL. fem. n. *Fragmana* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCWJ01*. The type species for the genus is *Candidatus* Fragmana ambiditia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Fragmaria voragousia sp. nov.

Candidatus Fragmaria voragousia (NL. fem. n. *voragousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRDG01 sp009783525*. The type genome for the species is the GenBank assembly GCA_009783525.1. The GC content of the type genome is 49.03 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Fragmaria gen. nov.

Candidatus Fragmaria (NL. fem. n. *Fragmaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRDG01*. The type species for the genus is *Candidatus* Fragmaria voragousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Fragmia turifitia sp. nov.

Candidatus Fragmia turifitia (NL. fem. n. *turifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOKD01 sp004376305*. The type genome for the species is the GenBank assembly GCA_004376305.1. The GC content of the type genome is 40.93 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Fragmia gen. nov.

Candidatus Fragmia (NL. fem. n. *Fragmia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SOKD01*. The type species for the genus is *Candidatus* Fragmia turifitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin80*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Remedanaceae.

Description of *Candidatus* Fragmida cnestatica sp. nov.

Candidatus Fragmida cnestatica (NL. fem. n. *cnestatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTAK01 sp013139625*. The type genome for the species is the GenBank assembly GCA_013139625.1. The GC content of the type genome is 32.77 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Fragmida gen. nov.

Candidatus Fragmida (NL. fem. n. *Fragmida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTAK01*. The type species for the genus is *Candidatus* Fragmida cnestatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4055*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecariaceae.

Description of *Candidatus* Fragmula genocatica sp. nov.

Candidatus Fragmula genocatica (NL. fem. n. *genocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSSB01 sp013214715*. The type genome for the species is the GenBank assembly GCA_013214715.1. The GC content of the type genome is 60.09 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Fragmula gen. nov.

Candidatus Fragmula (NL. fem. n. *Fragmula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSSB01*. The type species for the genus is *Candidatus* Fragmula genocatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Francisella alectatica sp. nov.

Candidatus Francisella alectatica (NL. fem. n. *alectatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Francisella sp008711465*. The type genome for the species is the GenBank assembly RS_GCF_008711465.1. The GC content of the type genome is 31.38 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Francisella cocibitica sp. nov.

Candidatus Francisella cocibitica (NL. fem. n. *cocibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Francisella sp000764555*. The type genome for the species is the GenBank assembly RS_GCF_000764555.1. The GC content of the type genome is 32.42 % and the genome length is 2.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Lab culture Euplotes raikovi".

Description of *Candidatus* Francisella depelentia sp. nov.

Candidatus Francisella depelentia (NL. fem. n. *depelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Francisella sp002095075*. The type genome for the species is the GenBank assembly GCA_001753795.1. The GC content of the type genome is 31.67 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Frankia conamifica sp. nov.

Candidatus Frankia conamifica (NL. fem. n. *conamifica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frankia sp001636565*. The type genome for the species is the GenBank assembly RS_GCF_001636565.1. The GC content of the type genome is 72.19 % and the genome length is 6.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "nodules".

Description of *Candidatus* Frankia demagentia sp. nov.

Candidatus Frankia demagentia (NL. fem. n. *demagentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frankia sp902812705*. The type genome for the species is the GenBank assembly RS_GCF_902812705.1. The GC content of the type genome is 71.34 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Frankia fuligitudo sp. nov.

Candidatus Frankia fuligitudo (NL. fem. n. *fuligitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frankia sp001854655*. The type genome for the species is the GenBank assembly RS_GCF_001854655.1. The GC content of the type genome is 71.44 % and the genome length is 8.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "nodule".

Description of *Candidatus* Frankia incocatica sp. nov.

Candidatus Frankia incocatica (NL. fem. n. *incocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frankia sp902806485*. The type genome for the species is the GenBank assembly RS_GCF_902806485.1. The GC content of the type genome is 71.57 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Frankia intamatica sp. nov.

Candidatus Frankia intamatica (NL. fem. n. *intamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frankia sp000177675*. The type genome for the species is the GenBank assembly RS_GCF_000177675.1. The GC content of the type genome is 70.81 % and the genome length is 9.35 Mbp.

Description of *Candidatus* Frankia nucifisca sp. nov.

Candidatus Frankia nucifisca (NL. fem. n. *nucifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frankia sp000262465*. The type genome for the species is the GenBank assembly RS_GCF_000262465.1. The GC content of the type genome is 72.59 % and the genome length is 7.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Frankia teleficella sp. nov.

Candidatus Frankia teleficella (NL. fem. n. *teleficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frankia sp001854805*. The type genome for the species is the GenBank assembly RS_GCF_001854805.1. The GC content of the type genome is 71.26 % and the genome length is 11.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root nodule".

Description of *Candidatus* Frankia utputax sp. nov.

Candidatus Frankia utputax (NL. fem. n. *utputax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frankia sp000966285*. The type genome for the species is the GenBank assembly RS_GCF_000966285.1. The GC content of the type genome is 71.93 % and the genome length is 6.88 Mbp.

Description of *Candidatus* Frateuria annifimonia sp. nov.

Candidatus Frateuria annifimonia (NL. fem. n. *annifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frateuria_A sp013362045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013362045.1. The GC content of the type genome is 69.25 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Frateuria assefisca sp. nov.

Candidatus Frateuria assefisca (NL. fem. n. *assefisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frateuria_A sp001428405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001428405.1. The GC content of the type genome is 68.96 % and the genome length is 4.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Frederiksenia perabago sp. nov.

Candidatus Frederiksenia perabago (NL. fem. n. *perabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frederiksenia sp011455275*. The type genome for the species is the GenBank assembly RS_GCF_011455275.1. The GC content of the type genome is 42.91 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Fretibacterium adcumiforma sp. nov.

Candidatus Fretibacterium adcumiforma (NL. fem. n. *adcumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fretibacterium sp012520235*. The type genome for the species is the GenBank assembly GCA_012520235.1. The GC content of the type genome is 57.34 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Fretibacterium bimotigena sp. nov.

Candidatus Fretibacterium bimotigena (NL. fem. n. *bimotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fretibacterium sp003860125*. The type genome for the species is the GenBank assembly RS_GCF_003860125.1. The GC content of the type genome is 62.82 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Fretibacterium impilugo sp. nov.

Candidatus Fretibacterium impilugo (NL. fem. n. *impilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fretibacterium sp009778055*. The type genome for the species is the GenBank assembly GCA_009778055.1. The GC content of the type genome is 55.07 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Frigdaria adessifica sp. nov.

Candidatus Frigdaria adessifica (NL. fem. n. *adessifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSYW01 sp011367345*. The type genome for the species is the GenBank assembly GCA_011367345.1. The GC content of the type genome is 67.09 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Frigdaria gen. nov.

Candidatus Frigdaria (NL. fem. n. *Frigdaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSYW01*. The type species for the genus is *Candidatus* Frigdaria adessifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hariciaceae.

Description of *Candidatus* Frigdella selibatica sp. nov.

Candidatus Frigdella selibatica (NL. fem. n. *selibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUAS01 sp903897205*. The type genome for the species is the GenBank assembly GCA_903897205.1. The GC content of the type genome is 39.56 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Frigdella gen. nov.

Candidatus Frigdella (NL. fem. n. *Frigdella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUAS01*. The type species for the genus is *Candidatus* Frigdella selibatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Frigdia ascelax sp. nov.

Candidatus Frigdia ascelax (NL. fem. n. *ascelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-11 sp001776335*. The type genome for the species is the GenBank assembly GCA_001776335.1. The GC content of the type genome is 41.3 % and the genome length is 0.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Frigdia gen. nov.

Candidatus Frigdia (NL. fem. n. *Frigdia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-41-11*. The type species for the genus is *Candidatus* Frigdia ascelax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-41-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Frigdosa inergicula sp. nov.

Candidatus Frigdosa inergicula (NL. fem. n. *inergicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQIV01 sp903871905*. The type genome for the species is the GenBank assembly GCA_903871905.1. The GC content of the type genome is 58.78 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Frigdosa gen. nov.

Candidatus Frigdosa (NL. fem. n. *Frigdosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQIV01*. The type species for the genus is *Candidatus* Frigdosa inergicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Frigidibacter allapitia sp. nov.

Candidatus Frigidibacter allapitia (NL. fem. n. *allapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigidibacter sp003993775*. The type genome for the species is the GenBank assembly RS_GCF_003993775.1. The GC content of the type genome is 69.47 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Frigidibacter peropibra sp. nov.

Candidatus Frigidibacter peropibra (NL. fem. n. *peropibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigidibacter sp002423245*. The type genome for the species is the GenBank assembly GCA_014359755.1. The GC content of the type genome is 68.43 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Frigididesulfovibrio inregitrix sp. nov.

Candidatus Frigididesulfovibrio inregitrix (NL. fem. n. *inregitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigididesulfovibrio sp002293605*. The type genome for the species is the GenBank assembly GCA_002293605.1. The GC content of the type genome is 58.27 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Frigididesulfovibrio megalitura sp. nov.

Candidatus Frigididesulfovibrio megalitura (NL. fem. n. *megalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigididesulfovibrio sp009783025*. The type genome for the species is the GenBank assembly GCA_009783025.1. The GC content of the type genome is 58.0 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Frigoribacterium adsocax sp. nov.

Candidatus Frigoribacterium adsocax (NL. fem. n. *adsocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp013248995*. The type genome for the species is the GenBank assembly RS_GCF_013248995.1. The GC content of the type genome is 70.35 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Frigoribacterium colipisca sp. nov.

Candidatus Frigoribacterium colipisca (NL. fem. n. *colipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp003755185*. The type genome for the species is the GenBank assembly RS_GCF_003755185.1. The GC content of the type genome is 70.64 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Frigoribacterium colopitia sp. nov.

Candidatus Frigoribacterium colopitia (NL. fem. n. *colopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp007954365*. The type genome for the species is the GenBank assembly RS_GCF_007954365.1. The GC content of the type genome is 71.98 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Frigoribacterium dilibugo sp. nov.

Candidatus Frigoribacterium dilibugo (NL. fem. n. *dilibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp001422285*. The type genome for the species is the GenBank assembly RS_GCF_001424285.1. The GC content of the type genome is 71.2 % and the genome length is 3.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Frigoribacterium munifitudo sp. nov.

Candidatus Frigoribacterium munifitudo (NL. fem. n. *munifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp001421165*. The type genome for the species is the GenBank assembly RS_GCF_013204925.1. The GC content of the type genome is 71.34 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Frigoribacterium obnoximonia sp. nov.

Candidatus Frigoribacterium obnoximonia (NL. fem. n. *obnoximonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp001423905*. The type genome for the species is the GenBank assembly RS_GCF_001423905.1. The GC content of the type genome is 71.47 % and the genome length is 3.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Frigoribacterium obsorigena sp. nov.

Candidatus Frigoribacterium obsorigena (NL. fem. n. *obsorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp003751785*. The type genome for the species is the GenBank assembly RS_GCF_003751785.1. The GC content of the type genome is 72.99 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Frigoribacterium pavimastra sp. nov.

Candidatus Frigoribacterium pavimastra (NL. fem. n. *pavimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp000878135*. The type genome for the species is the GenBank assembly RS_GCF_001421865.1. The GC content of the type genome is 71.15 % and the genome length is 3.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Frigoribacterium regifedo sp. nov.

Candidatus Frigoribacterium regifedo (NL. fem. n. *regifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp004364285*. The type genome for the species is the GenBank assembly RS_GCF_003751515.1. The GC content of the type genome is 72.39 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Frigoribacterium turibimonas sp. nov.

Candidatus Frigoribacterium turibimonas (NL. fem. n. *turibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frigoribacterium sp001424645*. The type genome for the species is the GenBank assembly RS_GCF_001864945.1. The GC content of the type genome is 71.12 % and the genome length is 3.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Leaf Litter".

Description of *Candidatus* Frischella semibitia sp. nov.

Candidatus Frischella semibitia (NL. fem. n. *semibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frischella sp014489845*. The type genome for the species is the GenBank assembly RS_GCF_014489845.1. The GC content of the type genome is 34.51 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Frisingicoccus codificella sp. nov.

Candidatus Frisingicoccus codificella (NL. fem. n. *codificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frisingicoccus sp009929615*. The type genome for the species is the GenBank assembly GCA_009929615.1. The GC content of the type genome is 41.17 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Frisingicoccus cucurimonia sp. nov.

Candidatus Frisingicoccus cucurimonia (NL. fem. n. *cucurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frisingicoccus sp900549105*. The type genome for the species is the GenBank assembly GCA_900549105.1. The GC content of the type genome is 44.54 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Frisingicoccus facunentia sp. nov.

Candidatus Frisingicoccus facunentia (NL. fem. n. *facunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frisingicoccus sp900753685*. The type genome for the species is the GenBank assembly RS_GCF_900753685.1. The GC content of the type genome is 45.22 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Frisingicoccus xeropicella sp. nov.

Candidatus Frisingicoccus xeropicella (NL. fem. n. *xeropicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frisingicoccus sp900757195*. The type genome for the species is the GenBank assembly RS_GCF_900757195.1. The GC content of the type genome is 46.17 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Frondihabitans adsifitica sp. nov.

Candidatus Frondihabitans adsifitica (NL. fem. n. *adsifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Frondihabitans sp002074055*. The type genome for the species is the GenBank assembly RS_GCF_002074055.1. The GC content of the type genome is 70.43 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Frondihabitans adviniforma sp. nov.

Candidatus Frondihabitans adviniforma (NL. fem. n. *adviniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frondihabitans sp001577365*. The type genome for the species is the GenBank assembly RS_GCF_001577365.1. The GC content of the type genome is 68.43 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Frondihabitans ensigax sp. nov.

Candidatus Frondihabitans ensigax (NL. fem. n. *ensigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frondihabitans sp003752365*. The type genome for the species is the GenBank assembly RS_GCF_003752365.1. The GC content of the type genome is 69.55 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Frondihabitans ficuletta sp. nov.

Candidatus Frondihabitans ficuletta (NL. fem. n. *ficuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Frondihabitans sp001423105*. The type genome for the species is the GenBank assembly RS_GCF_003814635.1. The GC content of the type genome is 67.3 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Fructobacillus colepentia sp. nov.

Candidatus Fructobacillus colepentia (NL. fem. n. *colepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fructobacillus sp001038455*. The type genome for the species is the GenBank assembly RS_GCF_001038455.1. The GC content of the type genome is 43.65 % and the genome length is 1.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "European foulbrood infected honey bee

larva".

Description of *Candidatus* Fuerstia inhabibula sp. nov.

Candidatus Fuerstia inhabibula (NL. fem. n. *inhabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fuerstia sp014238335*. The type genome for the species is the GenBank assembly GCA_014238335.1. The GC content of the type genome is 55.38 % and the genome length is 8.38 Mbp.

Description of *Candidatus* Fuligana demadax sp. nov.

Candidatus Fuligana demadax (NL. fem. n. *demadax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3569 sp002375895*. The type genome for the species is the GenBank assembly GCA_002376455.1. The GC content of the type genome is 62.23 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Fuligana gen. nov.

Candidatus Fuligana (NL. fem. n. *Fuligana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3569*. The type species for the genus is *Candidatus* Fuligana demadax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3569*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fuliganaceae.

Description of *Candidatus* Fuliganaceae fam. nov.

Candidatus Fuliganaceae (NL. fem. n. *Fuliganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3569.* The type genus for the taxon is *Candidatus* Fuligana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3569*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fuliganales.

Description of *Candidatus* Fuliganales ord. nov.

Candidatus Fuliganales (NL. fem. n. *Fuliganales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3569.* The type genus for the taxon is *Candidatus* Fuligana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA3569*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Fuliganae.

Description of *Candidatus* Fuliganae class. nov.

Candidatus Fuliganae (NL. fem. n. *c__Fuliganae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3569.* The type genus for the taxon is *Candidatus* Fuligana .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_E*.

Description of *Candidatus* Fuligaria defesibra sp. nov.

Candidatus Fuligaria defesibra (NL. fem. n. *defesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-12-FULL-45-9 sp001823215*. The type genome for the species is the GenBank assembly GCA_001823215.1. The GC content of the type genome is 45.07 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Fuligaria gen. nov.

Candidatus Fuligaria (NL. fem. n. *Fuligaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-12-FULL-45-9*. The type species for the genus is *Candidatus* Fuligaria defesibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxilidaceae.

Description of *Candidatus* Fuligella cohonimonas sp. nov.

Candidatus Fuligella cohonimonas (NL. fem. n. *cohonimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITQP01 sp903869975*. The type genome for the species is the GenBank assembly GCA_903869975.1. The GC content of the type genome is 48.6 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Fuligella gen. nov.

Candidatus Fuligella (NL. fem. n. *Fuligella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITQP01*. The type species for the genus is *Candidatus* Fuligella cohonimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relaposaceae.

Description of *Candidatus* Fuligella vinulimonas sp. nov.

Candidatus Fuligella vinulimonas (NL. fem. n. *vinulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITQP01 sp903894565*. The type genome for the species is the GenBank assembly GCA_903837185.1. The GC content of the type genome is 44.38 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Fuligia caravilega sp. nov.

Candidatus Fuligia caravilega (NL. fem. n. *caravilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6957 sp002707365*. The type genome for the species is the GenBank assembly GCA_002707365.1. The GC content of the type genome is 47.25 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Fuligia gen. nov.

Candidatus Fuligia (NL. fem. n. *Fuligia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6957*. The type species for the genus is *Candidatus* Fuligia caravilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fuligida ecfacitrix sp. nov.

Candidatus Fuligida ecfacitrix (NL. fem. n. *ecfacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMRG01 sp013202935*. The type genome for the species is the GenBank assembly GCA_013202935.1. The GC content of the type genome is 41.13 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Fuligida gen. nov.

Candidatus Fuligida (NL. fem. n. *Fuligida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMRG01*. The type species for the genus is *Candidatus* Fuligida ecfacitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMRG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fuligidaceae.

Description of *Candidatus* Fuligidaceae fam. nov.

Candidatus Fuligidaceae (NL. fem. n. *Fuligidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMRG01.* The type genus for the taxon is *Candidatus* Fuligida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMRG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fuligidales.

Description of *Candidatus* Fuligidales ord. nov.

Candidatus Fuligidales (NL. fem. n. *Fuligidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMRG01.* The type genus for the taxon is *Candidatus* Fuligida .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Fuligosa cobalatio sp. nov.

Candidatus Fuligosa cobalatio (NL. fem. n. *cobalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B26-G2 sp003647715*. The type genome for the species is the GenBank assembly GCA_003647745.1. The GC content of the type genome is 42.81 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Fuligosa gen. nov.

Candidatus Fuligosa (NL. fem. n. *Fuligosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B26-G2*. The type species for the genus is *Candidatus* Fuligosa cobalatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B26-G2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fuligosaceae.

Description of *Candidatus* Fuligosaceae fam. nov.

Candidatus Fuligosaceae (NL. fem. n. *Fuligosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B26-G2.* The type genus for the taxon is *Candidatus* Fuligosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *B26-G2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fuligosales.

Description of *Candidatus* Fuligosales ord. nov.

Candidatus Fuligosales (NL. fem. n. *Fuligosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B26-G2.* The type genus for the taxon is *Candidatus* Fuligosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *B26-G2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Fuligosae.

Description of *Candidatus* Fuligosae class. nov.

Candidatus Fuligosae (NL. fem. n. *c__Fuligosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B26-G2.* The type genus for the taxon is *Candidatus* Fuligosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *RBG-13-66-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Resuliota.

Description of *Candidatus* Fulvivirga antevigena sp. nov.

Candidatus Fulvivirga antevigena (NL. fem. n. *antevigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fulvivirga sp007097395*. The type genome for the species is the GenBank assembly RS_GCF_007097395.1. The GC content of the type genome is 41.28 % and the genome length is 8.13 Mbp.

Description of *Candidatus* Fulvivirga culilitio sp. nov.

Candidatus Fulvivirga culilitio (NL. fem. n. *culilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fulvivirga sp001657315*. The type genome for the species is the GenBank assembly GCA_001657315.1. The GC content of the type genome is 45.37 % and the genome length is 8.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture inoculated with black band disease microbial mat".

Description of *Candidatus* Fulvivirga taxilitrix sp. nov.

Candidatus Fulvivirga taxilitrix (NL. fem. n. *taxilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fulvivirga sp002338655*. The type genome for the species is the GenBank assembly GCA_002338655.1. The GC content of the type genome is 38.39 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Fumacaria notabastra sp. nov.

Candidatus Fumacaria notabastra (NL. fem. n. *notabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC2-FULL-37-10 sp001771535*. The type genome for the species is the GenBank assembly GCA_001771455.1. The GC content of the type genome is 37.32 % and the genome length is 1.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Fumacaria gen. nov.

Candidatus Fumacaria (NL. fem. n. *Fumacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYC2-FULL-37-10*. The type species for the genus is *Candidatus* Fumacaria notabastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-37-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumacariaceae.

Description of *Candidatus* Fumacariaceae fam. nov.

Candidatus Fumacariaceae (NL. fem. n. *Fumacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYC2-FULL-37-10.* The type genus for the taxon is *Candidatus* Fumacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYC2-FULL-46-14*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the order *Candidatus* Domipidales.

Description of *Candidatus* Fumacella cenodicula sp. nov.

Candidatus Fumacella cenodicula (NL. fem. n. *cenodicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCP01 sp013817465*. The type genome for the species is the GenBank assembly GCA_013817465.1. The GC content of the type genome is 63.64 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Fumacella gen. nov.

Candidatus Fumacella (NL. fem. n. *Fumacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDCP01*. The type species for the genus is *Candidatus* Fumacella cenodicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACDCP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumacellaceae.

Description of *Candidatus* Fumacellaceae fam. nov.

Candidatus Fumacellaceae (NL. fem. n. *Fumacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACDCP01.* The type genus for the taxon is *Candidatus* Fumacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACDCP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fumacellales.

Description of *Candidatus* Fumacellales ord. nov.

Candidatus Fumacellales (NL. fem. n. *Fumacellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACDCP01.* The type genus for the taxon is *Candidatus* Fumacella .

According to the GTDB R06-RS202, this order belongs to the class

Gammaproteobacteria.

Description of *Candidatus* Fumacia tabitessa sp. nov.

Candidatus Fumacia tabitessa (NL. fem. n. *tabitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCIY01 sp903970495*. The type genome for the species is the GenBank assembly GCA_903970495.1. The GC content of the type genome is 73.19 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Fumacia gen. nov.

Candidatus Fumacia (NL. fem. n. *Fumacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCIY01*. The type species for the genus is *Candidatus* Fumacia tabitessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJCIY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumaciaceae.

Description of *Candidatus* Fumaciaceae fam. nov.

Candidatus Fumaciaceae (NL. fem. n. *Fumaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAJCIY01*. The type genus for the taxon is *Candidatus* Fumacia .

According to GTDB R06-RS202, this family belongs to the order *Mycobacteriales*.

Description of *Candidatus* Fumacida denecatica sp. nov.

Candidatus Fumacida denecatica (NL. fem. n. *denecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7878 sp002501205*. The type genome for the species is the GenBank assembly GCA_002306585.1. The GC content of the type genome is 43.67 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Fumacida gen. nov.

Candidatus Fumacida (NL. fem. n. *Fumacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7878*. The type species for the genus is *Candidatus* Fumacida denecatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fumacida infesimonas sp. nov.

Candidatus Fumacida infesimonas (NL. fem. n. *infesimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7878 sp014524565*. The type genome for the species is the GenBank assembly GCA_014524565.1. The GC content of the type genome is 43.23 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Fumacida rurigetta sp. nov.

Candidatus Fumacida rurigetta (NL. fem. n. *rurigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7878 sp003045865*. The type genome for the species is the GenBank assembly GCA_003045865.1. The GC content of the type genome is 41.03 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Fumacosa dicimousia sp. nov.

Candidatus Fumacosa dicimousia (NL. fem. n. *dicimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSSG01 sp013214525*. The type genome for the species is the GenBank assembly GCA_013214525.1. The GC content of the type genome is 30.78 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Fumacosa gen. nov.

Candidatus Fumacosa (NL. fem. n. *Fumacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSSG01*. The type species for the genus is *Candidatus* Fumacosa dicimousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABSSG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumacosaceae.

Description of *Candidatus* Fumacosaceae fam. nov.

Candidatus Fumacosaceae (NL. fem. n. *Fumacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABSSG01*. The type genus for the taxon is *Candidatus* Fumacosa .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Fumacula addivimonas sp. nov.

Candidatus Fumacula addivimonas (NL. fem. n. *addivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2943 sp902764915*. The type genome for the species is the GenBank assembly GCA_902764915.1. The GC content of the type genome is 53.58 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Fumacula gen. nov.

Candidatus Fumacula (NL. fem. n. *Fumacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2943*. The type species for the genus is *Candidatus* Fumacula addivimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Fumacula dapifitica sp. nov.

Candidatus Fumacula dapifitica (NL. fem. n. *dapifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2943 sp002350845*. The type genome for the species is the GenBank assembly GCA_902781795.1. The GC content of the type genome is 53.93 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Fumacula desucastra sp. nov.

Candidatus Fumacula desucastra (NL. fem. n. *desucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2943 sp900321565*. The type genome for the species is the GenBank assembly GCA_902782765.1. The GC content of the type genome is 52.16 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Fumacula dilibago sp. nov.

Candidatus Fumacula dilibago (NL. fem. n. *dilibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2943 sp902774025*. The type genome for the species is the GenBank assembly GCA_902774025.1. The GC content of the type genome is 57.16 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Fumacula istiniforma sp. nov.

Candidatus Fumacula istiniforma (NL. fem. n. *istiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2943 sp902775835*. The type genome for the species is the GenBank assembly GCA_902775835.1. The GC content of the type genome is 55.96 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Fumacula pimenitia sp. nov.

Candidatus Fumacula pimenitia (NL. fem. n. *pimenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2943 sp900321295*. The type genome for the species is the GenBank assembly GCA_902760065.1. The GC content of the type genome is 51.76 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Fumifana decenitas sp. nov.

Candidatus Fumifana decenitas (NL. fem. n. *decenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3574 sp002375935*. The type genome for the species is the GenBank assembly GCA_002375935.1. The GC content of the type genome is 66.34 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Fumifana gen. nov.

Candidatus Fumifana (NL. fem. n. *Fumifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3574*. The type species for the genus is *Candidatus* Fumifana decenitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fumifaria detositoga sp. nov.

Candidatus Fumifaria detositoga (NL. fem. n. *detositoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6615 sp002937505*. The type genome for the species is the GenBank assembly GCA_002346765.1. The GC content of the type genome is 39.79 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Fumifaria gen. nov.

Candidatus Fumifaria (NL. fem. n. *Fumifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6615*. The type species for the genus is *Candidatus* Fumifaria detositoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Fumifariaceae.

Description of *Candidatus* Fumifariaceae fam. nov.

Candidatus Fumifariaceae (NL. fem. n. *Fumifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6615.* The type genus for the taxon is *Candidatus* Fumifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fumifariales.

Description of *Candidatus* Fumifariales ord. nov.

Candidatus Fumifariales (NL. fem. n. *Fumifariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6615.* The type genus for the taxon is *Candidatus* Fumifaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Fumifella ludibicella sp. nov.

Candidatus Fumifella ludibicella (NL. fem. n. *ludibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-38-21 sp001782475*. The type genome for the species is the GenBank assembly GCA_001782475.1. The GC content of the type genome is 37.02 % and the genome length is 0.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Fumifella gen. nov.

Candidatus Fumifella (NL. fem. n. *Fumifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-38-21*. The type species for the genus is *Candidatus* Fumifella ludibicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA12049. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Fumifella semiditica sp. nov.

Candidatus Fumifella semiditica (NL. fem. n. *semiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-38-21 sp001782085*. The type genome for the species is the GenBank assembly GCA_001782085.1. The GC content of the type genome is 37.2 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Fumifia ellebetta sp. nov.

Candidatus Fumifia ellebetta (NL. fem. n. *ellebetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SB21 sp008933615*. The type genome for the species is the GenBank assembly GCA_008933615.1. The GC content of the type genome is 43.74 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Fumifia gen. nov.

Candidatus Fumifia (NL. fem. n. *Fumifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SB21*. The type species for the genus is *Candidatus* Fumifia ellebetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SB21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifiaceae.

Description of *Candidatus* Fumifiaceae fam. nov.

Candidatus Fumifiaceae (NL. fem. n. *Fumifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SB21*. The type genus for the taxon is *Candidatus* Fumifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SB21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fumifiales.

Description of *Candidatus* Fumifiales ord. nov.

Candidatus Fumifiales (NL. fem. n. *Fumifiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SB21*. The type genus for the taxon is *Candidatus* Fumifia .

According to the original version of GTDB R06-RS202, this family belongs to the class *CLD3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defacidae.

Description of *Candidatus* Fumifida adfabitrix sp. nov.

Candidatus Fumifida adfabitrix (NL. fem. n. *adfabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTFT01 sp011363065*. The type genome for the species is the GenBank assembly GCA_011363065.1. The GC content of the type genome is 44.04 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Fumifida gen. nov.

Candidatus Fumifida (NL. fem. n. *Fumifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTFT01*. The type species for the genus is *Candidatus* Fumifida adfabitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTFT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifidaceae.

Description of *Candidatus* Fumifidaceae fam. nov.

Candidatus Fumifidaceae (NL. fem. n. *Fumifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *DTFT01*. The type genus for the taxon is *Candidatus* Fumifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *QNDG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decunulales.

Description of *Candidatus* Fumifosa attesatica sp. nov.

Candidatus Fumifosa attesatica (NL. fem. n. *attesatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DB6-IX sp002903145*. The type genome for the species is the GenBank assembly RS_GCF_002903145.1. The GC content of the type genome is 36.45 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Fumifosa gen. nov.

Candidatus Fumifosa (NL. fem. n. *Fumifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DB6-IX*. The type species for the genus is *Candidatus* Fumifosa attesatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fumifosa desupatica sp. nov.

Candidatus Fumifosa desupatica (NL. fem. n. *desupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DB6-IX sp000447795*. The type genome for the species is the GenBank assembly RS_GCF_000447795.1. The GC content of the type genome is 36.05 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Fumifosa devecitura sp. nov.

Candidatus Fumifosa devecitura (NL. fem. n. *devecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DB6-IX sp002686115*. The type genome for the species is the

GenBank assembly GCA_002686115.1. The GC content of the type genome is 34.34 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Fumifosa domigigena sp. nov.

Candidatus Fumifosa domigigena (NL. fem. n. *domigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DB6-IX sp001874305*. The type genome for the species is the GenBank assembly GCA_001874305.1. The GC content of the type genome is 35.67 % and the genome length is 3.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mediterranean seawater enriched with a specific particulate matter".

Description of *Candidatus* Fumifosa obtesessa sp. nov.

Candidatus Fumifosa obtesessa (NL. fem. n. *obtesessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DB6-IX sp000447775*. The type genome for the species is the GenBank assembly RS_GCF_000447775.1. The GC content of the type genome is 37.6 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Fumifosa palifibula sp. nov.

Candidatus Fumifosa palifibula (NL. fem. n. *palifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DB6-IX sp002338505*. The type genome for the species is the GenBank assembly GCA_002338505.1. The GC content of the type genome is 35.66 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Fumifosa relenedo sp. nov.

Candidatus Fumifosa relenedo (NL. fem. n. *relenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DB6-IX sp000443995*. The type genome for the species is the GenBank assembly RS_GCF_000443995.1. The GC content of the type genome is 36.47 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Fumifosa rorarivita sp. nov.

Candidatus Fumifosa rorarivita (NL. fem. n. *rorarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DB6-IX sp003612895*. The type genome for the species is the GenBank assembly RS_GCF_003612895.1. The GC content of the type genome is 35.84 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Fumifula luculitia sp. nov.

Candidatus Fumifula luculitia (NL. fem. n. *luculitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGT01 sp007376725*. The type genome for the species is the GenBank assembly GCA_007376725.1. The GC content of the type genome is 45.51 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Fumifula gen. nov.

Candidatus Fumifula (NL. fem. n. *Fumifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGT01*. The type species for the genus is *Candidatus* Fumifula luculitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VMGT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifulaceae.

Description of *Candidatus* Fumifulaceae fam. nov.

Candidatus Fumifulaceae (NL. fem. n. *Fumifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VMGT01.* The type genus for the taxon is *Candidatus* Fumifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Funamana proclitrix sp. nov.

Candidatus Funamana proclitrix (NL. fem. n. *proclitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2233 sp002347965*. The type genome for the species is the GenBank assembly GCA_002347965.1. The GC content of the type genome is 56.11 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Funamana gen. nov.

Candidatus Funamana (NL. fem. n. *Funamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2233*. The type species for the genus is *Candidatus* Funamana proclitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2233*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamanaceae.

Description of *Candidatus* Funamanaceae fam. nov.

Candidatus Funamanaceae (NL. fem. n. *Funamanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2233.* The type genus for the taxon is *Candidatus* Funamana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2233*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Funamanales.

Description of *Candidatus* Funamanales ord. nov.

Candidatus Funamanales (NL. fem. n. *Funamanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2233.* The type genus for the taxon is *Candidatus* Funamana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2233*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Funamanae.

Description of *Candidatus* Funamanae class. nov.

Candidatus Funamanae (NL. fem. n. *c__Funamanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2233.* The type genus for the taxon is *Candidatus* Funamana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBA2233*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Funamanota.

Description of *Candidatus* Funamanota phyl. nov.

Candidatus Funamanota (NL. fem. n. *Funamanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2233.* The type genus for the taxon is *Candidatus* Funamana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Funamana sifunitica sp. nov.

Candidatus Funamana sifunitica (NL. fem. n. *sifunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2233 sp011620345*. The type genome for the species is the GenBank assembly GCA_011620345.1. The GC content of the type genome is 55.75 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Funamaria artolessa sp. nov.

Candidatus Funamaria artolessa (NL. fem. n. *artolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFI01 sp903928615*. The type genome for the species is the GenBank assembly GCA_903928615.1. The GC content of the type genome is 71.74 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Funamaria gen. nov.

Candidatus Funamaria (NL. fem. n. *Funamaria* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYFI01*. The type species for the genus is *Candidatus* Funamaria artolessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077560*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadurellaceae.

Description of *Candidatus* Funamaria celamibra sp. nov.

Candidatus Funamaria celamibra (NL. fem. n. *celamibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFI01 sp005800465*. The type genome for the species is the GenBank assembly GCA_005800465.1. The GC content of the type genome is 66.99 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Funamaria fefelifica sp. nov.

Candidatus Funamaria fefelifica (NL. fem. n. *fefelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFI01 sp903943955*. The type genome for the species is the GenBank assembly GCA_903939585.1. The GC content of the type genome is 67.17 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Funamaria labecimonas sp. nov.

Candidatus Funamaria labecimonas (NL. fem. n. *labecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFI01 sp005788075*. The type genome for the species is the GenBank assembly GCA_005788075.1. The GC content of the type genome is 71.8 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Funamaria linigentia sp. nov.

Candidatus Funamaria linigentia (NL. fem. n. *linigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFI01 sp005792725*. The type genome for the species is the GenBank assembly GCA_005776805.1. The GC content of the type genome is 71.96 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Funamaria manomimonas sp. nov.

Candidatus Funamaria manomimonas (NL. fem. n. *manomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFI01 sp903866425*. The type genome for the species is the GenBank assembly GCA_903866425.1. The GC content of the type genome is 68.53 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Funamaria morigitudo sp. nov.

Candidatus Funamaria morigitudo (NL. fem. n. *morigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFI01 sp009694365*. The type genome for the species is the GenBank assembly GCA_009694365.1. The GC content of the type genome is 68.14 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Funamella televiforma sp. nov.

Candidatus Funamella televiforma (NL. fem. n. *televiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-48-14 sp001822835*. The type genome for the species is the GenBank assembly GCA_001822935.1. The GC content of the type genome is 48.01 % and the genome length is 0.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Funamella gen. nov.

Candidatus Funamella (NL. fem. n. *Funamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-48-14*. The type species for the genus is *Candidatus* Funamella televiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-58-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicodidaceae.

Description of *Candidatus* Funamia cinipitica sp. nov.

Candidatus Funamia cinipitica (NL. fem. n. *cinipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7656 sp002483445*. The type genome for the species is the GenBank assembly GCA_002483445.1. The GC content of the type genome is 54.55 % and the genome length is 8.15 Mbp.

Description of *Candidatus* Funamia gen. nov.

Candidatus Funamia (NL. fem. n. *Funamia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7656*. The type species for the genus is *Candidatus* Funamia cinipitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7656*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamiaceae.

Description of *Candidatus* Funamiaceae fam. nov.

Candidatus Funamiaceae (NL. fem. n. *Funamiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7656.* The type genus for the taxon is *Candidatus* Funamia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7656*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Funamiales.

Description of *Candidatus* Funamiales ord. nov.

Candidatus Funamiales (NL. fem. n. *Funamiales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7656.* The type genus for the taxon is *Candidatus* Funamia .

According to the GTDB R06-RS202, this order belongs to the class *Blastocatellia*.

Description of *Candidatus* Funamida casabitrix sp. nov.

Candidatus Funamida casabitrix (NL. fem. n. *casabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp002713545*. The type genome for the species is the GenBank assembly GCA_002480725.1. The GC content of the type genome is 42.72 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Funamida gen. nov.

Candidatus Funamida (NL. fem. n. *Funamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MedAcidi-G1*. The type species for the genus is *Candidatus* Funamida casabitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MedAcidi-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamidaceae.

Description of *Candidatus* Funamidaceae fam. nov.

Candidatus Funamidaceae (NL. fem. n. *Funamidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MedAcidi-G1.* The type genus for the taxon is *Candidatus* Funamida .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Funamida colapifica sp. nov.

Candidatus Funamida colapifica (NL. fem. n. *colapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp002299135*. The type genome for the species is the GenBank assembly GCA_002299135.1. The GC content of the type genome is 42.6 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Funamida demadicella sp. nov.

Candidatus Funamida demadicella (NL. fem. n. *demadicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp000817085*. The type genome for the species is the GenBank assembly GCA_002360055.1. The GC content of the type genome is 42.41 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Funamida derecimonia sp. nov.

Candidatus Funamida derecimonia (NL. fem. n. *derecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp002716285*. The type genome for the species is the GenBank assembly GCA_002716285.1. The GC content of the type genome is 42.87 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Funamida giganessa sp. nov.

Candidatus Funamida giganessa (NL. fem. n. *giganessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp002699555*. The type genome for the species is the GenBank assembly GCA_002699555.1. The GC content of the type genome is 41.2 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Funamida inhorastra sp. nov.

Candidatus Funamida inhorastra (NL. fem. n. *inhorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp002721755*. The type genome for the species is the GenBank assembly GCA_002721755.1. The GC content of the type genome is 42.5 %

and the genome length is 1.55 Mbp.

Description of *Candidatus* Funamida negidicella sp. nov.

Candidatus Funamida negidicella (NL. fem. n. *negidicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp002294285*. The type genome for the species is the GenBank assembly GCA_002725355.1. The GC content of the type genome is 43.08 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Funamida nugigitura sp. nov.

Candidatus Funamida nugigitura (NL. fem. n. *nugigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp002730515*. The type genome for the species is the GenBank assembly GCA_002730515.1. The GC content of the type genome is 41.84 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Funamida panifibra sp. nov.

Candidatus Funamida panifibra (NL. fem. n. *panifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp002729765*. The type genome for the species is the GenBank assembly GCA_002500585.1. The GC content of the type genome is 42.52 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Funamida vanidilega sp. nov.

Candidatus Funamida vanidilega (NL. fem. n. *vanidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G1 sp003214465*. The type genome for the species is the GenBank assembly GCA_003214465.1. The GC content of the type genome is 42.38 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Funamosa humecitica sp. nov.

Candidatus Funamosa humecitica (NL. fem. n. *humecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BuS5 sp000472805*. The type genome for the species is the GenBank assembly RS_GCF_000472805.1. The GC content of the type genome is 41.28 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Funamosa gen. nov.

Candidatus Funamosa (NL. fem. n. *Funamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BuS5*. The type species for the genus is *Candidatus* Funamosa humecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BuS5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamosaceae.

Description of *Candidatus* Funamosaceae fam. nov.

Candidatus Funamosaceae (NL. fem. n. *Funamosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BuS5.* The type genus for the taxon is *Candidatus* Funamosa .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Funamula appagitia sp. nov.

Candidatus Funamula appagitia (NL. fem. n. *appagitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF1-51-8 sp013177895*. The type genome for the species is the GenBank assembly GCA_013177895.1. The GC content of the type genome is 49.57 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Funamula gen. nov.

Candidatus Funamula (NL. fem. n. *Funamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF1-51-8*. The type species for the genus is *Candidatus* Funamula appagitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF1-51-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamulaceae.

Description of *Candidatus* Funamulaceae fam. nov.

Candidatus Funamulaceae (NL. fem. n. *Funamulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF1-51-8.* The type genus for the taxon is *Candidatus* Funamula .

According to GTDB R06-RS202, this family belongs to the order *Brevinematales*.

Description of *Candidatus* Funamula cepulugo sp. nov.

Candidatus Funamula cepulugo (NL. fem. n. *cepulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF1-51-8 sp001829395*. The type genome for the species is the GenBank assembly GCA_001829395.1. The GC content of the type genome is 49.25 % and the genome length is 2.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.1 filter".

Description of *Candidatus* Funamula fecunimonia sp. nov.

Candidatus Funamula fecunimonia (NL. fem. n. *fecunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF1-51-8 sp001829415*. The type genome for the species is the GenBank assembly GCA_001829415.1. The GC content of the type genome is 50.89 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.1 filter".

Description of *Candidatus* Fundidesulfovibrio purulitudo sp. nov.

Candidatus Fundidesulfovibrio purulitudo (NL. fem. n. *purulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fundidesulfovibrio sp009773665*. The type genome for the species is the GenBank assembly GCA_009773665.1. The GC content of the type genome is 62.14 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Fundidesulfovibrio televilenta sp. nov.

Candidatus Fundidesulfovibrio televilenta (NL. fem. n. *televilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fundidesulfovibrio sp013019105*. The type genome for the species is the GenBank assembly RS_GCF_013019105.1. The GC content of the type genome is 67.54 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Funebana venefimonia sp. nov.

Candidatus Funebana venefimonia (NL. fem. n. *venefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002787375 sp002778965*. The type genome for the species is the GenBank assembly GCA_002787375.1. The GC content of the type genome is 37.15 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Funebana gen. nov.

Candidatus Funebana (NL. fem. n. *Funebana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002787375*. The type species for the genus is *Candidatus* Funebana venefimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-42-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodidaceae.

Description of *Candidatus* Funebaria biveritura sp. nov.

Candidatus Funebaria biveritura (NL. fem. n. *biveritura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1123 sp002313895*. The type genome for the species is the GenBank assembly GCA_002313895.1. The GC content of the type genome is 55.77 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Funebaria gen. nov.

Candidatus Funebaria (NL. fem. n. *Funebaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1123*. The type species for the genus is *Candidatus* Funebaria biveritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resupellaceae.

Description of *Candidatus* Funebaria solifitica sp. nov.

Candidatus Funebaria solifitica (NL. fem. n. *solifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1123 sp002710885*. The type genome for the species is the GenBank assembly GCA_002710885.1. The GC content of the type genome is 55.39 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Funebella benivitio sp. nov.

Candidatus Funebella benivitio (NL. fem. n. *benivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQCK01 sp903870275*. The type genome for the species is the GenBank assembly GCA_903919265.1. The GC content of the type genome is 61.7 % and the genome length is 7.24 Mbp.

Description of *Candidatus* Funebella gen. nov.

Candidatus Funebella (NL. fem. n. *Funebella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQCK01*. The type species for the genus is *Candidatus* Funebella benivitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIQCK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funebellaceae.

Description of *Candidatus* Funebellaceae fam. nov.

Candidatus Funebellaceae (NL. fem. n. *Funebellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIQCK01.* The type genus for the taxon is *Candidatus* Funebella .

According to the original version of GTDB R06-RS202, this family belongs to the order *Palsa-1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipalanales.

Description of *Candidatus* Funebia bicipatica sp. nov.

Candidatus Funebia bicipatica (NL. fem. n. *bicipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-50-16-A sp001828605*. The type genome for the species is the GenBank assembly GCA_001828385.1. The GC content of the type genome is 50.33 % and the genome length is 1.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Funebia gen. nov.

Candidatus Funebia (NL. fem. n. *Funebia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-50-16-A*. The type species for the genus is *Candidatus* Funebia bicipatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-50-16-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funebiaceae.

Description of *Candidatus* Funebiaceae fam. nov.

Candidatus Funebiaceae (NL. fem. n. *Funebiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-50-16-A.* The type genus for the taxon is *Candidatus* Funebia .

According to GTDB R06-RS202, this family belongs to the order *Brocadiales*.

Description of *Candidatus* Funebida adsicastra sp. nov.

Candidatus Funebida adsicastra (NL. fem. n. *adsicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002704185 sp002704185*. The type genome for the species is the GenBank assembly GCA_002704185.1. The GC content of the type genome is 28.35 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Funebida gen. nov.

Candidatus Funebida (NL. fem. n. *Funebida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002704185*. The type species for the genus is *Candidatus* Funebida adsicastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Funebida pecunivita sp. nov.

Candidatus Funebida pecunivita (NL. fem. n. *pecunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002704185 sp902517865*. The type genome for the species is the GenBank assembly GCA_902517865.1. The GC content of the type genome is 29.41 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Funebida televitoga sp. nov.

Candidatus Funebida televitoga (NL. fem. n. *televitoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002704185 sp003280495*. The type genome for the species is the GenBank assembly GCA_902588515.1. The GC content of the type genome is 29.63 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Funebosa adpecago sp. nov.

Candidatus Funebosa adpecago (NL. fem. n. *adpecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp007571305*. The type genome for the species is the GenBank assembly GCA_007571305.1. The GC content of the type genome is 47.27 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Funebosa gen. nov.

Candidatus Funebosa (NL. fem. n. *Funebosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WGA-3G*. The type species for the genus is *Candidatus* Funebosa adpecago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WGA-3G*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funebosaceae.

Description of *Candidatus* Funebosaceae fam. nov.

Candidatus Funebosaceae (NL. fem. n. *Funebosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WGA-3G.* The type genus for the taxon is *Candidatus* Funebosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *WGA-4E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Demociales.

Description of *Candidatus* Funebosa annubicula sp. nov.

Candidatus Funebosa annubicula (NL. fem. n. *annubicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp012270875*. The type genome for the species is the GenBank assembly GCA_012270875.1. The GC content of the type genome is 47.5 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Funebosa cibaribra sp. nov.

Candidatus Funebosa cibaribra (NL. fem. n. *cibaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp009845545*. The type genome for the species is the GenBank assembly GCA_009838805.1. The GC content of the type genome is 47.62 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Funebosa cocodatica sp. nov.

Candidatus Funebosa cocodatica (NL. fem. n. *cocodatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp003635195*. The type genome for the species is the GenBank assembly GCA_003635195.1. The GC content of the type genome is 47.26 % and the genome length is 6.45 Mbp.

Description of *Candidatus* Funebosa decacetta sp. nov.

Candidatus Funebosa decacetta (NL. fem. n. *decacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp000406005*. The type genome for the species is the GenBank assembly GCA_000406005.1. The GC content of the type genome is 47.79 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Funebosa ecastastra sp. nov.

Candidatus Funebosa ecastastra (NL. fem. n. *ecastastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp007571355*. The type genome for the species is the GenBank assembly GCA_007571355.1. The GC content of the type genome is 48.27 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Funebosa eviscousia sp. nov.

Candidatus Funebosa eviscousia (NL. fem. n. *eviscousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp012270865*. The type genome for the species is the GenBank assembly GCA_012270865.1. The GC content of the type genome is 47.98 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Funebosa hemiditas sp. nov.

Candidatus Funebosa hemiditas (NL. fem. n. *hemiditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp012271015*. The type genome for the species is the GenBank assembly GCA_012271015.1. The GC content of the type genome is 47.9 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Funebosa repuredo sp. nov.

Candidatus Funebosa repuredo (NL. fem. n. *repuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp009843785*. The type genome for the species is the GenBank assembly GCA_009839085.1. The GC content of the type genome is 47.99 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Funebosa serotax sp. nov.

Candidatus Funebosa serotax (NL. fem. n. *serotax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp009839745*. The type genome for the species is the GenBank assembly GCA_009839745.1. The GC content of the type genome is 48.23 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Funebosa siligetta sp. nov.

Candidatus Funebosa siligetta (NL. fem. n. *siligetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp009841255*. The type genome for the species is the GenBank assembly GCA_009841255.1. The GC content of the type genome is 48.28 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Funebosa vinulatio sp. nov.

Candidatus Funebosa vinulatio (NL. fem. n. *vinulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp009835515*. The type genome for the species is the GenBank assembly GCA_009839665.1. The GC content of the type genome is 47.66 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Funebosa visifitio sp. nov.

Candidatus Funebosa visifitio (NL. fem. n. *visifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WGA-3G sp003635255*. The type genome for the species is the GenBank assembly GCA_003635255.1. The GC content of the type genome is 47.28 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Funebula defacitia sp. nov.

Candidatus Funebula defacitia (NL. fem. n. *defacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2689925 sp002689925*. The type genome for the species is the GenBank assembly GCA_002689925.1. The GC content of the type genome is 29.15 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Funebula gen. nov.

Candidatus Funebula (NL. fem. n. *Funebula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2689925*. The type species for the genus is *Candidatus* Funebula defacitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Funivana benemitica sp. nov.

Candidatus Funivana benemitica (NL. fem. n. *benemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXK01 sp902538705*. The type genome for the species is the GenBank assembly GCA_902538705.1. The GC content of the type genome is 34.06 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Funivana gen. nov.

Candidatus Funivana (NL. fem. n. *Funivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACNXK01*. The type species for the genus is *Candidatus* Funivana benemitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Funivana cacomigena sp. nov.

Candidatus Funivana cacomigena (NL. fem. n. *cacomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXK01 sp902557575*. The type genome for the species is the GenBank assembly GCA_902557575.1. The GC content of the type genome is 34.26 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Funivana defacedo sp. nov.

Candidatus Funivana defacedo (NL. fem. n. *defacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXK01 sp902622845*. The type genome for the species is the GenBank assembly GCA_902599965.1. The GC content of the type genome is 34.11 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Funivana gemebivita sp. nov.

Candidatus Funivana gemebivita (NL. fem. n. *gemebivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXK01 sp902518715*. The type genome for the species is the GenBank assembly GCA_902589515.1. The GC content of the type genome is 34.19 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Funivana inheribula sp. nov.

Candidatus Funivana inheribula (NL. fem. n. *inheribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXK01 sp902624425*. The type genome for the species is the GenBank assembly GCA_902624425.1. The GC content of the type genome is 34.41 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Funivana menapitura sp. nov.

Candidatus Funivana menapitura (NL. fem. n. *menapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXK01 sp902594005*. The type genome for the species is the GenBank assembly GCA_902594005.1. The GC content of the type genome is 34.3 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Funivana pimenatio sp. nov.

Candidatus Funivana pimenatio (NL. fem. n. *pimenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXK01 sp902541365*. The type genome for the species is the GenBank assembly GCA_902541365.1. The GC content of the type genome is 34.06 %

and the genome length is 1.02 Mbp.

Description of *Candidatus* Funivana sonipifica sp. nov.

Candidatus Funivana sonipifica (NL. fem. n. *sonipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACNXK01 sp902605165*. The type genome for the species is the GenBank assembly GCA_902518995.1. The GC content of the type genome is 34.07 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Funivaria monocedo sp. nov.

Candidatus Funivaria monocedo (NL. fem. n. *monocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-54-18 sp001797935*. The type genome for the species is the GenBank assembly GCA_001797935.1. The GC content of the type genome is 54.4 % and the genome length is 1.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Funivaria gen. nov.

Candidatus Funivaria (NL. fem. n. *Funivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-54-18*. The type species for the genus is *Candidatus* Funivaria monocedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-54-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funivariaceae.

Description of *Candidatus* Funivariaceae fam. nov.

Candidatus Funivariaceae (NL. fem. n. *Funivariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-54-18.* The type genus for the taxon is *Candidatus* Funivaria .

According to the original version of GTDB R06-RS202, this family belongs to the order

B13-G15. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Panifiales.

Description of *Candidatus* Funivella antegilega sp. nov.

Candidatus Funivella antegilega (NL. fem. n. *antegilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTKD01 sp011524535*. The type genome for the species is the GenBank assembly GCA_011524535.1. The GC content of the type genome is 41.57 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Funivella gen. nov.

Candidatus Funivella (NL. fem. n. *Funivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTKD01*. The type species for the genus is *Candidatus* Funivella antegilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WTKD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funivellaceae.

Description of *Candidatus* Funivellaceae fam. nov.

Candidatus Funivellaceae (NL. fem. n. *Funivellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WTKD01.* The type genus for the taxon is *Candidatus* Funivella .

According to the original version of GTDB R06-RS202, this family belongs to the order *WTKD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Funivellales.

Description of *Candidatus* Funivellales ord. nov.

Candidatus Funivellales (NL. fem. n. *Funivellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WTKD01.* The type genus for the taxon is *Candidatus* Funivella .

According to the GTDB R06-RS202, this order belongs to the class *Spirochaetia*.

Description of *Candidatus* Funivida cicilicula sp. nov.

Candidatus Funivida cicilicula (NL. fem. n. *cicilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2333 sp002344895*. The type genome for the species is the GenBank assembly GCA_002344895.1. The GC content of the type genome is 50.79 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Funivida gen. nov.

Candidatus Funivida (NL. fem. n. *Funivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2333*. The type species for the genus is *Candidatus* Funivida cicilicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Funivosa pedepastra sp. nov.

Candidatus Funivosa pedepastra (NL. fem. n. *pedepastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-all-39-27 sp002786715*. The type genome for the species is the GenBank assembly GCA_002786715.1. The GC content of the type genome is 38.75 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Funivosa gen. nov.

Candidatus Funivosa (NL. fem. n. *Funivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-all-39-27*. The type species for the genus is *Candidatus* Funivosa pedepastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Funivula catecibula sp. nov.

Candidatus Funivula catecibula (NL. fem. n. *catecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJHM01 sp014192625*. The type genome for the species is the GenBank assembly GCA_009691935.1. The GC content of the type genome is 60.5 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Funivula gen. nov.

Candidatus Funivula (NL. fem. n. *Funivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJHM01*. The type species for the genus is *Candidatus* Funivula catecibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifulaceae.

Description of *Candidatus* Furfurilactobacillus sonipitica sp. nov.

Candidatus Furfurilactobacillus sonipitica (NL. fem. n. *sonipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Furfurilactobacillus sp003482405*. The type genome for the species is the GenBank assembly GCA_002417945.1. The GC content of the type genome is 44.19 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Furibana desacimonia sp. nov.

Candidatus Furibana desacimonia (NL. fem. n. *desacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12438 sp902795725*. The type genome for the species is the GenBank assembly GCA_902795725.1. The GC content of the type genome is 26.71 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Furibana gen. nov.

Candidatus Furibana (NL. fem. n. *Furibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12438*. The type species for the genus is *Candidatus* Furibana desacimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Furibana inrefago sp. nov.

Candidatus Furibana inrefago (NL. fem. n. *inrefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12438 sp902779035*. The type genome for the species is the GenBank assembly GCA_902779035.1. The GC content of the type genome is 26.96 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Furibana monopetta sp. nov.

Candidatus Furibana monopetta (NL. fem. n. *monopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12438 sp902783215*. The type genome for the species is the GenBank assembly GCA_902783215.1. The GC content of the type genome is 25.49 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Furibana relapetta sp. nov.

Candidatus Furibana relapetta (NL. fem. n. *relapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12438 sp902801685*. The type genome for the species is the GenBank assembly GCA_902801975.1. The GC content of the type genome is 27.16 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Furibaria cinefousia sp. nov.

Candidatus Furibaria cinefousia (NL. fem. n. *cinefousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKUL01 sp007695365*. The type genome for the species is the GenBank assembly GCA_007695365.1. The GC content of the type genome is 49.32 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Furibaria gen. nov.

Candidatus Furibaria (NL. fem. n. *Furibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKUL01*. The type species for the genus is *Candidatus* Furibaria cinefousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Furibaria hemitessa sp. nov.

Candidatus Furibaria hemitessa (NL. fem. n. *hemitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKUL01 sp007129985*. The type genome for the species is the GenBank assembly GCA_007133755.1. The GC content of the type genome is 49.84 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Furibella foricivita sp. nov.

Candidatus Furibella foricivita (NL. fem. n. *foricivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1822 sp900545365*. The type genome for the species is the GenBank assembly GCA_900758645.1. The GC content of the type genome is 57.23 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Furibella gen. nov.

Candidatus Furibella (NL. fem. n. *Furibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA1822*. The type species for the genus is *Candidatus* Furibella foricivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Furibella solivitrix sp. nov.

Candidatus Furibella solivitrix (NL. fem. n. *solivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1822 sp002314995*. The type genome for the species is the GenBank assembly GCA_900552355.1. The GC content of the type genome is 58.35 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Furibia colepitrix sp. nov.

Candidatus Furibia colepitrix (NL. fem. n. *colepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNW01 sp007120305*. The type genome for the species is the GenBank assembly GCA_007120305.1. The GC content of the type genome is 69.56 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Furibia gen. nov.

Candidatus Furibia (NL. fem. n. *Furibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKNW01*. The type species for the genus is *Candidatus* Furibia colepitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Furibia induvigena sp. nov.

Candidatus Furibia induvigena (NL. fem. n. *induvigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SKNW01 sp007692665*. The type genome for the species is the GenBank assembly GCA_007692665.1. The GC content of the type genome is 69.66 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Furibida rarefitura sp. nov.

Candidatus Furibida rarefitura (NL. fem. n. *rarefitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6266 sp002440765*. The type genome for the species is the GenBank assembly GCA_002440765.1. The GC content of the type genome is 42.64 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Furibida gen. nov.

Candidatus Furibida (NL. fem. n. *Furibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6266*. The type species for the genus is *Candidatus* Furibida rarefitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6266*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Furibidaceae.

Description of *Candidatus* Furibidaceae fam. nov.

Candidatus Furibidaceae (NL. fem. n. *Furibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6266.* The type genus for the taxon is *Candidatus* Furibida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6266*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Furibidales.

Description of *Candidatus* Furibidales ord. nov.

Candidatus Furibidales (NL. fem. n. *Furibidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6266.* The type genus for the taxon is *Candidatus* Furibida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6266*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Furibidae.

Description of *Candidatus* Furibidae class. nov.

Candidatus Furibidae (NL. fem. n. *c__Furibidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6266.* The type genus for the taxon is *Candidatus* Furibida .

According to GTDB R06-RS202, this class belongs to the phylum *Aureabacteria*.

Description of *Candidatus* Furibosa legififorma sp. nov.

Candidatus Furibosa legififorma (NL. fem. n. *legififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2775 sp002352445*. The type genome for the species is the GenBank assembly GCA_002352445.1. The GC content of the type genome is 45.03 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Furibosa gen. nov.

Candidatus Furibosa (NL. fem. n. *Furibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2775*. The type species for the genus is *Candidatus* Furibosa legififorma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Furibosa semifugo sp. nov.

Candidatus Furibosa semifugo (NL. fem. n. *semifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2775 sp001750925*. The type genome for the species is the GenBank assembly GCA_001751145.1. The GC content of the type genome is 44.8 % and the genome length is 3.46 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "combined push core samples #3730; #5133; and #5579 collected at Hydrate Ridge".

Description of *Candidatus* Furibula abantedo sp. nov.

Candidatus Furibula abantedo (NL. fem. n. *abantedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-40-8 sp001769925*. The type genome for the species is the GenBank assembly GCA_001769925.1. The GC content of the type genome is 40.1 % and the genome length is 2.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Furibula gen. nov.

Candidatus Furibula (NL. fem. n. *Furibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-40-8*. The type species for the genus is *Candidatus* Furibula abantedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1609*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifanaceae.

Description of *Candidatus* Furibula refacitio sp. nov.

Candidatus Furibula refacitio (NL. fem. n. *refacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-40-8 sp903833275*. The type genome for the species is the GenBank assembly GCA_903898225.1. The GC content of the type genome is 48.59 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Fusibacter apperilenta sp. nov.

Candidatus Fusibacter apperilenta (NL. fem. n. *apperilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Fusibacter_A sp002452745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002452745.1. The GC content of the type genome is 40.19 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Fusibacter revecigena sp. nov.

Candidatus Fusibacter revecigena (NL. fem. n. *revecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusibacter_A sp001748365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001748365.1. The GC content of the type genome is 37.64 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Fusibacter bigarilega sp. nov.

Candidatus Fusibacter bigarilega (NL. fem. n. *bigarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusibacter_B sp004125825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013166675.1. The GC content of the type genome is 42.88 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Fusicatenibacter defosimonia sp. nov.

Candidatus Fusicatenibacter defosimonia (NL. fem. n. *defosimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusicatenibacter sp900543115*. The type genome for the species is the GenBank assembly GCA_900543115.1. The GC content of the type genome is 49.23 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Fusicatenibacter pavimessa sp. nov.

Candidatus Fusicatenibacter pavimessa (NL. fem. n. *pavimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusicatenibacter sp900772675*. The type genome for the species is the GenBank assembly RS_GCF_900772675.1. The GC content of the type genome is 48.29 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Fusifana bipinessa sp. nov.

Candidatus Fusifana bipinessa (NL. fem. n. *bipinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAACVY01 sp900661335*. The type genome for the species is the GenBank assembly GCA_900661335.1. The GC content of the type genome is 62.09 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Fusifana gen. nov.

Candidatus Fusifana (NL. fem. n. *Fusifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAACVY01*. The type species for the genus is *Candidatus* Fusifana bipinessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAACVY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fusifanaceae.

Description of *Candidatus* Fusifanaceae fam. nov.

Candidatus Fusifanaceae (NL. fem. n. *Fusifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAACVY01.* The type genus for the taxon is *Candidatus* Fusifana .

According to the original version of GTDB R06-RS202, this family belongs to the order *B70-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Retuniales.

Description of *Candidatus* Fusifaria malagimonia sp. nov.

Candidatus Fusifaria malagimonia (NL. fem. n. *malagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-900161835 sp900161835*. The type genome for the species is the GenBank assembly RS_GCF_900161835.1. The GC content of the type genome is 36.78 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Fusifaria gen. nov.

Candidatus Fusifaria (NL. fem. n. *Fusifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-900161835*. The type species for the genus is *Candidatus* Fusifaria malagimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fusifia arnogilenta sp. nov.

Candidatus Fusifia arnogilenta (NL. fem. n. *arnogilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXMI01 sp903925745*. The type genome for the species is the GenBank assembly GCA_903925745.1. The GC content of the type genome is 71.49 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Fusifia gen. nov.

Candidatus Fusifia (NL. fem. n. *Fusifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXMI01*. The type species for the genus is *Candidatus* Fusifia arnogilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Fusifia caravilenta sp. nov.

Candidatus Fusifia caravilenta (NL. fem. n. *caravilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXMI01 sp005777415*. The type genome for the species is the

GenBank assembly GCA_005800085.1. The GC content of the type genome is 72.03 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Fusifia detepitoga sp. nov.

Candidatus Fusifia detepitoga (NL. fem. n. *detepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXMI01 sp903873135*. The type genome for the species is the GenBank assembly GCA_903846395.1. The GC content of the type genome is 72.3 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Fusifia fumacicella sp. nov.

Candidatus Fusifia fumacicella (NL. fem. n. *fumacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXMI01 sp903852755*. The type genome for the species is the GenBank assembly GCA_903877695.1. The GC content of the type genome is 71.66 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Fusifia lupanivita sp. nov.

Candidatus Fusifia lupanivita (NL. fem. n. *lupanivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXMI01 sp903953195*. The type genome for the species is the GenBank assembly GCA_903953195.1. The GC content of the type genome is 70.21 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Fusifida almucicella sp. nov.

Candidatus Fusifida almucicella (NL. fem. n. *almucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12294 sp011362695*. The type genome for the species is the GenBank assembly GCA_011362695.1. The GC content of the type genome is 53.08 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Fusifida gen. nov.

Candidatus Fusifida (NL. fem. n. *Fusifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12294*. The type species for the genus is *Candidatus* Fusifida almucicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Fusifida conopentia sp. nov.

Candidatus Fusifida conopentia (NL. fem. n. *conopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12294 sp002050275*. The type genome for the species is the GenBank assembly GCA_002050275.1. The GC content of the type genome is 52.62 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Fusifida conubugo sp. nov.

Candidatus Fusifida conubugo (NL. fem. n. *conubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12294 sp003577395*. The type genome for the species is the GenBank assembly GCA_003577395.1. The GC content of the type genome is 53.68 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Fusifida daducicella sp. nov.

Candidatus Fusifida daducicella (NL. fem. n. *daducicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12294 sp011331405*. The type genome for the species is the GenBank assembly GCA_011331405.1. The GC content of the type genome is 54.39 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Fusifida detepilenta sp. nov.

Candidatus Fusifida detepilenta (NL. fem. n. *detepilenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12294 sp013388685*. The type genome for the species is the GenBank assembly GCA_013388685.1. The GC content of the type genome is 56.8 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Fusifida infabibula sp. nov.

Candidatus Fusifida infabibula (NL. fem. n. *infabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12294 sp003484265*. The type genome for the species is the GenBank assembly GCA_003484265.1. The GC content of the type genome is 50.28 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Fusifida nubigessa sp. nov.

Candidatus Fusifida nubigessa (NL. fem. n. *nubigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12294 sp002418205*. The type genome for the species is the GenBank assembly GCA_012026985.1. The GC content of the type genome is 54.88 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Fusifida nugacibula sp. nov.

Candidatus Fusifida nugacibula (NL. fem. n. *nugacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12294 sp013360875*. The type genome for the species is the GenBank assembly GCA_013360875.1. The GC content of the type genome is 56.84 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Fusifosa adrumedo sp. nov.

Candidatus Fusifosa adrumedo (NL. fem. n. *adrumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG563 sp902793245*. The type genome for the species is the GenBank assembly GCA_902793245.1. The GC content of the type genome is 58.13 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Fusifosa gen. nov.

Candidatus Fusifosa (NL. fem. n. *Fusifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG563*. The type species for the genus is *Candidatus* Fusifosa adrumedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Fusifosa apsenago sp. nov.

Candidatus Fusifosa apsenago (NL. fem. n. *apsenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG563 sp902773895*. The type genome for the species is the GenBank assembly GCA_902773895.1. The GC content of the type genome is 60.18 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Fusifosa categisca sp. nov.

Candidatus Fusifosa categisca (NL. fem. n. *categisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG563 sp902788445*. The type genome for the species is the GenBank assembly GCA_902788445.1. The GC content of the type genome is 58.08 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Fusifosa detenitudo sp. nov.

Candidatus Fusifosa detenitudo (NL. fem. n. *detenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RUG563 sp902764565*. The type genome for the species is the GenBank assembly GCA_902764565.1. The GC content of the type genome is 58.47 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Fusifosa funebitia sp. nov.

Candidatus Fusifosa funebitia (NL. fem. n. *funebitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG563 sp900320085*. The type genome for the species is the GenBank assembly GCA_902756175.1. The GC content of the type genome is 57.91 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Fusifosa pecunibra sp. nov.

Candidatus Fusifosa pecunibra (NL. fem. n. *pecunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG563 sp902801765*. The type genome for the species is the GenBank assembly GCA_902781075.1. The GC content of the type genome is 57.38 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Fusifosa sanabitoga sp. nov.

Candidatus Fusifosa sanabitoga (NL. fem. n. *sanabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG563 sp902795275*. The type genome for the species is the GenBank assembly GCA_902789635.1. The GC content of the type genome is 58.63 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Fusifosa venabitura sp. nov.

Candidatus Fusifosa venabitura (NL. fem. n. *venabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG563 sp902761755*. The type genome for the species is the GenBank assembly GCA_902761755.1. The GC content of the type genome is 61.57 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Fusifula amnenitudo sp. nov.

Candidatus Fusifula amnenitudo (NL. fem. n. *amnenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED113 sp002715445*. The type genome for the species is the GenBank assembly GCA_002715445.1. The GC content of the type genome is 28.61 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Fusifula gen. nov.

Candidatus Fusifula (NL. fem. n. *Fusifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED113*. The type species for the genus is *Candidatus* Fusifula amnenitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fusifulaceae.

Description of *Candidatus* Fusifulaceae fam. nov.

Candidatus Fusifulaceae (NL. fem. n. *Fusifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED113.* The type genus for the taxon is *Candidatus* Fusifula .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Fusifula rinocugo sp. nov.

Candidatus Fusifula rinocugo (NL. fem. n. *rinocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED113 sp002170235*. The type genome for the species is the GenBank assembly GCA_002170235.1. The GC content of the type genome is 29.89 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Fusobacterium forinetta sp. nov.

Candidatus Fusobacterium forinetta (NL. fem. n. *forinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium sp000235465*. The type genome for the species is the GenBank assembly RS_GCF_000235465.1. The GC content of the type genome is 27.5 % and the genome length is 2.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Fusobacterium artocitica sp. nov.

Candidatus Fusobacterium artocitica (NL. fem. n. *artocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_A sp900764925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900764925.1. The GC content of the type genome is 30.52 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Fusobacterium bifisicella sp. nov.

Candidatus Fusobacterium bifisicella (NL. fem. n. *bifisicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_A sp900555845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900555845.1. The GC content of the type genome is 29.29 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Fusobacterium bucelibula sp. nov.

Candidatus Fusobacterium bucelibula (NL. fem. n. *bucelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_A sp900015295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly RS_GCF_014337255.1. The GC content of the type genome is 29.05 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Fusobacterium depasax sp. nov.

Candidatus Fusobacterium depasax (NL. fem. n. *depasax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_A sp900549465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900549465.1. The GC content of the type genome is 29.87 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Fusobacterium oblivetta sp. nov.

Candidatus Fusobacterium oblivetta (NL. fem. n. *oblivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_A sp900555485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900555485.1. The GC content of the type genome is 28.56 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Fusobacterium renavitia sp. nov.

Candidatus Fusobacterium renavitia (NL. fem. n. *renavitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_A sp900543175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900765315.1. The GC content of the type genome is 29.5 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Fusobacterium alembatio sp. nov.

Candidatus Fusobacterium alembatio (NL. fem. n. *alembatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_B sp900542625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900542625.1. The GC content of the type genome is 31.49 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Fusobacterium apposicula sp. nov.

Candidatus Fusobacterium apposicula (NL. fem. n. *apposicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_B sp900545035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900545035.1. The GC content of the type genome is 32.12 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Fusobacterium benivilega sp. nov.

Candidatus Fusobacterium benivilega (NL. fem. n. *benivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_B sp900554355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900554355.1. The GC content of the type genome is 30.1 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Fusobacterium defunicula sp. nov.

Candidatus Fusobacterium defunicula (NL. fem. n. *defunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_B sp012843705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012843705.1. The GC content of the type genome is 26.23 % and the genome

length is 2.08 Mbp.

Description of *Candidatus* Fusobacterium didacitrix sp. nov.

Candidatus Fusobacterium didacitrix (NL. fem. n. *didacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_B sp010367435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010367435.1. The GC content of the type genome is 27.81 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Fusobacterium genocetta sp. nov.

Candidatus Fusobacterium genocetta (NL. fem. n. *genocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_B sp900541465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900541465.1. The GC content of the type genome is 30.65 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Fusobacterium rumifentia sp. nov.

Candidatus Fusobacterium rumifentia (NL. fem. n. *rumifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Fusobacterium_B sp900554885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900755635.1. The GC content of the type genome is 28.22 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Futatana abnocetta sp. nov.

Candidatus Futatana abnocetta (NL. fem. n. *abnocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-488 sp003486665*. The type genome for the species is the GenBank assembly GCA_003486665.1. The GC content of the type genome is 44.69 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Futatana gen. nov.

Candidatus Futatana (NL. fem. n. *Futatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-488*. The type species for the genus is *Candidatus* Futatana abnocetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Futatana bifaribra sp. nov.

Candidatus Futatana bifaribra (NL. fem. n. *bifaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-488 sp000434055*. The type genome for the species is the GenBank assembly GCA_004553365.1. The GC content of the type genome is 44.86 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Futatana funivimonia sp. nov.

Candidatus Futatana funivimonia (NL. fem. n. *funivimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-488 sp000434915*. The type genome for the species is the GenBank assembly GCA_000434915.1. The GC content of the type genome is 44.31 % and the genome length is 2.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Futatana gemebugo sp. nov.

Candidatus Futatana gemebugo (NL. fem. n. *gemebugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-488 sp900539465*. The type genome for the species is the GenBank assembly GCA_900539465.1. The GC content of the type genome is 44.04 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Futatana navicitica sp. nov.

Candidatus Futatana navicitica (NL. fem. n. *navicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-488 sp002449395*. The type genome for the species is the GenBank assembly GCA_002404725.1. The GC content of the type genome is 45.71 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Futatana semunitoga sp. nov.

Candidatus Futatana semunitoga (NL. fem. n. *semunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-488 sp002315505*. The type genome for the species is the GenBank assembly GCA_002315505.1. The GC content of the type genome is 40.23 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Futatana vitificella sp. nov.

Candidatus Futatana vitificella (NL. fem. n. *vitificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-488 sp900554995*. The type genome for the species is the GenBank assembly RS_GCF_900767395.1. The GC content of the type genome is 45.18 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Futataria adsicibula sp. nov.

Candidatus Futataria adsicibula (NL. fem. n. *adsicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-12 sp003598175*. The type genome for the species is the GenBank assembly GCA_003598175.1. The GC content of the type genome is 49.72 % and the genome length is 6.88 Mbp.

Description of *Candidatus* Futataria gen. nov.

Candidatus Futataria (NL. fem. n. *Futataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-12*. The type species for the genus is *Candidatus* Futataria adsicibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Futatariaceae.

Description of *Candidatus* Futatariaceae fam. nov.

Candidatus Futatariaceae (NL. fem. n. *Futatariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-12.* The type genus for the taxon is *Candidatus* Futataria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SURF-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Futatariales.

Description of *Candidatus* Futatariales ord. nov.

Candidatus Futatariales (NL. fem. n. *Futatariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-12.* The type genus for the taxon is *Candidatus* Futataria .

According to the original version of GTDB R06-RS202, this family belongs to the class *OLB16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Dehinanae.

Description of *Candidatus* Futatella saxopitas sp. nov.

Candidatus Futatella saxopitas (NL. fem. n. *saxopitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5206 sp002412705*. The type genome for the species is the GenBank assembly GCA_002412705.1. The GC content of the type genome is 42.96 %

and the genome length is 3.84 Mbp.

Description of *Candidatus* Futatella gen. nov.

Candidatus Futatella (NL. fem. n. *Futatella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5206*. The type species for the genus is *Candidatus* Futatella saxopitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BBW3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribiaceae.

Description of *Candidatus* Futatia deculax sp. nov.

Candidatus Futatia deculax (NL. fem. n. *deculax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5972 sp002430125*. The type genome for the species is the GenBank assembly GCA_013204485.1. The GC content of the type genome is 55.46 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Futatia gen. nov.

Candidatus Futatia (NL. fem. n. *Futatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5972*. The type species for the genus is *Candidatus* Futatia deculax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Futatia inpeletta sp. nov.

Candidatus Futatia inpeletta (NL. fem. n. *inpeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5972 sp013151335*. The type genome for the species is the GenBank assembly GCA_013151335.1. The GC content of the type genome is 56.24 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Futatia monacilega sp. nov.

Candidatus Futatia monacilega (NL. fem. n. *monacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5972 sp013151535*. The type genome for the species is the GenBank assembly GCA_013151535.1. The GC content of the type genome is 57.6 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Futatosa modifimonas sp. nov.

Candidatus Futatosa modifimonas (NL. fem. n. *modifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-15 sp003599475*. The type genome for the species is the GenBank assembly GCA_003599475.1. The GC content of the type genome is 54.29 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Futatosa gen. nov.

Candidatus Futatosa (NL. fem. n. *Futatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-15*. The type species for the genus is *Candidatus* Futatosa modifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Futatosaceae.

Description of *Candidatus* Futatosaceae fam. nov.

Candidatus Futatosaceae (NL. fem. n. *Futatosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-15.* The type genus for the taxon is *Candidatus* Futatosa .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Futatula colipicella sp. nov.

Candidatus Futatula colipicella (NL. fem. n. *colipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12481 sp903919065*. The type genome for the species is the GenBank assembly GCA_903919065.1. The GC content of the type genome is 45.04 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Futatula gen. nov.

Candidatus Futatula (NL. fem. n. *Futatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12481*. The type species for the genus is *Candidatus* Futatula colipicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12481*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Futatulaceae.

Description of *Candidatus* Futatulaceae fam. nov.

Candidatus Futatulaceae (NL. fem. n. *Futatulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12481.* The type genus for the taxon is *Candidatus* Futatula .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Futatula depacatica sp. nov.

Candidatus Futatula depacatica (NL. fem. n. *depacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12481 sp012523435*. The type genome for the species is the GenBank assembly GCA_012523435.1. The GC content of the type genome is 47.87 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Futatula desupitoga sp. nov.

Candidatus Futatula desupitoga (NL. fem. n. *desupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12481 sp903832165*. The type genome for the species is the GenBank assembly GCA_903832165.1. The GC content of the type genome is 45.71 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Futatula lubenitura sp. nov.

Candidatus Futatula lubenitura (NL. fem. n. *lubenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12481 sp007280905*. The type genome for the species is the GenBank assembly GCA_007280905.1. The GC content of the type genome is 44.79 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Futatula musulessa sp. nov.

Candidatus Futatula musulessa (NL. fem. n. *musulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12481 sp903851365*. The type genome for the species is the GenBank assembly GCA_903844595.1. The GC content of the type genome is 44.53 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Futatula notabitia sp. nov.

Candidatus Futatula notabitia (NL. fem. n. *notabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12481 sp001769295*. The type genome for the species is the GenBank assembly GCA_003487905.1. The GC content of the type genome is 48.97 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Futatula vatilessa sp. nov.

Candidatus Futatula vatilessa (NL. fem. n. *vatilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA12481 sp903919925*. The type genome for the species is the GenBank assembly GCA_903919925.1. The GC content of the type genome is 44.02 % and the genome length is 7.01 Mbp.

Description of *Candidatus* GBChlB acrifibra sp. nov.

Candidatus GBChlB acrifibra (NL. fem. n. *acrifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *GBChlB sp000724175*. The type genome for the species is the GenBank assembly GCA_000724175.1. The GC content of the type genome is 50.89 % and the genome length is 3.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "microbial mat from hot spring".

Description of *Candidatus* GWF epitredo sp. nov.

Candidatus GWF epitredo (NL. fem. n. *epitredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *GWF sp003576945*. The type genome for the species is the GenBank assembly GCA_003576945.1. The GC content of the type genome is 44.44 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Gabinana accerousia sp. nov.

Candidatus Gabinana accerousia (NL. fem. n. *accerousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp902795965*. The type genome for the species is the GenBank assembly GCA_902795965.1. The GC content of the type genome is 36.44 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Gabinana gen. nov.

Candidatus Gabinana (NL. fem. n. *Gabinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Zag1*. The type species for the genus is *Candidatus* Gabinana accerousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gabinana baropisca sp. nov.

Candidatus Gabinana baropisca (NL. fem. n. *baropisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp900769355*. The type genome for the species is the GenBank assembly RS_GCF_900769355.1. The GC content of the type genome is 35.19 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Gabinana calipibra sp. nov.

Candidatus Gabinana calipibra (NL. fem. n. *calipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp001765415*. The type genome for the species is the GenBank assembly GCA_000431115.1. The GC content of the type genome is 32.72 % and the genome length is 1.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Gabinana cosidax sp. nov.

Candidatus Gabinana cosidax (NL. fem. n. *cosidax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp900556295*. The type genome for the species is the GenBank assembly RS_GCF_900769685.1. The GC content of the type genome is 33.65 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Gabinana curabicula sp. nov.

Candidatus Gabinana curabicula (NL. fem. n. *curabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp902772945*. The type genome for the species is the GenBank assembly GCA_902772945.1. The GC content of the type genome is 32.77 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Gabinana desupitas sp. nov.

Candidatus Gabinana desupitas (NL. fem. n. *desupitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp900555175*. The type genome for the species is the GenBank assembly GCA_900555175.1. The GC content of the type genome is 32.28 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Gabinana devecitio sp. nov.

Candidatus Gabinana devecitio (NL. fem. n. *devecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp000433095*. The type genome for the species is the GenBank assembly GCA_000433095.1. The GC content of the type genome is 34.36 % and the genome length is 2.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Gabinana mavoricula sp. nov.

Candidatus Gabinana mavoricula (NL. fem. n. *mavoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp001917115*. The type genome for the species is the GenBank assembly GCA_001899425.1. The GC content of the type genome is 34.12 % and the genome length is 2.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "human fecal sample".

Description of *Candidatus* Gabinana rubicibula sp. nov.

Candidatus Gabinana rubicibula (NL. fem. n. *rubicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp000437435*. The type genome for the species is the GenBank assembly GCA_000437435.1. The GC content of the type genome is 30.54 % and the genome length is 1.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Gabinana siminilenta sp. nov.

Candidatus Gabinana siminilenta (NL. fem. n. *siminilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp900767135*. The type genome for the species is the GenBank assembly RS_GCF_900767135.1. The GC content of the type genome is 34.42 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Gabinana subucibra sp. nov.

Candidatus Gabinana subucibra (NL. fem. n. *subucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp000438175*. The type genome for the species is the GenBank assembly GCA_900554865.1. The GC content of the type genome is 34.6 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Gabinana tenebousia sp. nov.

Candidatus Gabinana tenebousia (NL. fem. n. *tenebousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp900752845*. The type genome for the species is the GenBank assembly RS_GCF_900752845.1. The GC content of the type genome is 34.03 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Gabinana vehemax sp. nov.

Candidatus Gabinana vehemax (NL. fem. n. *vehemax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag1 sp900769645*. The type genome for the species is the GenBank assembly RS_GCF_900769645.1. The GC content of the type genome is 35.29 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Gabinana volucitia sp. nov.

Candidatus Gabinana volucitia (NL. fem. n. *volucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Zag1 sp900551675*. The type genome for the species is the GenBank assembly GCA_900551675.1. The GC content of the type genome is 35.03 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Gabinaria curacibula sp. nov.

Candidatus Gabinaria curacibula (NL. fem. n. *curacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11889 sp002708205*. The type genome for the species is the GenBank assembly GCA_002708205.1. The GC content of the type genome is 46.28 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Gabinaria gen. nov.

Candidatus Gabinaria (NL. fem. n. *Gabinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11889*. The type species for the genus is *Candidatus* Gabinaria curacibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Gabinaria decunitas sp. nov.

Candidatus Gabinaria decunitas (NL. fem. n. *decunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11889 sp002715785*. The type genome for the species is the GenBank assembly GCA_003509125.1. The GC content of the type genome is 53.16 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Gabinaria idipsax sp. nov.

Candidatus Gabinaria idipsax (NL. fem. n. *idipsax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11889 sp002313255*. The type genome for the species is the

GenBank assembly GCA_002313255.1. The GC content of the type genome is 53.34 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Gabinaria refulitrix sp. nov.

Candidatus Gabinaria refulitrix (NL. fem. n. *refulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11889 sp002719135*. The type genome for the species is the GenBank assembly GCA_002725075.1. The GC content of the type genome is 53.2 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Gabinella desomitudo sp. nov.

Candidatus Gabinella desomitudo (NL. fem. n. *desomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB6 sp001567175*. The type genome for the species is the GenBank assembly GCA_001567175.1. The GC content of the type genome is 49.74 % and the genome length is 2.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Gabinella gen. nov.

Candidatus Gabinella (NL. fem. n. *Gabinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB6*. The type species for the genus is *Candidatus* Gabinella desomitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gabinia cemenugo sp. nov.

Candidatus Gabinia cemenugo (NL. fem. n. *cemenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11164 sp002420085*. The type genome for the species is the

GenBank assembly GCA_003504955.1. The GC content of the type genome is 65.98 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Gabinia gen. nov.

Candidatus Gabinia (NL. fem. n. *Gabinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11164*. The type species for the genus is *Candidatus* Gabinia cemenugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gabinida decucitudo sp. nov.

Candidatus Gabinida decucitudo (NL. fem. n. *decucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNZU01 sp003978405*. The type genome for the species is the GenBank assembly GCA_003978405.1. The GC content of the type genome is 34.39 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Gabinida gen. nov.

Candidatus Gabinida (NL. fem. n. *Gabinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNZU01*. The type species for the genus is *Candidatus* Gabinida decucitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QNZT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recomellaceae.

Description of *Candidatus* Gabinosa diminilega sp. nov.

Candidatus Gabinosa diminilega (NL. fem. n. *diminilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7879 sp002500565*. The type genome for the species is the GenBank assembly GCA_002500565.1. The GC content of the type genome is 40.54 %

and the genome length is 1.15 Mbp.

Description of *Candidatus* Gabinosa gen. nov.

Candidatus Gabinosa (NL. fem. n. *Gabinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7879*. The type species for the genus is *Candidatus* Gabinosa diminilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7879*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gabinosaceae.

Description of *Candidatus* Gabinosaceae fam. nov.

Candidatus Gabinosaceae (NL. fem. n. *Gabinosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7879.* The type genus for the taxon is *Candidatus* Gabinosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7879*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Gabinosales.

Description of *Candidatus* Gabinosales ord. nov.

Candidatus Gabinosales (NL. fem. n. *Gabinosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7879.* The type genus for the taxon is *Candidatus* Gabinosa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Gabinosa refacitudo sp. nov.

Candidatus Gabinosa refacitudo (NL. fem. n. *refacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7879 sp002869105*. The type genome for the species is the GenBank assembly GCA_002869105.1. The GC content of the type genome is 42.85 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Gabinula vicecastra sp. nov.

Candidatus Gabinula vicecastra (NL. fem. n. *vicecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB13 sp001567485*. The type genome for the species is the GenBank assembly GCA_002050245.1. The GC content of the type genome is 62.76 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Gabinula gen. nov.

Candidatus Gabinula (NL. fem. n. *Gabinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB13*. The type species for the genus is *Candidatus* Gabinula vicecastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Gabonibacter caduribra sp. nov.

Candidatus Gabonibacter caduribra (NL. fem. n. *caduribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gabonibacter sp900543425*. The type genome for the species is the GenBank assembly GCA_900543425.1. The GC content of the type genome is 41.01 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Gaiella altipitura sp. nov.

Candidatus Gaiella altipitura (NL. fem. n. *altipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gaiella sp009694305*. The type genome for the species is the GenBank assembly GCA_009694305.1. The GC content of the type genome is 66.93 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Gaiella infacitas sp. nov.

Candidatus Gaiella infacitas (NL. fem. n. *infacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gaiella sp013694685*. The type genome for the species is the GenBank assembly GCA_013694685.1. The GC content of the type genome is 69.89 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Galacana decupiforma sp. nov.

Candidatus Galacana decupiforma (NL. fem. n. *decupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXOD01 sp005776885*. The type genome for the species is the GenBank assembly GCA_005776885.1. The GC content of the type genome is 66.64 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Galacana gen. nov.

Candidatus Galacana (NL. fem. n. *Galacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXOD01*. The type species for the genus is *Candidatus* Galacana decupiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Galacaria vepalitura sp. nov.

Candidatus Galacaria vepalitura (NL. fem. n. *vepalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-02-FULL-42-9 sp001801405*. The type genome for the species is the GenBank assembly GCA_001801405.1. The GC content of the type genome is 42.06 % and the genome length is 1.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Galacaria gen. nov.

Candidatus Galacaria (NL. fem. n. *Galacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-02-FULL-42-9*. The type species for the genus is *Candidatus* Galacaria vepalitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12402*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pimenosaceae.

Description of *Candidatus* Galacella navicivita sp. nov.

Candidatus Galacella navicivita (NL. fem. n. *navicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga6A1 sp900102385*. The type genome for the species is the GenBank assembly GCA_902780475.1. The GC content of the type genome is 45.33 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Galacella gen. nov.

Candidatus Galacella (NL. fem. n. *Galacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga6A1*. The type species for the genus is *Candidatus* Galacella navicivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Galacida solacatio sp. nov.

Candidatus Galacida solacatio (NL. fem. n. *solacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-42-15 sp001784055*. The type genome for the species is the GenBank assembly GCA_001784055.1. The GC content of the type genome is 41.18 % and the genome length is 0.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Galacida gen. nov.

Candidatus Galacida (NL. fem. n. *Galacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-42-15*. The type species for the genus is *Candidatus* Galacida solacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Galacosa cinefilega sp. nov.

Candidatus Galacosa cinefilega (NL. fem. n. *cinefilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUCV01 sp903897805*. The type genome for the species is the GenBank assembly GCA_903860925.1. The GC content of the type genome is 44.93 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Galacosa gen. nov.

Candidatus Galacosa (NL. fem. n. *Galacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUCV01*. The type species for the genus is *Candidatus* Galacosa cinefilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *IGHO2-01-FULL-4-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisulaceae.

Description of *Candidatus* Galacula bifisimonia sp. nov.

Candidatus Galacula bifisimonia (NL. fem. n. *bifisimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW4 sp002732825*. The type genome for the species is the GenBank assembly GCA_002732825.1. The GC content of the type genome is 58.17 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Galacula gen. nov.

Candidatus Galacula (NL. fem. n. *Galacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SW4*. The type species for the genus is *Candidatus* Galacula bifisimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gallibacterium lucerisca sp. nov.

Candidatus Gallibacterium lucerisca (NL. fem. n. *lucerisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallibacterium sp001678475*. The type genome for the species is the GenBank assembly RS_GCF_001678475.1. The GC content of the type genome is 36.63 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Gallibacterium navicedo sp. nov.

Candidatus Gallibacterium navicedo (NL. fem. n. *navicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallibacterium sp000771875*. The type genome for the species is the GenBank assembly RS_GCF_001678625.1. The GC content of the type genome is 38.3 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Gallionella almucetta sp. nov.

Candidatus Gallionella almucetta (NL. fem. n. *almucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp013043965*. The type genome for the species is the GenBank assembly GCA_013043965.1. The GC content of the type genome is 56.53 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Gallionella angipitura sp. nov.

Candidatus Gallionella angipitura (NL. fem. n. *angipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp003235435*. The type genome for the species is the GenBank assembly GCA_003235435.1. The GC content of the type genome is 54.22 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Gallionella catocentia sp. nov.

Candidatus Gallionella catocentia (NL. fem. n. *catocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp001801215*. The type genome for the species is the GenBank assembly GCA_001801215.1. The GC content of the type genome is 58.99 % and the genome length is 2.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Gallionella citivastra sp. nov.

Candidatus Gallionella citivastra (NL. fem. n. *citivastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp001801175*. The type genome for the species is the GenBank assembly GCA_001801175.1. The GC content of the type genome is 56.77 % and the genome length is 2.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Gallionella decacitrix sp. nov.

Candidatus Gallionella decacitrix (NL. fem. n. *decacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp013044075*. The type genome for the species is the GenBank assembly GCA_013044075.1. The GC content of the type genome is 56.89 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Gallionella defesago sp. nov.

Candidatus Gallionella defesago (NL. fem. n. *defesago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp903858965*. The type genome for the species is the GenBank assembly GCA_903928035.1. The GC content of the type genome is 55.19 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Gallionella dimidibra sp. nov.

Candidatus Gallionella dimidibra (NL. fem. n. *dimidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp903885165*. The type genome for the species is the GenBank assembly GCA_903853545.1. The GC content of the type genome is 52.26 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Gallionella famelitura sp. nov.

Candidatus Gallionella famelitura (NL. fem. n. *famelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp002381565*. The type genome for the species is the GenBank assembly GCA_002413725.1. The GC content of the type genome is 53.79 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Gallionella figilitudo sp. nov.

Candidatus Gallionella figilitudo (NL. fem. n. *figilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp001801105*. The type genome for the species is the GenBank assembly GCA_001801105.1. The GC content of the type genome is 61.2 % and the genome length is 2.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Gallionella homogetta sp. nov.

Candidatus Gallionella homogetta (NL. fem. n. *homogetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp003153155*. The type genome for the species is the GenBank assembly GCA_003153155.1. The GC content of the type genome is 54.24 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Gallionella illapitudo sp. nov.

Candidatus Gallionella illapitudo (NL. fem. n. *illapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp013141315*. The type genome for the species is the GenBank assembly GCA_013141315.1. The GC content of the type genome is 48.84 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Gallionella impuditura sp. nov.

Candidatus Gallionella impuditura (NL. fem. n. *impuditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp001801055*. The type genome for the species is the GenBank assembly GCA_001801055.1. The GC content of the type genome is 55.19 % and the genome length is 1.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Gallionella incenugo sp. nov.

Candidatus Gallionella incenugo (NL. fem. n. *incenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp004298605*. The type genome for the species is the GenBank assembly GCA_004298605.1. The GC content of the type genome is 58.46 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Gallionella invinedo sp. nov.

Candidatus Gallionella invinedo (NL. fem. n. *invinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Gallionella sp903934275*. The type genome for the species is the GenBank assembly GCA_903934275.1. The GC content of the type genome is 53.44 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Gallionella lutulatica sp. nov.

Candidatus Gallionella lutulatica (NL. fem. n. *lutulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp002403995*. The type genome for the species is the GenBank assembly GCA_002403995.1. The GC content of the type genome is 55.72 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Gallionella mahelivita sp. nov.

Candidatus Gallionella mahelivita (NL. fem. n. *mahelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp903915035*. The type genome for the species is the GenBank assembly GCA_903902465.1. The GC content of the type genome is 50.82 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Gallionella minurilenta sp. nov.

Candidatus Gallionella minurilenta (NL. fem. n. *minurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp903861075*. The type genome for the species is the GenBank assembly GCA_903856785.1. The GC content of the type genome is 48.51 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Gallionella murililega sp. nov.

Candidatus Gallionella murililega (NL. fem. n. *murililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp903876685*. The type genome for the species is the GenBank assembly GCA_903876685.1. The GC content of the type genome is 50.43 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Gallionella recoritio sp. nov.

Candidatus Gallionella recoritio (NL. fem. n. *recoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp001801085*. The type genome for the species is the GenBank assembly GCA_003521785.1. The GC content of the type genome is 59.98 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Gallionella resacago sp. nov.

Candidatus Gallionella resacago (NL. fem. n. *resacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp002780675*. The type genome for the species is the GenBank assembly GCA_003530225.1. The GC content of the type genome is 54.46 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Gallionella robigetta sp. nov.

Candidatus Gallionella robigetta (NL. fem. n. *robigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp002414205*. The type genome for the species is the GenBank assembly GCA_002321645.1. The GC content of the type genome is 57.16 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Gallionella serotisca sp. nov.

Candidatus Gallionella serotisca (NL. fem. n. *serotisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp003134595*. The type genome for the species is the GenBank assembly GCA_003134595.1. The GC content of the type genome is 54.46 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Gallionella solipigena sp. nov.

Candidatus Gallionella solipigena (NL. fem. n. *solipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp001801025*. The type genome for the species is the GenBank assembly GCA_003523045.1. The GC content of the type genome is 52.81 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Gallionella xeramago sp. nov.

Candidatus Gallionella xeramago (NL. fem. n. *xeramago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gallionella sp002429165*. The type genome for the species is the GenBank assembly GCA_002429165.1. The GC content of the type genome is 55.52 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Galliscardovia satacitia sp. nov.

Candidatus Galliscardovia satacitia (NL. fem. n. *satacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Galliscardovia sp010667695*. The type genome for the species is the GenBank assembly RS_GCF_010667695.1. The GC content of the type genome is 63.58 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Garciella mahelilega sp. nov.

Candidatus Garciella mahelilega (NL. fem. n. *mahelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Garciella sp900555725*. The type genome for the species is the GenBank assembly GCA_900555725.1. The GC content of the type genome is 34.52 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Gasifana gabinitica sp. nov.

Candidatus Gasifana gabinitica (NL. fem. n. *gabinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA11471 sp900542765*. The type genome for the species is the GenBank assembly GCA_900542765.1. The GC content of the type genome is 53.15 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Gasifana gen. nov.

Candidatus Gasifana (NL. fem. n. *Gasifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11471*. The type species for the genus is *Candidatus* Gasifana gabinitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11471*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasifanaceae.

Description of *Candidatus* Gasifanaceae fam. nov.

Candidatus Gasifanaceae (NL. fem. n. *Gasifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11471*. The type genus for the taxon is *Candidatus* Gasifana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Gasifana labecigena sp. nov.

Candidatus Gasifana labecigena (NL. fem. n. *labecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11471 sp900547555*. The type genome for the species is the GenBank assembly GCA_900547555.1. The GC content of the type genome is 46.17 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Gasifana vehicessa sp. nov.

Candidatus Gasifana vehicessa (NL. fem. n. *vehicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11471 sp000434215*. The type genome for the species is the GenBank assembly GCA_000434215.1. The GC content of the type genome is 45.67 %

and the genome length is 2.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Gasifaria derecilenta sp. nov.

Candidatus Gasifaria derecilenta (NL. fem. n. *derecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBGR01 sp005880695*. The type genome for the species is the GenBank assembly GCA_005880435.1. The GC content of the type genome is 67.65 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Gasifaria gen. nov.

Candidatus Gasifaria (NL. fem. n. *Gasifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBGR01*. The type species for the genus is *Candidatus* Gasifaria derecilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gasifella nugacedo sp. nov.

Candidatus Gasifella nugacedo (NL. fem. n. *nugacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBNH01 sp903955385*. The type genome for the species is the GenBank assembly GCA_903875165.1. The GC content of the type genome is 67.36 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Gasifella gen. nov.

Candidatus Gasifella (NL. fem. n. *Gasifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBNH01*. The type species for the genus is *Candidatus* Gasifella nugacedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubigariaceae.

Description of *Candidatus* Gasifia cilotatio sp. nov.

Candidatus Gasifia cilotatio (NL. fem. n. *cilotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *32-111 sp002441125*. The type genome for the species is the GenBank assembly GCA_011329265.1. The GC content of the type genome is 30.83 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Gasifia gen. nov.

Candidatus Gasifia (NL. fem. n. *Gasifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *32-111*. The type species for the genus is *Candidatus* Gasifia cilotatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *32-111*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasifiaceae.

Description of *Candidatus* Gasifiaceae fam. nov.

Candidatus Gasifiaceae (NL. fem. n. *Gasifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *32-111.* The type genus for the taxon is *Candidatus* Gasifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *32-111*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Gasifiales.

Description of *Candidatus* Gasifiales ord. nov.

Candidatus Gasifiales (NL. fem. n. *Gasifiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *32-111.* The type genus for the taxon is *Candidatus* Gasifia .

According to the original version of GTDB R06-RS202, this family belongs to the class *32-111*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Gasifiae.

Description of *Candidatus* Gasifiae class. nov.

Candidatus Gasifiae (NL. fem. n. *c__Gasifiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *32-111*. The type genus for the taxon is *Candidatus* Gasifia .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *WOR-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Tigurariota.

Description of *Candidatus* Gasifia depelifica sp. nov.

Candidatus Gasifia depelifica (NL. fem. n. *depelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *32-111 sp001508335*. The type genome for the species is the GenBank assembly GCA_003485365.1. The GC content of the type genome is 31.64 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Gasifida dicabilenta sp. nov.

Candidatus Gasifida dicabilenta (NL. fem. n. *dicabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-4-69-16 sp001919865*. The type genome for the species is the GenBank assembly GCA_001919865.1. The GC content of the type genome is 69.18 % and the genome length is 2.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 20cm depth; 2 days after second rain event (91mm)".

Description of *Candidatus* Gasifida gen. nov.

Candidatus Gasifida (NL. fem. n. *Gasifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *20CM-4-69-16*. The type species for the genus is *Candidatus* Gasifida dicabilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Gasifida dilicisca sp. nov.

Candidatus Gasifida dilicisca (NL. fem. n. *dilicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-4-69-16 sp003220935*. The type genome for the species is the GenBank assembly GCA_003220935.1. The GC content of the type genome is 68.73 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Gasifida disidilenta sp. nov.

Candidatus Gasifida disidilenta (NL. fem. n. *disidilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-4-69-16 sp003220795*. The type genome for the species is the GenBank assembly GCA_003220795.1. The GC content of the type genome is 69.12 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Gasifida intenibula sp. nov.

Candidatus Gasifida intenibula (NL. fem. n. *intenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-4-69-16 sp001917665*. The type genome for the species is the GenBank assembly GCA_001917665.1. The GC content of the type genome is 69.58 % and the genome length is 2.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; pre rain".

Description of *Candidatus* Gasifida nutamitoga sp. nov.

Candidatus Gasifida nutamitoga (NL. fem. n. *nutamitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-4-69-16 sp003222135*. The type genome for the species is the GenBank assembly GCA_003222135.1. The GC content of the type genome is 69.24 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Gasifosa triclicella sp. nov.

Candidatus Gasifosa triclicella (NL. fem. n. *triclicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTYH01 sp012961955*. The type genome for the species is the GenBank assembly GCA_012961955.1. The GC content of the type genome is 45.78 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Gasifosa gen. nov.

Candidatus Gasifosa (NL. fem. n. *Gasifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTYH01*. The type species for the genus is *Candidatus* Gasifosa triclicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTYH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasifosaceae.

Description of *Candidatus* Gasifosaceae fam. nov.

Candidatus Gasifosaceae (NL. fem. n. *Gasifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTYH01.* The type genus for the taxon is *Candidatus* Gasifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *C00003060*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colubidales.

Description of *Candidatus* Gasifula semunitica sp. nov.

Candidatus Gasifula semunitica (NL. fem. n. *semunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZEB01 sp012512505*. The type genome for the species is the GenBank assembly GCA_012512505.1. The GC content of the type genome is 69.13 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Gasifula gen. nov.

Candidatus Gasifula (NL. fem. n. *Gasifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZEB01*. The type species for the genus is *Candidatus* Gasifula semunitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZEB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasifulaceae.

Description of *Candidatus* Gasifulaceae fam. nov.

Candidatus Gasifulaceae (NL. fem. n. *Gasifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZEB01.* The type genus for the taxon is *Candidatus* Gasifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAZEB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Gasifulales.

Description of *Candidatus* Gasifulales ord. nov.

Candidatus Gasifulales (NL. fem. n. *Gasifulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZEB01.* The type genus for the taxon is *Candidatus* Gasifula .

According to the original version of GTDB R06-RS202, this family belongs to the class *SYMT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bipenariae.

Description of *Candidatus* Gasomana cucuratio sp. nov.

Candidatus Gasomana cucuratio (NL. fem. n. *cucuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLWN01 sp012103575*. The type genome for the species is the GenBank assembly GCA_011088285.1. The GC content of the type genome is 43.65 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Gasomana gen. nov.

Candidatus Gasomana (NL. fem. n. *Gasomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLWN01*. The type species for the genus is *Candidatus* Gasomana cucuratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WLWN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasomanaceae.

Description of *Candidatus* Gasomanaceae fam. nov.

Candidatus Gasomanaceae (NL. fem. n. *Gasomanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WLWN01*. The type genus for the taxon is *Candidatus* Gasomana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Reveculales.

Description of *Candidatus* Gasomaria duponitudo sp. nov.

Candidatus Gasomaria duponitudo (NL. fem. n. *duponitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-52-35 sp001769805*. The type genome for the species is the GenBank assembly GCA_001769805.1. The GC content of the type genome is 52.23 % and the genome length is 3.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.1 filter".

Description of *Candidatus* Gasomaria gen. nov.

Candidatus Gasomaria (NL. fem. n. *Gasomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-52-35*. The type species for the genus is *Candidatus* Gasomaria duponitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Gasomella innasiforma sp. nov.

Candidatus Gasomella innasiforma (NL. fem. n. *innasiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5616 sp002423615*. The type genome for the species is the GenBank assembly GCA_002423615.1. The GC content of the type genome is 51.61 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Gasomella gen. nov.

Candidatus Gasomella (NL. fem. n. *Gasomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5616*. The type species for the genus is *Candidatus* Gasomella innasiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5616*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasomellaceae.

Description of *Candidatus* Gasomellaceae fam. nov.

Candidatus Gasomellaceae (NL. fem. n. *Gasomellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5616.* The type genus for the taxon is *Candidatus* Gasomella .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Gasomia dimadibula sp. nov.

Candidatus Gasomia dimadibula (NL. fem. n. *dimadibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-55-31 sp001770175*. The type genome for the species is

the GenBank assembly GCA_001770075.1. The GC content of the type genome is 54.53 % and the genome length is 3.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point C".

Description of *Candidatus* Gasomia gen. nov.

Candidatus Gasomia (NL. fem. n. *Gasomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD1-FULL-55-31*. The type species for the genus is *Candidatus* Gasomia dimadibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Gasomosa arcelilega sp. nov.

Candidatus Gasomosa arcelilega (NL. fem. n. *arcelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6170 sp002842045*. The type genome for the species is the GenBank assembly GCA_002842045.1. The GC content of the type genome is 42.12 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Gasomosa gen. nov.

Candidatus Gasomosa (NL. fem. n. *Gasomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6170*. The type species for the genus is *Candidatus* Gasomosa arcelilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gasomosa bicipigena sp. nov.

Candidatus Gasomosa bicipigena (NL. fem. n. *bicipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA6170 sp001899005*. The type genome for the species is the GenBank assembly GCA_001899005.1. The GC content of the type genome is 44.44 % and the genome length is 4.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Gasomosa octoditio sp. nov.

Candidatus Gasomosa octoditio (NL. fem. n. *octoditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6170 sp002702705*. The type genome for the species is the GenBank assembly GCA_002702705.1. The GC content of the type genome is 41.37 % and the genome length is 5.89 Mbp.

Description of *Candidatus* Gasomosa pragmentia sp. nov.

Candidatus Gasomosa pragmentia (NL. fem. n. *pragmentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6170 sp002841995*. The type genome for the species is the GenBank assembly GCA_002841995.1. The GC content of the type genome is 40.72 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Gasomosa tibicilega sp. nov.

Candidatus Gasomosa tibicilega (NL. fem. n. *tibicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6170 sp002840735*. The type genome for the species is the GenBank assembly GCA_002347375.1. The GC content of the type genome is 40.95 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Gasomosa vanitilega sp. nov.

Candidatus Gasomosa vanitilega (NL. fem. n. *vanitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6170 sp002840755*. The type genome for the species is the GenBank assembly GCA_002840755.1. The GC content of the type genome is 45.79 % and the genome length is 6.57 Mbp.

Description of *Candidatus* Gasomula arcatitio sp. nov.

Candidatus Gasomula arcatitio (NL. fem. n. *arcatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADFJ01 sp013152955*. The type genome for the species is the GenBank assembly GCA_013152955.1. The GC content of the type genome is 38.63 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Gasomula gen. nov.

Candidatus Gasomula (NL. fem. n. *Gasomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFJ01*. The type species for the genus is *Candidatus* Gasomula arcatitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADFJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gasomulaceae.

Description of *Candidatus* Gasomulaceae fam. nov.

Candidatus Gasomulaceae (NL. fem. n. *Gasomulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADFJ01.* The type genus for the taxon is *Candidatus* Gasomula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAADFJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Gasomulales.

Description of *Candidatus* Gasomulales ord. nov.

Candidatus Gasomulales (NL. fem. n. *Gasomulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADFJ01.* The type genus for the taxon is *Candidatus* Gasomula .

According to the GTDB R06-RS202, this order belongs to the class *Desulfurellia*.

Description of *Candidatus* Geitlerinema adlacitio sp. nov.

Candidatus Geitlerinema adlacitio (NL. fem. n. *adlacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geitlerinema sp001657325*. The type genome for the species is the GenBank assembly GCA_001657325.1. The GC content of the type genome is 50.26 % and the genome length is 5.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture inoculated with black band disease microbial mat".

Description of *Candidatus* Geitlerinema inhosiforma sp. nov.

Candidatus Geitlerinema inhosiforma (NL. fem. n. *inhosiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geitlerinema sp000332355*. The type genome for the species is the GenBank assembly RS_GCF_000332355.1. The GC content of the type genome is 51.59 % and the genome length is 6.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "unialgal culture".

Description of *Candidatus* Gelidibacter denavitia sp. nov.

Candidatus Gelidibacter denavitia (NL. fem. n. *denavitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gelidibacter sp014062315*. The type genome for the species is the GenBank assembly RS_GCF_014062315.1. The GC content of the type genome is 37.77 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Gemebana bulapentia sp. nov.

Candidatus Gemebana bulapentia (NL. fem. n. *bulapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2030 sp002332755*. The type genome for the species is the GenBank assembly GCA_013178055.1. The GC content of the type genome is 42.83 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Gemebana gen. nov.

Candidatus Gemebana (NL. fem. n. *Gemebana* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2030*. The type species for the genus is *Candidatus* Gemebana bulapentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TTA-H9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pinigiaceae.

Description of *Candidatus* Gemebaria genufedo sp. nov.

Candidatus Gemebaria genufedo (NL. fem. n. *genufedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAFBRK01 sp903231505*. The type genome for the species is the GenBank assembly RS_GCF_903231395.1. The GC content of the type genome is 54.22 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Gemebaria gen. nov.

Candidatus Gemebaria (NL. fem. n. *Gemebaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAFBRK01*. The type species for the genus is *Candidatus* Gemebaria genufedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAFBRK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gemebariaceae.

Description of *Candidatus* Gemebariaceae fam. nov.

Candidatus Gemebariaceae (NL. fem. n. *Gemebariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAFBRK01*. The type genus for the taxon is *Candidatus* Gemebaria .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Gemebella penicitrix sp. nov.

Candidatus Gemebella penicitrix (NL. fem. n. *penicitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QS-5-72-10 sp003021615*. The type genome for the species is the GenBank assembly GCA_003021615.1. The GC content of the type genome is 72.29 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Gemebella gen. nov.

Candidatus Gemebella (NL. fem. n. *Gemebella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QS-5-72-10*. The type species for the genus is *Candidatus* Gemebella penicitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gemebia apogriforma sp. nov.

Candidatus Gemebia apogriforma (NL. fem. n. *apogriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9547 sp003476475*. The type genome for the species is the GenBank assembly GCA_003476475.1. The GC content of the type genome is 40.2 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Gemebia gen. nov.

Candidatus Gemebia (NL. fem. n. *Gemebia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9547*. The type species for the genus is *Candidatus* Gemebia apogriforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9547*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gemebiaceae.

Description of *Candidatus* Gemebiaceae fam. nov.

Candidatus Gemebiaceae (NL. fem. n. *Gemebiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9547*. The type genus for the taxon is *Candidatus* Gemebia .

According to GTDB R06-RS202, this family belongs to the order *Cytophagales*.

Description of *Candidatus* Gemebia enimvatio sp. nov.

Candidatus Gemebia enimvatio (NL. fem. n. *enimvatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9547 sp014376535*. The type genome for the species is the GenBank assembly GCA_014376535.1. The GC content of the type genome is 35.88 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Gemebida inabratio sp. nov.

Candidatus Gemebida inabratio (NL. fem. n. *inabratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRXL01 sp011373285*. The type genome for the species is the GenBank assembly GCA_011373285.1. The GC content of the type genome is 56.29 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Gemebida gen. nov.

Candidatus Gemebida (NL. fem. n. *Gemebida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRXL01*. The type species for the genus is *Candidatus* Gemebida inabratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRXL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gemebidaceae.

Description of *Candidatus* Gemebidaceae fam. nov.

Candidatus Gemebidaceae (NL. fem. n. *Gemebidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *DRXL01*. The type genus for the taxon is *Candidatus* Gemebida .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-16-55-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vicecosales.

Description of *Candidatus* Gemebosa astipimonia sp. nov.

Candidatus Gemebosa astipimonia (NL. fem. n. *astipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9088 sp003498085*. The type genome for the species is the GenBank assembly GCA_003498085.1. The GC content of the type genome is 35.73 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Gemebosa gen. nov.

Candidatus Gemebosa (NL. fem. n. *Gemebosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9088*. The type species for the genus is *Candidatus* Gemebosa astipimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gemebosaceae.

Description of *Candidatus* Gemebosaceae fam. nov.

Candidatus Gemebosaceae (NL. fem. n. *Gemebosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9088.* The type genus for the taxon is *Candidatus* Gemebosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Gemebosales.

Description of *Candidatus* Gemebosales ord. nov.

Candidatus Gemebosales (NL. fem. n. *Gemebosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9088.* The type genus for the taxon is *Candidatus* Gemebosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Gemebosae.

Description of *Candidatus* Gemebosae class. nov.

Candidatus Gemebosae (NL. fem. n. *c__Gemebosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9088.* The type genus for the taxon is *Candidatus* Gemebosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBA9089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Casigariota.

Description of *Candidatus* Gemebula velivifica sp. nov.

Candidatus Gemebula velivifica (NL. fem. n. *velivifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFEL01 sp004557245*. The type genome for the species is the GenBank assembly GCA_004557245.1. The GC content of the type genome is 53.45 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Gemebula gen. nov.

Candidatus Gemebula (NL. fem. n. *Gemebula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFEL01*. The type species for the genus is *Candidatus* Gemebula velivifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Gemella addivatio sp. nov.

Candidatus Gemella addivatio (NL. fem. n. *addivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemella sp900555985*. The type genome for the species is the GenBank assembly GCA_900555985.1. The GC content of the type genome is 28.83 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Gemella calipivita sp. nov.

Candidatus Gemella calipivita (NL. fem. n. *calipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemella sp900766305*. The type genome for the species is the GenBank assembly GCA_900766305.1. The GC content of the type genome is 30.73 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Gemella defaletta sp. nov.

Candidatus Gemella defaletta (NL. fem. n. *defaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemella sp002871655*. The type genome for the species is the GenBank assembly RS_GCF_001075645.1. The GC content of the type genome is 30.65 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Gemella petulastra sp. nov.

Candidatus Gemella petulastra (NL. fem. n. *petulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemella sp004570485*. The type genome for the species is the GenBank assembly RS_GCF_013415365.1. The GC content of the type genome is 30.25 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Gemella petulifica sp. nov.

Candidatus Gemella petulifica (NL. fem. n. *petulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Gemella sp013415425*. The type genome for the species is the GenBank assembly RS_GCF_013415425.1. The GC content of the type genome is 28.24 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Geminisphaera depocatica sp. nov.

Candidatus Geminisphaera depocatica (NL. fem. n. *depocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geminisphaera sp000242935*. The type genome for the species is the GenBank assembly RS_GCF_000242935.2. The GC content of the type genome is 63.45 % and the genome length is 7.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Geminocystis arcipitia sp. nov.

Candidatus Geminocystis arcipitia (NL. fem. n. *arcipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geminocystis sp001548095*. The type genome for the species is the GenBank assembly RS_GCF_001548095.1. The GC content of the type genome is 32.29 % and the genome length is 4.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Geminocystis desonousia sp. nov.

Candidatus Geminocystis desonousia (NL. fem. n. *desonousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geminocystis sp009993045*. The type genome for the species is the GenBank assembly GCA_009993045.1. The GC content of the type genome is 32.37 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Geminocystis fidenicula sp. nov.

Candidatus Geminocystis fidenicula (NL. fem. n. *fidenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geminocystis sp001548115*. The type genome for the species is the

GenBank assembly RS_GCF_001548115.1. The GC content of the type genome is 33.36 % and the genome length is 4.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Geminocystis miracatio sp. nov.

Candidatus Geminocystis miracatio (NL. fem. n. *miracatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geminocystis sp011088145*. The type genome for the species is the GenBank assembly GCA_011088145.1. The GC content of the type genome is 33.92 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Gemmata adsusicella sp. nov.

Candidatus Gemmata adsusicella (NL. fem. n. *adsusicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmata sp005773755*. The type genome for the species is the GenBank assembly GCA_005773755.1. The GC content of the type genome is 67.44 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Gemmata assubitrix sp. nov.

Candidatus Gemmata assubitrix (NL. fem. n. *assubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmata sp013823135*. The type genome for the species is the GenBank assembly GCA_013823135.1. The GC content of the type genome is 61.13 % and the genome length is 8.23 Mbp.

Description of *Candidatus* Gemmata delacibula sp. nov.

Candidatus Gemmata delacibula (NL. fem. n. *delacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmata sp901538445*. The type genome for the species is the GenBank assembly RS_GCF_901538445.1. The GC content of the type genome is 69.87 % and the genome length is 7.86 Mbp.

Description of *Candidatus* Gemmata dilicago sp. nov.

Candidatus Gemmata dilicago (NL. fem. n. *dilicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmata sp005772955*. The type genome for the species is the GenBank assembly GCA_005800905.1. The GC content of the type genome is 63.65 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Gemmata inmitentia sp. nov.

Candidatus Gemmata inmitentia (NL. fem. n. *inmitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmata sp013128195*. The type genome for the species is the GenBank assembly RS_GCF_013128195.1. The GC content of the type genome is 67.39 % and the genome length is 9.86 Mbp.

Description of *Candidatus* Gemmata invecitica sp. nov.

Candidatus Gemmata invecitica (NL. fem. n. *invecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmata sp013822345*. The type genome for the species is the GenBank assembly GCA_013822345.1. The GC content of the type genome is 72.81 % and the genome length is 7.47 Mbp.

Description of *Candidatus* Gemmatimonas adnumastra sp. nov.

Candidatus Gemmatimonas adnumastra (NL. fem. n. *adnumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmatimonas sp013004105*. The type genome for the species is the GenBank assembly RS_GCF_013004105.1. The GC content of the type genome is 65.08 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Gemmatimonas ducilentia sp. nov.

Candidatus Gemmatimonas ducilentia (NL. fem. n. *ducilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmatimonas sp002737115*. The type genome for the species is the GenBank assembly GCA_903927125.1. The GC content of the type genome is 65.6 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Gemmatimonas inguritudo sp. nov.

Candidatus Gemmatimonas inguritudo (NL. fem. n. *inguritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmatimonas sp002331565*. The type genome for the species is the GenBank assembly GCA_002331565.1. The GC content of the type genome is 67.31 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Gemmatimonas lorarago sp. nov.

Candidatus Gemmatimonas lorarago (NL. fem. n. *lorarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmatimonas sp903894655*. The type genome for the species is the GenBank assembly GCA_903894655.1. The GC content of the type genome is 65.63 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Gemmatimonas redacetta sp. nov.

Candidatus Gemmatimonas redacetta (NL. fem. n. *redacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmatimonas sp002483225*. The type genome for the species is the GenBank assembly GCA_013822035.1. The GC content of the type genome is 66.03 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Gemmatimonas unetvugo sp. nov.

Candidatus Gemmatimonas unetvugo (NL. fem. n. *unetvugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Gemmatimonas sp903900795*. The type genome for the species is the GenBank assembly GCA_903900795.1. The GC content of the type genome is 65.68 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Gemmiger baropatica sp. nov.

Candidatus Gemmiger baropatica (NL. fem. n. *baropatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp900540775*. The type genome for the species is the GenBank assembly GCA_900540775.1. The GC content of the type genome is 58.84 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Gemmiger bicoribula sp. nov.

Candidatus Gemmiger bicoribula (NL. fem. n. *bicoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp900539695*. The type genome for the species is the GenBank assembly GCA_008674315.1. The GC content of the type genome is 58.78 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Gemmiger catilitia sp. nov.

Candidatus Gemmiger catilitia (NL. fem. n. *catilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp004555405*. The type genome for the species is the GenBank assembly GCA_900548665.1. The GC content of the type genome is 55.91 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Gemmiger cicatitoga sp. nov.

Candidatus Gemmiger cicatitoga (NL. fem. n. *cicatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp900554145*. The type genome for the species is the GenBank assembly GCA_900554145.1. The GC content of the type genome is 59.4 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Gemmiger colipicula sp. nov.

Candidatus Gemmiger colipicula (NL. fem. n. *colipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp900548355*. The type genome for the species is the GenBank assembly GCA_900548355.1. The GC content of the type genome is 60.86 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Gemmiger coturousia sp. nov.

Candidatus Gemmiger coturousia (NL. fem. n. *coturousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp004561545*. The type genome for the species is the GenBank assembly GCA_004561545.1. The GC content of the type genome is 61.24 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Gemmiger delebentia sp. nov.

Candidatus Gemmiger delebentia (NL. fem. n. *delebentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp900545545*. The type genome for the species is the GenBank assembly GCA_004556315.1. The GC content of the type genome is 59.3 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Gemmiger ecfacigena sp. nov.

Candidatus Gemmiger ecfacigena (NL. fem. n. *ecfacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp002306375*. The type genome for the species is the GenBank assembly GCA_002306375.1. The GC content of the type genome is 63.96 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Gemmiger favilitoga sp. nov.

Candidatus Gemmiger favilitoga (NL. fem. n. *favilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp900772715*. The type genome for the species is the GenBank assembly GCA_900772715.1. The GC content of the type genome is 57.85 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Gemmiger pacifitura sp. nov.

Candidatus Gemmiger pacifitura (NL. fem. n. *pacifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp900540595*. The type genome for the species is the GenBank assembly GCA_900540595.1. The GC content of the type genome is 58.77 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Gemmiger unetvigena sp. nov.

Candidatus Gemmiger unetvigena (NL. fem. n. *unetvigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger sp900556255*. The type genome for the species is the GenBank assembly GCA_900556255.1. The GC content of the type genome is 59.25 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Gemmiger effacitio sp. nov.

Candidatus Gemmiger effacitio (NL. fem. n. *effacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmiger_A sp002160955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002160955.1. The GC content of the type genome is 60.16 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Gemmobacter arrabugo sp. nov.

Candidatus Gemmobacter arrabugo (NL. fem. n. *arrabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter sp008973825*. The type genome for the species is the GenBank assembly RS_GCF_008973825.1. The GC content of the type genome is 63.68 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Gemmobacter catilicula sp. nov.

Candidatus Gemmobacter catilicula (NL. fem. n. *catilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter sp003509785*. The type genome for the species is the GenBank assembly GCA_001828835.1. The GC content of the type genome is 64.24 % and the genome length is 3.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 5 / E; 5m depth; 0.1 filter".

Description of *Candidatus* Gemmobacter amfitimonia sp. nov.

Candidatus Gemmobacter amfitimonia (NL. fem. n. *amfitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter_B sp013824045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013824045.1. The GC content of the type genome is 64.41 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Gemmobacter cobalousia sp. nov.

Candidatus Gemmobacter cobalousia (NL. fem. n. *cobalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter_B sp009908315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009908315.1. The GC content of the type genome is 66.21 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Gemmobacter ellipivita sp. nov.

Candidatus Gemmobacter ellipivita (NL. fem. n. *ellipivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter_B sp002256185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002256185.1. The GC content of the type genome is 63.36 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Gemmobacter immusibula sp. nov.

Candidatus Gemmobacter immusibula (NL. fem. n. *immusibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter_B sp003060865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003060865.1. The GC content of the type genome is 63.95 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Gemmobacter novilax sp. nov.

Candidatus Gemmobacter novilax (NL. fem. n. *novilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter_B sp011059185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011059185.1. The GC content of the type genome is 65.91 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Gemmobacter octupitura sp. nov.

Candidatus Gemmobacter octupitura (NL. fem. n. *octupitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter_B sp009908265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009908265.1. The GC

content of the type genome is 66.18 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Gemmobacter ornititio sp. nov.

Candidatus Gemmobacter ornititio (NL. fem. n. *ornititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter_B sp000500915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000500915.1. The GC content of the type genome is 66.64 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "5 liters of water from the Tucurui Power Plant Reservoir; point M5 collected 50cm beneath the lake surface; then filtered by negative pressure for posterior culture in BG-11 medium".

Description of *Candidatus* Gemmobacter ruricugo sp. nov.

Candidatus Gemmobacter ruricugo (NL. fem. n. *ruricugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter_B sp014654775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014654775.1. The GC content of the type genome is 65.25 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Gemmobacter xeramilega sp. nov.

Candidatus Gemmobacter xeramilega (NL. fem. n. *xeramilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gemmobacter_B sp002855575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002855575.1. The GC content of the type genome is 66.01 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Genocana infatugo sp. nov.

Candidatus Genocana infatugo (NL. fem. n. *infatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVQK01 sp002067515*. The type genome for the species is the GenBank assembly GCA_002067515.1. The GC content of the type genome is 45.98 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Genocana gen. nov.

Candidatus Genocana (NL. fem. n. *Genocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MVQK01*. The type species for the genus is *Candidatus* Genocana infatugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Genocana vatiletta sp. nov.

Candidatus Genocana vatiletta (NL. fem. n. *vatiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVQK01 sp002067395*. The type genome for the species is the GenBank assembly GCA_002067395.1. The GC content of the type genome is 47.2 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Genocaria cilicugo sp. nov.

Candidatus Genocaria cilicugo (NL. fem. n. *cilicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5862 sp002408105*. The type genome for the species is the GenBank assembly GCA_002408105.1. The GC content of the type genome is 62.18 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Genocaria gen. nov.

Candidatus Genocaria (NL. fem. n. *Genocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5862*. The type species for the genus is *Candidatus* Genocaria

cilicugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5862*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genocariaceae.

Description of *Candidatus* Genocariaceae fam. nov.

Candidatus Genocariaceae (NL. fem. n. *Genocariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5862.* The type genus for the taxon is *Candidatus* Genocaria .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Genocella acrolax sp. nov.

Candidatus Genocella acrolax (NL. fem. n. *acrolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7597 sp900767195*. The type genome for the species is the GenBank assembly RS_GCF_900767195.1. The GC content of the type genome is 48.8 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Genocella gen. nov.

Candidatus Genocella (NL. fem. n. *Genocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7597*. The type species for the genus is *Candidatus* Genocella acrolax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Genocella delapitura sp. nov.

Candidatus Genocella delapitura (NL. fem. n. *delapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7597 sp900542935*. The type genome for the species is the GenBank assembly GCA_900542935.1. The GC content of the type genome is 49.99 %

and the genome length is 1.99 Mbp.

Description of *Candidatus* Genocella hexagitrix sp. nov.

Candidatus Genocella hexagitrix (NL. fem. n. *hexagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7597 sp003448195*. The type genome for the species is the GenBank assembly RS_GCF_900770475.1. The GC content of the type genome is 49.96 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Genocella inregivita sp. nov.

Candidatus Genocella inregivita (NL. fem. n. *inregivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7597 sp002474405*. The type genome for the species is the GenBank assembly GCA_002474405.1. The GC content of the type genome is 51.49 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Genocia capabessa sp. nov.

Candidatus Genocia capabessa (NL. fem. n. *capabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5518 sp903938575*. The type genome for the species is the GenBank assembly GCA_903938575.1. The GC content of the type genome is 65.21 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Genocia gen. nov.

Candidatus Genocia (NL. fem. n. *Genocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5518*. The type species for the genus is *Candidatus* Genocia capabessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5518*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genociaceae.

Description of *Candidatus* Genociaceae fam. nov.

Candidatus Genociaceae (NL. fem. n. *Genociaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5518.* The type genus for the taxon is *Candidatus* Genocia .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Genocia faticicula sp. nov.

Candidatus Genocia faticicula (NL. fem. n. *faticicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5518 sp002396625*. The type genome for the species is the GenBank assembly GCA_002423785.1. The GC content of the type genome is 63.5 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Genocia lucelicula sp. nov.

Candidatus Genocia lucelicula (NL. fem. n. *lucelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5518 sp903921135*. The type genome for the species is the GenBank assembly GCA_903921135.1. The GC content of the type genome is 66.0 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Genocia manufivita sp. nov.

Candidatus Genocia manufivita (NL. fem. n. *manufivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5518 sp903928015*. The type genome for the species is the GenBank assembly GCA_903928015.1. The GC content of the type genome is 65.47 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Genocosa bonititoga sp. nov.

Candidatus Genocosa bonititoga (NL. fem. n. *bonititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708145 sp002728715*. The type genome for the species is the GenBank assembly GCA_002728715.1. The GC content of the type genome is 31.43 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Genocosa gen. nov.

Candidatus Genocosa (NL. fem. n. *Genocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002708145*. The type species for the genus is *Candidatus* Genocosa bonititoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelanaceae.

Description of *Candidatus* Genocosa nefarigena sp. nov.

Candidatus Genocosa nefarigena (NL. fem. n. *nefarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708145 sp002714425*. The type genome for the species is the GenBank assembly GCA_002714425.1. The GC content of the type genome is 31.58 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Genocosa recogatio sp. nov.

Candidatus Genocosa recogatio (NL. fem. n. *recogatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708145 sp002712125*. The type genome for the species is the GenBank assembly GCA_002712125.1. The GC content of the type genome is 31.32 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Genocosa thapsiforma sp. nov.

Candidatus Genocosa thapsiforma (NL. fem. n. *thapsiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708145 sp002708145*. The type genome for the species is the GenBank assembly GCA_002708145.1. The GC content of the type genome is 31.84 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Genocula dedigisca sp. nov.

Candidatus Genocula dedigisca (NL. fem. n. *dedigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKW01 sp009885355*. The type genome for the species is the GenBank assembly GCA_009885355.1. The GC content of the type genome is 39.79 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Genocula gen. nov.

Candidatus Genocula (NL. fem. n. *Genocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKW01*. The type species for the genus is *Candidatus* Genocula dedigisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VFKW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genoculaceae.

Description of *Candidatus* Genoculaceae fam. nov.

Candidatus Genoculaceae (NL. fem. n. *Genoculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VFKW01.* The type genus for the taxon is *Candidatus* Genocula .

According to the original version of GTDB R06-RS202, this family belongs to the order *VFKW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Genoculales.

Description of *Candidatus* Genoculales ord. nov.

Candidatus Genoculales (NL. fem. n. *Genoculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *VFKW01*. The type genus for the taxon is *Candidatus* Genocula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Panifidae.

Description of *Candidatus* Genufana decinitica sp. nov.

Candidatus Genufana decinitica (NL. fem. n. *decinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLA5 sp003576845*. The type genome for the species is the GenBank assembly GCA_003576845.1. The GC content of the type genome is 63.88 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Genufana gen. nov.

Candidatus Genufana (NL. fem. n. *Genufana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PLA5*. The type species for the genus is *Candidatus* Genufana decinitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PLA5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufanaceae.

Description of *Candidatus* Genufanaceae fam. nov.

Candidatus Genufanaceae (NL. fem. n. *Genufanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PLA5*. The type genus for the taxon is *Candidatus* Genufana .

According to GTDB R06-RS202, this family belongs to the order *Pirellulales*.

Description of *Candidatus* Genufaria feficetta sp. nov.

Candidatus Genufaria feficetta (NL. fem. n. *feficetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *QNYK01 sp003973385*. The type genome for the species is the GenBank assembly GCA_003973385.1. The GC content of the type genome is 58.1 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Genufaria gen. nov.

Candidatus Genufaria (NL. fem. n. *Genufaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNYK01*. The type species for the genus is *Candidatus* Genufaria feficetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1146*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenanaceae.

Description of *Candidatus* Genufaria utralicella sp. nov.

Candidatus Genufaria utralicella (NL. fem. n. *utralicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNYK01 sp014240375*. The type genome for the species is the GenBank assembly GCA_014240375.1. The GC content of the type genome is 57.75 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Genufaria vacilitrix sp. nov.

Candidatus Genufaria vacilitrix (NL. fem. n. *vacilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNYK01 sp012960845*. The type genome for the species is the GenBank assembly GCA_012960845.1. The GC content of the type genome is 57.85 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Genufella cerevimonas sp. nov.

Candidatus Genufella cerevimonas (NL. fem. n. *cerevimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIRW01 sp004366205*. The type genome for the species is the

GenBank assembly GCA_004366205.1. The GC content of the type genome is 73.92 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Genufella gen. nov.

Candidatus Genufella (NL. fem. n. *Genufella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIRW01*. The type species for the genus is *Candidatus* Genufella cerevimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SIRW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufellaceae.

Description of *Candidatus* Genufellaceae fam. nov.

Candidatus Genufellaceae (NL. fem. n. *Genufellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SIRW01.* The type genus for the taxon is *Candidatus* Genufella .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Genufia nidifitoga sp. nov.

Candidatus Genufia nidifitoga (NL. fem. n. *nidifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLRQ01 sp007130885*. The type genome for the species is the GenBank assembly GCA_007130885.1. The GC content of the type genome is 59.92 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Genufia gen. nov.

Candidatus Genufia (NL. fem. n. *Genufia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLRQ01*. The type species for the genus is *Candidatus* Genufia nidifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SLRQ01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufiaceae.

Description of *Candidatus* Genufiaceae fam. nov.

Candidatus Genufiaceae (NL. fem. n. *Genufiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLRQ01*. The type genus for the taxon is *Candidatus* Genufia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLRQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Genufiales.

Description of *Candidatus* Genufiales ord. nov.

Candidatus Genufiales (NL. fem. n. *Genufiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLRQ01*. The type genus for the taxon is *Candidatus* Genufia .

According to the GTDB R06-RS202, this order belongs to the class *Myxococcia*.

Description of *Candidatus* Genufida apsegibula sp. nov.

Candidatus Genufida apsegibula (NL. fem. n. *apsegibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J090 sp003695065*. The type genome for the species is the GenBank assembly GCA_003695065.1. The GC content of the type genome is 60.67 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Genufida gen. nov.

Candidatus Genufida (NL. fem. n. *Genufida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J090*. The type species for the genus is *Candidatus* Genufida apsegibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J090*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the

family *Candidatus* Genufidaceae.

Description of *Candidatus* Genufidaceae fam. nov.

Candidatus Genufidaceae (NL. fem. n. *Genufidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J090.* The type genus for the taxon is *Candidatus* Genufida .

According to GTDB R06-RS202, this family belongs to the order *Sphingomonadales*.

Description of *Candidatus* Genufula obmuritia sp. nov.

Candidatus Genufula obmuritia (NL. fem. n. *obmuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRLA01 sp009777825*. The type genome for the species is the GenBank assembly GCA_009777825.1. The GC content of the type genome is 45.69 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Genufula gen. nov.

Candidatus Genufula (NL. fem. n. *Genufula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRLA01*. The type species for the genus is *Candidatus* Genufula obmuritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRLA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufulaceae.

Description of *Candidatus* Genufulaceae fam. nov.

Candidatus Genufulaceae (NL. fem. n. *Genufulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRLA01.* The type genus for the taxon is *Candidatus* Genufula .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Geobacillus conifitrix sp. nov.

Candidatus Geobacillus conifitrix (NL. fem. n. *conifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geobacillus sp002809955*. The type genome for the species is the GenBank assembly RS_GCF_002809955.1. The GC content of the type genome is 52.54 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Geobacillus odontitica sp. nov.

Candidatus Geobacillus odontitica (NL. fem. n. *odontitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geobacillus sp000445995*. The type genome for the species is the GenBank assembly RS_GCF_000445995.2. The GC content of the type genome is 52.79 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Geobacillus saburedo sp. nov.

Candidatus Geobacillus saburedo (NL. fem. n. *saburedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geobacillus sp002077765*. The type genome for the species is the GenBank assembly RS_GCF_002077765.1. The GC content of the type genome is 52.06 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Geobacter megalitio sp. nov.

Candidatus Geobacter megalitio (NL. fem. n. *megalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geobacter sp003712145*. The type genome for the species is the GenBank assembly GCA_003712145.1. The GC content of the type genome is 59.89 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Geodermatophilus abambilenta sp. nov.

Candidatus Geodermatophilus abambilenta (NL. fem. n. *abambilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geodermatophilus sp008124535*. The type genome for the species is the GenBank assembly RS_GCF_008124535.1. The GC content of the type genome is 75.17 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Geodermatophilus agrimimonas sp. nov.

Candidatus Geodermatophilus agrimimonas (NL. fem. n. *agrimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geodermatophilus sp003428645*. The type genome for the species is the GenBank assembly RS_GCF_003428645.1. The GC content of the type genome is 75.61 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Geodermatophilus argumitica sp. nov.

Candidatus Geodermatophilus argumitica (NL. fem. n. *argumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geodermatophilus sp900104025*. The type genome for the species is the GenBank assembly RS_GCF_900104025.1. The GC content of the type genome is 74.65 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Geodermatophilus cenobisca sp. nov.

Candidatus Geodermatophilus cenobisca (NL. fem. n. *cenobisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geodermatophilus sp000701365*. The type genome for the species is the GenBank assembly RS_GCF_000701365.1. The GC content of the type genome is 74.0 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Geodermatophilus cimiticula sp. nov.

Candidatus Geodermatophilus cimiticula (NL. fem. n. *cimiticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Geodermatophilus sp003319125*. The type genome for the species is the GenBank assembly RS_GCF_003319125.1. The GC content of the type genome is 74.22 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Geodermatophilus extunisca sp. nov.

Candidatus Geodermatophilus extunisca (NL. fem. n. *extunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geodermatophilus sp003319115*. The type genome for the species is the GenBank assembly RS_GCF_003319115.1. The GC content of the type genome is 74.73 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Geodermatophilus megalatica sp. nov.

Candidatus Geodermatophilus megalatica (NL. fem. n. *megalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geodermatophilus sp004571065*. The type genome for the species is the GenBank assembly RS_GCF_004571065.1. The GC content of the type genome is 73.92 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Geofilum arcipugo sp. nov.

Candidatus Geofilum arcipugo (NL. fem. n. *arcipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geofilum sp002412555*. The type genome for the species is the GenBank assembly GCA_002412555.1. The GC content of the type genome is 43.77 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Geofilum ceracitica sp. nov.

Candidatus Geofilum ceracitica (NL. fem. n. *ceracitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geofilum sp002411385*. The type genome for the species is the GenBank assembly GCA_002411385.1. The GC content of the type genome is 43.48 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Geofilum lanigitio sp. nov.

Candidatus Geofilum lanigitio (NL. fem. n. *lanigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geofilum sp012838865*. The type genome for the species is the GenBank assembly GCA_012838865.1. The GC content of the type genome is 50.9 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Geofilum turiciforma sp. nov.

Candidatus Geofilum turiciforma (NL. fem. n. *turiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geofilum sp002427105*. The type genome for the species is the GenBank assembly GCA_003513175.1. The GC content of the type genome is 42.89 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Geomonas decenilenta sp. nov.

Candidatus Geomonas decenilenta (NL. fem. n. *decenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geomonas sp000023645*. The type genome for the species is the GenBank assembly RS_GCF_000023645.1. The GC content of the type genome is 60.47 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Geomonas denunifica sp. nov.

Candidatus Geomonas denunifica (NL. fem. n. *denunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geomonas sp003499925*. The type genome for the species is the GenBank assembly GCA_001802135.1. The GC content of the type genome is 59.92 % and the genome length is 6.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Geomonas infunilega sp. nov.

Candidatus Geomonas infunilega (NL. fem. n. *infunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geomonas sp014193515*. The type genome for the species is the GenBank assembly RS_GCF_014193515.1. The GC content of the type genome is 62.61 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Geomonas musulifica sp. nov.

Candidatus Geomonas musulifica (NL. fem. n. *musulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geomonas sp014193585*. The type genome for the species is the GenBank assembly RS_GCF_014193585.1. The GC content of the type genome is 62.41 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Geomonas selibetta sp. nov.

Candidatus Geomonas selibetta (NL. fem. n. *selibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geomonas sp000175115*. The type genome for the species is the GenBank assembly RS_GCF_000175115.2. The GC content of the type genome is 61.18 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Geomonas serotousia sp. nov.

Candidatus Geomonas serotousia (NL. fem. n. *serotousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geomonas sp903925075*. The type genome for the species is the GenBank assembly GCA_903925075.1. The GC content of the type genome is 60.72 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Geomonas terebitia sp. nov.

Candidatus Geomonas terebitia (NL. fem. n. *terebitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geomonas sp014193675*. The type genome for the species is the GenBank assembly RS_GCF_014193675.1. The GC content of the type genome is 61.82 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Geomonas vigenimonia sp. nov.

Candidatus Geomonas vigenimonia (NL. fem. n. *vigenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geomonas sp003490025*. The type genome for the species is the GenBank assembly GCA_003490025.1. The GC content of the type genome is 61.41 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Geopsychrobacter favonitia sp. nov.

Candidatus Geopsychrobacter favonitia (NL. fem. n. *favonitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geopsychrobacter sp012974425*. The type genome for the species is the GenBank assembly GCA_012974425.1. The GC content of the type genome is 55.24 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Geopsychrobacter semidilenta sp. nov.

Candidatus Geopsychrobacter semidilenta (NL. fem. n. *semidilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geopsychrobacter sp009993495*. The type genome for the species is the GenBank assembly GCA_009993495.1. The GC content of the type genome is 53.83 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Georgenia derunilega sp. nov.

Candidatus Georgenia derunilega (NL. fem. n. *derunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Georgenia sp003991205*. The type genome for the species is the GenBank assembly RS_GCF_003991205.1. The GC content of the type genome is 73.1

% and the genome length is 4.28 Mbp.

Description of *Candidatus* Georgenia haricitia sp. nov.

Candidatus Georgenia haricitia (NL. fem. n. *haricitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Georgenia sp006352065*. The type genome for the species is the GenBank assembly RS_GCF_007096345.1. The GC content of the type genome is 72.16 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Georhizobium diponago sp. nov.

Candidatus Georhizobium diponago (NL. fem. n. *diponago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Georhizobium sp902498825*. The type genome for the species is the GenBank assembly RS_GCF_902498825.1. The GC content of the type genome is 62.11 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Geothrix bigemibra sp. nov.

Candidatus Geothrix bigemibra (NL. fem. n. *bigemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903857495*. The type genome for the species is the GenBank assembly GCA_903843615.1. The GC content of the type genome is 67.77 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Geothrix bigemisca sp. nov.

Candidatus Geothrix bigemisca (NL. fem. n. *bigemisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903886655*. The type genome for the species is the GenBank assembly GCA_903919275.1. The GC content of the type genome is 67.74 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Geothrix cetaricula sp. nov.

Candidatus Geothrix cetaricula (NL. fem. n. *cetaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp003158505*. The type genome for the species is the GenBank assembly GCA_003160655.1. The GC content of the type genome is 63.81 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Geothrix chalbitura sp. nov.

Candidatus Geothrix chalbitura (NL. fem. n. *chalbitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903839205*. The type genome for the species is the GenBank assembly GCA_903839205.1. The GC content of the type genome is 67.47 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Geothrix defenivita sp. nov.

Candidatus Geothrix defenivita (NL. fem. n. *defenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp003538615*. The type genome for the species is the GenBank assembly GCA_003538615.1. The GC content of the type genome is 68.63 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Geothrix denomax sp. nov.

Candidatus Geothrix denomax (NL. fem. n. *denomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp013334395*. The type genome for the species is the GenBank assembly GCA_013334395.1. The GC content of the type genome is 68.17 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Geothrix dimadentia sp. nov.

Candidatus Geothrix dimadentia (NL. fem. n. *dimadentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903843705*. The type genome for the species is the GenBank assembly GCA_903831225.1. The GC content of the type genome is 67.14 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Geothrix documicella sp. nov.

Candidatus Geothrix documicella (NL. fem. n. *documicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903890595*. The type genome for the species is the GenBank assembly GCA_903884175.1. The GC content of the type genome is 67.45 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Geothrix genocousia sp. nov.

Candidatus Geothrix genocousia (NL. fem. n. *genocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903884655*. The type genome for the species is the GenBank assembly GCA_903908045.1. The GC content of the type genome is 65.2 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Geothrix hariciforma sp. nov.

Candidatus Geothrix hariciforma (NL. fem. n. *hariciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903876615*. The type genome for the species is the GenBank assembly GCA_903876615.1. The GC content of the type genome is 67.61 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Geothrix maleditudo sp. nov.

Candidatus Geothrix maleditudo (NL. fem. n. *maleditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903873655*. The type genome for the species is the GenBank assembly GCA_903887115.1. The GC content of the type genome is 64.46 %

and the genome length is 3.21 Mbp.

Description of *Candidatus* Geothrix medimitoga sp. nov.

Candidatus Geothrix medimitoga (NL. fem. n. *medimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903880675*. The type genome for the species is the GenBank assembly GCA_903859585.1. The GC content of the type genome is 67.1 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Geothrix recomatica sp. nov.

Candidatus Geothrix recomatica (NL. fem. n. *recomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903927605*. The type genome for the species is the GenBank assembly GCA_903927605.1. The GC content of the type genome is 63.46 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Geothrix resuressa sp. nov.

Candidatus Geothrix resuressa (NL. fem. n. *resuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903913215*. The type genome for the species is the GenBank assembly GCA_903841555.1. The GC content of the type genome is 65.85 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Geothrix sotulugo sp. nov.

Candidatus Geothrix sotulugo (NL. fem. n. *sotulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903937385*. The type genome for the species is the GenBank assembly GCA_903893685.1. The GC content of the type genome is 66.82 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Geothrix subacimonia sp. nov.

Candidatus Geothrix subacimonia (NL. fem. n. *subacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903919165*. The type genome for the species is the GenBank assembly GCA_903821245.1. The GC content of the type genome is 63.56 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Geothrix subucivita sp. nov.

Candidatus Geothrix subucivita (NL. fem. n. *subucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903863195*. The type genome for the species is the GenBank assembly GCA_903925945.1. The GC content of the type genome is 68.0 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Geothrix susicastra sp. nov.

Candidatus Geothrix susicastra (NL. fem. n. *susicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp903840385*. The type genome for the species is the GenBank assembly GCA_903897625.1. The GC content of the type genome is 67.55 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Geothrix umbilifica sp. nov.

Candidatus Geothrix umbilifica (NL. fem. n. *umbilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geothrix sp013390615*. The type genome for the species is the GenBank assembly GCA_013390615.1. The GC content of the type genome is 67.57 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Geovibrio satacimonia sp. nov.

Candidatus Geovibrio satacimonia (NL. fem. n. *satacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Geovibrio sp001603805*. The type genome for the species is the GenBank assembly GCA_001603805.1. The GC content of the type genome is 44.38 % and the genome length is 2.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Gerunana amfitibra sp. nov.

Candidatus Gerunana amfitibra (NL. fem. n. *amfitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp902626505*. The type genome for the species is the GenBank assembly GCA_902626505.1. The GC content of the type genome is 29.22 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Gerunana gen. nov.

Candidatus Gerunana (NL. fem. n. *Gerunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G16*. The type species for the genus is *Candidatus* Gerunana amfitibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gerunana anatrugo sp. nov.

Candidatus Gerunana anatrugo (NL. fem. n. *anatrugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp902636265*. The type genome for the species is the GenBank assembly GCA_902636265.1. The GC content of the type genome is 29.23 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Gerunana bifarimonia sp. nov.

Candidatus Gerunana bifarimonia (NL. fem. n. *bifarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp002701745*. The type genome for the species is the GenBank assembly GCA_002701745.1. The GC content of the type genome is 29.51 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Gerunana decitifica sp. nov.

Candidatus Gerunana decitifica (NL. fem. n. *decitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp002702205*. The type genome for the species is the GenBank assembly GCA_002702205.1. The GC content of the type genome is 31.4 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Gerunana incocimonas sp. nov.

Candidatus Gerunana incocimonas (NL. fem. n. *incocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp002457315*. The type genome for the species is the GenBank assembly GCA_002457315.1. The GC content of the type genome is 29.6 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Gerunana indupitoga sp. nov.

Candidatus Gerunana indupitoga (NL. fem. n. *indupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp002697405*. The type genome for the species is the GenBank assembly GCA_002697405.1. The GC content of the type genome is 29.35 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Gerunana medimibra sp. nov.

Candidatus Gerunana medimibra (NL. fem. n. *medimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp902633975*. The type genome for the species is the GenBank assembly GCA_902633975.1. The GC content of the type genome is 30.41 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Gerunana musulitia sp. nov.

Candidatus Gerunana musulitia (NL. fem. n. *musulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp002696995*. The type genome for the species is the GenBank assembly GCA_002457035.1. The GC content of the type genome is 29.1 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Gerunana saxificula sp. nov.

Candidatus Gerunana saxificula (NL. fem. n. *saxificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp002692105*. The type genome for the species is the GenBank assembly GCA_002692105.1. The GC content of the type genome is 31.23 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Gerunana subucatica sp. nov.

Candidatus Gerunana subucatica (NL. fem. n. *subucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp902523065*. The type genome for the species is the GenBank assembly GCA_902549205.1. The GC content of the type genome is 31.34 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Gerunana tubicitoga sp. nov.

Candidatus Gerunana tubicitoga (NL. fem. n. *tubicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G16 sp902634135*. The type genome for the species is the GenBank assembly GCA_902634135.1. The GC content of the type genome is 28.96 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Gerunaria cepulessa sp. nov.

Candidatus Gerunaria cepulessa (NL. fem. n. *cepulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKYU01 sp007127715*. The type genome for the species is the GenBank assembly GCA_007123115.1. The GC content of the type genome is 67.78 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Gerunaria gen. nov.

Candidatus Gerunaria (NL. fem. n. *Gerunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKYU01*. The type species for the genus is *Candidatus* Gerunaria cepulessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWYM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisalellaceae.

Description of *Candidatus* Gerunaria hecatiforma sp. nov.

Candidatus Gerunaria hecatiforma (NL. fem. n. *hecatiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKYU01 sp003567475*. The type genome for the species is the GenBank assembly GCA_007131765.1. The GC content of the type genome is 66.78 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Gerunaria peradago sp. nov.

Candidatus Gerunaria peradago (NL. fem. n. *peradago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKYU01 sp007693855*. The type genome for the species is the GenBank assembly GCA_007693855.1. The GC content of the type genome is 67.12 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Gerunella solifitio sp. nov.

Candidatus Gerunella solifitio (NL. fem. n. *solifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002779465 sp002771315*. The type genome for the species is the GenBank assembly GCA_002771315.1. The GC content of the type genome is 52.32 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Gerunella gen. nov.

Candidatus Gerunella (NL. fem. n. *Gerunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002779465*. The type species for the genus is *Candidatus* Gerunella solifitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2156*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coniganaceae.

Description of *Candidatus* Gerunida hexagibra sp. nov.

Candidatus Gerunida hexagibra (NL. fem. n. *hexagibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1346 sp003170085*. The type genome for the species is the GenBank assembly GCA_003170085.1. The GC content of the type genome is 66.03 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Gerunida gen. nov.

Candidatus Gerunida (NL. fem. n. *Gerunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1346*. The type species for the genus is *Candidatus* Gerunida hexagibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gerunidaceae.

Description of *Candidatus* Gerunidaceae fam. nov.

Candidatus Gerunidaceae (NL. fem. n. *Gerunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-1346.* The type genus for the taxon is *Candidatus* Gerunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *FEN-1346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Gerunidales.

Description of *Candidatus* Gerunidales ord. nov.

Candidatus Gerunidales (NL. fem. n. *Gerunidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-1346.* The type genus for the taxon is *Candidatus* Gerunida .

According to the GTDB R06-RS202, this order belongs to the class *Phycisphaerae*.

Description of *Candidatus* Gerunosa cisorilenta sp. nov.

Candidatus Gerunosa cisorilenta (NL. fem. n. *cisorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c54 sp002770955*. The type genome for the species is the GenBank assembly GCA_002788275.1. The GC content of the type genome is 31.75 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Gerunosa gen. nov.

Candidatus Gerunosa (NL. fem. n. *Gerunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BRH-c54*. The type species for the genus is *Candidatus* Gerunosa cisorilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gerunosa demagigena sp. nov.

Candidatus Gerunosa demagigena (NL. fem. n. *demagigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *BRH-c54 sp000961845*. The type genome for the species is the GenBank assembly GCA_000961845.1. The GC content of the type genome is 32.22 % and the genome length is 2.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Gerunosa socagicella sp. nov.

Candidatus Gerunosa socagicella (NL. fem. n. *socagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c54 sp002841035*. The type genome for the species is the GenBank assembly GCA_002841035.1. The GC content of the type genome is 32.29 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Gerunosa vicatibula sp. nov.

Candidatus Gerunosa vicatibula (NL. fem. n. *vicatibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c54 sp002359215*. The type genome for the species is the GenBank assembly GCA_002415035.1. The GC content of the type genome is 32.01 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Gerunula nugivilenta sp. nov.

Candidatus Gerunula nugivilenta (NL. fem. n. *nugivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCH01 sp013694495*. The type genome for the species is the GenBank assembly GCA_013694495.1. The GC content of the type genome is 72.35 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Gerunula gen. nov.

Candidatus Gerunula (NL. fem. n. *Gerunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDCH01*. The type species for the genus is *Candidatus* Gerunula nugivilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACDCH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gerunulaceae.

Description of *Candidatus* Gerunulaceae fam. nov.

Candidatus Gerunulaceae (NL. fem. n. *Gerunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACDCH01.* The type genus for the taxon is *Candidatus* Gerunula .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Ghiorsea locelax sp. nov.

Candidatus Ghiorsea locelax (NL. fem. n. *locelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ghiorsea sp002323245*. The type genome for the species is the GenBank assembly GCA_002323245.1. The GC content of the type genome is 46.4 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Ghiorsea octusiforma sp. nov.

Candidatus Ghiorsea octusiforma (NL. fem. n. *octusiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ghiorsea sp002401135*. The type genome for the species is the GenBank assembly GCA_002401135.1. The GC content of the type genome is 43.6 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Giesbergeria adcesilenta sp. nov.

Candidatus Giesbergeria adcesilenta (NL. fem. n. *adcesilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Giesbergeria sp903882725*. The type genome for the species is the GenBank assembly GCA_903882725.1. The GC content of the type genome is 60.46 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Giesbergeria cunabessa sp. nov.

Candidatus Giesbergeria cunabessa (NL. fem. n. *cunabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Giesbergeria sp003096555*. The type genome for the species is the GenBank assembly RS_GCF_003387115.1. The GC content of the type genome is 63.08 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Giesbergeria nicoticella sp. nov.

Candidatus Giesbergeria nicoticella (NL. fem. n. *nicoticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Giesbergeria sp001770955*. The type genome for the species is the GenBank assembly GCA_003516715.1. The GC content of the type genome is 65.71 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Giesbergeria peropivita sp. nov.

Candidatus Giesbergeria peropivita (NL. fem. n. *peropivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Giesbergeria sp001724785*. The type genome for the species is the GenBank assembly GCA_001724785.1. The GC content of the type genome is 67.74 % and the genome length is 2.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Giesbergeria semunicula sp. nov.

Candidatus Giesbergeria semunicula (NL. fem. n. *semunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Giesbergeria sp010020825*. The type genome for the species is the GenBank assembly RS_GCF_010020825.1. The GC content of the type genome is 65.41 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Giesbergeria solacugo sp. nov.

Candidatus Giesbergeria solacugo (NL. fem. n. *solacugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Giesbergeria sp012932145*. The type genome for the species is the GenBank assembly RS_GCF_012931925.1. The GC content of the type genome is 66.65 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Giganana bipinilenta sp. nov.

Candidatus Giganana bipinilenta (NL. fem. n. *bipinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9630 sp003482885*. The type genome for the species is the GenBank assembly GCA_003450775.1. The GC content of the type genome is 37.67 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Giganana gen. nov.

Candidatus Giganana (NL. fem. n. *Giganana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9630*. The type species for the genus is *Candidatus* Giganana bipinilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Giganana bucolitio sp. nov.

Candidatus Giganana bucolitio (NL. fem. n. *bucolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9630 sp903842445*. The type genome for the species is the GenBank assembly GCA_903842445.1. The GC content of the type genome is 37.88 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Giganana resacastra sp. nov.

Candidatus Giganana resacastra (NL. fem. n. *resacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9630 sp903937035*. The type genome for the species is the GenBank assembly GCA_903824765.1. The GC content of the type genome is 40.11 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Giganaria cilotitrix sp. nov.

Candidatus Giganaria cilotitrix (NL. fem. n. *cilotitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5946 sp002434045*. The type genome for the species is the GenBank assembly GCA_002434045.1. The GC content of the type genome is 51.14 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Giganaria gen. nov.

Candidatus Giganaria (NL. fem. n. *Giganaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5946*. The type species for the genus is *Candidatus* Giganaria cilotitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Giganella inpenibra sp. nov.

Candidatus Giganella inpenibra (NL. fem. n. *inpenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSYF01 sp011367605*. The type genome for the species is the GenBank assembly GCA_011367605.1. The GC content of the type genome is 66.12 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Giganella gen. nov.

Candidatus Giganella (NL. fem. n. *Giganella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSYF01*. The type species for the genus is *Candidatus* Giganella

inpenibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSYF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Giganellaceae.

Description of *Candidatus* Giganellaceae fam. nov.

Candidatus Giganellaceae (NL. fem. n. *Giganellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSYF01.* The type genus for the taxon is *Candidatus* Giganella .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Gigania adordessa sp. nov.

Candidatus Gigania adordessa (NL. fem. n. *adordessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2110 sp002331465*. The type genome for the species is the GenBank assembly GCA_002331465.1. The GC content of the type genome is 54.35 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Gigania gen. nov.

Candidatus Gigania (NL. fem. n. *Gigania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2110*. The type species for the genus is *Candidatus* Gigania adordessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TK06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaculaceae.

Description of *Candidatus* Gigania detumilenta sp. nov.

Candidatus Gigania detumilenta (NL. fem. n. *detumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2110 sp002719335*. The type genome for the species is the GenBank assembly GCA_002726525.1. The GC content of the type genome is 54.94 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Gigania excamitia sp. nov.

Candidatus Gigania excamitia (NL. fem. n. *excamitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2110 sp002388005*. The type genome for the species is the GenBank assembly GCA_002388005.1. The GC content of the type genome is 55.27 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Gigania imbeledo sp. nov.

Candidatus Gigania imbeledo (NL. fem. n. *imbeledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2110 sp012960315*. The type genome for the species is the GenBank assembly GCA_012960315.1. The GC content of the type genome is 54.37 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Gigania satacousia sp. nov.

Candidatus Gigania satacousia (NL. fem. n. *satacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2110 sp014239555*. The type genome for the species is the GenBank assembly GCA_014239555.1. The GC content of the type genome is 54.3 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Gigania scaccessa sp. nov.

Candidatus Gigania scaccessa (NL. fem. n. *scaccessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2110 sp002705305*. The type genome for the species is the GenBank assembly GCA_002705305.1. The GC content of the type genome is 55.01 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Giganida diminitoga sp. nov.

Candidatus Giganida diminitoga (NL. fem. n. *diminitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU063 sp001512695*. The type genome for the species is the GenBank assembly GCA_002386075.1. The GC content of the type genome is 42.3 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Giganida gen. nov.

Candidatus Giganida (NL. fem. n. *Giganida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU063*. The type species for the genus is *Candidatus* Giganida diminitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Giganida ossaratica sp. nov.

Candidatus Giganida ossaratica (NL. fem. n. *ossaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU063 sp012842445*. The type genome for the species is the GenBank assembly GCA_012842445.1. The GC content of the type genome is 38.68 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Giganosa camilatica sp. nov.

Candidatus Giganosa camilatica (NL. fem. n. *camilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMFV01 sp903840435*. The type genome for the species is the GenBank assembly GCA_903945585.1. The GC content of the type genome is 60.58 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Giganosa gen. nov.

Candidatus Giganosa (NL. fem. n. *Giganosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMFV01*. The type species for the genus is *Candidatus* Giganosa camilatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Giganosa cinefibula sp. nov.

Candidatus Giganosa cinefibula (NL. fem. n. *cinefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMFV01 sp903884425*. The type genome for the species is the GenBank assembly GCA_903843275.1. The GC content of the type genome is 69.04 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Giganosa defesastra sp. nov.

Candidatus Giganosa defesastra (NL. fem. n. *defesastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMFV01 sp903874895*. The type genome for the species is the GenBank assembly GCA_903874895.1. The GC content of the type genome is 68.02 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Giganosa doxolago sp. nov.

Candidatus Giganosa doxolago (NL. fem. n. *doxolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMFV01 sp903851655*. The type genome for the species is the GenBank assembly GCA_903851655.1. The GC content of the type genome is 69.55 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Giganosa idciratica sp. nov.

Candidatus Giganosa idciratica (NL. fem. n. *idciratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIMFV01 sp903858685*. The type genome for the species is the GenBank assembly GCA_903858685.1. The GC content of the type genome is 63.65 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Giganosa remedousia sp. nov.

Candidatus Giganosa remedousia (NL. fem. n. *remedousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMFV01 sp903903715*. The type genome for the species is the GenBank assembly GCA_903903715.1. The GC content of the type genome is 65.1 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Giganula decitatio sp. nov.

Candidatus Giganula decitatio (NL. fem. n. *decitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4767 sp002403385*. The type genome for the species is the GenBank assembly GCA_002328145.1. The GC content of the type genome is 45.92 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Giganula gen. nov.

Candidatus Giganula (NL. fem. n. *Giganula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4767*. The type species for the genus is *Candidatus* Giganula decitatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Giganulaceae.

Description of *Candidatus* Giganulaceae fam. nov.

Candidatus Giganulaceae (NL. fem. n. *Giganulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4767.* The type genus for the taxon is *Candidatus* Giganula .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Gilliamella cotenitio sp. nov.

Candidatus Gilliamella cotenitio (NL. fem. n. *cotenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gilliamella sp002142215*. The type genome for the species is the GenBank assembly RS_GCF_002142215.1. The GC content of the type genome is 34.38 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Gilliamella exheritoga sp. nov.

Candidatus Gilliamella exheritoga (NL. fem. n. *exheritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gilliamella sp009795885*. The type genome for the species is the GenBank assembly RS_GCF_009795885.1. The GC content of the type genome is 35.37 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Gilliamella nehalitrix sp. nov.

Candidatus Gilliamella nehalitrix (NL. fem. n. *nehalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gilliamella sp009795805*. The type genome for the species is the GenBank assembly RS_GCF_009795865.1. The GC content of the type genome is 34.87 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Gilliamella repagago sp. nov.

Candidatus Gilliamella repagago (NL. fem. n. *repagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gilliamella sp009795845*. The type genome for the species is the GenBank assembly RS_GCF_009795895.1. The GC content of the type genome is 34.89 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Gillisia desonitio sp. nov.

Candidatus Gillisia desonitio (NL. fem. n. *desonitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gillisia sp002364325*. The type genome for the species is the GenBank assembly GCA_002364325.1. The GC content of the type genome is 34.44 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Gillisia detecivita sp. nov.

Candidatus Gillisia detecivita (NL. fem. n. *detecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gillisia sp900104765*. The type genome for the species is the GenBank assembly RS_GCF_000744275.1. The GC content of the type genome is 34.3 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Gillisia esculilenta sp. nov.

Candidatus Gillisia esculilenta (NL. fem. n. *esculilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gillisia sp007993795*. The type genome for the species is the GenBank assembly RS_GCF_007993795.1. The GC content of the type genome is 39.77 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Gillisia siminastra sp. nov.

Candidatus Gillisia siminastra (NL. fem. n. *siminastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gillisia sp007827275*. The type genome for the species is the GenBank assembly RS_GCF_007827275.1. The GC content of the type genome is 36.98 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Gillisia venefastra sp. nov.

Candidatus Gillisia venefastra (NL. fem. n. *venefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Gillisia sp000403785*. The type genome for the species is the GenBank assembly RS_GCF_000403785.1. The GC content of the type genome is 33.9 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Gilvibacter desacedo sp. nov.

Candidatus Gilvibacter desacedo (NL. fem. n. *desacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gilvibacter sp003229235*. The type genome for the species is the GenBank assembly GCA_003229235.1. The GC content of the type genome is 38.3 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Gilvibacter inherugo sp. nov.

Candidatus Gilvibacter inherugo (NL. fem. n. *inherugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gilvibacter sp013214815*. The type genome for the species is the GenBank assembly GCA_013214815.1. The GC content of the type genome is 43.55 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Gilvibacter resurivita sp. nov.

Candidatus Gilvibacter resurivita (NL. fem. n. *resurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gilvibacter sp002163875*. The type genome for the species is the GenBank assembly RS_GCF_002163875.1. The GC content of the type genome is 43.63 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Gimesia adlubigena sp. nov.

Candidatus Gimesia adlubigena (NL. fem. n. *adlubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gimesia sp007744675*. The type genome for the species is the GenBank assembly RS_GCF_007744675.1. The GC content of the type genome is 49.58 % and the genome length is 7.77 Mbp.

Description of *Candidatus* Gimesia benepitrix sp. nov.

Candidatus Gimesia benepitrix (NL. fem. n. *benepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gimesia sp007754425*. The type genome for the species is the GenBank assembly RS_GCF_007754425.1. The GC content of the type genome is 49.49 % and the genome length is 7.7 Mbp.

Description of *Candidatus* Gimesia cacopibra sp. nov.

Candidatus Gimesia cacopibra (NL. fem. n. *cacopibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gimesia sp007748195*. The type genome for the species is the GenBank assembly RS_GCF_007748175.1. The GC content of the type genome is 45.08 % and the genome length is 7.22 Mbp.

Description of *Candidatus* Gimesia curacitura sp. nov.

Candidatus Gimesia curacitura (NL. fem. n. *curacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gimesia sp007748135*. The type genome for the species is the GenBank assembly RS_GCF_007748135.1. The GC content of the type genome is 52.91 % and the genome length is 8.1 Mbp.

Description of *Candidatus* Gimesia deforibra sp. nov.

Candidatus Gimesia deforibra (NL. fem. n. *deforibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gimesia sp007746795*. The type genome for the species is the GenBank assembly RS_GCF_007746795.1. The GC content of the type genome is 50.16 % and the genome length is 7.93 Mbp.

Description of *Candidatus* Gimesia denavitio sp. nov.

Candidatus Gimesia denavitio (NL. fem. n. *denavitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gimesia sp002724985*. The type genome for the species is the GenBank assembly RS_GCF_007744075.1. The GC content of the type genome is 52.81 % and the genome length is 8.29 Mbp.

Description of *Candidatus* Gimesia vanidibula sp. nov.

Candidatus Gimesia vanidibula (NL. fem. n. *vanidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gimesia sp007748015*. The type genome for the species is the GenBank assembly RS_GCF_007748015.1. The GC content of the type genome is 53.58 % and the genome length is 7.98 Mbp.

Description of *Candidatus* Gimesia venabisca sp. nov.

Candidatus Gimesia venabisca (NL. fem. n. *venabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gimesia sp002706765*. The type genome for the species is the GenBank assembly GCA_002415975.1. The GC content of the type genome is 51.08 % and the genome length is 7.38 Mbp.

Description of *Candidatus* Glaciecola adpugicula sp. nov.

Candidatus Glaciecola adpugicula (NL. fem. n. *adpugicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glaciecola sp002338515*. The type genome for the species is the GenBank assembly GCA_002338515.1. The GC content of the type genome is 37.89 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Glaciecola cibicastra sp. nov.

Candidatus Glaciecola cibicastra (NL. fem. n. *cibicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Glaciecola sp000155775*. The type genome for the species is the GenBank assembly RS_GCF_000155775.1. The GC content of the type genome is 40.72 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Glaciecola coninicula sp. nov.

Candidatus Glaciecola coninicula (NL. fem. n. *coninicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glaciecola sp002292215*. The type genome for the species is the GenBank assembly GCA_002292215.1. The GC content of the type genome is 41.62 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Glaciecola defesedo sp. nov.

Candidatus Glaciecola defesedo (NL. fem. n. *defesedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glaciecola sp002836745*. The type genome for the species is the GenBank assembly RS_GCF_002836745.1. The GC content of the type genome is 41.28 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Glaciecola excamibula sp. nov.

Candidatus Glaciecola excamibula (NL. fem. n. *excamibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glaciecola sp003203515*. The type genome for the species is the GenBank assembly RS_GCF_003203515.1. The GC content of the type genome is 41.22 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Glaciecola ridibicella sp. nov.

Candidatus Glaciecola ridibicella (NL. fem. n. *ridibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glaciecola sp002340325*. The type genome for the species is the GenBank assembly GCA_002340325.1. The GC content of the type genome is 41.98 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Glaciimonas direcilega sp. nov.

Candidatus Glaciimonas direcilega (NL. fem. n. *direcilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glaciimonas sp009497155*. The type genome for the species is the GenBank assembly RS_GCF_009497155.1. The GC content of the type genome is 49.15 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Glaciimonas lucifilega sp. nov.

Candidatus Glaciimonas lucifilega (NL. fem. n. *lucifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glaciimonas sp014377145*. The type genome for the species is the GenBank assembly GCA_014377145.1. The GC content of the type genome is 46.4 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Glaciimonas resacimonas sp. nov.

Candidatus Glaciimonas resacimonas (NL. fem. n. *resacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glaciimonas sp003056055*. The type genome for the species is the GenBank assembly RS_GCF_003056055.1. The GC content of the type genome is 51.12 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Gleimia altipessa sp. nov.

Candidatus Gleimia altipessa (NL. fem. n. *altipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gleimia sp012837655*. The type genome for the species is the GenBank assembly GCA_012837655.1. The GC content of the type genome is 56.98 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Globicatella defarago sp. nov.

Candidatus Globicatella defarago (NL. fem. n. *defarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Globicatella sp010892315*. The type genome for the species is the GenBank assembly RS_GCF_010892315.1. The GC content of the type genome is 35.8 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Gloeocapsa eclecago sp. nov.

Candidatus Gloeocapsa eclecago (NL. fem. n. *eclecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gloeocapsa sp007693955*. The type genome for the species is the GenBank assembly GCA_007693955.1. The GC content of the type genome is 38.05 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Gloeocapsa molecentia sp. nov.

Candidatus Gloeocapsa molecentia (NL. fem. n. *molecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gloeocapsa sp000332035*. The type genome for the species is the GenBank assembly RS_GCF_000332035.1. The GC content of the type genome is 41.11 % and the genome length is 4.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sphagnum bog".

Description of *Candidatus* Gluconacetobacter bipenedo sp. nov.

Candidatus Gluconacetobacter bipenedo (NL. fem. n. *bipenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gluconacetobacter sp014174165*. The type genome for the species is the GenBank assembly RS_GCF_014174205.1. The GC content of the type genome is 64.65 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Gluconobacter haricago sp. nov.

Candidatus Gluconobacter haricago (NL. fem. n. *haricago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gluconobacter sp009547075*. The type genome for the species is the GenBank assembly RS_GCF_009547075.1. The GC content of the type genome is 60.27 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Gluconobacter taraxedo sp. nov.

Candidatus Gluconobacter taraxedo (NL. fem. n. *taraxedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gluconobacter_A sp014132155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014132155.1. The GC content of the type genome is 56.12 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Glutamicibacter anancousia sp. nov.

Candidatus Glutamicibacter anancousia (NL. fem. n. *anancousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glutamicibacter sp004320535*. The type genome for the species is the GenBank assembly RS_GCF_004320535.1. The GC content of the type genome is 55.69 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Glutamicibacter bipinatica sp. nov.

Candidatus Glutamicibacter bipinatica (NL. fem. n. *bipinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glutamicibacter sp009805585*. The type genome for the species is the GenBank assembly RS_GCF_009805585.1. The GC content of the type genome is 55.57 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Glutamicibacter cerofitio sp. nov.

Candidatus Glutamicibacter cerofitio (NL. fem. n. *cerofitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glutamicibacter sp900094805*. The type genome for the species is the

GenBank assembly RS_GCF_900094805.1. The GC content of the type genome is 56.09 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Glutamicibacter defanax sp. nov.

Candidatus Glutamicibacter defanax (NL. fem. n. *defanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glutamicibacter sp002979865*. The type genome for the species is the GenBank assembly RS_GCF_002979815.1. The GC content of the type genome is 61.07 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Glutamicibacter fetifitura sp. nov.

Candidatus Glutamicibacter fetifitura (NL. fem. n. *fetifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glutamicibacter sp002975405*. The type genome for the species is the GenBank assembly RS_GCF_002979925.1. The GC content of the type genome is 60.83 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Glutamicibacter inrecicula sp. nov.

Candidatus Glutamicibacter inrecicula (NL. fem. n. *inrecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glutamicibacter sp002979915*. The type genome for the species is the GenBank assembly RS_GCF_002979915.1. The GC content of the type genome is 55.79 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Glutamicibacter semilessa sp. nov.

Candidatus Glutamicibacter semilessa (NL. fem. n. *semilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glutamicibacter sp003486025*. The type genome for the species is the GenBank assembly GCA_003486025.1. The GC content of the type genome is 57.51 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Glycocaulis depicisca sp. nov.

Candidatus Glycocaulis depicisca (NL. fem. n. *depicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glycocaulis sp000744995*. The type genome for the species is the GenBank assembly RS_GCF_000744995.1. The GC content of the type genome is 63.0 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Glycomyces adfulitrix sp. nov.

Candidatus Glycomyces adfulitrix (NL. fem. n. *adfulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glycomyces sp003933745*. The type genome for the species is the GenBank assembly RS_GCF_003933745.1. The GC content of the type genome is 72.27 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Glycomyces pulegisca sp. nov.

Candidatus Glycomyces pulegisca (NL. fem. n. *pulegisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Glycomyces sp000719515*. The type genome for the species is the GenBank assembly RS_GCF_000719515.1. The GC content of the type genome is 70.52 % and the genome length is 4.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Gordonia adtagatica sp. nov.

Candidatus Gordonia adtagatica (NL. fem. n. *adtagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp012933505*. The type genome for the species is the GenBank assembly RS_GCF_012933505.1. The GC content of the type genome is 66.1 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Gordonia antimetta sp. nov.

Candidatus Gordonia antimetta (NL. fem. n. *antimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp002414845*. The type genome for the species is the GenBank assembly GCA_002414845.1. The GC content of the type genome is 67.64 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Gordonia bulapilega sp. nov.

Candidatus Gordonia bulapilega (NL. fem. n. *bulapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp014530585*. The type genome for the species is the GenBank assembly GCA_014530585.1. The GC content of the type genome is 66.95 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Gordonia buxanicula sp. nov.

Candidatus Gordonia buxanicula (NL. fem. n. *buxanicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp003797825*. The type genome for the species is the GenBank assembly RS_GCF_003797825.1. The GC content of the type genome is 67.29 % and the genome length is 5.8 Mbp.

Description of *Candidatus* Gordonia cerevibra sp. nov.

Candidatus Gordonia cerevibra (NL. fem. n. *cerevibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp000143885*. The type genome for the species is the GenBank assembly RS_GCF_001418765.1. The GC content of the type genome is 67.83 % and the genome length is 5.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sludge".

Description of *Candidatus* Gordonia cibaritura sp. nov.

Candidatus Gordonia cibaritura (NL. fem. n. *cibaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp014041935*. The type genome for the species is the

GenBank assembly GCA_014041935.1. The GC content of the type genome is 67.56 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Gordonia embamedo sp. nov.

Candidatus Gordonia embamedo (NL. fem. n. *embamedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp009862785*. The type genome for the species is the GenBank assembly RS_GCF_009862785.1. The GC content of the type genome is 66.63 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Gordonia fiducedo sp. nov.

Candidatus Gordonia fiducedo (NL. fem. n. *fiducedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp003797185*. The type genome for the species is the GenBank assembly RS_GCF_003797185.1. The GC content of the type genome is 66.29 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Gordonia fuligicula sp. nov.

Candidatus Gordonia fuligicula (NL. fem. n. *fuligicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp010548645*. The type genome for the species is the GenBank assembly RS_GCF_010548645.1. The GC content of the type genome is 66.68 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Gordonia infanousia sp. nov.

Candidatus Gordonia infanousia (NL. fem. n. *infanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp009828195*. The type genome for the species is the GenBank assembly RS_GCF_009828195.1. The GC content of the type genome is 66.99 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Gordonia malogibula sp. nov.

Candidatus Gordonia malogibula (NL. fem. n. *malogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp002009645*. The type genome for the species is the GenBank assembly RS_GCF_001456905.1. The GC content of the type genome is 67.93 % and the genome length is 5.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sediment".

Description of *Candidatus* Gordonia semodicella sp. nov.

Candidatus Gordonia semodicella (NL. fem. n. *semodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp012515855*. The type genome for the species is the GenBank assembly GCA_012515855.1. The GC content of the type genome is 67.83 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Gordonia tigurousia sp. nov.

Candidatus Gordonia tigurousia (NL. fem. n. *tigurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp002700145*. The type genome for the species is the GenBank assembly GCA_002700145.1. The GC content of the type genome is 66.49 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Gordonia vanidedo sp. nov.

Candidatus Gordonia vanidedo (NL. fem. n. *vanidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp004353055*. The type genome for the species is the GenBank assembly RS_GCF_007559005.1. The GC content of the type genome is 66.95 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Gordonia xeramisca sp. nov.

Candidatus Gordonia xeramisca (NL. fem. n. *xeramisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonia sp002477755*. The type genome for the species is the GenBank assembly GCA_002477755.1. The GC content of the type genome is 67.63 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Gordonibacter penicitica sp. nov.

Candidatus Gordonibacter penicitica (NL. fem. n. *penicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gordonibacter sp003339845*. The type genome for the species is the GenBank assembly RS_GCF_902387185.1. The GC content of the type genome is 65.04 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Gorillibacterium bicapugo sp. nov.

Candidatus Gorillibacterium bicapugo (NL. fem. n. *bicapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gorillibacterium sp014380705*. The type genome for the species is the GenBank assembly GCA_014380705.1. The GC content of the type genome is 45.37 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Gottfriedia absegitas sp. nov.

Candidatus Gottfriedia absegitas (NL. fem. n. *absegitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gottfriedia sp002574545*. The type genome for the species is the GenBank assembly RS_GCF_002574545.1. The GC content of the type genome is 33.1 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Gottfriedia ascenilega sp. nov.

Candidatus Gottfriedia ascenilega (NL. fem. n. *ascenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gottfriedia sp004340305*. The type genome for the species is the GenBank assembly RS_GCF_004340305.1. The GC content of the type genome is 32.71

% and the genome length is 4.28 Mbp.

Description of *Candidatus* Gottfriedia attubimonas sp. nov.

Candidatus Gottfriedia attubimonas (NL. fem. n. *attubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gottfriedia sp002559405*. The type genome for the species is the GenBank assembly RS_GCF_002559405.1. The GC content of the type genome is 33.12 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Gottfriedia bovicimonia sp. nov.

Candidatus Gottfriedia bovicimonia (NL. fem. n. *bovicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gottfriedia sp002564465*. The type genome for the species is the GenBank assembly RS_GCF_002566505.1. The GC content of the type genome is 33.12 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Gottfriedia exhilitas sp. nov.

Candidatus Gottfriedia exhilitas (NL. fem. n. *exhilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gottfriedia sp002577195*. The type genome for the species is the GenBank assembly RS_GCF_002577195.1. The GC content of the type genome is 33.12 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Gottfriedia octobitoga sp. nov.

Candidatus Gottfriedia octobitoga (NL. fem. n. *octobitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gottfriedia sp001420605*. The type genome for the species is the GenBank assembly RS_GCF_001420605.1. The GC content of the type genome is 33.0 % and the genome length is 5.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Gottfriedia podagisca sp. nov.

Candidatus Gottfriedia podagisca (NL. fem. n. *podagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gottfriedia sp003053645*. The type genome for the species is the GenBank assembly RS_GCF_003053645.1. The GC content of the type genome is 32.98 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Gottfriedia valefessa sp. nov.

Candidatus Gottfriedia valefessa (NL. fem. n. *valefessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gottfriedia sp002156875*. The type genome for the species is the GenBank assembly RS_GCF_002156875.1. The GC content of the type genome is 33.06 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Gottfriedia vepalatica sp. nov.

Candidatus Gottfriedia vepalatica (NL. fem. n. *vepalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gottfriedia sp002556365*. The type genome for the species is the GenBank assembly RS_GCF_013200995.1. The GC content of the type genome is 33.37 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Gracilibacillus adrumitio sp. nov.

Candidatus Gracilibacillus adrumitio (NL. fem. n. *adrumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gracilibacillus sp009498735*. The type genome for the species is the GenBank assembly RS_GCF_009498735.1. The GC content of the type genome is 37.51 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Gracilibacillus arancugo sp. nov.

Candidatus Gracilibacillus arancugo (NL. fem. n. *arancugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gracilibacillus sp010993965*. The type genome for the species is the GenBank assembly RS_GCF_010993965.1. The GC content of the type genome is 36.47 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Gracilibacillus totiditia sp. nov.

Candidatus Gracilibacillus totiditia (NL. fem. n. *totiditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gracilibacillus sp002797295*. The type genome for the species is the GenBank assembly RS_GCF_009650095.1. The GC content of the type genome is 36.67 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Gracilibacter vitabitio sp. nov.

Candidatus Gracilibacter vitabitio (NL. fem. n. *vitabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gracilibacter sp001516055*. The type genome for the species is the GenBank assembly GCA_001516055.1. The GC content of the type genome is 39.52 % and the genome length is 4.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Gracilimonas forabitas sp. nov.

Candidatus Gracilimonas forabitas (NL. fem. n. *forabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gracilimonas sp002694685*. The type genome for the species is the GenBank assembly GCA_002694685.1. The GC content of the type genome is 41.31 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Gracilimonas lucelibra sp. nov.

Candidatus Gracilimonas lucelibra (NL. fem. n. *lucelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Gracilimonas sp002696035*. The type genome for the species is the GenBank assembly GCA_002696035.1. The GC content of the type genome is 43.36 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Grallana sanabetta sp. nov.

Candidatus Grallana sanabetta (NL. fem. n. *sanabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMAH01 sp014132615*. The type genome for the species is the GenBank assembly GCA_014132615.1. The GC content of the type genome is 37.54 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Grallana gen. nov.

Candidatus Grallana (NL. fem. n. *Grallana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMAH01*. The type species for the genus is *Candidatus* Grallana sanabetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Grallella induvivita sp. nov.

Candidatus Grallella induvivita (NL. fem. n. *induvivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-36-16 sp002794035*. The type genome for the species is the GenBank assembly GCA_002794035.1. The GC content of the type genome is 36.11 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Grallella gen. nov.

Candidatus Grallella (NL. fem. n. *Grallella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-36-16*. The type species for the genus is *Candidatus* Grallella induvivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *IGHO2-01-FULL-4-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisulaceae.

Description of *Candidatus* Grallia utralilega sp. nov.

Candidatus Grallia utralilega (NL. fem. n. *utralilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9647 sp003519375*. The type genome for the species is the GenBank assembly GCA_003519375.1. The GC content of the type genome is 54.21 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Grallia gen. nov.

Candidatus Grallia (NL. fem. n. *Grallia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9647*. The type species for the genus is *Candidatus* Grallia utralilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabanaceae.

Description of *Candidatus* Grallida cerificella sp. nov.

Candidatus Grallida cerificella (NL. fem. n. *cerificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686465 sp002686465*. The type genome for the species is the GenBank assembly GCA_002686465.1. The GC content of the type genome is 42.24 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Grallida gen. nov.

Candidatus Grallida (NL. fem. n. *Grallida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2686465*. The type species for the genus is *Candidatus* Grallida

cerificella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sotulanaceae.

Description of *Candidatus* Grallosa demagetta sp. nov.

Candidatus Grallosa demagetta (NL. fem. n. *demagetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *55-13 sp001898035*. The type genome for the species is the GenBank assembly GCA_001898035.1. The GC content of the type genome is 55.49 % and the genome length is 4.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Grallosa gen. nov.

Candidatus Grallosa (NL. fem. n. *Grallosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *55-13*. The type species for the genus is *Candidatus* Grallosa demagetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Grallosa obsoribula sp. nov.

Candidatus Grallosa obsoribula (NL. fem. n. *obsoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *55-13 sp014380605*. The type genome for the species is the GenBank assembly GCA_014380605.1. The GC content of the type genome is 55.45 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Grallula ecfunousia sp. nov.

Candidatus Grallula ecfunousia (NL. fem. n. *ecfunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JACCTU01 sp013812235*. The type genome for the species is the GenBank assembly GCA_013812235.1. The GC content of the type genome is 69.54 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Grallula gen. nov.

Candidatus Grallula (NL. fem. n. *Grallula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCTU01*. The type species for the genus is *Candidatus* Grallula ecfunousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Gramella aciscifica sp. nov.

Candidatus Gramella aciscifica (NL. fem. n. *aciscifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gramella sp009735695*. The type genome for the species is the GenBank assembly RS_GCF_009735695.1. The GC content of the type genome is 41.44 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Gramella obnupiforma sp. nov.

Candidatus Gramella obnupiforma (NL. fem. n. *obnupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gramella sp004332155*. The type genome for the species is the GenBank assembly RS_GCF_004332155.1. The GC content of the type genome is 39.94 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Gramella recorigena sp. nov.

Candidatus Gramella recorigena (NL. fem. n. *recorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gramella sp900105135*. The type genome for the species is the GenBank assembly RS_GCF_900105135.1. The GC content of the type genome is 37.07 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Gramella refocilenta sp. nov.

Candidatus Gramella refocilenta (NL. fem. n. *refocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gramella sp006714895*. The type genome for the species is the GenBank assembly RS_GCF_006714895.1. The GC content of the type genome is 38.21 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Granulicatella abluviforma sp. nov.

Candidatus Granulicatella abluviforma (NL. fem. n. *abluviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Granulicatella sp001071995*. The type genome for the species is the GenBank assembly RS_GCF_001071995.1. The GC content of the type genome is 39.25 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Granulicatella bicinimonas sp. nov.

Candidatus Granulicatella bicinimonas (NL. fem. n. *bicinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Granulicatella sp001058355*. The type genome for the species is the GenBank assembly GCA_001058355.1. The GC content of the type genome is 39.06 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Granulicatella codifago sp. nov.

Candidatus Granulicatella codifago (NL. fem. n. *codifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Granulicatella sp900551535*. The type genome for the species is the GenBank assembly GCA_900551535.1. The GC content of the type genome is 39.13 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Granulicella attegago sp. nov.

Candidatus Granulicella attegago (NL. fem. n. *attegago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Granulicella_A sp009766105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009766105.1. The GC content of the type genome is 57.27 % and the genome length is 6.44 Mbp.

Description of *Candidatus* Granulicella nocenugo sp. nov.

Candidatus Granulicella nocenugo (NL. fem. n. *nocenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Granulicella_C sp009914315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009914315.1. The GC content of the type genome is 60.66 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Granulicella noninatio sp. nov.

Candidatus Granulicella noninatio (NL. fem. n. *noninatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Granulicella_C sp903970285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903970285.1. The GC content of the type genome is 63.13 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Granulicella proprivita sp. nov.

Candidatus Granulicella proprivita (NL. fem. n. *proprivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Granulicella_C sp903642265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_903642265.1. The GC content of the type genome is 57.76 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Granulosicoccus cenotilenta sp. nov.

Candidatus Granulosicoccus cenotilenta (NL. fem. n. *cenotilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Granulosicoccus sp002746645*. The type genome for the species is the GenBank assembly GCA_002746645.1. The GC content of the type genome is 62.22 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Granulosicoccus venabilega sp. nov.

Candidatus Granulosicoccus venabilega (NL. fem. n. *venabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Granulosicoccus sp013002205*. The type genome for the species is the GenBank assembly GCA_013002205.1. The GC content of the type genome is 57.58 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Gryllotalpicola navicigena sp. nov.

Candidatus Gryllotalpicola navicigena (NL. fem. n. *navicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gryllotalpicola sp009780695*. The type genome for the species is the GenBank assembly GCA_009779305.1. The GC content of the type genome is 70.99 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Gsub hiruditia sp. nov.

Candidatus Gsub hiruditia (NL. fem. n. *hiruditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gsub sp002007405*. The type genome for the species is the GenBank assembly GCA_002007405.1. The GC content of the type genome is 38.18 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Gulosibacter antefitrix sp. nov.

Candidatus Gulosibacter antefitrix (NL. fem. n. *antefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gulosibacter sp900626105*. The type genome for the species is the GenBank assembly RS_GCF_900626105.1. The GC content of the type genome is 67.17 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Gulosibacter assudatio sp. nov.

Candidatus Gulosibacter assudatio (NL. fem. n. *assudatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gulosibacter sp900163695*. The type genome for the species is the GenBank assembly RS_GCF_900163695.1. The GC content of the type genome is 70.72 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Gulosibacter dilicessa sp. nov.

Candidatus Gulosibacter dilicessa (NL. fem. n. *dilicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gulosibacter sp012719255*. The type genome for the species is the GenBank assembly GCA_012719255.1. The GC content of the type genome is 73.49 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Gulosibacter dupunatica sp. nov.

Candidatus Gulosibacter dupunatica (NL. fem. n. *dupunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Gulosibacter sp003865375*. The type genome for the species is the GenBank assembly RS_GCF_003865375.1. The GC content of the type genome is 64.36 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Guyparkeria exsufitas sp. nov.

Candidatus Guyparkeria exsufitas (NL. fem. n. *exsufitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Guyparkeria sp011380105*. The type genome for the species is the GenBank assembly GCA_011380105.1. The GC content of the type genome is 52.38 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Guyparkeria fuligentia sp. nov.

Candidatus Guyparkeria fuligentia (NL. fem. n. *fuligentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Guyparkeria sp001641825*. The type genome for the species is the GenBank assembly RS_GCF_001641825.1. The GC content of the type genome is 66.19 % and the genome length is 2.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "saline-alkaline soil".

Description of *Candidatus* Guyparkeria inabrentia sp. nov.

Candidatus Guyparkeria inabrentia (NL. fem. n. *inabrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Guyparkeria sp003932495*. The type genome for the species is the GenBank assembly RS_GCF_003932495.1. The GC content of the type genome is 64.7 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Guyparkeria liceniforma sp. nov.

Candidatus Guyparkeria liceniforma (NL. fem. n. *liceniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Guyparkeria sp011389965*. The type genome for the species is the GenBank assembly GCA_011389965.1. The GC content of the type genome is 63.91 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Habacana bulapessa sp. nov.

Candidatus Habacana bulapessa (NL. fem. n. *bulapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-140 sp003567805*. The type genome for the species is the GenBank assembly GCA_003567805.1. The GC content of the type genome is 50.48 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Habacana gen. nov.

Candidatus Habacana (NL. fem. n. *Habacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3Sed10-140*. The type species for the genus is *Candidatus* Habacana bulapessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depupellaceae.

Description of *Candidatus* Habacana colipousia sp. nov.

Candidatus Habacana colipousia (NL. fem. n. *colipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-140 sp007129405*. The type genome for the species is the GenBank assembly GCA_007129405.1. The GC content of the type genome is 51.73 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Habacana ignifatica sp. nov.

Candidatus Habacana ignifatica (NL. fem. n. *ignifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-140 sp003567005*. The type genome for the species is the GenBank assembly GCA_003567005.1. The GC content of the type genome is 51.65 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Habacana indifentia sp. nov.

Candidatus Habacana indifentia (NL. fem. n. *indifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-140 sp007126175*. The type genome for the species is the GenBank assembly GCA_007126175.1. The GC content of the type genome is 56.42 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Habacaria angipitica sp. nov.

Candidatus Habacaria angipitica (NL. fem. n. *angipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRLM01 sp011375345*. The type genome for the species is the GenBank assembly GCA_011375345.1. The GC content of the type genome is 63.16 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Habacaria gen. nov.

Candidatus Habacaria (NL. fem. n. *Habacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRLM01*. The type species for the genus is *Candidatus* Habacaria angipitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRLM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacariaceae.

Description of *Candidatus* Habacariaceae fam. nov.

Candidatus Habacariaceae (NL. fem. n. *Habacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRLM01.* The type genus for the taxon is *Candidatus* Habacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRLM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Habacariales.

Description of *Candidatus* Habacariales ord. nov.

Candidatus Habacariales (NL. fem. n. *Habacariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRLM01.* The type genus for the taxon is *Candidatus* Habacaria .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Habacella cementrix sp. nov.

Candidatus Habacella cemenitrix (NL. fem. n. *cemenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1138 sp002313925*. The type genome for the species is the GenBank assembly GCA_002295045.1. The GC content of the type genome is 52.72 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Habacella gen. nov.

Candidatus Habacella (NL. fem. n. *Habacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1138*. The type species for the genus is *Candidatus* Habacella cemenitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Habacella delacilenta sp. nov.

Candidatus Habacella delacilenta (NL. fem. n. *delacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1138 sp012960225*. The type genome for the species is the GenBank assembly GCA_012960225.1. The GC content of the type genome is 52.78 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Habacella diminitio sp. nov.

Candidatus Habacella diminitio (NL. fem. n. *diminitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1138 sp002724575*. The type genome for the species is the GenBank assembly GCA_002724575.1. The GC content of the type genome is 51.69 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Habacella hirudetta sp. nov.

Candidatus Habacella hirudetta (NL. fem. n. *hirudetta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1138 sp009937285*. The type genome for the species is the GenBank assembly GCA_009937285.1. The GC content of the type genome is 61.53 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Habacella mutabibra sp. nov.

Candidatus Habacella mutabibra (NL. fem. n. *mutabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1138 sp003447875*. The type genome for the species is the GenBank assembly GCA_002311435.1. The GC content of the type genome is 64.07 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Habacella resacedo sp. nov.

Candidatus Habacella resacedo (NL. fem. n. *resacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1138 sp002311875*. The type genome for the species is the GenBank assembly GCA_012965305.1. The GC content of the type genome is 55.37 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Habacella subacivita sp. nov.

Candidatus Habacella subacivita (NL. fem. n. *subacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1138 sp002501085*. The type genome for the species is the GenBank assembly GCA_002501085.1. The GC content of the type genome is 52.55 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Habacia carunivita sp. nov.

Candidatus Habacia carunivita (NL. fem. n. *carunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFOM01 sp009918675*. The type genome for the species is the GenBank assembly GCA_009918675.1. The GC content of the type genome is 49.3 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Habacia gen. nov.

Candidatus Habacia (NL. fem. n. *Habacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFOM01*. The type species for the genus is *Candidatus* Habacia carunivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Habacia ecastiforma sp. nov.

Candidatus Habacia ecastiforma (NL. fem. n. *ecastiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFOM01 sp009926615*. The type genome for the species is the GenBank assembly GCA_009926615.1. The GC content of the type genome is 52.22 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Habacia xeropimonas sp. nov.

Candidatus Habacia xeropimonas (NL. fem. n. *xeropimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFOM01 sp903933385*. The type genome for the species is the GenBank assembly GCA_903922025.1. The GC content of the type genome is 48.39 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Habacida adhoretta sp. nov.

Candidatus Habacida adhoretta (NL. fem. n. *adhoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4823 sp002402275*. The type genome for the species is the GenBank assembly GCA_002402275.1. The GC content of the type genome is 43.09 %

and the genome length is 2.48 Mbp.

Description of *Candidatus* Habacida gen. nov.

Candidatus Habacida (NL. fem. n. *Habacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4823*. The type species for the genus is *Candidatus* Habacida adhoretta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Habacidaceae fam. nov.

Candidatus Habacidaceae (NL. fem. n. *Habacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4823.* The type genus for the taxon is *Candidatus* Habacida .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Habacosa exforisca sp. nov.

Candidatus Habacosa exforisca (NL. fem. n. *exforisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-54-10 sp001767075*. The type genome for the species is the GenBank assembly GCA_001767075.1. The GC content of the type genome is 53.9 % and the genome length is 2.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Habacosa gen. nov.

Candidatus Habacosa (NL. fem. n. *Habacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-54-10*. The type species for the genus is *Candidatus* Habacosa exforisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-54-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacosaceae.

Description of *Candidatus* Habacosaceae fam. nov.

Candidatus Habacosaceae (NL. fem. n. *Habacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-54-10.* The type genus for the taxon is *Candidatus* Habacosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-12-FULL-54-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Habacosales.

Description of *Candidatus* Habacosales ord. nov.

Candidatus Habacosales (NL. fem. n. *Habacosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-54-10.* The type genus for the taxon is *Candidatus* Habacosa .

According to the GTDB R06-RS202, this order belongs to the class *Acidobacteriae*.

Description of *Candidatus* Habacula lanugessa sp. nov.

Candidatus Habacula lanugessa (NL. fem. n. *lanugessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMRZ01 sp013202315*. The type genome for the species is the GenBank assembly GCA_013202315.1. The GC content of the type genome is 45.96 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Habacula gen. nov.

Candidatus Habacula (NL. fem. n. *Habacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMRZ01*. The type species for the genus is *Candidatus* Habacula

lanugessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMRZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habaculaceae.

Description of *Candidatus* Habaculaceae fam. nov.

Candidatus Habaculaceae (NL. fem. n. *Habaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMRZ01.* The type genus for the taxon is *Candidatus* Habacula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMRZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Habaculales.

Description of *Candidatus* Habaculales ord. nov.

Candidatus Habaculales (NL. fem. n. *Habaculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMRZ01.* The type genus for the taxon is *Candidatus* Habacula .

According to the original version of GTDB R06-RS202, this family belongs to the class *JABMRZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Habaculae.

Description of *Candidatus* Habaculae class. nov.

Candidatus Habaculae (NL. fem. n. *c__Habaculae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMRZ01.* The type genus for the taxon is *Candidatus* Habacula .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *AABM5-125-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Desonellota.

Description of *Candidatus* Haematobacter tabifago sp. nov.

Candidatus Haematobacter tabifago (NL. fem. n. *tabifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haematobacter sp002196855*. The type genome for the species is the GenBank assembly RS_GCF_002196855.1. The GC content of the type genome is 65.35 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Haematospirillum decacedo sp. nov.

Candidatus Haematospirillum decacedo (NL. fem. n. *decacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haematospirillum sp012102705*. The type genome for the species is the GenBank assembly RS_GCF_012102705.1. The GC content of the type genome is 55.77 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Haematospirillum masocilega sp. nov.

Candidatus Haematospirillum masocilega (NL. fem. n. *masocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haematospirillum sp012102745*. The type genome for the species is the GenBank assembly RS_GCF_012102665.1. The GC content of the type genome is 55.94 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Haemophilus demulimonas sp. nov.

Candidatus Haemophilus demulimonas (NL. fem. n. *demulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haemophilus sp002998595*. The type genome for the species is the GenBank assembly RS_GCF_001679495.1. The GC content of the type genome is 38.26 % and the genome length is 1.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sputum".

Description of *Candidatus* Haemophilus nugigessa sp. nov.

Candidatus Haemophilus nugigessa (NL. fem. n. *nugigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haemophilus sp001276515*. The type genome for the species is the

GenBank assembly RS_GCF_003493125.1. The GC content of the type genome is 38.29 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Haemophilus bipatousia sp. nov.

Candidatus Haemophilus bipatousia (NL. fem. n. *bipatousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haemophilus_D sp001815355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001914055.1. The GC content of the type genome is 39.55 % and the genome length is 1.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Infant 1 DOL 23 oral".

Description of *Candidatus* Haemophilus fidenifica sp. nov.

Candidatus Haemophilus fidenifica (NL. fem. n. *fidenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haemophilus_D sp900756155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900756155.1. The GC content of the type genome is 39.46 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Haemophilus irremessa sp. nov.

Candidatus Haemophilus irremessa (NL. fem. n. *irremessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haemophilus_D sp900755445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900755445.1. The GC content of the type genome is 39.58 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Haemophilus labecatio sp. nov.

Candidatus Haemophilus labecatio (NL. fem. n. *labecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haemophilus_D sp900756875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900756875.1. The GC content of the type genome is 39.55 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Haemophilus maligibula sp. nov.

Candidatus Haemophilus maligibula (NL. fem. n. *maligibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haemophilus_D sp001679485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001279145.1. The GC content of the type genome is 39.52 % and the genome length is 1.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Oropharynx".

Description of *Candidatus* Haemophilus practentia sp. nov.

Candidatus Haemophilus practentia (NL. fem. n. *practentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haemophilus_D sp900764435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900764435.1. The GC content of the type genome is 39.52 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Hahella dehinugo sp. nov.

Candidatus Hahella dehinugo (NL. fem. n. *dehinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hahella sp004135205*. The type genome for the species is the GenBank assembly RS_GCF_004014695.1. The GC content of the type genome is 53.91 % and the genome length is 6.94 Mbp.

Description of *Candidatus* Hahella lenimigena sp. nov.

Candidatus Hahella lenimigena (NL. fem. n. *lenimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hahella sp002260525*. The type genome for the species is the GenBank assembly RS_GCF_002260525.1. The GC content of the type genome is 49.77 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Halanaerobium inlacedo sp. nov.

Candidatus Halanaerobium inlacedo (NL. fem. n. *inlacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halanaerobium sp003070825*. The type genome for the species is the GenBank assembly GCA_003070825.1. The GC content of the type genome is 36.6 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Halarcobacter bipatiforma sp. nov.

Candidatus Halarcobacter bipatiforma (NL. fem. n. *bipatiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halarcobacter sp001895145*. The type genome for the species is the GenBank assembly RS_GCF_001895145.1. The GC content of the type genome is 27.9 % and the genome length is 3.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gut of abalone".

Description of *Candidatus* Halarcobacter capabitica sp. nov.

Candidatus Halarcobacter capabitica (NL. fem. n. *capabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halarcobacter sp005771535*. The type genome for the species is the GenBank assembly RS_GCF_005771535.1. The GC content of the type genome is 28.14 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Halarcobacter hexapago sp. nov.

Candidatus Halarcobacter hexapago (NL. fem. n. *hexapago* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halarcobacter sp013373175*. The type genome for the species is the GenBank assembly GCA_013373175.1. The GC content of the type genome is 28.43 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Halarcobacter lubenimonia sp. nov.

Candidatus Halarcobacter lubenimonia (NL. fem. n. *lubenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halarcobacter sp004116455*. The type genome for the species is the GenBank assembly RS_GCF_004116455.1. The GC content of the type genome is 29.06 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Halarcobacter tametitura sp. nov.

Candidatus Halarcobacter tametitura (NL. fem. n. *tametitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halarcobacter sp002869565*. The type genome for the species is the GenBank assembly GCA_002869565.1. The GC content of the type genome is 28.1 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Halarcobacter terebitura sp. nov.

Candidatus Halarcobacter terebitura (NL. fem. n. *terebitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halarcobacter sp003252105*. The type genome for the species is the GenBank assembly GCA_003252105.1. The GC content of the type genome is 27.99 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Halarcobacter uberritrix sp. nov.

Candidatus Halarcobacter uberritrix (NL. fem. n. *uberritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halarcobacter sp004118855*. The type genome for the species is the GenBank assembly RS_GCF_004118855.1. The GC content of the type genome is 28.12 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Haliea laxititia sp. nov.

Candidatus Haliea laxititia (NL. fem. n. *laxititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haliea sp002414665*. The type genome for the species is the GenBank assembly GCA_002384925.1. The GC content of the type genome is 61.65 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Haliea revecitia sp. nov.

Candidatus Haliea revecitia (NL. fem. n. *revecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haliea sp002416125*. The type genome for the species is the GenBank assembly GCA_002416125.1. The GC content of the type genome is 62.91 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Halioglobus adpagimonas sp. nov.

Candidatus Halioglobus adpagimonas (NL. fem. n. *adpagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp009937575*. The type genome for the species is the GenBank assembly GCA_009937575.1. The GC content of the type genome is 59.69 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Halioglobus agravastra sp. nov.

Candidatus Halioglobus agravastra (NL. fem. n. *agravastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp002862985*. The type genome for the species is the GenBank assembly GCA_002862985.1. The GC content of the type genome is 52.87 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Halioglobus ambifatica sp. nov.

Candidatus Halioglobus ambifatica (NL. fem. n. *ambifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp004354085*. The type genome for the species is the GenBank assembly RS_GCF_004354085.1. The GC content of the type genome is 59.87 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Halioglobus ceracousia sp. nov.

Candidatus Halioglobus ceracousia (NL. fem. n. *ceracousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp003646415*. The type genome for the species is the GenBank assembly GCA_003646415.1. The GC content of the type genome is 55.83 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Halioglobus denecitura sp. nov.

Candidatus Halioglobus denecitura (NL. fem. n. *denecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp002699145*. The type genome for the species is the GenBank assembly GCA_002699145.1. The GC content of the type genome is 64.69 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Halioglobus desulimonia sp. nov.

Candidatus Halioglobus desulimonia (NL. fem. n. *desulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp013214285*. The type genome for the species is the GenBank assembly GCA_013214285.1. The GC content of the type genome is 55.03 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Halioglobus dilibitrix sp. nov.

Candidatus Halioglobus dilibitrix (NL. fem. n. *dilibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp008370495*. The type genome for the species is the GenBank assembly RS_GCF_008370495.1. The GC content of the type genome is 60.12 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Halioglobus indilivita sp. nov.

Candidatus Halioglobus indilivita (NL. fem. n. *indilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp002862465*. The type genome for the species is the GenBank assembly GCA_002862465.1. The GC content of the type genome is 50.46 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Halioglobus lapicibula sp. nov.

Candidatus Halioglobus lapicibula (NL. fem. n. *lapicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp000156295*. The type genome for the species is the GenBank assembly RS_GCF_000156295.1. The GC content of the type genome is 52.96 % and the genome length is 4.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "10 m water depth from station NH15".

Description of *Candidatus* Halioglobus obnupedo sp. nov.

Candidatus Halioglobus obnupedo (NL. fem. n. *obnupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp004745945*. The type genome for the species is the GenBank assembly RS_GCF_004745945.1. The GC content of the type genome is 65.12 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Halioglobus offunastra sp. nov.

Candidatus Halioglobus offunastra (NL. fem. n. *offunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halioglobus sp003646405*. The type genome for the species is the GenBank assembly GCA_003646405.1. The GC content of the type genome is 56.4 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Haliscomenobacter xenopimonas sp. nov.

Candidatus Haliscomenobacter xenopimonas (NL. fem. n. *xenopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haliscomenobacter sp013299105*. The type genome for the species is the GenBank assembly GCA_013299105.1. The GC content of the type genome is 47.35 % and the genome length is 7.67 Mbp.

Description of *Candidatus* Haloactinobacterium attesibula sp. nov.

Candidatus Haloactinobacterium attesibula (NL. fem. n. *attesibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haloactinobacterium sp009805705*. The type genome for the species is the GenBank assembly RS_GCF_009805705.1. The GC content of the type genome is 68.35 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Halobacillus inmobitudo sp. nov.

Candidatus Halobacillus inmobitudo (NL. fem. n. *inmobitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halobacillus sp004078665*. The type genome for the species is the GenBank assembly GCA_004078665.1. The GC content of the type genome is 44.79 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Halobacillus manupiforma sp. nov.

Candidatus Halobacillus manupiforma (NL. fem. n. *manupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halobacillus sp001592845*. The type genome for the species is the GenBank assembly RS_GCF_000328325.1. The GC content of the type genome is 46.84 % and the genome length is 3.78 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "soil".

Description of *Candidatus* Halobacillus adverugo sp. nov.

Candidatus Halobacillus adverugo (NL. fem. n. *adverugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halobacillus_A sp902809865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902809865.1. The GC content of the type genome is 42.33 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Halobacillus amercimonas sp. nov.

Candidatus Halobacillus amercimonas (NL. fem. n. *amercimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halobacillus_A sp900240285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900240285.1. The GC content of the type genome is 41.31 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Halobacillus categitas sp. nov.

Candidatus Halobacillus categitas (NL. fem. n. *categitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halobacillus_A sp902726645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902726645.1. The GC content of the type genome is 41.18 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Halobacteriovorax accenitudo sp. nov.

Candidatus Halobacteriovorax accenitudo (NL. fem. n. *accenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Halobacteriovorax sp004006665*. The type genome for the species is the GenBank assembly RS_GCF_004006665.1. The GC content of the type genome is 35.13 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Halobacteriovorax arrecisca sp. nov.

Candidatus Halobacteriovorax arrecisca (NL. fem. n. *arrecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halobacteriovorax sp002753895*. The type genome for the species is the GenBank assembly GCA_002753895.1. The GC content of the type genome is 36.08 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Halobacteriovorax turicitica sp. nov.

Candidatus Halobacteriovorax turicitica (NL. fem. n. *turicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halobacteriovorax sp002366565*. The type genome for the species is the GenBank assembly GCA_002366565.1. The GC content of the type genome is 34.52 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Halocella menapivita sp. nov.

Candidatus Halocella menapivita (NL. fem. n. *menapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halocella sp003953885*. The type genome for the species is the GenBank assembly RS_GCF_003953885.1. The GC content of the type genome is 35.09 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Halochromatium culilitura sp. nov.

Candidatus Halochromatium culilitura (NL. fem. n. *culilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halochromatium sp010912705*. The type genome for the species is the GenBank assembly GCA_010912705.1. The GC content of the type genome is 60.85 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Halochromatium encomifica sp. nov.

Candidatus Halochromatium encomifica (NL. fem. n. *encomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halochromatium sp009908845*. The type genome for the species is the GenBank assembly GCA_009908845.1. The GC content of the type genome is 64.43 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Halochromatium repudilega sp. nov.

Candidatus Halochromatium repudilega (NL. fem. n. *repudilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halochromatium sp007693535*. The type genome for the species is the GenBank assembly GCA_007693535.1. The GC content of the type genome is 67.23 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Halochromatium rudicibula sp. nov.

Candidatus Halochromatium rudicibula (NL. fem. n. *rudicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halochromatium sp003562815*. The type genome for the species is the GenBank assembly GCA_007120455.1. The GC content of the type genome is 64.66 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Halocynthiibacter bipinifica sp. nov.

Candidatus Halocynthiibacter bipinifica (NL. fem. n. *bipinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halocynthiibacter sp011326755*. The type genome for the species is the GenBank assembly RS_GCF_011326755.1. The GC content of the type genome is 50.89 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Halocynthiibacter derunivita sp. nov.

Candidatus Halocynthiibacter derunivita (NL. fem. n. *derunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halocynthiibacter sp003031585*. The type genome for the species is the GenBank assembly RS_GCF_003031585.1. The GC content of the type genome is 55.14 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Halodesulfovibrio abnorimonia sp. nov.

Candidatus Halodesulfovibrio abnorimonia (NL. fem. n. *abnorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halodesulfovibrio sp003252375*. The type genome for the species is the GenBank assembly GCA_003252375.1. The GC content of the type genome is 60.9 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Halodesulfovibrio amnigitio sp. nov.

Candidatus Halodesulfovibrio amnigitio (NL. fem. n. *amnigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halodesulfovibrio sp013340285*. The type genome for the species is the GenBank assembly RS_GCF_013340285.1. The GC content of the type genome is 56.66 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Halodesulfovibrio cacopicella sp. nov.

Candidatus Halodesulfovibrio cacopicella (NL. fem. n. *cacopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halodesulfovibrio sp009914765*. The type genome for the species is the GenBank assembly RS_GCF_009914765.1. The GC content of the type genome is 45.03 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Haloechinothrix admutitudo sp. nov.

Candidatus Haloechinothrix admutitudo (NL. fem. n. *admutitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Haloechinothrix sp013450155*. The type genome for the species is the GenBank assembly RS_GCF_013450155.1. The GC content of the type genome is 69.11 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Haloferula bicoretta sp. nov.

Candidatus Haloferula bicoretta (NL. fem. n. *bicoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haloferula sp004293445*. The type genome for the species is the GenBank assembly GCA_004293445.1. The GC content of the type genome is 61.51 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Haloferula extunedo sp. nov.

Candidatus Haloferula extunedo (NL. fem. n. *extunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haloferula sp002304315*. The type genome for the species is the GenBank assembly GCA_002304315.1. The GC content of the type genome is 63.94 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Haloferula illapugo sp. nov.

Candidatus Haloferula illapugo (NL. fem. n. *illapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haloferula sp012913485*. The type genome for the species is the GenBank assembly RS_GCF_012913485.1. The GC content of the type genome is 60.98 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Haloferula insubifica sp. nov.

Candidatus Haloferula insubifica (NL. fem. n. *insubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haloferula sp000739615*. The type genome for the species is the GenBank assembly RS_GCF_000739615.1. The GC content of the type genome is 62.49 % and the genome length is 7.8 Mbp.

Description of *Candidatus* Haloimpatiens facunitrix sp. nov.

Candidatus Haloimpatiens facunitrix (NL. fem. n. *facunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Haloimpatiens sp000744935*. The type genome for the species is the GenBank assembly RS_GCF_000744935.1. The GC content of the type genome is 30.52 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Halomicronema impilisca sp. nov.

Candidatus Halomicronema impilisca (NL. fem. n. *impilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomicronema_A sp010671905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_010671905.1. The GC content of the type genome is 51.86 % and the genome length is 8.34 Mbp.

Description of *Candidatus* Halomonas adcelousia sp. nov.

Candidatus Halomonas adcelousia (NL. fem. n. *adcelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp013112225*. The type genome for the species is the GenBank assembly RS_GCF_013112225.1. The GC content of the type genome is 55.37 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Halomonas adsucugo sp. nov.

Candidatus Halomonas adsucugo (NL. fem. n. *adsucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp014263395*. The type genome for the species is the GenBank assembly RS_GCF_014263395.1. The GC content of the type genome is 56.94 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Halomonas ambecitica sp. nov.

Candidatus Halomonas ambecitica (NL. fem. n. *ambecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp002813215*. The type genome for the species is the GenBank assembly RS_GCF_002813215.1. The GC content of the type genome is 54.66 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Halomonas bimotitudo sp. nov.

Candidatus Halomonas bimotitudo (NL. fem. n. *bimotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp001507855*. The type genome for the species is the GenBank assembly GCA_003444515.1. The GC content of the type genome is 54.78 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Halomonas carecilenta sp. nov.

Candidatus Halomonas carecilenta (NL. fem. n. *carecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003990195*. The type genome for the species is the GenBank assembly RS_GCF_003989805.1. The GC content of the type genome is 55.0 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Halomonas cerebitudo sp. nov.

Candidatus Halomonas cerebitudo (NL. fem. n. *cerebitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp902500215*. The type genome for the species is the GenBank assembly RS_GCF_902500215.1. The GC content of the type genome is 64.8 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Halomonas cerifilenta sp. nov.

Candidatus Halomonas cerifilenta (NL. fem. n. *cerifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp001651035*. The type genome for the species is the GenBank assembly RS_GCF_001651035.1. The GC content of the type genome is 54.46 % and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Halomonas cululimonia sp. nov.

Candidatus Halomonas cululimonia (NL. fem. n. *cululimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003031405*. The type genome for the species is the GenBank assembly RS_GCF_002009255.1. The GC content of the type genome is 52.71 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Halomonas decenitoga sp. nov.

Candidatus Halomonas decenitoga (NL. fem. n. *decenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp001882345*. The type genome for the species is the GenBank assembly RS_GCF_001882345.1. The GC content of the type genome is 54.65 % and the genome length is 4.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "lake water".

Description of *Candidatus* Halomonas decunigena sp. nov.

Candidatus Halomonas decunigena (NL. fem. n. *decunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003202205*. The type genome for the species is the GenBank assembly RS_GCF_003202205.1. The GC content of the type genome is 66.38 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Halomonas denigisca sp. nov.

Candidatus Halomonas denigisca (NL. fem. n. *denigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Halomonas sp900086985*. The type genome for the species is the GenBank assembly GCA_001314745.1. The GC content of the type genome is 56.39 % and the genome length is 3.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-O from microbial mat sample; contains cyanobacterium Phormidium OSCR and associated heterotrophs".

Description of *Candidatus* Halomonas depecago sp. nov.

Candidatus Halomonas depecago (NL. fem. n. *depecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp000219565*. The type genome for the species is the GenBank assembly RS_GCF_000219565.1. The GC content of the type genome is 52.57 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Halomonas desacousia sp. nov.

Candidatus Halomonas desacousia (NL. fem. n. *desacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp004347715*. The type genome for the species is the GenBank assembly RS_GCF_009901955.1. The GC content of the type genome is 64.0 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Halomonas dibapetta sp. nov.

Candidatus Halomonas dibapetta (NL. fem. n. *dibapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp011050415*. The type genome for the species is the GenBank assembly GCA_011050415.1. The GC content of the type genome is 52.92 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Halomonas dicabentia sp. nov.

Candidatus Halomonas dicabentia (NL. fem. n. *dicabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp900163645*. The type genome for the species is the

GenBank assembly GCA_003531285.1. The GC content of the type genome is 54.16 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Halomonas dimidiforma sp. nov.

Candidatus Halomonas dimidiforma (NL. fem. n. *dimidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003182195*. The type genome for the species is the GenBank assembly RS_GCF_013000985.1. The GC content of the type genome is 67.75 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Halomonas domipicella sp. nov.

Candidatus Halomonas domipicella (NL. fem. n. *domipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp006228115*. The type genome for the species is the GenBank assembly RS_GCF_006228115.1. The GC content of the type genome is 58.33 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Halomonas dupunessa sp. nov.

Candidatus Halomonas dupunessa (NL. fem. n. *dupunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003336675*. The type genome for the species is the GenBank assembly RS_GCF_003336675.1. The GC content of the type genome is 62.87 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Halomonas enuntisca sp. nov.

Candidatus Halomonas enuntisca (NL. fem. n. *enuntisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003560175*. The type genome for the species is the GenBank assembly GCA_003560175.1. The GC content of the type genome is 65.19 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Halomonas ficeditrix sp. nov.

Candidatus Halomonas ficeditrix (NL. fem. n. *ficeditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp002966495*. The type genome for the species is the GenBank assembly RS_GCF_000236625.2. The GC content of the type genome is 53.93 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Halomonas immematio sp. nov.

Candidatus Halomonas immematio (NL. fem. n. *immematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp007692655*. The type genome for the species is the GenBank assembly GCA_007692655.1. The GC content of the type genome is 53.93 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Halomonas inmenentia sp. nov.

Candidatus Halomonas inmenentia (NL. fem. n. *inmenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp002119345*. The type genome for the species is the GenBank assembly RS_GCF_002119345.1. The GC content of the type genome is 56.88 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Halomonas malagugo sp. nov.

Candidatus Halomonas malagugo (NL. fem. n. *malagugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp008329985*. The type genome for the species is the GenBank assembly RS_GCF_008329985.1. The GC content of the type genome is 57.02 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Halomonas malifousia sp. nov.

Candidatus Halomonas malifousia (NL. fem. n. *malifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp008297955*. The type genome for the species is the GenBank assembly RS_GCF_008297955.1. The GC content of the type genome is 63.55 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Halomonas manupitrix sp. nov.

Candidatus Halomonas manupitrix (NL. fem. n. *manupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003553625*. The type genome for the species is the GenBank assembly GCA_003550545.1. The GC content of the type genome is 66.19 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Halomonas modifitrix sp. nov.

Candidatus Halomonas modifitrix (NL. fem. n. *modifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003339685*. The type genome for the species is the GenBank assembly RS_GCF_003339685.1. The GC content of the type genome is 62.22 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Halomonas monopentia sp. nov.

Candidatus Halomonas monopentia (NL. fem. n. *monopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp000686925*. The type genome for the species is the GenBank assembly RS_GCF_000686925.1. The GC content of the type genome is 58.98 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Halomonas negotivita sp. nov.

Candidatus Halomonas negotivita (NL. fem. n. *negotivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp007116835*. The type genome for the species is the GenBank assembly GCA_007122835.1. The GC content of the type genome is 53.63 %

and the genome length is 2.03 Mbp.

Description of *Candidatus* Halomonas nicotugo sp. nov.

Candidatus Halomonas nicotugo (NL. fem. n. *nicotugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp007129225*. The type genome for the species is the GenBank assembly GCA_007129225.1. The GC content of the type genome is 63.71 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Halomonas oblivago sp. nov.

Candidatus Halomonas oblivago (NL. fem. n. *oblivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp011742165*. The type genome for the species is the GenBank assembly RS_GCF_011742165.1. The GC content of the type genome is 63.63 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Halomonas papilibra sp. nov.

Candidatus Halomonas papilibra (NL. fem. n. *papilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp007625055*. The type genome for the species is the GenBank assembly GCA_007625055.1. The GC content of the type genome is 56.79 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Halomonas paralisca sp. nov.

Candidatus Halomonas paralisca (NL. fem. n. *paralisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp009793355*. The type genome for the species is the GenBank assembly RS_GCF_009793355.1. The GC content of the type genome is 57.14 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Halomonas podagicula sp. nov.

Candidatus Halomonas podagicula (NL. fem. n. *podagicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp009834345*. The type genome for the species is the GenBank assembly RS_GCF_009834345.1. The GC content of the type genome is 63.93 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Halomonas recucitia sp. nov.

Candidatus Halomonas recucitia (NL. fem. n. *recucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp002332255*. The type genome for the species is the GenBank assembly RS_GCF_002332255.1. The GC content of the type genome is 53.9 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Halomonas relenentia sp. nov.

Candidatus Halomonas relenentia (NL. fem. n. *relenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp002364315*. The type genome for the species is the GenBank assembly GCA_002364315.1. The GC content of the type genome is 54.48 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Halomonas renavitoga sp. nov.

Candidatus Halomonas renavitoga (NL. fem. n. *renavitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp000246875*. The type genome for the species is the GenBank assembly RS_GCF_000246875.1. The GC content of the type genome is 64.09 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Halomonas ridibitura sp. nov.

Candidatus Halomonas ridibitura (NL. fem. n. *ridibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp010994375*. The type genome for the species is the GenBank assembly RS_GCF_010994375.1. The GC content of the type genome is 66.6 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Halomonas rosacitrix sp. nov.

Candidatus Halomonas rosacitrix (NL. fem. n. *rosacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp002696125*. The type genome for the species is the GenBank assembly GCA_002696125.1. The GC content of the type genome is 58.97 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Halomonas socagimonia sp. nov.

Candidatus Halomonas socagimonia (NL. fem. n. *socagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp002366715*. The type genome for the species is the GenBank assembly GCA_002366715.1. The GC content of the type genome is 54.92 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Halomonas totidax sp. nov.

Candidatus Halomonas totidax (NL. fem. n. *totidax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp002082565*. The type genome for the species is the GenBank assembly RS_GCF_002082565.1. The GC content of the type genome is 52.11 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Halomonas tumefitio sp. nov.

Candidatus Halomonas tumefitio (NL. fem. n. *tumefitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003336665*. The type genome for the species is the GenBank assembly RS_GCF_003336665.1. The GC content of the type genome is 57.24

% and the genome length is 4.47 Mbp.

Description of *Candidatus* Halomonas valefifica sp. nov.

Candidatus Halomonas valefifica (NL. fem. n. *valefifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp010993975*. The type genome for the species is the GenBank assembly RS_GCF_010993975.1. The GC content of the type genome is 64.47 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Halomonas valefitica sp. nov.

Candidatus Halomonas valefitica (NL. fem. n. *valefitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp003552795*. The type genome for the species is the GenBank assembly GCA_003552795.1. The GC content of the type genome is 67.48 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Halomonas vigenibra sp. nov.

Candidatus Halomonas vigenibra (NL. fem. n. *vigenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp009363755*. The type genome for the species is the GenBank assembly RS_GCF_009363755.1. The GC content of the type genome is 68.38 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Halomonas virecifica sp. nov.

Candidatus Halomonas virecifica (NL. fem. n. *virecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp013371085*. The type genome for the species is the GenBank assembly RS_GCF_013371085.1. The GC content of the type genome is 54.39 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Halomonas vivifedo sp. nov.

Candidatus Halomonas vivifedo (NL. fem. n. *vivifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas sp000235725*. The type genome for the species is the GenBank assembly RS_GCF_000235725.1. The GC content of the type genome is 54.13 % and the genome length is 4.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil of a gold mine".

Description of *Candidatus* Halomonas dereletta sp. nov.

Candidatus Halomonas dereletta (NL. fem. n. *dereletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas_B sp002286975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002286975.1. The GC content of the type genome is 63.83 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Halomonas dicibatica sp. nov.

Candidatus Halomonas dicibatica (NL. fem. n. *dicibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas_B sp001971685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001971685.1. The GC content of the type genome is 65.32 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Halomonas robigicella sp. nov.

Candidatus Halomonas robigicella (NL. fem. n. *robigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas_B sp013009075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013009075.1. The GC

content of the type genome is 61.7 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Halomonas avoncigena sp. nov.

Candidatus Halomonas avoncigena (NL. fem. n. *avoncigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas_C sp001577635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001577635.1. The GC content of the type genome is 67.13 % and the genome length is 3.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hydraulically fractured well fluid at Timepoint_82".

Description of *Candidatus* Halomonas benevivita sp. nov.

Candidatus Halomonas benevivita (NL. fem. n. *benevivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas_C sp001039575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001039575.1. The GC content of the type genome is 57.53 % and the genome length is 3.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gut".

Description of *Candidatus* Halomonas nubifitas sp. nov.

Candidatus Halomonas nubifitas (NL. fem. n. *nubifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas_C sp900961225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900961225.1. The GC content of the type genome is 64.85 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Halomonas nugiviforma sp. nov.

Candidatus Halomonas nugiviforma (NL. fem. n. *nugiviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas_C sp010993675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010993675.1. The GC content of the type genome is 67.26 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Halomonas acculiforma sp. nov.

Candidatus Halomonas acculiforma (NL. fem. n. *acculiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halomonas_E sp012062845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012062845.1. The GC content of the type genome is 61.01 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Halorhodospira coticimonas sp. nov.

Candidatus Halorhodospira coticimonas (NL. fem. n. *coticimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halorhodospira sp003552625*. The type genome for the species is the GenBank assembly GCA_003552625.1. The GC content of the type genome is 66.02 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Halorhodospira navicatio sp. nov.

Candidatus Halorhodospira navicatio (NL. fem. n. *navicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halorhodospira sp003552345*. The type genome for the species is the GenBank assembly GCA_003552345.1. The GC content of the type genome is 69.12 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Halospina adnicimonia sp. nov.

Candidatus Halospina adnicimonia (NL. fem. n. *adnicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halospina sp002286965*. The type genome for the species is the GenBank assembly RS_GCF_002286965.1. The GC content of the type genome is 62.1 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Halospina dimacimonia sp. nov.

Candidatus Halospina dimacimonia (NL. fem. n. *dimacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halospina sp007135745*. The type genome for the species is the GenBank assembly GCA_007135745.1. The GC content of the type genome is 58.86 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Halothece adnunatio sp. nov.

Candidatus Halothece adnunatio (NL. fem. n. *adnunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halothece sp003021905*. The type genome for the species is the GenBank assembly GCA_003021905.1. The GC content of the type genome is 44.37 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Halothece catilibula sp. nov.

Candidatus Halothece catilibula (NL. fem. n. *catilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halothece sp009909085*. The type genome for the species is the GenBank assembly GCA_009909085.1. The GC content of the type genome is 43.83 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Halothece fetutitia sp. nov.

Candidatus Halothece fetutitia (NL. fem. n. *fetutitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Halothece sp000317635*. The type genome for the species is the GenBank assembly RS_GCF_000317635.1. The GC content of the type genome is 42.92 % and the genome length is 4.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Water; lake; Solar lake".

Description of *Candidatus* Halothiobacillus bicorago sp. nov.

Candidatus Halothiobacillus bicorago (NL. fem. n. *bicorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halothiobacillus sp002282715*. The type genome for the species is the GenBank assembly GCA_002279175.1. The GC content of the type genome is 55.44 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Halothiobacillus malivivita sp. nov.

Candidatus Halothiobacillus malivivita (NL. fem. n. *malivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halothiobacillus sp001663815*. The type genome for the species is the GenBank assembly RS_GCF_001663815.1. The GC content of the type genome is 60.73 % and the genome length is 2.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Pearl River surface water".

Description of *Candidatus* Halothiobacillus monimousia sp. nov.

Candidatus Halothiobacillus monimousia (NL. fem. n. *monimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halothiobacillus sp002281295*. The type genome for the species is the GenBank assembly GCA_002281295.1. The GC content of the type genome is 53.52 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Halovulum alcalitudo sp. nov.

Candidatus Halovulum alcalitudo (NL. fem. n. *alcalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Halovulum sp009931615*. The type genome for the species is the GenBank assembly RS_GCF_009931615.1. The GC content of the type genome is 61.51

% and the genome length is 3.99 Mbp.

Description of *Candidatus* Halucana bipinicella sp. nov.

Candidatus Halucana bipinicella (NL. fem. n. *bipinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2700365 sp002700365*. The type genome for the species is the GenBank assembly GCA_002700365.1. The GC content of the type genome is 48.66 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Halucana gen. nov.

Candidatus Halucana (NL. fem. n. *Halucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2700365*. The type species for the genus is *Candidatus* Halucana bipinicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Halucaria defesivita sp. nov.

Candidatus Halucaria defesivita (NL. fem. n. *defesivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXNF01 sp009835395*. The type genome for the species is the GenBank assembly GCA_009844215.1. The GC content of the type genome is 69.79 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Halucaria gen. nov.

Candidatus Halucaria (NL. fem. n. *Halucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXNF01*. The type species for the genus is *Candidatus* Halucaria defesivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin134*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monacanaceae.

Description of *Candidatus* Halucaria visifatica sp. nov.

Candidatus Halucaria visifatica (NL. fem. n. *visifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXNF01 sp009840735*. The type genome for the species is the GenBank assembly GCA_009837005.1. The GC content of the type genome is 69.99 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Halucella abantisca sp. nov.

Candidatus Halucella abantisca (NL. fem. n. *abantisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12454 sp002839495*. The type genome for the species is the GenBank assembly GCA_002839495.1. The GC content of the type genome is 45.52 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Halucella gen. nov.

Candidatus Halucella (NL. fem. n. *Halucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12454*. The type species for the genus is *Candidatus* Halucella abantisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12454*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucellaceae.

Description of *Candidatus* Halucellaceae fam. nov.

Candidatus Halucellaceae (NL. fem. n. *Halucellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12454.* The type genus for the taxon is *Candidatus* Halucella .

According to GTDB R06-RS202, this family belongs to the order *Sedimentisphaerales*.

Description of *Candidatus* Halucella celumivita sp. nov.

Candidatus Halucella celumivita (NL. fem. n. *celumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12454 sp003142595*. The type genome for the species is the GenBank assembly GCA_003142595.1. The GC content of the type genome is 44.04 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Halucella defulatica sp. nov.

Candidatus Halucella defulatica (NL. fem. n. *defulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12454 sp903847315*. The type genome for the species is the GenBank assembly GCA_903821845.1. The GC content of the type genome is 44.76 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Halucella desepitura sp. nov.

Candidatus Halucella desepitura (NL. fem. n. *desepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12454 sp001825665*. The type genome for the species is the GenBank assembly GCA_001825665.1. The GC content of the type genome is 41.04 % and the genome length is 4.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Halucella diluvicella sp. nov.

Candidatus Halucella diluvicella (NL. fem. n. *diluvicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12454 sp002068635*. The type genome for the species is the GenBank assembly GCA_002068635.1. The GC content of the type genome is 43.37 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Halucella semoditas sp. nov.

Candidatus Halucella semoditas (NL. fem. n. *semoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12454 sp001825675*. The type genome for the species is the GenBank assembly GCA_001825675.1. The GC content of the type genome is 42.03 % and the genome length is 4.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Halucia denigugo sp. nov.

Candidatus Halucia denigugo (NL. fem. n. *denigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYIM01 sp903866395*. The type genome for the species is the GenBank assembly GCA_903836645.1. The GC content of the type genome is 63.37 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Halucia gen. nov.

Candidatus Halucia (NL. fem. n. *Halucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYIM01*. The type species for the genus is *Candidatus* Halucia denigugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Halucia homunugo sp. nov.

Candidatus Halucia homunugo (NL. fem. n. *homunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYIM01 sp903907905*. The type genome for the species is the GenBank assembly GCA_903907905.1. The GC content of the type genome is 65.11 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Halucia licenitoga sp. nov.

Candidatus Halucia licenitoga (NL. fem. n. *licenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYIM01 sp009921765*. The type genome for the species is the GenBank assembly GCA_009921765.1. The GC content of the type genome is 63.88 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Halucia semimivita sp. nov.

Candidatus Halucia semimivita (NL. fem. n. *semimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYIM01 sp005798775*. The type genome for the species is the GenBank assembly GCA_005798775.1. The GC content of the type genome is 63.01 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Halucida adnaredo sp. nov.

Candidatus Halucida adnaredo (NL. fem. n. *adnaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYKM01 sp012522415*. The type genome for the species is the GenBank assembly GCA_012522415.1. The GC content of the type genome is 52.93 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Halucida gen. nov.

Candidatus Halucida (NL. fem. n. *Halucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYKM01*. The type species for the genus is *Candidatus* Halucida adnaredo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYKM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucidaceae.

Description of *Candidatus* Halucidaceae fam. nov.

Candidatus Halucidaceae (NL. fem. n. *Halucidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *JAAYKM01*. The type genus for the taxon is *Candidatus* Halucida .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Halucula exaggax sp. nov.

Candidatus Halucula exaggax (NL. fem. n. *exaggax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-121 sp005880615*. The type genome for the species is the GenBank assembly GCA_005880615.1. The GC content of the type genome is 66.73 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Halucula gen. nov.

Candidatus Halucula (NL. fem. n. *Halucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-121*. The type species for the genus is *Candidatus* Halucula exaggax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CF-121*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Haluculaceae.

Description of *Candidatus* Haluculaceae fam. nov.

Candidatus Haluculaceae (NL. fem. n. *Haluculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CF-121*. The type genus for the taxon is *Candidatus* Halucula .

According to the original version of GTDB R06-RS202, this family belongs to the order *CF-121*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Haluculales.

Description of *Candidatus* Haluculales ord. nov.

Candidatus Haluculales (NL. fem. n. *Haluculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CF-121*. The type genus for the taxon is *Candidatus* Halucula .

According to the GTDB R06-RS202, this order belongs to the class *Dormibacteria*.

Description of *Candidatus* Hamadaea cerimibula sp. nov.

Candidatus Hamadaea cerimibula (NL. fem. n. *cerimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hamadaea sp013361475*. The type genome for the species is the GenBank assembly GCA_013362565.1. The GC content of the type genome is 70.1 % and the genome length is 7.3 Mbp.

Description of *Candidatus* Hamadaea vilipatio sp. nov.

Candidatus Hamadaea vilipatio (NL. fem. n. *vilipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hamadaea sp013362815*. The type genome for the species is the GenBank assembly GCA_013362815.1. The GC content of the type genome is 69.07 % and the genome length is 7.45 Mbp.

Description of *Candidatus* Hansschlegelia aggubibra sp. nov.

Candidatus Hansschlegelia aggubibra (NL. fem. n. *aggubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hansschlegelia sp003241695*. The type genome for the species is the GenBank assembly GCA_003241695.1. The GC content of the type genome is 68.29 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Hansschlegelia exsupitio sp. nov.

Candidatus Hansschlegelia exsupitio (NL. fem. n. *exsupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hansschlegelia sp902168115*. The type genome for the species is the GenBank assembly GCA_902168115.1. The GC content of the type genome is 69.04 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Hansschlegelia infisilenta sp. nov.

Candidatus Hansschlegelia infisilenta (NL. fem. n. *infisilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hansschlegelia sp000384475*. The type genome for the species is the GenBank assembly RS_GCF_000384475.1. The GC content of the type genome is 67.98 % and the genome length is 4.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Hansschlegelia octopicula sp. nov.

Candidatus Hansschlegelia octopicula (NL. fem. n. *octopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hansschlegelia sp004310425*. The type genome for the species is the GenBank assembly RS_GCF_004310425.1. The GC content of the type genome is 67.04 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Haricana manomedo sp. nov.

Candidatus Haricana manomedo (NL. fem. n. *manomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2210 sp002327865*. The type genome for the species is the GenBank assembly GCA_002327865.1. The GC content of the type genome is 48.11 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Haricana gen. nov.

Candidatus Haricana (NL. fem. n. *Haricana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2210*. The type species for the genus is *Candidatus* Haricana manomedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2210*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Haricanaceae.

Description of *Candidatus* Haricanaceae fam. nov.

Candidatus Haricanaceae (NL. fem. n. *Haricanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2210.* The type genus for the taxon is *Candidatus* Haricana .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Haricaria adnicigena sp. nov.

Candidatus Haricaria adnicigena (NL. fem. n. *adnicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp004560915*. The type genome for the species is the GenBank assembly GCA_004560915.1. The GC content of the type genome is 26.4 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Haricaria gen. nov.

Candidatus Haricaria (NL. fem. n. *Haricaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-1000*. The type species for the genus is *Candidatus* Haricaria adnicigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Haricaria adnumitica sp. nov.

Candidatus Haricaria adnumitica (NL. fem. n. *adnumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp900768345*. The type genome for the species is the GenBank assembly RS_GCF_900768345.1. The GC content of the type genome is 26.61 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Haricaria albogedo sp. nov.

Candidatus Haricaria albogedo (NL. fem. n. *albogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp902775285*. The type genome for the species is the GenBank assembly GCA_902775285.1. The GC content of the type genome is 24.45 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Haricaria apsoriforma sp. nov.

Candidatus Haricaria apsoriforma (NL. fem. n. *apsoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp902778125*. The type genome for the species is the GenBank assembly GCA_902778125.1. The GC content of the type genome is 26.13 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Haricaria bicipitio sp. nov.

Candidatus Haricaria bicipitio (NL. fem. n. *bicipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp004552445*. The type genome for the species is the GenBank assembly RS_GCF_900769155.1. The GC content of the type genome is 25.89 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Haricaria decinilega sp. nov.

Candidatus Haricaria decinilega (NL. fem. n. *decinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp000436975*. The type genome for the species is the GenBank assembly GCA_000436975.1. The GC content of the type genome is 26.26 % and the genome length is 1.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Haricaria denecitrix sp. nov.

Candidatus Haricaria denecitrix (NL. fem. n. *denecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp900313815*. The type genome for the species is the GenBank assembly GCA_900313815.1. The GC content of the type genome is 25.89 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Haricaria dibucitudo sp. nov.

Candidatus Haricaria dibucitudo (NL. fem. n. *dibucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp900556025*. The type genome for the species is the GenBank assembly RS_GCF_900771945.1. The GC content of the type genome is 25.81 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Haricaria divulimonas sp. nov.

Candidatus Haricaria divulimonas (NL. fem. n. *divulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp012512795*. The type genome for the species is the GenBank assembly GCA_012512795.1. The GC content of the type genome is 25.87 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Haricaria fumifitas sp. nov.

Candidatus Haricaria fumifitas (NL. fem. n. *fumifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp900772435*. The type genome for the species is the GenBank assembly RS_GCF_900772435.1. The GC content of the type genome is 26.3 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Haricaria immeditrix sp. nov.

Candidatus Haricaria immeditrix (NL. fem. n. *immeditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp900761555*. The type genome for the species is the GenBank assembly RS_GCF_900761555.1. The GC content of the type genome is 25.56 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Haricaria invigastra sp. nov.

Candidatus Haricaria invigastra (NL. fem. n. *invigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp902761685*. The type genome for the species is the GenBank assembly GCA_902761685.1. The GC content of the type genome is 24.87 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Haricaria lavabimonia sp. nov.

Candidatus Haricaria lavabimonia (NL. fem. n. *lavabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp000434555*. The type genome for the species is the GenBank assembly GCA_900549035.1. The GC content of the type genome is 25.48 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Haricaria penuricula sp. nov.

Candidatus Haricaria penuricula (NL. fem. n. *penuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1000 sp902764145*. The type genome for the species is the GenBank assembly GCA_902764145.1. The GC content of the type genome is 25.26 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Haricella arundibra sp. nov.

Candidatus Haricella arundibra (NL. fem. n. *arundibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9634 sp003450815*. The type genome for the species is the GenBank assembly GCA_003450815.1. The GC content of the type genome is 50.94 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Haricella gen. nov.

Candidatus Haricella (NL. fem. n. *Haricella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9634*. The type species for the genus is *Candidatus* Haricella arundibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9959*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvidaceae.

Description of *Candidatus* Haricella fetutibra sp. nov.

Candidatus Haricella fetutibra (NL. fem. n. *fetutibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9634 sp001799565*. The type genome for the species is the GenBank assembly GCA_001799915.1. The GC content of the type genome is 51.49 % and the genome length is 2.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Haricia diritax sp. nov.

Candidatus Haricia diritax (NL. fem. n. *diritax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1161 sp002311745*. The type genome for the species is the GenBank assembly GCA_002311745.1. The GC content of the type genome is 62.7 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Haricia gen. nov.

Candidatus Haricia (NL. fem. n. *Haricia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1161*. The type species for the genus is *Candidatus* Haricia diritax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hariciaceae.

Description of *Candidatus* Hariciaceae fam. nov.

Candidatus Hariciaceae (NL. fem. n. *Hariciaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1161*. The type genus for the taxon is *Candidatus* Haricia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hariciales.

Description of *Candidatus* Hariciales ord. nov.

Candidatus Hariciales (NL. fem. n. *Hariciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1161*. The type genus for the taxon is *Candidatus* Haricia .

According to the GTDB R06-RS202, this order belongs to the class *Phycisphaerae*.

Description of *Candidatus* Haricida adsocilenta sp. nov.

Candidatus Haricida adsocilenta (NL. fem. n. *adsocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2284 sp002422045*. The type genome for the species is the GenBank assembly GCA_002422045.1. The GC content of the type genome is 41.18 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Haricida gen. nov.

Candidatus Haricida (NL. fem. n. *Haricida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2284*. The type species for the genus is *Candidatus* Haricida adsocilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Haricida agratessa sp. nov.

Candidatus Haricida agratessa (NL. fem. n. *agratessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2284 sp003605085*. The type genome for the species is the GenBank assembly GCA_003605085.1. The GC content of the type genome is 37.81 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Haricida bicalifica sp. nov.

Candidatus Haricida bicalifica (NL. fem. n. *bicalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2284 sp002839095*. The type genome for the species is the GenBank assembly GCA_002839095.1. The GC content of the type genome is 33.74 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Haricida obsolago sp. nov.

Candidatus Haricida obsolago (NL. fem. n. *obsolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2284 sp006226985*. The type genome for the species is the GenBank assembly GCA_006226985.1. The GC content of the type genome is 33.65 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Haricida recucicula sp. nov.

Candidatus Haricida recucicula (NL. fem. n. *recucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2284 sp001830045*. The type genome for the species is the GenBank assembly GCA_001830945.1. The GC content of the type genome is 34.65 % and the genome length is 2.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Haricida revecitica sp. nov.

Candidatus Haricida revecitica (NL. fem. n. *revecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2284 sp002418725*. The type genome for the species is the GenBank assembly GCA_002418725.1. The GC content of the type genome is 37.65 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Haricida rumifetta sp. nov.

Candidatus Haricida rumifetta (NL. fem. n. *rumifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2284 sp002345705*. The type genome for the species is the GenBank assembly GCA_002345705.1. The GC content of the type genome is 33.81 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Haricida tabifivita sp. nov.

Candidatus Haricida tabifivita (NL. fem. n. *tabifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2284 sp003249785*. The type genome for the species is the GenBank assembly GCA_003249785.1. The GC content of the type genome is 37.4 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Haricida timefigena sp. nov.

Candidatus Haricida timefigena (NL. fem. n. *timefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2284 sp003518475*. The type genome for the species is the GenBank assembly GCA_003499865.1. The GC content of the type genome is 38.05 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Haricida viburago sp. nov.

Candidatus Haricida viburago (NL. fem. n. *viburago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2284 sp002424575*. The type genome for the species is the GenBank assembly GCA_002424575.1. The GC content of the type genome is 39.11 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Haricosa decatetta sp. nov.

Candidatus Haricosa decatetta (NL. fem. n. *decatetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Abin05 sp002898015*. The type genome for the species is the GenBank assembly GCA_002898015.1. The GC content of the type genome is 46.4 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Haricosa gen. nov.

Candidatus Haricosa (NL. fem. n. *Haricosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Abin05*. The type species for the genus is *Candidatus* Haricosa decatetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3Abin05*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Haricosaceae.

Description of *Candidatus* Haricosaceae fam. nov.

Candidatus Haricosaceae (NL. fem. n. *Haricosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3Abin05.* The type genus for the taxon is *Candidatus* Haricosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JdFR-76*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogidales.

Description of *Candidatus* Haricosa xenodatica sp. nov.

Candidatus Haricosa xenodatica (NL. fem. n. *xenodatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Abin05 sp013151735*. The type genome for the species is the GenBank assembly GCA_013151735.1. The GC content of the type genome is 47.96 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Haricula benemetta sp. nov.

Candidatus Haricula benemetta (NL. fem. n. *benemetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5615 sp002382075*. The type genome for the species is the GenBank assembly GCA_002382075.1. The GC content of the type genome is 38.15 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Haricula gen. nov.

Candidatus Haricula (NL. fem. n. *Haricula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5615*. The type species for the genus is *Candidatus* Haricula benemetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Hassallia nefanilega sp. nov.

Candidatus Hassallia nefanilega (NL. fem. n. *nefanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hassallia sp002218085*. The type genome for the species is the GenBank assembly RS_GCF_002218085.1. The GC content of the type genome is 41.8 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Hathewaya octinessa sp. nov.

Candidatus Hathewaya octinessa (NL. fem. n. *octinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hathewaya sp003288255*. The type genome for the species is the GenBank assembly RS_GCF_003288255.1. The GC content of the type genome is 27.83 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Hecatana vanidugo sp. nov.

Candidatus Hecatana vanidugo (NL. fem. n. *vanidugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVWV01 sp011773845*. The type genome for the species is the GenBank assembly GCA_011771445.1. The GC content of the type genome is 66.73 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Hecatana gen. nov.

Candidatus Hecatana (NL. fem. n. *Hecatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVWV01*. The type species for the genus is *Candidatus* Hecatana vanidugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulellaceae.

Description of *Candidatus* Hecataria femeliforma sp. nov.

Candidatus Hecataria femeliforma (NL. fem. n. *femeliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXRF01 sp005792635*. The type genome for the species is the GenBank assembly GCA_005779685.1. The GC content of the type genome is 46.08 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Hecataria gen. nov.

Candidatus Hecataria (NL. fem. n. *Hecataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXRF01*. The type species for the genus is *Candidatus* Hecataria femeliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXRF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatariaceae.

Description of *Candidatus* Hecatariaceae fam. nov.

Candidatus Hecatariaceae (NL. fem. n. *Hecatariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SXRF01*. The type genus for the taxon is *Candidatus* Hecataria .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Hecatella absocitudo sp. nov.

Candidatus Hecatella absocitudo (NL. fem. n. *absocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *49-20 sp002417685*. The type genome for the species is the GenBank assembly GCA_002417685.1. The GC content of the type genome is 49.21 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Hecatella gen. nov.

Candidatus Hecatella (NL. fem. n. *Hecatella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *49-20*. The type species for the genus is *Candidatus* Hecatella absocitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hecatella anxifivita sp. nov.

Candidatus Hecatella anxifivita (NL. fem. n. *anxifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *49-20 sp003445715*. The type genome for the species is the GenBank assembly GCA_003445715.1. The GC content of the type genome is 49.82 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Hecatella celamitura sp. nov.

Candidatus Hecatella celamitura (NL. fem. n. *celamitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *49-20 sp012517865*. The type genome for the species is the GenBank assembly GCA_012517865.1. The GC content of the type genome is 55.75 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Hecatella exaspentia sp. nov.

Candidatus Hecatella exaspentia (NL. fem. n. *exaspentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *49-20 sp012797215*. The type genome for the species is the GenBank assembly GCA_012797215.1. The GC content of the type genome is 54.53 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Hecatella momorisca sp. nov.

Candidatus Hecatella momorisca (NL. fem. n. *momorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *49-20 sp002436085*. The type genome for the species is the GenBank assembly GCA_002436085.1. The GC content of the type genome is 54.89 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Hecatella utrolitio sp. nov.

Candidatus Hecatella utrolitio (NL. fem. n. *utrolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *49-20 sp003499715*. The type genome for the species is the GenBank assembly GCA_003499715.1. The GC content of the type genome is 48.55 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Hecatia bimetiforma sp. nov.

Candidatus Hecatia bimetiforma (NL. fem. n. *bimetiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CSP1-4 sp001443375*. The type genome for the species is the GenBank assembly GCA_001443375.1. The GC content of the type genome is 71.85 % and the genome length is 2.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment at 5m depth".

Description of *Candidatus* Hecatia gen. nov.

Candidatus Hecatia (NL. fem. n. *Hecatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSP1-4*. The type species for the genus is *Candidatus* Hecatia bimetiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Hecatiaceae fam. nov.

Candidatus Hecatiaceae (NL. fem. n. *Hecatiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSP1-4.* The type genus for the taxon is *Candidatus* Hecatia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hecatiales.

Description of *Candidatus* Hecatiales ord. nov.

Candidatus Hecatiales (NL. fem. n. *Hecatiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSP1-4.* The type genus for the taxon is *Candidatus* Hecatia .

According to the original version of GTDB R06-RS202, this family belongs to the class *Ellin6529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Remedellae.

Description of *Candidatus* Hecatida artilugo sp. nov.

Candidatus Hecatida artilugo (NL. fem. n. *artilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACJXQ01 sp902551695*. The type genome for the species is the GenBank assembly GCA_902551695.1. The GC content of the type genome is 42.55 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Hecatida gen. nov.

Candidatus Hecatida (NL. fem. n. *Hecatida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACJXQ01*. The type species for the genus is *Candidatus* Hecatida artilugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACJXQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatidaceae.

Description of *Candidatus* Hecatidaceae fam. nov.

Candidatus Hecatidaceae (NL. fem. n. *Hecatidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACJXQ01*. The type genus for the taxon is *Candidatus* Hecatida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CACJXQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hecatidales.

Description of *Candidatus* Hecatidales ord. nov.

Candidatus Hecatidales (NL. fem. n. *Hecatidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACJXQ01*. The type genus for the taxon is *Candidatus* Hecatida .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Hecatida indevilega sp. nov.

Candidatus Hecatida indevilega (NL. fem. n. *indevilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACJXQ01 sp902597385*. The type genome for the species is the GenBank assembly GCA_902597385.1. The GC content of the type genome is 42.47 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Hecatosa cohoniforma sp. nov.

Candidatus Hecatosa cohoniforma (NL. fem. n. *cohoniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-28-2 sp001303545*. The type genome for the species is the GenBank assembly GCA_001303545.1. The GC content of the type genome is 63.75 % and the genome length is 1.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Hecatosa gen. nov.

Candidatus Hecatosa (NL. fem. n. *Hecatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-28-2*. The type species for the genus is *Candidatus* Hecatosa cohoniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-28-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatosaceae.

Description of *Candidatus* Hecatosaceae fam. nov.

Candidatus Hecatosaceae (NL. fem. n. *Hecatosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-28-2.* The type genus for the taxon is *Candidatus* Hecatosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-28-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hecatosales.

Description of *Candidatus* Hecatosales ord. nov.

Candidatus Hecatosales (NL. fem. n. *Hecatosales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-28-2.* The type genus for the taxon is *Candidatus* Hecatosa .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Hecatula vinolitio sp. nov.

Candidatus Hecatula vinolitio (NL. fem. n. *vinolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2143 sp002685955*. The type genome for the species is the GenBank assembly GCA_002328955.1. The GC content of the type genome is 36.24 % and the genome length is 0.55 Mbp.

Description of *Candidatus* Hecatula gen. nov.

Candidatus Hecatula (NL. fem. n. *Hecatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2143*. The type species for the genus is *Candidatus* Hecatula vinolitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2143*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatulaceae.

Description of *Candidatus* Hecatulaceae fam. nov.

Candidatus Hecatulaceae (NL. fem. n. *Hecatulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2143.* The type genus for the taxon is *Candidatus* Hecatula .

According to GTDB R06-RS202, this family belongs to the order *Portnoybacterales*.

Description of *Candidatus* Hegumana curotugo sp. nov.

Candidatus Hegumana curotugo (NL. fem. n. *curotugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1573 sp003452275*. The type genome for the species is the GenBank assembly GCA_003452275.1. The GC content of the type genome is 48.18 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Hegumana gen. nov.

Candidatus Hegumana (NL. fem. n. *Hegumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1573*. The type species for the genus is *Candidatus* Hegumana curotugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hegumana dimiditio sp. nov.

Candidatus Hegumana dimiditio (NL. fem. n. *dimiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1573 sp002425415*. The type genome for the species is the GenBank assembly GCA_002344755.1. The GC content of the type genome is 44.99 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Hegumana labecicella sp. nov.

Candidatus Hegumana labecicella (NL. fem. n. *labecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1573 sp002421905*. The type genome for the species is the GenBank assembly GCA_002421905.1. The GC content of the type genome is 46.48 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Hegumana roraritudo sp. nov.

Candidatus Hegumana roraritudo (NL. fem. n. *roraritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1573 sp003245575*. The type genome for the species is the

GenBank assembly GCA_003245575.1. The GC content of the type genome is 46.13 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Hegumana rosacisca sp. nov.

Candidatus Hegumana rosacisca (NL. fem. n. *rosacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1573 sp001767915*. The type genome for the species is the GenBank assembly GCA_001767915.1. The GC content of the type genome is 45.89 % and the genome length is 2.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Hegumana videlicula sp. nov.

Candidatus Hegumana videlicula (NL. fem. n. *videlicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1573 sp001871905*. The type genome for the species is the GenBank assembly GCA_001871905.1. The GC content of the type genome is 46.68 % and the genome length is 2.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Hegumaria homulimonia sp. nov.

Candidatus Hegumaria homulimonia (NL. fem. n. *homulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXH01 sp903829565*. The type genome for the species is the GenBank assembly GCA_903830195.1. The GC content of the type genome is 63.85 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Hegumaria gen. nov.

Candidatus Hegumaria (NL. fem. n. *Hegumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXXH01*. The type species for the genus is *Candidatus* Hegumaria homulimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Hegumaria subadousia sp. nov.

Candidatus Hegumaria subadousia (NL. fem. n. *subadousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXH01 sp005789645*. The type genome for the species is the GenBank assembly GCA_005789645.1. The GC content of the type genome is 69.95 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Hegumella anxificella sp. nov.

Candidatus Hegumella anxificella (NL. fem. n. *anxificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1375 sp900551235*. The type genome for the species is the GenBank assembly GCA_900551235.1. The GC content of the type genome is 44.57 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Hegumella gen. nov.

Candidatus Hegumella (NL. fem. n. *Hegumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1375*. The type species for the genus is *Candidatus* Hegumella anxificella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hegumella cosigatio sp. nov.

Candidatus Hegumella cosigatio (NL. fem. n. *cosigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1375 sp900066615*. The type genome for the species is the GenBank assembly GCA_000434575.1. The GC content of the type genome is 44.67 %

and the genome length is 2.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Hegumia prospitas sp. nov.

Candidatus Hegumia prospitas (NL. fem. n. *prospitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BY39 sp003327435*. The type genome for the species is the GenBank assembly GCA_003327435.1. The GC content of the type genome is 33.93 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Hegumia gen. nov.

Candidatus Hegumia (NL. fem. n. *Hegumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BY39*. The type species for the genus is *Candidatus* Hegumia prospitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BY39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hegumiaceae.

Description of *Candidatus* Hegumiaceae fam. nov.

Candidatus Hegumiaceae (NL. fem. n. *Hegumiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BY39*. The type genus for the taxon is *Candidatus* Hegumia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vagabanales.

Description of *Candidatus* Hegumida nocumax sp. nov.

Candidatus Hegumida nocumax (NL. fem. n. *nocumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J025 sp003696645*. The type genome for the species is the GenBank assembly GCA_003696645.1. The GC content of the type genome is 51.52 % and the

genome length is 3.27 Mbp.

Description of *Candidatus* Hegumida gen. nov.

Candidatus Hegumida (NL. fem. n. *Hegumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J025*. The type species for the genus is *Candidatus* Hegumida nocumax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hegumidaceae.

Description of *Candidatus* Hegumidaceae fam. nov.

Candidatus Hegumidaceae (NL. fem. n. *Hegumidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J025.* The type genus for the taxon is *Candidatus* Hegumida .

According to the original version of GTDB R06-RS202, this family belongs to the order *J025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hegumidales.

Description of *Candidatus* Hegumidales ord. nov.

Candidatus Hegumidales (NL. fem. n. *Hegumidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J025.* The type genus for the taxon is *Candidatus* Hegumida .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Hegumosa recumilenta sp. nov.

Candidatus Hegumosa recumilenta (NL. fem. n. *recumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA828 sp002296185*. The type genome for the species is the GenBank assembly GCA_002296185.1. The GC content of the type genome is 38.69 %

and the genome length is 1.61 Mbp.

Description of *Candidatus* Hegumosa gen. nov.

Candidatus Hegumosa (NL. fem. n. *Hegumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA828*. The type species for the genus is *Candidatus* Hegumosa recumilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA828*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hegumosaceae.

Description of *Candidatus* Hegumosaceae fam. nov.

Candidatus Hegumosaceae (NL. fem. n. *Hegumosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA828.* The type genus for the taxon is *Candidatus* Hegumosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA828*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hegumosales.

Description of *Candidatus* Hegumosales ord. nov.

Candidatus Hegumosales (NL. fem. n. *Hegumosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA828.* The type genus for the taxon is *Candidatus* Hegumosa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Hegumula famelivita sp. nov.

Candidatus Hegumula famelivita (NL. fem. n. *famelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AB-629-J13 sp002346675*. The type genome for the species is the GenBank assembly GCA_002717875.1. The GC content of the type genome is 36.0 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Hegumula gen. nov.

Candidatus Hegumula (NL. fem. n. *Hegumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AB-629-J13*. The type species for the genus is *Candidatus* Hegumula famelivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8229*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilellaceae.

Description of *Candidatus* Helicobacter volucedo sp. nov.

Candidatus Helicobacter volucedo (NL. fem. n. *volucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_A sp003364195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003364195.1. The GC content of the type genome is 31.6 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Helicobacter tegumitio sp. nov.

Candidatus Helicobacter tegumitio (NL. fem. n. *tegumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_B sp001854545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902387275.1. The GC content of the type genome is 45.16 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Helicobacter adlecitas sp. nov.

Candidatus Helicobacter adlecitas (NL. fem. n. *adlecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_C sp000765665*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000765665.2. The GC content of the type genome is 37.71 % and the genome length is 1.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "cecum".

Description of *Candidatus* Helicobacter adgubastra sp. nov.

Candidatus Helicobacter adgubastra (NL. fem. n. *adgubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_D sp900770765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900770765.1. The GC content of the type genome is 34.79 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Helicobacter inergastra sp. nov.

Candidatus Helicobacter inergastra (NL. fem. n. *inergastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_D sp000765695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000765695.2. The GC content of the type genome is 34.55 % and the genome length is 1.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces".

Description of *Candidatus* Helicobacter obsecatica sp. nov.

Candidatus Helicobacter obsecatica (NL. fem. n. *obsecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_D sp000765675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000765675.1. The GC content of the type genome is 38.07 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Helicobacter prosciforma sp. nov.

Candidatus Helicobacter prosciforma (NL. fem. n. *prosciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_D sp003288905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003288905.1. The GC content of the type genome is 34.07 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Helicobacter antiratio sp. nov.

Candidatus Helicobacter antiratio (NL. fem. n. *antiratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_E sp003660395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003660395.1. The GC content of the type genome is 47.87 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Helicobacter conaribra sp. nov.

Candidatus Helicobacter conaribra (NL. fem. n. *conaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_E sp003660385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003660265.1. The GC content of the type genome is 45.78 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Helicobacter vocifitrix sp. nov.

Candidatus Helicobacter vocifitrix (NL. fem. n. *vocifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_E sp003660355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_003660355.1. The GC content of the type genome is 47.36 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Helicobacter minuredo sp. nov.

Candidatus Helicobacter minuredo (NL. fem. n. *minuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_F sp003364115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003364115.1. The GC content of the type genome is 41.41 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Helicobacter nefanitoga sp. nov.

Candidatus Helicobacter nefanitoga (NL. fem. n. *nefanitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_F sp002287135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002287135.1. The GC content of the type genome is 37.8 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Helicobacter octacifica sp. nov.

Candidatus Helicobacter octacifica (NL. fem. n. *octacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_F sp003288805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003288805.1. The GC content of the type genome is 38.5 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Helicobacter faticitoga sp. nov.

Candidatus Helicobacter faticitoga (NL. fem. n. *faticitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_G sp001693335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001693335.1. The GC content of the type genome is 40.79 % and the genome length is 1.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Stomach".

Description of *Candidatus* Helicobacter velivicella sp. nov.

Candidatus Helicobacter velivicella (NL. fem. n. *velivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_H sp900199585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900199535.1. The GC content of the type genome is 32.38 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Helicobacter hemidedo sp. nov.

Candidatus Helicobacter hemidedo (NL. fem. n. *hemidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_I sp002272925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002272925.1. The GC content of the type genome is 34.72 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Helicobacter sacopitica sp. nov.

Candidatus Helicobacter sacopitica (NL. fem. n. *sacopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_I sp002272875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002272875.1. The GC content of the type genome is 35.71 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Helicobacter ambifibra sp. nov.

Candidatus Helicobacter ambifibra (NL. fem. n. *ambifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_J sp002272835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002272835.1. The GC content of the type genome is 33.75 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Helicobacter conipilega sp. nov.

Candidatus Helicobacter conipilega (NL. fem. n. *conipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_J sp002272865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002272865.1. The GC content of the type genome is 41.36 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Helicobacter exsurisca sp. nov.

Candidatus Helicobacter exsurisca (NL. fem. n. *exsurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_J sp002272895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002272895.1. The GC content of the type genome is 34.98 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Helicobacter inhumitica sp. nov.

Candidatus Helicobacter inhumitica (NL. fem. n. *inhumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_J sp002272785*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002272785.1. The GC content of the type genome is 32.55 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Helicobacter opercugo sp. nov.

Candidatus Helicobacter opercugo (NL. fem. n. *opercugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_J sp002272795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002272795.1. The GC content of the type genome is 33.49 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Helicobacter verecimonia sp. nov.

Candidatus Helicobacter verecimonia (NL. fem. n. *verecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Helicobacter_J sp002272825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002272825.1. The GC content of the type genome is 41.39 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Hemidaria cerimitoga sp. nov.

Candidatus Hemidaria cerimitoga (NL. fem. n. *cerimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFH01 sp900542395*. The type genome for the species is the GenBank assembly GCA_900542395.1. The GC content of the type genome is 60.37 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Hemidaria gen. nov.

Candidatus Hemidaria (NL. fem. n. *Hemidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SFFH01*. The type species for the genus is *Candidatus* Hemidaria cerimitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Hemidaria direpax sp. nov.

Candidatus Hemidaria direpax (NL. fem. n. *direpax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFH01 sp004555535*. The type genome for the species is the GenBank assembly GCA_004555535.1. The GC content of the type genome is 63.74 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Hemidaria excaniforma sp. nov.

Candidatus Hemidaria excaniforma (NL. fem. n. *excaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFH01 sp004556985*. The type genome for the species is the GenBank assembly GCA_004556985.1. The GC content of the type genome is 63.71 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Hemidaria genocago sp. nov.

Candidatus Hemidaria genocago (NL. fem. n. *genocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFH01 sp900542445*. The type genome for the species is the GenBank assembly GCA_900542445.1. The GC content of the type genome is 57.14 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Hemidaria inrevimonas sp. nov.

Candidatus Hemidaria inrevimonas (NL. fem. n. *inrevimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SFFH01 sp902767305*. The type genome for the species is the GenBank assembly GCA_902767305.1. The GC content of the type genome is 50.12 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Hemidaria lenocentia sp. nov.

Candidatus Hemidaria lenocentia (NL. fem. n. *lenocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFH01 sp900548125*. The type genome for the species is the GenBank assembly RS_GCF_900761605.1. The GC content of the type genome is 55.03 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Hemidaria negidisca sp. nov.

Candidatus Hemidaria negidisca (NL. fem. n. *negidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFH01 sp004557905*. The type genome for the species is the GenBank assembly GCA_004557905.1. The GC content of the type genome is 62.22 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Hemidaria repagitio sp. nov.

Candidatus Hemidaria repagitio (NL. fem. n. *repagitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFH01 sp002395225*. The type genome for the species is the GenBank assembly GCA_002395225.1. The GC content of the type genome is 52.91 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Hemidaria toluticula sp. nov.

Candidatus Hemidaria toluticula (NL. fem. n. *toluticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFH01 sp900313545*. The type genome for the species is the GenBank assembly GCA_902772995.1. The GC content of the type genome is 58.39 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Hemidaria vanitax sp. nov.

Candidatus Hemidaria vanitax (NL. fem. n. *vanitax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFFH01 sp902781095*. The type genome for the species is the GenBank assembly GCA_902781095.1. The GC content of the type genome is 61.21 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Hemidella osciledo sp. nov.

Candidatus Hemidella osciledo (NL. fem. n. *osciledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIFEU01 sp903789505*. The type genome for the species is the GenBank assembly GCA_903789505.1. The GC content of the type genome is 69.46 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Hemidella gen. nov.

Candidatus Hemidella (NL. fem. n. *Hemidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIFEU01*. The type species for the genus is *Candidatus* Hemidella osciledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS124*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recocanaceae.

Description of *Candidatus* Hemidella tametastra sp. nov.

Candidatus Hemidella tametastra (NL. fem. n. *tametastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIFEU01 sp902783515*. The type genome for the species is the GenBank assembly GCA_902783515.1. The GC content of the type genome is 68.74 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Hemidida aseptessa sp. nov.

Candidatus Hemidida aseptessa (NL. fem. n. *aseptessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2126 sp004124535*. The type genome for the species is the GenBank assembly RS_GCF_004124535.1. The GC content of the type genome is 41.61 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Hemidida gen. nov.

Candidatus Hemidida (NL. fem. n. *Hemidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2126*. The type species for the genus is *Candidatus* Hemidida aseptessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufidaceae.

Description of *Candidatus* Hemidida canacitrix sp. nov.

Candidatus Hemidida canacitrix (NL. fem. n. *canacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2126 sp002730315*. The type genome for the species is the GenBank assembly GCA_002730315.1. The GC content of the type genome is 42.0 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Hemidida defanilenta sp. nov.

Candidatus Hemidida defanilenta (NL. fem. n. *defanilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2126 sp003503735*. The type genome for the species is the GenBank assembly GCA_003503735.1. The GC content of the type genome is 42.93 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Hemidida detenivita sp. nov.

Candidatus Hemidida detenivita (NL. fem. n. *detenivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2126 sp002436185*. The type genome for the species is the GenBank assembly GCA_002685605.1. The GC content of the type genome is 39.11 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Hemidida luceritia sp. nov.

Candidatus Hemidida luceritia (NL. fem. n. *luceritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2126 sp014381755*. The type genome for the species is the GenBank assembly GCA_014381755.1. The GC content of the type genome is 38.48 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Hemidida maxilicula sp. nov.

Candidatus Hemidida maxilicula (NL. fem. n. *maxilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2126 sp004124385*. The type genome for the species is the GenBank assembly RS_GCF_004124385.1. The GC content of the type genome is 38.12 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Hemidida notacitio sp. nov.

Candidatus Hemidida notacitio (NL. fem. n. *notacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2126 sp002713385*. The type genome for the species is the GenBank assembly GCA_002713385.1. The GC content of the type genome is 40.9 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Hemidida semidifica sp. nov.

Candidatus Hemidida semidifica (NL. fem. n. *semidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2126 sp002256485*. The type genome for the species is the GenBank assembly GCA_002256485.1. The GC content of the type genome is 37.79 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Hemidida siticousia sp. nov.

Candidatus Hemidida siticousia (NL. fem. n. *siticousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2126 sp012964125*. The type genome for the species is the GenBank assembly GCA_012964125.1. The GC content of the type genome is 41.31 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Hemidosa invigentia sp. nov.

Candidatus Hemidosa invigentia (NL. fem. n. *invigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-38 sp003233095*. The type genome for the species is the GenBank assembly GCA_003233095.1. The GC content of the type genome is 55.37 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Hemidosa gen. nov.

Candidatus Hemidosa (NL. fem. n. *Hemidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-38*. The type species for the genus is *Candidatus* Hemidosa invigentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hemidosaceae.

Description of *Candidatus* Hemidosaceae fam. nov.

Candidatus Hemidosaceae (NL. fem. n. *Hemidosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-38.* The type genus for the taxon is *Candidatus* Hemidosa .

According to GTDB R06-RS202, this family belongs to the order *Xanthomonadales*.

Description of *Candidatus* Hemitana mutabugo sp. nov.

Candidatus Hemitana mutabugo (NL. fem. n. *mutabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3903 sp002391625*. The type genome for the species is the GenBank assembly GCA_002391625.1. The GC content of the type genome is 38.1 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Hemitana gen. nov.

Candidatus Hemitana (NL. fem. n. *Hemitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3903*. The type species for the genus is *Candidatus* Hemitana mutabugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hemitaria myalgivita sp. nov.

Candidatus Hemitaria myalgivita (NL. fem. n. *myalgivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-49 sp002085265*. The type genome for the species is the GenBank assembly GCA_002085265.1. The GC content of the type genome is 39.49 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Hemitaria gen. nov.

Candidatus Hemitaria (NL. fem. n. *Hemitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-49*. The type species for the genus is *Candidatus* Hemitaria myalgivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-49*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hemitariaceae.

Description of *Candidatus* Hemitariaceae fam. nov.

Candidatus Hemitariaceae (NL. fem. n. *Hemitariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-49.* The type genus for the taxon is *Candidatus* Hemitaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *4484-49*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hemitariales.

Description of *Candidatus* Hemitariales ord. nov.

Candidatus Hemitariales (NL. fem. n. *Hemitariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-49.* The type genus for the taxon is *Candidatus* Hemitaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Hemitella ammixitura sp. nov.

Candidatus Hemitella ammixitura (NL. fem. n. *ammixitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp007123695*. The type genome for the species is the GenBank assembly GCA_007123695.1. The GC content of the type genome is 66.91 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Hemitella gen. nov.

Candidatus Hemitella (NL. fem. n. *Hemitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Arctic95D-9*. The type species for the genus is *Candidatus* Hemitella ammixitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DEV007*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragosaceae.

Description of *Candidatus* Hemitella annucicula sp. nov.

Candidatus Hemitella annucicula (NL. fem. n. *annucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp002396885*. The type genome for the species is the GenBank assembly GCA_002396885.1. The GC content of the type genome is 62.1 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Hemitella calipicella sp. nov.

Candidatus Hemitella calipicella (NL. fem. n. *calipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp002323995*. The type genome for the species is the GenBank assembly GCA_002291675.1. The GC content of the type genome is 51.7 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Hemitella carucitas sp. nov.

Candidatus Hemitella carucitas (NL. fem. n. *carucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp002344525*. The type genome for the species is the GenBank assembly GCA_002344525.1. The GC content of the type genome is 65.38 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Hemitella derecedo sp. nov.

Candidatus Hemitella derecedo (NL. fem. n. *derecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp002344215*. The type genome for the species is the GenBank assembly GCA_002344215.1. The GC content of the type genome is 58.1 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Hemitella diponicella sp. nov.

Candidatus Hemitella diponicella (NL. fem. n. *diponicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp002726915*. The type genome for the species is the GenBank assembly GCA_002726915.1. The GC content of the type genome is 51.74 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Hemitella oppugago sp. nov.

Candidatus Hemitella oppugago (NL. fem. n. *oppugago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp002422425*. The type genome for the species is the GenBank assembly GCA_002422425.1. The GC content of the type genome is 60.28 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Hemitella scaccatio sp. nov.

Candidatus Hemitella scaccatio (NL. fem. n. *scaccatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp002288445*. The type genome for the species is the GenBank assembly GCA_002288445.1. The GC content of the type genome is 61.72 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Hemitella siligitica sp. nov.

Candidatus Hemitella siligitica (NL. fem. n. *siligitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp012719225*. The type genome for the species is the GenBank assembly GCA_012719225.1. The GC content of the type genome is 62.71 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Hemitella sotulibula sp. nov.

Candidatus Hemitella sotulibula (NL. fem. n. *sotulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Arctic95D-9 sp013213905*. The type genome for the species is the GenBank assembly GCA_013213905.1. The GC content of the type genome is 56.18 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Hemitella turilago sp. nov.

Candidatus Hemitella turilago (NL. fem. n. *turilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp002862135*. The type genome for the species is the GenBank assembly GCA_002862135.1. The GC content of the type genome is 54.52 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Hemitella uberribula sp. nov.

Candidatus Hemitella uberribula (NL. fem. n. *uberribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic95D-9 sp002698785*. The type genome for the species is the GenBank assembly GCA_002698785.1. The GC content of the type genome is 52.73 % and the genome length is 7.02 Mbp.

Description of *Candidatus* Hemitia diponitura sp. nov.

Candidatus Hemitia diponitura (NL. fem. n. *diponitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLNW01 sp009699605*. The type genome for the species is the GenBank assembly GCA_009700635.1. The GC content of the type genome is 67.18 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Hemitia gen. nov.

Candidatus Hemitia (NL. fem. n. *Hemitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLNW01*. The type species for the genus is *Candidatus* Hemitia diponitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WLNW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Hemitiaceae.

Description of *Candidatus* Hemitiaceae fam. nov.

Candidatus Hemitiaceae (NL. fem. n. *Hemitiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WLNW01*. The type genus for the taxon is *Candidatus* Hemitia .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Hemitida immadicula sp. nov.

Candidatus Hemitida immadicula (NL. fem. n. *immadicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Z2-YC6860 sp001579845*. The type genome for the species is the GenBank assembly RS_GCF_001579845.1. The GC content of the type genome is 63.53 % and the genome length is 8.19 Mbp.

Description of *Candidatus* Hemitida gen. nov.

Candidatus Hemitida (NL. fem. n. *Hemitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Z2-YC6860*. The type species for the genus is *Candidatus* Hemitida immadicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hemitida maxumentia sp. nov.

Candidatus Hemitida maxumentia (NL. fem. n. *maxumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Z2-YC6860 sp003169835*. The type genome for the species is the GenBank assembly GCA_003169835.1. The GC content of the type genome is 60.5 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Hemitida vivifitia sp. nov.

Candidatus Hemitida vivifitia (NL. fem. n. *vivifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Z2-YC6860 sp009694215*. The type genome for the species is the GenBank assembly GCA_009694215.1. The GC content of the type genome is 65.45 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Hemitosa cerifago sp. nov.

Candidatus Hemitosa cerifago (NL. fem. n. *cerifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp002695445*. The type genome for the species is the GenBank assembly GCA_902564105.1. The GC content of the type genome is 32.84 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Hemitosa gen. nov.

Candidatus Hemitosa (NL. fem. n. *Hemitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8316*. The type species for the genus is *Candidatus* Hemitosa cerifago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hemitosa cisalitura sp. nov.

Candidatus Hemitosa cisalitura (NL. fem. n. *cisalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp902584445*. The type genome for the species is the GenBank assembly GCA_902584445.1. The GC content of the type genome is 33.62 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Hemitosa cocibitura sp. nov.

Candidatus Hemitosa cocibitura (NL. fem. n. *cocibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp002716845*. The type genome for the species is the GenBank assembly GCA_002716845.1. The GC content of the type genome is 38.87 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Hemitosa demogastra sp. nov.

Candidatus Hemitosa demogastra (NL. fem. n. *demogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp902515395*. The type genome for the species is the GenBank assembly GCA_902560975.1. The GC content of the type genome is 33.48 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Hemitosa denecatio sp. nov.

Candidatus Hemitosa denecatio (NL. fem. n. *denecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp003538555*. The type genome for the species is the GenBank assembly GCA_003538555.1. The GC content of the type genome is 40.73 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Hemitosa dimadessa sp. nov.

Candidatus Hemitosa dimadessa (NL. fem. n. *dimadessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp002687665*. The type genome for the species is the GenBank assembly GCA_002687665.1. The GC content of the type genome is 37.04 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Hemitosa enimvimonas sp. nov.

Candidatus Hemitosa enimvimonas (NL. fem. n. *enimvimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp009936675*. The type genome for the species is the GenBank assembly GCA_009936675.1. The GC content of the type genome is 40.55 %

and the genome length is 1.73 Mbp.

Description of *Candidatus* Hemitosa excetifica sp. nov.

Candidatus Hemitosa excetifica (NL. fem. n. *excetifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp902619315*. The type genome for the species is the GenBank assembly GCA_902619315.1. The GC content of the type genome is 36.68 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Hemitosa fefelimonia sp. nov.

Candidatus Hemitosa fefelimonia (NL. fem. n. *fefelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp002711215*. The type genome for the species is the GenBank assembly GCA_002170965.1. The GC content of the type genome is 35.82 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Hemitosa rarefitas sp. nov.

Candidatus Hemitosa rarefitas (NL. fem. n. *rarefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp902590705*. The type genome for the species is the GenBank assembly GCA_902590705.1. The GC content of the type genome is 33.59 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Hemitosa recomax sp. nov.

Candidatus Hemitosa recomax (NL. fem. n. *recomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp002171295*. The type genome for the species is the GenBank assembly GCA_002171295.2. The GC content of the type genome is 34.02 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Hemitosa retecimonia sp. nov.

Candidatus Hemitosa retecimonia (NL. fem. n. *retecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp002390455*. The type genome for the species is the GenBank assembly GCA_002168005.2. The GC content of the type genome is 39.16 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Hemitosa satacibula sp. nov.

Candidatus Hemitosa satacibula (NL. fem. n. *satacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp002364535*. The type genome for the species is the GenBank assembly GCA_002364535.1. The GC content of the type genome is 39.18 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Hemitosa valefibula sp. nov.

Candidatus Hemitosa valefibula (NL. fem. n. *valefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp902609035*. The type genome for the species is the GenBank assembly GCA_902609035.1. The GC content of the type genome is 35.89 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Hemitosa vigenilega sp. nov.

Candidatus Hemitosa vigenilega (NL. fem. n. *vigenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8316 sp002336305*. The type genome for the species is the GenBank assembly GCA_002336305.1. The GC content of the type genome is 36.83 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Hemitula exadvitrix sp. nov.

Candidatus Hemitula exadvitrix (NL. fem. n. *exadvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBX01 sp009784335*. The type genome for the species is the GenBank assembly GCA_009784335.1. The GC content of the type genome is 43.34 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Hemitula gen. nov.

Candidatus Hemitula (NL. fem. n. *Hemitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBX01*. The type species for the genus is *Candidatus* Hemitula exadvitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hemitulaceae.

Description of *Candidatus* Hemitulaceae fam. nov.

Candidatus Hemitulaceae (NL. fem. n. *Hemitulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRBX01.* The type genus for the taxon is *Candidatus* Hemitula .

According to GTDB R06-RS202, this family belongs to the order *Monoglobales*.

Description of *Candidatus* Henriciella abveriforma sp. nov.

Candidatus Henriciella abveriforma (NL. fem. n. *abveriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Henriciella sp012960415*. The type genome for the species is the GenBank assembly GCA_012960415.1. The GC content of the type genome is 59.91 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Henriciella demogax sp. nov.

Candidatus Henriciella demogax (NL. fem. n. *demogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Henriciella sp003576285*. The type genome for the species is the GenBank assembly RS_GCF_003576295.1. The GC content of the type genome is 61.27 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Henriciella excetousia sp. nov.

Candidatus Henriciella excetousia (NL. fem. n. *excetousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Henriciella sp013214545*. The type genome for the species is the GenBank assembly GCA_013214545.1. The GC content of the type genome is 57.49 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Henriciella ingurugo sp. nov.

Candidatus Henriciella ingurugo (NL. fem. n. *ingurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Henriciella sp013213825*. The type genome for the species is the GenBank assembly GCA_013213825.1. The GC content of the type genome is 54.8 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Henriciella locupimonia sp. nov.

Candidatus Henriciella locupimonia (NL. fem. n. *locupimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Henriciella sp002172915*. The type genome for the species is the GenBank assembly GCA_002172915.1. The GC content of the type genome is 54.68 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Henriciella mahelibula sp. nov.

Candidatus Henriciella mahelibula (NL. fem. n. *mahelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Henriciella sp002733705*. The type genome for the species is the GenBank assembly GCA_002733705.1. The GC content of the type genome is 61.36 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Henriciella opercatio sp. nov.

Candidatus Henriciella opercatio (NL. fem. n. *opercatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Henriciella sp013213785*. The type genome for the species is the GenBank assembly GCA_013213785.1. The GC content of the type genome is 54.95 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Henriciella redunitrix sp. nov.

Candidatus Henriciella redunitrix (NL. fem. n. *redunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Henriciella sp001854405*. The type genome for the species is the GenBank assembly RS_GCF_001854405.1. The GC content of the type genome is 58.14 % and the genome length is 3.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "non-axenic unialgal culture; shallow tropical waters; normally from coral reef substrate".

Description of *Candidatus* Herbaspirillum adpinitica sp. nov.

Candidatus Herbaspirillum adpinitica (NL. fem. n. *adpinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp000282575*. The type genome for the species is the GenBank assembly RS_GCF_000282575.1. The GC content of the type genome is 63.79 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Herbaspirillum cuferilenta sp. nov.

Candidatus Herbaspirillum cuferilenta (NL. fem. n. *cuferilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp014192645*. The type genome for the species is the GenBank assembly RS_GCF_014192615.1. The GC content of the type genome is 54.48 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Herbaspirillum derunitas sp. nov.

Candidatus Herbaspirillum derunitas (NL. fem. n. *derunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp002257565*. The type genome for the species is the GenBank assembly RS_GCF_002257565.1. The GC content of the type genome is 57.08 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Herbaspirillum enharetta sp. nov.

Candidatus Herbaspirillum enharetta (NL. fem. n. *enharetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp000282135*. The type genome for the species is the GenBank assembly RS_GCF_000282135.1. The GC content of the type genome is 59.75 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Herbaspirillum ermelitio sp. nov.

Candidatus Herbaspirillum ermelitio (NL. fem. n. *ermelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp000577615*. The type genome for the species is the GenBank assembly RS_GCF_000577615.1. The GC content of the type genome is 59.23 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Herbaspirillum inlepilega sp. nov.

Candidatus Herbaspirillum inlepilega (NL. fem. n. *inlepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp013426985*. The type genome for the species is the GenBank assembly RS_GCF_013426985.1. The GC content of the type genome is 63.0 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Herbaspirillum inrefitudo sp. nov.

Candidatus Herbaspirillum inrefitudo (NL. fem. n. *inrefitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp004134995*. The type genome for the species is the GenBank assembly RS_GCF_004134995.1. The GC content of the type genome is 60.34 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Herbaspirillum monimitica sp. nov.

Candidatus Herbaspirillum monimitica (NL. fem. n. *monimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp004563925*. The type genome for the species is the GenBank assembly RS_GCF_003400355.1. The GC content of the type genome is 60.44 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Herbaspirillum subinitio sp. nov.

Candidatus Herbaspirillum subinitio (NL. fem. n. *subinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp000261365*. The type genome for the species is the GenBank assembly RS_GCF_000261365.1. The GC content of the type genome is 62.46 % and the genome length is 5.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rhizosphere soil".

Description of *Candidatus* Herbaspirillum totidivita sp. nov.

Candidatus Herbaspirillum totidivita (NL. fem. n. *totidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbaspirillum sp006715495*. The type genome for the species is the GenBank assembly RS_GCF_006715445.1. The GC content of the type genome is 63.11 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Herbiconiux cohuritrix sp. nov.

Candidatus Herbiconiux cohuritrix (NL. fem. n. *cohuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbiconiux sp005502775*. The type genome for the species is the

GenBank assembly RS_GCF_005503235.1. The GC content of the type genome is 69.91 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Herbiconiux rarefastra sp. nov.

Candidatus Herbiconiux rarefastra (NL. fem. n. *rarefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbiconiux sp013113715*. The type genome for the species is the GenBank assembly RS_GCF_013113715.1. The GC content of the type genome is 70.29 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Herbiconiux velifitura sp. nov.

Candidatus Herbiconiux velifitura (NL. fem. n. *velifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbiconiux sp004297105*. The type genome for the species is the GenBank assembly GCA_004297105.1. The GC content of the type genome is 68.63 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Herbinix acricitudo sp. nov.

Candidatus Herbinix acricitudo (NL. fem. n. *acricitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012519905*. The type genome for the species is the GenBank assembly GCA_012519905.1. The GC content of the type genome is 36.64 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Herbinix alluvilega sp. nov.

Candidatus Herbinix alluvilega (NL. fem. n. *alluvilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012839235*. The type genome for the species is the GenBank assembly GCA_012839235.1. The GC content of the type genome is 35.35 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Herbinix ampenibula sp. nov.

Candidatus Herbinix ampenibula (NL. fem. n. *ampenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012519565*. The type genome for the species is the GenBank assembly GCA_012519565.1. The GC content of the type genome is 34.87 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Herbinix apogrago sp. nov.

Candidatus Herbinix apogrago (NL. fem. n. *apogrago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012839085*. The type genome for the species is the GenBank assembly GCA_012839085.1. The GC content of the type genome is 35.83 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Herbinix appiciforma sp. nov.

Candidatus Herbinix appiciforma (NL. fem. n. *appiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp004294845*. The type genome for the species is the GenBank assembly GCA_004294845.1. The GC content of the type genome is 36.99 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Herbinix bacifimonia sp. nov.

Candidatus Herbinix bacifimonia (NL. fem. n. *bacifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012839295*. The type genome for the species is the GenBank assembly GCA_012839295.1. The GC content of the type genome is 43.84 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Herbinix cadavimonas sp. nov.

Candidatus Herbinix cadavimonas (NL. fem. n. *cadavimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012519195*. The type genome for the species is the GenBank assembly GCA_012519195.1. The GC content of the type genome is 37.07 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Herbinix defuliforma sp. nov.

Candidatus Herbinix defuliforma (NL. fem. n. *defuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp014174405*. The type genome for the species is the GenBank assembly GCA_014174405.1. The GC content of the type genome is 38.47 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Herbinix dibapicella sp. nov.

Candidatus Herbinix dibapicella (NL. fem. n. *dibapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012520635*. The type genome for the species is the GenBank assembly GCA_012520635.1. The GC content of the type genome is 34.56 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Herbinix everbessa sp. nov.

Candidatus Herbinix everbessa (NL. fem. n. *everbessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp002307215*. The type genome for the species is the GenBank assembly GCA_002307215.1. The GC content of the type genome is 38.61 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Herbinix excucicella sp. nov.

Candidatus Herbinix excucicella (NL. fem. n. *excucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012523925*. The type genome for the species is the GenBank assembly GCA_012523925.1. The GC content of the type genome is 35.96 %

and the genome length is 2.77 Mbp.

Description of *Candidatus* Herbinix fatifisca sp. nov.

Candidatus Herbinix fatifisca (NL. fem. n. *fatifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012837605*. The type genome for the species is the GenBank assembly GCA_012837605.1. The GC content of the type genome is 37.97 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Herbinix immobitrix sp. nov.

Candidatus Herbinix immobitrix (NL. fem. n. *immobitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012837865*. The type genome for the species is the GenBank assembly GCA_012837865.1. The GC content of the type genome is 30.25 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Herbinix locelifica sp. nov.

Candidatus Herbinix locelifica (NL. fem. n. *locelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012523775*. The type genome for the species is the GenBank assembly GCA_012523775.1. The GC content of the type genome is 39.02 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Herbinix nidifimonas sp. nov.

Candidatus Herbinix nidifimonas (NL. fem. n. *nidifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012518935*. The type genome for the species is the GenBank assembly GCA_012518935.1. The GC content of the type genome is 35.18 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Herbinix ossarousia sp. nov.

Candidatus Herbinix ossarousia (NL. fem. n. *ossarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp003519685*. The type genome for the species is the GenBank assembly GCA_003519685.1. The GC content of the type genome is 41.51 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Herbinix pragmimonas sp. nov.

Candidatus Herbinix pragmimonas (NL. fem. n. *pragmimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp002329645*. The type genome for the species is the GenBank assembly GCA_002329645.1. The GC content of the type genome is 43.24 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Herbinix relecitia sp. nov.

Candidatus Herbinix relecitia (NL. fem. n. *relecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012735495*. The type genome for the species is the GenBank assembly GCA_012735495.1. The GC content of the type genome is 44.85 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Herbinix repagugo sp. nov.

Candidatus Herbinix repagugo (NL. fem. n. *repagugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012522735*. The type genome for the species is the GenBank assembly GCA_012522735.1. The GC content of the type genome is 37.3 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Herbinix vanititica sp. nov.

Candidatus Herbinix vanititica (NL. fem. n. *vanititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbinix sp012518975*. The type genome for the species is the GenBank assembly GCA_012518975.1. The GC content of the type genome is 35.43 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Herbivorax desupitia sp. nov.

Candidatus Herbivorax desupitia (NL. fem. n. *desupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbivorax sp012517995*. The type genome for the species is the GenBank assembly GCA_012517995.1. The GC content of the type genome is 33.54 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Herbivorax illibigena sp. nov.

Candidatus Herbivorax illibigena (NL. fem. n. *illibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herbivorax sp012841175*. The type genome for the species is the GenBank assembly GCA_012841175.1. The GC content of the type genome is 31.42 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Herinana documitica sp. nov.

Candidatus Herinana documitica (NL. fem. n. *documitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12079 sp001029775*. The type genome for the species is the GenBank assembly GCA_000990745.1. The GC content of the type genome is 34.71 % and the genome length is 0.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Herinana gen. nov.

Candidatus Herinana (NL. fem. n. *Herinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12079*. The type species for the genus is *Candidatus* Herinana documitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12079*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Herinanaceae.

Description of *Candidatus* Herinanaceae fam. nov.

Candidatus Herinanaceae (NL. fem. n. *Herinanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12079.* The type genus for the taxon is *Candidatus* Herinana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Herinana palifastra sp. nov.

Candidatus Herinana palifastra (NL. fem. n. *palifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12079 sp001774495*. The type genome for the species is the GenBank assembly GCA_001774495.1. The GC content of the type genome is 34.94 % and the genome length is 0.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Herinaria recucessa sp. nov.

Candidatus Herinaria recucessa (NL. fem. n. *recucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-81 sp001304015*. The type genome for the species is the GenBank assembly GCA_001304015.1. The GC content of the type genome is 52.83 % and the genome length is 3.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Herinaria gen. nov.

Candidatus Herinaria (NL. fem. n. *Herinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-81*. The type species for the genus is *Candidatus* Herinaria recucessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-81*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Herinariaceae.

Description of *Candidatus* Herinariaceae fam. nov.

Candidatus Herinariaceae (NL. fem. n. *Herinariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-81.* The type genus for the taxon is *Candidatus* Herinaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-81*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Herinariales.

Description of *Candidatus* Herinariales ord. nov.

Candidatus Herinariales (NL. fem. n. *Herinariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-81.* The type genus for the taxon is *Candidatus* Herinaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *DG-26_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bucelidae.

Description of *Candidatus* Herinella cemenisca sp. nov.

Candidatus Herinella cemenisca (NL. fem. n. *cemenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-45-10 sp001777995*. The type genome for the species is the GenBank assembly GCA_001780235.1. The GC content of the type genome is 45.11 % and the genome length is 0.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Herinella gen. nov.

Candidatus Herinella (NL. fem. n. *Herinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-45-10*. The type species for the genus is *Candidatus* Herinella cemenisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-47-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defacellaceae.

Description of *Candidatus* Herinella enuntitudo sp. nov.

Candidatus Herinella enuntitudo (NL. fem. n. *enuntitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-45-10 sp002773575*. The type genome for the species is the GenBank assembly GCA_002773575.1. The GC content of the type genome is 44.44 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Herinida recogimonia sp. nov.

Candidatus Herinida recogimonia (NL. fem. n. *recogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9554 sp003512825*. The type genome for the species is the GenBank assembly GCA_003485125.1. The GC content of the type genome is 59.21 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Herinida gen. nov.

Candidatus Herinida (NL. fem. n. *Herinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9554*. The type species for the genus is *Candidatus* Herinida recogimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Herinida turilitudo sp. nov.

Candidatus Herinida turilitudo (NL. fem. n. *turilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9554 sp009922885*. The type genome for the species is the GenBank assembly GCA_009922885.1. The GC content of the type genome is 60.65 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Herinosa masocugo sp. nov.

Candidatus Herinosa masocugo (NL. fem. n. *masocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLHW01 sp007135955*. The type genome for the species is the GenBank assembly GCA_007117855.1. The GC content of the type genome is 44.17 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Herinosa gen. nov.

Candidatus Herinosa (NL. fem. n. *Herinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLHW01*. The type species for the genus is *Candidatus* Herinosa masocugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLHW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Herinosaceae.

Description of *Candidatus* Herinosaceae fam. nov.

Candidatus Herinosaceae (NL. fem. n. *Herinosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLHW01*. The type genus for the taxon is *Candidatus* Herinosa .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Herinosa timefitura sp. nov.

Candidatus Herinosa timefitura (NL. fem. n. *timefitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLHW01 sp007132685*. The type genome for the species is the GenBank assembly GCA_007132685.1. The GC content of the type genome is 47.04 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Herinula gabinago sp. nov.

Candidatus Herinula gabinago (NL. fem. n. *gabinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1670 sp902406135*. The type genome for the species is the GenBank assembly GCA_902406135.1. The GC content of the type genome is 40.67 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Herinula gen. nov.

Candidatus Herinula (NL. fem. n. *Herinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1670*. The type species for the genus is *Candidatus* Herinula gabinago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Herinula minagigena sp. nov.

Candidatus Herinula minagigena (NL. fem. n. *minagigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1670 sp900546215*. The type genome for the species is the GenBank assembly GCA_900546215.1. The GC content of the type genome is 40.82 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Herinula tenilago sp. nov.

Candidatus Herinula tenilago (NL. fem. n. *tenilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UMGS1670 sp900548595*. The type genome for the species is the GenBank assembly RS_GCF_900757895.1. The GC content of the type genome is 39.04 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Herinula triclimonas sp. nov.

Candidatus Herinula triclimonas (NL. fem. n. *triclimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1670 sp900553995*. The type genome for the species is the GenBank assembly GCA_900553995.1. The GC content of the type genome is 39.5 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Herminiimonas agripetta sp. nov.

Candidatus Herminiimonas agripetta (NL. fem. n. *agripetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herminiimonas sp001464355*. The type genome for the species is the GenBank assembly GCA_001464355.1. The GC content of the type genome is 51.83 % and the genome length is 3.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Herminiimonas dilogatica sp. nov.

Candidatus Herminiimonas dilogatica (NL. fem. n. *dilogatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herminiimonas sp003852535*. The type genome for the species is the GenBank assembly RS_GCF_003852535.1. The GC content of the type genome is 54.01 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Herminiimonas exoscax sp. nov.

Candidatus Herminiimonas exoscax (NL. fem. n. *exoscax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herminiimonas sp000013625*. The type genome for the species is the GenBank assembly RS_GCF_000013625.1. The GC content of the type genome is 54.23

% and the genome length is 4.11 Mbp.

Description of *Candidatus* Herminiimonas recomitrix sp. nov.

Candidatus Herminiimonas recomitrix (NL. fem. n. *recomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herminiimonas sp903993245*. The type genome for the species is the GenBank assembly RS_GCF_903993245.1. The GC content of the type genome is 54.35 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Herminiimonas rorulax sp. nov.

Candidatus Herminiimonas rorulax (NL. fem. n. *rorulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Herminiimonas sp002384815*. The type genome for the species is the GenBank assembly GCA_002384815.1. The GC content of the type genome is 53.54 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Hexagana arcipessa sp. nov.

Candidatus Hexagana arcipessa (NL. fem. n. *arcipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp002393905*. The type genome for the species is the GenBank assembly GCA_002393905.1. The GC content of the type genome is 36.24 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Hexagana gen. nov.

Candidatus Hexagana (NL. fem. n. *Hexagana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3207*. The type species for the genus is *Candidatus* Hexagana arcipessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Hexagana catafatio sp. nov.

Candidatus Hexagana catafatio (NL. fem. n. *catafatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp902796125*. The type genome for the species is the GenBank assembly GCA_902796125.1. The GC content of the type genome is 35.67 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Hexagana cuticitrix sp. nov.

Candidatus Hexagana cuticitrix (NL. fem. n. *cuticitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp902768335*. The type genome for the species is the GenBank assembly GCA_902768335.1. The GC content of the type genome is 35.56 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Hexagana decupibra sp. nov.

Candidatus Hexagana decupibra (NL. fem. n. *decupibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp002395065*. The type genome for the species is the GenBank assembly GCA_002395065.1. The GC content of the type genome is 36.42 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Hexagana defetedo sp. nov.

Candidatus Hexagana defetedo (NL. fem. n. *defetedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp902787955*. The type genome for the species is the GenBank assembly GCA_902787955.1. The GC content of the type genome is 33.59 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Hexagana fidenousia sp. nov.

Candidatus Hexagana fidenousia (NL. fem. n. *fidenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp902774655*. The type genome for the species is the GenBank assembly GCA_902774655.1. The GC content of the type genome is 34.23 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Hexagana inoblentia sp. nov.

Candidatus Hexagana inoblentia (NL. fem. n. *inoblentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp002363735*. The type genome for the species is the GenBank assembly GCA_002363735.1. The GC content of the type genome is 34.65 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Hexagana lavabatio sp. nov.

Candidatus Hexagana lavabatio (NL. fem. n. *lavabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp002494205*. The type genome for the species is the GenBank assembly GCA_002494205.1. The GC content of the type genome is 33.83 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Hexagana nosocicula sp. nov.

Candidatus Hexagana nosocicula (NL. fem. n. *nosocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp003501485*. The type genome for the species is the GenBank assembly GCA_003501485.1. The GC content of the type genome is 30.65 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Hexagana obvolousia sp. nov.

Candidatus Hexagana obvolousia (NL. fem. n. *obvolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA3207 sp902797855*. The type genome for the species is the GenBank assembly GCA_902797855.1. The GC content of the type genome is 34.15 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Hexagana podagago sp. nov.

Candidatus Hexagana podagago (NL. fem. n. *podagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3207 sp900314585*. The type genome for the species is the GenBank assembly GCA_902755175.1. The GC content of the type genome is 36.87 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Hexagaria desupentia sp. nov.

Candidatus Hexagaria desupentia (NL. fem. n. *desupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-18 sp001772615*. The type genome for the species is the GenBank assembly GCA_001772615.1. The GC content of the type genome is 40.47 % and the genome length is 1.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Hexagaria gen. nov.

Candidatus Hexagaria (NL. fem. n. *Hexagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-41-18*. The type species for the genus is *Candidatus* Hexagaria desupentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-41-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexagariaceae.

Description of *Candidatus* Hexagariaceae fam. nov.

Candidatus Hexagariaceae (NL. fem. n. *Hexagariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *2-01-FULL-41-18.* The type genus for the taxon is *Candidatus* Hexagaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA101185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deceniales.

Description of *Candidatus* Hexagella invetitrix sp. nov.

Candidatus Hexagella invetitrix (NL. fem. n. *invetitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBBH01 sp005239795*. The type genome for the species is the GenBank assembly GCA_005239795.1. The GC content of the type genome is 63.24 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Hexagella gen. nov.

Candidatus Hexagella (NL. fem. n. *Hexagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBBH01*. The type species for the genus is *Candidatus* Hexagella invetitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBBH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexagellaceae.

Description of *Candidatus* Hexagellaceae fam. nov.

Candidatus Hexagellaceae (NL. fem. n. *Hexagellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBH01.* The type genus for the taxon is *Candidatus* Hexagella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBBH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hexagellales.

Description of *Candidatus* Hexagellales ord. nov.

Candidatus Hexagellales (NL. fem. n. *Hexagellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBH01*. The type genus for the taxon is *Candidatus* Hexagella .

According to the original version of GTDB R06-RS202, this family belongs to the class *SBBH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Hexagellae.

Description of *Candidatus* Hexagellae class. nov.

Candidatus Hexagellae (NL. fem. n. *c__Hexagellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBH01*. The type genus for the taxon is *Candidatus* Hexagella .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Hexagia bonitetta sp. nov.

Candidatus Hexagia bonitetta (NL. fem. n. *bonitetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp002707915*. The type genome for the species is the GenBank assembly GCA_902582615.1. The GC content of the type genome is 36.09 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Hexagia gen. nov.

Candidatus Hexagia (NL. fem. n. *Hexagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2707915*. The type species for the genus is *Candidatus* Hexagia bonitetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SAR86*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludimulaceae.

Description of *Candidatus* Hexagia caravicella sp. nov.

Candidatus Hexagia caravicella (NL. fem. n. *caravicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902604855*. The type genome for the species is the GenBank assembly GCA_902604855.1. The GC content of the type genome is 35.86 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Hexagia catilugo sp. nov.

Candidatus Hexagia catilugo (NL. fem. n. *catilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp003212335*. The type genome for the species is the GenBank assembly GCA_902593995.1. The GC content of the type genome is 36.37 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Hexagia cotenilega sp. nov.

Candidatus Hexagia cotenilega (NL. fem. n. *cotenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902517565*. The type genome for the species is the GenBank assembly GCA_902517565.1. The GC content of the type genome is 36.24 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Hexagia denavivita sp. nov.

Candidatus Hexagia denavivita (NL. fem. n. *denavivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902594545*. The type genome for the species is the GenBank assembly GCA_902592425.1. The GC content of the type genome is 37.15 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Hexagia faviligena sp. nov.

Candidatus Hexagia faviligena (NL. fem. n. *faviligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902606175*. The type genome for the species is the GenBank assembly GCA_902606175.1. The GC content of the type genome is 35.77 %

and the genome length is 1.32 Mbp.

Description of *Candidatus* Hexagia ficedicula sp. nov.

Candidatus Hexagia ficedicula (NL. fem. n. *ficedicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp004214065*. The type genome for the species is the GenBank assembly GCA_902572975.1. The GC content of the type genome is 36.04 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Hexagia holisitio sp. nov.

Candidatus Hexagia holisitio (NL. fem. n. *holisitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902620785*. The type genome for the species is the GenBank assembly GCA_902587485.1. The GC content of the type genome is 35.84 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Hexagia homoliforma sp. nov.

Candidatus Hexagia homoliforma (NL. fem. n. *homoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902574355*. The type genome for the species is the GenBank assembly GCA_902574355.1. The GC content of the type genome is 35.86 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Hexagia inexsivita sp. nov.

Candidatus Hexagia inexsivita (NL. fem. n. *inexsivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902630715*. The type genome for the species is the GenBank assembly GCA_902630715.1. The GC content of the type genome is 36.74 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Hexagia irrevimonas sp. nov.

Candidatus Hexagia irrevimonas (NL. fem. n. *irrevimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902605935*. The type genome for the species is the GenBank assembly GCA_902605935.1. The GC content of the type genome is 35.73 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Hexagia metabatica sp. nov.

Candidatus Hexagia metabatica (NL. fem. n. *metabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902618945*. The type genome for the species is the GenBank assembly GCA_902611645.1. The GC content of the type genome is 35.88 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Hexagia tenemitura sp. nov.

Candidatus Hexagia tenemitura (NL. fem. n. *tenemitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707915 sp902542325*. The type genome for the species is the GenBank assembly GCA_902542325.1. The GC content of the type genome is 35.8 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Hexagida vanidastra sp. nov.

Candidatus Hexagida vanidastra (NL. fem. n. *vanidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B21-G9 sp003641545*. The type genome for the species is the GenBank assembly GCA_003641545.1. The GC content of the type genome is 44.45 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Hexagida gen. nov.

Candidatus Hexagida (NL. fem. n. *Hexagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B21-G9*. The type species for the genus is *Candidatus* Hexagida vanidastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B21-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexagidaceae.

Description of *Candidatus* Hexagidaceae fam. nov.

Candidatus Hexagidaceae (NL. fem. n. *Hexagidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B21-G9.* The type genus for the taxon is *Candidatus* Hexagida .

According to the original version of GTDB R06-RS202, this family belongs to the order *B21-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hexagidales.

Description of *Candidatus* Hexagidales ord. nov.

Candidatus Hexagidales (NL. fem. n. *Hexagidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B21-G9.* The type genus for the taxon is *Candidatus* Hexagida .

According to the GTDB R06-RS202, this order belongs to the class *Thermotogae*.

Description of *Candidatus* Hexagosa alectiforma sp. nov.

Candidatus Hexagosa alectiforma (NL. fem. n. *alectiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB11 sp009920815*. The type genome for the species is the GenBank assembly GCA_009920815.1. The GC content of the type genome is 50.27 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Hexagosa gen. nov.

Candidatus Hexagosa (NL. fem. n. *Hexagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *HIMB11*. The type species for the genus is *Candidatus* Hexagosa alectiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hexagosa avoncicella sp. nov.

Candidatus Hexagosa avoncicella (NL. fem. n. *avoncicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB11 sp009920225*. The type genome for the species is the GenBank assembly GCA_009920225.1. The GC content of the type genome is 52.34 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Hexagosa maciledo sp. nov.

Candidatus Hexagosa maciledo (NL. fem. n. *maciledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB11 sp000472185*. The type genome for the species is the GenBank assembly RS_GCF_000472185.1. The GC content of the type genome is 49.73 % and the genome length is 3.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Hexagosa ratifilega sp. nov.

Candidatus Hexagosa ratifilega (NL. fem. n. *ratifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB11 sp003486095*. The type genome for the species is the GenBank assembly GCA_010022345.1. The GC content of the type genome is 49.81 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Hexagula catalisca sp. nov.

Candidatus Hexagula catalisca (NL. fem. n. *catalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBH01 sp013694995*. The type genome for the species is the

GenBank assembly GCA_013694995.1. The GC content of the type genome is 44.6 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Hexagula gen. nov.

Candidatus Hexagula (NL. fem. n. *Hexagula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDBH01*. The type species for the genus is *Candidatus* Hexagula catalisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACDBH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexagulaceae.

Description of *Candidatus* Hexagulaceae fam. nov.

Candidatus Hexagulaceae (NL. fem. n. *Hexagulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACDBH01.* The type genus for the taxon is *Candidatus* Hexagula .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Hexamana fecunatica sp. nov.

Candidatus Hexamana fecunatica (NL. fem. n. *fecunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4345 sp002362105*. The type genome for the species is the GenBank assembly GCA_002372195.1. The GC content of the type genome is 45.33 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Hexamana gen. nov.

Candidatus Hexamana (NL. fem. n. *Hexamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4345*. The type species for the genus is *Candidatus* Hexamana fecunatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hexamana monogimonia sp. nov.

Candidatus Hexamana monogimonia (NL. fem. n. *monogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4345 sp002396385*. The type genome for the species is the GenBank assembly GCA_002396385.1. The GC content of the type genome is 45.34 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Hexamaria reduvessa sp. nov.

Candidatus Hexamaria reduvessa (NL. fem. n. *reduvessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-38-13 sp000993025*. The type genome for the species is the GenBank assembly GCA_000993025.1. The GC content of the type genome is 38.01 % and the genome length is 1.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Hexamaria gen. nov.

Candidatus Hexamaria (NL. fem. n. *Hexamaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-38-13*. The type species for the genus is *Candidatus* Hexamaria reduvessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Hexamaria vilipifica sp. nov.

Candidatus Hexamaria vilipifica (NL. fem. n. *vilipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-38-13 sp000993685*. The type genome for the species is the GenBank assembly GCA_000993685.1. The GC content of the type genome is 38.98 % and the genome length is 1.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Hexamella depopimonia sp. nov.

Candidatus Hexamella depopimonia (NL. fem. n. *depopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQWC01 sp903875425*. The type genome for the species is the GenBank assembly GCA_903894185.1. The GC content of the type genome is 56.63 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Hexamella gen. nov.

Candidatus Hexamella (NL. fem. n. *Hexamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQWC01*. The type species for the genus is *Candidatus* Hexamella depopimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Hexamella domipousia sp. nov.

Candidatus Hexamella domipousia (NL. fem. n. *domipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQWC01 sp903825305*. The type genome for the species is the GenBank assembly GCA_903825305.1. The GC content of the type genome is 57.02 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Hexamia arnogiforma sp. nov.

Candidatus Hexamia arnogiforma (NL. fem. n. *arnogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA240-E13 sp000513075*. The type genome for the species is the GenBank assembly GCA_000513075.1. The GC content of the type genome is 30.07 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Hexamia gen. nov.

Candidatus Hexamia (NL. fem. n. *Hexamia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AAA240-E13*. The type species for the genus is *Candidatus* Hexamia arnogiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hexamia denomedo sp. nov.

Candidatus Hexamia denomedo (NL. fem. n. *denomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA240-E13 sp000504625*. The type genome for the species is the GenBank assembly GCA_000504625.1. The GC content of the type genome is 28.97 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Hexamia detorilenta sp. nov.

Candidatus Hexamia detorilenta (NL. fem. n. *detorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA240-E13 sp003211695*. The type genome for the species is the GenBank assembly GCA_902608355.1. The GC content of the type genome is 29.75 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Hexamia orgetilega sp. nov.

Candidatus Hexamia orgetilega (NL. fem. n. *orgetilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA240-E13 sp000513055*. The type genome for the species is the GenBank assembly GCA_000513055.1. The GC content of the type genome is 29.14 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Hexamia utralicula sp. nov.

Candidatus Hexamia utralicula (NL. fem. n. *utralicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA240-E13 sp000504605*. The type genome for the species is the GenBank assembly GCA_000504605.1. The GC content of the type genome is 29.0 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Hexamia vacilatica sp. nov.

Candidatus Hexamia vacilatica (NL. fem. n. *vacilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA240-E13 sp003209225*. The type genome for the species is the GenBank assembly GCA_003209225.1. The GC content of the type genome is 29.44 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Hexamia vepaliforma sp. nov.

Candidatus Hexamia vepaliforma (NL. fem. n. *vepaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA240-E13 sp002690285*. The type genome for the species is the GenBank assembly GCA_002690285.1. The GC content of the type genome is 30.55 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Hexamida badititrix sp. nov.

Candidatus Hexamida badititrix (NL. fem. n. *badititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077527 sp003820645*. The type genome for the species is the GenBank assembly GCA_003820645.1. The GC content of the type genome is 62.91 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Hexamida gen. nov.

Candidatus Hexamida (NL. fem. n. *Hexamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077527*. The type species for the genus is *Candidatus* Hexamida badititrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludanaceae.

Description of *Candidatus* Hexamida cucurivita sp. nov.

Candidatus Hexamida cucurivita (NL. fem. n. *cucurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077527 sp903933915*. The type genome for the species is the GenBank assembly GCA_903857965.1. The GC content of the type genome is 60.68 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Hexamida proscivita sp. nov.

Candidatus Hexamida proscivita (NL. fem. n. *proscivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077527 sp001464815*. The type genome for the species is the GenBank assembly GCA_001464815.1. The GC content of the type genome is 62.99 % and the genome length is 3.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Hexamida venucimonia sp. nov.

Candidatus Hexamida venucimonia (NL. fem. n. *venucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077527 sp903885665*. The type genome for the species is the GenBank assembly GCA_903885665.1. The GC content of the type genome is 46.6 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Hexamosa paralessa sp. nov.

Candidatus Hexamosa paralessa (NL. fem. n. *paralessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7488 sp002477185*. The type genome for the species is the

GenBank assembly GCA_002477185.1. The GC content of the type genome is 40.76 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Hexamosa gen. nov.

Candidatus Hexamosa (NL. fem. n. *Hexamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7488*. The type species for the genus is *Candidatus* Hexamosa paralessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3637*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracellaceae.

Description of *Candidatus* Hexamula viburatica sp. nov.

Candidatus Hexamula viburatica (NL. fem. n. *viburatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWQI01 sp003670885*. The type genome for the species is the GenBank assembly GCA_903917725.1. The GC content of the type genome is 52.15 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Hexamula gen. nov.

Candidatus Hexamula (NL. fem. n. *Hexamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QWQI01*. The type species for the genus is *Candidatus* Hexamula viburatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hexapana abindimonas sp. nov.

Candidatus Hexapana abindimonas (NL. fem. n. *abindimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009787835*. The type genome for the species is the GenBank assembly GCA_009787835.1. The GC content of the type genome is 43.13 %

and the genome length is 3.08 Mbp.

Description of *Candidatus* Hexapana gen. nov.

Candidatus Hexapana (NL. fem. n. *Hexapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQXQ01*. The type species for the genus is *Candidatus* Hexapana abindimonas .

According to GTDB R06-RS202, this genus belongs to the family _B.

Description of *Candidatus* Hexapana adcumifica sp. nov.

Candidatus Hexapana adcumifica (NL. fem. n. *adcumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009777735*. The type genome for the species is the GenBank assembly GCA_009777735.1. The GC content of the type genome is 46.31 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Hexapana antipitia sp. nov.

Candidatus Hexapana antipitia (NL. fem. n. *antipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009778155*. The type genome for the species is the GenBank assembly GCA_009778155.1. The GC content of the type genome is 51.7 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Hexapana ascisastra sp. nov.

Candidatus Hexapana ascisastra (NL. fem. n. *ascisastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009784775*. The type genome for the species is the GenBank assembly GCA_009784775.1. The GC content of the type genome is 48.03 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Hexapana assucatica sp. nov.

Candidatus Hexapana assucatica (NL. fem. n. *assucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009785215*. The type genome for the species is the GenBank assembly GCA_009785215.1. The GC content of the type genome is 38.91 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Hexapana bovicugo sp. nov.

Candidatus Hexapana bovicugo (NL. fem. n. *bovicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009784975*. The type genome for the species is the GenBank assembly GCA_009784975.1. The GC content of the type genome is 41.72 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Hexapana butubatio sp. nov.

Candidatus Hexapana butubatio (NL. fem. n. *butubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009787775*. The type genome for the species is the GenBank assembly GCA_009787775.1. The GC content of the type genome is 42.53 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Hexapana cemenetta sp. nov.

Candidatus Hexapana cemenetta (NL. fem. n. *cemenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009787285*. The type genome for the species is the GenBank assembly GCA_009787145.1. The GC content of the type genome is 42.42 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Hexapana cilicibra sp. nov.

Candidatus Hexapana cilicibra (NL. fem. n. *cilicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009786715*. The type genome for the species is the GenBank assembly GCA_009786715.1. The GC content of the type genome is 42.49 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Hexapana decacibra sp. nov.

Candidatus Hexapana decacibra (NL. fem. n. *decacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009786495*. The type genome for the species is the GenBank assembly GCA_009786495.1. The GC content of the type genome is 44.36 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Hexapana decititrix sp. nov.

Candidatus Hexapana decititrix (NL. fem. n. *decititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009786455*. The type genome for the species is the GenBank assembly GCA_009786455.1. The GC content of the type genome is 42.11 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Hexapana derelago sp. nov.

Candidatus Hexapana derelago (NL. fem. n. *derelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009784995*. The type genome for the species is the GenBank assembly GCA_009784995.1. The GC content of the type genome is 38.95 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Hexapana disiditia sp. nov.

Candidatus Hexapana disiditia (NL. fem. n. *disiditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009778545*. The type genome for the species is the GenBank assembly GCA_009778545.1. The GC content of the type genome is 53.49 %

and the genome length is 1.99 Mbp.

Description of *Candidatus* Hexapana exsupax sp. nov.

Candidatus Hexapana exsupax (NL. fem. n. *exsupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009781475*. The type genome for the species is the GenBank assembly GCA_009781475.1. The GC content of the type genome is 36.71 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Hexapana hegumitica sp. nov.

Candidatus Hexapana hegumitica (NL. fem. n. *hegumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009786625*. The type genome for the species is the GenBank assembly GCA_009786625.1. The GC content of the type genome is 44.13 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Hexapana inurbetta sp. nov.

Candidatus Hexapana inurbetta (NL. fem. n. *inurbetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009781635*. The type genome for the species is the GenBank assembly GCA_009781635.1. The GC content of the type genome is 41.33 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Hexapana labecetta sp. nov.

Candidatus Hexapana labecetta (NL. fem. n. *labecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009787795*. The type genome for the species is the GenBank assembly GCA_009787885.1. The GC content of the type genome is 43.79 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Hexapana luceritura sp. nov.

Candidatus Hexapana luceritura (NL. fem. n. *luceritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009785545*. The type genome for the species is the GenBank assembly GCA_009785545.1. The GC content of the type genome is 41.28 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Hexapana malifetta sp. nov.

Candidatus Hexapana malifetta (NL. fem. n. *malifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009780285*. The type genome for the species is the GenBank assembly GCA_009780285.1. The GC content of the type genome is 58.79 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Hexapana nehaliforma sp. nov.

Candidatus Hexapana nehaliforma (NL. fem. n. *nehaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009788065*. The type genome for the species is the GenBank assembly GCA_009788065.1. The GC content of the type genome is 42.45 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Hexapana nicotibula sp. nov.

Candidatus Hexapana nicotibula (NL. fem. n. *nicotibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009785045*. The type genome for the species is the GenBank assembly GCA_009785045.1. The GC content of the type genome is 41.54 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Hexapana omnimitas sp. nov.

Candidatus Hexapana omnimitas (NL. fem. n. *omnimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009784935*. The type genome for the species is the GenBank assembly GCA_009784935.1. The GC content of the type genome is 39.66 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Hexapana paropisca sp. nov.

Candidatus Hexapana paropisca (NL. fem. n. *paropisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009777535*. The type genome for the species is the GenBank assembly GCA_009777535.1. The GC content of the type genome is 46.62 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Hexapana plascicula sp. nov.

Candidatus Hexapana plascicula (NL. fem. n. *plascicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009776715*. The type genome for the species is the GenBank assembly GCA_009776715.1. The GC content of the type genome is 42.77 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Hexapana sicinedo sp. nov.

Candidatus Hexapana sicinedo (NL. fem. n. *sicinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009780545*. The type genome for the species is the GenBank assembly GCA_009780545.1. The GC content of the type genome is 59.59 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Hexapana utralitoga sp. nov.

Candidatus Hexapana utralitoga (NL. fem. n. *utralitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009787695*. The type genome for the species is the GenBank assembly GCA_009787695.1. The GC content of the type genome is 37.59 %

and the genome length is 2.82 Mbp.

Description of *Candidatus* Hexapana vilitibra sp. nov.

Candidatus Hexapana vilitibra (NL. fem. n. *vilitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXQ01 sp009786675*. The type genome for the species is the GenBank assembly GCA_009786675.1. The GC content of the type genome is 59.43 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Hexaparia artifitudo sp. nov.

Candidatus Hexaparia artifitudo (NL. fem. n. *artifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1062 sp001896555*. The type genome for the species is the GenBank assembly GCA_001896555.1. The GC content of the type genome is 57.7 % and the genome length is 3.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sludge from a mesophilic anaerobic wastewater digester enriched on phosphite and carbon dioxide".

Description of *Candidatus* Hexaparia gen. nov.

Candidatus Hexaparia (NL. fem. n. *Hexaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1062*. The type species for the genus is *Candidatus* Hexaparia artifitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1062*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexapariaceae.

Description of *Candidatus* Hexapariaceae fam. nov.

Candidatus Hexapariaceae (NL. fem. n. *Hexapariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1062.* The type genus for the taxon is *Candidatus* Hexaparia .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA1062. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hexapariales.

Description of *Candidatus* Hexapariales ord. nov.

Candidatus Hexapariales (NL. fem. n. *Hexapariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1062.* The type genus for the taxon is *Candidatus* Hexaparia .

According to the GTDB R06-RS202, this order belongs to the class *Desulfomonilia*.

Description of *Candidatus* Hexaparia labecitoga sp. nov.

Candidatus Hexaparia labecitoga (NL. fem. n. *labecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1062 sp002448235*. The type genome for the species is the GenBank assembly GCA_002448235.1. The GC content of the type genome is 54.49 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Hexaparia reduvisca sp. nov.

Candidatus Hexaparia reduvisca (NL. fem. n. *reduvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1062 sp002316295*. The type genome for the species is the GenBank assembly GCA_002068365.1. The GC content of the type genome is 58.17 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Hexapella desorimonas sp. nov.

Candidatus Hexapella desorimonas (NL. fem. n. *desorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3680 sp002372875*. The type genome for the species is the GenBank assembly GCA_002372875.1. The GC content of the type genome is 40.07 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Hexapella gen. nov.

Candidatus Hexapella (NL. fem. n. *Hexapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3680*. The type species for the genus is *Candidatus* Hexapella desorimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-274*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negotulaceae.

Description of *Candidatus* Hexapia cerofago sp. nov.

Candidatus Hexapia cerofago (NL. fem. n. *cerofago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKTA01 sp007122745*. The type genome for the species is the GenBank assembly GCA_007126985.1. The GC content of the type genome is 45.38 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Hexapia gen. nov.

Candidatus Hexapia (NL. fem. n. *Hexapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKTA01*. The type species for the genus is *Candidatus* Hexapia cerofago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Hexapia delubilega sp. nov.

Candidatus Hexapia delubilega (NL. fem. n. *delubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKTA01 sp007123065*. The type genome for the species is the GenBank assembly GCA_007117335.1. The GC content of the type genome is 44.48 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Hexapia divolousia sp. nov.

Candidatus Hexapia divolousia (NL. fem. n. *divolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKTA01 sp007125275*. The type genome for the species is the GenBank assembly GCA_007125275.1. The GC content of the type genome is 47.73 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Hexapia vilipilega sp. nov.

Candidatus Hexapia vilipilega (NL. fem. n. *vilipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKTA01 sp007120085*. The type genome for the species is the GenBank assembly GCA_007131095.1. The GC content of the type genome is 46.66 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Hexapia volucago sp. nov.

Candidatus Hexapia volucago (NL. fem. n. *volucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKTA01 sp007132825*. The type genome for the species is the GenBank assembly GCA_007125445.1. The GC content of the type genome is 44.62 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Hexapida luceribula sp. nov.

Candidatus Hexapida luceribula (NL. fem. n. *luceribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-40-14 sp001822815*. The type genome for the species is the GenBank assembly GCA_001822905.1. The GC content of the type genome is 43.12 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Hexapida gen. nov.

Candidatus Hexapida (NL. fem. n. *Hexapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-40-14*. The type species for the genus is *Candidatus* Hexapida luceribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-40-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexapidaceae.

Description of *Candidatus* Hexapidaceae fam. nov.

Candidatus Hexapidaceae (NL. fem. n. *Hexapidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWB1-40-14.* The type genus for the taxon is *Candidatus* Hexapida .

According to GTDB R06-RS202, this family belongs to the order *Terrybacterales*.

Description of *Candidatus* Hexapida veridatica sp. nov.

Candidatus Hexapida veridatica (NL. fem. n. *veridatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-40-14 sp000996085*. The type genome for the species is the GenBank assembly GCA_001822895.1. The GC content of the type genome is 40.11 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Hexaposa cruppastra sp. nov.

Candidatus Hexaposa cruppastra (NL. fem. n. *cruppastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4151 sp002722845*. The type genome for the species is the GenBank assembly GCA_002722845.1. The GC content of the type genome is 60.66 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Hexaposa gen. nov.

Candidatus Hexaposa (NL. fem. n. *Hexaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4151*. The type species for the genus is *Candidatus* Hexaposa cruppastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexaposaceae.

Description of *Candidatus* Hexaposaceae fam. nov.

Candidatus Hexaposaceae (NL. fem. n. *Hexaposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4151.* The type genus for the taxon is *Candidatus* Hexaposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hexaposales.

Description of *Candidatus* Hexaposales ord. nov.

Candidatus Hexaposales (NL. fem. n. *Hexaposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4151.* The type genus for the taxon is *Candidatus* Hexaposa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA727*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Minurellae.

Description of *Candidatus* Hexaposa sugiledo sp. nov.

Candidatus Hexaposa sugiledo (NL. fem. n. *sugiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4151 sp002696345*. The type genome for the species is the GenBank assembly GCA_003509265.1. The GC content of the type genome is 56.19 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Hexapula retunentia sp. nov.

Candidatus Hexapula retunentia (NL. fem. n. *retunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG350 sp900315995*. The type genome for the species is the GenBank assembly GCA_902751235.1. The GC content of the type genome is 41.3 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Hexapula gen. nov.

Candidatus Hexapula (NL. fem. n. *Hexapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG350*. The type species for the genus is *Candidatus* Hexapula retunentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RUG350*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexapulaceae.

Description of *Candidatus* Hexapulaceae fam. nov.

Candidatus Hexapulaceae (NL. fem. n. *Hexapulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG350.* The type genus for the taxon is *Candidatus* Hexapula .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Hibisana imbelitia sp. nov.

Candidatus Hibisana imbelitia (NL. fem. n. *imbelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-FULL-32-11 sp903913175*. The type genome for the species is the GenBank assembly GCA_903913175.1. The GC content of the type genome is 31.76 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Hibisana gen. nov.

Candidatus Hibisana (NL. fem. n. *Hibisana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB1-FULL-32-11*. The type species for the genus is *Candidatus* Hibisana imbelitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hibisana megaledo sp. nov.

Candidatus Hibisana megaledo (NL. fem. n. *megaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-FULL-32-11 sp903850725*. The type genome for the species is the GenBank assembly GCA_903850725.1. The GC content of the type genome is 32.99 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Hibisana revecilega sp. nov.

Candidatus Hibisana revecilega (NL. fem. n. *revecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-FULL-32-11 sp001820485*. The type genome for the species is the GenBank assembly GCA_001820485.1. The GC content of the type genome is 31.77 % and the genome length is 1.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Hibisana tenemimonia sp. nov.

Candidatus Hibisana tenemimonia (NL. fem. n. *tenemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-FULL-32-11 sp903854535*. The type genome for the species is the GenBank assembly GCA_903836565.1. The GC content of the type genome is 31.81 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Hibisaria papiletta sp. nov.

Candidatus Hibisaria papiletta (NL. fem. n. *papiletta* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1301 sp003141435*. The type genome for the species is the GenBank assembly GCA_003141435.1. The GC content of the type genome is 35.91 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Hibisaria gen. nov.

Candidatus Hibisaria (NL. fem. n. *Hibisaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1301*. The type species for the genus is *Candidatus* Hibisaria papiletta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hibisella desoribula sp. nov.

Candidatus Hibisella desoribula (NL. fem. n. *desoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBWC01 sp006218035*. The type genome for the species is the GenBank assembly GCA_009773435.1. The GC content of the type genome is 59.23 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Hibisella gen. nov.

Candidatus Hibisella (NL. fem. n. *Hibisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBWC01*. The type species for the genus is *Candidatus* Hibisella desoribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VBWC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hibisellaceae.

Description of *Candidatus* Hibisellaceae fam. nov.

Candidatus Hibisellaceae (NL. fem. n. *Hibisellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VBWC01.* The type genus for the taxon is *Candidatus* Hibisella .

According to the original version of GTDB R06-RS202, this family belongs to the order *VBWC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hibisellales.

Description of *Candidatus* Hibisellales ord. nov.

Candidatus Hibisellales (NL. fem. n. *Hibisellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VBWC01.* The type genus for the taxon is *Candidatus* Hibisella .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Hibisia vicatessa sp. nov.

Candidatus Hibisia vicatessa (NL. fem. n. *vicatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-40 sp001304425*. The type genome for the species is the GenBank assembly GCA_001304425.1. The GC content of the type genome is 60.33 % and the genome length is 2.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-rich zone estuary sediments 8-12 cm".

Description of *Candidatus* Hibisia gen. nov.

Candidatus Hibisia (NL. fem. n. *Hibisia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG8-40*. The type species for the genus is *Candidatus* Hibisia vicatessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-40*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hibisiaceae.

Description of *Candidatus* Hibisiaceae fam. nov.

Candidatus Hibisiaceae (NL. fem. n. *Hibisiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SG8-40.* The type genus for the taxon is *Candidatus* Hibisia .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Hibisida antiribra sp. nov.

Candidatus Hibisida antiribra (NL. fem. n. *antiribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp900753285*. The type genome for the species is the GenBank assembly RS_GCF_900753285.1. The GC content of the type genome is 48.63 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Hibisida gen. nov.

Candidatus Hibisida (NL. fem. n. *Hibisida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1696*. The type species for the genus is *Candidatus* Hibisida antiribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Hibisida catobifica sp. nov.

Candidatus Hibisida catobifica (NL. fem. n. *catobifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp902782445*. The type genome for the species is the GenBank assembly GCA_902782445.1. The GC content of the type genome is 60.36 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Hibisida fatiligena sp. nov.

Candidatus Hibisida fatiligena (NL. fem. n. *fatiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp900763885*. The type genome for the species is the GenBank assembly RS_GCF_900763885.1. The GC content of the type genome is 56.7 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Hibisida fetulitio sp. nov.

Candidatus Hibisida fetulitio (NL. fem. n. *fetulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp900554225*. The type genome for the species is the GenBank assembly GCA_900554225.1. The GC content of the type genome is 55.37 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Hibisida halucatio sp. nov.

Candidatus Hibisida halucatio (NL. fem. n. *halucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp902783755*. The type genome for the species is the GenBank assembly GCA_902783755.1. The GC content of the type genome is 53.51 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Hibisida ludimicella sp. nov.

Candidatus Hibisida ludimicella (NL. fem. n. *ludimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp902783705*. The type genome for the species is the GenBank assembly GCA_902790355.1. The GC content of the type genome is 61.31 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Hibisida mimogugo sp. nov.

Candidatus Hibisida mimogugo (NL. fem. n. *mimogugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp902778205*. The type genome for the species is the GenBank assembly GCA_902778205.1. The GC content of the type genome is 61.6 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Hibisida omnifisca sp. nov.

Candidatus Hibisida omnifisca (NL. fem. n. *omnifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp902765885*. The type genome for the species is the GenBank assembly GCA_902765885.1. The GC content of the type genome is 43.63 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Hibisida podagibra sp. nov.

Candidatus Hibisida podagibra (NL. fem. n. *podagibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp902773525*. The type genome for the species is the GenBank assembly GCA_902767295.1. The GC content of the type genome is 60.66 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Hibisida tegimastra sp. nov.

Candidatus Hibisida tegimastra (NL. fem. n. *tegimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1696 sp902761695*. The type genome for the species is the GenBank assembly GCA_902761695.1. The GC content of the type genome is 61.56 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Hibisosa democitia sp. nov.

Candidatus Hibisosa democitia (NL. fem. n. *democitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6663 sp002455335*. The type genome for the species is the GenBank assembly GCA_002455335.1. The GC content of the type genome is 65.59 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Hibisosa gen. nov.

Candidatus Hibisosa (NL. fem. n. *Hibisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6663*. The type species for the genus is *Candidatus* Hibisosa democitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6663*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hibisosaceae.

Description of *Candidatus* Hibisosaceae fam. nov.

Candidatus Hibisosaceae (NL. fem. n. *Hibisosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6663.* The type genus for the taxon is *Candidatus* Hibisosa .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Hibisula debucimonia sp. nov.

Candidatus Hibisula debucimonia (NL. fem. n. *debucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11791 sp002714255*. The type genome for the species is the GenBank assembly GCA_002693245.1. The GC content of the type genome is 53.86 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Hibisula gen. nov.

Candidatus Hibisula (NL. fem. n. *Hibisula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11791*. The type species for the genus is *Candidatus* Hibisula debucimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA868*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotanaceae.

Description of *Candidatus* Hibisula idciricula sp. nov.

Candidatus Hibisula idciricula (NL. fem. n. *idciricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11791 sp012960345*. The type genome for the species is the GenBank assembly GCA_012960345.1. The GC content of the type genome is 53.36 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Hibisula volucibra sp. nov.

Candidatus Hibisula volucibra (NL. fem. n. *volucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11791 sp012965245*. The type genome for the species is the GenBank assembly GCA_012965245.1. The GC content of the type genome is 53.17 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Hippea eccisimonas sp. nov.

Candidatus Hippea eccisimonas (NL. fem. n. *eccisimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hippea sp000526195*. The type genome for the species is the GenBank assembly RS_GCF_000526195.1. The GC content of the type genome is 42.85 % and the genome length is 1.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Hirschia vanititoga sp. nov.

Candidatus Hirschia vanititoga (NL. fem. n. *vanititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hirschia sp002709235*. The type genome for the species is the GenBank assembly GCA_002715175.1. The GC content of the type genome is 55.93 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Hirudana ablaciforma sp. nov.

Candidatus Hirudana ablaciforma (NL. fem. n. *ablaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp002167945*. The type genome for the species is the GenBank assembly GCA_002167945.1. The GC content of the type genome is 38.58 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Hirudana gen. nov.

Candidatus Hirudana (NL. fem. n. *Hirudana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MS024-2A*. The type species for the genus is *Candidatus* Hirudana ablaciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hirudana abnoribra sp. nov.

Candidatus Hirudana abnoribra (NL. fem. n. *abnoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp902606525*. The type genome for the species is the GenBank assembly GCA_902606525.1. The GC content of the type genome is 32.54 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Hirudana adhositica sp. nov.

Candidatus Hirudana adhositica (NL. fem. n. *adhositica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp902512755*. The type genome for the species is the GenBank assembly GCA_902512755.1. The GC content of the type genome is 32.9 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Hirudana ascalousia sp. nov.

Candidatus Hirudana ascalousia (NL. fem. n. *ascalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp008081175*. The type genome for the species is the GenBank assembly GCA_008081175.1. The GC content of the type genome is 38.25 %

and the genome length is 1.57 Mbp.

Description of *Candidatus* Hirudana cepurousia sp. nov.

Candidatus Hirudana cepurousia (NL. fem. n. *cepurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp000173095*. The type genome for the species is the GenBank assembly GCA_002389405.1. The GC content of the type genome is 35.74 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Hirudana ceromousia sp. nov.

Candidatus Hirudana ceromousia (NL. fem. n. *ceromousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp902561795*. The type genome for the species is the GenBank assembly GCA_902561795.1. The GC content of the type genome is 31.56 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Hirudana cruppitica sp. nov.

Candidatus Hirudana cruppitica (NL. fem. n. *cruppitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp902517245*. The type genome for the species is the GenBank assembly GCA_902517245.1. The GC content of the type genome is 32.48 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Hirudana cuticitica sp. nov.

Candidatus Hirudana cuticitica (NL. fem. n. *cuticitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp002167525*. The type genome for the species is the GenBank assembly GCA_002167525.1. The GC content of the type genome is 31.21 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Hirudana demagessa sp. nov.

Candidatus Hirudana demagessa (NL. fem. n. *demagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp011525195*. The type genome for the species is the GenBank assembly GCA_011525195.1. The GC content of the type genome is 38.3 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Hirudana depasitudo sp. nov.

Candidatus Hirudana depasitudo (NL. fem. n. *depasitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp003130815*. The type genome for the species is the GenBank assembly GCA_003130815.1. The GC content of the type genome is 31.79 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Hirudana desoricella sp. nov.

Candidatus Hirudana desoricella (NL. fem. n. *desoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp902546725*. The type genome for the species is the GenBank assembly GCA_902546725.1. The GC content of the type genome is 37.47 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Hirudana fatililenta sp. nov.

Candidatus Hirudana fatililenta (NL. fem. n. *fatililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp002457295*. The type genome for the species is the GenBank assembly GCA_902612435.1. The GC content of the type genome is 35.85 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Hirudana gerunivita sp. nov.

Candidatus Hirudana gerunivita (NL. fem. n. *gerunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp010031465*. The type genome for the species is the GenBank assembly GCA_010031465.1. The GC content of the type genome is 38.75 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Hirudana inhoriforma sp. nov.

Candidatus Hirudana inhoriforma (NL. fem. n. *inhoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp002705385*. The type genome for the species is the GenBank assembly GCA_002705385.1. The GC content of the type genome is 33.19 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Hirudana innupitrix sp. nov.

Candidatus Hirudana innupitrix (NL. fem. n. *innupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp002169865*. The type genome for the species is the GenBank assembly GCA_002169865.1. The GC content of the type genome is 32.8 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Hirudana irradicula sp. nov.

Candidatus Hirudana irradicula (NL. fem. n. *irradicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp009886625*. The type genome for the species is the GenBank assembly GCA_009886625.1. The GC content of the type genome is 35.71 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Hirudana menapax sp. nov.

Candidatus Hirudana menapax (NL. fem. n. *menapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp902618245*. The type genome for the species is the GenBank assembly GCA_902549355.1. The GC content of the type genome is 31.86 %

and the genome length is 1.38 Mbp.

Description of *Candidatus* Hirudana ossicatica sp. nov.

Candidatus Hirudana ossicatica (NL. fem. n. *ossicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp902613595*. The type genome for the species is the GenBank assembly GCA_902613595.1. The GC content of the type genome is 31.98 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Hirudana palifatio sp. nov.

Candidatus Hirudana palifatio (NL. fem. n. *palifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp002714815*. The type genome for the species is the GenBank assembly GCA_002714815.1. The GC content of the type genome is 32.22 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Hirudana plascitrix sp. nov.

Candidatus Hirudana plascitrix (NL. fem. n. *plascitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp902616905*. The type genome for the species is the GenBank assembly GCA_902616905.1. The GC content of the type genome is 30.97 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Hirudana rudecibra sp. nov.

Candidatus Hirudana rudecibra (NL. fem. n. *rudecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp002292265*. The type genome for the species is the GenBank assembly GCA_002292265.1. The GC content of the type genome is 39.95 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Hirudana ulcisilenta sp. nov.

Candidatus Hirudana ulcisilenta (NL. fem. n. *ulcisilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MS024-2A sp002384715*. The type genome for the species is the GenBank assembly GCA_002384715.1. The GC content of the type genome is 38.49 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Hirudaria bovicivita sp. nov.

Candidatus Hirudaria bovicivita (NL. fem. n. *bovicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPLT01 sp903865935*. The type genome for the species is the GenBank assembly GCA_903884565.1. The GC content of the type genome is 38.66 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Hirudaria gen. nov.

Candidatus Hirudaria (NL. fem. n. *Hirudaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPLT01*. The type species for the genus is *Candidatus* Hirudaria bovicivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIPLT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hirudariaceae.

Description of *Candidatus* Hirudariaceae fam. nov.

Candidatus Hirudariaceae (NL. fem. n. *Hirudariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIPLT01.* The type genus for the taxon is *Candidatus* Hirudaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homulosales.

Description of *Candidatus* Hirudia bicapigena sp. nov.

Candidatus Hirudia bicapigena (NL. fem. n. *bicapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs118 sp903892045*. The type genome for the species is the GenBank assembly GCA_903860695.1. The GC content of the type genome is 70.55 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Hirudia gen. nov.

Candidatus Hirudia (NL. fem. n. *Hirudia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-120-MAGs118*. The type species for the genus is *Candidatus* Hirudia bicapigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Hirudia epitrigena sp. nov.

Candidatus Hirudia epitrigena (NL. fem. n. *epitrigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs118 sp005778045*. The type genome for the species is the GenBank assembly GCA_005778045.1. The GC content of the type genome is 69.82 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Hirudia futatitas sp. nov.

Candidatus Hirudia futatitas (NL. fem. n. *futatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs118 sp903928115*. The type genome for the species is the GenBank assembly GCA_903928115.1. The GC content of the type genome is 68.86 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Hirudia labecentia sp. nov.

Candidatus Hirudia labecentia (NL. fem. n. *labecentia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs118 sp013360535*. The type genome for the species is the GenBank assembly GCA_013360535.1. The GC content of the type genome is 69.48 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Hirudida emortastra sp. nov.

Candidatus Hirudida emortastra (NL. fem. n. *emortastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMSB01 sp013202205*. The type genome for the species is the GenBank assembly GCA_013202205.1. The GC content of the type genome is 46.23 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Hirudida gen. nov.

Candidatus Hirudida (NL. fem. n. *Hirudida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMSB01*. The type species for the genus is *Candidatus* Hirudida emortastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMSB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hirudidaceae.

Description of *Candidatus* Hirudidaceae fam. nov.

Candidatus Hirudidaceae (NL. fem. n. *Hirudidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMSB01.* The type genus for the taxon is *Candidatus* Hirudida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMRJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Biparidales.

Description of *Candidatus* Hirudula malifitas sp. nov.

Candidatus Hirudula malifitas (NL. fem. n. *malifitas* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6099 sp002435745*. The type genome for the species is the GenBank assembly GCA_002435745.1. The GC content of the type genome is 56.14 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Hirudula gen. nov.

Candidatus Hirudula (NL. fem. n. *Hirudula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6099*. The type species for the genus is *Candidatus* Hirudula malifitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6099*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hirudulaceae.

Description of *Candidatus* Hirudulaceae fam. nov.

Candidatus Hirudulaceae (NL. fem. n. *Hirudulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6099.* The type genus for the taxon is *Candidatus* Hirudula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6099*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hirudulales.

Description of *Candidatus* Hirudulales ord. nov.

Candidatus Hirudulales (NL. fem. n. *Hirudulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6099.* The type genus for the taxon is *Candidatus* Hirudula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6099*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Hirudulae.

Description of *Candidatus* Hirudulae class. nov.

Candidatus Hirudulae (NL. fem. n. *c__Hirudulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6099.* The type genus for the taxon is *Candidatus* Hirudula .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBP15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Manubariota.

Description of *Candidatus* Hirudula sitelitudo sp. nov.

Candidatus Hirudula sitelitudo (NL. fem. n. *sitelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6099 sp002069885*. The type genome for the species is the GenBank assembly GCA_002069885.1. The GC content of the type genome is 54.8 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Hirunana bicubigena sp. nov.

Candidatus Hirunana bicubigena (NL. fem. n. *bicubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1847 sp013001045*. The type genome for the species is the GenBank assembly GCA_013001045.1. The GC content of the type genome is 57.53 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Hirunana gen. nov.

Candidatus Hirunana (NL. fem. n. *Hirunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1847*. The type species for the genus is *Candidatus* Hirunana bicubigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hirunana catilax sp. nov.

Candidatus Hirunana catilax (NL. fem. n. *catilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1847 sp013043165*. The type genome for the species is the GenBank assembly GCA_013043165.1. The GC content of the type genome is 58.09 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Hirunana cerucousia sp. nov.

Candidatus Hirunana cerucousia (NL. fem. n. *cerucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1847 sp004282875*. The type genome for the species is the GenBank assembly GCA_004282875.1. The GC content of the type genome is 60.1 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Hirunana disidedo sp. nov.

Candidatus Hirunana disidedo (NL. fem. n. *disidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1847 sp002338605*. The type genome for the species is the GenBank assembly GCA_002338605.1. The GC content of the type genome is 56.22 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Hirunana holisugo sp. nov.

Candidatus Hirunana holisugo (NL. fem. n. *holisugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1847 sp009937605*. The type genome for the species is the GenBank assembly GCA_009937605.1. The GC content of the type genome is 57.91 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Hirunana inambastra sp. nov.

Candidatus Hirunana inambastra (NL. fem. n. *inambastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1847 sp009937445*. The type genome for the species is the GenBank assembly GCA_009937445.1. The GC content of the type genome is 54.75 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Hirunana maciletta sp. nov.

Candidatus Hirunana maciletta (NL. fem. n. *maciletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1847 sp013042375*. The type genome for the species is the GenBank assembly GCA_013003095.1. The GC content of the type genome is 63.48 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Hirunana sicubax sp. nov.

Candidatus Hirunana sicubax (NL. fem. n. *sicubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1847 sp002685275*. The type genome for the species is the GenBank assembly GCA_002685275.1. The GC content of the type genome is 36.44 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Hirunella ablepibula sp. nov.

Candidatus Hirunella ablepibula (NL. fem. n. *ablepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLZ01 sp012799075*. The type genome for the species is the GenBank assembly GCA_012799075.1. The GC content of the type genome is 56.26 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Hirunella gen. nov.

Candidatus Hirunella (NL. fem. n. *Hirunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZLZ01*. The type species for the genus is *Candidatus* Hirunella ablepibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZLZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Hirunellaceae.

Description of *Candidatus* Hirunellaceae fam. nov.

Candidatus Hirunellaceae (NL. fem. n. *Hirunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZLZ01.* The type genus for the taxon is *Candidatus* Hirunella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAZLZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hirunellales.

Description of *Candidatus* Hirunellales ord. nov.

Candidatus Hirunellales (NL. fem. n. *Hirunellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZLZ01.* The type genus for the taxon is *Candidatus* Hirunella .

According to the GTDB R06-RS202, this order belongs to the class *Limnochordia*.

Description of *Candidatus* Hirunella bicinetta sp. nov.

Candidatus Hirunella bicinetta (NL. fem. n. *bicinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLZ01 sp012522085*. The type genome for the species is the GenBank assembly GCA_012522085.1. The GC content of the type genome is 57.38 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Hirunella lucelitas sp. nov.

Candidatus Hirunella lucelitas (NL. fem. n. *lucelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLZ01 sp012521755*. The type genome for the species is the GenBank assembly GCA_012521755.1. The GC content of the type genome is 58.13 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Hirunia acrolitio sp. nov.

Candidatus Hirunia acrolitio (NL. fem. n. *acrolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp009922705*. The type genome for the species is the GenBank assembly GCA_009922705.1. The GC content of the type genome is 54.95 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Hirunia gen. nov.

Candidatus Hirunia (NL. fem. n. *Hirunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HIMB30*. The type species for the genus is *Candidatus* Hirunia acrolitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hirunia acrolitoga sp. nov.

Candidatus Hirunia acrolitoga (NL. fem. n. *acrolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp003513265*. The type genome for the species is the GenBank assembly GCA_003513265.1. The GC content of the type genome is 48.31 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Hirunia affunicella sp. nov.

Candidatus Hirunia affunicella (NL. fem. n. *affunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp008087055*. The type genome for the species is the GenBank assembly RS_GCF_008087055.1. The GC content of the type genome is 48.57 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Hirunia camilibra sp. nov.

Candidatus Hirunia camilibra (NL. fem. n. *camilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp000227525*. The type genome for the species is the GenBank assembly RS_GCF_000227525.1. The GC content of the type genome is 49.86 % and the genome length is 2.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "South Kaneohe Bay; near MCBH; Oahu; Hawaii".

Description of *Candidatus* Hirunia cohonicella sp. nov.

Candidatus Hirunia cohonicella (NL. fem. n. *cohonicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp002705795*. The type genome for the species is the GenBank assembly GCA_002705795.1. The GC content of the type genome is 50.6 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Hirunia conifitas sp. nov.

Candidatus Hirunia conifitas (NL. fem. n. *conifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp902558075*. The type genome for the species is the GenBank assembly GCA_902558075.1. The GC content of the type genome is 48.26 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Hirunia diminiforma sp. nov.

Candidatus Hirunia diminiforma (NL. fem. n. *diminiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp002731015*. The type genome for the species is the GenBank assembly GCA_003455635.1. The GC content of the type genome is 48.48 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Hirunia futatago sp. nov.

Candidatus Hirunia futatago (NL. fem. n. *futatago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp002705325*. The type genome for the species is the GenBank assembly GCA_002705325.1. The GC content of the type genome is 49.83 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Hirunia intamitica sp. nov.

Candidatus Hirunia intamitica (NL. fem. n. *intamitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp902541775*. The type genome for the species is the GenBank assembly GCA_902541775.1. The GC content of the type genome is 48.59 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Hirunia milipitoga sp. nov.

Candidatus Hirunia milipitoga (NL. fem. n. *milipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp002714245*. The type genome for the species is the GenBank assembly GCA_003526775.1. The GC content of the type genome is 49.63 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Hirunia mimogago sp. nov.

Candidatus Hirunia mimogago (NL. fem. n. *mimogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp002730235*. The type genome for the species is the GenBank assembly GCA_002730235.1. The GC content of the type genome is 47.5 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Hirunia mimogitica sp. nov.

Candidatus Hirunia mimogitica (NL. fem. n. *mimogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp902594275*. The type genome for the species is the GenBank assembly GCA_902594275.1. The GC content of the type genome is 48.63 %

and the genome length is 1.29 Mbp.

Description of *Candidatus* Hirunia nidifisca sp. nov.

Candidatus Hirunia nidifisca (NL. fem. n. *nidifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp002717305*. The type genome for the species is the GenBank assembly GCA_002717305.1. The GC content of the type genome is 48.25 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Hirunia nocumitrix sp. nov.

Candidatus Hirunia nocumitrix (NL. fem. n. *nocumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp004213775*. The type genome for the species is the GenBank assembly GCA_902528165.1. The GC content of the type genome is 49.16 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Hirunia protritudo sp. nov.

Candidatus Hirunia protritudo (NL. fem. n. *protritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp902536515*. The type genome for the species is the GenBank assembly GCA_902536515.1. The GC content of the type genome is 48.63 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Hirunia semapastra sp. nov.

Candidatus Hirunia semapastra (NL. fem. n. *semapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp002691485*. The type genome for the species is the GenBank assembly GCA_003448275.1. The GC content of the type genome is 51.11 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Hirunia velivigena sp. nov.

Candidatus Hirunia velivigena (NL. fem. n. *velivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB30 sp010024125*. The type genome for the species is the GenBank assembly GCA_010023495.1. The GC content of the type genome is 49.82 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Hirunida adrenimonia sp. nov.

Candidatus Hirunida adrenimonia (NL. fem. n. *adrenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXTU01 sp009924135*. The type genome for the species is the GenBank assembly GCA_009924135.1. The GC content of the type genome is 62.83 % and the genome length is 6.68 Mbp.

Description of *Candidatus* Hirunida gen. nov.

Candidatus Hirunida (NL. fem. n. *Hirunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXTU01*. The type species for the genus is *Candidatus* Hirunida adrenimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXTU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hirunidaceae.

Description of *Candidatus* Hirunidaceae fam. nov.

Candidatus Hirunidaceae (NL. fem. n. *Hirunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SXTU01.* The type genus for the taxon is *Candidatus* Hirunida .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Hirunida cicaribra sp. nov.

Candidatus Hirunida cicaribra (NL. fem. n. *cicaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXTU01 sp009773355*. The type genome for the species is the GenBank assembly GCA_008080695.1. The GC content of the type genome is 65.87 % and the genome length is 6.12 Mbp.

Description of *Candidatus* Hirunida dilicitura sp. nov.

Candidatus Hirunida dilicitura (NL. fem. n. *dilicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXTU01 sp903863315*. The type genome for the species is the GenBank assembly GCA_903863315.1. The GC content of the type genome is 64.07 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Hirunida sonivifica sp. nov.

Candidatus Hirunida sonivifica (NL. fem. n. *sonivifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXTU01 sp005791875*. The type genome for the species is the GenBank assembly GCA_005809165.1. The GC content of the type genome is 65.03 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Hirunida subadax sp. nov.

Candidatus Hirunida subadax (NL. fem. n. *subadax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXTU01 sp009922615*. The type genome for the species is the GenBank assembly GCA_009922615.1. The GC content of the type genome is 62.51 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Hirunida uberrivita sp. nov.

Candidatus Hirunida uberrivita (NL. fem. n. *uberrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SXTU01 sp009695395*. The type genome for the species is the GenBank assembly GCA_009695395.1. The GC content of the type genome is 64.34 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Hirunosa depecisca sp. nov.

Candidatus Hirunosa depecisca (NL. fem. n. *depecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-44-29 sp001778695*. The type genome for the species is the GenBank assembly GCA_001000005.1. The GC content of the type genome is 43.09 % and the genome length is 0.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Hirunosa gen. nov.

Candidatus Hirunosa (NL. fem. n. *Hirunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-44-29*. The type species for the genus is *Candidatus* Hirunosa depecisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-45-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tametellaceae.

Description of *Candidatus* Hirunosa murilastra sp. nov.

Candidatus Hirunosa murilastra (NL. fem. n. *murilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-44-29 sp001001285*. The type genome for the species is the GenBank assembly GCA_000994865.1. The GC content of the type genome is 43.95 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Hirunula arcitessa sp. nov.

Candidatus Hirunula arcitessa (NL. fem. n. *arcitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUSS01 sp012842495*. The type genome for the species is the GenBank assembly GCA_012842495.1. The GC content of the type genome is 57.0 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Hirunula gen. nov.

Candidatus Hirunula (NL. fem. n. *Hirunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUSS01*. The type species for the genus is *Candidatus* Hirunula arcitessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUSS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hirunulaceae.

Description of *Candidatus* Hirunulaceae fam. nov.

Candidatus Hirunulaceae (NL. fem. n. *Hirunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUSS01.* The type genus for the taxon is *Candidatus* Hirunula .

According to the original version of GTDB R06-RS202, this family belongs to the order *D8A-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dinupiales.

Description of *Candidatus* Hoeflea adluvilega sp. nov.

Candidatus Hoeflea adluvilega (NL. fem. n. *adluvilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hoeflea sp902498795*. The type genome for the species is the GenBank assembly RS_GCF_902498795.1. The GC content of the type genome is 61.33 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Hoeflea ecfacifica sp. nov.

Candidatus Hoeflea ecfacifica (NL. fem. n. *ecfacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hoeflea sp000961635*. The type genome for the species is the GenBank assembly GCA_000961635.1. The GC content of the type genome is 61.17 % and the genome length is 3.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Hoeflea epistousia sp. nov.

Candidatus Hoeflea epistousia (NL. fem. n. *epistousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hoeflea sp000759435*. The type genome for the species is the GenBank assembly RS_GCF_000759435.1. The GC content of the type genome is 65.37 % and the genome length is 5.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water".

Description of *Candidatus* Hoeflea impugastra sp. nov.

Candidatus Hoeflea impugastra (NL. fem. n. *impugastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hoeflea sp014359905*. The type genome for the species is the GenBank assembly GCA_014359905.1. The GC content of the type genome is 62.64 % and the genome length is 6.86 Mbp.

Description of *Candidatus* Hoeflea offiritrix sp. nov.

Candidatus Hoeflea offiritrix (NL. fem. n. *offiritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hoeflea sp001011155*. The type genome for the species is the GenBank assembly RS_GCF_001011155.1. The GC content of the type genome is 58.84 % and the genome length is 5.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Coastal seawater".

Description of *Candidatus* Hoeflea renavitrix sp. nov.

Candidatus Hoeflea renavitrix (NL. fem. n. *renavitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hoeflea sp002733955*. The type genome for the species is the GenBank assembly GCA_002733955.1. The GC content of the type genome is 61.11 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Holdemanella cerifitoga sp. nov.

Candidatus Holdemanella cerifitoga (NL. fem. n. *cerifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holdemanella sp003436425*. The type genome for the species is the GenBank assembly RS_GCF_003436425.1. The GC content of the type genome is 34.19 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Holdemanella cocodivita sp. nov.

Candidatus Holdemanella cocodivita (NL. fem. n. *cocodivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holdemanella sp003458715*. The type genome for the species is the GenBank assembly GCA_900542855.1. The GC content of the type genome is 34.2 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Holdemanella linigitrix sp. nov.

Candidatus Holdemanella linigitrix (NL. fem. n. *linigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holdemanella sp002299315*. The type genome for the species is the GenBank assembly GCA_008680055.1. The GC content of the type genome is 34.67 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Holdemanella rutabitica sp. nov.

Candidatus Holdemanella rutabitica (NL. fem. n. *rutabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holdemanella sp900754615*. The type genome for the species is the GenBank assembly GCA_900754615.1. The GC content of the type genome is 33.85 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Holdemanella siticibula sp. nov.

Candidatus Holdemanella siticibula (NL. fem. n. *siticibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holdemanella sp900547815*. The type genome for the species is the GenBank assembly GCA_900759735.1. The GC content of the type genome is 33.44 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Holdemanella tirocax sp. nov.

Candidatus Holdemanella tirocax (NL. fem. n. *tirocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holdemanella sp900551285*. The type genome for the species is the GenBank assembly GCA_900551285.1. The GC content of the type genome is 34.22 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Holdemania decupifica sp. nov.

Candidatus Holdemania decupifica (NL. fem. n. *decupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holdemania sp900120005*. The type genome for the species is the GenBank assembly GCA_900546205.1. The GC content of the type genome is 51.38 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Holisaria xeramitas sp. nov.

Candidatus Holisaria xeramitas (NL. fem. n. *xeramitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC1-FULL-56-13 sp001783715*. The type genome for the species is the GenBank assembly GCA_001781945.1. The GC content of the type genome is 56.51 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Holisaria gen. nov.

Candidatus Holisaria (NL. fem. n. *Holisaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYC1-FULL-56-13*. The type species for the genus is *Candidatus* Holisaria xeramitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD2-FULL-50-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nicomellaceae.

Description of *Candidatus* Holisella exhililega sp. nov.

Candidatus Holisella exhililega (NL. fem. n. *exhililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5760 sp002418895*. The type genome for the species is the GenBank assembly GCA_002418895.1. The GC content of the type genome is 50.67 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Holisella gen. nov.

Candidatus Holisella (NL. fem. n. *Holisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5760*. The type species for the genus is *Candidatus* Holisella exhililega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5760*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisellaceae.

Description of *Candidatus* Holisellaceae fam. nov.

Candidatus Holisellaceae (NL. fem. n. *Holisellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5760.* The type genus for the taxon is *Candidatus* Holisella .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Holisida adlicitio sp. nov.

Candidatus Holisida adlicitio (NL. fem. n. *adlicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp002304435*. The type genome for the species is the GenBank assembly GCA_002304435.1. The GC content of the type genome is 69.98 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Holisida gen. nov.

Candidatus Holisida (NL. fem. n. *Holisida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ER46*. The type species for the genus is *Candidatus* Holisida adlicitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Holisida adlubifica sp. nov.

Candidatus Holisida adlubifica (NL. fem. n. *adlubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp003054705*. The type genome for the species is the GenBank assembly RS_GCF_003054705.1. The GC content of the type genome is 67.07 % and the genome length is 5.71 Mbp.

Description of *Candidatus* Holisida antacitudo sp. nov.

Candidatus Holisida antacitudo (NL. fem. n. *antacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp011525695*. The type genome for the species is the GenBank assembly GCA_011525695.1. The GC content of the type genome is 64.44 % and the genome length is 6.54 Mbp.

Description of *Candidatus* Holisida expenivita sp. nov.

Candidatus Holisida expenivita (NL. fem. n. *expenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp002288455*. The type genome for the species is the GenBank assembly GCA_002288455.1. The GC content of the type genome is 67.69 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Holisida noninousia sp. nov.

Candidatus Holisida noninousia (NL. fem. n. *noninousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp009695065*. The type genome for the species is the GenBank assembly GCA_009695065.1. The GC content of the type genome is 64.68 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Holisida obsurigena sp. nov.

Candidatus Holisida obsurigena (NL. fem. n. *obsurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp903848965*. The type genome for the species is the GenBank assembly GCA_903848965.1. The GC content of the type genome is 64.94 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Holisida pulegatica sp. nov.

Candidatus Holisida pulegatica (NL. fem. n. *pulegatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp903900845*. The type genome for the species is the GenBank assembly GCA_903900845.1. The GC content of the type genome is 67.63 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Holisida remulibula sp. nov.

Candidatus Holisida remulibula (NL. fem. n. *remulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp005786775*. The type genome for the species is the GenBank assembly GCA_005786775.1. The GC content of the type genome is 70.04 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Holisida subodilenta sp. nov.

Candidatus Holisida subodilenta (NL. fem. n. *subodilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp005792355*. The type genome for the species is the GenBank assembly GCA_005779485.1. The GC content of the type genome is 64.83 % and the genome length is 8.1 Mbp.

Description of *Candidatus* Holisida taxilugo sp. nov.

Candidatus Holisida taxilugo (NL. fem. n. *taxilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp903820035*. The type genome for the species is the GenBank assembly GCA_903835405.1. The GC content of the type genome is 65.02 % and the genome length is 6.07 Mbp.

Description of *Candidatus* Holisida tomogimonas sp. nov.

Candidatus Holisida tomogimonas (NL. fem. n. *tomogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp903861185*. The type genome for the species is the GenBank assembly GCA_903861185.1. The GC content of the type genome is 69.4 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Holisida tranvessa sp. nov.

Candidatus Holisida tranvessa (NL. fem. n. *tranvessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ER46 sp903926425*. The type genome for the species is the GenBank assembly GCA_903926425.1. The GC content of the type genome is 64.46 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Holisosa bifarentia sp. nov.

Candidatus Holisosa bifarentia (NL. fem. n. *bifarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4874 sp002398065*. The type genome for the species is the GenBank assembly GCA_002398065.1. The GC content of the type genome is 49.06 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Holisosa gen. nov.

Candidatus Holisosa (NL. fem. n. *Holisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4874*. The type species for the genus is *Candidatus* Holisosa bifarentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU083*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petulellaceae.

Description of *Candidatus* Holisosa rubefitio sp. nov.

Candidatus Holisosa rubefitio (NL. fem. n. *rubefitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4874 sp002399435*. The type genome for the species is the GenBank assembly GCA_002399435.1. The GC content of the type genome is 48.86 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Holophaga culililega sp. nov.

Candidatus Holophaga culililega (NL. fem. n. *culililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holophaga sp002298155*. The type genome for the species is the GenBank assembly GCA_002298155.1. The GC content of the type genome is 67.83 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Holophaga decomilenta sp. nov.

Candidatus Holophaga decomilenta (NL. fem. n. *decomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holophaga sp002068835*. The type genome for the species is the GenBank assembly GCA_002068835.1. The GC content of the type genome is 67.77 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Holophaga fatififorma sp. nov.

Candidatus Holophaga fatififorma (NL. fem. n. *fatififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holophaga sp903868115*. The type genome for the species is the GenBank assembly GCA_903868115.1. The GC content of the type genome is 62.93 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Holophaga hirudicella sp. nov.

Candidatus Holophaga hirudicella (NL. fem. n. *hirudicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holophaga sp002297665*. The type genome for the species is the GenBank assembly GCA_002297665.1. The GC content of the type genome is 69.06 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Holophaga inretitia sp. nov.

Candidatus Holophaga inretitia (NL. fem. n. *inretitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holophaga sp003165415*. The type genome for the species is the GenBank assembly GCA_003165415.1. The GC content of the type genome is 66.97 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Holophaga subofedo sp. nov.

Candidatus Holophaga subofedo (NL. fem. n. *subofedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Holophaga sp002319925*. The type genome for the species is the GenBank assembly GCA_002319925.1. The GC content of the type genome is 61.22 %

and the genome length is 4.24 Mbp.

Description of *Candidatus* Holovana debucivita sp. nov.

Candidatus Holovana debucivita (NL. fem. n. *debucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-113 sp003136675*. The type genome for the species is the GenBank assembly GCA_003168955.1. The GC content of the type genome is 59.69 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Holovana gen. nov.

Candidatus Holovana (NL. fem. n. *Holovana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-113*. The type species for the genus is *Candidatus* Holovana debucivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Holovana fuligitia sp. nov.

Candidatus Holovana fuligitia (NL. fem. n. *fuligitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-113 sp903970205*. The type genome for the species is the GenBank assembly RS_GCF_903970205.1. The GC content of the type genome is 59.26 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Holovaria capucastra sp. nov.

Candidatus Holovaria capucastra (NL. fem. n. *capucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6894 sp903912515*. The type genome for the species is the GenBank assembly GCA_903929995.1. The GC content of the type genome is 54.82 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Holovaria gen. nov.

Candidatus Holovaria (NL. fem. n. *Holovaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6894*. The type species for the genus is *Candidatus* Holovaria capucastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Holovaria impigimonia sp. nov.

Candidatus Holovaria impigimonia (NL. fem. n. *impigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6894 sp003669555*. The type genome for the species is the GenBank assembly GCA_003669555.1. The GC content of the type genome is 59.65 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Holovaria rorifilenta sp. nov.

Candidatus Holovaria rorifilenta (NL. fem. n. *rorifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6894 sp002451275*. The type genome for the species is the GenBank assembly GCA_002331825.1. The GC content of the type genome is 62.06 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Holovella tibicatica sp. nov.

Candidatus Holovella tibicatica (NL. fem. n. *tibicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-217 sp004356805*. The type genome for the species is the GenBank assembly GCA_004356805.1. The GC content of the type genome is 60.32 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Holovella gen. nov.

Candidatus Holovella (NL. fem. n. *Holovella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-217*. The type species for the genus is *Candidatus* Holovella tibicatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ZC4RG35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidosaceae.

Description of *Candidatus* Holovella vanidimonia sp. nov.

Candidatus Holovella vanidimonia (NL. fem. n. *vanidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-217 sp003230435*. The type genome for the species is the GenBank assembly GCA_003230435.1. The GC content of the type genome is 60.53 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Holovia adculivita sp. nov.

Candidatus Holovia adculivita (NL. fem. n. *adculivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp902802365*. The type genome for the species is the GenBank assembly GCA_902802365.1. The GC content of the type genome is 52.99 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Holovia gen. nov.

Candidatus Holovia (NL. fem. n. *Holovia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA733*. The type species for the genus is *Candidatus* Holovia adculivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Holovia bulapastra sp. nov.

Candidatus Holovia bulapastra (NL. fem. n. *bulapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp900317165*. The type genome for the species is the GenBank assembly GCA_900317165.1. The GC content of the type genome is 46.9 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Holovia bulapedo sp. nov.

Candidatus Holovia bulapedo (NL. fem. n. *bulapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp900316365*. The type genome for the species is the GenBank assembly GCA_902757585.1. The GC content of the type genome is 48.9 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Holovia denecimonas sp. nov.

Candidatus Holovia denecimonas (NL. fem. n. *denecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp902803375*. The type genome for the species is the GenBank assembly GCA_902803375.1. The GC content of the type genome is 50.54 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Holovia depupifica sp. nov.

Candidatus Holovia depupifica (NL. fem. n. *depupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp902773005*. The type genome for the species is the GenBank assembly GCA_902773005.1. The GC content of the type genome is 50.63 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Holovia figilitrix sp. nov.

Candidatus Holovia figilitrix (NL. fem. n. *figilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA733 sp004561785*. The type genome for the species is the GenBank assembly GCA_902783865.1. The GC content of the type genome is 52.79 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Holovia irreditrix sp. nov.

Candidatus Holovia irreditrix (NL. fem. n. *irreditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp900767825*. The type genome for the species is the GenBank assembly RS_GCF_900767825.1. The GC content of the type genome is 35.22 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Holovia laxitibra sp. nov.

Candidatus Holovia laxitibra (NL. fem. n. *laxitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp900321535*. The type genome for the species is the GenBank assembly GCA_900321535.1. The GC content of the type genome is 46.48 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Holovia malivicula sp. nov.

Candidatus Holovia malivicula (NL. fem. n. *malivicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp002321395*. The type genome for the species is the GenBank assembly GCA_002404805.1. The GC content of the type genome is 52.69 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Holovia podagitio sp. nov.

Candidatus Holovia podagitio (NL. fem. n. *podagitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp900539595*. The type genome for the species is the GenBank assembly GCA_900539595.1. The GC content of the type genome is 45.79 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Holovia renavimonas sp. nov.

Candidatus Holovia renavimonas (NL. fem. n. *renavimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp003512585*. The type genome for the species is the GenBank assembly GCA_003506235.1. The GC content of the type genome is 34.39 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Holovia scaccitudo sp. nov.

Candidatus Holovia scaccitudo (NL. fem. n. *scaccitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp002068375*. The type genome for the species is the GenBank assembly GCA_002068375.1. The GC content of the type genome is 51.36 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Holovia uberriforma sp. nov.

Candidatus Holovia uberriforma (NL. fem. n. *uberriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp900767605*. The type genome for the species is the GenBank assembly RS_GCF_900767605.1. The GC content of the type genome is 46.1 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Holovia vagabitica sp. nov.

Candidatus Holovia vagabitica (NL. fem. n. *vagabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp002472275*. The type genome for the species is the GenBank assembly GCA_002472275.1. The GC content of the type genome is 53.95 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Holovia valefitio sp. nov.

Candidatus Holovia valefitio (NL. fem. n. *valefitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp900550795*. The type genome for the species is the GenBank assembly RS_GCF_900753385.1. The GC content of the type genome is 35.0 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Holovia vitigitica sp. nov.

Candidatus Holovia vitigitica (NL. fem. n. *vitigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA733 sp900317295*. The type genome for the species is the GenBank assembly GCA_902793785.1. The GC content of the type genome is 54.01 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Holovida direcifica sp. nov.

Candidatus Holovida direcifica (NL. fem. n. *direcifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5704 sp002420005*. The type genome for the species is the GenBank assembly GCA_002420005.1. The GC content of the type genome is 69.38 % and the genome length is 8.02 Mbp.

Description of *Candidatus* Holovida gen. nov.

Candidatus Holovida (NL. fem. n. *Holovida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5704*. The type species for the genus is *Candidatus* Holovida direcifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5704*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovidaceae.

Description of *Candidatus* Holovidaceae fam. nov.

Candidatus Holovidaceae (NL. fem. n. *Holovidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5704.* The type genus for the taxon is *Candidatus* Holovida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5704*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Holovidales.

Description of *Candidatus* Holovidales ord. nov.

Candidatus Holovidales (NL. fem. n. *Holovidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5704.* The type genus for the taxon is *Candidatus* Holovida .

According to the GTDB R06-RS202, this order belongs to the class *Thermoanaerobaculia*.

Description of *Candidatus* Holovosa affabax sp. nov.

Candidatus Holovosa affabax (NL. fem. n. *affabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU087 sp012727675*. The type genome for the species is the GenBank assembly GCA_012727675.1. The GC content of the type genome is 52.43 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Holovosa gen. nov.

Candidatus Holovosa (NL. fem. n. *Holovosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU087*. The type species for the genus is *Candidatus* Holovosa affabax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovosaceae.

Description of *Candidatus* Holovosaceae fam. nov.

Candidatus Holovosaceae (NL. fem. n. *Holovosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU087.* The type genus for the taxon is *Candidatus* Holovosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Holovosales.

Description of *Candidatus* Holovosales ord. nov.

Candidatus Holovosales (NL. fem. n. *Holovosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU087.* The type genus for the taxon is *Candidatus* Holovosa .

According to the GTDB R06-RS202, this order belongs to the class *Limnochordia*.

Description of *Candidatus* Holovosa decatastra sp. nov.

Candidatus Holovosa decatastra (NL. fem. n. *decatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU087 sp012839845*. The type genome for the species is the GenBank assembly GCA_012839845.1. The GC content of the type genome is 54.37 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Holovosa levidessa sp. nov.

Candidatus Holovosa levidessa (NL. fem. n. *levidessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU087 sp012735435*. The type genome for the species is the GenBank assembly GCA_012735435.1. The GC content of the type genome is 52.96 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Holovosa rubicimonas sp. nov.

Candidatus Holovosa rubicimonas (NL. fem. n. *rubicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU087 sp001513495*. The type genome for the species is the

GenBank assembly GCA_012518545.1. The GC content of the type genome is 54.71 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Holovosa supelitudo sp. nov.

Candidatus Holovosa supelitudo (NL. fem. n. *supelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU087 sp012510855*. The type genome for the species is the GenBank assembly GCA_012510855.1. The GC content of the type genome is 52.75 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Holovula menapilega sp. nov.

Candidatus Holovula menapilega (NL. fem. n. *menapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2701925 sp002701925*. The type genome for the species is the GenBank assembly GCA_002701925.2. The GC content of the type genome is 32.53 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Holovula gen. nov.

Candidatus Holovula (NL. fem. n. *Holovula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2701925*. The type species for the genus is *Candidatus* Holovula menapilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1144*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conifellaceae.

Description of *Candidatus* Homagana ruricousia sp. nov.

Candidatus Homagana ruricousia (NL. fem. n. *ruricousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747955 sp002747955*. The type genome for the species is the GenBank assembly GCA_002747955.1. The GC content of the type genome is 30.03 %

and the genome length is 0.61 Mbp.

Description of *Candidatus* Homagana gen. nov.

Candidatus Homagana (NL. fem. n. *Homagana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2747955*. The type species for the genus is *Candidatus* Homagana ruricousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2747955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homaganaceae.

Description of *Candidatus* Homaganaceae fam. nov.

Candidatus Homaganaceae (NL. fem. n. *Homaganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2747955.* The type genus for the taxon is *Candidatus* Homagana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Homagaria abantitas sp. nov.

Candidatus Homagaria abantitas (NL. fem. n. *abantitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-933 sp903927615*. The type genome for the species is the GenBank assembly GCA_903927615.1. The GC content of the type genome is 63.34 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Homagaria gen. nov.

Candidatus Homagaria (NL. fem. n. *Homagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-933*. The type species for the genus is *Candidatus* Homagaria abantitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homagaria homicetta sp. nov.

Candidatus Homagaria homicetta (NL. fem. n. *homicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-933 sp003165295*. The type genome for the species is the GenBank assembly GCA_003165295.1. The GC content of the type genome is 65.62 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Homagaria homilago sp. nov.

Candidatus Homagaria homilago (NL. fem. n. *homilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-933 sp903920145*. The type genome for the species is the GenBank assembly GCA_903903135.1. The GC content of the type genome is 58.71 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Homagella cilibedo sp. nov.

Candidatus Homagella cilibedo (NL. fem. n. *cilibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG039 sp900314875*. The type genome for the species is the GenBank assembly GCA_900314785.1. The GC content of the type genome is 47.94 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Homagella gen. nov.

Candidatus Homagella (NL. fem. n. *Homagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG039*. The type species for the genus is *Candidatus* Homagella cilibedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homagia rubefitudo sp. nov.

Candidatus Homagia rubefitudo (NL. fem. n. *rubefitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MarineAlpha5-Bin7 sp002938195*. The type genome for the species is the GenBank assembly GCA_002937925.1. The GC content of the type genome is 28.09 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Homagia gen. nov.

Candidatus Homagia (NL. fem. n. *Homagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MarineAlpha5-Bin7*. The type species for the genus is *Candidatus* Homagia rubefitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002718135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defululaceae.

Description of *Candidatus* Homagida artufilega sp. nov.

Candidatus Homagida artufilega (NL. fem. n. *artufilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-NZ sp013332095*. The type genome for the species is the GenBank assembly GCA_013332095.1. The GC content of the type genome is 29.09 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Homagida gen. nov.

Candidatus Homagida (NL. fem. n. *Homagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MAG-NZ*. The type species for the genus is *Candidatus* Homagida artufilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MAG-NZ*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homagidaceae.

Description of *Candidatus* Homagidaceae fam. nov.

Candidatus Homagidaceae (NL. fem. n. *Homagidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MAG-NZ.* The type genus for the taxon is *Candidatus* Homagida .

According to the original version of GTDB R06-RS202, this family belongs to the order *MAG-NZ*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homagidales.

Description of *Candidatus* Homagidales ord. nov.

Candidatus Homagidales (NL. fem. n. *Homagidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MAG-NZ.* The type genus for the taxon is *Candidatus* Homagida .

According to the GTDB R06-RS202, this order belongs to the class *Bacilli*.

Description of *Candidatus* Homagosa venunastra sp. nov.

Candidatus Homagosa venunastra (NL. fem. n. *venunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJXJ01 sp903824575*. The type genome for the species is the GenBank assembly GCA_903824575.1. The GC content of the type genome is 53.74 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Homagosa gen. nov.

Candidatus Homagosa (NL. fem. n. *Homagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJXJ01*. The type species for the genus is *Candidatus* Homagosa venunastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homagula cibarisca sp. nov.

Candidatus Homagula cibarisca (NL. fem. n. *cibarisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-56 sp002361955*. The type genome for the species is the GenBank assembly GCA_002494285.1. The GC content of the type genome is 51.8 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Homagula gen. nov.

Candidatus Homagula (NL. fem. n. *Homagula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-56*. The type species for the genus is *Candidatus* Homagula cibarisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homagula defalentia sp. nov.

Candidatus Homagula defalentia (NL. fem. n. *defalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-56 sp004793585*. The type genome for the species is the GenBank assembly RS_GCF_004793585.1. The GC content of the type genome is 45.89 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Homagula immobago sp. nov.

Candidatus Homagula immobago (NL. fem. n. *immobago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-56 sp900762665*. The type genome for the species is the GenBank assembly GCA_900762665.1. The GC content of the type genome is 47.51 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Homagula supelisca sp. nov.

Candidatus Homagula supelisca (NL. fem. n. *supelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-56 sp900539525*. The type genome for the species is the GenBank assembly GCA_900758835.1. The GC content of the type genome is 47.45 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Homagula ulcisimonas sp. nov.

Candidatus Homagula ulcisimonas (NL. fem. n. *ulcisimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-56 sp900752065*. The type genome for the species is the GenBank assembly RS_GCF_900752065.1. The GC content of the type genome is 48.38 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Homicana capilitas sp. nov.

Candidatus Homicana capilitas (NL. fem. n. *capilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKYL01 sp007127935*. The type genome for the species is the GenBank assembly GCA_007127935.1. The GC content of the type genome is 66.39 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Homicana gen. nov.

Candidatus Homicana (NL. fem. n. *Homicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKYL01*. The type species for the genus is *Candidatus* Homicana capilitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homicana saxifastra sp. nov.

Candidatus Homicana saxifastra (NL. fem. n. *saxifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKYL01 sp007121755*. The type genome for the species is the GenBank assembly GCA_007121755.1. The GC content of the type genome is 65.26 %

and the genome length is 2.21 Mbp.

Description of *Candidatus* Homicella coturedo sp. nov.

Candidatus Homicella coturedo (NL. fem. n. *coturedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2988 sp002346665*. The type genome for the species is the GenBank assembly GCA_002346665.1. The GC content of the type genome is 61.69 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Homicella gen. nov.

Candidatus Homicella (NL. fem. n. *Homicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2988*. The type species for the genus is *Candidatus* Homicella coturedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Homicosa capabimonia sp. nov.

Candidatus Homicosa capabimonia (NL. fem. n. *capabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1063 sp011338235*. The type genome for the species is the GenBank assembly GCA_011338235.1. The GC content of the type genome is 41.43 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Homicosa gen. nov.

Candidatus Homicosa (NL. fem. n. *Homicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1063*. The type species for the genus is *Candidatus* Homicosa capabimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1063*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Homicosaceae.

Description of *Candidatus* Homicosaceae fam. nov.

Candidatus Homicosaceae (NL. fem. n. *Homicosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1063.* The type genus for the taxon is *Candidatus* Homicosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1063*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homicosales.

Description of *Candidatus* Homicosales ord. nov.

Candidatus Homicosales (NL. fem. n. *Homicosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1063.* The type genus for the taxon is *Candidatus* Homicosa .

According to the GTDB R06-RS202, this order belongs to the class *Hydrothermia*.

Description of *Candidatus* Homicosa cituvisca sp. nov.

Candidatus Homicosa cituvisca (NL. fem. n. *cituvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1063 sp002316275*. The type genome for the species is the GenBank assembly GCA_002316275.1. The GC content of the type genome is 40.33 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Homicosa lavabitia sp. nov.

Candidatus Homicosa lavabitia (NL. fem. n. *lavabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1063 sp011363785*. The type genome for the species is the GenBank assembly GCA_011363785.1. The GC content of the type genome is 39.46 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Homicosa luxurimonas sp. nov.

Candidatus Homicosa luxurimonas (NL. fem. n. *luxurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1063 sp002421425*. The type genome for the species is the GenBank assembly GCA_002421425.1. The GC content of the type genome is 41.77 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Homicula salubiforma sp. nov.

Candidatus Homicula salubiforma (NL. fem. n. *salubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6930 sp002450755*. The type genome for the species is the GenBank assembly GCA_002450755.1. The GC content of the type genome is 47.79 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Homicula gen. nov.

Candidatus Homicula (NL. fem. n. *Homicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6930*. The type species for the genus is *Candidatus* Homicula salubiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6930*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homiculaceae.

Description of *Candidatus* Homiculaceae fam. nov.

Candidatus Homiculaceae (NL. fem. n. *Homiculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6930.* The type genus for the taxon is *Candidatus* Homicula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxifiales.

Description of *Candidatus* Homilana allobimonas sp. nov.

Candidatus Homilana allobimonas (NL. fem. n. *allobimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXDE01 sp003566475*. The type genome for the species is the GenBank assembly GCA_003566475.1. The GC content of the type genome is 69.48 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Homilana gen. nov.

Candidatus Homilana (NL. fem. n. *Homilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXDE01*. The type species for the genus is *Candidatus* Homilana allobimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PXDE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homilanaceae.

Description of *Candidatus* Homilanaceae fam. nov.

Candidatus Homilanaceae (NL. fem. n. *Homilanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PXDE01.* The type genus for the taxon is *Candidatus* Homilana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SS1-B-03-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nutamidales.

Description of *Candidatus* Homilaria malogitudo sp. nov.

Candidatus Homilaria malogitudo (NL. fem. n. *malogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBCG01 sp005881895*. The type genome for the species is the GenBank assembly GCA_005881895.1. The GC content of the type genome is 62.38 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Homilaria gen. nov.

Candidatus Homilaria (NL. fem. n. *Homilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBCG01*. The type species for the genus is *Candidatus* Homilaria malogitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homilella repudimonia sp. nov.

Candidatus Homilella repudimonia (NL. fem. n. *repudimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKRI01 sp007118565*. The type genome for the species is the GenBank assembly GCA_007118565.1. The GC content of the type genome is 68.66 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Homilella gen. nov.

Candidatus Homilella (NL. fem. n. *Homilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKRI01*. The type species for the genus is *Candidatus* Homilella repudimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homilida cilicifica sp. nov.

Candidatus Homilida cilicifica (NL. fem. n. *cilicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-35 sp005884125*. The type genome for the species is the GenBank assembly GCA_005884125.1. The GC content of the type genome is 71.78 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Homilida gen. nov.

Candidatus Homilida (NL. fem. n. *Homilida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-35*. The type species for the genus is *Candidatus* Homilida cilicifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AC-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homilidaceae.

Description of *Candidatus* Homilidaceae fam. nov.

Candidatus Homilidaceae (NL. fem. n. *Homilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AC-35.* The type genus for the taxon is *Candidatus* Homilida .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Homilosa attolitrix sp. nov.

Candidatus Homilosa attolitrix (NL. fem. n. *attolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYPH01 sp903845065*. The type genome for the species is the GenBank assembly GCA_903845065.1. The GC content of the type genome is 67.7 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Homilosa gen. nov.

Candidatus Homilosa (NL. fem. n. *Homilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYPH01*. The type species for the genus is *Candidatus* Homilosa attolitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homilosa obnupitica sp. nov.

Candidatus Homilosa obnupitica (NL. fem. n. *obnupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYPH01 sp903865895*. The type genome for the species is the GenBank assembly GCA_903865895.1. The GC content of the type genome is 67.67 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Homilosa pecunilenta sp. nov.

Candidatus Homilosa pecunilenta (NL. fem. n. *pecunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYPH01 sp903928045*. The type genome for the species is the GenBank assembly GCA_903910565.1. The GC content of the type genome is 67.21 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Homilosa remedatica sp. nov.

Candidatus Homilosa remedatica (NL. fem. n. *remedatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYPH01 sp903928895*. The type genome for the species is the GenBank assembly GCA_903886375.1. The GC content of the type genome is 67.45 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Homilula luceliforma sp. nov.

Candidatus Homilula luceliforma (NL. fem. n. *luceliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLDB01 sp007125475*. The type genome for the species is the GenBank assembly GCA_007118635.1. The GC content of the type genome is 71.92 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Homilula gen. nov.

Candidatus Homilula (NL. fem. n. *Homilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLDB01*. The type species for the genus is *Candidatus* Homilula luceliforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homogana asporugo sp. nov.

Candidatus Homogana asporugo (NL. fem. n. *asporugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VENL01 sp009711605*. The type genome for the species is the GenBank assembly GCA_009711605.1. The GC content of the type genome is 30.85 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Homogana gen. nov.

Candidatus Homogana (NL. fem. n. *Homogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VENL01*. The type species for the genus is *Candidatus* Homogana asporugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VENL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homoganaceae.

Description of *Candidatus* Homoganaceae fam. nov.

Candidatus Homoganaceae (NL. fem. n. *Homoganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VENL01*. The type genus for the taxon is *Candidatus* Homogana .

According to GTDB R06-RS202, this family belongs to the order *Tissierellales*.

Description of *Candidatus* Homogaria depubitura sp. nov.

Candidatus Homogaria depubitura (NL. fem. n. *depubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYXC01 sp012516115*. The type genome for the species is the GenBank assembly GCA_012516115.1. The GC content of the type genome is 60.44 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Homogaria gen. nov.

Candidatus Homogaria (NL. fem. n. *Homogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYXC01*. The type species for the genus is *Candidatus* Homogaria depubitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYXC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homogariaceae.

Description of *Candidatus* Homogariaceae fam. nov.

Candidatus Homogariaceae (NL. fem. n. *Homogariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYXC01.* The type genus for the taxon is *Candidatus* Homogaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYXC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homogariales.

Description of *Candidatus* Homogariales ord. nov.

Candidatus Homogariales (NL. fem. n. *Homogariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYXC01.* The type genus for the taxon is *Candidatus* Homogaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4882*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Lacinanae.

Description of *Candidatus* Homogella alembigena sp. nov.

Candidatus Homogella alembigena (NL. fem. n. *alembigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp009841635*. The type genome for the species is the GenBank assembly GCA_009841635.1. The GC content of the type genome is 51.46 % and the

genome length is 2.9 Mbp.

Description of *Candidatus* Homogella gen. nov.

Candidatus Homogella (NL. fem. n. *Homogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin55*. The type species for the genus is *Candidatus* Homogella alembigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Homogella dehonigena sp. nov.

Candidatus Homogella dehonigena (NL. fem. n. *dehonigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp009840305*. The type genome for the species is the GenBank assembly GCA_009835715.1. The GC content of the type genome is 47.46 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Homogella egregilenta sp. nov.

Candidatus Homogella egregilenta (NL. fem. n. *egregilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp002238665*. The type genome for the species is the GenBank assembly GCA_002238665.1. The GC content of the type genome is 47.27 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Homogella fefelilenta sp. nov.

Candidatus Homogella fefelilenta (NL. fem. n. *fefelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp012267385*. The type genome for the species is the GenBank assembly GCA_012267385.1. The GC content of the type genome is 46.52 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Homogella legifentia sp. nov.

Candidatus Homogella legifentia (NL. fem. n. *legifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp009840545*. The type genome for the species is the GenBank assembly GCA_009840545.1. The GC content of the type genome is 49.58 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Homogella offunatica sp. nov.

Candidatus Homogella offunatica (NL. fem. n. *offunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp011525295*. The type genome for the species is the GenBank assembly GCA_011525295.1. The GC content of the type genome is 46.78 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Homogella repeciforma sp. nov.

Candidatus Homogella repeciforma (NL. fem. n. *repeciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp009845835*. The type genome for the species is the GenBank assembly GCA_011523575.1. The GC content of the type genome is 44.22 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Homogella semilitoga sp. nov.

Candidatus Homogella semilitoga (NL. fem. n. *semilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp009837185*. The type genome for the species is the GenBank assembly GCA_009837185.1. The GC content of the type genome is 47.01 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Homogella videlilega sp. nov.

Candidatus Homogella videlilega (NL. fem. n. *videlilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp009841615*. The type genome for the species is the GenBank assembly GCA_009841615.1. The GC content of the type genome is 46.54 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Homogella visocatio sp. nov.

Candidatus Homogella visocatio (NL. fem. n. *visocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin55 sp009842245*. The type genome for the species is the GenBank assembly GCA_009842245.1. The GC content of the type genome is 47.42 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Homogia adtagitrix sp. nov.

Candidatus Homogia adtagitrix (NL. fem. n. *adtagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SbD1 sp900290365*. The type genome for the species is the GenBank assembly RS_GCF_900290365.1. The GC content of the type genome is 52.45 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Homogia gen. nov.

Candidatus Homogia (NL. fem. n. *Homogia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SbD1*. The type species for the genus is *Candidatus* Homogia adtagitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homogia armidimonas sp. nov.

Candidatus Homogia armidimonas (NL. fem. n. *armidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SbD1 sp003165235*. The type genome for the species is the GenBank assembly GCA_003165235.1. The GC content of the type genome is 52.86 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Homogia seposivita sp. nov.

Candidatus Homogia seposivita (NL. fem. n. *seposivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SbD1 sp900290385*. The type genome for the species is the GenBank assembly RS_GCF_900290385.1. The GC content of the type genome is 53.27 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Homogosa aplesitica sp. nov.

Candidatus Homogosa aplesitica (NL. fem. n. *aplesitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYHX01 sp009926245*. The type genome for the species is the GenBank assembly GCA_009926245.1. The GC content of the type genome is 53.23 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Homogosa gen. nov.

Candidatus Homogosa (NL. fem. n. *Homogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYHX01*. The type species for the genus is *Candidatus* Homogosa aplesitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7662*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manubanaceae.

Description of *Candidatus* Homogosa arbavatio sp. nov.

Candidatus Homogosa arbavatio (NL. fem. n. *arbavatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYHX01 sp009926405*. The type genome for the species is the

GenBank assembly GCA_009926405.1. The GC content of the type genome is 51.86 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Homogosa monimitia sp. nov.

Candidatus Homogosa monimitia (NL. fem. n. *monimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYHX01 sp005799025*. The type genome for the species is the GenBank assembly GCA_005799025.1. The GC content of the type genome is 48.68 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Homogosa semodimonia sp. nov.

Candidatus Homogosa semodimonia (NL. fem. n. *semodimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYHX01 sp903856555*. The type genome for the species is the GenBank assembly GCA_903899585.1. The GC content of the type genome is 53.42 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Homogosa susicago sp. nov.

Candidatus Homogosa susicago (NL. fem. n. *susicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYHX01 sp009927485*. The type genome for the species is the GenBank assembly GCA_009927485.1. The GC content of the type genome is 50.95 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Homogula defarax sp. nov.

Candidatus Homogula defarax (NL. fem. n. *defarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA695 sp903928175*. The type genome for the species is the GenBank assembly GCA_903928175.1. The GC content of the type genome is 58.53 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Homogula gen. nov.

Candidatus Homogula (NL. fem. n. *Homogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA695*. The type species for the genus is *Candidatus* Homogula defarax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homogula desorastra sp. nov.

Candidatus Homogula desorastra (NL. fem. n. *desorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA695 sp903933715*. The type genome for the species is the GenBank assembly GCA_903933715.1. The GC content of the type genome is 57.92 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Homogula intamitas sp. nov.

Candidatus Homogula intamitas (NL. fem. n. *intamitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA695 sp002298145*. The type genome for the species is the GenBank assembly GCA_002298145.1. The GC content of the type genome is 60.51 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Homolana domigousia sp. nov.

Candidatus Homolana domigousia (NL. fem. n. *domigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGA01 sp009787405*. The type genome for the species is the GenBank assembly GCA_009787405.1. The GC content of the type genome is 41.2 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Homolana gen. nov.

Candidatus Homolana (NL. fem. n. *Homolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGA01*. The type species for the genus is *Candidatus* Homolana domigousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRGA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homolanaceae.

Description of *Candidatus* Homolanaceae fam. nov.

Candidatus Homolanaceae (NL. fem. n. *Homolanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRGA01.* The type genus for the taxon is *Candidatus* Homolana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Homolaria ceracigena sp. nov.

Candidatus Homolaria ceracigena (NL. fem. n. *ceracigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp000438015*. The type genome for the species is the GenBank assembly GCA_000438015.1. The GC content of the type genome is 46.24 % and the genome length is 2.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Homolaria gen. nov.

Candidatus Homolaria (NL. fem. n. *Homolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-312*. The type species for the genus is *Candidatus* Homolaria ceracigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-312*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homolariaceae.

Description of *Candidatus* Homolariaceae fam. nov.

Candidatus Homolariaceae (NL. fem. n. *Homolariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-312*. The type genus for the taxon is *Candidatus* Homolaria .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Homolaria detecitura sp. nov.

Candidatus Homolaria detecitura (NL. fem. n. *detecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp900545715*. The type genome for the species is the GenBank assembly GCA_900545715.1. The GC content of the type genome is 49.31 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Homolaria endivitica sp. nov.

Candidatus Homolaria endivitica (NL. fem. n. *endivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp900760055*. The type genome for the species is the GenBank assembly RS_GCF_900760055.1. The GC content of the type genome is 49.28 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Homolaria gerunibra sp. nov.

Candidatus Homolaria gerunibra (NL. fem. n. *gerunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp002437405*. The type genome for the species is the GenBank assembly GCA_002437055.1. The GC content of the type genome is 55.01 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Homolaria incivigena sp. nov.

Candidatus Homolaria incivigena (NL. fem. n. *incivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp900760665*. The type genome for the species is the

GenBank assembly RS_GCF_900760665.1. The GC content of the type genome is 57.59 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Homolaria lanugilenta sp. nov.

Candidatus Homolaria lanugilenta (NL. fem. n. *lanugilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp900546565*. The type genome for the species is the GenBank assembly GCA_900546565.1. The GC content of the type genome is 52.93 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Homolaria latibugo sp. nov.

Candidatus Homolaria latibugo (NL. fem. n. *latibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp900548275*. The type genome for the species is the GenBank assembly GCA_900548275.1. The GC content of the type genome is 54.73 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Homolaria legifimonia sp. nov.

Candidatus Homolaria legifimonia (NL. fem. n. *legifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp001917305*. The type genome for the species is the GenBank assembly GCA_001917305.1. The GC content of the type genome is 57.8 % and the genome length is 2.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Homolaria practastra sp. nov.

Candidatus Homolaria practastra (NL. fem. n. *practastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp002405555*. The type genome for the species is the GenBank assembly GCA_002405555.1. The GC content of the type genome is 56.59 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Homolaria tubicicella sp. nov.

Candidatus Homolaria tubicicella (NL. fem. n. *tubicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-312 sp900545705*. The type genome for the species is the GenBank assembly GCA_900545705.1. The GC content of the type genome is 48.68 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Homolella acraticula sp. nov.

Candidatus Homolella acraticula (NL. fem. n. *acraticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU012 sp012840925*. The type genome for the species is the GenBank assembly GCA_012840925.1. The GC content of the type genome is 48.48 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Homolella gen. nov.

Candidatus Homolella (NL. fem. n. *Homolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU012*. The type species for the genus is *Candidatus* Homolella acraticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU012*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homolellaceae.

Description of *Candidatus* Homolellaceae fam. nov.

Candidatus Homolellaceae (NL. fem. n. *Homolellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU012.* The type genus for the taxon is *Candidatus* Homolella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ducilidales.

Description of *Candidatus* Homolella enimvastra sp. nov.

Candidatus Homolella enimvastra (NL. fem. n. *enimvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU012 sp012520795*. The type genome for the species is the GenBank assembly GCA_012520795.1. The GC content of the type genome is 49.99 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Homolella hexagimonia sp. nov.

Candidatus Homolella hexagimonia (NL. fem. n. *hexagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU012 sp012837335*. The type genome for the species is the GenBank assembly GCA_012837335.1. The GC content of the type genome is 47.32 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Homolella inrematio sp. nov.

Candidatus Homolella inrematio (NL. fem. n. *inrematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU012 sp012521805*. The type genome for the species is the GenBank assembly GCA_012521805.1. The GC content of the type genome is 45.58 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Homolella lucelugo sp. nov.

Candidatus Homolella lucelugo (NL. fem. n. *lucelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU012 sp900019385*. The type genome for the species is the GenBank assembly GCA_900019385.1. The GC content of the type genome is 53.78 % and the genome length is 2.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "anaerobic digester metagenome".

Description of *Candidatus* Homolia mahemetta sp. nov.

Candidatus Homolia mahemetta (NL. fem. n. *mahemetta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-171 sp002049895*. The type genome for the species is the GenBank assembly GCA_002049895.1. The GC content of the type genome is 39.09 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Homolia gen. nov.

Candidatus Homolia (NL. fem. n. *Homolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-171*. The type species for the genus is *Candidatus* Homolia mahemetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-171*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homoliaceae.

Description of *Candidatus* Homoliaceae fam. nov.

Candidatus Homoliaceae (NL. fem. n. *Homoliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-171.* The type genus for the taxon is *Candidatus* Homolia .

According to the original version of GTDB R06-RS202, this family belongs to the order *4484-171*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homoliales.

Description of *Candidatus* Homoliales ord. nov.

Candidatus Homoliales (NL. fem. n. *Homoliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-171.* The type genus for the taxon is *Candidatus* Homolia .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Homolida bimetax sp. nov.

Candidatus Homolida bimetax (NL. fem. n. *bimetax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4078 sp002419385*. The type genome for the species is the GenBank assembly GCA_002347465.1. The GC content of the type genome is 56.65 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Homolida gen. nov.

Candidatus Homolida (NL. fem. n. *Homolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4078*. The type species for the genus is *Candidatus* Homolida bimetax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homolida desometta sp. nov.

Candidatus Homolida desometta (NL. fem. n. *desometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4078 sp003314535*. The type genome for the species is the GenBank assembly GCA_003314535.1. The GC content of the type genome is 55.4 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Homolosa debucitica sp. nov.

Candidatus Homolosa debucitica (NL. fem. n. *debucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5394 sp002409725*. The type genome for the species is the GenBank assembly GCA_002409725.1. The GC content of the type genome is 58.35 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Homolosa gen. nov.

Candidatus Homolosa (NL. fem. n. *Homolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5394*. The type species for the genus is *Candidatus* Homolosa debucitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Homolosa decunugo sp. nov.

Candidatus Homolosa decunugo (NL. fem. n. *decunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5394 sp900542615*. The type genome for the species is the GenBank assembly GCA_900542615.1. The GC content of the type genome is 60.59 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Homolosa pedepatio sp. nov.

Candidatus Homolosa pedepatio (NL. fem. n. *pedepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5394 sp003150565*. The type genome for the species is the GenBank assembly GCA_900543475.1. The GC content of the type genome is 58.79 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Homoserinimonas penicessa sp. nov.

Candidatus Homoserinimonas penicessa (NL. fem. n. *penicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Homoserinimonas sp003065485*. The type genome for the species is the GenBank assembly RS_GCF_003065485.1. The GC content of the type genome is 64.1 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Homoserinimonas pimenedo sp. nov.

Candidatus Homoserinimonas pimenedo (NL. fem. n. *pimenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Homoserinimonas sp008001035*. The type genome for the species is the GenBank assembly RS_GCF_008017685.1. The GC content of the type genome is 67.5 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Homulana dehisedo sp. nov.

Candidatus Homulana dehisedo (NL. fem. n. *dehisedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6879 sp002449135*. The type genome for the species is the GenBank assembly GCA_002449135.1. The GC content of the type genome is 27.46 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Homulana gen. nov.

Candidatus Homulana (NL. fem. n. *Homulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6879*. The type species for the genus is *Candidatus* Homulana dehisedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-288*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropellaceae.

Description of *Candidatus* Homulana diponimonia sp. nov.

Candidatus Homulana diponimonia (NL. fem. n. *diponimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6879 sp902772915*. The type genome for the species is the GenBank assembly GCA_902772915.1. The GC content of the type genome is 32.92 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Homulella alcedivita sp. nov.

Candidatus Homulella alcedivita (NL. fem. n. *alcedivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-353 sp900768995*. The type genome for the species is the GenBank assembly RS_GCF_900768995.1. The GC content of the type genome is 46.57 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Homulella gen. nov.

Candidatus Homulella (NL. fem. n. *Homulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-353*. The type species for the genus is *Candidatus* Homulella alcedivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homulella cibicilenta sp. nov.

Candidatus Homulella cibicilenta (NL. fem. n. *cibicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-353 sp001941135*. The type genome for the species is the GenBank assembly GCA_001941135.1. The GC content of the type genome is 45.13 % and the genome length is 2.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Zagget the koala".

Description of *Candidatus* Homulella homulisca sp. nov.

Candidatus Homulella homulisca (NL. fem. n. *homulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-353 sp002395525*. The type genome for the species is the GenBank assembly GCA_002395525.1. The GC content of the type genome is 51.51 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Homulella indifitura sp. nov.

Candidatus Homulella indifitura (NL. fem. n. *indifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-353 sp902782875*. The type genome for the species is the GenBank assembly GCA_902782875.1. The GC content of the type genome is 48.19 %

and the genome length is 2.3 Mbp.

Description of *Candidatus* Homulella pericax sp. nov.

Candidatus Homulella pericax (NL. fem. n. *pericax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-353 sp900066885*. The type genome for the species is the GenBank assembly RS_GCF_902363145.1. The GC content of the type genome is 46.51 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Homulia ecligago sp. nov.

Candidatus Homulia ecligago (NL. fem. n. *ecligago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINVO01 sp903854195*. The type genome for the species is the GenBank assembly GCA_903854195.1. The GC content of the type genome is 36.94 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Homulia gen. nov.

Candidatus Homulia (NL. fem. n. *Homulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINVO01*. The type species for the genus is *Candidatus* Homulia ecligago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAINVO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homuliaceae.

Description of *Candidatus* Homuliaceae fam. nov.

Candidatus Homuliaceae (NL. fem. n. *Homuliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAINVO01.* The type genus for the taxon is *Candidatus* Homulia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Homulida nugivedo sp. nov.

Candidatus Homulida nugivedo (NL. fem. n. *nugivedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHCA01 sp003244095*. The type genome for the species is the GenBank assembly GCA_003244095.1. The GC content of the type genome is 70.49 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Homulida gen. nov.

Candidatus Homulida (NL. fem. n. *Homulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHCA01*. The type species for the genus is *Candidatus* Homulida nugivedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHCA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homulidaceae.

Description of *Candidatus* Homulidaceae fam. nov.

Candidatus Homulidaceae (NL. fem. n. *Homulidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QHCA01.* The type genus for the taxon is *Candidatus* Homulida .

According to GTDB R06-RS202, this family belongs to the order *Mycobacteriales*.

Description of *Candidatus* Homulosa assubastra sp. nov.

Candidatus Homulosa assubastra (NL. fem. n. *assubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2258 sp903908785*. The type genome for the species is the GenBank assembly GCA_903908785.1. The GC content of the type genome is 62.52 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Homulosa gen. nov.

Candidatus Homulosa (NL. fem. n. *Homulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2258*. The type species for the genus is *Candidatus* Homulosa assubastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homulosaceae.

Description of *Candidatus* Homulosaceae fam. nov.

Candidatus Homulosaceae (NL. fem. n. *Homulosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2258.* The type genus for the taxon is *Candidatus* Homulosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homulosales.

Description of *Candidatus* Homulosales ord. nov.

Candidatus Homulosales (NL. fem. n. *Homulosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2258.* The type genus for the taxon is *Candidatus* Homulosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *WOR-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Tigurariae.

Description of *Candidatus* Homulosa expecitura sp. nov.

Candidatus Homulosa expecitura (NL. fem. n. *expecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2258 sp002347155*. The type genome for the species is the GenBank assembly GCA_002347155.1. The GC content of the type genome is 62.62 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Homulula depubedo sp. nov.

Candidatus Homulula depubedo (NL. fem. n. *depubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN36 sp011053495*. The type genome for the species is the GenBank assembly GCA_011053915.1. The GC content of the type genome is 59.08 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Homulula gen. nov.

Candidatus Homulula (NL. fem. n. *Homulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN36*. The type species for the genus is *Candidatus* Homulula depubedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homululaceae.

Description of *Candidatus* Homululaceae fam. nov.

Candidatus Homululaceae (NL. fem. n. *Homululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN36.* The type genus for the taxon is *Candidatus* Homulula .

According to GTDB R06-RS202, this family belongs to the order *Gemmatales*.

Description of *Candidatus* Homulula vehicibra sp. nov.

Candidatus Homulula vehicibra (NL. fem. n. *vehicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN36 sp002898995*. The type genome for the species is the GenBank assembly GCA_002898995.1. The GC content of the type genome is 57.9 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Homunana semipitura sp. nov.

Candidatus Homunana semipitura (NL. fem. n. *semipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED69 sp002170535*. The type genome for the species is the GenBank assembly GCA_902603495.1. The GC content of the type genome is 38.03 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Homunana gen. nov.

Candidatus Homunana (NL. fem. n. *Homunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED69*. The type species for the genus is *Candidatus* Homunana semipitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077536_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosigiaceae.

Description of *Candidatus* Homunaria infacago sp. nov.

Candidatus Homunaria infacago (NL. fem. n. *infacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B129-G9 sp003644325*. The type genome for the species is the GenBank assembly GCA_003644325.1. The GC content of the type genome is 58.0 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Homunaria gen. nov.

Candidatus Homunaria (NL. fem. n. *Homunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B129-G9*. The type species for the genus is *Candidatus* Homunaria infacago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B129-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homunariaceae.

Description of *Candidatus* Homunariaceae fam. nov.

Candidatus Homunariaceae (NL. fem. n. *Homunariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B129-G9.* The type genus for the taxon is *Candidatus* Homunaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *B129-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homunariales.

Description of *Candidatus* Homunariales ord. nov.

Candidatus Homunariales (NL. fem. n. *Homunariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B129-G9.* The type genus for the taxon is *Candidatus* Homunaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *B129-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Homunariae.

Description of *Candidatus* Homunariae class. nov.

Candidatus Homunariae (NL. fem. n. *c__Homunariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B129-G9.* The type genus for the taxon is *Candidatus* Homunaria .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Homunella gerunitrix sp. nov.

Candidatus Homunella gerunitrix (NL. fem. n. *gerunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS951 sp900547585*. The type genome for the species is the GenBank assembly RS_GCF_900755835.1. The GC content of the type genome is 41.28 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Homunella gen. nov.

Candidatus Homunella (NL. fem. n. *Homunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS951*. The type species for the genus is *Candidatus* Homunella gerunitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homunella lenocibra sp. nov.

Candidatus Homunella lenocibra (NL. fem. n. *lenocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS951 sp900547155*. The type genome for the species is the GenBank assembly RS_GCF_900755955.1. The GC content of the type genome is 41.51 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Homunia turifetta sp. nov.

Candidatus Homunia turifetta (NL. fem. n. *turifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEP01 sp011176535*. The type genome for the species is the GenBank assembly GCA_011176535.1. The GC content of the type genome is 64.21 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Homunia gen. nov.

Candidatus Homunia (NL. fem. n. *Homunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUEP01*. The type species for the genus is *Candidatus* Homunia turifetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRMV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacanaceae.

Description of *Candidatus* Homunida desucitudo sp. nov.

Candidatus Homunida desucitudo (NL. fem. n. *desucitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYOY01 sp903927905*. The type genome for the species is the GenBank assembly GCA_903870385.1. The GC content of the type genome is 54.5 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Homunida gen. nov.

Candidatus Homunida (NL. fem. n. *Homunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYOY01*. The type species for the genus is *Candidatus* Homunida desucitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunulaceae.

Description of *Candidatus* Homunosa crastilenta sp. nov.

Candidatus Homunosa crastilenta (NL. fem. n. *crastilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKAD01 sp903854335*. The type genome for the species is the GenBank assembly GCA_903854335.1. The GC content of the type genome is 54.8 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Homunosa gen. nov.

Candidatus Homunosa (NL. fem. n. *Homunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKAD01*. The type species for the genus is *Candidatus* Homunosa crastilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Homunosa nehaledo sp. nov.

Candidatus Homunosa nehaledo (NL. fem. n. *nehaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKAD01 sp903822115*. The type genome for the species is the GenBank assembly GCA_903822115.1. The GC content of the type genome is 55.55 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Homunosa rudicetta sp. nov.

Candidatus Homunosa rudicetta (NL. fem. n. *rudicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKAD01 sp903825315*. The type genome for the species is the GenBank assembly GCA_903825315.1. The GC content of the type genome is 55.71 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Homunula accomastra sp. nov.

Candidatus Homunula accomastra (NL. fem. n. *accomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2200 sp002070215*. The type genome for the species is the GenBank assembly GCA_002070215.1. The GC content of the type genome is 62.96 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Homunula gen. nov.

Candidatus Homunula (NL. fem. n. *Homunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2200*. The type species for the genus is *Candidatus* Homunula accomastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2200*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homunulaceae.

Description of *Candidatus* Homunulaceae fam. nov.

Candidatus Homunulaceae (NL. fem. n. *Homunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2200.* The type genus for the taxon is *Candidatus* Homunula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2200*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homunulales.

Description of *Candidatus* Homunulales ord. nov.

Candidatus Homunulales (NL. fem. n. *Homunulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2200.* The type genus for the taxon is *Candidatus* Homunula .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Homunula frigdigena sp. nov.

Candidatus Homunula frigdigena (NL. fem. n. *frigdigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2200 sp002327925*. The type genome for the species is the GenBank assembly GCA_002327925.1. The GC content of the type genome is 62.09 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Hormoscilla demigilenta sp. nov.

Candidatus Hormoscilla demigilenta (NL. fem. n. *demigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hormoscilla sp005518235*. The type genome for the species is the GenBank assembly GCA_005518235.1. The GC content of the type genome is 47.52 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Hormoscilla feficessa sp. nov.

Candidatus Hormoscilla feficessa (NL. fem. n. *feficessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hormoscilla sp005518205*. The type genome for the species is the

GenBank assembly GCA_014323675.1. The GC content of the type genome is 47.74 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Hormoscilla rosaritas sp. nov.

Candidatus Hormoscilla rosaritas (NL. fem. n. *rosaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hormoscilla sp014324065*. The type genome for the species is the GenBank assembly GCA_014323895.1. The GC content of the type genome is 47.53 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Horomana utraritura sp. nov.

Candidatus Horomana utraritura (NL. fem. n. *utraritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2777 sp002352365*. The type genome for the species is the GenBank assembly GCA_002352365.1. The GC content of the type genome is 49.24 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Horomana gen. nov.

Candidatus Horomana (NL. fem. n. *Horomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2777*. The type species for the genus is *Candidatus* Horomana utraritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2777*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Horomanaceae.

Description of *Candidatus* Horomanaceae fam. nov.

Candidatus Horomanaceae (NL. fem. n. *Horomanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2777.* The type genus for the taxon is *Candidatus* Horomana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2777*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Horomanales.

Description of *Candidatus* Horomanales ord. nov.

Candidatus Horomanales (NL. fem. n. *Horomanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2777*. The type genus for the taxon is *Candidatus* Horomana .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Horomaria faticousia sp. nov.

Candidatus Horomaria faticousia (NL. fem. n. *faticousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTFY01 sp009839635*. The type genome for the species is the GenBank assembly GCA_009839635.1. The GC content of the type genome is 56.5 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Horomaria gen. nov.

Candidatus Horomaria (NL. fem. n. *Horomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTFY01*. The type species for the genus is *Candidatus* Horomaria faticousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paraciaceae.

Description of *Candidatus* Horomaria indupessa sp. nov.

Candidatus Horomaria indupessa (NL. fem. n. *indupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTFY01 sp011523795*. The type genome for the species is the GenBank assembly GCA_011523795.1. The GC content of the type genome is 53.52 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Horomella vehemigena sp. nov.

Candidatus Horomella vehemigena (NL. fem. n. *vehemigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFKM01 sp001779575*. The type genome for the species is the GenBank assembly GCA_001779575.1. The GC content of the type genome is 42.19 % and the genome length is 0.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Horomella gen. nov.

Candidatus Horomella (NL. fem. n. *Horomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFKM01*. The type species for the genus is *Candidatus* Horomella vehemigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MFKM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Horomellaceae.

Description of *Candidatus* Horomellaceae fam. nov.

Candidatus Horomellaceae (NL. fem. n. *Horomellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MFKM01*. The type genus for the taxon is *Candidatus* Horomella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Horomia prognedo sp. nov.

Candidatus Horomia prognedo (NL. fem. n. *prognedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-45-21 sp001805575*. The type genome for the species is the GenBank assembly GCA_001805575.1. The GC content of the type genome is 44.59

% and the genome length is 1.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Horomia gen. nov.

Candidatus Horomia (NL. fem. n. *Horomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-45-21*. The type species for the genus is *Candidatus* Horomia prognedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12090*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabellaceae.

Description of *Candidatus* Horomia televibula sp. nov.

Candidatus Horomia televibula (NL. fem. n. *televibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-45-21 sp001805845*. The type genome for the species is the GenBank assembly GCA_001805605.1. The GC content of the type genome is 45.77 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Horomida derecimonas sp. nov.

Candidatus Horomida derecimonas (NL. fem. n. *derecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXIP01 sp005772825*. The type genome for the species is the GenBank assembly GCA_005772825.1. The GC content of the type genome is 49.42 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Horomida gen. nov.

Candidatus Horomida (NL. fem. n. *Horomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SXIP01*. The type species for the genus is *Candidatus* Horomida derecimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Horomosa inregitudo sp. nov.

Candidatus Horomosa inregitudo (NL. fem. n. *inregitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *172606-1 sp010119975*. The type genome for the species is the GenBank assembly RS_GCF_010119975.1. The GC content of the type genome is 40.75 % and the genome length is 8.98 Mbp.

Description of *Candidatus* Horomosa gen. nov.

Candidatus Horomosa (NL. fem. n. *Horomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *172606-1*. The type species for the genus is *Candidatus* Horomosa inregitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *172606-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Horomosaceae.

Description of *Candidatus* Horomosaceae fam. nov.

Candidatus Horomosaceae (NL. fem. n. *Horomosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *172606-1.* The type genus for the taxon is *Candidatus* Horomosa .

According to GTDB R06-RS202, this family belongs to the order *Cytophagales*.

Description of *Candidatus* Horomula vicecousia sp. nov.

Candidatus Horomula vicecousia (NL. fem. n. *vicecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-54-110 sp001789045*. The type genome for the species is the

GenBank assembly GCA_001787625.1. The GC content of the type genome is 54.32 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Horomula gen. nov.

Candidatus Horomula (NL. fem. n. *Horomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-54-110*. The type species for the genus is *Candidatus* Horomula vicecousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Hoyosella antimilenta sp. nov.

Candidatus Hoyosella antimilenta (NL. fem. n. *antimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hoyosella sp008312885*. The type genome for the species is the GenBank assembly RS_GCF_008312885.1. The GC content of the type genome is 68.36 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Humecaria optabisca sp. nov.

Candidatus Humecaria optabisca (NL. fem. n. *optabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002772825 sp002772825*. The type genome for the species is the GenBank assembly GCA_002772825.1. The GC content of the type genome is 38.45 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Humecaria gen. nov.

Candidatus Humecaria (NL. fem. n. *Humecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002772825*. The type species for the genus is *Candidatus* Humecaria optabisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GCA-002772825. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Humecariaceae.

Description of *Candidatus* Humecariaceae fam. nov.

Candidatus Humecariaceae (NL. fem. n. *Humecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002772825.* The type genus for the taxon is *Candidatus* Humecaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Letifosales.

Description of *Candidatus* Humecella decitastra sp. nov.

Candidatus Humecella decitastra (NL. fem. n. *decitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-J23 sp003280245*. The type genome for the species is the GenBank assembly GCA_003280245.1. The GC content of the type genome is 39.1 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Humecella gen. nov.

Candidatus Humecella (NL. fem. n. *Humecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-363-J23*. The type species for the genus is *Candidatus* Humecella decitastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Humecella herinitica sp. nov.

Candidatus Humecella herinitica (NL. fem. n. *herinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-J23 sp003280095*. The type genome for the species is the

GenBank assembly GCA_003280095.1. The GC content of the type genome is 39.69 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Humecia homagedo sp. nov.

Candidatus Humecia homagedo (NL. fem. n. *homagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Abin09 sp002897915*. The type genome for the species is the GenBank assembly GCA_002897915.1. The GC content of the type genome is 45.96 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Humecia gen. nov.

Candidatus Humecia (NL. fem. n. *Humecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Abin09*. The type species for the genus is *Candidatus* Humecia homagedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodosaceae.

Description of *Candidatus* Humecida cohoritia sp. nov.

Candidatus Humecida cohoritia (NL. fem. n. *cohoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-46-13 sp001778785*. The type genome for the species is the GenBank assembly GCA_001778785.1. The GC content of the type genome is 46.27 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Humecida gen. nov.

Candidatus Humecida (NL. fem. n. *Humecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-46-13*. The type species for the genus is *Candidatus*

Humecida cohoritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11713*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semidiaceae.

Description of *Candidatus* Humecida decinax sp. nov.

Candidatus Humecida decinax (NL. fem. n. *decinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-46-13 sp001778545*. The type genome for the species is the GenBank assembly GCA_001778815.1. The GC content of the type genome is 43.58 % and the genome length is 0.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; 10% subassembly".

Description of *Candidatus* Humecida faticicella sp. nov.

Candidatus Humecida faticicella (NL. fem. n. *faticicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-46-13 sp001780775*. The type genome for the species is the GenBank assembly GCA_001780775.1. The GC content of the type genome is 42.98 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Humecida refocisca sp. nov.

Candidatus Humecida refocisca (NL. fem. n. *refocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-46-13 sp001778905*. The type genome for the species is the GenBank assembly GCA_001780495.1. The GC content of the type genome is 43.89 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Humecosa allacastra sp. nov.

Candidatus Humecosa allacastra (NL. fem. n. *allacastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp902788555*. The type genome for the species is the GenBank assembly GCA_902788555.1. The GC content of the type genome is 37.18 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Humecosa gen. nov.

Candidatus Humecosa (NL. fem. n. *Humecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-127*. The type species for the genus is *Candidatus* Humecosa allacastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Humecosa annicilega sp. nov.

Candidatus Humecosa annicilega (NL. fem. n. *annicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp002369325*. The type genome for the species is the GenBank assembly GCA_002369325.1. The GC content of the type genome is 37.29 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Humecosa benifilega sp. nov.

Candidatus Humecosa benifilega (NL. fem. n. *benifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp002476495*. The type genome for the species is the GenBank assembly GCA_002476495.1. The GC content of the type genome is 38.69 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Humecosa colipifica sp. nov.

Candidatus Humecosa colipifica (NL. fem. n. *colipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp902800325*. The type genome for the species is the GenBank assembly GCA_902781715.1. The GC content of the type genome is 36.86 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Humecosa demogimonas sp. nov.

Candidatus Humecosa demogimonas (NL. fem. n. *demogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp900539705*. The type genome for the species is the GenBank assembly GCA_900539705.1. The GC content of the type genome is 44.24 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Humecosa exadvetta sp. nov.

Candidatus Humecosa exadvetta (NL. fem. n. *exadvetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp002404515*. The type genome for the species is the GenBank assembly GCA_002404515.1. The GC content of the type genome is 44.07 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Humecosa impigitura sp. nov.

Candidatus Humecosa impigitura (NL. fem. n. *impigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp002493625*. The type genome for the species is the GenBank assembly GCA_002493625.1. The GC content of the type genome is 40.75 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Humecosa innecisca sp. nov.

Candidatus Humecosa innecisca (NL. fem. n. *innecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp900766925*. The type genome for the species is the GenBank assembly RS_GCF_900766925.1. The GC content of the type genome is 38.27 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Humecosa laculilega sp. nov.

Candidatus Humecosa laculilega (NL. fem. n. *laculilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp900321145*. The type genome for the species is the GenBank assembly GCA_900321145.1. The GC content of the type genome is 47.26 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Humecosa negidedo sp. nov.

Candidatus Humecosa negidedo (NL. fem. n. *negidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp900767585*. The type genome for the species is the GenBank assembly RS_GCF_900767585.1. The GC content of the type genome is 44.35 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Humecosa nubecimonia sp. nov.

Candidatus Humecosa nubecimonia (NL. fem. n. *nubecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp900553925*. The type genome for the species is the GenBank assembly GCA_900553925.1. The GC content of the type genome is 45.55 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Humecosa octiniforma sp. nov.

Candidatus Humecosa octiniforma (NL. fem. n. *octiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp902780405*. The type genome for the species is the GenBank assembly GCA_902780405.1. The GC content of the type genome is 49.88 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Humecosa recogitio sp. nov.

Candidatus Humecosa recogitio (NL. fem. n. *recogitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp002431865*. The type genome for the species is the GenBank assembly GCA_002437385.1. The GC content of the type genome is 44.98 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Humecosa refacivita sp. nov.

Candidatus Humecosa refacivita (NL. fem. n. *refacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp902783015*. The type genome for the species is the GenBank assembly GCA_902783015.1. The GC content of the type genome is 51.58 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Humecosa relapousia sp. nov.

Candidatus Humecosa relapousia (NL. fem. n. *relapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp900319515*. The type genome for the species is the GenBank assembly GCA_014337155.1. The GC content of the type genome is 43.92 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Humecosa vaniditio sp. nov.

Candidatus Humecosa vaniditio (NL. fem. n. *vaniditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-127 sp902762955*. The type genome for the species is the GenBank assembly GCA_902762955.1. The GC content of the type genome is 37.31 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Humecula pinigibula sp. nov.

Candidatus Humecula pinigibula (NL. fem. n. *pinigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DUMW01 sp012839765*. The type genome for the species is the GenBank assembly GCA_012839765.1. The GC content of the type genome is 54.3 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Humecula gen. nov.

Candidatus Humecula (NL. fem. n. *Humecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMW01*. The type species for the genus is *Candidatus* Humecula pinigibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Humeculaceae.

Description of *Candidatus* Humeculaceae fam. nov.

Candidatus Humeculaceae (NL. fem. n. *Humeculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMW01.* The type genus for the taxon is *Candidatus* Humecula .

According to the original version of GTDB R06-RS202, this family belongs to the order *DUMW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Humeculales.

Description of *Candidatus* Humeculales ord. nov.

Candidatus Humeculales (NL. fem. n. *Humeculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMW01.* The type genus for the taxon is *Candidatus* Humecula .

According to the GTDB R06-RS202, this order belongs to the class *Limnochordia*.

Description of *Candidatus* Humibacter algebousia sp. nov.

Candidatus Humibacter algebousia (NL. fem. n. *algebousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Humibacter sp007859675*. The type genome for the species is the

GenBank assembly RS_GCF_007859675.1. The GC content of the type genome is 68.26 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Humibacter futatigena sp. nov.

Candidatus Humibacter futatigena (NL. fem. n. *futatigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Humibacter sp012985205*. The type genome for the species is the GenBank assembly RS_GCF_012985205.1. The GC content of the type genome is 67.48 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Humidesulfovibrio adoscatio sp. nov.

Candidatus Humidesulfovibrio adoscatio (NL. fem. n. *adoscatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Humidesulfovibrio sp001871085*. The type genome for the species is the GenBank assembly GCA_001871085.1. The GC content of the type genome is 65.26 % and the genome length is 2.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Humidesulfovibrio bugilax sp. nov.

Candidatus Humidesulfovibrio bugilax (NL. fem. n. *bugilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Humidesulfovibrio sp001799475*. The type genome for the species is the GenBank assembly GCA_001799475.1. The GC content of the type genome is 65.04 % and the genome length is 3.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Humidesulfovibrio desepibula sp. nov.

Candidatus Humidesulfovibrio desepibula (NL. fem. n. *desepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Humidesulfovibrio sp002422505*. The type genome for the species is

the GenBank assembly GCA_002422505.1. The GC content of the type genome is 65.01 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Humidesulfovibrio habacatica sp. nov.

Candidatus Humidesulfovibrio habacatica (NL. fem. n. *habacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Humidesulfovibrio sp002840405*. The type genome for the species is the GenBank assembly GCA_002840405.1. The GC content of the type genome is 65.16 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Humidesulfovibrio resulax sp. nov.

Candidatus Humidesulfovibrio resulax (NL. fem. n. *resulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Humidesulfovibrio sp903843965*. The type genome for the species is the GenBank assembly GCA_903837795.1. The GC content of the type genome is 65.95 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Hungateiclostridium biparentia sp. nov.

Candidatus Hungateiclostridium biparentia (NL. fem. n. *biparentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hungateiclostridium sp012523755*. The type genome for the species is the GenBank assembly GCA_012523755.1. The GC content of the type genome is 37.57 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Hungateiclostridium decomibula sp. nov.

Candidatus Hungateiclostridium decomibula (NL. fem. n. *decomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hungateiclostridium sp001512505*. The type genome for the species is the GenBank assembly GCA_001512505.1. The GC content of the type genome is 38.11 % and the genome length is 3.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors

for biogas production (methane)".

Description of *Candidatus* Hungateiclostridium milipisca sp. nov.

Candidatus Hungateiclostridium milipisca (NL. fem. n. *milipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hungateiclostridium sp012798835*. The type genome for the species is the GenBank assembly GCA_012798835.1. The GC content of the type genome is 38.65 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Hungatella tabifetta sp. nov.

Candidatus Hungatella tabifetta (NL. fem. n. *tabifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hungatella sp005845265*. The type genome for the species is the GenBank assembly RS_GCF_005845265.1. The GC content of the type genome is 48.52 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Hydrococcus dehonicula sp. nov.

Candidatus Hydrococcus dehonicula (NL. fem. n. *dehonicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrococcus sp012031035*. The type genome for the species is the GenBank assembly GCA_012034135.1. The GC content of the type genome is 42.12 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Hydrogenedens alembago sp. nov.

Candidatus Hydrogenedens alembago (NL. fem. n. *alembago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenedens sp011338105*. The type genome for the species is the GenBank assembly GCA_011338105.1. The GC content of the type genome is 36.95 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Hydrogeniiclostridium apharitoga sp. nov.

Candidatus Hydrogeniiclostridium apharitoga (NL. fem. n. *apharitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogeniiclostridium sp002160025*. The type genome for the species is the GenBank assembly RS_GCF_002160025.1. The GC content of the type genome is 54.31 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Hydrogeniiclostridium momoritica sp. nov.

Candidatus Hydrogeniiclostridium momoritica (NL. fem. n. *momoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogeniiclostridium sp900550095*. The type genome for the species is the GenBank assembly GCA_900550095.1. The GC content of the type genome is 53.49 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Hydrogeniiclostridium obtecedo sp. nov.

Candidatus Hydrogeniiclostridium obtecedo (NL. fem. n. *obtecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogeniiclostridium sp900752115*. The type genome for the species is the GenBank assembly RS_GCF_900752115.1. The GC content of the type genome is 55.67 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Hydrogenimonas admuritia sp. nov.

Candidatus Hydrogenimonas admuritia (NL. fem. n. *admuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenimonas sp003945285*. The type genome for the species is the GenBank assembly GCA_003945285.1. The GC content of the type genome is 50.17 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Hydrogenimonas adsucisca sp. nov.

Candidatus Hydrogenimonas adsucisca (NL. fem. n. *adsucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenimonas sp003978765*. The type genome for the species is the GenBank assembly GCA_003978765.1. The GC content of the type genome is 41.38 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Hydrogenimonas modifitica sp. nov.

Candidatus Hydrogenimonas modifitica (NL. fem. n. *modifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenimonas sp013153475*. The type genome for the species is the GenBank assembly GCA_013153475.1. The GC content of the type genome is 55.61 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Hydrogenivirga redacitas sp. nov.

Candidatus Hydrogenivirga redacitas (NL. fem. n. *redacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenivirga sp013153495*. The type genome for the species is the GenBank assembly GCA_013153495.1. The GC content of the type genome is 47.46 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Hydrogenoanaerobacterium adnicifica sp. nov.

Candidatus Hydrogenoanaerobacterium adnicifica (NL. fem. n. *adnicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenoanaerobacterium sp014384885*. The type genome for the species is the GenBank assembly GCA_014384885.1. The GC content of the type genome is 57.03 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Hydrogenobaculum entomastra sp. nov.

Candidatus Hydrogenobaculum entomastra (NL. fem. n. *entomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenobaculum sp002341805*. The type genome for the species is the GenBank assembly GCA_002341805.1. The GC content of the type genome is 33.78

% and the genome length is 1.57 Mbp.

Description of *Candidatus* Hydrogenobaculum fiduciforma sp. nov.

Candidatus Hydrogenobaculum fiduciforma (NL. fem. n. *fiduciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenobaculum sp000213785*. The type genome for the species is the GenBank assembly RS_GCF_000215065.1. The GC content of the type genome is 34.75 % and the genome length is 1.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "fresh water".

Description of *Candidatus* Hydrogenobaculum impavicella sp. nov.

Candidatus Hydrogenobaculum impavicella (NL. fem. n. *impavicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenobaculum sp002878215*. The type genome for the species is the GenBank assembly GCA_002878215.1. The GC content of the type genome is 35.28 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Hydrogenobaculum tiguritrix sp. nov.

Candidatus Hydrogenobaculum tiguritrix (NL. fem. n. *tiguritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenobaculum sp000020785*. The type genome for the species is the GenBank assembly RS_GCF_000020785.1. The GC content of the type genome is 34.85 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Hydrogenophaga admulentia sp. nov.

Candidatus Hydrogenophaga admulentia (NL. fem. n. *admulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp002001205*. The type genome for the species is the GenBank assembly RS_GCF_002001205.1. The GC content of the type genome is 65.53 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Hydrogenophaga adselitas sp. nov.

Candidatus Hydrogenophaga adselitas (NL. fem. n. *adselitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp002840835*. The type genome for the species is the GenBank assembly GCA_002840835.1. The GC content of the type genome is 63.35 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Hydrogenophaga advecax sp. nov.

Candidatus Hydrogenophaga advecax (NL. fem. n. *advecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp011390835*. The type genome for the species is the GenBank assembly GCA_011390835.1. The GC content of the type genome is 64.73 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Hydrogenophaga ambifentia sp. nov.

Candidatus Hydrogenophaga ambifentia (NL. fem. n. *ambifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp013823485*. The type genome for the species is the GenBank assembly GCA_013823485.1. The GC content of the type genome is 68.94 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Hydrogenophaga arcelago sp. nov.

Candidatus Hydrogenophaga arcelago (NL. fem. n. *arcelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp001713375*. The type genome for the species is the GenBank assembly RS_GCF_001713375.1. The GC content of the type genome is 65.51 % and the genome length is 4.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Chrysochromulina tobin phycosphere".

Description of *Candidatus* Hydrogenophaga artilimonia sp. nov.

Candidatus Hydrogenophaga artilimonia (NL. fem. n. *artilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp005503365*. The type genome for the species is the GenBank assembly RS_GCF_005503365.1. The GC content of the type genome is 65.61 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Hydrogenophaga bigaritica sp. nov.

Candidatus Hydrogenophaga bigaritica (NL. fem. n. *bigaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp011391495*. The type genome for the species is the GenBank assembly GCA_011391495.1. The GC content of the type genome is 66.5 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Hydrogenophaga desuratio sp. nov.

Candidatus Hydrogenophaga desuratio (NL. fem. n. *desuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp001770905*. The type genome for the species is the GenBank assembly GCA_001770905.1. The GC content of the type genome is 66.95 % and the genome length is 5.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Hydrogenophaga domicivita sp. nov.

Candidatus Hydrogenophaga domicivita (NL. fem. n. *domicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp006227785*. The type genome for the species is the GenBank assembly GCA_006227785.1. The GC content of the type genome is 65.88 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Hydrogenophaga exculugo sp. nov.

Candidatus Hydrogenophaga exculugo (NL. fem. n. *exculugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Hydrogenophaga sp003241965*. The type genome for the species is the GenBank assembly GCA_003241965.1. The GC content of the type genome is 64.93 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Hydrogenophaga exhorilenta sp. nov.

Candidatus Hydrogenophaga exhorilenta (NL. fem. n. *exhorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp013823505*. The type genome for the species is the GenBank assembly GCA_013823505.1. The GC content of the type genome is 65.06 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Hydrogenophaga forabatio sp. nov.

Candidatus Hydrogenophaga forabatio (NL. fem. n. *forabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp010104355*. The type genome for the species is the GenBank assembly RS_GCF_010104355.1. The GC content of the type genome is 65.27 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Hydrogenophaga incenatio sp. nov.

Candidatus Hydrogenophaga incenatio (NL. fem. n. *incenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp001428625*. The type genome for the species is the GenBank assembly RS_GCF_001428625.1. The GC content of the type genome is 65.11 % and the genome length is 5.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Hydrogenophaga indomicella sp. nov.

Candidatus Hydrogenophaga indomicella (NL. fem. n. *indomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp013823655*. The type genome for the species is the GenBank assembly GCA_013823655.1. The GC content of the type genome is 66.69 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Hydrogenophaga inmiticula sp. nov.

Candidatus Hydrogenophaga inmiticula (NL. fem. n. *inmiticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp011388215*. The type genome for the species is the GenBank assembly RS_GCF_011388215.1. The GC content of the type genome is 69.42 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Hydrogenophaga inmobimonas sp. nov.

Candidatus Hydrogenophaga inmobimonas (NL. fem. n. *inmobimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp002842215*. The type genome for the species is the GenBank assembly GCA_002842215.1. The GC content of the type genome is 65.44 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Hydrogenophaga inoffibula sp. nov.

Candidatus Hydrogenophaga inoffibula (NL. fem. n. *inoffibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp002127265*. The type genome for the species is the GenBank assembly RS_GCF_002127265.1. The GC content of the type genome is 64.98 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Hydrogenophaga irrevessa sp. nov.

Candidatus Hydrogenophaga irrevessa (NL. fem. n. *irrevessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp011390855*. The type genome for the species is the GenBank assembly GCA_011390855.1. The GC content of the type genome is 62.38 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Hydrogenophaga masocitudo sp. nov.

Candidatus Hydrogenophaga masocitudo (NL. fem. n. *masocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp002127215*. The type genome for the species is the GenBank assembly RS_GCF_002127215.1. The GC content of the type genome is 68.73 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Hydrogenophaga mirabilega sp. nov.

Candidatus Hydrogenophaga mirabilega (NL. fem. n. *mirabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp006227825*. The type genome for the species is the GenBank assembly GCA_006227825.1. The GC content of the type genome is 68.54 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Hydrogenophaga monogatica sp. nov.

Candidatus Hydrogenophaga monogatica (NL. fem. n. *monogatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp003509765*. The type genome for the species is the GenBank assembly GCA_003509765.1. The GC content of the type genome is 65.77 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Hydrogenophaga nicomugo sp. nov.

Candidatus Hydrogenophaga nicomugo (NL. fem. n. *nicomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp003599455*. The type genome for the species is the GenBank assembly GCA_003599455.1. The GC content of the type genome is 67.68 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Hydrogenophaga podagitudo sp. nov.

Candidatus Hydrogenophaga podagitudo (NL. fem. n. *podagitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Hydrogenophaga sp011772445*. The type genome for the species is the GenBank assembly GCA_011771805.1. The GC content of the type genome is 69.18 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Hydrogenophaga repagilega sp. nov.

Candidatus Hydrogenophaga repagilega (NL. fem. n. *repagilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp011391745*. The type genome for the species is the GenBank assembly GCA_011391745.1. The GC content of the type genome is 60.46 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Hydrogenophaga visifimonia sp. nov.

Candidatus Hydrogenophaga visifimonia (NL. fem. n. *visifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp009859475*. The type genome for the species is the GenBank assembly RS_GCF_009859475.1. The GC content of the type genome is 65.4 % and the genome length is 6.77 Mbp.

Description of *Candidatus* Hydrogenophaga volucetta sp. nov.

Candidatus Hydrogenophaga volucetta (NL. fem. n. *volucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenophaga sp004795855*. The type genome for the species is the GenBank assembly RS_GCF_004795855.1. The GC content of the type genome is 61.89 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Hydrogenothermus casabastra sp. nov.

Candidatus Hydrogenothermus casabastra (NL. fem. n. *casabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenothermus sp012961365*. The type genome for the species is the GenBank assembly GCA_012961365.1. The GC content of the type genome is 29.67 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Hydrogenothermus ceraritudo sp. nov.

Candidatus Hydrogenothermus ceraritudo (NL. fem. n. *ceraritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenothermus sp003978675*. The type genome for the species is the GenBank assembly GCA_003978675.1. The GC content of the type genome is 30.22 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Hydrogenovibrio adsigitudo sp. nov.

Candidatus Hydrogenovibrio adsigitudo (NL. fem. n. *adsigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenovibrio sp001507555*. The type genome for the species is the GenBank assembly RS_GCF_001507555.1. The GC content of the type genome is 50.12 % and the genome length is 2.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Kebrit brine-seawater interface".

Description of *Candidatus* Hydrogenovibrio clancetta sp. nov.

Candidatus Hydrogenovibrio clancetta (NL. fem. n. *clancetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenovibrio sp002299585*. The type genome for the species is the GenBank assembly GCA_002299585.1. The GC content of the type genome is 34.48 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Hydrogenovibrio coninitrix sp. nov.

Candidatus Hydrogenovibrio coninitrix (NL. fem. n. *coninitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenovibrio sp001507535*. The type genome for the species is the GenBank assembly RS_GCF_001507535.1. The GC content of the type genome is 53.73 % and the genome length is 2.28 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Kebrit brine-seawater interface".

Description of *Candidatus* Hydrogenovibrio exforivita sp. nov.

Candidatus Hydrogenovibrio exforivita (NL. fem. n. *exforivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenovibrio sp002848135*. The type genome for the species is the GenBank assembly RS_GCF_002848135.1. The GC content of the type genome is 42.87 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Hydrogenovibrio inmitastra sp. nov.

Candidatus Hydrogenovibrio inmitastra (NL. fem. n. *inmitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenovibrio sp000744875*. The type genome for the species is the GenBank assembly RS_GCF_000744875.1. The GC content of the type genome is 43.95 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Hydrogenovibrio munimifica sp. nov.

Candidatus Hydrogenovibrio munimifica (NL. fem. n. *munimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenovibrio sp009296185*. The type genome for the species is the GenBank assembly RS_GCF_009296185.1. The GC content of the type genome is 44.56 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Hydrogenovibrio podagimonas sp. nov.

Candidatus Hydrogenovibrio podagimonas (NL. fem. n. *podagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hydrogenovibrio sp002779995*. The type genome for the species is the GenBank assembly GCA_002786735.1. The GC content of the type genome is 43.61 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Hyella refulago sp. nov.

Candidatus Hyella refulago (NL. fem. n. *refulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyella sp012932785*. The type genome for the species is the GenBank assembly RS_GCF_012932785.1. The GC content of the type genome is 35.35 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Hylemonella adnilatio sp. nov.

Candidatus Hylemonella adnilatio (NL. fem. n. *adnilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hylemonella sp002454975*. The type genome for the species is the GenBank assembly GCA_002454975.1. The GC content of the type genome is 60.01 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Hylemonella adpaniforma sp. nov.

Candidatus Hylemonella adpaniforma (NL. fem. n. *adpaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hylemonella sp003500955*. The type genome for the species is the GenBank assembly GCA_003500955.1. The GC content of the type genome is 66.59 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Hylemonella defanitica sp. nov.

Candidatus Hylemonella defanitica (NL. fem. n. *defanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hylemonella sp002633085*. The type genome for the species is the GenBank assembly GCA_002633085.1. The GC content of the type genome is 63.09 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Hylemonella effigugo sp. nov.

Candidatus Hylemonella effigugo (NL. fem. n. *effigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hylemonella sp001432305*. The type genome for the species is the GenBank assembly RS_GCF_001432305.1. The GC content of the type genome is 65.5

% and the genome length is 3.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "river water".

Description of *Candidatus* Hylemonella incucitas sp. nov.

Candidatus Hylemonella incucitas (NL. fem. n. *incucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hylemonella sp013334205*. The type genome for the species is the GenBank assembly RS_GCF_013334205.1. The GC content of the type genome is 65.56 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Hylemonella lapiletta sp. nov.

Candidatus Hylemonella lapiletta (NL. fem. n. *lapiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hylemonella sp001797315*. The type genome for the species is the GenBank assembly GCA_003537855.1. The GC content of the type genome is 64.15 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Hylemonella pudibago sp. nov.

Candidatus Hylemonella pudibago (NL. fem. n. *pudibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hylemonella sp002342165*. The type genome for the species is the GenBank assembly GCA_002342165.1. The GC content of the type genome is 55.5 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Hymenobacter adinvicella sp. nov.

Candidatus Hymenobacter adinvicella (NL. fem. n. *adinvicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp001280305*. The type genome for the species is the GenBank assembly RS_GCF_001280305.1. The GC content of the type genome is 57.29 % and the genome length is 3.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Hymenobacter adlocitura sp. nov.

Candidatus Hymenobacter adlocitura (NL. fem. n. *adlocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp000801315*. The type genome for the species is the GenBank assembly RS_GCF_000801315.1. The GC content of the type genome is 57.54 % and the genome length is 4.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Hymenobacter advoratio sp. nov.

Candidatus Hymenobacter advoratio (NL. fem. n. *advoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp013256425*. The type genome for the species is the GenBank assembly RS_GCF_013256425.1. The GC content of the type genome is 59.46 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Hymenobacter affulicella sp. nov.

Candidatus Hymenobacter affulicella (NL. fem. n. *affulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp012275535*. The type genome for the species is the GenBank assembly RS_GCF_012275535.1. The GC content of the type genome is 61.2 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Hymenobacter annucitia sp. nov.

Candidatus Hymenobacter annucitia (NL. fem. n. *annucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp013377905*. The type genome for the species is the GenBank assembly RS_GCF_013377905.1. The GC content of the type genome is 59.9 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Hymenobacter apsegitia sp. nov.

Candidatus Hymenobacter apsegitia (NL. fem. n. *apsegitia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp013256625*. The type genome for the species is the GenBank assembly RS_GCF_013256625.1. The GC content of the type genome is 61.41 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Hymenobacter assicago sp. nov.

Candidatus Hymenobacter assicago (NL. fem. n. *assicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp007713685*. The type genome for the species is the GenBank assembly RS_GCF_007713685.1. The GC content of the type genome is 58.37 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Hymenobacter bacifitia sp. nov.

Candidatus Hymenobacter bacifitia (NL. fem. n. *bacifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp004355185*. The type genome for the species is the GenBank assembly RS_GCF_004355185.1. The GC content of the type genome is 54.26 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Hymenobacter caselatica sp. nov.

Candidatus Hymenobacter caselatica (NL. fem. n. *caselatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp004745825*. The type genome for the species is the GenBank assembly RS_GCF_004745825.1. The GC content of the type genome is 56.69 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Hymenobacter cenotitura sp. nov.

Candidatus Hymenobacter cenotitura (NL. fem. n. *cenotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp003417065*. The type genome for the species is the GenBank assembly RS_GCF_003417065.1. The GC content of the type genome is 59.65 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Hymenobacter cilotax sp. nov.

Candidatus Hymenobacter cilotax (NL. fem. n. *cilotax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp002154225*. The type genome for the species is the GenBank assembly RS_GCF_002154225.1. The GC content of the type genome is 55.05 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Hymenobacter ciminimonas sp. nov.

Candidatus Hymenobacter ciminimonas (NL. fem. n. *ciminimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp014333585*. The type genome for the species is the GenBank assembly RS_GCF_014333585.1. The GC content of the type genome is 54.31 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Hymenobacter citocilenta sp. nov.

Candidatus Hymenobacter citocilenta (NL. fem. n. *citocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp013137895*. The type genome for the species is the GenBank assembly RS_GCF_013137895.1. The GC content of the type genome is 56.15 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Hymenobacter cuferitica sp. nov.

Candidatus Hymenobacter cuferitica (NL. fem. n. *cuferitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp004684095*. The type genome for the species is the GenBank assembly RS_GCF_004684095.1. The GC content of the type genome is 60.66 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Hymenobacter decapilega sp. nov.

Candidatus Hymenobacter decapilega (NL. fem. n. *decapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp001596155*. The type genome for the species is the GenBank assembly RS_GCF_001596155.1. The GC content of the type genome is 60.93 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Hymenobacter depupessa sp. nov.

Candidatus Hymenobacter depupessa (NL. fem. n. *depupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp006352025*. The type genome for the species is the GenBank assembly RS_GCF_006352025.1. The GC content of the type genome is 59.6 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Hymenobacter derecugo sp. nov.

Candidatus Hymenobacter derecugo (NL. fem. n. *derecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp014333525*. The type genome for the species is the GenBank assembly RS_GCF_014333525.1. The GC content of the type genome is 59.58 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Hymenobacter endivago sp. nov.

Candidatus Hymenobacter endivago (NL. fem. n. *endivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp013294115*. The type genome for the species is the GenBank assembly RS_GCF_013294115.1. The GC content of the type genome is 64.88 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Hymenobacter fidenedo sp. nov.

Candidatus Hymenobacter fidenedo (NL. fem. n. *fidenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp000715495*. The type genome for the species is the GenBank assembly RS_GCF_000715495.1. The GC content of the type genome is 60.69 % and the genome length is 5.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Fresh Water Lake L43 Ice Water Interface".

Description of *Candidatus* Hymenobacter galacitudo sp. nov.

Candidatus Hymenobacter galacitudo (NL. fem. n. *galacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp003944705*. The type genome for the species is the GenBank assembly RS_GCF_003944705.1. The GC content of the type genome is 59.84 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Hymenobacter haricitrix sp. nov.

Candidatus Hymenobacter haricitrix (NL. fem. n. *haricitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp004745645*. The type genome for the species is the GenBank assembly RS_GCF_004745645.1. The GC content of the type genome is 59.49 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Hymenobacter inlapilega sp. nov.

Candidatus Hymenobacter inlapilega (NL. fem. n. *inlapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp013377885*. The type genome for the species is the GenBank assembly RS_GCF_013377885.1. The GC content of the type genome is 60.48 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Hymenobacter insepitudo sp. nov.

Candidatus Hymenobacter insepitudo (NL. fem. n. *insepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp014333615*. The type genome for the species is the GenBank assembly RS_GCF_014333615.1. The GC content of the type genome is 57.27 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Hymenobacter intolitrix sp. nov.

Candidatus Hymenobacter intolitrix (NL. fem. n. *intolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp001562275*. The type genome for the species is the GenBank assembly RS_GCF_001562275.1. The GC content of the type genome is 63.08 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Hymenobacter macilessa sp. nov.

Candidatus Hymenobacter macilessa (NL. fem. n. *macilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp009755225*. The type genome for the species is the GenBank assembly RS_GCF_009755225.1. The GC content of the type genome is 59.27 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Hymenobacter necopago sp. nov.

Candidatus Hymenobacter necopago (NL. fem. n. *necopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp012927305*. The type genome for the species is the GenBank assembly RS_GCF_012927305.1. The GC content of the type genome is 62.82 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Hymenobacter nicotatica sp. nov.

Candidatus Hymenobacter nicotatica (NL. fem. n. *nicotatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp014217645*. The type genome for the species is the GenBank assembly RS_GCF_014217645.1. The GC content of the type genome is 56.65

% and the genome length is 5.39 Mbp.

Description of *Candidatus* Hymenobacter nicotifica sp. nov.

Candidatus Hymenobacter nicotifica (NL. fem. n. *nicotifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp003634355*. The type genome for the species is the GenBank assembly RS_GCF_003634355.1. The GC content of the type genome is 56.6 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Hymenobacter pericago sp. nov.

Candidatus Hymenobacter pericago (NL. fem. n. *pericago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp000737515*. The type genome for the species is the GenBank assembly RS_GCF_000737515.1. The GC content of the type genome is 61.84 % and the genome length is 5.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "silkworm feces".

Description of *Candidatus* Hymenobacter recoritoga sp. nov.

Candidatus Hymenobacter recoritoga (NL. fem. n. *recoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp012273015*. The type genome for the species is the GenBank assembly RS_GCF_012273015.1. The GC content of the type genome is 59.83 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Hymenobacter stercugo sp. nov.

Candidatus Hymenobacter stercugo (NL. fem. n. *stercugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp008728635*. The type genome for the species is the GenBank assembly RS_GCF_008728635.1. The GC content of the type genome is 59.78 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Hymenobacter ulcisivita sp. nov.

Candidatus Hymenobacter ulcisivita (NL. fem. n. *ulcisivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hymenobacter sp014250515*. The type genome for the species is the GenBank assembly RS_GCF_014250515.1. The GC content of the type genome is 57.91 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Hyphobacterium aspilivita sp. nov.

Candidatus Hyphobacterium aspilivita (NL. fem. n. *aspilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphobacterium sp002783385*. The type genome for the species is the GenBank assembly GCA_002783385.1. The GC content of the type genome is 59.28 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Hyphobacterium macilibula sp. nov.

Candidatus Hyphobacterium macilibula (NL. fem. n. *macilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphobacterium sp014323565*. The type genome for the species is the GenBank assembly RS_GCF_014323565.1. The GC content of the type genome is 60.15 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Hyphobacterium sifunastra sp. nov.

Candidatus Hyphobacterium sifunastra (NL. fem. n. *sifunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphobacterium sp002692855*. The type genome for the species is the GenBank assembly GCA_002325265.1. The GC content of the type genome is 63.98 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Hyphomicrobium addubiforma sp. nov.

Candidatus Hyphomicrobium addubiforma (NL. fem. n. *addubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp002928955*. The type genome for the species is the GenBank assembly GCA_002928955.1. The GC content of the type genome is 62.45 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Hyphomicrobium adoscicula sp. nov.

Candidatus Hyphomicrobium adoscicula (NL. fem. n. *adoscicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp003987855*. The type genome for the species is the GenBank assembly GCA_003987855.1. The GC content of the type genome is 59.62 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Hyphomicrobium atricimonia sp. nov.

Candidatus Hyphomicrobium atricimonia (NL. fem. n. *atricimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp902825785*. The type genome for the species is the GenBank assembly GCA_902825785.1. The GC content of the type genome is 61.82 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Hyphomicrobium decucisca sp. nov.

Candidatus Hyphomicrobium decucisca (NL. fem. n. *decucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp000384335*. The type genome for the species is the GenBank assembly RS_GCF_000384335.2. The GC content of the type genome is 59.54 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Hyphomicrobium desonibula sp. nov.

Candidatus Hyphomicrobium desonibula (NL. fem. n. *desonibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp013141015*. The type genome for the species is the GenBank assembly GCA_013141015.1. The GC content of the type genome is 59.84 %

and the genome length is 3.94 Mbp.

Description of *Candidatus* Hyphomicrobium divoritica sp. nov.

Candidatus Hyphomicrobium divoritica (NL. fem. n. *divoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp002279935*. The type genome for the species is the GenBank assembly GCA_002279935.1. The GC content of the type genome is 61.61 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Hyphomicrobium ecnepitica sp. nov.

Candidatus Hyphomicrobium ecnepitica (NL. fem. n. *ecnepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp001464285*. The type genome for the species is the GenBank assembly GCA_001464285.1. The GC content of the type genome is 60.31 % and the genome length is 5.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Hyphomicrobium ineffilega sp. nov.

Candidatus Hyphomicrobium ineffilega (NL. fem. n. *ineffilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp900117455*. The type genome for the species is the GenBank assembly RS_GCF_900117455.1. The GC content of the type genome is 63.64 % and the genome length is 4.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Corroded Artesian Bore Well".

Description of *Candidatus* Hyphomicrobium luceressa sp. nov.

Candidatus Hyphomicrobium luceressa (NL. fem. n. *luceressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp003987725*. The type genome for the species is the GenBank assembly GCA_003987725.1. The GC content of the type genome is 59.94 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Hyphomicrobium pavicitrix sp. nov.

Candidatus Hyphomicrobium pavicitrix (NL. fem. n. *pavicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp002928735*. The type genome for the species is the GenBank assembly GCA_013821915.1. The GC content of the type genome is 62.18 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Hyphomicrobium petulatica sp. nov.

Candidatus Hyphomicrobium petulatica (NL. fem. n. *petulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp002928395*. The type genome for the species is the GenBank assembly GCA_002928395.1. The GC content of the type genome is 63.23 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Hyphomicrobium semunago sp. nov.

Candidatus Hyphomicrobium semunago (NL. fem. n. *semunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp902826555*. The type genome for the species is the GenBank assembly GCA_902826555.1. The GC content of the type genome is 64.28 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Hyphomicrobium sicunago sp. nov.

Candidatus Hyphomicrobium sicunago (NL. fem. n. *sicunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp002928515*. The type genome for the species is the GenBank assembly GCA_002928515.1. The GC content of the type genome is 55.04 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Hyphomicrobium telegisca sp. nov.

Candidatus Hyphomicrobium telegisca (NL. fem. n. *telegisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium sp000253295*. The type genome for the species is the GenBank assembly RS_GCF_000526135.1. The GC content of the type genome is 59.47 % and the genome length is 4.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Hyphomicrobium benivitoga sp. nov.

Candidatus Hyphomicrobium benivitoga (NL. fem. n. *benivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium_A sp009026145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009026145.1. The GC content of the type genome is 64.85 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Hyphomicrobium paracitudo sp. nov.

Candidatus Hyphomicrobium paracitudo (NL. fem. n. *paracitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium_A sp900117445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900117445.1. The GC content of the type genome is 62.8 % and the genome length is 4.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Coal seam gas extraction bore well".

Description of *Candidatus* Hyphomicrobium pinificula sp. nov.

Candidatus Hyphomicrobium pinificula (NL. fem. n. *pinificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomicrobium_A sp009708035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly RS_GCF_009708035.1. The GC content of the type genome is 65.1 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Hyphomonas acceritura sp. nov.

Candidatus Hyphomonas acceritura (NL. fem. n. *acceritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp002695785*. The type genome for the species is the GenBank assembly GCA_002695785.1. The GC content of the type genome is 59.47 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Hyphomonas decucatio sp. nov.

Candidatus Hyphomonas decucatio (NL. fem. n. *decucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp000682775*. The type genome for the species is the GenBank assembly GCA_002375605.1. The GC content of the type genome is 58.5 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Hyphomonas fatifibula sp. nov.

Candidatus Hyphomonas fatifibula (NL. fem. n. *fatifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp002700305*. The type genome for the species is the GenBank assembly GCA_002700305.1. The GC content of the type genome is 61.57 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Hyphomonas nidifitura sp. nov.

Candidatus Hyphomonas nidifitura (NL. fem. n. *nidifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp002414505*. The type genome for the species is the GenBank assembly GCA_002695955.1. The GC content of the type genome is 60.18 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Hyphomonas nimiredo sp. nov.

Candidatus Hyphomonas nimiredo (NL. fem. n. *nimiredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp002841155*. The type genome for the species is the GenBank assembly GCA_002841155.1. The GC content of the type genome is 61.61 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Hyphomonas paralilega sp. nov.

Candidatus Hyphomonas paralilega (NL. fem. n. *paralilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp000682735*. The type genome for the species is the GenBank assembly RS_GCF_003263315.1. The GC content of the type genome is 60.7 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Hyphomonas plostitoga sp. nov.

Candidatus Hyphomonas plostitoga (NL. fem. n. *plostitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp013823385*. The type genome for the species is the GenBank assembly GCA_013823385.1. The GC content of the type genome is 62.92 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Hyphomonas recocilenta sp. nov.

Candidatus Hyphomonas recocilenta (NL. fem. n. *recocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp000961795*. The type genome for the species is the GenBank assembly GCA_000961795.1. The GC content of the type genome is 60.92 % and the genome length is 4.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Hyphomonas refacibra sp. nov.

Candidatus Hyphomonas refacibra (NL. fem. n. *refacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp002282565*. The type genome for the species is the GenBank assembly GCA_002282565.1. The GC content of the type genome is 61.93 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Hyphomonas remedibula sp. nov.

Candidatus Hyphomonas remedibula (NL. fem. n. *remedibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp013791775*. The type genome for the species is the GenBank assembly GCA_013791775.1. The GC content of the type genome is 63.8 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Hyphomonas tegumitura sp. nov.

Candidatus Hyphomonas tegumitura (NL. fem. n. *tegumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp001464545*. The type genome for the species is the GenBank assembly GCA_001464545.1. The GC content of the type genome is 64.44 % and the genome length is 3.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Hyphomonas timefibra sp. nov.

Candidatus Hyphomonas timefibra (NL. fem. n. *timefibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp000961695*. The type genome for the species is the GenBank assembly GCA_000961695.1. The GC content of the type genome is 61.39 % and the genome length is 3.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Hyphomonas tubicitica sp. nov.

Candidatus Hyphomonas tubicitica (NL. fem. n. *tubicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Hyphomonas sp003486945*. The type genome for the species is the GenBank assembly GCA_003486945.1. The GC content of the type genome is 62.52 % and the genome length is 3.12 Mbp.

Description of *Candidatus* ISDg abluvigena sp. nov.

Candidatus ISDg abluvigena (NL. fem. n. *abluvigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *ISDg sp902797475*. The type genome for the species is the GenBank assembly GCA_902797475.1. The GC content of the type genome is 51.93 % and the genome length is 1.65 Mbp.

Description of *Candidatus* ISDg adposilenta sp. nov.

Candidatus ISDg adposilenta (NL. fem. n. *adposilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *ISDg sp902798585*. The type genome for the species is the GenBank assembly GCA_902798585.1. The GC content of the type genome is 54.3 % and the genome length is 2.59 Mbp.

Description of *Candidatus* ISDg affabitas sp. nov.

Candidatus ISDg affabitas (NL. fem. n. *affabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *ISDg sp902783725*. The type genome for the species is the GenBank assembly GCA_902783725.1. The GC content of the type genome is 56.56 % and the genome length is 1.97 Mbp.

Description of *Candidatus* ISDg armiditas sp. nov.

Candidatus ISDg armiditas (NL. fem. n. *armiditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *ISDg sp902795625*. The type genome for the species is the GenBank assembly GCA_902795625.1. The GC content of the type genome is 55.91 % and the genome length is 2.1 Mbp.

Description of *Candidatus* ISDg benevimonas sp. nov.

Candidatus ISDg benevimonas (NL. fem. n. *benevimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *ISDg sp002479645*. The type genome for the species is the GenBank assembly GCA_002415425.1. The GC content of the type genome is 47.75 % and the genome length is 1.85 Mbp.

Description of *Candidatus* ISDg desonimonia sp. nov.

Candidatus ISDg desonimonia (NL. fem. n. *desonimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *ISDg sp902787715*. The type genome for the species is the GenBank assembly GCA_902775585.1. The GC content of the type genome is 54.74 % and the genome length is 2.44 Mbp.

Description of *Candidatus* ISDg levifitura sp. nov.

Candidatus ISDg levifitura (NL. fem. n. *levifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *ISDg sp002311665*. The type genome for the species is the GenBank assembly GCA_002311665.1. The GC content of the type genome is 55.69 % and the genome length is 2.8 Mbp.

Description of *Candidatus* ISDg taraxugo sp. nov.

Candidatus ISDg taraxugo (NL. fem. n. *taraxugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *ISDg sp002308955*. The type genome for the species is the GenBank assembly GCA_002308955.1. The GC content of the type genome is 52.05 % and the

genome length is 2.18 Mbp.

Description of *Candidatus* ISDg tenebugo sp. nov.

Candidatus ISDg tenebugo (NL. fem. n. *tenebugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *ISDg sp002315495*. The type genome for the species is the GenBank assembly GCA_002315495.1. The GC content of the type genome is 46.42 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Ichthyenterobacterium dicimimonia sp. nov.

Candidatus Ichthyenterobacterium dicimimonia (NL. fem. n. *dicimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ichthyenterobacterium sp002162765*. The type genome for the species is the GenBank assembly GCA_002162765.1. The GC content of the type genome is 33.52 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Idcirana ambacedo sp. nov.

Candidatus Idcirana ambacedo (NL. fem. n. *ambacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABRT01 sp011390935*. The type genome for the species is the GenBank assembly GCA_011390935.1. The GC content of the type genome is 67.37 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Idcirana gen. nov.

Candidatus Idcirana (NL. fem. n. *Idcirana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABRT01*. The type species for the genus is *Candidatus* Idcirana ambacedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Idcirana ficulibra sp. nov.

Candidatus Idcirana ficulibra (NL. fem. n. *ficulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABRT01 sp011390885*. The type genome for the species is the GenBank assembly GCA_011390885.1. The GC content of the type genome is 70.84 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Idcirana valefastra sp. nov.

Candidatus Idcirana valefastra (NL. fem. n. *valefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABRT01 sp011390805*. The type genome for the species is the GenBank assembly GCA_011390805.1. The GC content of the type genome is 61.92 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Idciraria almucastra sp. nov.

Candidatus Idciraria almucastra (NL. fem. n. *almucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUOQ01 sp012034795*. The type genome for the species is the GenBank assembly GCA_012034795.1. The GC content of the type genome is 48.64 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Idciraria gen. nov.

Candidatus Idciraria (NL. fem. n. *Idciraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUOQ01*. The type species for the genus is *Candidatus* Idciraria almucastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Idcirella monopousia sp. nov.

Candidatus Idcirella monopousia (NL. fem. n. *monopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ML27 sp009362845*. The type genome for the species is the GenBank assembly RS_GCF_009362845.1. The GC content of the type genome is 45.62 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Idcirella gen. nov.

Candidatus Idcirella (NL. fem. n. *Idcirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ML27*. The type species for the genus is *Candidatus* Idcirella monopousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Idciria avuncivita sp. nov.

Candidatus Idciria avuncivita (NL. fem. n. *avuncivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYPI01 sp005804005*. The type genome for the species is the GenBank assembly GCA_005804005.1. The GC content of the type genome is 65.28 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Idciria gen. nov.

Candidatus Idciria (NL. fem. n. *Idciria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYPI01*. The type species for the genus is *Candidatus* Idciria avuncivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Idciria bicapicella sp. nov.

Candidatus Idciria bicapicella (NL. fem. n. *bicapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYPI01 sp009692045*. The type genome for the species is the GenBank assembly GCA_009692045.1. The GC content of the type genome is 60.25 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Idcirida arrecivita sp. nov.

Candidatus Idcirida arrecivita (NL. fem. n. *arrecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-185 sp003228685*. The type genome for the species is the GenBank assembly GCA_003228685.1. The GC content of the type genome is 63.14 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Idcirida gen. nov.

Candidatus Idcirida (NL. fem. n. *Idcirida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-185*. The type species for the genus is *Candidatus* Idcirida arrecivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-68-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tetenariaceae.

Description of *Candidatus* Ideonella aspiletta sp. nov.

Candidatus Ideonella aspiletta (NL. fem. n. *aspiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ideonella sp010499455*. The type genome for the species is the GenBank assembly RS_GCF_010499455.1. The GC content of the type genome is 70.01 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Ideonella ecfacivita sp. nov.

Candidatus Ideonella ecfacivita (NL. fem. n. *ecfacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Ideonella sp002255925*. The type genome for the species is the GenBank assembly GCA_002255925.1. The GC content of the type genome is 66.57 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Ideonella indivedo sp. nov.

Candidatus Ideonella indivedo (NL. fem. n. *indivedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ideonella sp000333615*. The type genome for the species is the GenBank assembly RS_GCF_000333615.1. The GC content of the type genome is 68.71 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Ideonella pinacedo sp. nov.

Candidatus Ideonella pinacedo (NL. fem. n. *pinacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ideonella sp004359425*. The type genome for the species is the GenBank assembly GCA_004359425.1. The GC content of the type genome is 62.5 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Idiomarina dimacessa sp. nov.

Candidatus Idiomarina dimacessa (NL. fem. n. *dimacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Idiomarina sp002685255*. The type genome for the species is the GenBank assembly GCA_002364475.1. The GC content of the type genome is 47.6 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Idiomarina navicastra sp. nov.

Candidatus Idiomarina navicastra (NL. fem. n. *navicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Idiomarina sp002808045*. The type genome for the species is the GenBank assembly RS_GCF_002808045.1. The GC content of the type genome is 47.27 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Idiomarina panifigena sp. nov.

Candidatus Idiomarina panifigena (NL. fem. n. *panifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Idiomarina sp001870515*. The type genome for the species is the GenBank assembly RS_GCF_001870515.1. The GC content of the type genome is 47.47 % and the genome length is 2.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "solar salterns".

Description of *Candidatus* Idiomarina serotago sp. nov.

Candidatus Idiomarina serotago (NL. fem. n. *serotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Idiomarina sp002729675*. The type genome for the species is the GenBank assembly GCA_002732745.1. The GC content of the type genome is 48.72 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Idipsana gemebitio sp. nov.

Candidatus Idipsana gemebitio (NL. fem. n. *gemebitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPR01 sp013202385*. The type genome for the species is the GenBank assembly GCA_013202385.1. The GC content of the type genome is 44.24 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Idipsana gen. nov.

Candidatus Idipsana (NL. fem. n. *Idipsana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPR01*. The type species for the genus is *Candidatus* Idipsana gemebitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8477*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogosaceae.

Description of *Candidatus* Idipsana mahemitas sp. nov.

Candidatus Idipsana mahemitas (NL. fem. n. *mahemitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPR01 sp013203185*. The type genome for the species is the GenBank assembly GCA_013203185.1. The GC content of the type genome is 44.07 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Idipsana omnivibula sp. nov.

Candidatus Idipsana omnivibula (NL. fem. n. *omnivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPR01 sp013202495*. The type genome for the species is the GenBank assembly GCA_013202495.1. The GC content of the type genome is 43.45 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Idipsana pinifitudo sp. nov.

Candidatus Idipsana pinifitudo (NL. fem. n. *pinifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPR01 sp013202895*. The type genome for the species is the GenBank assembly GCA_013202895.1. The GC content of the type genome is 43.06 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Idipsana sicunilega sp. nov.

Candidatus Idipsana sicunilega (NL. fem. n. *sicunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPR01 sp014382565*. The type genome for the species is the GenBank assembly GCA_014382565.1. The GC content of the type genome is 44.0 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Idipsaria ammodedo sp. nov.

Candidatus Idipsaria ammodedo (NL. fem. n. *ammodedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CV81 sp003506635*. The type genome for the species is the GenBank assembly GCA_003506635.1. The GC content of the type genome is 64.51 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Idipsaria gen. nov.

Candidatus Idipsaria (NL. fem. n. *Idipsaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CV81*. The type species for the genus is *Candidatus* Idipsaria ammodedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Idipsaria catapiforma sp. nov.

Candidatus Idipsaria catapiforma (NL. fem. n. *catapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CV81 sp902826095*. The type genome for the species is the GenBank assembly GCA_902826095.1. The GC content of the type genome is 62.91 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Idipsaria invetugo sp. nov.

Candidatus Idipsaria invetugo (NL. fem. n. *invetugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CV81 sp013389125*. The type genome for the species is the GenBank assembly GCA_013389125.1. The GC content of the type genome is 64.14 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Idipsaria tirocousia sp. nov.

Candidatus Idipsaria tirocousia (NL. fem. n. *tirocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CV81 sp001767925*. The type genome for the species is the GenBank assembly GCA_001767925.1. The GC content of the type genome is 63.17 % and the genome length is 3.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Idipsida scaccimonia sp. nov.

Candidatus Idipsida scaccimonia (NL. fem. n. *scaccimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REBX01 sp007692505*. The type genome for the species is the GenBank assembly GCA_007692505.1. The GC content of the type genome is 70.46 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Idipsida gen. nov.

Candidatus Idipsida (NL. fem. n. *Idipsida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REBX01*. The type species for the genus is *Candidatus* Idipsida scaccimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Idipsosa decitivita sp. nov.

Candidatus Idipsosa decitivita (NL. fem. n. *decitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-14 sp000990355*. The type genome for the species is the GenBank assembly GCA_000990355.1. The GC content of the type genome is 36.23 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Idipsosa gen. nov.

Candidatus Idipsosa (NL. fem. n. *Idipsosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-37-14*. The type species for the genus is *Candidatus* Idipsosa decitivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Idipsula ascalibra sp. nov.

Candidatus Idipsula ascalibra (NL. fem. n. *ascalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REEE01 sp007695245*. The type genome for the species is the GenBank assembly GCA_007695245.1. The GC content of the type genome is 63.34 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Idipsula gen. nov.

Candidatus Idipsula (NL. fem. n. *Idipsula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REEE01*. The type species for the genus is *Candidatus* Idipsula ascalibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignatzschineria utrinitio sp. nov.

Candidatus Ignatzschineria utrinitio (NL. fem. n. *utrinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ignatzschineria sp002252045*. The type genome for the species is the GenBank assembly RS_GCF_002252045.1. The GC content of the type genome is 41.55 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Ignavibacterium catapatio sp. nov.

Candidatus Ignavibacterium catapatio (NL. fem. n. *catapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ignavibacterium sp900696555*. The type genome for the species is the GenBank assembly GCA_013285425.1. The GC content of the type genome is 33.47 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Ignavibacterium forinago sp. nov.

Candidatus Ignavibacterium forinago (NL. fem. n. *forinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ignavibacterium sp003538625*. The type genome for the species is the GenBank assembly GCA_003538625.1. The GC content of the type genome is 33.58 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Ignavibacterium metabivita sp. nov.

Candidatus Ignavibacterium metabivita (NL. fem. n. *metabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ignavibacterium sp002050295*. The type genome for the species is the GenBank assembly GCA_002050295.1. The GC content of the type genome is 33.01 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Ignicana cisalago sp. nov.

Candidatus Ignicana cisalago (NL. fem. n. *cisalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4096 sp002422605*. The type genome for the species is the GenBank assembly GCA_002422605.1. The GC content of the type genome is 40.74 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Ignicana gen. nov.

Candidatus Ignicana (NL. fem. n. *Ignicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4096*. The type species for the genus is *Candidatus* Ignicana cisalago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignicana conigibula sp. nov.

Candidatus Ignicana conigibula (NL. fem. n. *conigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4096 sp002381945*. The type genome for the species is the GenBank assembly GCA_002381945.1. The GC content of the type genome is 40.69 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Ignicana inguratio sp. nov.

Candidatus Ignicana inguratio (NL. fem. n. *inguratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4096 sp002381765*. The type genome for the species is the GenBank assembly GCA_002381765.1. The GC content of the type genome is 41.75 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Ignicana lenuniforma sp. nov.

Candidatus Ignicana lenuniforma (NL. fem. n. *lenuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4096 sp002482685*. The type genome for the species is the GenBank assembly GCA_002482685.1. The GC content of the type genome is 41.25 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Ignicana vepalousia sp. nov.

Candidatus Ignicana vepalousia (NL. fem. n. *vepalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4096 sp005791855*. The type genome for the species is the GenBank assembly GCA_005791855.1. The GC content of the type genome is 60.58 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Ignicella obnupicula sp. nov.

Candidatus Ignicella obnupicula (NL. fem. n. *obnupicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1572 sp900553045*. The type genome for the species is the GenBank assembly GCA_900553045.1. The GC content of the type genome is 30.73 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Ignicella gen. nov.

Candidatus Ignicella (NL. fem. n. *Ignicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1572*. The type species for the genus is *Candidatus* Ignicella obnupicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Ignicia affunibra sp. nov.

Candidatus Ignicia affunibra (NL. fem. n. *affunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMFT01 sp007376195*. The type genome for the species is the GenBank assembly GCA_007376195.1. The GC content of the type genome is 45.97 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Ignicia gen. nov.

Candidatus Ignicia (NL. fem. n. *Ignicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMFT01*. The type species for the genus is *Candidatus* Ignicia affunibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-48-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifariaceae.

Description of *Candidatus* Ignicida adtilivita sp. nov.

Candidatus Ignicida adtilivita (NL. fem. n. *adtilivita* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0074137 sp001464715*. The type genome for the species is the GenBank assembly GCA_001464715.1. The GC content of the type genome is 51.07 % and the genome length is 3.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Ignicida gen. nov.

Candidatus Ignicida (NL. fem. n. *Ignicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0074137*. The type species for the genus is *Candidatus* Ignicida adtilivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignifana palififorma sp. nov.

Candidatus Ignifana palififorma (NL. fem. n. *palififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-42-12 sp002787695*. The type genome for the species is the GenBank assembly GCA_002787695.1. The GC content of the type genome is 41.83 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Ignifana gen. nov.

Candidatus Ignifana (NL. fem. n. *Ignifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-42-12*. The type species for the genus is *Candidatus* Ignifana palififorma .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Ignifaria effemilenta sp. nov.

Candidatus Ignifaria effemilenta (NL. fem. n. *effemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA696 sp002298165*. The type genome for the species is the GenBank assembly GCA_002298165.1. The GC content of the type genome is 52.03 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Ignifaria gen. nov.

Candidatus Ignifaria (NL. fem. n. *Ignifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA696*. The type species for the genus is *Candidatus* Ignifaria effemilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignifaria entomitica sp. nov.

Candidatus Ignifaria entomitica (NL. fem. n. *entomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA696 sp002298995*. The type genome for the species is the GenBank assembly GCA_002298995.1. The GC content of the type genome is 53.8 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Ignifia abinvitrix sp. nov.

Candidatus Ignifia abinvitrix (NL. fem. n. *abinvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S5133MH16 sp004193595*. The type genome for the species is the GenBank assembly GCA_004193595.1. The GC content of the type genome is 43.72 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Ignifia gen. nov.

Candidatus Ignifia (NL. fem. n. *Ignifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *S5133MH16*. The type species for the genus is *Candidatus* Ignifia

abinvitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11574*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momoranaceae.

Description of *Candidatus* Ignifia bisulicula sp. nov.

Candidatus Ignifia bisulicula (NL. fem. n. *bisulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S5133MH16 sp001751005*. The type genome for the species is the GenBank assembly GCA_001751005.1. The GC content of the type genome is 43.59 % and the genome length is 3.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sample #5133; Elevator 3A push core 47; collected at Hydrate Ridge North during Jason II dive J2-593 from an area of active seepage marked by bubble ebullition and surface expression of white microbial mat".

Description of *Candidatus* Ignifida exadvilenta sp. nov.

Candidatus Ignifida exadvilenta (NL. fem. n. *exadvilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHD01 sp013821265*. The type genome for the species is the GenBank assembly GCA_013821265.1. The GC content of the type genome is 42.92 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Ignifida gen. nov.

Candidatus Ignifida (NL. fem. n. *Ignifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDHD01*. The type species for the genus is *Candidatus* Ignifida exadvilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignifula adsifatica sp. nov.

Candidatus Ignifula adsifatica (NL. fem. n. *adsifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-9228 sp001870905*. The type genome for the species is the GenBank assembly RS_GCF_001870905.1. The GC content of the type genome is 48.82 % and the genome length is 4.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Ignifula gen. nov.

Candidatus Ignifula (NL. fem. n. *Ignifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-9228*. The type species for the genus is *Candidatus* Ignifula adsifatica .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Ignigana acrocicella sp. nov.

Candidatus Ignigana acrocicella (NL. fem. n. *acrocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5348 sp012837765*. The type genome for the species is the GenBank assembly GCA_012837765.1. The GC content of the type genome is 28.28 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Ignigana gen. nov.

Candidatus Ignigana (NL. fem. n. *Ignigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5348*. The type species for the genus is *Candidatus* Ignigana acrocicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Ignigana defasedo sp. nov.

Candidatus Ignigana defasedo (NL. fem. n. *defasedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5348 sp012841205*. The type genome for the species is the GenBank assembly GCA_012841205.1. The GC content of the type genome is 29.39 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Ignigana rubecisca sp. nov.

Candidatus Ignigana rubecisca (NL. fem. n. *rubecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5348 sp002411005*. The type genome for the species is the GenBank assembly GCA_002411005.1. The GC content of the type genome is 29.24 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Ignigaria illepedo sp. nov.

Candidatus Ignigaria illepedo (NL. fem. n. *illepedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSA5 sp013414685*. The type genome for the species is the GenBank assembly GCA_013414685.1. The GC content of the type genome is 38.29 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Ignigaria gen. nov.

Candidatus Ignigaria (NL. fem. n. *Ignigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSA5*. The type species for the genus is *Candidatus* Ignigaria illepedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignigella cimelatio sp. nov.

Candidatus Ignigella cimelatio (NL. fem. n. *cimelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZKO01 sp012799795*. The type genome for the species is the GenBank assembly GCA_012799795.1. The GC content of the type genome is 35.21 %

and the genome length is 0.73 Mbp.

Description of *Candidatus* Ignigella gen. nov.

Candidatus Ignigella (NL. fem. n. *Ignigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZKO01*. The type species for the genus is *Candidatus* Ignigella cimelatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Ignigella luculisca sp. nov.

Candidatus Ignigella luculisca (NL. fem. n. *luculisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZKO01 sp012515515*. The type genome for the species is the GenBank assembly GCA_012515515.1. The GC content of the type genome is 37.01 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Ignigia democatica sp. nov.

Candidatus Ignigia democatica (NL. fem. n. *democatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBC01 sp013360695*. The type genome for the species is the GenBank assembly GCA_013360695.1. The GC content of the type genome is 66.47 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Ignigia gen. nov.

Candidatus Ignigia (NL. fem. n. *Ignigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBC01*. The type species for the genus is *Candidatus* Ignigia democatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Ignigida delucax sp. nov.

Candidatus Ignigida delucax (NL. fem. n. *delucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRT-SC02 sp001321855*. The type genome for the species is the GenBank assembly GCA_001321855.1. The GC content of the type genome is 29.43 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "single cell amplified by MDA; hadopelagic water column of the Puerto Rico Trench at 8200 m depth".

Description of *Candidatus* Ignigida gen. nov.

Candidatus Ignigida (NL. fem. n. *Ignigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PRT-SC02*. The type species for the genus is *Candidatus* Ignigida delucax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignigida pinifitoga sp. nov.

Candidatus Ignigida pinifitoga (NL. fem. n. *pinifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRT-SC02 sp902572695*. The type genome for the species is the GenBank assembly GCA_902572695.1. The GC content of the type genome is 29.74 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Ignigosa ascelessa sp. nov.

Candidatus Ignigosa ascelessa (NL. fem. n. *ascelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRGS01 sp011053245*. The type genome for the species is the GenBank assembly GCA_011053245.1. The GC content of the type genome is 47.44 %

and the genome length is 2.65 Mbp.

Description of *Candidatus* Ignigosa gen. nov.

Candidatus Ignigosa (NL. fem. n. *Ignigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRGS01*. The type species for the genus is *Candidatus* Ignigosa ascelessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignipana pecunimonia sp. nov.

Candidatus Ignipana pecunimonia (NL. fem. n. *pecunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSHD01 sp011058515*. The type genome for the species is the GenBank assembly GCA_011058515.1. The GC content of the type genome is 74.8 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Ignipana gen. nov.

Candidatus Ignipana (NL. fem. n. *Ignipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSHD01*. The type species for the genus is *Candidatus* Ignipana pecunimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Igniparia adrecilega sp. nov.

Candidatus Igniparia adrecilega (NL. fem. n. *adrecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-55-46_A sp001797415*. The type genome for the species is the GenBank assembly GCA_001797415.1. The GC content of the type genome is 55.63 % and the genome length is 2.24 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Igniparia gen. nov.

Candidatus Igniparia (NL. fem. n. *Igniparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-55-46_A*. The type species for the genus is *Candidatus* Igniparia adrecilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifellaceae.

Description of *Candidatus* Ignipella bisulugo sp. nov.

Candidatus Ignipella bisulugo (NL. fem. n. *bisulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCUD01 sp004297335*. The type genome for the species is the GenBank assembly GCA_004297335.1. The GC content of the type genome is 67.92 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Ignipella gen. nov.

Candidatus Ignipella (NL. fem. n. *Ignipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCUD01*. The type species for the genus is *Candidatus* Ignipella bisulugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignipella infisisca sp. nov.

Candidatus Ignipella infisisca (NL. fem. n. *infisisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCUD01 sp009692245*. The type genome for the species is the GenBank assembly GCA_009692245.1. The GC content of the type genome is 64.31 %

and the genome length is 1.62 Mbp.

Description of *Candidatus* Ignipida acertilega sp. nov.

Candidatus Ignipida acertilega (NL. fem. n. *acertilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LX47W sp014042345*. The type genome for the species is the GenBank assembly RS_GCF_014042345.1. The GC content of the type genome is 65.58 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Ignipida gen. nov.

Candidatus Ignipida (NL. fem. n. *Ignipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LX47W*. The type species for the genus is *Candidatus* Ignipida acertilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignipida bipinilega sp. nov.

Candidatus Ignipida bipinilega (NL. fem. n. *bipinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LX47W sp014042365*. The type genome for the species is the GenBank assembly RS_GCF_014042365.1. The GC content of the type genome is 65.24 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Ignipida valeficula sp. nov.

Candidatus Ignipida valeficula (NL. fem. n. *valeficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LX47W sp014042355*. The type genome for the species is the GenBank assembly RS_GCF_014042355.1. The GC content of the type genome is 64.35 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Igniposa illepetta sp. nov.

Candidatus Igniposa illepetta (NL. fem. n. *illepetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCQ01 sp013360195*. The type genome for the species is the GenBank assembly GCA_013360195.1. The GC content of the type genome is 52.43 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Igniposa gen. nov.

Candidatus Igniposa (NL. fem. n. *Igniposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCQ01*. The type species for the genus is *Candidatus* Igniposa illepetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RPQS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifidaceae.

Description of *Candidatus* Ignipula gabinisca sp. nov.

Candidatus Ignipula gabinisca (NL. fem. n. *gabinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZKQ01 sp012799755*. The type genome for the species is the GenBank assembly GCA_012799755.1. The GC content of the type genome is 58.83 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Ignipula gen. nov.

Candidatus Ignipula (NL. fem. n. *Ignipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZKQ01*. The type species for the genus is *Candidatus* Ignipula gabinisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semilidaceae.

Description of *Candidatus* Ignobella lucubisca sp. nov.

Candidatus Ignobella lucubisca (NL. fem. n. *lucubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VKGY01 sp008080685*. The type genome for the species is the GenBank assembly GCA_008080685.1. The GC content of the type genome is 55.8 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Ignobella gen. nov.

Candidatus Ignobella (NL. fem. n. *Ignobella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VKGY01*. The type species for the genus is *Candidatus* Ignobella lucubisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duponosaceae.

Description of *Candidatus* Ignobida recocimonas sp. nov.

Candidatus Ignobida recocimonas (NL. fem. n. *recocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYYY01 sp012515125*. The type genome for the species is the GenBank assembly GCA_012515125.1. The GC content of the type genome is 64.94 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Ignobida gen. nov.

Candidatus Ignobida (NL. fem. n. *Ignobida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYYY01*. The type species for the genus is *Candidatus* Ignobida recocimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignobosa abinvugo sp. nov.

Candidatus Ignobosa abinvugo (NL. fem. n. *abinvugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-183 sp003567255*. The type genome for the species is the GenBank assembly GCA_003567255.1. The GC content of the type genome is 54.95 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Ignobosa gen. nov.

Candidatus Ignobosa (NL. fem. n. *Ignobosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3Sed10-183*. The type species for the genus is *Candidatus* Ignobosa abinvugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-45221*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamiaceae.

Description of *Candidatus* Ignobula socagiforma sp. nov.

Candidatus Ignobula socagiforma (NL. fem. n. *socagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWOD01 sp003557545*. The type genome for the species is the GenBank assembly GCA_003557545.1. The GC content of the type genome is 46.12 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Ignobula gen. nov.

Candidatus Ignobula (NL. fem. n. *Ignobula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWOD01*. The type species for the genus is *Candidatus* Ignobula socagiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *T1Sed10-126*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracanaceae.

Description of *Candidatus* Ignomana adnuledo sp. nov.

Candidatus Ignomana adnuledo (NL. fem. n. *adnuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRMK01 sp011322575*. The type genome for the species is the GenBank assembly GCA_011322575.1. The GC content of the type genome is 62.78 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Ignomana gen. nov.

Candidatus Ignomana (NL. fem. n. *Ignomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRMK01*. The type species for the genus is *Candidatus* Ignomana adnuledo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignomaria inambago sp. nov.

Candidatus Ignomaria inambago (NL. fem. n. *inambago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-46-13 sp001820875*. The type genome for the species is the GenBank assembly GCA_001820875.1. The GC content of the type genome is 45.45 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Ignomaria gen. nov.

Candidatus Ignomaria (NL. fem. n. *Ignomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-46-13*. The type species for the genus is *Candidatus* Ignomaria inambago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Ignomaria intolatica sp. nov.

Candidatus Ignomaria intolatica (NL. fem. n. *intolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-46-13 sp001821015*. The type genome for the species is the GenBank assembly GCA_001821015.1. The GC content of the type genome is 45.74 % and the genome length is 0.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Ignomella catabax sp. nov.

Candidatus Ignomella catabax (NL. fem. n. *catabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZYP01 sp009930275*. The type genome for the species is the GenBank assembly GCA_009930275.1. The GC content of the type genome is 42.2 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Ignomella gen. nov.

Candidatus Ignomella (NL. fem. n. *Ignomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RZYP01*. The type species for the genus is *Candidatus* Ignomella catabax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignomella divulisca sp. nov.

Candidatus Ignomella divulisca (NL. fem. n. *divulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZYP01 sp012517145*. The type genome for the species is the GenBank assembly GCA_012517145.1. The GC content of the type genome is 41.17 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Ignomia armidilega sp. nov.

Candidatus Ignomia armidilega (NL. fem. n. *armidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYX01 sp013696265*. The type genome for the species is the GenBank assembly GCA_013696265.1. The GC content of the type genome is 64.84 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Ignomia gen. nov.

Candidatus Ignomia (NL. fem. n. *Ignomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCYX01*. The type species for the genus is *Candidatus* Ignomia armidilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Ignomia incomilenta sp. nov.

Candidatus Ignomia incomilenta (NL. fem. n. *incomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYX01 sp013698495*. The type genome for the species is the GenBank assembly GCA_013698495.1. The GC content of the type genome is 61.69 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Ignomida oppanisca sp. nov.

Candidatus Ignomida oppanisca (NL. fem. n. *oppanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTZ01 sp012031225*. The type genome for the species is the GenBank assembly GCA_012031225.1. The GC content of the type genome is 60.16 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Ignomida gen. nov.

Candidatus Ignomida (NL. fem. n. *Ignomida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUTZ01*. The type species for the genus is *Candidatus* Ignomida oppanisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignomosa impilitudo sp. nov.

Candidatus Ignomosa impilitudo (NL. fem. n. *impilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NC2004 sp000621905*. The type genome for the species is the GenBank assembly RS_GCF_000621905.1. The GC content of the type genome is 39.37 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Ignomosa gen. nov.

Candidatus Ignomosa (NL. fem. n. *Ignomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NC2004*. The type species for the genus is *Candidatus* Ignomosa impilitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignosana labecax sp. nov.

Candidatus Ignosana labecax (NL. fem. n. *labecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDIP01 sp013003675*. The type genome for the species is the GenBank assembly GCA_013003675.1. The GC content of the type genome is 67.74 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Ignosana gen. nov.

Candidatus Ignosana (NL. fem. n. *Ignosana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDIP01*. The type species for the genus is *Candidatus* Ignosana labecax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignosaria obsolastra sp. nov.

Candidatus Ignosaria obsolastra (NL. fem. n. *obsolastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRPG01 sp011376105*. The type genome for the species is the GenBank assembly GCA_011376105.1. The GC content of the type genome is 70.36 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Ignosaria gen. nov.

Candidatus Ignosaria (NL. fem. n. *Ignosaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRPG01*. The type species for the genus is *Candidatus* Ignosaria obsolastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2862545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tolutanaceae.

Description of *Candidatus* Ignosella scorbitia sp. nov.

Candidatus Ignosella scorbitia (NL. fem. n. *scorbitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-07484 sp003963515*. The type genome for the species is the GenBank assembly RS_GCF_003963515.1. The GC content of the type genome is 56.17 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Ignosella gen. nov.

Candidatus Ignosella (NL. fem. n. *Ignosella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SCSIO-07484*. The type species for the genus is *Candidatus* Ignosella scorbitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignosia dimadimonas sp. nov.

Candidatus Ignosia dimadimonas (NL. fem. n. *dimadimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JS7-9 sp004329715*. The type genome for the species is the GenBank assembly RS_GCF_004329715.1. The GC content of the type genome is 49.9 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Ignosia gen. nov.

Candidatus Ignosia (NL. fem. n. *Ignosia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JS7-9*. The type species for the genus is *Candidatus* Ignosia dimadimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignosida accumastra sp. nov.

Candidatus Ignosida accumastra (NL. fem. n. *accumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1907 sp013333405*. The type genome for the species is the GenBank assembly GCA_013333405.2. The GC content of the type genome is 35.8 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Ignosida gen. nov.

Candidatus Ignosida (NL. fem. n. *Ignosida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1907*. The type species for the genus is *Candidatus* Ignosida accumastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignosida carecitrix sp. nov.

Candidatus Ignosida carecitrix (NL. fem. n. *carecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1907 sp004151455*. The type genome for the species is the GenBank assembly RS_GCF_004151455.1. The GC content of the type genome is 32.34 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Ignosida delubentia sp. nov.

Candidatus Ignosida delubentia (NL. fem. n. *delubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1907 sp900555945*. The type genome for the species is the GenBank assembly GCA_900555945.1. The GC content of the type genome is 35.4 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Ignosida extunitas sp. nov.

Candidatus Ignosida extunitas (NL. fem. n. *extunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1907 sp900556165*. The type genome for the species is the GenBank assembly GCA_900556165.1. The GC content of the type genome is 36.09 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Ignososa exsoretta sp. nov.

Candidatus Ignososa exsoretta (NL. fem. n. *exsoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2685935 sp002685935*. The type genome for the species is the GenBank assembly GCA_002685935.1. The GC content of the type genome is 62.87 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Ignososa gen. nov.

Candidatus Ignososa (NL. fem. n. *Ignososa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2685935*. The type species for the genus is *Candidatus* Ignososa exsoretta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ignosula fumacitica sp. nov.

Candidatus Ignosula fumacitica (NL. fem. n. *fumacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BCD1 sp008501835*. The type genome for the species is the GenBank assembly GCA_008501835.1. The GC content of the type genome is 41.36 % and the genome length is 6.79 Mbp.

Description of *Candidatus* Ignosula gen. nov.

Candidatus Ignosula (NL. fem. n. *Ignosula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BCD1*. The type species for the genus is *Candidatus* Ignosula fumacitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illaparia adnepastra sp. nov.

Candidatus Illaparia adnepastra (NL. fem. n. *adnepastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDX01 sp013812695*. The type genome for the species is the GenBank assembly GCA_013812695.1. The GC content of the type genome is 69.55 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Illaparia gen. nov.

Candidatus Illaparia (NL. fem. n. *Illaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDDX01*. The type species for the genus is *Candidatus* Illaparia adnepastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Illaparia cepulax sp. nov.

Candidatus Illaparia cepulax (NL. fem. n. *cepulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDX01 sp013813435*. The type genome for the species is the GenBank assembly GCA_013813435.1. The GC content of the type genome is 63.76 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Illaparia frigdimonas sp. nov.

Candidatus Illaparia frigdimonas (NL. fem. n. *frigdimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDX01 sp013813675*. The type genome for the species is the GenBank assembly GCA_013813675.1. The GC content of the type genome is 68.66 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Illaparia recucibra sp. nov.

Candidatus Illaparia recucibra (NL. fem. n. *recucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDX01 sp013816685*. The type genome for the species is the GenBank assembly GCA_013816685.1. The GC content of the type genome is 68.58 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Illaparia refulibra sp. nov.

Candidatus Illaparia refulibra (NL. fem. n. *refulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDX01 sp013820855*. The type genome for the species is the GenBank assembly GCA_013820855.1. The GC content of the type genome is 69.53 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Illaparia telefousia sp. nov.

Candidatus Illaparia telefousia (NL. fem. n. *telefousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDX01 sp013813875*. The type genome for the species is the GenBank assembly GCA_013813875.1. The GC content of the type genome is 67.55 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Illaparia tetenax sp. nov.

Candidatus Illaparia tetenax (NL. fem. n. *tetenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDX01 sp013813145*. The type genome for the species is the GenBank assembly GCA_013813145.1. The GC content of the type genome is 68.9 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Illapella cenodatica sp. nov.

Candidatus Illapella cenodatica (NL. fem. n. *cenodatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINEZ01 sp903847905*. The type genome for the species is the GenBank assembly GCA_903847905.1. The GC content of the type genome is 34.05 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Illapella gen. nov.

Candidatus Illapella (NL. fem. n. *Illapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINEZ01*. The type species for the genus is *Candidatus* Illapella cenodatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-32-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadosaceae.

Description of *Candidatus* Illapella dicabitoga sp. nov.

Candidatus Illapella dicabitoga (NL. fem. n. *dicabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINEZ01 sp013334735*. The type genome for the species is the GenBank assembly GCA_013334735.1. The GC content of the type genome is 33.57 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Illapella scellax sp. nov.

Candidatus Illapella scellax (NL. fem. n. *scellax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINEZ01 sp903889915*. The type genome for the species is the GenBank assembly GCA_903889915.1. The GC content of the type genome is 38.06 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Illapia artifugo sp. nov.

Candidatus Illapia artifugo (NL. fem. n. *artifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADBRF01 sp902796975*. The type genome for the species is the GenBank assembly GCA_902796975.1. The GC content of the type genome is 56.47 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Illapia gen. nov.

Candidatus Illapia (NL. fem. n. *Illapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADBRF01*. The type species for the genus is *Candidatus* Illapia artifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

QAMH01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decuniaceae.

Description of *Candidatus* Illaposa colubentia sp. nov.

Candidatus Illaposa colubentia (NL. fem. n. *colubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZYX01 sp014239435*. The type genome for the species is the GenBank assembly GCA_014239435.1. The GC content of the type genome is 43.08 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Illaposa gen. nov.

Candidatus Illaposa (NL. fem. n. *Illaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZYX01*. The type species for the genus is *Candidatus* Illaposa colubentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufidaceae.

Description of *Candidatus* Illapula nucificula sp. nov.

Candidatus Illapula nucificula (NL. fem. n. *nucificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZEE01 sp903931835*. The type genome for the species is the GenBank assembly GCA_903931835.1. The GC content of the type genome is 61.19 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Illapula gen. nov.

Candidatus Illapula (NL. fem. n. *Illapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZEE01*. The type species for the genus is *Candidatus* Illapula nucificula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illepana admuliforma sp. nov.

Candidatus Illepana admuliforma (NL. fem. n. *admuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCN01 sp013288125*. The type genome for the species is the GenBank assembly GCA_013288125.1. The GC content of the type genome is 36.98 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Illepana gen. nov.

Candidatus Illepana (NL. fem. n. *Illepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCN01*. The type species for the genus is *Candidatus* Illepana admuliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Illepana semidousia sp. nov.

Candidatus Illepana semidousia (NL. fem. n. *semidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCN01 sp013287745*. The type genome for the species is the GenBank assembly GCA_013287745.1. The GC content of the type genome is 40.23 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Illeparia adcomitia sp. nov.

Candidatus Illeparia adcomitia (NL. fem. n. *adcomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-014117445 sp014117445*. The type genome for the species is the GenBank assembly RS_GCF_014117445.1. The GC content of the type genome is 67.65

% and the genome length is 3.36 Mbp.

Description of *Candidatus* Illeparia gen. nov.

Candidatus Illeparia (NL. fem. n. *Illeparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-014117445*. The type species for the genus is *Candidatus* Illeparia adcomitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illepella locupilega sp. nov.

Candidatus Illepella locupilega (NL. fem. n. *locupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMEH01 sp903839975*. The type genome for the species is the GenBank assembly GCA_903839975.1. The GC content of the type genome is 44.27 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Illepella gen. nov.

Candidatus Illepella (NL. fem. n. *Illepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMEH01*. The type species for the genus is *Candidatus* Illepella locupilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-50-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defunellaceae.

Description of *Candidatus* Illeposa egregatio sp. nov.

Candidatus Illeposa egregatio (NL. fem. n. *egregatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WSXY01 sp009773565*. The type genome for the species is the GenBank assembly GCA_009773565.1. The GC content of the type genome is 62.74 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Illeposa gen. nov.

Candidatus Illeposa (NL. fem. n. *Illeposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WSXY01*. The type species for the genus is *Candidatus* Illeposa egregatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2279*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depeciaceae.

Description of *Candidatus* Illepula sicarimonas sp. nov.

Candidatus Illepula sicarimonas (NL. fem. n. *sicarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LB2 sp014467015*. The type genome for the species is the GenBank assembly GCA_014467015.1. The GC content of the type genome is 36.2 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Illepula gen. nov.

Candidatus Illepula (NL. fem. n. *Illepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LB2*. The type species for the genus is *Candidatus* Illepula sicarimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illibana arrecigena sp. nov.

Candidatus Illibana arrecigena (NL. fem. n. *arrecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-52-12 sp001724175*. The type genome for the species is the GenBank assembly GCA_001724175.1. The GC content of the type genome is 52.17 % and the genome length is 5.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Illibana gen. nov.

Candidatus Illibana (NL. fem. n. *Illibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCN-52-12*. The type species for the genus is *Candidatus* Illibana arrecigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illibia penicibra sp. nov.

Candidatus Illibia penicibra (NL. fem. n. *penicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11890 sp902773675*. The type genome for the species is the GenBank assembly GCA_902773675.1. The GC content of the type genome is 24.79 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Illibia gen. nov.

Candidatus Illibia (NL. fem. n. *Illibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11890*. The type species for the genus is *Candidatus* Illibia penicibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Illibida refinax sp. nov.

Candidatus Illibida refinax (NL. fem. n. *refinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOJ01 sp012838895*. The type genome for the species is the GenBank assembly GCA_012838895.1. The GC content of the type genome is 47.2 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Illibida gen. nov.

Candidatus Illibida (NL. fem. n. *Illibida* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOJ01*. The type species for the genus is *Candidatus* Illibida refinax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illibosa lanigilega sp. nov.

Candidatus Illibosa lanigilega (NL. fem. n. *lanigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABRB01 sp011391185*. The type genome for the species is the GenBank assembly GCA_011391185.1. The GC content of the type genome is 66.03 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Illibosa gen. nov.

Candidatus Illibosa (NL. fem. n. *Illibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABRB01*. The type species for the genus is *Candidatus* Illibosa lanigilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Illibula lanifibra sp. nov.

Candidatus Illibula lanifibra (NL. fem. n. *lanifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2232 sp002348045*. The type genome for the species is the GenBank assembly GCA_002348045.1. The GC content of the type genome is 60.18 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Illibula gen. nov.

Candidatus Illibula (NL. fem. n. *Illibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2232*. The type species for the genus is *Candidatus* Illibula lanifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2200*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homunulaceae.

Description of *Candidatus* Illunana cacopetta sp. nov.

Candidatus Illunana cacopetta (NL. fem. n. *cacopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUU01 sp012517535*. The type genome for the species is the GenBank assembly GCA_012517535.1. The GC content of the type genome is 52.01 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Illunana gen. nov.

Candidatus Illunana (NL. fem. n. *Illunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUU01*. The type species for the genus is *Candidatus* Illunana cacopetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illunaria ciminisca sp. nov.

Candidatus Illunaria ciminisca (NL. fem. n. *ciminisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQN01 sp013203045*. The type genome for the species is the GenBank assembly GCA_013203045.1. The GC content of the type genome is 46.92 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Illunaria gen. nov.

Candidatus Illunaria (NL. fem. n. *Illunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQN01*. The type species for the genus is *Candidatus* Illunaria ciminisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-899*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunosaceae.

Description of *Candidatus* Illunella egritousia sp. nov.

Candidatus Illunella egritousia (NL. fem. n. *egritousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAR01 sp012719235*. The type genome for the species is the GenBank assembly GCA_012719235.1. The GC content of the type genome is 54.82 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Illunella gen. nov.

Candidatus Illunella (NL. fem. n. *Illunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAR01*. The type species for the genus is *Candidatus* Illunella egritousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illunida obsatimonia sp. nov.

Candidatus Illunida obsatimonia (NL. fem. n. *obsatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PJMG01 sp003173895*. The type genome for the species is the GenBank assembly GCA_003173895.1. The GC content of the type genome is 30.77 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Illunida gen. nov.

Candidatus Illunida (NL. fem. n. *Illunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *PJMG01*. The type species for the genus is *Candidatus* Illunida obsatimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Illunosa inargisca sp. nov.

Candidatus Illunosa inargisca (NL. fem. n. *inargisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3384 sp002358935*. The type genome for the species is the GenBank assembly GCA_002358935.1. The GC content of the type genome is 27.62 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Illunosa gen. nov.

Candidatus Illunosa (NL. fem. n. *Illunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3384*. The type species for the genus is *Candidatus* Illunosa inargisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illunula dapifatio sp. nov.

Candidatus Illunula dapifatio (NL. fem. n. *dapifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J050 sp003696865*. The type genome for the species is the GenBank assembly GCA_003696865.1. The GC content of the type genome is 58.91 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Illunula gen. nov.

Candidatus Illunula (NL. fem. n. *Illunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J050*. The type species for the genus is *Candidatus* Illunula dapifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HR10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desupariaceae.

Description of *Candidatus* Illuvaria opuscimonia sp. nov.

Candidatus Illuvaria opuscimonia (NL. fem. n. *opuscimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M269 sp004353515*. The type genome for the species is the GenBank assembly RS_GCF_004353515.1. The GC content of the type genome is 42.13 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Illuvaria gen. nov.

Candidatus Illuvaria (NL. fem. n. *Illuvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M269*. The type species for the genus is *Candidatus* Illuvaria opuscimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illuvella anamnibula sp. nov.

Candidatus Illuvella anamnibula (NL. fem. n. *anamnibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCWM01 sp013697635*. The type genome for the species is the GenBank assembly GCA_013697635.1. The GC content of the type genome is 62.71 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Illuvella gen. nov.

Candidatus Illuvella (NL. fem. n. *Illuvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCWM01*. The type species for the genus is *Candidatus* Illuvella anamnibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illuvida tomogitica sp. nov.

Candidatus Illuvida tomogitica (NL. fem. n. *tomogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2726205 sp002726205*. The type genome for the species is the GenBank assembly GCA_002726205.1. The GC content of the type genome is 62.5 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Illuvida gen. nov.

Candidatus Illuvida (NL. fem. n. *Illuvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2726205*. The type species for the genus is *Candidatus* Illuvida tomogitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illuvosa exsusitudo sp. nov.

Candidatus Illuvosa exsusitudo (NL. fem. n. *exsusitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G116 sp902578815*. The type genome for the species is the GenBank assembly GCA_902578815.1. The GC content of the type genome is 49.4 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Illuvosa gen. nov.

Candidatus Illuvosa (NL. fem. n. *Illuvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G116*. The type species for the genus is *Candidatus* Illuvosa exsusitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Illuvosa immedatio sp. nov.

Candidatus Illuvosa immedatio (NL. fem. n. *immedatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G116 sp902596655*. The type genome for the species is the GenBank assembly GCA_902596655.1. The GC content of the type genome is 49.49 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Illuvosa ininnago sp. nov.

Candidatus Illuvosa ininnago (NL. fem. n. *ininnago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G116 sp004212735*. The type genome for the species is the GenBank assembly GCA_004212735.1. The GC content of the type genome is 54.41 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Illuvosa nutamimonia sp. nov.

Candidatus Illuvosa nutamimonia (NL. fem. n. *nutamimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G116 sp902547925*. The type genome for the species is the GenBank assembly GCA_902547925.1. The GC content of the type genome is 51.2 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Illuvosa rudecitoga sp. nov.

Candidatus Illuvosa rudecitoga (NL. fem. n. *rudecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G116 sp902623185*. The type genome for the species is the GenBank assembly GCA_902623185.1. The GC content of the type genome is 47.4 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Illuvula demigitio sp. nov.

Candidatus Illuvula demigitio (NL. fem. n. *demigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJT01 sp011370485*. The type genome for the species is the GenBank assembly GCA_011370485.1. The GC content of the type genome is 31.46 % and the genome length is 0.45 Mbp.

Description of *Candidatus* Illuvula gen. nov.

Candidatus Illuvula (NL. fem. n. *Illuvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJT01*. The type species for the genus is *Candidatus* Illuvula demigitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subucidaceae.

Description of *Candidatus* Ilumatobacter detotitrix sp. nov.

Candidatus Ilumatobacter detotitrix (NL. fem. n. *detotitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ilumatobacter sp002698945*. The type genome for the species is the GenBank assembly GCA_002698945.1. The GC content of the type genome is 68.13 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Ilumatobacter defanisca sp. nov.

Candidatus Ilumatobacter defanisca (NL. fem. n. *defanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ilumatobacter_A sp013002175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013002175.1. The GC content of the type genome is 69.21 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Ilumatobacter repurugo sp. nov.

Candidatus Ilumatobacter repurugo (NL. fem. n. *repurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ilumatobacter_A sp002711735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002711735.1. The GC content of the type genome is 59.28 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Imbecana conibimonia sp. nov.

Candidatus Imbecana conibimonia (NL. fem. n. *conibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8670 sp003539375*. The type genome for the species is the GenBank assembly GCA_003539375.1. The GC content of the type genome is 31.84 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Imbecana gen. nov.

Candidatus Imbecana (NL. fem. n. *Imbecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8670*. The type species for the genus is *Candidatus* Imbecana conibimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Imbecana sicinifica sp. nov.

Candidatus Imbecana sicinifica (NL. fem. n. *sicinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8670 sp011390775*. The type genome for the species is the GenBank assembly GCA_011390775.1. The GC content of the type genome is 30.46 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Imbecaria munifetta sp. nov.

Candidatus Imbecaria munifetta (NL. fem. n. *munifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWY01 sp011373495*. The type genome for the species is the GenBank assembly GCA_011373495.1. The GC content of the type genome is 59.69 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Imbecaria gen. nov.

Candidatus Imbecaria (NL. fem. n. *Imbecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWY01*. The type species for the genus is *Candidatus* Imbecaria munifetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRbin24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadellaceae.

Description of *Candidatus* Imbecella delacousia sp. nov.

Candidatus Imbecella delacousia (NL. fem. n. *delacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B70-G16 sp003644385*. The type genome for the species is the GenBank assembly GCA_003644385.1. The GC content of the type genome is 40.25 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Imbecella gen. nov.

Candidatus Imbecella (NL. fem. n. *Imbecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B70-G16*. The type species for the genus is *Candidatus* Imbecella delacousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Imbecia hexapisca sp. nov.

Candidatus Imbecia hexapisca (NL. fem. n. *hexapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVO01 sp011368315*. The type genome for the species is the GenBank assembly GCA_011368315.1. The GC content of the type genome is 61.8 % and the genome length is 6.46 Mbp.

Description of *Candidatus* Imbecia gen. nov.

Candidatus Imbecia (NL. fem. n. *Imbecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVO01*. The type species for the genus is *Candidatus* Imbecia hexapisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYYI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabidaceae.

Description of *Candidatus* Imbecida vilipicula sp. nov.

Candidatus Imbecida vilipicula (NL. fem. n. *vilipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-583 sp011367385*. The type genome for the species is the GenBank assembly GCA_011367385.1. The GC content of the type genome is 69.46 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Imbecida gen. nov.

Candidatus Imbecida (NL. fem. n. *Imbecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-583*. The type species for the genus is *Candidatus* Imbecida vilipicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6663*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hibisosaceae.

Description of *Candidatus* Imbecosa taraxentia sp. nov.

Candidatus Imbecosa taraxentia (NL. fem. n. *taraxentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLRF01 sp007131065*. The type genome for the species is the GenBank assembly GCA_007131065.1. The GC content of the type genome is 47.16 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Imbecosa gen. nov.

Candidatus Imbecosa (NL. fem. n. *Imbecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLRF01*. The type species for the genus is *Candidatus* Imbecosa taraxentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QS-5-54-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vilipidaceae.

Description of *Candidatus* Imbecula agratibula sp. nov.

Candidatus Imbecula agratibula (NL. fem. n. *agratibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDDE01 sp013287775*. The type genome for the species is the GenBank assembly GCA_013287775.1. The GC content of the type genome is 44.39 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Imbecula gen. nov.

Candidatus Imbecula (NL. fem. n. *Imbecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDE01*. The type species for the genus is *Candidatus* Imbecula agratibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1388*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conabulaceae.

Description of *Candidatus* Imbelana pudibitrix sp. nov.

Candidatus Imbelana pudibitrix (NL. fem. n. *pudibitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3774 sp902783095*. The type genome for the species is the GenBank assembly GCA_902783095.1. The GC content of the type genome is 60.61 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Imbelana gen. nov.

Candidatus Imbelana (NL. fem. n. *Imbelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3774*. The type species for the genus is *Candidatus* Imbelana pudibitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Imbelana semunitrix sp. nov.

Candidatus Imbelana semunitrix (NL. fem. n. *semunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3774 sp002369255*. The type genome for the species is the GenBank assembly GCA_002369255.1. The GC content of the type genome is 46.99 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Imbelella extinisca sp. nov.

Candidatus Imbelella extinisca (NL. fem. n. *extinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCXN01 sp902806695*. The type genome for the species is the GenBank assembly RS_GCF_902806695.1. The GC content of the type genome is 47.21 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Imbelella gen. nov.

Candidatus Imbelella (NL. fem. n. *Imbelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CADCXN01*. The type species for the genus is *Candidatus* Imbelella extinisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Imbelia ludibivita sp. nov.

Candidatus Imbelia ludibivita (NL. fem. n. *ludibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-46-36 sp002772995*. The type genome for the species is the GenBank assembly GCA_002772995.1. The GC content of the type genome is 45.78 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Imbelia gen. nov.

Candidatus Imbelia (NL. fem. n. *Imbelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-46-36*. The type species for the genus is *Candidatus* Imbelia ludibivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-10-42-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culigidaceae.

Description of *Candidatus* Imbelida indiressa sp. nov.

Candidatus Imbelida indiressa (NL. fem. n. *indiressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-43-11 sp001817805*. The type genome for the species is the GenBank assembly GCA_001817805.1. The GC content of the type genome is 43.07 % and the genome length is 0.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Imbelida gen. nov.

Candidatus Imbelida (NL. fem. n. *Imbelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-43-11*. The type species for the genus is *Candidatus* Imbelida indiressa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Imbelula domabugo sp. nov.

Candidatus Imbelula domabugo (NL. fem. n. *domabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJX01 sp013003245*. The type genome for the species is the GenBank assembly GCA_013003245.1. The GC content of the type genome is 57.46 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Imbelula gen. nov.

Candidatus Imbelula (NL. fem. n. *Imbelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJX01*. The type species for the genus is *Candidatus* Imbelula domabugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immacana accogitrix sp. nov.

Candidatus Immacana accogitrix (NL. fem. n. *accogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J031 sp003696975*. The type genome for the species is the GenBank assembly GCA_003696975.1. The GC content of the type genome is 53.77 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Immacana gen. nov.

Candidatus Immacana (NL. fem. n. *Immacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J031*. The type species for the genus is *Candidatus* Immacana accogitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8639*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locelidaceae.

Description of *Candidatus* Immacaria bucolax sp. nov.

Candidatus Immacaria bucolax (NL. fem. n. *bucolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-47 sp002011415*. The type genome for the species is the GenBank assembly GCA_002011415.1. The GC content of the type genome is 63.85 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Immacaria gen. nov.

Candidatus Immacaria (NL. fem. n. *Immacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-47*. The type species for the genus is *Candidatus* Immacaria bucolax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immacella aranciforma sp. nov.

Candidatus Immacella aranciforma (NL. fem. n. *aranciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVJW01 sp903906315*. The type genome for the species is the GenBank assembly GCA_903906315.1. The GC content of the type genome is 73.07 % and the genome length is 8.79 Mbp.

Description of *Candidatus* Immacella gen. nov.

Candidatus Immacella (NL. fem. n. *Immacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVJW01*. The type species for the genus is *Candidatus* Immacella aranciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immacosa asporitica sp. nov.

Candidatus Immacosa asporitica (NL. fem. n. *asporitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5454 sp012512335*. The type genome for the species is the GenBank assembly GCA_012512335.1. The GC content of the type genome is 38.58 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Immacosa gen. nov.

Candidatus Immacosa (NL. fem. n. *Immacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5454*. The type species for the genus is *Candidatus* Immacosa asporitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU083*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petulellaceae.

Description of *Candidatus* Immacosa xenoditrix sp. nov.

Candidatus Immacosa xenoditrix (NL. fem. n. *xenoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5454 sp002426555*. The type genome for the species is the GenBank assembly GCA_002426555.1. The GC content of the type genome is 41.82 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Immacula inhorifica sp. nov.

Candidatus Immacula inhorifica (NL. fem. n. *inhorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWZ01 sp011373475*. The type genome for the species is the GenBank assembly GCA_011373475.1. The GC content of the type genome is 34.48 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Immacula gen. nov.

Candidatus Immacula (NL. fem. n. *Immacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWZ01*. The type species for the genus is *Candidatus* Immacula inhorifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immadana antepilenta sp. nov.

Candidatus Immadana antepilenta (NL. fem. n. *antepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TP-CH-4 sp009371985*. The type genome for the species is the GenBank assembly RS_GCF_009371985.2. The GC content of the type genome is 44.51 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Immadana gen. nov.

Candidatus Immadana (NL. fem. n. *Immadana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TP-CH-4*. The type species for the genus is *Candidatus* Immadana antepilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immadula supelicella sp. nov.

Candidatus Immadula supelicella (NL. fem. n. *supelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYY01 sp009780995*. The type genome for the species is the GenBank assembly GCA_009780995.1. The GC content of the type genome is 41.45 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Immadula gen. nov.

Candidatus Immadula (NL. fem. n. *Immadula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQYY01*. The type species for the genus is *Candidatus* Immadula supelicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immatana octupatio sp. nov.

Candidatus Immatana octupatio (NL. fem. n. *octupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOH01 sp012838955*. The type genome for the species is the GenBank assembly GCA_012838955.1. The GC content of the type genome is 48.19 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Immatana gen. nov.

Candidatus Immatana (NL. fem. n. *Immatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOH01*. The type species for the genus is *Candidatus* Immatana octupatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Valefulaceae.

Description of *Candidatus* Immatia leviditas sp. nov.

Candidatus Immatia leviditas (NL. fem. n. *leviditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCA01 sp013359345*. The type genome for the species is the GenBank assembly GCA_013359345.1. The GC content of the type genome is 42.53 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Immatia gen. nov.

Candidatus Immatia (NL. fem. n. *Immatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCA01*. The type species for the genus is *Candidatus* Immatia leviditas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immatosa dilicitas sp. nov.

Candidatus Immatosa dilicitas (NL. fem. n. *dilicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKJH01 sp007116005*. The type genome for the species is the GenBank assembly GCA_007116005.1. The GC content of the type genome is 25.91 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Immatosa gen. nov.

Candidatus Immatosa (NL. fem. n. *Immatosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKJH01*. The type species for the genus is *Candidatus* Immatosa dilicitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Immatula antecivita sp. nov.

Candidatus Immatula antecivita (NL. fem. n. *antecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYKS01 sp012522285*. The type genome for the species is the GenBank assembly GCA_012522285.1. The GC content of the type genome is 59.2 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Immatula gen. nov.

Candidatus Immatula (NL. fem. n. *Immatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAYKS01*. The type species for the genus is *Candidatus* Immatula antecivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5734*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropulaceae.

Description of *Candidatus* Immedana facunibula sp. nov.

Candidatus Immedana facunibula (NL. fem. n. *facunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2716765 sp002716765*. The type genome for the species is the GenBank assembly GCA_002716765.1. The GC content of the type genome is 37.08 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Immedana gen. nov.

Candidatus Immedana (NL. fem. n. *Immedana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2716765*. The type species for the genus is *Candidatus* Immedana facunibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Immedella modifilega sp. nov.

Candidatus Immedella modifilega (NL. fem. n. *modifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIOZ-UU106 sp014384545*. The type genome for the species is the GenBank assembly GCA_014384545.1. The GC content of the type genome is 52.53 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Immedella gen. nov.

Candidatus Immedella (NL. fem. n. *Immedella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NIOZ-UU106*. The type species for the genus is *Candidatus* Immedella modifilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6624*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denicidaceae.

Description of *Candidatus* Immedosa ruricitio sp. nov.

Candidatus Immedosa ruricitio (NL. fem. n. *ruricitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUUJ01 sp012030715*. The type genome for the species is the GenBank assembly GCA_012030715.1. The GC content of the type genome is 52.65 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Immedosa gen. nov.

Candidatus Immedosa (NL. fem. n. *Immedosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUUJ01*. The type species for the genus is *Candidatus* Immedosa ruricitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JA-3-3Ab*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divolariaceae.

Description of *Candidatus* Immemana ignobitura sp. nov.

Candidatus Immemana ignobitura (NL. fem. n. *ignobitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM1919 sp010993985*. The type genome for the species is the GenBank assembly RS_GCF_010993985.1. The GC content of the type genome is 42.58 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Immemana gen. nov.

Candidatus Immemana (NL. fem. n. *Immemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM1919*. The type species for the genus is *Candidatus* Immemana ignobitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immemaria resalibra sp. nov.

Candidatus Immemaria resalibra (NL. fem. n. *resalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGM01 sp013152375*. The type genome for the species is the GenBank assembly GCA_013152375.1. The GC content of the type genome is 48.28 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Immemaria gen. nov.

Candidatus Immemaria (NL. fem. n. *Immemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGM01*. The type species for the genus is *Candidatus* Immemaria resalibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMOW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceracariaceae.

Description of *Candidatus* Immemella nitelitica sp. nov.

Candidatus Immemella nitelitica (NL. fem. n. *nitelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-45-16 sp002787535*. The type genome for the species is the GenBank assembly GCA_002787535.1. The GC content of the type genome is 44.79 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Immemella gen. nov.

Candidatus Immemella (NL. fem. n. *Immemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-45-16*. The type species for the genus is *Candidatus* Immemella nitelitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2394*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeroposaceae.

Description of *Candidatus* Immemia xeropitrix sp. nov.

Candidatus Immemia xeropitrix (NL. fem. n. *xeropitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6824 sp002452155*. The type genome for the species is the GenBank assembly GCA_002452155.1. The GC content of the type genome is 50.31 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Immemia gen. nov.

Candidatus Immemia (NL. fem. n. *Immemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6824*. The type species for the genus is *Candidatus* Immemia xeropitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10212*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categiaceae.

Description of *Candidatus* Immemida bigemitura sp. nov.

Candidatus Immemida bigemitura (NL. fem. n. *bigemitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISDA01 sp903884005*. The type genome for the species is the GenBank assembly GCA_903884005.1. The GC content of the type genome is 53.67 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Immemida gen. nov.

Candidatus Immemida (NL. fem. n. *Immemida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISDA01*. The type species for the genus is *Candidatus* Immemida bigemitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8401*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rurigellaceae.

Description of *Candidatus* Immemosa ancepitoga sp. nov.

Candidatus Immemosa ancepitoga (NL. fem. n. *ancepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W1P29-020 sp004555175*. The type genome for the species is the GenBank assembly GCA_004555175.1. The GC content of the type genome is 63.47 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Immemosa gen. nov.

Candidatus Immemosa (NL. fem. n. *Immemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W1P29-020*. The type species for the genus is *Candidatus* Immemosa ancepitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Immemosa arrecitica sp. nov.

Candidatus Immemosa arrecitica (NL. fem. n. *arrecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W1P29-020 sp900771325*. The type genome for the species is the GenBank assembly RS_GCF_900771325.1. The GC content of the type genome is 64.97 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Immemula expenitudo sp. nov.

Candidatus Immemula expenitudo (NL. fem. n. *expenitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUZK01 sp013349495*. The type genome for the species is the GenBank assembly GCA_013349495.1. The GC content of the type genome is 48.4 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Immemula gen. nov.

Candidatus Immemula (NL. fem. n. *Immemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUZK01*. The type species for the genus is *Candidatus* Immemula expenitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Futatosaceae.

Description of *Candidatus* Immigana semigiforma sp. nov.

Candidatus Immigana semigiforma (NL. fem. n. *semigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNOJ01 sp013824755*. The type genome for the species is the GenBank assembly GCA_013824755.1. The GC content of the type genome is 71.72 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Immigana gen. nov.

Candidatus Immigana (NL. fem. n. *Immigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNOJ01*. The type species for the genus is *Candidatus* Immigana semigiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LZORAL124-64-63*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolellaceae.

Description of *Candidatus* Immigaria domicatio sp. nov.

Candidatus Immigaria domicatio (NL. fem. n. *domicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFMC01 sp009704985*. The type genome for the species is the GenBank assembly GCA_009704985.1. The GC content of the type genome is 71.24 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Immigaria gen. nov.

Candidatus Immigaria (NL. fem. n. *Immigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFMC01*. The type species for the genus is *Candidatus* Immigaria domicatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immigaria vilitivita sp. nov.

Candidatus Immigaria vilitivita (NL. fem. n. *vilitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFMC01 sp006515795*. The type genome for the species is the GenBank assembly GCA_006515795.1. The GC content of the type genome is 67.76 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Immigella solivifica sp. nov.

Candidatus Immigella solivifica (NL. fem. n. *solivifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWTL01 sp903915555*. The type genome for the species is the GenBank assembly GCA_903915555.1. The GC content of the type genome is 68.58 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Immigella gen. nov.

Candidatus Immigella (NL. fem. n. *Immigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWTL01*. The type species for the genus is *Candidatus* Immigella solivifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2699445*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dupunanaceae.

Description of *Candidatus* Immigia visibessa sp. nov.

Candidatus Immigia visibessa (NL. fem. n. *visibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RCIO01 sp004000235*. The type genome for the species is the GenBank assembly RS_GCF_004000235.1. The GC content of the type genome is 62.08 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Immigia gen. nov.

Candidatus Immigia (NL. fem. n. *Immigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RCIO01*. The type species for the genus is *Candidatus* Immigia visibessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immigida recocentia sp. nov.

Candidatus Immigida recocentia (NL. fem. n. *recocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLIZ01 sp007135395*. The type genome for the species is the GenBank assembly GCA_007135395.1. The GC content of the type genome is 61.5 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Immigida gen. nov.

Candidatus Immigida (NL. fem. n. *Immigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SLIZ01*. The type species for the genus is *Candidatus* Immigida recocentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immobana bisacilenta sp. nov.

Candidatus Immobana bisacilenta (NL. fem. n. *bisacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUWA01 sp012840755*. The type genome for the species is the GenBank assembly GCA_012840755.1. The GC content of the type genome is 26.32 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Immobana gen. nov.

Candidatus Immobana (NL. fem. n. *Immobana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUWA01*. The type species for the genus is *Candidatus* Immobana bisacilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Immobaria ignifitura sp. nov.

Candidatus Immobaria ignifitura (NL. fem. n. *ignifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-56 sp005884985*. The type genome for the species is the GenBank assembly GCA_005884985.1. The GC content of the type genome is 69.57 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Immobaria gen. nov.

Candidatus Immobaria (NL. fem. n. *Immobaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-56*. The type species for the genus is *Candidatus* Immobaria

ignifitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *70-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Immobella feculicella sp. nov.

Candidatus Immobella feculicella (NL. fem. n. *feculicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WREE01 sp009779515*. The type genome for the species is the GenBank assembly GCA_009779515.1. The GC content of the type genome is 50.78 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Immobella gen. nov.

Candidatus Immobella (NL. fem. n. *Immobella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WREE01*. The type species for the genus is *Candidatus* Immobella feculicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRDA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilibariaceae.

Description of *Candidatus* Immobia obsolilega sp. nov.

Candidatus Immobia obsolilega (NL. fem. n. *obsolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRUS01 sp011388535*. The type genome for the species is the GenBank assembly GCA_011388535.1. The GC content of the type genome is 66.74 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Immobia gen. nov.

Candidatus Immobia (NL. fem. n. *Immobia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DRUS01*. The type species for the genus is *Candidatus* Immobia obsolilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTKN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonipanaceae.

Description of *Candidatus* Immobida excocitia sp. nov.

Candidatus Immobida excocitia (NL. fem. n. *excocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HMF7056 sp009834915*. The type genome for the species is the GenBank assembly RS_GCF_009834915.1. The GC content of the type genome is 50.54 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Immobida gen. nov.

Candidatus Immobida (NL. fem. n. *Immobida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HMF7056*. The type species for the genus is *Candidatus* Immobida excocitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immobula arundousia sp. nov.

Candidatus Immobula arundousia (NL. fem. n. *arundousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1251 sp900549995*. The type genome for the species is the GenBank assembly GCA_900549995.1. The GC content of the type genome is 43.77 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Immobula gen. nov.

Candidatus Immobula (NL. fem. n. *Immobula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1251*. The type species for the genus is *Candidatus* Immobula

arundousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immodana tegimedo sp. nov.

Candidatus Immodana tegimedo (NL. fem. n. *tegimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C176 sp009649225*. The type genome for the species is the GenBank assembly RS_GCF_009649225.1. The GC content of the type genome is 54.12 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Immodana gen. nov.

Candidatus Immodana (NL. fem. n. *Immodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C176*. The type species for the genus is *Candidatus* Immodana tegimedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immodaria noninitas sp. nov.

Candidatus Immodaria noninitas (NL. fem. n. *noninitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNIG01 sp013203195*. The type genome for the species is the GenBank assembly GCA_013203195.1. The GC content of the type genome is 46.26 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Immodaria gen. nov.

Candidatus Immodaria (NL. fem. n. *Immodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNIG01*. The type species for the genus is *Candidatus* Immodaria noninitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA11574. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momoranaceae.

Description of *Candidatus* Immodaria rumifivita sp. nov.

Candidatus Immodaria rumifivita (NL. fem. n. *rumifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNIG01 sp014383215*. The type genome for the species is the GenBank assembly GCA_014383215.1. The GC content of the type genome is 45.86 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Immodella labecitas sp. nov.

Candidatus Immodella labecitas (NL. fem. n. *labecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCHO01 sp903970145*. The type genome for the species is the GenBank assembly GCA_903970145.1. The GC content of the type genome is 61.91 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Immodella gen. nov.

Candidatus Immodella (NL. fem. n. *Immodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCHO01*. The type species for the genus is *Candidatus* Immodella labecitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immodia gemebax sp. nov.

Candidatus Immodia gemebax (NL. fem. n. *gemebax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJG01 sp013002595*. The type genome for the species is the GenBank assembly GCA_013002595.1. The GC content of the type genome is 58.73 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Immodia gen. nov.

Candidatus Immodia (NL. fem. n. *Immodia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJG01*. The type species for the genus is *Candidatus* Immodia gemebax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immodida depecicula sp. nov.

Candidatus Immodida depecicula (NL. fem. n. *depecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYY01 sp009692555*. The type genome for the species is the GenBank assembly GCA_009692555.1. The GC content of the type genome is 70.26 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Immodida gen. nov.

Candidatus Immodida (NL. fem. n. *Immodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYY01*. The type species for the genus is *Candidatus* Immodida depecicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1104*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Effigidaceae.

Description of *Candidatus* Immundisolibacter defesitrix sp. nov.

Candidatus Immundisolibacter defesitrix (NL. fem. n. *defesitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Immundisolibacter sp003526065*. The type genome for the species is the GenBank assembly GCA_003526065.1. The GC content of the type genome is 67.81 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Immundisolibacter exsupisca sp. nov.

Candidatus Immundisolibacter exsupisca (NL. fem. n. *exsupisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Immundisolibacter sp014359565*. The type genome for the species is the GenBank assembly GCA_014359565.1. The GC content of the type genome is 68.07 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Immurella eviscilenta sp. nov.

Candidatus Immurella eviscilenta (NL. fem. n. *eviscilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOIS01 sp004375965*. The type genome for the species is the GenBank assembly GCA_004375965.1. The GC content of the type genome is 37.67 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Immurella gen. nov.

Candidatus Immurella (NL. fem. n. *Immurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SOIS01*. The type species for the genus is *Candidatus* Immurella eviscilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin80*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Remedanaceae.

Description of *Candidatus* Immuria sonipitura sp. nov.

Candidatus Immuria sonipitura (NL. fem. n. *sonipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Io17-Chloro-G2 sp002816875*. The type genome for the species is the GenBank assembly GCA_002816875.1. The GC content of the type genome is 58.71 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Immuria gen. nov.

Candidatus Immuria (NL. fem. n. *Immuria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Io17-Chloro-G2*. The type species for the genus is *Candidatus* Immuria sonipitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Immurida apogrilega sp. nov.

Candidatus Immurida apogrilega (NL. fem. n. *apogrilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MnB-11 sp012027035*. The type genome for the species is the GenBank assembly GCA_012027035.1. The GC content of the type genome is 41.47 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Immurida gen. nov.

Candidatus Immurida (NL. fem. n. *Immurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MnB-11*. The type species for the genus is *Candidatus* Immurida apogrilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immurosa chancessa sp. nov.

Candidatus Immurosa chancessa (NL. fem. n. *chancessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VJOY01 sp007109405*. The type genome for the species is the GenBank assembly RS_GCF_007109405.1. The GC content of the type genome is 67.64 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Immurosa gen. nov.

Candidatus Immurosa (NL. fem. n. *Immurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VJOY01*. The type species for the genus is *Candidatus* Immurosa chancessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immusella gen. nov.

Candidatus Immusella (NL. fem. n. *Immusella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTPE01*. The type species for the genus is *Candidatus* Immusella lauensis_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immusia adcogitica sp. nov.

Candidatus Immusia adcogitica (NL. fem. n. *adcogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-179 sp003229735*. The type genome for the species is the GenBank assembly GCA_003229735.1. The GC content of the type genome is 47.41 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Immusia gen. nov.

Candidatus Immusia (NL. fem. n. *Immusia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-179*. The type species for the genus is *Candidatus* Immusia adcogitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolidaceae.

Description of *Candidatus* Immusula ellipicella sp. nov.

Candidatus Immusula ellipicella (NL. fem. n. *ellipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSO01 sp012521405*. The type genome for the species is the GenBank assembly GCA_012521405.1. The GC content of the type genome is 44.91 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Immusula gen. nov.

Candidatus Immusula (NL. fem. n. *Immusula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSO01*. The type species for the genus is *Candidatus* Immusula ellipicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Immusula illunifica sp. nov.

Candidatus Immusula illunifica (NL. fem. n. *illunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSO01 sp012523945*. The type genome for the species is the GenBank assembly GCA_012523945.1. The GC content of the type genome is 45.08 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Impacana fuligessa sp. nov.

Candidatus Impacana fuligessa (NL. fem. n. *fuligessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12998 sp900756495*. The type genome for the species is the GenBank assembly GCA_900756495.1. The GC content of the type genome is 57.27 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Impacana gen. nov.

Candidatus Impacana (NL. fem. n. *Impacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12998*. The type species for the genus is *Candidatus* Impacana fuligessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impacaria pereximonia sp. nov.

Candidatus Impacaria pereximonia (NL. fem. n. *pereximonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQS01 sp013202525*. The type genome for the species is the GenBank assembly GCA_013202525.1. The GC content of the type genome is 47.68 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Impacaria gen. nov.

Candidatus Impacaria (NL. fem. n. *Impacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQS01*. The type species for the genus is *Candidatus* Impacaria pereximonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMRG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fuligidaceae.

Description of *Candidatus* Impacella milipilega sp. nov.

Candidatus Impacella milipilega (NL. fem. n. *milipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYZM01 sp012514835*. The type genome for the species is the GenBank assembly GCA_012514835.1. The GC content of the type genome is 72.33 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Impacella gen. nov.

Candidatus Impacella (NL. fem. n. *Impacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZM01*. The type species for the genus is *Candidatus* Impacella milipilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impacia denicessa sp. nov.

Candidatus Impacia denicessa (NL. fem. n. *denicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKD01 sp009885735*. The type genome for the species is the GenBank assembly GCA_009885735.1. The GC content of the type genome is 60.13 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Impacia gen. nov.

Candidatus Impacia (NL. fem. n. *Impacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKD01*. The type species for the genus is *Candidatus* Impacia denicessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBBX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senipanaceae.

Description of *Candidatus* Impacosa decucibula sp. nov.

Candidatus Impacosa decucibula (NL. fem. n. *decucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9650 sp003518205*. The type genome for the species is the GenBank assembly GCA_003518205.1. The GC content of the type genome is 42.26 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Impacosa gen. nov.

Candidatus Impacosa (NL. fem. n. *Impacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9650*. The type species for the genus is *Candidatus* Impacosa decucibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Impavana bicoratio sp. nov.

Candidatus Impavana bicoratio (NL. fem. n. *bicoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIN01 sp012800855*. The type genome for the species is the GenBank assembly GCA_012800855.1. The GC content of the type genome is 59.8 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Impavana gen. nov.

Candidatus Impavana (NL. fem. n. *Impavana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZIN01*. The type species for the genus is *Candidatus* Impavana bicoratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Impavana fibicicella sp. nov.

Candidatus Impavana fibicicella (NL. fem. n. *fibicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIN01 sp012510625*. The type genome for the species is the GenBank assembly GCA_012510625.1. The GC content of the type genome is 55.43 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Impavaria detumicella sp. nov.

Candidatus Impavaria detumicella (NL. fem. n. *detumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ap0902 sp009835005*. The type genome for the species is the GenBank assembly RS_GCF_009835005.1. The GC content of the type genome is 34.46 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Impavaria gen. nov.

Candidatus Impavaria (NL. fem. n. *Impavaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ap0902*. The type species for the genus is *Candidatus* Impavaria detumicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impavella hexapentia sp. nov.

Candidatus Impavella hexapentia (NL. fem. n. *hexapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIYW01 sp014359745*. The type genome for the species is the GenBank assembly GCA_014359745.1. The GC content of the type genome is 64.56 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Impavella gen. nov.

Candidatus Impavella (NL. fem. n. *Impavella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIYW01*. The type species for the genus is *Candidatus* Impavella hexapentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impavia semimigena sp. nov.

Candidatus Impavia semimigena (NL. fem. n. *semimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR9 sp003221435*. The type genome for the species is the GenBank assembly GCA_003221435.1. The GC content of the type genome is 68.69 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Impavia gen. nov.

Candidatus Impavia (NL. fem. n. *Impavia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AR9*. The type species for the genus is *Candidatus* Impavia semimigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Impavosa asporedo sp. nov.

Candidatus Impavosa asporedo (NL. fem. n. *asporedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ARS98 sp002685655*. The type genome for the species is the GenBank assembly GCA_002685655.1. The GC content of the type genome is 56.9 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Impavosa gen. nov.

Candidatus Impavosa (NL. fem. n. *Impavosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ARS98*. The type species for the genus is *Candidatus* Impavosa asporedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impavula pinifitura sp. nov.

Candidatus Impavula pinifitura (NL. fem. n. *pinifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747035 sp002747035*. The type genome for the species is the GenBank assembly GCA_002747035.1. The GC content of the type genome is 60.15 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Impavula gen. nov.

Candidatus Impavula (NL. fem. n. *Impavula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2747035*. The type species for the genus is *Candidatus* Impavula pinifitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Imperialibacter detorimonas sp. nov.

Candidatus Imperialibacter detorimonas (NL. fem. n. *detorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Imperialibacter sp902498805*. The type genome for the species is the GenBank assembly RS_GCF_902498805.1. The GC content of the type genome is 46.6 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Impigana benevitia sp. nov.

Candidatus Impigana benevitia (NL. fem. n. *benevitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHV01 sp013297655*. The type genome for the species is the GenBank assembly GCA_013297655.1. The GC content of the type genome is 67.83 % and the genome length is 9.92 Mbp.

Description of *Candidatus* Impigana gen. nov.

Candidatus Impigana (NL. fem. n. *Impigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHV01*. The type species for the genus is *Candidatus* Impigana benevitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impigaria conifitura sp. nov.

Candidatus Impigaria conifitura (NL. fem. n. *conifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYVG01 sp011358025*. The type genome for the species is the

GenBank assembly GCA_011358025.1. The GC content of the type genome is 34.84 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Impigaria gen. nov.

Candidatus Impigaria (NL. fem. n. *Impigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYVG01*. The type species for the genus is *Candidatus* Impigaria conifitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9959*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvidaceae.

Description of *Candidatus* Impigaria expalilenta sp. nov.

Candidatus Impigaria expalilenta (NL. fem. n. *expalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYVG01 sp012517285*. The type genome for the species is the GenBank assembly GCA_012517285.1. The GC content of the type genome is 33.96 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Impigella apogrimonia sp. nov.

Candidatus Impigella apogrimonia (NL. fem. n. *apogrimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACHRU01 sp902582345*. The type genome for the species is the GenBank assembly GCA_902582345.1. The GC content of the type genome is 29.74 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Impigella gen. nov.

Candidatus Impigella (NL. fem. n. *Impigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACHRU01*. The type species for the genus is *Candidatus* Impigella apogrimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impigella luculibra sp. nov.

Candidatus Impigella luculibra (NL. fem. n. *luculibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACHRU01 sp902581775*. The type genome for the species is the GenBank assembly GCA_902581775.1. The GC content of the type genome is 29.29 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Impigia adpinugo sp. nov.

Candidatus Impigia adpinugo (NL. fem. n. *adpinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXZL01 sp009845505*. The type genome for the species is the GenBank assembly GCA_009845505.1. The GC content of the type genome is 48.16 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Impigia gen. nov.

Candidatus Impigia (NL. fem. n. *Impigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXZL01*. The type species for the genus is *Candidatus* Impigia adpinugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WGA-3G*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funebosaceae.

Description of *Candidatus* Impigosa xenodastra sp. nov.

Candidatus Impigosa xenodastra (NL. fem. n. *xenodastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12789 sp900766585*. The type genome for the species is the GenBank assembly RS_GCF_900766585.1. The GC content of the type genome is 59.3 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Impigosa gen. nov.

Candidatus Impigosa (NL. fem. n. *Impigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12789*. The type species for the genus is *Candidatus* Impigosa xenodastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impilana biveribula sp. nov.

Candidatus Impilana biveribula (NL. fem. n. *biveribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUCZ01 sp903897785*. The type genome for the species is the GenBank assembly GCA_903897785.1. The GC content of the type genome is 45.39 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Impilana gen. nov.

Candidatus Impilana (NL. fem. n. *Impilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUCZ01*. The type species for the genus is *Candidatus* Impilana biveribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desuriaceae.

Description of *Candidatus* Impilella accorax sp. nov.

Candidatus Impilella accorax (NL. fem. n. *accorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMCP01 sp008081305*. The type genome for the species is the GenBank assembly GCA_008081305.1. The GC content of the type genome is 40.05 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Impilella gen. nov.

Candidatus Impilella (NL. fem. n. *Impilella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMCP01*. The type species for the genus is *Candidatus* Impilella accorax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadidaceae.

Description of *Candidatus* Impilella acrifilega sp. nov.

Candidatus Impilella acrifilega (NL. fem. n. *acrifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMCP01 sp903879775*. The type genome for the species is the GenBank assembly GCA_903879775.1. The GC content of the type genome is 36.13 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Impilida malivibula sp. nov.

Candidatus Impilida malivibula (NL. fem. n. *malivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFKE01 sp013298215*. The type genome for the species is the GenBank assembly GCA_013298215.1. The GC content of the type genome is 48.95 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Impilida gen. nov.

Candidatus Impilida (NL. fem. n. *Impilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFKE01*. The type species for the genus is *Candidatus* Impilida malivibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impilosa defulimonas sp. nov.

Candidatus Impilosa defulimonas (NL. fem. n. *defulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KBS-83 sp000381585*. The type genome for the species is the GenBank assembly RS_GCF_000381585.1. The GC content of the type genome is 59.15 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Impilosa gen. nov.

Candidatus Impilosa (NL. fem. n. *Impilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KBS-83*. The type species for the genus is *Candidatus* Impilosa defulimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impinana acropifica sp. nov.

Candidatus Impinana acropifica (NL. fem. n. *acropifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RH-chloro-G1 sp003670575*. The type genome for the species is the GenBank assembly GCA_003670575.1. The GC content of the type genome is 66.44 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Impinana gen. nov.

Candidatus Impinana (NL. fem. n. *Impinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RH-chloro-G1*. The type species for the genus is *Candidatus* Impinana acropifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Impinana diponisca sp. nov.

Candidatus Impinana diponisca (NL. fem. n. *diponisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RH-chloro-G1 sp003670735*. The type genome for the species is the GenBank assembly GCA_003670735.1. The GC content of the type genome is 66.67 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Impinaria domipifica sp. nov.

Candidatus Impinaria domipifica (NL. fem. n. *domipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXNE01 sp009840715*. The type genome for the species is the GenBank assembly GCA_009840715.1. The GC content of the type genome is 68.66 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Impinaria gen. nov.

Candidatus Impinaria (NL. fem. n. *Impinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXNE01*. The type species for the genus is *Candidatus* Impinaria domipifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Impinella enigmimonia sp. nov.

Candidatus Impinella enigmimonia (NL. fem. n. *enigmimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-477 sp902727985*. The type genome for the species is the GenBank assembly GCA_902727985.1. The GC content of the type genome is 42.87 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Impinella gen. nov.

Candidatus Impinella (NL. fem. n. *Impinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *HyVt-477*. The type species for the genus is *Candidatus* Impinella enigmimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impinella trocliforma sp. nov.

Candidatus Impinella trocliforma (NL. fem. n. *trocliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-477 sp011375245*. The type genome for the species is the GenBank assembly GCA_011375245.1. The GC content of the type genome is 39.39 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Impinia denixiforma sp. nov.

Candidatus Impinia denixiforma (NL. fem. n. *denixiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNKC01 sp013822275*. The type genome for the species is the GenBank assembly GCA_013822275.1. The GC content of the type genome is 66.08 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Impinia gen. nov.

Candidatus Impinia (NL. fem. n. *Impinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNKC01*. The type species for the genus is *Candidatus* Impinia denixiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2991*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifariaceae.

Description of *Candidatus* Impinida noninitudo sp. nov.

Candidatus Impinida noninitudo (NL. fem. n. *noninitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SKFT01 sp007117865*. The type genome for the species is the GenBank assembly GCA_007117865.1. The GC content of the type genome is 52.59 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Impinida gen. nov.

Candidatus Impinida (NL. fem. n. *Impinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKFT01*. The type species for the genus is *Candidatus* Impinida noninitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-45221*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamiaceae.

Description of *Candidatus* Impinosa innabessa sp. nov.

Candidatus Impinosa innabessa (NL. fem. n. *innabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICQ01 sp009691385*. The type genome for the species is the GenBank assembly GCA_009691385.1. The GC content of the type genome is 47.67 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Impinosa gen. nov.

Candidatus Impinosa (NL. fem. n. *Impinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICQ01*. The type species for the genus is *Candidatus* Impinosa innabessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-47-10b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipatanaceae.

Description of *Candidatus* Impinula viripiforma sp. nov.

Candidatus Impinula viripiforma (NL. fem. n. *viripiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-65-29 sp001767435*. The type genome for the species is the GenBank assembly GCA_001767435.1. The GC content of the type genome is 65.5 % and the genome length is 5.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Impinula gen. nov.

Candidatus Impinula (NL. fem. n. *Impinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-65-29*. The type species for the genus is *Candidatus* Impinula viripiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Impiraria vocamicula sp. nov.

Candidatus Impiraria vocamicula (NL. fem. n. *vocamicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDU01 sp013816845*. The type genome for the species is the GenBank assembly GCA_013816845.1. The GC content of the type genome is 38.59 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Impiraria gen. nov.

Candidatus Impiraria (NL. fem. n. *Impiraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDDU01*. The type species for the genus is *Candidatus* Impiraria vocamicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Impirella capilax sp. nov.

Candidatus Impirella capilax (NL. fem. n. *capilax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-63-20 sp004297215*. The type genome for the species is the GenBank assembly GCA_004297215.1. The GC content of the type genome is 63.41 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Impirella gen. nov.

Candidatus Impirella (NL. fem. n. *Impirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-63-20*. The type species for the genus is *Candidatus* Impirella capilax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Impirella fetifitica sp. nov.

Candidatus Impirella fetifitica (NL. fem. n. *fetifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-63-20 sp001791045*. The type genome for the species is the GenBank assembly GCA_001791045.1. The GC content of the type genome is 63.88 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Impirosa rubicitura sp. nov.

Candidatus Impirosa rubicitura (NL. fem. n. *rubicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J065 sp003695625*. The type genome for the species is the GenBank assembly GCA_003695625.1. The GC content of the type genome is 72.83 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Impirosa gen. nov.

Candidatus Impirosa (NL. fem. n. *Impirosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J065*. The type species for the genus is *Candidatus* Impirosa rubicitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J045*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direculaceae.

Description of *Candidatus* Impolana adlenax sp. nov.

Candidatus Impolana adlenax (NL. fem. n. *adlenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2683135 sp002683135*. The type genome for the species is the GenBank assembly GCA_002683135.1. The GC content of the type genome is 62.53 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Impolana gen. nov.

Candidatus Impolana (NL. fem. n. *Impolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2683135*. The type species for the genus is *Candidatus* Impolana adlenax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002687715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobellaceae.

Description of *Candidatus* Impolana bicipilenta sp. nov.

Candidatus Impolana bicipilenta (NL. fem. n. *bicipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2683135 sp013213915*. The type genome for the species is the GenBank assembly GCA_013213915.1. The GC content of the type genome is 65.65 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Impolella figilitio sp. nov.

Candidatus Impolella figilitio (NL. fem. n. *figilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBP01 sp013360445*. The type genome for the species is the GenBank assembly GCA_013360445.1. The GC content of the type genome is 54.28 % and the genome length is 6.02 Mbp.

Description of *Candidatus* Impolella gen. nov.

Candidatus Impolella (NL. fem. n. *Impolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBP01*. The type species for the genus is *Candidatus* Impolella figilitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diluvidaceae.

Description of *Candidatus* Impolella semipitia sp. nov.

Candidatus Impolella semipitia (NL. fem. n. *semipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBP01 sp011526015*. The type genome for the species is the GenBank assembly GCA_011526015.1. The GC content of the type genome is 53.81 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Impolia prognatica sp. nov.

Candidatus Impolia prognatica (NL. fem. n. *prognatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2724505 sp002724505*. The type genome for the species is the GenBank assembly GCA_002724505.1. The GC content of the type genome is 46.42 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Impolia gen. nov.

Candidatus Impolia (NL. fem. n. *Impolia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2724505*. The type species for the genus is *Candidatus* Impolia prognatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2964*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibidaceae.

Description of *Candidatus* Impolula insopitoga sp. nov.

Candidatus Impolula insopitoga (NL. fem. n. *insopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9312 sp003527965*. The type genome for the species is the GenBank assembly GCA_003527965.1. The GC content of the type genome is 41.95 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Impolula gen. nov.

Candidatus Impolula (NL. fem. n. *Impolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9312*. The type species for the genus is *Candidatus* Impolula insopitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semunellaceae.

Description of *Candidatus* Impudana arancax sp. nov.

Candidatus Impudana arancax (NL. fem. n. *arancax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIVM01 sp902590115*. The type genome for the species is the GenBank assembly GCA_902590115.1. The GC content of the type genome is 29.63 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Impudana gen. nov.

Candidatus Impudana (NL. fem. n. *Impudana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACIVM01*. The type species for the genus is *Candidatus* Impudana arancax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impudaria crastastra sp. nov.

Candidatus Impudaria crastastra (NL. fem. n. *crastastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-112 sp002254285*. The type genome for the species is the GenBank assembly GCA_002254285.1. The GC content of the type genome is 33.67 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Impudaria gen. nov.

Candidatus Impudaria (NL. fem. n. *Impudaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4572-112*. The type species for the genus is *Candidatus* Impudaria crastastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1556*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depopellaceae.

Description of *Candidatus* Impudaria manibago sp. nov.

Candidatus Impudaria manibago (NL. fem. n. *manibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-112 sp003648395*. The type genome for the species is the GenBank assembly GCA_003648395.1. The GC content of the type genome is 31.7 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Impudella depacetta sp. nov.

Candidatus Impudella depacetta (NL. fem. n. *depacetta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718585 sp002707765*. The type genome for the species is the GenBank assembly GCA_002707765.1. The GC content of the type genome is 29.15 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Impudella gen. nov.

Candidatus Impudella (NL. fem. n. *Impudella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002718585*. The type species for the genus is *Candidatus* Impudella depacetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002707645*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipiaceae.

Description of *Candidatus* Impudella innulessa sp. nov.

Candidatus Impudella innulessa (NL. fem. n. *innulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718585 sp002718585*. The type genome for the species is the GenBank assembly GCA_002718585.1. The GC content of the type genome is 28.07 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Impudia dehisousia sp. nov.

Candidatus Impudia dehisousia (NL. fem. n. *dehisousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753275 sp002753275*. The type genome for the species is the GenBank assembly GCA_002753275.1. The GC content of the type genome is 47.58 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Impudia gen. nov.

Candidatus Impudia (NL. fem. n. *Impudia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2753275*. The type species for the genus is *Candidatus* Impudia dehisousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impudida intabicella sp. nov.

Candidatus Impudida intabicella (NL. fem. n. *intabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRIE01 sp009782875*. The type genome for the species is the GenBank assembly GCA_009782875.1. The GC content of the type genome is 46.11 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Impudida gen. nov.

Candidatus Impudida (NL. fem. n. *Impudida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRIE01*. The type species for the genus is *Candidatus* Impudida intabicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impudosa panopimonia sp. nov.

Candidatus Impudosa panopimonia (NL. fem. n. *panopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM10890 sp900769965*. The type genome for the species is the GenBank assembly RS_GCF_900769965.1. The GC content of the type genome is 34.44 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Impudosa gen. nov.

Candidatus Impudosa (NL. fem. n. *Impudosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM10890*. The type species for the genus is *Candidatus* Impudosa

panopimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-288*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropellaceae.

Description of *Candidatus* Impugana incivisca sp. nov.

Candidatus Impugana incivisca (NL. fem. n. *incivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGYR01 sp002839765*. The type genome for the species is the GenBank assembly GCA_002839765.1. The GC content of the type genome is 34.06 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Impugana gen. nov.

Candidatus Impugana (NL. fem. n. *Impugana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGYR01*. The type species for the genus is *Candidatus* Impugana incivisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Impugaria colepigena sp. nov.

Candidatus Impugaria colepigena (NL. fem. n. *colepigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHXF01 sp009693435*. The type genome for the species is the GenBank assembly GCA_009693435.1. The GC content of the type genome is 62.36 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Impugaria gen. nov.

Candidatus Impugaria (NL. fem. n. *Impugaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SHXF01*. The type species for the genus is *Candidatus* Impugaria colepigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Impugella biparitia sp. nov.

Candidatus Impugella biparitia (NL. fem. n. *biparitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2400975 sp012965955*. The type genome for the species is the GenBank assembly GCA_012965955.1. The GC content of the type genome is 44.27 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Impugella gen. nov.

Candidatus Impugella (NL. fem. n. *Impugella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2400975*. The type species for the genus is *Candidatus* Impugella biparitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NORP154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinariaceae.

Description of *Candidatus* Impugella ininnitia sp. nov.

Candidatus Impugella ininnitia (NL. fem. n. *ininnitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2400975 sp002400975*. The type genome for the species is the GenBank assembly GCA_002400975.1. The GC content of the type genome is 43.63 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Impugia adpicousia sp. nov.

Candidatus Impugia adpicousia (NL. fem. n. *adpicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-448 sp003249225*. The type genome for the species is the GenBank assembly GCA_003249225.1. The GC content of the type genome is 40.98 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Impugia gen. nov.

Candidatus Impugia (NL. fem. n. *Impugia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-448*. The type species for the genus is *Candidatus* Impugia adpicousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impugia cerucatica sp. nov.

Candidatus Impugia cerucatica (NL. fem. n. *cerucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-448 sp003252135*. The type genome for the species is the GenBank assembly GCA_003252135.1. The GC content of the type genome is 42.24 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Impugida camilousia sp. nov.

Candidatus Impugida camilousia (NL. fem. n. *camilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA929 sp002293625*. The type genome for the species is the GenBank assembly GCA_002293625.1. The GC content of the type genome is 55.5 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Impugida gen. nov.

Candidatus Impugida (NL. fem. n. *Impugida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA929*. The type species for the genus is *Candidatus* Impugida camilousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impugida exaggivita sp. nov.

Candidatus Impugida exaggivita (NL. fem. n. *exaggivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA929 sp009782215*. The type genome for the species is the GenBank assembly GCA_009782215.1. The GC content of the type genome is 58.21 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Impugida inrecibra sp. nov.

Candidatus Impugida inrecibra (NL. fem. n. *inrecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA929 sp009777475*. The type genome for the species is the GenBank assembly GCA_009777475.1. The GC content of the type genome is 47.03 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Impugida maxumicella sp. nov.

Candidatus Impugida maxumicella (NL. fem. n. *maxumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA929 sp009782475*. The type genome for the species is the GenBank assembly GCA_009782475.1. The GC content of the type genome is 54.13 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Impugosa licenigena sp. nov.

Candidatus Impugosa licenigena (NL. fem. n. *licenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VSOB01 sp009774625*. The type genome for the species is the GenBank assembly GCA_009774625.1. The GC content of the type genome is 48.29 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Impugosa gen. nov.

Candidatus Impugosa (NL. fem. n. *Impugosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VSOB01*. The type species for the genus is *Candidatus* Impugosa licenigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Impugula omnivugo sp. nov.

Candidatus Impugula omnivugo (NL. fem. n. *omnivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHD01 sp013152075*. The type genome for the species is the GenBank assembly GCA_013152075.1. The GC content of the type genome is 50.0 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Impugula gen. nov.

Candidatus Impugula (NL. fem. n. *Impugula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHD01*. The type species for the genus is *Candidatus* Impugula omnivugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DEV007*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragosaceae.

Description of *Candidatus* Inabrana adgubago sp. nov.

Candidatus Inabrana adgubago (NL. fem. n. *adgubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002402085 sp002402085*. The type genome for the species is the GenBank assembly GCA_002402085.1. The GC content of the type genome is 46.03 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Inabrana gen. nov.

Candidatus Inabrana (NL. fem. n. *Inabrana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002402085*. The type species for the genus is *Candidatus* Inabrana adgubago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Molecidaceae.

Description of *Candidatus* Inabrana masocicula sp. nov.

Candidatus Inabrana masocicula (NL. fem. n. *masocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002402085 sp002401525*. The type genome for the species is the GenBank assembly GCA_002401525.1. The GC content of the type genome is 45.33 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Inabraria argitousia sp. nov.

Candidatus Inabraria argitousia (NL. fem. n. *argitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRIP01 sp009782665*. The type genome for the species is the GenBank assembly GCA_009782665.1. The GC content of the type genome is 42.55 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Inabraria gen. nov.

Candidatus Inabraria (NL. fem. n. *Inabraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRIP01*. The type species for the genus is *Candidatus* Inabraria argitousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inabraria sicunitas sp. nov.

Candidatus Inabraria sicunitas (NL. fem. n. *sicunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRIP01 sp012520915*. The type genome for the species is the GenBank assembly GCA_012520915.1. The GC content of the type genome is 42.38 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Inabrosa cataficula sp. nov.

Candidatus Inabrosa cataficula (NL. fem. n. *cataficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KM106-2 sp009731425*. The type genome for the species is the GenBank assembly RS_GCF_009731425.1. The GC content of the type genome is 36.58 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Inabrosa gen. nov.

Candidatus Inabrosa (NL. fem. n. *Inabrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KM106-2*. The type species for the genus is *Candidatus* Inabrosa cataficula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inabrula pudibatica sp. nov.

Candidatus Inabrula pudibatica (NL. fem. n. *pudibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ISCAR-4553 sp011682235*. The type genome for the species is the GenBank assembly RS_GCF_011682235.1. The GC content of the type genome is 67.17 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Inabrula gen. nov.

Candidatus Inabrula (NL. fem. n. *Inabrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ISCAR-4553*. The type species for the genus is *Candidatus* Inabrula

pudibatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inabsaria andabigena sp. nov.

Candidatus Inabsaria andabigena (NL. fem. n. *andabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMNN01 sp903842845*. The type genome for the species is the GenBank assembly GCA_903842845.1. The GC content of the type genome is 57.02 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Inabsaria gen. nov.

Candidatus Inabsaria (NL. fem. n. *Inabsaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMNN01*. The type species for the genus is *Candidatus* Inabsaria andabigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inabsella catafisca sp. nov.

Candidatus Inabsella catafisca (NL. fem. n. *catafisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-1004 sp011333645*. The type genome for the species is the GenBank assembly GCA_011333645.1. The GC content of the type genome is 50.28 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Inabsella gen. nov.

Candidatus Inabsella (NL. fem. n. *Inabsella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-1004*. The type species for the genus is *Candidatus* Inabsella catafisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA5620. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semaposaceae.

Description of *Candidatus* Inabsella selecicella sp. nov.

Candidatus Inabsella selecicella (NL. fem. n. *selecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-1004 sp011371865*. The type genome for the species is the GenBank assembly GCA_011371865.1. The GC content of the type genome is 52.64 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Inabsia adgenivita sp. nov.

Candidatus Inabsia adgenivita (NL. fem. n. *adgenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJR01 sp013298815*. The type genome for the species is the GenBank assembly GCA_013298815.1. The GC content of the type genome is 49.83 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Inabsia gen. nov.

Candidatus Inabsia (NL. fem. n. *Inabsia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFJR01*. The type species for the genus is *Candidatus* Inabsia adgenivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inabsia effunax sp. nov.

Candidatus Inabsia effunax (NL. fem. n. *effunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJR01 sp013298945*. The type genome for the species is the GenBank assembly GCA_013298945.1. The GC content of the type genome is 50.13 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Inabsosa adremimonas sp. nov.

Candidatus Inabsosa adremimonas (NL. fem. n. *adremimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-601 sp003250865*. The type genome for the species is the GenBank assembly GCA_003250865.1. The GC content of the type genome is 46.62 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Inabsosa gen. nov.

Candidatus Inabsosa (NL. fem. n. *Inabsosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-601*. The type species for the genus is *Candidatus* Inabsosa adremimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2720935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulidaceae.

Description of *Candidatus* Inabsula inredicella sp. nov.

Candidatus Inabsula inredicella (NL. fem. n. *inredicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNOM01 sp013824835*. The type genome for the species is the GenBank assembly GCA_013824835.1. The GC content of the type genome is 46.91 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Inabsula gen. nov.

Candidatus Inabsula (NL. fem. n. *Inabsula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNOM01*. The type species for the genus is *Candidatus* Inabsula inredicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaccana nicomiforma sp. nov.

Candidatus Inaccana nicomiforma (NL. fem. n. *nicomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3566 sp002376065*. The type genome for the species is the GenBank assembly GCA_002376065.1. The GC content of the type genome is 33.84 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Inaccana gen. nov.

Candidatus Inaccana (NL. fem. n. *Inaccana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3566*. The type species for the genus is *Candidatus* Inaccana nicomiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaccaria abmatitas sp. nov.

Candidatus Inaccaria abmatitas (NL. fem. n. *abmatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1363 sp013816485*. The type genome for the species is the GenBank assembly GCA_013816485.1. The GC content of the type genome is 63.9 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Inaccaria gen. nov.

Candidatus Inaccaria (NL. fem. n. *Inaccaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-1363*. The type species for the genus is *Candidatus* Inaccaria abmatitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisorariaceae.

Description of *Candidatus* Inaccaria accoratica sp. nov.

Candidatus Inaccaria accoratica (NL. fem. n. *accoratica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1363 sp003136555*. The type genome for the species is the GenBank assembly GCA_003136555.1. The GC content of the type genome is 66.79 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Inaccaria inremedo sp. nov.

Candidatus Inaccaria inremedo (NL. fem. n. *inremedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1363 sp013821615*. The type genome for the species is the GenBank assembly GCA_013821615.1. The GC content of the type genome is 68.91 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Inaccaria pulegitura sp. nov.

Candidatus Inaccaria pulegitura (NL. fem. n. *pulegitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1363 sp005801395*. The type genome for the species is the GenBank assembly GCA_005801395.1. The GC content of the type genome is 49.23 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Inaccella accapatica sp. nov.

Candidatus Inaccella accapatica (NL. fem. n. *accapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZYX01 sp012519975*. The type genome for the species is the GenBank assembly GCA_012519975.1. The GC content of the type genome is 36.02 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Inaccella gen. nov.

Candidatus Inaccella (NL. fem. n. *Inaccella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *RZYX01*. The type species for the genus is *Candidatus* Inaccella accapatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaccella imbeliforma sp. nov.

Candidatus Inaccella imbeliforma (NL. fem. n. *imbeliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZYX01 sp009930155*. The type genome for the species is the GenBank assembly GCA_009930155.1. The GC content of the type genome is 36.11 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Inaccia embamitas sp. nov.

Candidatus Inaccia embamitas (NL. fem. n. *embamitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCWP01 sp013697585*. The type genome for the species is the GenBank assembly GCA_013697585.1. The GC content of the type genome is 70.41 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Inaccia gen. nov.

Candidatus Inaccia (NL. fem. n. *Inaccia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCWP01*. The type species for the genus is *Candidatus* Inaccia embamitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaccida caduritoga sp. nov.

Candidatus Inaccida caduritoga (NL. fem. n. *caduritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3 sp001689445*. The type genome for the species is the GenBank assembly GCA_001689445.1. The GC content of the type genome is 54.71 % and the

genome length is 2.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Feces".

Description of *Candidatus* Inaccida gen. nov.

Candidatus Inaccida (NL. fem. n. *Inaccida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M3*. The type species for the genus is *Candidatus* Inaccida caduritoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaccosa mutabitas sp. nov.

Candidatus Inaccosa mutabitas (NL. fem. n. *mutabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADIE01 sp013151495*. The type genome for the species is the GenBank assembly GCA_013151495.1. The GC content of the type genome is 43.39 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Inaccosa gen. nov.

Candidatus Inaccosa (NL. fem. n. *Inaccosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADIE01*. The type species for the genus is *Candidatus* Inaccosa mutabitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-85*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benepiaceae.

Description of *Candidatus* Inaccula effinessa sp. nov.

Candidatus Inaccula effinessa (NL. fem. n. *effinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABLXU01 sp013177805*. The type genome for the species is the GenBank assembly GCA_013177805.1. The GC content of the type genome is 56.59 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Inaccula gen. nov.

Candidatus Inaccula (NL. fem. n. *Inaccula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABLXU01*. The type species for the genus is *Candidatus* Inaccula effinessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Futatariaceae.

Description of *Candidatus* Inadfana dehonugo sp. nov.

Candidatus Inadfana dehonugo (NL. fem. n. *dehonugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W-Firmicutes-14 sp002840275*. The type genome for the species is the GenBank assembly GCA_002840275.1. The GC content of the type genome is 46.54 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Inadfana gen. nov.

Candidatus Inadfana (NL. fem. n. *Inadfana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W-Firmicutes-14*. The type species for the genus is *Candidatus* Inadfana dehonugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefanaceae.

Description of *Candidatus* Inadfaria desonitoga sp. nov.

Candidatus Inadfaria desonitoga (NL. fem. n. *desonitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5399 sp003510345*. The type genome for the species is the GenBank assembly GCA_003510345.1. The GC content of the type genome is 53.41 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Inadfaria gen. nov.

Candidatus Inadfaria (NL. fem. n. *Inadfaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5399*. The type species for the genus is *Candidatus* Inadfaria desonitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inadfaria medimigena sp. nov.

Candidatus Inadfaria medimigena (NL. fem. n. *medimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5399 sp002407725*. The type genome for the species is the GenBank assembly GCA_002407725.1. The GC content of the type genome is 52.14 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Inadfella innasax sp. nov.

Candidatus Inadfella innasax (NL. fem. n. *innasax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXFB01 sp903918595*. The type genome for the species is the GenBank assembly GCA_903918595.1. The GC content of the type genome is 57.77 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Inadfella gen. nov.

Candidatus Inadfella (NL. fem. n. *Inadfella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXFB01*. The type species for the genus is *Candidatus* Inadfella innasax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Inadfia locelisca sp. nov.

Candidatus Inadfia locelisca (NL. fem. n. *locelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AM-2324 sp900299495*. The type genome for the species is the GenBank assembly GCA_900299495.1. The GC content of the type genome is 37.43 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Inadfia gen. nov.

Candidatus Inadfia (NL. fem. n. *Inadfia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AM-2324*. The type species for the genus is *Candidatus* Inadfia locelisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inadfida buxanastra sp. nov.

Candidatus Inadfida buxanastra (NL. fem. n. *buxanastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VEOV01 sp009886125*. The type genome for the species is the GenBank assembly GCA_009886125.1. The GC content of the type genome is 51.71 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Inadfida gen. nov.

Candidatus Inadfida (NL. fem. n. *Inadfida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VEOV01*. The type species for the genus is *Candidatus* Inadfida buxanastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inadfida irremitia sp. nov.

Candidatus Inadfida irremitia (NL. fem. n. *irremitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VEOV01 sp012026855*. The type genome for the species is the GenBank assembly GCA_012026855.1. The GC content of the type genome is 55.41 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Inadfida lutuletta sp. nov.

Candidatus Inadfida lutuletta (NL. fem. n. *lutuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VEOV01 sp013377075*. The type genome for the species is the GenBank assembly GCA_013377075.1. The GC content of the type genome is 50.36 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Inadfosa turilastra sp. nov.

Candidatus Inadfosa turilastra (NL. fem. n. *turilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-46-13 sp001791995*. The type genome for the species is the GenBank assembly GCA_001791995.1. The GC content of the type genome is 46.74 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Inadfosa gen. nov.

Candidatus Inadfosa (NL. fem. n. *Inadfosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-46-13*. The type species for the genus is *Candidatus* Inadfosa turilastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Inadfula adtubicula sp. nov.

Candidatus Inadfula adtubicula (NL. fem. n. *adtubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5009 sp002396665*. The type genome for the species is the GenBank assembly GCA_002396665.1. The GC content of the type genome is 40.39 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Inadfula gen. nov.

Candidatus Inadfula (NL. fem. n. *Inadfula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5009*. The type species for the genus is *Candidatus* Inadfula adtubicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inambana dilicitoga sp. nov.

Candidatus Inambana dilicitoga (NL. fem. n. *dilicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCUL01 sp013811855*. The type genome for the species is the GenBank assembly GCA_013811855.1. The GC content of the type genome is 70.98 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Inambana gen. nov.

Candidatus Inambana (NL. fem. n. *Inambana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCUL01*. The type species for the genus is *Candidatus* Inambana dilicitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inambaria arcipitas sp. nov.

Candidatus Inambaria arcipitas (NL. fem. n. *arcipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMES01 sp007375655*. The type genome for the species is the

GenBank assembly GCA_007375655.1. The GC content of the type genome is 52.77 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Inambaria gen. nov.

Candidatus Inambaria (NL. fem. n. *Inambaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMES01*. The type species for the genus is *Candidatus* Inambaria arcipitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Inambia incesago sp. nov.

Candidatus Inambia incesago (NL. fem. n. *incesago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDYZ01 sp004293855*. The type genome for the species is the GenBank assembly GCA_004293855.1. The GC content of the type genome is 53.56 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Inambia gen. nov.

Candidatus Inambia (NL. fem. n. *Inambia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDYZ01*. The type species for the genus is *Candidatus* Inambia incesago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inambia induvimonia sp. nov.

Candidatus Inambia induvimonia (NL. fem. n. *induvimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDYZ01 sp011390275*. The type genome for the species is the GenBank assembly GCA_011390275.1. The GC content of the type genome is 53.61 %

and the genome length is 4.28 Mbp.

Description of *Candidatus* Inambia oscilago sp. nov.

Candidatus Inambia oscilago (NL. fem. n. *oscilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDYZ01 sp012033105*. The type genome for the species is the GenBank assembly GCA_012033105.1. The GC content of the type genome is 53.48 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Inambida cucurugo sp. nov.

Candidatus Inambida cucurugo (NL. fem. n. *cucurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYRG01 sp903928515*. The type genome for the species is the GenBank assembly GCA_903928515.1. The GC content of the type genome is 60.86 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Inambida gen. nov.

Candidatus Inambida (NL. fem. n. *Inambida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYRG01*. The type species for the genus is *Candidatus* Inambida cucurugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inambida gerunicula sp. nov.

Candidatus Inambida gerunicula (NL. fem. n. *gerunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYRG01 sp903862715*. The type genome for the species is the GenBank assembly GCA_903862715.1. The GC content of the type genome is 60.37 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Inambida halucax sp. nov.

Candidatus Inambida halucax (NL. fem. n. *halucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYRG01 sp009693985*. The type genome for the species is the GenBank assembly GCA_009693985.1. The GC content of the type genome is 62.95 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Inambosa doxolitura sp. nov.

Candidatus Inambosa doxolitura (NL. fem. n. *doxolitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM524 sp002869315*. The type genome for the species is the GenBank assembly GCA_002869315.1. The GC content of the type genome is 33.9 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Inambosa gen. nov.

Candidatus Inambosa (NL. fem. n. *Inambosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM524*. The type species for the genus is *Candidatus* Inambosa doxolitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Inambosa habacitio sp. nov.

Candidatus Inambosa habacitio (NL. fem. n. *habacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM524 sp002869365*. The type genome for the species is the GenBank assembly GCA_002869365.1. The GC content of the type genome is 34.12 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Inambosa insuribula sp. nov.

Candidatus Inambosa insuribula (NL. fem. n. *insuribula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM524 sp013151215*. The type genome for the species is the GenBank assembly GCA_013151215.1. The GC content of the type genome is 41.04 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Inardaria peripitrix sp. nov.

Candidatus Inardaria peripitrix (NL. fem. n. *peripitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAE01 sp014238905*. The type genome for the species is the GenBank assembly GCA_014238905.1. The GC content of the type genome is 49.3 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Inardaria gen. nov.

Candidatus Inardaria (NL. fem. n. *Inardaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABAAE01*. The type species for the genus is *Candidatus* Inardaria peripitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inardella rorifimonas sp. nov.

Candidatus Inardella rorifimonas (NL. fem. n. *rorifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTM01 sp012031455*. The type genome for the species is the GenBank assembly GCA_012031455.1. The GC content of the type genome is 55.49 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Inardella gen. nov.

Candidatus Inardella (NL. fem. n. *Inardella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAUTM01*. The type species for the genus is *Candidatus* Inardella rorifimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inardida pavimiforma sp. nov.

Candidatus Inardida pavimiforma (NL. fem. n. *pavimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRHL01 sp009783245*. The type genome for the species is the GenBank assembly GCA_009783245.1. The GC content of the type genome is 57.11 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Inardida gen. nov.

Candidatus Inardida (NL. fem. n. *Inardida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRHL01*. The type species for the genus is *Candidatus* Inardida pavimiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumanaceae.

Description of *Candidatus* Inardula effacugo sp. nov.

Candidatus Inardula effacugo (NL. fem. n. *effacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-95 sp002011835*. The type genome for the species is the GenBank assembly GCA_002011835.1. The GC content of the type genome is 68.22 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Inardula gen. nov.

Candidatus Inardula (NL. fem. n. *Inardula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-95*. The type species for the genus is *Candidatus* Inardula

effacugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inargana adpinigena sp. nov.

Candidatus Inargana adpinigena (NL. fem. n. *adpinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NSJ-62 sp014334055*. The type genome for the species is the GenBank assembly RS_GCF_014334055.1. The GC content of the type genome is 58.6 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Inargana gen. nov.

Candidatus Inargana (NL. fem. n. *Inargana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NSJ-62*. The type species for the genus is *Candidatus* Inargana adpinigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inargaria infatatio sp. nov.

Candidatus Inargaria infatatio (NL. fem. n. *infatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBD01 sp013360685*. The type genome for the species is the GenBank assembly GCA_013360685.1. The GC content of the type genome is 63.95 % and the genome length is 8.0 Mbp.

Description of *Candidatus* Inargaria gen. nov.

Candidatus Inargaria (NL. fem. n. *Inargaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBD01*. The type species for the genus is *Candidatus* Inargaria infatatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inargaria pomifitoga sp. nov.

Candidatus Inargaria pomifitoga (NL. fem. n. *pomifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBD01 sp012728855*. The type genome for the species is the GenBank assembly GCA_012728855.1. The GC content of the type genome is 61.9 % and the genome length is 11.31 Mbp.

Description of *Candidatus* Inargella adgenetta sp. nov.

Candidatus Inargella adgenetta (NL. fem. n. *adgenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ULC077BIN1 sp003249025*. The type genome for the species is the GenBank assembly GCA_003249025.1. The GC content of the type genome is 48.17 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Inargella gen. nov.

Candidatus Inargella (NL. fem. n. *Inargella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ULC077BIN1*. The type species for the genus is *Candidatus* Inargella adgenetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inargia linigitura sp. nov.

Candidatus Inargia linigitura (NL. fem. n. *linigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6149 sp002423155*. The type genome for the species is the GenBank assembly GCA_002423155.1. The GC content of the type genome is 41.97 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Inargia gen. nov.

Candidatus Inargia (NL. fem. n. *Inargia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6149*. The type species for the genus is *Candidatus* Inargia linigitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA998*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifariaceae.

Description of *Candidatus* Inargida crabrimonas sp. nov.

Candidatus Inargida crabrimonas (NL. fem. n. *crabrimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tous-C9LFEB sp903970445*. The type genome for the species is the GenBank assembly GCA_903970445.1. The GC content of the type genome is 57.91 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Inargida gen. nov.

Candidatus Inargida (NL. fem. n. *Inargida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Tous-C9LFEB*. The type species for the genus is *Candidatus* Inargida crabrimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaspana tranvibra sp. nov.

Candidatus Inaspana tranvibra (NL. fem. n. *tranvibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGAU01 sp009919975*. The type genome for the species is the GenBank assembly GCA_009919975.1. The GC content of the type genome is 65.37 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Inaspana gen. nov.

Candidatus Inaspana (NL. fem. n. *Inaspana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGAU01*. The type species for the genus is *Candidatus* Inaspana tranvibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Inasparia depubugo sp. nov.

Candidatus Inasparia depubugo (NL. fem. n. *depubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA933 sp002293545*. The type genome for the species is the GenBank assembly GCA_002293545.1. The GC content of the type genome is 41.94 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Inasparia gen. nov.

Candidatus Inasparia (NL. fem. n. *Inasparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA933*. The type species for the genus is *Candidatus* Inasparia depubugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaspella adhinitio sp. nov.

Candidatus Inaspella adhinitio (NL. fem. n. *adhinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NSCAC1 sp902810445*. The type genome for the species is the GenBank assembly GCA_902810445.1. The GC content of the type genome is 37.01 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Inaspella gen. nov.

Candidatus Inaspella (NL. fem. n. *Inaspella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *NSCAC1*. The type species for the genus is *Candidatus* Inaspella adhinitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaspia senacibula sp. nov.

Candidatus Inaspia senacibula (NL. fem. n. *senacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTM01 sp004297485*. The type genome for the species is the GenBank assembly GCA_004297485.1. The GC content of the type genome is 59.99 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Inaspia gen. nov.

Candidatus Inaspia (NL. fem. n. *Inaspia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTM01*. The type species for the genus is *Candidatus* Inaspia senacibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaspida delebetta sp. nov.

Candidatus Inaspida delebetta (NL. fem. n. *delebetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-57-27 sp002281735*. The type genome for the species is the GenBank assembly GCA_002281735.1. The GC content of the type genome is 56.83 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Inaspida gen. nov.

Candidatus Inaspida (NL. fem. n. *Inaspida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *28-57-27*. The type species for the genus is *Candidatus* Inaspida delebetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inaspida ossucimonia sp. nov.

Candidatus Inaspida ossucimonia (NL. fem. n. *ossucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-57-27 sp006212015*. The type genome for the species is the GenBank assembly GCA_006212015.1. The GC content of the type genome is 65.45 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Inasposa adnumatica sp. nov.

Candidatus Inasposa adnumatica (NL. fem. n. *adnumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2733415 sp013214625*. The type genome for the species is the GenBank assembly GCA_013214625.1. The GC content of the type genome is 31.83 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Inasposa gen. nov.

Candidatus Inasposa (NL. fem. n. *Inasposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2733415*. The type species for the genus is *Candidatus* Inasposa adnumatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inasposa pinififica sp. nov.

Candidatus Inasposa pinififica (NL. fem. n. *pinififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2733415 sp002733415*. The type genome for the species is the GenBank assembly GCA_002733415.1. The GC content of the type genome is 32.44 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Inaspula thapsitudo sp. nov.

Candidatus Inaspula thapsitudo (NL. fem. n. *thapsitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYVN01 sp012517155*. The type genome for the species is the GenBank assembly GCA_012517155.1. The GC content of the type genome is 39.27 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Inaspula gen. nov.

Candidatus Inaspula (NL. fem. n. *Inaspula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYVN01*. The type species for the genus is *Candidatus* Inaspula thapsitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inbecana dimacibula sp. nov.

Candidatus Inbecana dimacibula (NL. fem. n. *dimacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZBV01 sp012513605*. The type genome for the species is the GenBank assembly GCA_012513605.1. The GC content of the type genome is 42.62 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Inbecana gen. nov.

Candidatus Inbecana (NL. fem. n. *Inbecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZBV01*. The type species for the genus is *Candidatus* Inbecana dimacibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGW-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifulaceae.

Description of *Candidatus* Inbecaria defanentia sp. nov.

Candidatus Inbecaria defanentia (NL. fem. n. *defanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J130 sp003694235*. The type genome for the species is the GenBank assembly GCA_003694235.1. The GC content of the type genome is 61.56 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Inbecaria gen. nov.

Candidatus Inbecaria (NL. fem. n. *Inbecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J130*. The type species for the genus is *Candidatus* Inbecaria defanentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11858*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifellaceae.

Description of *Candidatus* Inbecella inlecessa sp. nov.

Candidatus Inbecella inlecessa (NL. fem. n. *inlecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JC658 sp011634775*. The type genome for the species is the GenBank assembly RS_GCF_011634775.1. The GC content of the type genome is 54.63 % and the genome length is 7.36 Mbp.

Description of *Candidatus* Inbecella gen. nov.

Candidatus Inbecella (NL. fem. n. *Inbecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JC658*. The type species for the genus is *Candidatus* Inbecella inlecessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inbecia bovicigena sp. nov.

Candidatus Inbecia bovicigena (NL. fem. n. *bovicigena* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-21 sp003598015*. The type genome for the species is the GenBank assembly GCA_003598015.1. The GC content of the type genome is 61.06 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Inbecia gen. nov.

Candidatus Inbecia (NL. fem. n. *Inbecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-21*. The type species for the genus is *Candidatus* Inbecia bovicigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-55-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Salubiaceae.

Description of *Candidatus* Inbecosa paropifica sp. nov.

Candidatus Inbecosa paropifica (NL. fem. n. *paropifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0029 sp006227875*. The type genome for the species is the GenBank assembly GCA_006227875.1. The GC content of the type genome is 63.65 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Inbecosa gen. nov.

Candidatus Inbecosa (NL. fem. n. *Inbecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M0029*. The type species for the genus is *Candidatus* Inbecosa paropifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5704*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovidaceae.

Description of *Candidatus* Inbecula penurilega sp. nov.

Candidatus Inbecula penurilega (NL. fem. n. *penurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADBMC01 sp902795635*. The type genome for the species is the GenBank assembly GCA_902795635.1. The GC content of the type genome is 67.54 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Inbecula gen. nov.

Candidatus Inbecula (NL. fem. n. *Inbecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADBMC01*. The type species for the genus is *Candidatus* Inbecula penurilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inbelana rudicilenta sp. nov.

Candidatus Inbelana rudicilenta (NL. fem. n. *rudicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11682 sp003455945*. The type genome for the species is the GenBank assembly GCA_003455945.1. The GC content of the type genome is 66.13 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Inbelana gen. nov.

Candidatus Inbelana (NL. fem. n. *Inbelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11682*. The type species for the genus is *Candidatus* Inbelana rudicilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inbelaria annucatica sp. nov.

Candidatus Inbelaria annucatica (NL. fem. n. *annucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1384 sp900551265*. The type genome for the species is the GenBank assembly GCA_900551265.1. The GC content of the type genome is 50.59 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Inbelaria gen. nov.

Candidatus Inbelaria (NL. fem. n. *Inbelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1384*. The type species for the genus is *Candidatus* Inbelaria annucatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inbelella chancicula sp. nov.

Candidatus Inbelella chancicula (NL. fem. n. *chancicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAANAU01 sp011089965*. The type genome for the species is the GenBank assembly GCA_011089965.1. The GC content of the type genome is 56.76 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Inbelella gen. nov.

Candidatus Inbelella (NL. fem. n. *Inbelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAANAU01*. The type species for the genus is *Candidatus* Inbelella chancicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inbelia agravitoga sp. nov.

Candidatus Inbelia agravitoga (NL. fem. n. *agravitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMS01 sp009782505*. The type genome for the species is the

GenBank assembly GCA_009782505.1. The GC content of the type genome is 57.86 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Inbelia gen. nov.

Candidatus Inbelia (NL. fem. n. *Inbelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRMS01*. The type species for the genus is *Candidatus* Inbelia agravitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5745*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feficellaceae.

Description of *Candidatus* Inbelia indevimonia sp. nov.

Candidatus Inbelia indevimonia (NL. fem. n. *indevimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMS01 sp009776595*. The type genome for the species is the GenBank assembly GCA_009776595.1. The GC content of the type genome is 53.25 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Inbelia manufitica sp. nov.

Candidatus Inbelia manufitica (NL. fem. n. *manufitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMS01 sp009777025*. The type genome for the species is the GenBank assembly GCA_009777025.1. The GC content of the type genome is 52.71 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Inbelida gen. nov.

Candidatus Inbelida (NL. fem. n. *Inbelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTGT01*. The type species for the genus is *Candidatus* Inbelida tiedjei_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inbelosa imbecilenta sp. nov.

Candidatus Inbelosa imbecilenta (NL. fem. n. *imbecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707695 sp002707695*. The type genome for the species is the GenBank assembly GCA_002707695.1. The GC content of the type genome is 43.48 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Inbelosa gen. nov.

Candidatus Inbelosa (NL. fem. n. *Inbelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2707695*. The type species for the genus is *Candidatus* Inbelosa imbecilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12402*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pimenosaceae.

Description of *Candidatus* Inbelula tigurax sp. nov.

Candidatus Inbelula tigurax (NL. fem. n. *tigurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *73-13 sp001898855*. The type genome for the species is the GenBank assembly GCA_001898855.1. The GC content of the type genome is 72.52 % and the genome length is 2.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Inbelula gen. nov.

Candidatus Inbelula (NL. fem. n. *Inbelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *73-13*. The type species for the genus is *Candidatus* Inbelula tigurax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incenana dupunimonas sp. nov.

Candidatus Incenana dupunimonas (NL. fem. n. *dupunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-7 sp002085285*. The type genome for the species is the GenBank assembly GCA_002085285.1. The GC content of the type genome is 50.94 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Incenana gen. nov.

Candidatus Incenana (NL. fem. n. *Incenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-7*. The type species for the genus is *Candidatus* Incenana dupunimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incenaria abrumatica sp. nov.

Candidatus Incenaria abrumatica (NL. fem. n. *abrumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCUL01 sp004297205*. The type genome for the species is the GenBank assembly GCA_004297205.1. The GC content of the type genome is 64.54 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Incenaria gen. nov.

Candidatus Incenaria (NL. fem. n. *Incenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCUL01*. The type species for the genus is *Candidatus* Incenaria abrumatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-57-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacomanaceae.

Description of *Candidatus* Incenella altivibra sp. nov.

Candidatus Incenella altivibra (NL. fem. n. *altivibra* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746605 sp002746605*. The type genome for the species is the GenBank assembly GCA_002746605.1. The GC content of the type genome is 30.45 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Incenella gen. nov.

Candidatus Incenella (NL. fem. n. *Incenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746605*. The type species for the genus is *Candidatus* Incenella altivibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incenia maliventia sp. nov.

Candidatus Incenia maliventia (NL. fem. n. *maliventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSQX01 sp013215615*. The type genome for the species is the GenBank assembly GCA_013215615.1. The GC content of the type genome is 68.26 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Incenia gen. nov.

Candidatus Incenia (NL. fem. n. *Incenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSQX01*. The type species for the genus is *Candidatus* Incenia maliventia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMWR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penicellaceae.

Description of *Candidatus* Incenida faviliforma sp. nov.

Candidatus Incenida faviliforma (NL. fem. n. *faviliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1313 sp001873075*. The type genome for the species is the GenBank assembly GCA_001873075.1. The GC content of the type genome is 44.78 % and the genome length is 2.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Incenida gen. nov.

Candidatus Incenida (NL. fem. n. *Incenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1313*. The type species for the genus is *Candidatus* Incenida faviliforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incenida ludibibula sp. nov.

Candidatus Incenida ludibibula (NL. fem. n. *ludibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1313 sp002307115*. The type genome for the species is the GenBank assembly GCA_002307115.1. The GC content of the type genome is 45.07 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Incesana semodiforma sp. nov.

Candidatus Incesana semodiforma (NL. fem. n. *semodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4660 sp002405435*. The type genome for the species is the GenBank assembly GCA_002405435.1. The GC content of the type genome is 54.4 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Incesana gen. nov.

Candidatus Incesana (NL. fem. n. *Incesana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4660*. The type species for the genus is *Candidatus* Incesana semodiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UA16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilosaceae.

Description of *Candidatus* Incesaria innasatio sp. nov.

Candidatus Incesaria innasatio (NL. fem. n. *innasatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SACF01 sp009928665*. The type genome for the species is the GenBank assembly GCA_009928665.1. The GC content of the type genome is 46.78 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Incesaria gen. nov.

Candidatus Incesaria (NL. fem. n. *Incesaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SACF01*. The type species for the genus is *Candidatus* Incesaria innasatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedepariaceae.

Description of *Candidatus* Incesella giganatio sp. nov.

Candidatus Incesella giganatio (NL. fem. n. *giganatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9904 sp003513845*. The type genome for the species is the GenBank assembly GCA_003513845.1. The GC content of the type genome is 34.04 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Incesella gen. nov.

Candidatus Incesella (NL. fem. n. *Incesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9904*. The type species for the genus is *Candidatus* Incesella giganatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *34-128*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefosaceae.

Description of *Candidatus* Incesosa abindibula sp. nov.

Candidatus Incesosa abindibula (NL. fem. n. *abindibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4781 sp002403105*. The type genome for the species is the GenBank assembly GCA_002403105.1. The GC content of the type genome is 43.72 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Incesosa gen. nov.

Candidatus Incesosa (NL. fem. n. *Incesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4781*. The type species for the genus is *Candidatus* Incesosa abindibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incesosa accumitrix sp. nov.

Candidatus Incesosa accumitrix (NL. fem. n. *accumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4781 sp003446605*. The type genome for the species is the GenBank assembly GCA_003446605.1. The GC content of the type genome is 44.85 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Incesosa dilecigena sp. nov.

Candidatus Incesosa dilecigena (NL. fem. n. *dilecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4781 sp012797975*. The type genome for the species is the GenBank assembly GCA_012797975.1. The GC content of the type genome is 48.36 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Incesosa exturicula sp. nov.

Candidatus Incesosa exturicula (NL. fem. n. *exturicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4781 sp012797815*. The type genome for the species is the GenBank assembly GCA_012797815.1. The GC content of the type genome is 47.94 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Incesosa octoditura sp. nov.

Candidatus Incesosa octoditura (NL. fem. n. *octoditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4781 sp012798455*. The type genome for the species is the GenBank assembly GCA_012798455.1. The GC content of the type genome is 46.1 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Incivana monopitura sp. nov.

Candidatus Incivana monopitura (NL. fem. n. *monopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6080 sp002436025*. The type genome for the species is the GenBank assembly GCA_002436025.1. The GC content of the type genome is 58.87 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Incivana gen. nov.

Candidatus Incivana (NL. fem. n. *Incivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6080*. The type species for the genus is *Candidatus* Incivana monopitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incivaria bucolago sp. nov.

Candidatus Incivaria bucolago (NL. fem. n. *bucolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2697345 sp002697345*. The type genome for the species is the GenBank assembly GCA_002697345.1. The GC content of the type genome is 38.78 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Incivaria gen. nov.

Candidatus Incivaria (NL. fem. n. *Incivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2697345*. The type species for the genus is *Candidatus* Incivaria bucolago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incivella infacicella sp. nov.

Candidatus Incivella infacicella (NL. fem. n. *infacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLOH01 sp007132595*. The type genome for the species is the GenBank assembly GCA_007132595.1. The GC content of the type genome is 44.34 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Incivella gen. nov.

Candidatus Incivella (NL. fem. n. *Incivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLOH01*. The type species for the genus is *Candidatus* Incivella infacicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incivia medimicula sp. nov.

Candidatus Incivia medimicula (NL. fem. n. *medimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-457 sp003161575*. The type genome for the species is the GenBank assembly GCA_003161575.1. The GC content of the type genome is 66.66 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Incivia gen. nov.

Candidatus Incivia (NL. fem. n. *Incivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-457*. The type species for the genus is *Candidatus* Incivia medimicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Incivida sitelitia sp. nov.

Candidatus Incivida sitelitia (NL. fem. n. *sitelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748425 sp002748425*. The type genome for the species is the GenBank assembly GCA_002748425.1. The GC content of the type genome is 49.58 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Incivida gen. nov.

Candidatus Incivida (NL. fem. n. *Incivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2748425*. The type species for the genus is *Candidatus* Incivida sitelitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incivula occumentia sp. nov.

Candidatus Incivula occumentia (NL. fem. n. *occumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALA01 sp003343565*. The type genome for the species is the GenBank assembly GCA_003343565.1. The GC content of the type genome is 55.93 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Incivula gen. nov.

Candidatus Incivula (NL. fem. n. *Incivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QALA01*. The type species for the genus is *Candidatus* Incivula occumentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-312*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homolariaceae.

Description of *Candidatus* Incocana extunitrix sp. nov.

Candidatus Incocana extunitrix (NL. fem. n. *extunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRLJ01 sp009777685*. The type genome for the species is the GenBank assembly GCA_009777685.1. The GC content of the type genome is 62.76 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Incocana gen. nov.

Candidatus Incocana (NL. fem. n. *Incocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRLJ01*. The type species for the genus is *Candidatus* Incocana extunitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incocula divolitura sp. nov.

Candidatus Incocula divolitura (NL. fem. n. *divolitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1757 sp002315625*. The type genome for the species is the GenBank assembly GCA_002315625.1. The GC content of the type genome is 50.3 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Incocula gen. nov.

Candidatus Incocula (NL. fem. n. *Incocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1757*. The type species for the genus is *Candidatus* Incocula divolitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1402*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicimidaceae.

Description of *Candidatus* Incomana curaciforma sp. nov.

Candidatus Incomana curaciforma (NL. fem. n. *curaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRDE01 sp009783605*. The type genome for the species is the GenBank assembly GCA_009783605.1. The GC content of the type genome is 55.53 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Incomana gen. nov.

Candidatus Incomana (NL. fem. n. *Incomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRDE01*. The type species for the genus is *Candidatus* Incomana curaciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incomaria insubastra sp. nov.

Candidatus Incomaria insubastra (NL. fem. n. *insubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OXYB2-FULL-48-7-A sp001771615*. The type genome for the species is the GenBank assembly GCA_001771615.1. The GC content of the type genome is 48.24 % and the genome length is 1.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Incomaria gen. nov.

Candidatus Incomaria (NL. fem. n. *Incomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OXYB2-FULL-48-7-A*. The type species for the genus is *Candidatus* Incomaria insubastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYB2-FULL-48-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomogiaceae.

Description of *Candidatus* Incomia adfirugo sp. nov.

Candidatus Incomia adfirugo (NL. fem. n. *adfirugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDAE01 sp013289325*. The type genome for the species is the GenBank assembly GCA_013289325.1. The GC content of the type genome is 40.88 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Incomia gen. nov.

Candidatus Incomia (NL. fem. n. *Incomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDAE01*. The type species for the genus is *Candidatus* Incomia adfirugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incomosa cucuretta sp. nov.

Candidatus Incomosa cucuretta (NL. fem. n. *cucuretta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J005 sp003695905*. The type genome for the species is the GenBank assembly GCA_003695905.1. The GC content of the type genome is 56.86 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Incomosa gen. nov.

Candidatus Incomosa (NL. fem. n. *Incomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J005*. The type species for the genus is *Candidatus* Incomosa cucuretta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incomosa octusitio sp. nov.

Candidatus Incomosa octusitio (NL. fem. n. *octusitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J005 sp003696795*. The type genome for the species is the GenBank assembly GCA_003696795.1. The GC content of the type genome is 60.87 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Incomula anaplimonas sp. nov.

Candidatus Incomula anaplimonas (NL. fem. n. *anaplimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISIP01 sp903885415*. The type genome for the species is the GenBank assembly GCA_903885415.1. The GC content of the type genome is 64.21 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Incomula gen. nov.

Candidatus Incomula (NL. fem. n. *Incomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISIP01*. The type species for the genus is *Candidatus* Incomula

anaplimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inconana exhonilenta sp. nov.

Candidatus Inconana exhonilenta (NL. fem. n. *exhonilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACECR01 sp902558105*. The type genome for the species is the GenBank assembly GCA_902558105.1. The GC content of the type genome is 35.64 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Inconana gen. nov.

Candidatus Inconana (NL. fem. n. *Inconana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACECR01*. The type species for the genus is *Candidatus* Inconana exhonilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA817*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Calipidaceae.

Description of *Candidatus* Inconaria nugigetta sp. nov.

Candidatus Inconaria nugigetta (NL. fem. n. *nugigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRHF01 sp009783415*. The type genome for the species is the GenBank assembly GCA_009783415.1. The GC content of the type genome is 46.56 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Inconaria gen. nov.

Candidatus Inconaria (NL. fem. n. *Inconaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRHF01*. The type species for the genus is *Candidatus* Inconaria nugigetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4068*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divulosaceae.

Description of *Candidatus* Inconella annicitoga sp. nov.

Candidatus Inconella annicitoga (NL. fem. n. *annicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-743 sp003151955*. The type genome for the species is the GenBank assembly GCA_003151955.1. The GC content of the type genome is 71.8 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Inconella gen. nov.

Candidatus Inconella (NL. fem. n. *Inconella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-743*. The type species for the genus is *Candidatus* Inconella annicitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegosaceae.

Description of *Candidatus* Inconula inbelatica sp. nov.

Candidatus Inconula inbelatica (NL. fem. n. *inbelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGA01 sp900696425*. The type genome for the species is the GenBank assembly GCA_900696425.1. The GC content of the type genome is 67.28 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Inconula gen. nov.

Candidatus Inconula (NL. fem. n. *Inconula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAADGA01*. The type species for the genus is *Candidatus* Inconula

inbelatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Incoraria deculibula sp. nov.

Candidatus Incoraria deculibula (NL. fem. n. *deculibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKGN01 sp007117415*. The type genome for the species is the GenBank assembly GCA_007117415.1. The GC content of the type genome is 27.7 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Incoraria gen. nov.

Candidatus Incoraria (NL. fem. n. *Incoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKGN01*. The type species for the genus is *Candidatus* Incoraria deculibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Incoria omnipitudo sp. nov.

Candidatus Incoria omnipitudo (NL. fem. n. *omnipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVA01 sp009691195*. The type genome for the species is the GenBank assembly GCA_009691195.1. The GC content of the type genome is 69.85 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Incoria gen. nov.

Candidatus Incoria (NL. fem. n. *Incoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SHVA01*. The type species for the genus is *Candidatus* Incoria omnipitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *70-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Incorida panifitia sp. nov.

Candidatus Incorida panifitia (NL. fem. n. *panifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1150 sp003139415*. The type genome for the species is the GenBank assembly GCA_003139415.1. The GC content of the type genome is 69.02 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Incorida gen. nov.

Candidatus Incorida (NL. fem. n. *Incorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1150*. The type species for the genus is *Candidatus* Incorida panifitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incorida semigax sp. nov.

Candidatus Incorida semigax (NL. fem. n. *semigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1150 sp003153495*. The type genome for the species is the GenBank assembly GCA_003153495.1. The GC content of the type genome is 70.37 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Incorosa immodatica sp. nov.

Candidatus Incorosa immodatica (NL. fem. n. *immodatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JACMQM01 sp014376985*. The type genome for the species is the GenBank assembly GCA_014376985.1. The GC content of the type genome is 39.43 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Incorosa gen. nov.

Candidatus Incorosa (NL. fem. n. *Incorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMQM01*. The type species for the genus is *Candidatus* Incorosa immodatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incorula agrimifica sp. nov.

Candidatus Incorula agrimifica (NL. fem. n. *agrimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSXX01 sp011367745*. The type genome for the species is the GenBank assembly GCA_011367745.1. The GC content of the type genome is 36.73 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Incorula gen. nov.

Candidatus Incorula (NL. fem. n. *Incorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSXX01*. The type species for the genus is *Candidatus* Incorula agrimifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-40-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifellaceae.

Description of *Candidatus* Incucana hemititia sp. nov.

Candidatus Incucana hemititia (NL. fem. n. *hemititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKIC01 sp007116685*. The type genome for the species is the

GenBank assembly GCA_007116685.1. The GC content of the type genome is 40.94 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Incucana gen. nov.

Candidatus Incucana (NL. fem. n. *Incucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKIC01*. The type species for the genus is *Candidatus* Incucana hemititia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinulaceae.

Description of *Candidatus* Incucaria facunessa sp. nov.

Candidatus Incucaria facunessa (NL. fem. n. *facunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-935 sp003165275*. The type genome for the species is the GenBank assembly GCA_003165275.1. The GC content of the type genome is 68.31 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Incucaria gen. nov.

Candidatus Incucaria (NL. fem. n. *Incucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-935*. The type species for the genus is *Candidatus* Incucaria facunessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incucella peracimonia sp. nov.

Candidatus Incucella peracimonia (NL. fem. n. *peracimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J021 sp003696665*. The type genome for the species is the GenBank assembly GCA_003696665.1. The GC content of the type genome is 51.47 % and the

genome length is 2.97 Mbp.

Description of *Candidatus* Incucella gen. nov.

Candidatus Incucella (NL. fem. n. *Incucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J021*. The type species for the genus is *Candidatus* Incucella peracimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002770795*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conoposaceae.

Description of *Candidatus* Incucia accapibula sp. nov.

Candidatus Incucia accapibula (NL. fem. n. *accapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAO01 sp007126835*. The type genome for the species is the GenBank assembly GCA_007126835.1. The GC content of the type genome is 70.71 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Incucia gen. nov.

Candidatus Incucia (NL. fem. n. *Incucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLAO01*. The type species for the genus is *Candidatus* Incucia accapibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incucia assefimonas sp. nov.

Candidatus Incucia assefimonas (NL. fem. n. *assefimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAO01 sp007120845*. The type genome for the species is the GenBank assembly GCA_007120845.1. The GC content of the type genome is 70.85 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Incucida funivago sp. nov.

Candidatus Incucida funivago (NL. fem. n. *funivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRHN01 sp011049595*. The type genome for the species is the GenBank assembly GCA_011049595.1. The GC content of the type genome is 44.67 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Incucida gen. nov.

Candidatus Incucida (NL. fem. n. *Incucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRHN01*. The type species for the genus is *Candidatus* Incucida funivago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B62-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenocellaceae.

Description of *Candidatus* Incucosa vecoritica sp. nov.

Candidatus Incucosa vecoritica (NL. fem. n. *vecoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-65-60-17 sp002787815*. The type genome for the species is the GenBank assembly GCA_002787815.1. The GC content of the type genome is 59.75 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Incucosa gen. nov.

Candidatus Incucosa (NL. fem. n. *Incucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-65-60-17*. The type species for the genus is *Candidatus* Incucosa vecoritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10348*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divorosaceae.

Description of *Candidatus* Incucula solacessa sp. nov.

Candidatus Incucula solacessa (NL. fem. n. *solacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3535 sp002376845*. The type genome for the species is the GenBank assembly GCA_002376845.1. The GC content of the type genome is 41.85 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Incucula gen. nov.

Candidatus Incucula (NL. fem. n. *Incucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3535*. The type species for the genus is *Candidatus* Incucula solacessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA840*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hemidanaceae.

Description of *Candidatus* Inculia penecilenta sp. nov.

Candidatus Inculia penecilenta (NL. fem. n. *penecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCI01 sp012729855*. The type genome for the species is the GenBank assembly GCA_012729855.1. The GC content of the type genome is 60.36 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Inculia gen. nov.

Candidatus Inculia (NL. fem. n. *Inculia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYCI01*. The type species for the genus is *Candidatus* Inculia penecilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inculida fefelilega sp. nov.

Candidatus Inculida fefelilega (NL. fem. n. *fefelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0074130 sp001464495*. The type genome for the species is the GenBank assembly GCA_001464495.1. The GC content of the type genome is 56.57 % and the genome length is 2.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Inculida gen. nov.

Candidatus Inculida (NL. fem. n. *Inculida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0074130*. The type species for the genus is *Candidatus* Inculida fefelilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incunana pinacitoga sp. nov.

Candidatus Incunana pinacitoga (NL. fem. n. *pinacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLK101 sp007134695*. The type genome for the species is the GenBank assembly GCA_007134695.1. The GC content of the type genome is 50.15 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Incunana gen. nov.

Candidatus Incunana (NL. fem. n. *Incunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLK101*. The type species for the genus is *Candidatus* Incunana pinacitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incunaria intamitia sp. nov.

Candidatus Incunaria intamitia (NL. fem. n. *intamitia* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDFU01 sp013815585*. The type genome for the species is the GenBank assembly GCA_013815585.1. The GC content of the type genome is 68.41 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Incunaria gen. nov.

Candidatus Incunaria (NL. fem. n. *Incunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDFU01*. The type species for the genus is *Candidatus* Incunaria intamitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Incunella alembax sp. nov.

Candidatus Incunella alembax (NL. fem. n. *alembax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCTO01 sp902805585*. The type genome for the species is the GenBank assembly GCA_902805585.1. The GC content of the type genome is 69.69 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Incunella gen. nov.

Candidatus Incunella (NL. fem. n. *Incunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCTO01*. The type species for the genus is *Candidatus* Incunella alembax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Incunia adsicitudo sp. nov.

Candidatus Incunia adsicitudo (NL. fem. n. *adsicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFUP01 sp001785735*. The type genome for the species is the GenBank assembly GCA_001785735.1. The GC content of the type genome is 32.88 % and the genome length is 0.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Incunia gen. nov.

Candidatus Incunia (NL. fem. n. *Incunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFUP01*. The type species for the genus is *Candidatus* Incunia adsicitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973_B*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Necubiaceae.

Description of *Candidatus* Incunula demigatio sp. nov.

Candidatus Incunula demigatio (NL. fem. n. *demigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADDZ01 sp013153635*. The type genome for the species is the GenBank assembly GCA_013153635.1. The GC content of the type genome is 33.48 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Incunula gen. nov.

Candidatus Incunula (NL. fem. n. *Incunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADDZ01*. The type species for the genus is *Candidatus* Incunula demigatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indecaria enigmilega sp. nov.

Candidatus Indecaria enigmilega (NL. fem. n. *enigmilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMIU01 sp014380985*. The type genome for the species is the GenBank assembly GCA_014380985.1. The GC content of the type genome is 59.37 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Indecaria gen. nov.

Candidatus Indecaria (NL. fem. n. *Indecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMIU01*. The type species for the genus is *Candidatus* Indecaria enigmilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indecaria innupibula sp. nov.

Candidatus Indecaria innupibula (NL. fem. n. *innupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMIU01 sp014381035*. The type genome for the species is the GenBank assembly GCA_014381035.1. The GC content of the type genome is 58.4 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Indecaria mavoritudo sp. nov.

Candidatus Indecaria mavoritudo (NL. fem. n. *mavoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMIU01 sp014379275*. The type genome for the species is the GenBank assembly GCA_014379275.1. The GC content of the type genome is 59.81 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Indecia incenigena sp. nov.

Candidatus Indecia incenigena (NL. fem. n. *incenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADDV01 sp013153795*. The type genome for the species is the GenBank assembly GCA_013153795.1. The GC content of the type genome is 31.34 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Indecia gen. nov.

Candidatus Indecia (NL. fem. n. *Indecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADDV01*. The type species for the genus is *Candidatus* Indecia incenigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indecida dilemilenta sp. nov.

Candidatus Indecida dilemilenta (NL. fem. n. *dilemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMDK01 sp008080835*. The type genome for the species is the GenBank assembly GCA_008080835.1. The GC content of the type genome is 47.04 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Indecida gen. nov.

Candidatus Indecida (NL. fem. n. *Indecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMDK01*. The type species for the genus is *Candidatus* Indecida dilemilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9320*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilariaceae.

Description of *Candidatus* Indecosa assudigena sp. nov.

Candidatus Indecosa assudigena (NL. fem. n. *assudigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAXUU01 sp013335845*. The type genome for the species is the GenBank assembly GCA_013335845.1. The GC content of the type genome is 53.01 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Indecosa gen. nov.

Candidatus Indecosa (NL. fem. n. *Indecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXUU01*. The type species for the genus is *Candidatus* Indecosa assudigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RUG844*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicuniaceae.

Description of *Candidatus* Indecula carunilenta sp. nov.

Candidatus Indecula carunilenta (NL. fem. n. *carunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1219 sp011054615*. The type genome for the species is the GenBank assembly GCA_011054615.1. The GC content of the type genome is 67.72 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Indecula gen. nov.

Candidatus Indecula (NL. fem. n. *Indecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1219*. The type species for the genus is *Candidatus* Indecula carunilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6522*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudecariaceae.

Description of *Candidatus* Indecula deculitia sp. nov.

Candidatus Indecula deculitia (NL. fem. n. *deculitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1219 sp003155415*. The type genome for the species is the GenBank assembly GCA_003155415.1. The GC content of the type genome is 64.61 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Indepana dehonilega sp. nov.

Candidatus Indepana dehonilega (NL. fem. n. *dehonilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM250 sp008014345*. The type genome for the species is the GenBank assembly RS_GCF_008014345.1. The GC content of the type genome is 64.78 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Indepana gen. nov.

Candidatus Indepana (NL. fem. n. *Indepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM250*. The type species for the genus is *Candidatus* Indepana dehonilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6910*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibicellaceae.

Description of *Candidatus* Indeparia octacicula sp. nov.

Candidatus Indeparia octacicula (NL. fem. n. *octacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748575 sp002748575*. The type genome for the species is the GenBank assembly GCA_002748575.1. The GC content of the type genome is 47.58 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Indeparia gen. nov.

Candidatus Indeparia (NL. fem. n. *Indeparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2748575*. The type species for the genus is *Candidatus* Indeparia

octacicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indepella pecunicella sp. nov.

Candidatus Indepella pecunicella (NL. fem. n. *pecunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDEC01 sp013816645*. The type genome for the species is the GenBank assembly GCA_013816645.1. The GC content of the type genome is 68.63 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Indepella gen. nov.

Candidatus Indepella (NL. fem. n. *Indepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDEC01*. The type species for the genus is *Candidatus* Indepella pecunicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisorariaceae.

Description of *Candidatus* Indepia effemimonia sp. nov.

Candidatus Indepia effemimonia (NL. fem. n. *effemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1532 sp900552605*. The type genome for the species is the GenBank assembly GCA_900552605.1. The GC content of the type genome is 43.94 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Indepia gen. nov.

Candidatus Indepia (NL. fem. n. *Indepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1532*. The type species for the genus is *Candidatus* Indepia effemimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indepida recucatio sp. nov.

Candidatus Indepida recucatio (NL. fem. n. *recucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCPY01 sp004299495*. The type genome for the species is the GenBank assembly GCA_004299495.1. The GC content of the type genome is 47.34 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Indepida gen. nov.

Candidatus Indepida (NL. fem. n. *Indepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCPY01*. The type species for the genus is *Candidatus* Indepida recucatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12090*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabellaceae.

Description of *Candidatus* Indeposa affuligena sp. nov.

Candidatus Indeposa affuligena (NL. fem. n. *affuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDDM01 sp013287605*. The type genome for the species is the GenBank assembly GCA_013287605.1. The GC content of the type genome is 50.78 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Indeposa gen. nov.

Candidatus Indeposa (NL. fem. n. *Indeposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDM01*. The type species for the genus is *Candidatus* Indeposa affuligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family

Palsa-1295. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Antegiaceae.

Description of *Candidatus* Indepula illepitica sp. nov.

Candidatus Indepula illepitica (NL. fem. n. *illepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNQ01 sp009784305*. The type genome for the species is the GenBank assembly GCA_009784305.1. The GC content of the type genome is 44.12 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Indepula gen. nov.

Candidatus Indepula (NL. fem. n. *Indepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRNQ01*. The type species for the genus is *Candidatus* Indepula illepitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indepula immacago sp. nov.

Candidatus Indepula immacago (NL. fem. n. *immacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNQ01 sp009776565*. The type genome for the species is the GenBank assembly GCA_009776565.1. The GC content of the type genome is 43.5 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Indepula selibousia sp. nov.

Candidatus Indepula selibousia (NL. fem. n. *selibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNQ01 sp009783355*. The type genome for the species is the GenBank assembly GCA_009783355.1. The GC content of the type genome is 45.52 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Indevana agnomicula sp. nov.

Candidatus Indevana agnomicula (NL. fem. n. *agnomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-82 sp005879815*. The type genome for the species is the GenBank assembly GCA_005879815.1. The GC content of the type genome is 68.45 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Indevana gen. nov.

Candidatus Indevana (NL. fem. n. *Indevana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-82*. The type species for the genus is *Candidatus* Indevana agnomicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHBO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefariaceae.

Description of *Candidatus* Indevana expanilenta sp. nov.

Candidatus Indevana expanilenta (NL. fem. n. *expanilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-82 sp005882055*. The type genome for the species is the GenBank assembly GCA_005882055.1. The GC content of the type genome is 68.61 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Indevana incocilega sp. nov.

Candidatus Indevana incocilega (NL. fem. n. *incocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-82 sp005880165*. The type genome for the species is the GenBank assembly GCA_005880165.1. The GC content of the type genome is 68.33 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Indevaria exsativita sp. nov.

Candidatus Indevaria exsativita (NL. fem. n. *exsativita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIXO01 sp014360385*. The type genome for the species is the GenBank assembly GCA_014360385.1. The GC content of the type genome is 35.84 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Indevaria gen. nov.

Candidatus Indevaria (NL. fem. n. *Indevaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIXO01*. The type species for the genus is *Candidatus* Indevaria exsativita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1414*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefulaceae.

Description of *Candidatus* Indevosa remulessa sp. nov.

Candidatus Indevosa remulessa (NL. fem. n. *remulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1226 sp003142435*. The type genome for the species is the GenBank assembly GCA_003142435.1. The GC content of the type genome is 36.53 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Indevosa gen. nov.

Candidatus Indevosa (NL. fem. n. *Indevosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1226*. The type species for the genus is *Candidatus* Indevosa remulessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9339*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetutanaceae.

Description of *Candidatus* Indevula ingigimonia sp. nov.

Candidatus Indevula ingigimonia (NL. fem. n. *ingigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFVL01 sp013362805*. The type genome for the species is the GenBank assembly GCA_013362805.1. The GC content of the type genome is 58.48 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Indevula gen. nov.

Candidatus Indevula (NL. fem. n. *Indevula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFVL01*. The type species for the genus is *Candidatus* Indevula ingigimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHCE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacidaceae.

Description of *Candidatus* Indidana tabifitoga sp. nov.

Candidatus Indidana tabifitoga (NL. fem. n. *tabifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVJ01 sp009694295*. The type genome for the species is the GenBank assembly GCA_009694295.1. The GC content of the type genome is 66.96 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Indidana gen. nov.

Candidatus Indidana (NL. fem. n. *Indidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVJ01*. The type species for the genus is *Candidatus* Indidana tabifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-555*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pocilulaceae.

Description of *Candidatus* Indidaria occalitudo sp. nov.

Candidatus Indidaria occalitudo (NL. fem. n. *occalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-73-18 sp001794945*. The type genome for the species is the GenBank assembly GCA_001794945.1. The GC content of the type genome is 73.11 % and the genome length is 2.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Indidaria gen. nov.

Candidatus Indidaria (NL. fem. n. *Indidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-73-18*. The type species for the genus is *Candidatus* Indidaria occalitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Indidella admigentia sp. nov.

Candidatus Indidella admigentia (NL. fem. n. *admigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLRP01 sp007130845*. The type genome for the species is the GenBank assembly GCA_007130845.1. The GC content of the type genome is 51.59 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Indidella gen. nov.

Candidatus Indidella (NL. fem. n. *Indidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLRP01*. The type species for the genus is *Candidatus* Indidella admigentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Reveculaceae.

Description of *Candidatus* Indidia accumivita sp. nov.

Candidatus Indidia accumivita (NL. fem. n. *accumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1419 sp002305585*. The type genome for the species is the GenBank assembly GCA_002305585.1. The GC content of the type genome is 52.55 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Indidia gen. nov.

Candidatus Indidia (NL. fem. n. *Indidia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1419*. The type species for the genus is *Candidatus* Indidia accumivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumanaceae.

Description of *Candidatus* Indidia leviditio sp. nov.

Candidatus Indidia leviditio (NL. fem. n. *leviditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1419 sp012515495*. The type genome for the species is the GenBank assembly GCA_012515495.1. The GC content of the type genome is 51.57 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Indidida appacugo sp. nov.

Candidatus Indidida appacugo (NL. fem. n. *appacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WMHbin3 sp002753185*. The type genome for the species is the GenBank assembly GCA_002753185.1. The GC content of the type genome is 61.61 %

and the genome length is 4.6 Mbp.

Description of *Candidatus* Indididа gen. nov.

Candidatus Indididа (NL. fem. n. *Indididа* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WMHbin3*. The type species for the genus is *Candidatus* Indididа appacugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indidosa refunilenta sp. nov.

Candidatus Indidosa refunilenta (NL. fem. n. *refunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Plut-88865 sp012267425*. The type genome for the species is the GenBank assembly GCA_012267425.1. The GC content of the type genome is 58.23 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Indidosa gen. nov.

Candidatus Indidosa (NL. fem. n. *Indidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Plut-88865*. The type species for the genus is *Candidatus* Indidosa refunilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin80*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecanaceae.

Description of *Candidatus* Indidula morigousia sp. nov.

Candidatus Indidula morigousia (NL. fem. n. *morigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RXOA01 sp003979035*. The type genome for the species is the GenBank assembly GCA_003979035.1. The GC content of the type genome is 60.52 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Indidula gen. nov.

Candidatus Indidula (NL. fem. n. *Indidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RXOA01*. The type species for the genus is *Candidatus* Indidula morigousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9294*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semodosaceae.

Description of *Candidatus* Indifana inlepifica sp. nov.

Candidatus Indifana inlepifica (NL. fem. n. *inlepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BIGb0124 sp003752175*. The type genome for the species is the GenBank assembly RS_GCF_003752175.1. The GC content of the type genome is 65.74 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Indifana gen. nov.

Candidatus Indifana (NL. fem. n. *Indifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BIGb0124*. The type species for the genus is *Candidatus* Indifana inlepifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indifaria lametitrix sp. nov.

Candidatus Indifaria lametitrix (NL. fem. n. *lametitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1200 sp002309765*. The type genome for the species is the GenBank assembly GCA_002309765.1. The GC content of the type genome is 57.03 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Indifaria gen. nov.

Candidatus Indifaria (NL. fem. n. *Indifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1200*. The type species for the genus is *Candidatus* Indifaria lametitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Indifella resuligena sp. nov.

Candidatus Indifella resuligena (NL. fem. n. *resuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMO-BIN1 sp003123965*. The type genome for the species is the GenBank assembly GCA_003123965.1. The GC content of the type genome is 46.28 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Indifella gen. nov.

Candidatus Indifella (NL. fem. n. *Indifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMO-BIN1*. The type species for the genus is *Candidatus* Indifella resuligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indifida nubigibula sp. nov.

Candidatus Indifida nubigibula (NL. fem. n. *nubigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXRL01 sp903921835*. The type genome for the species is the GenBank assembly GCA_903921835.1. The GC content of the type genome is 70.38 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Indifida gen. nov.

Candidatus Indifida (NL. fem. n. *Indifida* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXRL01*. The type species for the genus is *Candidatus* Indifida nubigibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabidaceae.

Description of *Candidatus* Indifosa minuricula sp. nov.

Candidatus Indifosa minuricula (NL. fem. n. *minuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13279 sp902787475*. The type genome for the species is the GenBank assembly GCA_902787475.1. The GC content of the type genome is 62.37 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Indifosa gen. nov.

Candidatus Indifosa (NL. fem. n. *Indifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13279*. The type species for the genus is *Candidatus* Indifosa minuricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Indiicoccus adselugo sp. nov.

Candidatus Indiicoccus adselugo (NL. fem. n. *adselugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Indiicoccus sp001999905*. The type genome for the species is the GenBank assembly RS_GCF_001999905.1. The GC content of the type genome is 48.32 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Indilana innabifica sp. nov.

Candidatus Indilana innabifica (NL. fem. n. *innabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *A52C2 sp900110915*. The type genome for the species is the GenBank assembly RS_GCF_900110915.1. The GC content of the type genome is 65.71 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Indilana gen. nov.

Candidatus Indilana (NL. fem. n. *Indilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *A52C2*. The type species for the genus is *Candidatus* Indilana innabifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indilana irredousia sp. nov.

Candidatus Indilana irredousia (NL. fem. n. *irredousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *A52C2 sp013812985*. The type genome for the species is the GenBank assembly GCA_013812985.1. The GC content of the type genome is 65.54 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Indilana remulatica sp. nov.

Candidatus Indilana remulatica (NL. fem. n. *remulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *A52C2 sp009866965*. The type genome for the species is the GenBank assembly RS_GCF_009866965.1. The GC content of the type genome is 69.03 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Indilaria detosax sp. nov.

Candidatus Indilaria detosax (NL. fem. n. *detosax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-38-12b sp001820175*. The type genome for the species is the GenBank assembly GCA_001820175.1. The GC content of the type genome is 41.82 % and the genome length is 0.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Indilaria gen. nov.

Candidatus Indilaria (NL. fem. n. *Indilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-38-12b*. The type species for the genus is *Candidatus* Indilaria detosax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indilaria mavorimonas sp. nov.

Candidatus Indilaria mavorimonas (NL. fem. n. *mavorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-38-12b sp001820255*. The type genome for the species is the GenBank assembly GCA_001820255.1. The GC content of the type genome is 38.06 % and the genome length is 0.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Indilella excalicella sp. nov.

Candidatus Indilella excalicella (NL. fem. n. *excalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHX01 sp012735215*. The type genome for the species is the GenBank assembly GCA_012735215.1. The GC content of the type genome is 35.2 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Indilella gen. nov.

Candidatus Indilella (NL. fem. n. *Indilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHX01*. The type species for the genus is *Candidatus* Indilella excalicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indilia cenodilega sp. nov.

Candidatus Indilia cenodilega (NL. fem. n. *cenodilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM13618 sp900753975*. The type genome for the species is the GenBank assembly RS_GCF_900753975.1. The GC content of the type genome is 31.24 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Indilia gen. nov.

Candidatus Indilia (NL. fem. n. *Indilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM13618*. The type species for the genus is *Candidatus* Indilia cenodilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1234*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desucellaceae.

Description of *Candidatus* Indilida armigitio sp. nov.

Candidatus Indilida armigitio (NL. fem. n. *armigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AE-B3B sp005223085*. The type genome for the species is the GenBank assembly GCA_005223085.1. The GC content of the type genome is 43.1 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Indilida gen. nov.

Candidatus Indilida (NL. fem. n. *Indilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AE-B3B*. The type species for the genus is *Candidatus* Indilida armigitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AE-B3A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ciminariaceae.

Description of *Candidatus* Indilula adpagitia sp. nov.

Candidatus Indilula adpagitia (NL. fem. n. *adpagitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBR01 sp013694825*. The type genome for the species is the GenBank assembly GCA_013694825.1. The GC content of the type genome is 70.11 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Indilula gen. nov.

Candidatus Indilula (NL. fem. n. *Indilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDBR01*. The type species for the genus is *Candidatus* Indilula adpagitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *70-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Indipia viragastra sp. nov.

Candidatus Indipia viragastra (NL. fem. n. *viragastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WAJ17 sp014174515*. The type genome for the species is the GenBank assembly RS_GCF_014174515.1. The GC content of the type genome is 68.01 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Indipia gen. nov.

Candidatus Indipia (NL. fem. n. *Indipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WAJ17*. The type species for the genus is *Candidatus* Indipia viragastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indipida esculitas sp. nov.

Candidatus Indipida esculitas (NL. fem. n. *esculitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OXYB2-FULL-32-7 sp001787465*. The type genome for the species is the GenBank assembly GCA_001787465.1. The GC content of the type genome is 31.39 % and the genome length is 1.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Indipida gen. nov.

Candidatus Indipida (NL. fem. n. *Indipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OXYB2-FULL-32-7*. The type species for the genus is *Candidatus* Indipida esculitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-33-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticosaceae.

Description of *Candidatus* Indiposa admoribula sp. nov.

Candidatus Indiposa admoribula (NL. fem. n. *admoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-41-16 sp000996695*. The type genome for the species is the GenBank assembly GCA_000996695.1. The GC content of the type genome is 41.17 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Indiposa gen. nov.

Candidatus Indiposa (NL. fem. n. *Indiposa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE2-41-16*. The type species for the genus is *Candidatus* Indiposa admoribula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indiposa anancilenta sp. nov.

Candidatus Indiposa anancilenta (NL. fem. n. *anancilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-41-16 sp903831405*. The type genome for the species is the GenBank assembly GCA_903831405.1. The GC content of the type genome is 37.98 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Indipula necopitio sp. nov.

Candidatus Indipula necopitio (NL. fem. n. *necopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NHYN01 sp003288845*. The type genome for the species is the GenBank assembly RS_GCF_003288845.1. The GC content of the type genome is 35.33 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Indipula gen. nov.

Candidatus Indipula (NL. fem. n. *Indipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NHYN01*. The type species for the genus is *Candidatus* Indipula necopitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indiraria excaredo sp. nov.

Candidatus Indiraria excaredo (NL. fem. n. *excaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQTX01 sp002069975*. The type genome for the species is the GenBank assembly GCA_002069975.1. The GC content of the type genome is 33.92 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Indiraria gen. nov.

Candidatus Indiraria (NL. fem. n. *Indiraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQTX01*. The type species for the genus is *Candidatus* Indiraria excaredo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Veridariaceae.

Description of *Candidatus* Indiraria invesitura sp. nov.

Candidatus Indiraria invesitura (NL. fem. n. *invesitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQTX01 sp009786075*. The type genome for the species is the GenBank assembly GCA_009786075.1. The GC content of the type genome is 38.95 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Indirella anactentia sp. nov.

Candidatus Indirella anactentia (NL. fem. n. *anactentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFKA01 sp013299115*. The type genome for the species is the GenBank assembly GCA_013299115.1. The GC content of the type genome is 38.52 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Indirella gen. nov.

Candidatus Indirella (NL. fem. n. *Indirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAFKA01*. The type species for the genus is *Candidatus* Indirella anactentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indiria feficibula sp. nov.

Candidatus Indiria feficibula (NL. fem. n. *feficibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQUU01 sp009781925*. The type genome for the species is the GenBank assembly GCA_009781925.1. The GC content of the type genome is 57.91 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Indiria gen. nov.

Candidatus Indiria (NL. fem. n. *Indiria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQUU01*. The type species for the genus is *Candidatus* Indiria feficibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indirosa vinulimonia sp. nov.

Candidatus Indirosa vinulimonia (NL. fem. n. *vinulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB21 sp001567305*. The type genome for the species is the GenBank assembly GCA_001567305.1. The GC content of the type genome is 38.46 % and the genome length is 1.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Indirosa gen. nov.

Candidatus Indirosa (NL. fem. n. *Indirosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *OLB21*. The type species for the genus is *Candidatus* Indirosa vinulimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nutamiaceae.

Description of *Candidatus* Indirula perexatio sp. nov.

Candidatus Indirula perexatio (NL. fem. n. *perexatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2561 sp002340355*. The type genome for the species is the GenBank assembly GCA_002340355.1. The GC content of the type genome is 34.32 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Indirula gen. nov.

Candidatus Indirula (NL. fem. n. *Indirula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2561*. The type species for the genus is *Candidatus* Indirula perexatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indivana cobalentia sp. nov.

Candidatus Indivana cobalentia (NL. fem. n. *cobalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIBK01 sp009695205*. The type genome for the species is the GenBank assembly GCA_009695205.1. The GC content of the type genome is 58.32 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Indivana gen. nov.

Candidatus Indivana (NL. fem. n. *Indivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIBK01*. The type species for the genus is *Candidatus* Indivana

cobalentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9464*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilariaceae.

Description of *Candidatus* Indivaria antecatica sp. nov.

Candidatus Indivaria antecatica (NL. fem. n. *antecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVK01 sp011328795*. The type genome for the species is the GenBank assembly GCA_011328795.1. The GC content of the type genome is 47.09 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Indivaria gen. nov.

Candidatus Indivaria (NL. fem. n. *Indivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVK01*. The type species for the genus is *Candidatus* Indivaria antecatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYCZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilemellaceae.

Description of *Candidatus* Indivella aprugisca sp. nov.

Candidatus Indivella aprugisca (NL. fem. n. *aprugisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-49 sp007116605*. The type genome for the species is the GenBank assembly GCA_007116605.1. The GC content of the type genome is 35.81 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Indivella gen. nov.

Candidatus Indivella (NL. fem. n. *Indivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CSBR16-49*. The type species for the genus is *Candidatus* Indivella aprugisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indivosa agricitura sp. nov.

Candidatus Indivosa agricitura (NL. fem. n. *agricitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2727315 sp002727315*. The type genome for the species is the GenBank assembly GCA_002727315.1. The GC content of the type genome is 63.15 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Indivosa gen. nov.

Candidatus Indivosa (NL. fem. n. *Indivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2727315*. The type species for the genus is *Candidatus* Indivosa agricitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifariaceae.

Description of *Candidatus* Indivula ermelitas sp. nov.

Candidatus Indivula ermelitas (NL. fem. n. *ermelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSG01 sp007130545*. The type genome for the species is the GenBank assembly GCA_007130545.1. The GC content of the type genome is 53.28 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Indivula gen. nov.

Candidatus Indivula (NL. fem. n. *Indivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLSG01*. The type species for the genus is *Candidatus* Indivula

ermelitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Indivula offuledo sp. nov.

Candidatus Indivula offuledo (NL. fem. n. *offuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSG01 sp007132865*. The type genome for the species is the GenBank assembly GCA_007132865.1. The GC content of the type genome is 52.48 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Indomella encolax sp. nov.

Candidatus Indomella encolax (NL. fem. n. *encolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1353 sp003153655*. The type genome for the species is the GenBank assembly GCA_003153655.1. The GC content of the type genome is 57.02 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Indomella gen. nov.

Candidatus Indomella (NL. fem. n. *Indomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1353*. The type species for the genus is *Candidatus* Indomella encolax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hariciaceae.

Description of *Candidatus* Indomia ingurax sp. nov.

Candidatus Indomia ingurax (NL. fem. n. *ingurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-55 sp003232855*. The type genome for the species is the GenBank assembly GCA_003232855.1. The GC content of the type genome is 60.1 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Indomia gen. nov.

Candidatus Indomia (NL. fem. n. *Indomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-55*. The type species for the genus is *Candidatus* Indomia ingurax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DEV007*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragosaceae.

Description of *Candidatus* Indomida inrevatio sp. nov.

Candidatus Indomida inrevatio (NL. fem. n. *inrevatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-41 sp003233075*. The type genome for the species is the GenBank assembly GCA_003233075.1. The GC content of the type genome is 38.71 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Indomida gen. nov.

Candidatus Indomida (NL. fem. n. *Indomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-41*. The type species for the genus is *Candidatus* Indomida inrevatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinipulaceae.

Description of *Candidatus* Indomosa butubitoga sp. nov.

Candidatus Indomosa butubitoga (NL. fem. n. *butubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTL01 sp011390735*. The type genome for the species is the GenBank assembly GCA_011390735.1. The GC content of the type genome is 74.0 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Indomosa gen. nov.

Candidatus Indomosa (NL. fem. n. *Indomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABTL01*. The type species for the genus is *Candidatus* Indomosa butubitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indomosa inheritia sp. nov.

Candidatus Indomosa inheritia (NL. fem. n. *inheritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTL01 sp011389865*. The type genome for the species is the GenBank assembly GCA_011389865.1. The GC content of the type genome is 73.27 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Indomosa petulatio sp. nov.

Candidatus Indomosa petulatio (NL. fem. n. *petulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTL01 sp011390455*. The type genome for the species is the GenBank assembly GCA_011390455.1. The GC content of the type genome is 73.31 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Indomosa retunax sp. nov.

Candidatus Indomosa retunax (NL. fem. n. *retunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTL01 sp011390675*. The type genome for the species is the

GenBank assembly GCA_011390675.1. The GC content of the type genome is 72.91 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Indomula rutabetta sp. nov.

Candidatus Indomula rutabetta (NL. fem. n. *rutabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXIZ01 sp005779525*. The type genome for the species is the GenBank assembly GCA_005779525.1. The GC content of the type genome is 44.87 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Indomula gen. nov.

Candidatus Indomula (NL. fem. n. *Indomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXIZ01*. The type species for the genus is *Candidatus* Indomula rutabetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indomula vicatax sp. nov.

Candidatus Indomula vicatax (NL. fem. n. *vicatax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXIZ01 sp013141155*. The type genome for the species is the GenBank assembly GCA_013141155.1. The GC content of the type genome is 44.79 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Indotana alticedo sp. nov.

Candidatus Indotana alticedo (NL. fem. n. *alticedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GBMRC-2046 sp009826895*. The type genome for the species is the GenBank assembly RS_GCF_009826895.1. The GC content of the type genome is 60.82 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Indotana gen. nov.

Candidatus Indotana (NL. fem. n. *Indotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GBMRC-2046*. The type species for the genus is *Candidatus* Indotana alticedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indotana decatitia sp. nov.

Candidatus Indotana decatitia (NL. fem. n. *decatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GBMRC-2046 sp013266695*. The type genome for the species is the GenBank assembly RS_GCF_013266695.1. The GC content of the type genome is 60.77 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Indotana menapetta sp. nov.

Candidatus Indotana menapetta (NL. fem. n. *menapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GBMRC-2046 sp014050225*. The type genome for the species is the GenBank assembly RS_GCF_014050225.1. The GC content of the type genome is 63.31 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Indotaria visibentia sp. nov.

Candidatus Indotaria visibentia (NL. fem. n. *visibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTIL01 sp011334485*. The type genome for the species is the GenBank assembly GCA_011334485.1. The GC content of the type genome is 39.08 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Indotaria gen. nov.

Candidatus Indotaria (NL. fem. n. *Indotaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTIL01*. The type species for the genus is *Candidatus* Indotaria visibentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-41-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditosaceae.

Description of *Candidatus* Indotia benivitudo sp. nov.

Candidatus Indotia benivitudo (NL. fem. n. *benivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMME01 sp013817545*. The type genome for the species is the GenBank assembly GCA_013817545.1. The GC content of the type genome is 60.78 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Indotia gen. nov.

Candidatus Indotia (NL. fem. n. *Indotia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMME01*. The type species for the genus is *Candidatus* Indotia benivitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indotia linigilenta sp. nov.

Candidatus Indotia linigilenta (NL. fem. n. *linigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMME01 sp014379205*. The type genome for the species is the GenBank assembly GCA_014379205.1. The GC content of the type genome is 60.31 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Indotida canacisca sp. nov.

Candidatus Indotida canacisca (NL. fem. n. *canacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHZC01 sp009692505*. The type genome for the species is the GenBank assembly GCA_009692505.1. The GC content of the type genome is 67.24 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Indotida gen. nov.

Candidatus Indotida (NL. fem. n. *Indotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHZC01*. The type species for the genus is *Candidatus* Indotida canacisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Democellaceae.

Description of *Candidatus* Indotula arnogitura sp. nov.

Candidatus Indotula arnogitura (NL. fem. n. *arnogitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QFNR01 sp003248485*. The type genome for the species is the GenBank assembly GCA_003248485.1. The GC content of the type genome is 39.83 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Indotula gen. nov.

Candidatus Indotula (NL. fem. n. *Indotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QFNR01*. The type species for the genus is *Candidatus* Indotula arnogitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indubana adtiligena sp. nov.

Candidatus Indubana adtiligena (NL. fem. n. *adtiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1155 sp002067405*. The type genome for the species is the GenBank assembly GCA_002067405.1. The GC content of the type genome is 53.82 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Indubana gen. nov.

Candidatus Indubana (NL. fem. n. *Indubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-1155*. The type species for the genus is *Candidatus* Indubana adtiligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinefellaceae.

Description of *Candidatus* Indubana immigimonas sp. nov.

Candidatus Indubana immigimonas (NL. fem. n. *immigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1155 sp003165115*. The type genome for the species is the GenBank assembly GCA_003165115.1. The GC content of the type genome is 58.82 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Indubaria allobessa sp. nov.

Candidatus Indubaria allobessa (NL. fem. n. *allobessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBA01 sp013360745*. The type genome for the species is the GenBank assembly GCA_013360745.1. The GC content of the type genome is 62.95 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Indubaria gen. nov.

Candidatus Indubaria (NL. fem. n. *Indubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBA01*. The type species for the genus is *Candidatus* Indubaria

allobessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBBX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senipanaceae.

Description of *Candidatus* Indubella selibisca sp. nov.

Candidatus Indubella selibisca (NL. fem. n. *selibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CHKCI001 sp900045905*. The type genome for the species is the GenBank assembly RS_GCF_900045905.1. The GC content of the type genome is 35.75 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Indubella gen. nov.

Candidatus Indubella (NL. fem. n. *Indubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CHKCI001*. The type species for the genus is *Candidatus* Indubella selibisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indubia spastitas sp. nov.

Candidatus Indubia spastitas (NL. fem. n. *spastitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLOWO2-02-64-14 sp001770325*. The type genome for the species is the GenBank assembly GCA_001770325.1. The GC content of the type genome is 64.19 % and the genome length is 3.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; 10% subassembly".

Description of *Candidatus* Indubia gen. nov.

Candidatus Indubia (NL. fem. n. *Indubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *PLOWO2-02-64-14*. The type species for the genus is *Candidatus* Indubia spastitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludanaceae.

Description of *Candidatus* Indubida admuletta sp. nov.

Candidatus Indubida admuletta (NL. fem. n. *admuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12871 sp902783445*. The type genome for the species is the GenBank assembly GCA_902783445.1. The GC content of the type genome is 38.71 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Indubida gen. nov.

Candidatus Indubida (NL. fem. n. *Indubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12871*. The type species for the genus is *Candidatus* Indubida admuletta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indubosa inculitoga sp. nov.

Candidatus Indubosa inculitoga (NL. fem. n. *inculitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W-Chloroflexi-9 sp002840675*. The type genome for the species is the GenBank assembly GCA_002840675.1. The GC content of the type genome is 69.66 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Indubosa gen. nov.

Candidatus Indubosa (NL. fem. n. *Indubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W-Chloroflexi-9*. The type species for the genus is *Candidatus* Indubosa

inculitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Indupana ducilitura sp. nov.

Candidatus Indupana ducilitura (NL. fem. n. *ducilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFNH01 sp001781995*. The type genome for the species is the GenBank assembly GCA_001781995.1. The GC content of the type genome is 35.34 % and the genome length is 1.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Indupana gen. nov.

Candidatus Indupana (NL. fem. n. *Indupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFNH01*. The type species for the genus is *Candidatus* Indupana ducilitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Indupella arundicula sp. nov.

Candidatus Indupella arundicula (NL. fem. n. *arundicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRVL01 sp011374065*. The type genome for the species is the GenBank assembly GCA_011374065.1. The GC content of the type genome is 32.83 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Indupella gen. nov.

Candidatus Indupella (NL. fem. n. *Indupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRVL01*. The type species for the genus is *Candidatus* Indupella arundicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABLXN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Derunidaceae.

Description of *Candidatus* Indupia venunisca sp. nov.

Candidatus Indupia venunisca (NL. fem. n. *venunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-A19 sp003216155*. The type genome for the species is the GenBank assembly GCA_003216155.1. The GC content of the type genome is 40.15 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Indupia gen. nov.

Candidatus Indupia (NL. fem. n. *Indupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-A19*. The type species for the genus is *Candidatus* Indupia venunisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Indupida inhosilenta sp. nov.

Candidatus Indupida inhosilenta (NL. fem. n. *inhosilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKH01 sp011333545*. The type genome for the species is the GenBank assembly GCA_011333545.1. The GC content of the type genome is 39.49 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Indupida gen. nov.

Candidatus Indupida (NL. fem. n. *Indupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKH01*. The type species for the genus is *Candidatus* Indupida inhosilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Indupula excinilega sp. nov.

Candidatus Indupula excinilega (NL. fem. n. *excinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBS01 sp012718855*. The type genome for the species is the GenBank assembly GCA_012718855.1. The GC content of the type genome is 41.3 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Indupula gen. nov.

Candidatus Indupula (NL. fem. n. *Indupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBS01*. The type species for the genus is *Candidatus* Indupula excinilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Induvana abindugo sp. nov.

Candidatus Induvana abindugo (NL. fem. n. *abindugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED165 sp002171035*. The type genome for the species is the GenBank assembly GCA_002171035.2. The GC content of the type genome is 28.79 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Induvana gen. nov.

Candidatus Induvana (NL. fem. n. *Induvana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *TMED165*. The type species for the genus is *Candidatus* Induvana abindugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Induvaria cenoditoga sp. nov.

Candidatus Induvaria cenoditoga (NL. fem. n. *cenoditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M2408 sp006226425*. The type genome for the species is the GenBank assembly GCA_006226425.1. The GC content of the type genome is 42.94 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Induvaria gen. nov.

Candidatus Induvaria (NL. fem. n. *Induvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M2408*. The type species for the genus is *Candidatus* Induvaria cenoditoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Induvella bipalicula sp. nov.

Candidatus Induvella bipalicula (NL. fem. n. *bipalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FL481 sp006508105*. The type genome for the species is the GenBank assembly GCA_006508105.1. The GC content of the type genome is 66.13 % and the genome length is 6.45 Mbp.

Description of *Candidatus* Induvella gen. nov.

Candidatus Induvella (NL. fem. n. *Induvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FL481*. The type species for the genus is *Candidatus* Induvella bipalicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Induvosa viragitrix sp. nov.

Candidatus Induvosa viragitrix (NL. fem. n. *viragitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQQM01 sp903873945*. The type genome for the species is the GenBank assembly GCA_903873945.1. The GC content of the type genome is 57.56 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Induvosa gen. nov.

Candidatus Induvosa (NL. fem. n. *Induvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQQM01*. The type species for the genus is *Candidatus* Induvosa viragitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabitidaceae.

Description of *Candidatus* Induvula remulicula sp. nov.

Candidatus Induvula remulicula (NL. fem. n. *remulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-270 sp003132825*. The type genome for the species is the GenBank assembly GCA_003132825.1. The GC content of the type genome is 59.88 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Induvula gen. nov.

Candidatus Induvula (NL. fem. n. *Induvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-270*. The type species for the genus is *Candidatus* Induvula remulicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inediibacterium daduciforma sp. nov.

Candidatus Inediibacterium daduciforma (NL. fem. n. *daduciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Inediibacterium sp004138215*. The type genome for the species is the GenBank assembly RS_GCF_004138215.1. The GC content of the type genome is 29.42 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Ineffana enharitudo sp. nov.

Candidatus Ineffana enharitudo (NL. fem. n. *enharitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRO6 sp003576765*. The type genome for the species is the GenBank assembly GCA_003576765.1. The GC content of the type genome is 67.02 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Ineffana gen. nov.

Candidatus Ineffana (NL. fem. n. *Ineffana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PRO6*. The type species for the genus is *Candidatus* Ineffana enharitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ineffella cilicitudo sp. nov.

Candidatus Ineffella cilicitudo (NL. fem. n. *cilicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-64-23 sp001770575*. The type genome for the species is the GenBank assembly GCA_001770575.1. The GC content of the type genome is 63.83 % and the genome length is 3.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Ineffella gen. nov.

Candidatus Ineffella (NL. fem. n. *Ineffella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-64-23*. The type species for the genus is *Candidatus* Ineffella cilicitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Ineffella infirilenta sp. nov.

Candidatus Ineffella infirilenta (NL. fem. n. *infirilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-64-23 sp004298385*. The type genome for the species is the GenBank assembly GCA_004298385.1. The GC content of the type genome is 62.95 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Ineffella pacifitrix sp. nov.

Candidatus Ineffella pacifitrix (NL. fem. n. *pacifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-64-23 sp012274205*. The type genome for the species is the GenBank assembly GCA_012274205.1. The GC content of the type genome is 64.78 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Ineffella rosacitica sp. nov.

Candidatus Ineffella rosacitica (NL. fem. n. *rosacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-64-23 sp007280315*. The type genome for the species is the GenBank assembly GCA_007280315.1. The GC content of the type genome is 62.15 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Ineffida egregibula sp. nov.

Candidatus Ineffida egregibula (NL. fem. n. *egregibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2286 sp004348925*. The type genome for the species is the GenBank assembly GCA_004348925.1. The GC content of the type genome is 64.85 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Ineffida gen. nov.

Candidatus Ineffida (NL. fem. n. *Ineffida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2286*. The type species for the genus is *Candidatus* Ineffida egregibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2279*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depeciaceae.

Description of *Candidatus* Ineffida laculitio sp. nov.

Candidatus Ineffida laculitio (NL. fem. n. *laculitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2286 sp002841355*. The type genome for the species is the GenBank assembly GCA_002841355.1. The GC content of the type genome is 64.4 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Ineffida rubefousia sp. nov.

Candidatus Ineffida rubefousia (NL. fem. n. *rubefousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2286 sp002345925*. The type genome for the species is the GenBank assembly GCA_002345925.1. The GC content of the type genome is 61.86 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Ineffida telegago sp. nov.

Candidatus Ineffida telegago (NL. fem. n. *telegago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2286 sp002841295*. The type genome for the species is the GenBank assembly GCA_002841295.1. The GC content of the type genome is 62.15 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Ineffosa coninifica sp. nov.

Candidatus Ineffosa coninifica (NL. fem. n. *coninifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTV01 sp009377535*. The type genome for the species is the GenBank assembly GCA_009377535.1. The GC content of the type genome is 67.36 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Ineffosa gen. nov.

Candidatus Ineffosa (NL. fem. n. *Ineffosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTV01*. The type species for the genus is *Candidatus* Ineffosa coninifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ineffula colopugo sp. nov.

Candidatus Ineffula colopugo (NL. fem. n. *colopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5851 sp002431635*. The type genome for the species is the GenBank assembly GCA_002431635.1. The GC content of the type genome is 37.33 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Ineffula gen. nov.

Candidatus Ineffula (NL. fem. n. *Ineffula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5851*. The type species for the genus is *Candidatus* Ineffula

colopugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inergana amnigousia sp. nov.

Candidatus Inergana amnigousia (NL. fem. n. *amnigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKY01 sp011333485*. The type genome for the species is the GenBank assembly GCA_011333485.1. The GC content of the type genome is 58.8 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Inergana gen. nov.

Candidatus Inergana (NL. fem. n. *Inergana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKY01*. The type species for the genus is *Candidatus* Inergana amnigousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inergaria illuvastra sp. nov.

Candidatus Inergaria illuvastra (NL. fem. n. *illuvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1487 sp900552225*. The type genome for the species is the GenBank assembly GCA_900552225.1. The GC content of the type genome is 61.32 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Inergaria gen. nov.

Candidatus Inergaria (NL. fem. n. *Inergaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1487*. The type species for the genus is *Candidatus* Inergaria illuvastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inergella adnepibula sp. nov.

Candidatus Inergella adnepibula (NL. fem. n. *adnepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-394 sp011370245*. The type genome for the species is the GenBank assembly GCA_011370245.1. The GC content of the type genome is 61.41 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Inergella gen. nov.

Candidatus Inergella (NL. fem. n. *Inergella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-394*. The type species for the genus is *Candidatus* Inergella adnepibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WQYP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludidaceae.

Description of *Candidatus* Inergia proclousia sp. nov.

Candidatus Inergia proclousia (NL. fem. n. *proclousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REEB01 sp007695295*. The type genome for the species is the GenBank assembly GCA_007695295.1. The GC content of the type genome is 65.12 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Inergia gen. nov.

Candidatus Inergia (NL. fem. n. *Inergia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REEB01*. The type species for the genus is *Candidatus* Inergia proclousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inergida ecastilega sp. nov.

Candidatus Inergida ecastilega (NL. fem. n. *ecastilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXR01 sp013696915*. The type genome for the species is the GenBank assembly GCA_013696915.1. The GC content of the type genome is 72.86 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Inergida gen. nov.

Candidatus Inergida (NL. fem. n. *Inergida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXR01*. The type species for the genus is *Candidatus* Inergida ecastilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inergosa nimirivita sp. nov.

Candidatus Inergosa nimirivita (NL. fem. n. *nimirivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9676 sp003541285*. The type genome for the species is the GenBank assembly GCA_003541285.1. The GC content of the type genome is 69.68 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Inergosa gen. nov.

Candidatus Inergosa (NL. fem. n. *Inergosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9676*. The type species for the genus is *Candidatus* Inergosa nimirivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inergula anamnastra sp. nov.

Candidatus Inergula anamnastra (NL. fem. n. *anamnastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7672 sp903831255*. The type genome for the species is the GenBank assembly GCA_903831255.1. The GC content of the type genome is 61.99 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Inergula gen. nov.

Candidatus Inergula (NL. fem. n. *Inergula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7672*. The type species for the genus is *Candidatus* Inergula anamnastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inergula aplesimonas sp. nov.

Candidatus Inergula aplesimonas (NL. fem. n. *aplesimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7672 sp002280725*. The type genome for the species is the GenBank assembly GCA_002280725.1. The GC content of the type genome is 64.37 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Inergula cenotatica sp. nov.

Candidatus Inergula cenotatica (NL. fem. n. *cenotatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7672 sp903831485*. The type genome for the species is the GenBank assembly GCA_903831485.1. The GC content of the type genome is 65.0 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Inergula desulifica sp. nov.

Candidatus Inergula desulifica (NL. fem. n. *desulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7672 sp903842595*. The type genome for the species is the

GenBank assembly GCA_903842595.1. The GC content of the type genome is 63.65 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Inergula fraglitas sp. nov.

Candidatus Inergula fraglitas (NL. fem. n. *fraglitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7672 sp002483135*. The type genome for the species is the GenBank assembly GCA_002483135.1. The GC content of the type genome is 63.81 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Inexcana illuvago sp. nov.

Candidatus Inexcana illuvago (NL. fem. n. *illuvago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWBJ01 sp002069525*. The type genome for the species is the GenBank assembly GCA_002069525.1. The GC content of the type genome is 33.67 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Inexcana gen. nov.

Candidatus Inexcana (NL. fem. n. *Inexcana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWBJ01*. The type species for the genus is *Candidatus* Inexcana illuvago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denomulaceae.

Description of *Candidatus* Inexcaria opercivita sp. nov.

Candidatus Inexcaria opercivita (NL. fem. n. *opercivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDZE01 sp902812465*. The type genome for the species is the GenBank assembly RS_GCF_902812465.1. The GC content of the type genome is 61.75

% and the genome length is 3.92 Mbp.

Description of *Candidatus* Inexcaria gen. nov.

Candidatus Inexcaria (NL. fem. n. *Inexcaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDZE01*. The type species for the genus is *Candidatus* Inexcaria opercivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumariaceae.

Description of *Candidatus* Inexcella clancax sp. nov.

Candidatus Inexcella clancax (NL. fem. n. *clancax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14240 sp902797125*. The type genome for the species is the GenBank assembly GCA_902797125.1. The GC content of the type genome is 51.81 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Inexcella gen. nov.

Candidatus Inexcella (NL. fem. n. *Inexcella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14240*. The type species for the genus is *Candidatus* Inexcella clancax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Inexcia tranvisca sp. nov.

Candidatus Inexcia tranvisca (NL. fem. n. *tranvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMNT01 sp013203595*. The type genome for the species is the

GenBank assembly GCA_013203595.1. The GC content of the type genome is 56.69 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Inexcia gen. nov.

Candidatus Inexcia (NL. fem. n. *Inexcia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMNT01*. The type species for the genus is *Candidatus* Inexcia tranvisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Casp-alpha2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninidaceae.

Description of *Candidatus* Inexcosa vinulax sp. nov.

Candidatus Inexcosa vinulax (NL. fem. n. *vinulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E29-bin14 sp004377355*. The type genome for the species is the GenBank assembly GCA_004377355.1. The GC content of the type genome is 36.22 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Inexcosa gen. nov.

Candidatus Inexcosa (NL. fem. n. *Inexcosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E29-bin14*. The type species for the genus is *Candidatus* Inexcosa vinulax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomogosaceae.

Description of *Candidatus* Inexcula crabrastra sp. nov.

Candidatus Inexcula crabrastra (NL. fem. n. *crabrastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CADDYR01 sp902810765*. The type genome for the species is the GenBank assembly RS_GCF_902810765.1. The GC content of the type genome is 67.42 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Inexcula gen. nov.

Candidatus Inexcula (NL. fem. n. *Inexcula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDYR01*. The type species for the genus is *Candidatus* Inexcula crabrastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inexpana cinipilega sp. nov.

Candidatus Inexpana cinipilega (NL. fem. n. *cinipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PMG-095 sp004193285*. The type genome for the species is the GenBank assembly GCA_004193285.1. The GC content of the type genome is 67.1 % and the genome length is 8.66 Mbp.

Description of *Candidatus* Inexpana gen. nov.

Candidatus Inexpana (NL. fem. n. *Inexpana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PMG-095*. The type species for the genus is *Candidatus* Inexpana cinipilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inexpana refulax sp. nov.

Candidatus Inexpana refulax (NL. fem. n. *refulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PMG-095 sp903642325*. The type genome for the species is the GenBank assembly RS_GCF_903642325.1. The GC content of the type genome is 63.72 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Inexparia seposessa sp. nov.

Candidatus Inexparia seposessa (NL. fem. n. *seposessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-000287335 sp000287335*. The type genome for the species is the GenBank assembly RS_GCF_000287335.1. The GC content of the type genome is 43.29 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Inexparia gen. nov.

Candidatus Inexparia (NL. fem. n. *Inexparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-000287335*. The type species for the genus is *Candidatus* Inexparia seposessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inexpella infacifica sp. nov.

Candidatus Inexpella infacifica (NL. fem. n. *infacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J075 sp003695285*. The type genome for the species is the GenBank assembly GCA_003695285.1. The GC content of the type genome is 43.5 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Inexpella gen. nov.

Candidatus Inexpella (NL. fem. n. *Inexpella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J075*. The type species for the genus is *Candidatus* Inexpella infacifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diluvidaceae.

Description of *Candidatus* Inexpia ermelitica sp. nov.

Candidatus Inexpia ermelitica (NL. fem. n. *ermelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBR01 sp013360405*. The type genome for the species is the GenBank assembly GCA_013360405.1. The GC content of the type genome is 50.15 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Inexpia gen. nov.

Candidatus Inexpia (NL. fem. n. *Inexpia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBR01*. The type species for the genus is *Candidatus* Inexpia ermelitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inexpida defenastra sp. nov.

Candidatus Inexpida defenastra (NL. fem. n. *defenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1934 sp002068855*. The type genome for the species is the GenBank assembly GCA_002068855.1. The GC content of the type genome is 58.96 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Inexpida gen. nov.

Candidatus Inexpida (NL. fem. n. *Inexpida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1934*. The type species for the genus is *Candidatus* Inexpida defenastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inexpida utputifica sp. nov.

Candidatus Inexpida utputifica (NL. fem. n. *utputifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1934 sp002337055*. The type genome for the species is the GenBank assembly GCA_002337055.1. The GC content of the type genome is 60.85 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Inexsana lenunivita sp. nov.

Candidatus Inexsana lenunivita (NL. fem. n. *lenunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11540 sp003445125*. The type genome for the species is the GenBank assembly GCA_003445125.1. The GC content of the type genome is 52.06 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Inexsana gen. nov.

Candidatus Inexsana (NL. fem. n. *Inexsana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11540*. The type species for the genus is *Candidatus* Inexsana lenunivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inexsaria sifunifica sp. nov.

Candidatus Inexsaria sifunifica (NL. fem. n. *sifunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2749205 sp002749205*. The type genome for the species is the GenBank assembly GCA_002749205.1. The GC content of the type genome is 36.25 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Inexsaria gen. nov.

Candidatus Inexsaria (NL. fem. n. *Inexsaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2749205*. The type species for the genus is *Candidatus* Inexsaria sifunifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inexsella biparilega sp. nov.

Candidatus Inexsella biparilega (NL. fem. n. *biparilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHAD01 sp002841595*. The type genome for the species is the GenBank assembly GCA_002841595.1. The GC content of the type genome is 38.81 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Inexsella gen. nov.

Candidatus Inexsella (NL. fem. n. *Inexsella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHAD01*. The type species for the genus is *Candidatus* Inexsella biparilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRI-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Latibellaceae.

Description of *Candidatus* Inexsia fumacitura sp. nov.

Candidatus Inexsia fumacitura (NL. fem. n. *fumacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPJV01 sp006844765*. The type genome for the species is the GenBank assembly GCA_006844765.1. The GC content of the type genome is 56.75 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Inexsia gen. nov.

Candidatus Inexsia (NL. fem. n. *Inexsia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPJV01*. The type species for the genus is *Candidatus* Inexsia fumacitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GCA-2696645. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubecidaceae.

Description of *Candidatus* Inexsida defaniforma sp. nov.

Candidatus Inexsida defaniforma (NL. fem. n. *defaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEB01 sp011176655*. The type genome for the species is the GenBank assembly GCA_011176655.1. The GC content of the type genome is 57.36 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Inexsida gen. nov.

Candidatus Inexsida (NL. fem. n. *Inexsida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUEB01*. The type species for the genus is *Candidatus* Inexsida defaniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5760*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisellaceae.

Description of *Candidatus* Inexsula delapax sp. nov.

Candidatus Inexsula delapax (NL. fem. n. *delapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDDY01 sp013287365*. The type genome for the species is the GenBank assembly GCA_013287365.1. The GC content of the type genome is 47.34 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Inexsula gen. nov.

Candidatus Inexsula (NL. fem. n. *Inexsula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDY01*. The type species for the genus is *Candidatus* Inexsula delapax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infabana pocilousia sp. nov.

Candidatus Infabana pocilousia (NL. fem. n. *pocilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077526 sp001464765*. The type genome for the species is the GenBank assembly GCA_001464765.1. The GC content of the type genome is 66.1 % and the genome length is 6.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Infabana gen. nov.

Candidatus Infabana (NL. fem. n. *Infabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077526*. The type species for the genus is *Candidatus* Infabana pocilousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077523*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turifiaceae.

Description of *Candidatus* Infabana rorulugo sp. nov.

Candidatus Infabana rorulugo (NL. fem. n. *rorulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077526 sp001464895*. The type genome for the species is the GenBank assembly GCA_001464895.1. The GC content of the type genome is 67.01 % and the genome length is 4.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Infabaria excanilega sp. nov.

Candidatus Infabaria excanilega (NL. fem. n. *excanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEFT01 sp902826685*. The type genome for the species is the GenBank assembly GCA_902826685.1. The GC content of the type genome is 63.1 % and the genome length is 7.42 Mbp.

Description of *Candidatus* Infabaria gen. nov.

Candidatus Infabaria (NL. fem. n. *Infabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEFT01*. The type species for the genus is *Candidatus* Infabaria excanilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infabella ignicitia sp. nov.

Candidatus Infabella ignicitia (NL. fem. n. *ignicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RHLJ01 sp003712055*. The type genome for the species is the GenBank assembly GCA_003712055.1. The GC content of the type genome is 39.92 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Infabella gen. nov.

Candidatus Infabella (NL. fem. n. *Infabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RHLJ01*. The type species for the genus is *Candidatus* Infabella ignicitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infabia enharibra sp. nov.

Candidatus Infabia enharibra (NL. fem. n. *enharibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSWX01 sp011368065*. The type genome for the species is the

GenBank assembly GCA_011368065.1. The GC content of the type genome is 56.59 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Infabia gen. nov.

Candidatus Infabia (NL. fem. n. *Infabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSWX01*. The type species for the genus is *Candidatus* Infabia enharibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYYI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabidaceae.

Description of *Candidatus* Infabida ridibilenta sp. nov.

Candidatus Infabida ridibilenta (NL. fem. n. *ridibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQZE01 sp009780875*. The type genome for the species is the GenBank assembly GCA_009780875.1. The GC content of the type genome is 44.18 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Infabida gen. nov.

Candidatus Infabida (NL. fem. n. *Infabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQZE01*. The type species for the genus is *Candidatus* Infabida ridibilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Infabosa dilacibra sp. nov.

Candidatus Infabosa dilacibra (NL. fem. n. *dilacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAADFB01 sp013153095*. The type genome for the species is the GenBank assembly GCA_013153095.1. The GC content of the type genome is 36.58 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Infabosa gen. nov.

Candidatus Infabosa (NL. fem. n. *Infabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFB01*. The type species for the genus is *Candidatus* Infabosa dilacibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infabula attubago sp. nov.

Candidatus Infabula attubago (NL. fem. n. *attubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNJR01 sp014382495*. The type genome for the species is the GenBank assembly GCA_014382495.1. The GC content of the type genome is 33.62 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Infabula gen. nov.

Candidatus Infabula (NL. fem. n. *Infabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNJR01*. The type species for the genus is *Candidatus* Infabula attubago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JGIOTU-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimetanaceae.

Description of *Candidatus* Infacana sicubatio sp. nov.

Candidatus Infacana sicubatio (NL. fem. n. *sicubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZFF01 sp012511845*. The type genome for the species is the

GenBank assembly GCA_012511845.1. The GC content of the type genome is 46.83 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Infacana gen. nov.

Candidatus Infacana (NL. fem. n. *Infacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZFF01*. The type species for the genus is *Candidatus* Infacana sicubatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3636*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cepuliaceae.

Description of *Candidatus* Infacella agnicedo sp. nov.

Candidatus Infacella agnicedo (NL. fem. n. *agnicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDAN01 sp013695385*. The type genome for the species is the GenBank assembly GCA_013695385.1. The GC content of the type genome is 68.08 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Infacella gen. nov.

Candidatus Infacella (NL. fem. n. *Infacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDAN01*. The type species for the genus is *Candidatus* Infacella agnicedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infacosa cerofentia sp. nov.

Candidatus Infacosa cerofentia (NL. fem. n. *cerofentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2634385 sp002634385*. The type genome for the species is the GenBank assembly GCA_002634385.1. The GC content of the type genome is 55.93 %

and the genome length is 4.31 Mbp.

Description of *Candidatus* Infacosa gen. nov.

Candidatus Infacosa (NL. fem. n. *Infacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2634385*. The type species for the genus is *Candidatus* Infacosa cerofentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramosaceae.

Description of *Candidatus* Infacula acricitia sp. nov.

Candidatus Infacula acricitia (NL. fem. n. *acricitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2699105 sp002699105*. The type genome for the species is the GenBank assembly GCA_002699105.1. The GC content of the type genome is 53.07 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Infacula gen. nov.

Candidatus Infacula (NL. fem. n. *Infacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2699105*. The type species for the genus is *Candidatus* Infacula acricitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-365*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipinariaceae.

Description of *Candidatus* Infanana oblivitudo sp. nov.

Candidatus Infanana oblivitudo (NL. fem. n. *oblivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTKG01 sp011524475*. The type genome for the species is the

GenBank assembly GCA_011524475.1. The GC content of the type genome is 57.92 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Infanana gen. nov.

Candidatus Infanana (NL. fem. n. *Infanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTKG01*. The type species for the genus is *Candidatus* Infanana oblivitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infanaria ignicigena sp. nov.

Candidatus Infanaria ignicigena (NL. fem. n. *ignicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747105 sp002747105*. The type genome for the species is the GenBank assembly GCA_002747105.1. The GC content of the type genome is 33.27 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Infanaria gen. nov.

Candidatus Infanaria (NL. fem. n. *Infanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2747105*. The type species for the genus is *Candidatus* Infanaria ignicigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infania tenilitas sp. nov.

Candidatus Infania tenilitas (NL. fem. n. *tenilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G107 sp004213155*. The type genome for the species is the GenBank assembly GCA_004213155.1. The GC content of the type genome is 27.9 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Infania gen. nov.

Candidatus Infania (NL. fem. n. *Infania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G107*. The type species for the genus is *Candidatus* Infania tenilitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infanida dibucisca sp. nov.

Candidatus Infanida dibucisca (NL. fem. n. *dibucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYQU01 sp012519055*. The type genome for the species is the GenBank assembly GCA_012519055.1. The GC content of the type genome is 35.65 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Infanida gen. nov.

Candidatus Infanida (NL. fem. n. *Infanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYQU01*. The type species for the genus is *Candidatus* Infanida dibucisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infanosa manupessa sp. nov.

Candidatus Infanosa manupessa (NL. fem. n. *manupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCT01 sp013287985*. The type genome for the species is the GenBank assembly GCA_013287985.1. The GC content of the type genome is 49.4 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Infanosa gen. nov.

Candidatus Infanosa (NL. fem. n. *Infanosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCT01*. The type species for the genus is *Candidatus* Infanosa manupessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infanula ephipitoga sp. nov.

Candidatus Infanula ephipitoga (NL. fem. n. *ephipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-43-14 sp001771735*. The type genome for the species is the GenBank assembly GCA_001771735.1. The GC content of the type genome is 42.98 % and the genome length is 1.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Infanula gen. nov.

Candidatus Infanula (NL. fem. n. *Infanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-43-14*. The type species for the genus is *Candidatus* Infanula ephipitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-42*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Labeciaceae.

Description of *Candidatus* Infatana exorbilenta sp. nov.

Candidatus Infatana exorbilenta (NL. fem. n. *exorbilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACHNP01 sp902581285*. The type genome for the species is the GenBank assembly GCA_902581285.1. The GC content of the type genome is 40.73 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Infatana gen. nov.

Candidatus Infatana (NL. fem. n. *Infatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACHNP01*. The type species for the genus is *Candidatus* Infatana exorbilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infataria adtemibra sp. nov.

Candidatus Infataria adtemibra (NL. fem. n. *adtemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1038 sp012512355*. The type genome for the species is the GenBank assembly GCA_012512355.1. The GC content of the type genome is 48.0 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Infataria gen. nov.

Candidatus Infataria (NL. fem. n. *Infataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1038*. The type species for the genus is *Candidatus* Infataria adtemibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Infataria catabatio sp. nov.

Candidatus Infataria catabatio (NL. fem. n. *catabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1038 sp012513645*. The type genome for the species is the GenBank assembly GCA_012513645.1. The GC content of the type genome is 62.76 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Infataria telegastra sp. nov.

Candidatus Infataria telegastra (NL. fem. n. *telegastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1038 sp002305755*. The type genome for the species is the GenBank assembly GCA_002305755.1. The GC content of the type genome is 61.36 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Infataria tomacicella sp. nov.

Candidatus Infataria tomacicella (NL. fem. n. *tomacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1038 sp012513735*. The type genome for the species is the GenBank assembly GCA_012513735.1. The GC content of the type genome is 59.69 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Infatella favilimonas sp. nov.

Candidatus Infatella favilimonas (NL. fem. n. *favilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-6312 sp000316685*. The type genome for the species is the GenBank assembly RS_GCF_000316685.1. The GC content of the type genome is 48.5 % and the genome length is 3.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "fresh water".

Description of *Candidatus* Infatella gen. nov.

Candidatus Infatella (NL. fem. n. *Infatella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-6312*. The type species for the genus is *Candidatus* Infatella favilimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infatula apsuretta sp. nov.

Candidatus Infatula apsuretta (NL. fem. n. *apsuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-672 sp003158705*. The type genome for the species is the GenBank assembly GCA_003158705.1. The GC content of the type genome is 68.09 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Infatula gen. nov.

Candidatus Infatula (NL. fem. n. *Infatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-672*. The type species for the genus is *Candidatus* Infatula apsuretta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2241*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocariaceae.

Description of *Candidatus* Infelana decunatio sp. nov.

Candidatus Infelana decunatio (NL. fem. n. *decunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6251 sp002441285*. The type genome for the species is the GenBank assembly GCA_002441285.1. The GC content of the type genome is 33.55 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Infelana gen. nov.

Candidatus Infelana (NL. fem. n. *Infelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6251*. The type species for the genus is *Candidatus* Infelana decunatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *34-128*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefosaceae.

Description of *Candidatus* Infelaria defasivita sp. nov.

Candidatus Infelaria defasivita (NL. fem. n. *defasivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYIB01 sp012744295*. The type genome for the species is the GenBank assembly GCA_012744295.1. The GC content of the type genome is 49.82 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Infelaria gen. nov.

Candidatus Infelaria (NL. fem. n. *Infelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYIB01*. The type species for the genus is *Candidatus* Infelaria defasivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infelia taraxiforma sp. nov.

Candidatus Infelia taraxiforma (NL. fem. n. *taraxiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXN01 sp009784815*. The type genome for the species is the GenBank assembly GCA_009784815.1. The GC content of the type genome is 49.33 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Infelia gen. nov.

Candidatus Infelia (NL. fem. n. *Infelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQXN01*. The type species for the genus is *Candidatus* Infelia taraxiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Rs-D84*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delapiaceae.

Description of *Candidatus* Infelida utpotugo sp. nov.

Candidatus Infelida utpotugo (NL. fem. n. *utpotugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13077 sp902785485*. The type genome for the species is the GenBank assembly GCA_902785485.1. The GC content of the type genome is 52.25 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Infelida gen. nov.

Candidatus Infelida (NL. fem. n. *Infelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13077*. The type species for the genus is *Candidatus* Infelida utpotugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Infelosa lapilitas sp. nov.

Candidatus Infelosa lapilitas (NL. fem. n. *lapilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2194 sp013388435*. The type genome for the species is the GenBank assembly GCA_013388435.1. The GC content of the type genome is 34.57 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Infelosa gen. nov.

Candidatus Infelosa (NL. fem. n. *Infelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2194*. The type species for the genus is *Candidatus* Infelosa lapilitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peridulaceae.

Description of *Candidatus* Infelosa monogitas sp. nov.

Candidatus Infelosa monogitas (NL. fem. n. *monogitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2194 sp011367585*. The type genome for the species is the GenBank assembly GCA_011367585.1. The GC content of the type genome is 50.01 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Infelosa venabicula sp. nov.

Candidatus Infelosa venabicula (NL. fem. n. *venabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2194 sp002328665*. The type genome for the species is the GenBank assembly GCA_002328665.1. The GC content of the type genome is 47.95 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Infenaria deforessa sp. nov.

Candidatus Infenaria deforessa (NL. fem. n. *deforessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2690215 sp002690215*. The type genome for the species is the GenBank assembly GCA_002690215.1. The GC content of the type genome is 63.92 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Infenaria gen. nov.

Candidatus Infenaria (NL. fem. n. *Infenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2690215*. The type species for the genus is *Candidatus* Infenaria deforessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2966*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dinuposaceae.

Description of *Candidatus* Infenella adbelitica sp. nov.

Candidatus Infenella adbelitica (NL. fem. n. *adbelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTM01 sp009377755*. The type genome for the species is the GenBank assembly GCA_009377755.1. The GC content of the type genome is 64.84 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Infenella gen. nov.

Candidatus Infenella (NL. fem. n. *Infenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTM01*. The type species for the genus is *Candidatus* Infenella adbelitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infenia occumitas sp. nov.

Candidatus Infenia occumitas (NL. fem. n. *occumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401155 sp002401155*. The type genome for the species is the GenBank assembly GCA_002401155.1. The GC content of the type genome is 49.4 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Infenia gen. nov.

Candidatus Infenia (NL. fem. n. *Infenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2401155*. The type species for the genus is *Candidatus* Infenia occumitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infenida lutulousia sp. nov.

Candidatus Infenida lutulousia (NL. fem. n. *lutulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5186 sp002413095*. The type genome for the species is the

GenBank assembly GCA_002413095.1. The GC content of the type genome is 69.55 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Infenida gen. nov.

Candidatus Infenida (NL. fem. n. *Infenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5186*. The type species for the genus is *Candidatus* Infenida lutulousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infenosa everbigena sp. nov.

Candidatus Infenosa everbigena (NL. fem. n. *everbigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QIAJ01 sp003225495*. The type genome for the species is the GenBank assembly GCA_003225495.1. The GC content of the type genome is 56.64 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Infenosa gen. nov.

Candidatus Infenosa (NL. fem. n. *Infenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QIAJ01*. The type species for the genus is *Candidatus* Infenosa everbigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infenula adlicitudo sp. nov.

Candidatus Infenula adlicitudo (NL. fem. n. *adlicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIFEB01 sp903789375*. The type genome for the species is the GenBank assembly GCA_903789375.1. The GC content of the type genome is 64.59 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Infenula gen. nov.

Candidatus Infenula (NL. fem. n. *Infenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIFEB01*. The type species for the genus is *Candidatus* Infenula adlicitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infesella redacimonia sp. nov.

Candidatus Infesella redacimonia (NL. fem. n. *redacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R33 sp009901585*. The type genome for the species is the GenBank assembly RS_GCF_009901585.1. The GC content of the type genome is 44.48 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Infesella gen. nov.

Candidatus Infesella (NL. fem. n. *Infesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *R33*. The type species for the genus is *Candidatus* Infesella redacimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infesida pavimicula sp. nov.

Candidatus Infesida pavimicula (NL. fem. n. *pavimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBW01 sp012729975*. The type genome for the species is the GenBank assembly GCA_012729975.1. The GC content of the type genome is 50.72 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Infesida gen. nov.

Candidatus Infesida (NL. fem. n. *Infesida* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBW01*. The type species for the genus is *Candidatus* Infesida pavimicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infesosa irrecicula sp. nov.

Candidatus Infesosa irrecicula (NL. fem. n. *irrecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGK01 sp007376535*. The type genome for the species is the GenBank assembly GCA_007376535.1. The GC content of the type genome is 39.95 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Infesosa gen. nov.

Candidatus Infesosa (NL. fem. n. *Infesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGK01*. The type species for the genus is *Candidatus* Infesosa irrecicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-39-44*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Femelulaceae.

Description of *Candidatus* Infesula agrapousia sp. nov.

Candidatus Infesula agrapousia (NL. fem. n. *agrapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14891 sp902803685*. The type genome for the species is the GenBank assembly GCA_902803685.1. The GC content of the type genome is 28.78 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Infesula gen. nov.

Candidatus Infesula (NL. fem. n. *Infesula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14891*. The type species for the genus is *Candidatus* Infesula agrapousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Infinana hexagitoga sp. nov.

Candidatus Infinana hexagitoga (NL. fem. n. *hexagitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWCT01 sp903911225*. The type genome for the species is the GenBank assembly GCA_903911225.1. The GC content of the type genome is 50.5 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Infinana gen. nov.

Candidatus Infinana (NL. fem. n. *Infinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWCT01*. The type species for the genus is *Candidatus* Infinana hexagitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIRTM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagulaceae.

Description of *Candidatus* Infinaria catafitura sp. nov.

Candidatus Infinaria catafitura (NL. fem. n. *catafitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Marseille-P3160 sp900162725*. The type genome for the species is the GenBank assembly RS_GCF_900162725.1. The GC content of the type genome is 43.07 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Infinaria gen. nov.

Candidatus Infinaria (NL. fem. n. *Infinaria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Marseille-P3160*. The type species for the genus is *Candidatus* Infinaria catafitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infinella fumacedo sp. nov.

Candidatus Infinella fumacedo (NL. fem. n. *fumacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYD01 sp009781445*. The type genome for the species is the GenBank assembly GCA_009781445.1. The GC content of the type genome is 42.22 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Infinella gen. nov.

Candidatus Infinella (NL. fem. n. *Infinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQYD01*. The type species for the genus is *Candidatus* Infinella fumacedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecariaceae.

Description of *Candidatus* Infinida ocissitio sp. nov.

Candidatus Infinida ocissitio (NL. fem. n. *ocissitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNJU01 sp014382375*. The type genome for the species is the GenBank assembly GCA_014382375.1. The GC content of the type genome is 54.01 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Infinida gen. nov.

Candidatus Infinida (NL. fem. n. *Infinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNJU01*. The type species for the genus is *Candidatus* Infinida ocissitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-58-16_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bulapanaceae.

Description of *Candidatus* Infinosa verifisca sp. nov.

Candidatus Infinosa verifisca (NL. fem. n. *verifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-49-17 sp002778575*. The type genome for the species is the GenBank assembly GCA_002778575.1. The GC content of the type genome is 49.11 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Infinosa gen. nov.

Candidatus Infinosa (NL. fem. n. *Infinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-49-17*. The type species for the genus is *Candidatus* Infinosa verifisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Infinula evangisca sp. nov.

Candidatus Infinula evangisca (NL. fem. n. *evangisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXOA01 sp005778405*. The type genome for the species is the GenBank assembly GCA_005778405.1. The GC content of the type genome is 59.89 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Infinula gen. nov.

Candidatus Infinula (NL. fem. n. *Infinula* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXOA01*. The type species for the genus is *Candidatus* Infinula evangisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infirana denigilega sp. nov.

Candidatus Infirana denigilega (NL. fem. n. *denigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZOH01 sp012797845*. The type genome for the species is the GenBank assembly GCA_012797845.1. The GC content of the type genome is 36.68 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Infirana gen. nov.

Candidatus Infirana (NL. fem. n. *Infirana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZOH01*. The type species for the genus is *Candidatus* Infirana denigilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1449*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demagariaceae.

Description of *Candidatus* Infiraria depocisca sp. nov.

Candidatus Infiraria depocisca (NL. fem. n. *depocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCVE01 sp013698285*. The type genome for the species is the GenBank assembly GCA_013698285.1. The GC content of the type genome is 69.47 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Infiraria gen. nov.

Candidatus Infiraria (NL. fem. n. *Infiraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCVE01*. The type species for the genus is *Candidatus* Infiraria depocisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Infiraria inlaciforma sp. nov.

Candidatus Infiraria inlaciforma (NL. fem. n. *inlaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCVE01 sp902806395*. The type genome for the species is the GenBank assembly GCA_902806395.1. The GC content of the type genome is 68.25 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Infirella demadicula sp. nov.

Candidatus Infirella demadicula (NL. fem. n. *demadicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2239 sp002347615*. The type genome for the species is the GenBank assembly GCA_002347615.1. The GC content of the type genome is 64.31 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Infirella gen. nov.

Candidatus Infirella (NL. fem. n. *Infirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2239*. The type species for the genus is *Candidatus* Infirella demadicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infirida apraredo sp. nov.

Candidatus Infirida apraredo (NL. fem. n. *apraredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DDPF01 sp013289415*. The type genome for the species is the GenBank assembly GCA_013289415.1. The GC content of the type genome is 41.55 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Infirida gen. nov.

Candidatus Infirida (NL. fem. n. *Infirida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DDPF01*. The type species for the genus is *Candidatus* Infirida apraredo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infirida exsolilega sp. nov.

Candidatus Infirida exsolilega (NL. fem. n. *exsolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DDPF01 sp003507515*. The type genome for the species is the GenBank assembly GCA_003507515.1. The GC content of the type genome is 46.24 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Infirosa immuritrix sp. nov.

Candidatus Infirosa immuritrix (NL. fem. n. *immuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDLO01 sp013002995*. The type genome for the species is the GenBank assembly GCA_013002995.1. The GC content of the type genome is 38.42 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Infirosa gen. nov.

Candidatus Infirosa (NL. fem. n. *Infirosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDLO01*. The type species for the genus is *Candidatus* Infirosa immuritrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infirula teniligena sp. nov.

Candidatus Infirula teniligena (NL. fem. n. *teniligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-0-20-56-8 sp002796165*. The type genome for the species is the GenBank assembly GCA_002796165.1. The GC content of the type genome is 55.68 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Infirula gen. nov.

Candidatus Infirula (NL. fem. n. *Infirula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-0-20-56-8*. The type species for the genus is *Candidatus* Infirula teniligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infisaria lanugatio sp. nov.

Candidatus Infisaria lanugatio (NL. fem. n. *lanugatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXDB01 sp903918125*. The type genome for the species is the GenBank assembly GCA_903918125.1. The GC content of the type genome is 48.36 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Infisaria gen. nov.

Candidatus Infisaria (NL. fem. n. *Infisaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXDB01*. The type species for the genus is *Candidatus* Infisaria lanugatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infisella senipugo sp. nov.

Candidatus Infisella senipugo (NL. fem. n. *senipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1304 sp002307295*. The type genome for the species is the GenBank assembly GCA_002307295.1. The GC content of the type genome is 36.88 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Infisella gen. nov.

Candidatus Infisella (NL. fem. n. *Infisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1304*. The type species for the genus is *Candidatus* Infisella senipugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infisia infelicella sp. nov.

Candidatus Infisia infelicella (NL. fem. n. *infelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUPO01 sp012033095*. The type genome for the species is the GenBank assembly GCA_012033095.1. The GC content of the type genome is 43.43 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Infisia gen. nov.

Candidatus Infisia (NL. fem. n. *Infisia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUPO01*. The type species for the genus is *Candidatus* Infisia infelicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infisida allobicula sp. nov.

Candidatus Infisida allobicula (NL. fem. n. *allobicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOHW01 sp903858195*. The type genome for the species is the GenBank assembly GCA_903858195.1. The GC content of the type genome is 60.79 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Infisida gen. nov.

Candidatus Infisida (NL. fem. n. *Infisida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOHW01*. The type species for the genus is *Candidatus* Infisida allobicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Infisosa omnigousia sp. nov.

Candidatus Infisosa omnigousia (NL. fem. n. *omnigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-37-34 sp001801495*. The type genome for the species is the GenBank assembly GCA_001801495.1. The GC content of the type genome is 37.39 % and the genome length is 1.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Infisosa gen. nov.

Candidatus Infisosa (NL. fem. n. *Infisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-37-34*. The type species for the genus is *Candidatus* Infisosa omnigousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Infisosa tabifastra sp. nov.

Candidatus Infisosa tabifastra (NL. fem. n. *tabifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-37-34 sp001801485*. The type genome for the species is the GenBank assembly GCA_001801485.1. The GC content of the type genome is 37.04 % and the genome length is 2.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Inforana cerebibula sp. nov.

Candidatus Inforana cerebibula (NL. fem. n. *cerebibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SACC01 sp009928745*. The type genome for the species is the GenBank assembly GCA_009928745.1. The GC content of the type genome is 41.24 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Inforana gen. nov.

Candidatus Inforana (NL. fem. n. *Inforana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SACC01*. The type species for the genus is *Candidatus* Inforana cerebibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-1252*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenunulaceae.

Description of *Candidatus* Inforaria rorulimonia sp. nov.

Candidatus Inforaria rorulimonia (NL. fem. n. *rorulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3107 sp001483205*. The type genome for the species is the GenBank assembly GCA_001483205.1. The GC content of the type genome is 63.6 % and the genome length is 2.17 Mbp. The isolation source for the NCBI BioSample associated

with the type genome is descibed as "sea water".

Description of *Candidatus* Inforaria gen. nov.

Candidatus Inforaria (NL. fem. n. *Inforaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *3107*. The type species for the genus is *Candidatus* Inforaria rorulimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inforella induvitrix sp. nov.

Candidatus Inforella induvitrix (NL. fem. n. *induvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRLZ01 sp009777365*. The type genome for the species is the GenBank assembly GCA_009777365.1. The GC content of the type genome is 47.79 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Inforella gen. nov.

Candidatus Inforella (NL. fem. n. *Inforella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRLZ01*. The type species for the genus is *Candidatus* Inforella induvitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inforosa agripentia sp. nov.

Candidatus Inforosa agripentia (NL. fem. n. *agripentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCQX01 sp004298545*. The type genome for the species is the GenBank assembly GCA_004298545.1. The GC content of the type genome is 63.25 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Inforosa gen. nov.

Candidatus Inforosa (NL. fem. n. *Inforosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCQX01*. The type species for the genus is *Candidatus* Inforosa agripentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inforula aciscimonia sp. nov.

Candidatus Inforula aciscimonia (NL. fem. n. *aciscimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AB-137-C09 sp000379225*. The type genome for the species is the GenBank assembly GCA_000379225.1. The GC content of the type genome is 47.66 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Inforula gen. nov.

Candidatus Inforula (NL. fem. n. *Inforula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AB-137-C09*. The type species for the genus is *Candidatus* Inforula aciscimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infucana arcitifica sp. nov.

Candidatus Infucana arcitifica (NL. fem. n. *arcitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-278 sp003133505*. The type genome for the species is the GenBank assembly GCA_003133505.1. The GC content of the type genome is 56.78 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Infucana gen. nov.

Candidatus Infucana (NL. fem. n. *Infucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-278*. The type species for the genus is *Candidatus* Infucana arcitifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Infucaria cilotastra sp. nov.

Candidatus Infucaria cilotastra (NL. fem. n. *cilotastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMJI01 sp900299315*. The type genome for the species is the GenBank assembly GCA_900299315.1. The GC content of the type genome is 62.13 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Infucaria gen. nov.

Candidatus Infucaria (NL. fem. n. *Infucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OMJI01*. The type species for the genus is *Candidatus* Infucaria cilotastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipalanaceae.

Description of *Candidatus* Infucella serotentia sp. nov.

Candidatus Infucella serotentia (NL. fem. n. *serotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4655 sp002405515*. The type genome for the species is the GenBank assembly GCA_002405515.1. The GC content of the type genome is 68.04 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Infucella gen. nov.

Candidatus Infucella (NL. fem. n. *Infucella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4655*. The type species for the genus is *Candidatus* Infucella serotentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subinellaceae.

Description of *Candidatus* Infucia bipalago sp. nov.

Candidatus Infucia bipalago (NL. fem. n. *bipalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RJJX01 sp003996985*. The type genome for the species is the GenBank assembly RS_GCF_003996985.1. The GC content of the type genome is 35.73 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Infucia gen. nov.

Candidatus Infucia (NL. fem. n. *Infucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RJJX01*. The type species for the genus is *Candidatus* Infucia bipalago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infunana excocitura sp. nov.

Candidatus Infunana excocitura (NL. fem. n. *excocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PH2015 sp014654705*. The type genome for the species is the GenBank assembly GCA_014654705.1. The GC content of the type genome is 48.47 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Infunana gen. nov.

Candidatus Infunana (NL. fem. n. *Infunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PH2015*. The type species for the genus is *Candidatus* Infunana excocitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4661*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forabellaceae.

Description of *Candidatus* Infunana inlusentia sp. nov.

Candidatus Infunana inlusentia (NL. fem. n. *inlusentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PH2015 sp004292595*. The type genome for the species is the GenBank assembly GCA_004292595.1. The GC content of the type genome is 48.32 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Infunana inretitoga sp. nov.

Candidatus Infunana inretitoga (NL. fem. n. *inretitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PH2015 sp013298775*. The type genome for the species is the GenBank assembly GCA_013298775.1. The GC content of the type genome is 48.16 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Infunana salubitrix sp. nov.

Candidatus Infunana salubitrix (NL. fem. n. *salubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PH2015 sp013298375*. The type genome for the species is the GenBank assembly GCA_013298375.1. The GC content of the type genome is 48.33 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Infunaria cocolisca sp. nov.

Candidatus Infunaria cocolisca (NL. fem. n. *cocolisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CP2-2F sp003695215*. The type genome for the species is the GenBank assembly GCA_003695215.1. The GC content of the type genome is 59.6 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Infunaria gen. nov.

Candidatus Infunaria (NL. fem. n. *Infunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CP2-2F*. The type species for the genus is *Candidatus* Infunaria cocolisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Salubellaceae.

Description of *Candidatus* Infunaria defenilenta sp. nov.

Candidatus Infunaria defenilenta (NL. fem. n. *defenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CP2-2F sp002794705*. The type genome for the species is the GenBank assembly GCA_002794705.1. The GC content of the type genome is 58.87 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Infunella dilibousia sp. nov.

Candidatus Infunella dilibousia (NL. fem. n. *dilibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR44 sp003221455*. The type genome for the species is the GenBank assembly GCA_003221455.1. The GC content of the type genome is 70.03 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Infunella gen. nov.

Candidatus Infunella (NL. fem. n. *Infunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *AR44*. The type species for the genus is *Candidatus* Infunella dilibousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Infunida decitedo sp. nov.

Candidatus Infunida decitedo (NL. fem. n. *decitedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXWY01 sp013334745*. The type genome for the species is the GenBank assembly GCA_013334745.1. The GC content of the type genome is 65.06 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Infunida gen. nov.

Candidatus Infunida (NL. fem. n. *Infunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXWY01*. The type species for the genus is *Candidatus* Infunida decitedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAXUF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Menaposaceae.

Description of *Candidatus* Infunosa peridatica sp. nov.

Candidatus Infunosa peridatica (NL. fem. n. *peridatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2683405 sp002683405*. The type genome for the species is the GenBank assembly GCA_002683405.1. The GC content of the type genome is 64.07 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Infunosa gen. nov.

Candidatus Infunosa (NL. fem. n. *Infunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2683405*. The type species for the genus is *Candidatus* Infunosa peridatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Infunula ammodibra sp. nov.

Candidatus Infunula ammodibra (NL. fem. n. *ammodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2687515 sp013204125*. The type genome for the species is the GenBank assembly GCA_013204125.1. The GC content of the type genome is 54.82 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Infunula gen. nov.

Candidatus Infunula (NL. fem. n. *Infunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2687515*. The type species for the genus is *Candidatus* Infunula ammodibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubanaceae.

Description of *Candidatus* Infunula momorigena sp. nov.

Candidatus Infunula momorigena (NL. fem. n. *momorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2687515 sp002687515*. The type genome for the species is the GenBank assembly GCA_002687515.1. The GC content of the type genome is 60.19 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Ingigana bigemicula sp. nov.

Candidatus Ingigana bigemicula (NL. fem. n. *bigemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCQS01 sp013814015*. The type genome for the species is the GenBank assembly GCA_013814015.1. The GC content of the type genome is 67.16 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Ingigana gen. nov.

Candidatus Ingigana (NL. fem. n. *Ingigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCQS01*. The type species for the genus is *Candidatus* Ingigana bigemicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ingigana coninetta sp. nov.

Candidatus Ingigana coninetta (NL. fem. n. *coninetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCQS01 sp013811975*. The type genome for the species is the GenBank assembly GCA_013811975.1. The GC content of the type genome is 66.96 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Ingigana innumentia sp. nov.

Candidatus Ingigana innumentia (NL. fem. n. *innumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCQS01 sp013812385*. The type genome for the species is the GenBank assembly GCA_013812385.1. The GC content of the type genome is 67.23 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Ingigana levifentia sp. nov.

Candidatus Ingigana levifentia (NL. fem. n. *levifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCQS01 sp013811805*. The type genome for the species is the GenBank assembly GCA_013811805.1. The GC content of the type genome is 67.42 %

and the genome length is 3.28 Mbp.

Description of *Candidatus* Ingigella aciscigena sp. nov.

Candidatus Ingigella aciscigena (NL. fem. n. *aciscigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA646 sp003650285*. The type genome for the species is the GenBank assembly GCA_003650285.1. The GC content of the type genome is 36.51 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Ingigella gen. nov.

Candidatus Ingigella (NL. fem. n. *Ingigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA646*. The type species for the genus is *Candidatus* Ingigella aciscigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ingigella exsusousia sp. nov.

Candidatus Ingigella exsusousia (NL. fem. n. *exsusousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA646 sp002299965*. The type genome for the species is the GenBank assembly GCA_002299965.1. The GC content of the type genome is 36.41 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Ingigida ceromatio sp. nov.

Candidatus Ingigida ceromatio (NL. fem. n. *ceromatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746885 sp002746885*. The type genome for the species is the GenBank assembly GCA_002746885.1. The GC content of the type genome is 50.96 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Ingigida gen. nov.

Candidatus Ingigida (NL. fem. n. *Ingigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746885*. The type species for the genus is *Candidatus* Ingigida ceromatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Merididaceae.

Description of *Candidatus* Ingigosa adbelicella sp. nov.

Candidatus Ingigosa adbelicella (NL. fem. n. *adbelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-224 sp003139735*. The type genome for the species is the GenBank assembly GCA_003139735.1. The GC content of the type genome is 63.18 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Ingigosa gen. nov.

Candidatus Ingigosa (NL. fem. n. *Ingigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-224*. The type species for the genus is *Candidatus* Ingigosa adbelicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ingigosa gasomitica sp. nov.

Candidatus Ingigosa gasomitica (NL. fem. n. *gasomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-224 sp903882645*. The type genome for the species is the GenBank assembly GCA_903882645.1. The GC content of the type genome is 64.29 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Ingigosa inpinisca sp. nov.

Candidatus Ingigosa inpinisca (NL. fem. n. *inpinisca* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-224 sp903925975*. The type genome for the species is the GenBank assembly GCA_903925975.1. The GC content of the type genome is 62.45 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Ingigula recucentia sp. nov.

Candidatus Ingigula recucentia (NL. fem. n. *recucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKHV01 sp007116765*. The type genome for the species is the GenBank assembly GCA_007116765.1. The GC content of the type genome is 39.92 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Ingigula gen. nov.

Candidatus Ingigula (NL. fem. n. *Ingigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKHV01*. The type species for the genus is *Candidatus* Ingigula recucentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ingigula sotulibra sp. nov.

Candidatus Ingigula sotulibra (NL. fem. n. *sotulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKHV01 sp012719495*. The type genome for the species is the GenBank assembly GCA_012719495.1. The GC content of the type genome is 40.05 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Ingurana depopugo sp. nov.

Candidatus Ingurana depopugo (NL. fem. n. *depopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9971 sp003499955*. The type genome for the species is the GenBank assembly GCA_003499955.1. The GC content of the type genome is 33.72 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Ingurana gen. nov.

Candidatus Ingurana (NL. fem. n. *Ingurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9971*. The type species for the genus is *Candidatus* Ingurana depopugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9579*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibariaceae.

Description of *Candidatus* Ingurana exsuratica sp. nov.

Candidatus Ingurana exsuratica (NL. fem. n. *exsuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9971 sp001784535*. The type genome for the species is the GenBank assembly GCA_001784535.1. The GC content of the type genome is 33.27 % and the genome length is 2.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Inguraria metabitas sp. nov.

Candidatus Inguraria metabitas (NL. fem. n. *metabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1477 sp900761525*. The type genome for the species is the GenBank assembly RS_GCF_900761525.1. The GC content of the type genome is 31.57 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Inguraria gen. nov.

Candidatus Inguraria (NL. fem. n. *Inguraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1477*. The type species for the genus is *Candidatus* Inguraria metabitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inguraria vavasilenta sp. nov.

Candidatus Inguraria vavasilenta (NL. fem. n. *vavasilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1477 sp900552205*. The type genome for the species is the GenBank assembly GCA_900552205.1. The GC content of the type genome is 30.55 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Inguraria viginicula sp. nov.

Candidatus Inguraria viginicula (NL. fem. n. *viginicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1477 sp900553845*. The type genome for the species is the GenBank assembly GCA_900553845.1. The GC content of the type genome is 29.67 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Ingurella funamago sp. nov.

Candidatus Ingurella funamago (NL. fem. n. *funamago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14199 sp902796675*. The type genome for the species is the GenBank assembly GCA_902796675.1. The GC content of the type genome is 54.85 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Ingurella gen. nov.

Candidatus Ingurella (NL. fem. n. *Ingurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14199*. The type species for the genus is *Candidatus* Ingurella funamago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Ingurella pinigisca sp. nov.

Candidatus Ingurella pinigisca (NL. fem. n. *pinigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14199 sp902797495*. The type genome for the species is the GenBank assembly GCA_902797495.1. The GC content of the type genome is 54.15 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Ingurida armicitura sp. nov.

Candidatus Ingurida armicitura (NL. fem. n. *armicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-48-11-A sp001818435*. The type genome for the species is the GenBank assembly GCA_001818435.1. The GC content of the type genome is 47.21 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Ingurida gen. nov.

Candidatus Ingurida (NL. fem. n. *Ingurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-48-11-A*. The type species for the genus is *Candidatus* Ingurida armicitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2169*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacosaceae.

Description of *Candidatus* Ingurosa decupitia sp. nov.

Candidatus Ingurosa decupitia (NL. fem. n. *decupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1404 sp002305075*. The type genome for the species is the GenBank assembly GCA_002305075.1. The GC content of the type genome is 57.32 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Ingurosa gen. nov.

Candidatus Ingurosa (NL. fem. n. *Ingurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1404*. The type species for the genus is *Candidatus* Ingurosa decupitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhabaria insenicula sp. nov.

Candidatus Inhabaria insenicula (NL. fem. n. *insenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABLXM01 sp013177815*. The type genome for the species is the GenBank assembly GCA_013177815.1. The GC content of the type genome is 56.14 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Inhabaria gen. nov.

Candidatus Inhabaria (NL. fem. n. *Inhabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABLXM01*. The type species for the genus is *Candidatus* Inhabaria insenicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhabella cisoritica sp. nov.

Candidatus Inhabella cisoritica (NL. fem. n. *cisoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIO01 sp012800805*. The type genome for the species is the

GenBank assembly GCA_012800805.1. The GC content of the type genome is 44.34 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Inhabella gen. nov.

Candidatus Inhabella (NL. fem. n. *Inhabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZIO01*. The type species for the genus is *Candidatus* Inhabella cisoritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadanaceae.

Description of *Candidatus* Inhabida telegilenta sp. nov.

Candidatus Inhabida telegilenta (NL. fem. n. *telegilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC7113 sp000317515*. The type genome for the species is the GenBank assembly RS_GCF_000317515.1. The GC content of the type genome is 46.21 % and the genome length is 7.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "orchid house soil".

Description of *Candidatus* Inhabida gen. nov.

Candidatus Inhabida (NL. fem. n. *Inhabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC7113*. The type species for the genus is *Candidatus* Inhabida telegilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhabosa anaplax sp. nov.

Candidatus Inhabosa anaplax (NL. fem. n. *anaplax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J020 sp003696725*. The type genome for the species is the GenBank

assembly GCA_003696725.1. The GC content of the type genome is 72.36 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Inhabosa gen. nov.

Candidatus Inhabosa (NL. fem. n. *Inhabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J020*. The type species for the genus is *Candidatus* Inhabosa anaplax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Inheraria direpimonia sp. nov.

Candidatus Inheraria direpimonia (NL. fem. n. *direpimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-333 sp011054565*. The type genome for the species is the GenBank assembly GCA_011054565.1. The GC content of the type genome is 42.87 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Inheraria gen. nov.

Candidatus Inheraria (NL. fem. n. *Inheraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-333*. The type species for the genus is *Candidatus* Inheraria direpimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8401*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rurigellaceae.

Description of *Candidatus* Inherida recorimonia sp. nov.

Candidatus Inherida recorimonia (NL. fem. n. *recorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5364 sp002410935*. The type genome for the species is the

GenBank assembly GCA_002410935.1. The GC content of the type genome is 27.74 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Inherida gen. nov.

Candidatus Inherida (NL. fem. n. *Inherida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5364*. The type species for the genus is *Candidatus* Inherida recorimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Inherosa ossucilega sp. nov.

Candidatus Inherosa ossucilega (NL. fem. n. *ossucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG612 sp900320605*. The type genome for the species is the GenBank assembly GCA_900320605.1. The GC content of the type genome is 51.56 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Inherosa gen. nov.

Candidatus Inherosa (NL. fem. n. *Inherosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG612*. The type species for the genus is *Candidatus* Inherosa ossucilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inherula crastatio sp. nov.

Candidatus Inherula crastatio (NL. fem. n. *crastatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFC01 sp009779015*. The type genome for the species is the GenBank assembly GCA_009779015.1. The GC content of the type genome is 60.75 %

and the genome length is 1.11 Mbp.

Description of *Candidatus* Inherula gen. nov.

Candidatus Inherula (NL. fem. n. *Inherula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFC01*. The type species for the genus is *Candidatus* Inherula crastatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumanaceae.

Description of *Candidatus* Inhonana gasomastra sp. nov.

Candidatus Inhonana gasomastra (NL. fem. n. *gasomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG12826 sp902783025*. The type genome for the species is the GenBank assembly GCA_902783025.1. The GC content of the type genome is 50.37 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Inhonana gen. nov.

Candidatus Inhonana (NL. fem. n. *Inhonana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG12826*. The type species for the genus is *Candidatus* Inhonana gasomastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Inhonaria epitrimonia sp. nov.

Candidatus Inhonaria epitrimonia (NL. fem. n. *epitrimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVN01 sp009785795*. The type genome for the species is the

GenBank assembly GCA_009785795.1. The GC content of the type genome is 47.1 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Inhonaria gen. nov.

Candidatus Inhonaria (NL. fem. n. *Inhonaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVN01*. The type species for the genus is *Candidatus* Inhonaria epitrimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WQUG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecidaceae.

Description of *Candidatus* Inhonaria vitigitas sp. nov.

Candidatus Inhonaria vitigitas (NL. fem. n. *vitigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVN01 sp009779395*. The type genome for the species is the GenBank assembly GCA_009779395.1. The GC content of the type genome is 52.86 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Inhonella bimotago sp. nov.

Candidatus Inhonella bimotago (NL. fem. n. *bimotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11412 sp900770185*. The type genome for the species is the GenBank assembly RS_GCF_900770185.1. The GC content of the type genome is 45.1 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Inhonella gen. nov.

Candidatus Inhonella (NL. fem. n. *Inhonella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11412*. The type species for the genus is *Candidatus* Inhonella bimotago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhonia octoditica sp. nov.

Candidatus Inhonia octoditica (NL. fem. n. *octoditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DDH964 sp001611275*. The type genome for the species is the GenBank assembly RS_GCF_001611275.1. The GC content of the type genome is 62.23 % and the genome length is 3.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "terrestrial subsurface brine".

Description of *Candidatus* Inhonia gen. nov.

Candidatus Inhonia (NL. fem. n. *Inhonia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DDH964*. The type species for the genus is *Candidatus* Inhonia octoditica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhonida redacitia sp. nov.

Candidatus Inhonida redacitia (NL. fem. n. *redacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2421 sp002343075*. The type genome for the species is the GenBank assembly GCA_002343075.1. The GC content of the type genome is 59.57 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Inhonida gen. nov.

Candidatus Inhonida (NL. fem. n. *Inhonida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2421*. The type species for the genus is *Candidatus* Inhonida redacitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hariciaceae.

Description of *Candidatus* Inhonosa filifatio sp. nov.

Candidatus Inhonosa filifatio (NL. fem. n. *filifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *17J80-11 sp014349105*. The type genome for the species is the GenBank assembly RS_GCF_014349105.1. The GC content of the type genome is 70.64 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Inhonosa gen. nov.

Candidatus Inhonosa (NL. fem. n. *Inhonosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *17J80-11*. The type species for the genus is *Candidatus* Inhonosa filifatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhonosa papilitia sp. nov.

Candidatus Inhonosa papilitia (NL. fem. n. *papilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *17J80-11 sp010975005*. The type genome for the species is the GenBank assembly RS_GCF_010975005.1. The GC content of the type genome is 70.61 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Inhonula cimelitio sp. nov.

Candidatus Inhonula cimelitio (NL. fem. n. *cimelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCY01 sp013287855*. The type genome for the species is the GenBank assembly GCA_013287855.1. The GC content of the type genome is 39.95 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Inhonula gen. nov.

Candidatus Inhonula (NL. fem. n. *Inhonula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCY01*. The type species for the genus is *Candidatus* Inhonula cimelitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhorana adfulifica sp. nov.

Candidatus Inhorana adfulifica (NL. fem. n. *adfulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B137-G9 sp003647825*. The type genome for the species is the GenBank assembly GCA_003647825.1. The GC content of the type genome is 36.73 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Inhorana gen. nov.

Candidatus Inhorana (NL. fem. n. *Inhorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B137-G9*. The type species for the genus is *Candidatus* Inhorana adfulifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefellaceae.

Description of *Candidatus* Inhoraria monocitica sp. nov.

Candidatus Inhoraria monocitica (NL. fem. n. *monocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYKF01 sp012522535*. The type genome for the species is the GenBank assembly GCA_012522535.1. The GC content of the type genome is 35.4 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Inhoraria gen. nov.

Candidatus Inhoraria (NL. fem. n. *Inhoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYKF01*. The type species for the genus is *Candidatus* Inhoraria monocitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turibosaceae.

Description of *Candidatus* Inhorida metapibula sp. nov.

Candidatus Inhorida metapibula (NL. fem. n. *metapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVU01 sp009691105*. The type genome for the species is the GenBank assembly GCA_009691105.1. The GC content of the type genome is 63.88 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Inhorida gen. nov.

Candidatus Inhorida (NL. fem. n. *Inhorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVU01*. The type species for the genus is *Candidatus* Inhorida metapibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-67-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susiculaceae.

Description of *Candidatus* Inhorosa arcelitia sp. nov.

Candidatus Inhorosa arcelitia (NL. fem. n. *arcelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTA01 sp011390075*. The type genome for the species is the GenBank assembly GCA_011390075.1. The GC content of the type genome is 38.19 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Inhorosa gen. nov.

Candidatus Inhorosa (NL. fem. n. *Inhorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABTA01*. The type species for the genus is *Candidatus* Inhorosa arcelitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigariaceae.

Description of *Candidatus* Inhorula horomifica sp. nov.

Candidatus Inhorula horomifica (NL. fem. n. *horomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGD01 sp009787355*. The type genome for the species is the GenBank assembly GCA_009787355.1. The GC content of the type genome is 28.58 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Inhorula gen. nov.

Candidatus Inhorula (NL. fem. n. *Inhorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGD01*. The type species for the genus is *Candidatus* Inhorula horomifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5962*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenoculaceae.

Description of *Candidatus* Inhosaria caselax sp. nov.

Candidatus Inhosaria caselax (NL. fem. n. *caselax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMNR01 sp013203465*. The type genome for the species is the GenBank assembly GCA_013203465.1. The GC content of the type genome is 64.37 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Inhosaria gen. nov.

Candidatus Inhosaria (NL. fem. n. *Inhosaria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMNR01*. The type species for the genus is *Candidatus* Inhosaria caselax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhosida anastago sp. nov.

Candidatus Inhosida anastago (NL. fem. n. *anastago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REAG01 sp004293915*. The type genome for the species is the GenBank assembly GCA_004293915.1. The GC content of the type genome is 32.18 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Inhosida gen. nov.

Candidatus Inhosida (NL. fem. n. *Inhosida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REAG01*. The type species for the genus is *Candidatus* Inhosida anastago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9547*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gemebiaceae.

Description of *Candidatus* Inhosida exsolitia sp. nov.

Candidatus Inhosida exsolitia (NL. fem. n. *exsolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REAG01 sp013297755*. The type genome for the species is the GenBank assembly GCA_013297755.1. The GC content of the type genome is 32.04 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Inhosida mimogentia sp. nov.

Candidatus Inhosida mimogentia (NL. fem. n. *mimogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REAG01 sp004294265*. The type genome for the species is the GenBank assembly GCA_004294265.1. The GC content of the type genome is 29.81 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Inhososa ecfunitudo sp. nov.

Candidatus Inhososa ecfunitudo (NL. fem. n. *ecfunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *K478 sp011250645*. The type genome for the species is the GenBank assembly RS_GCF_011250645.1. The GC content of the type genome is 74.15 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Inhososa gen. nov.

Candidatus Inhososa (NL. fem. n. *Inhososa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *K478*. The type species for the genus is *Candidatus* Inhososa ecfunitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhososa nugivibula sp. nov.

Candidatus Inhososa nugivibula (NL. fem. n. *nugivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *K478 sp011250635*. The type genome for the species is the GenBank assembly RS_GCF_011250635.1. The GC content of the type genome is 73.66 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Inhosula acropousia sp. nov.

Candidatus Inhosula acropousia (NL. fem. n. *acropousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAAYZI01 sp012514925*. The type genome for the species is the GenBank assembly GCA_012514925.1. The GC content of the type genome is 50.19 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Inhosula gen. nov.

Candidatus Inhosula (NL. fem. n. *Inhosula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZI01*. The type species for the genus is *Candidatus* Inhosula acropousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIXSY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemidaceae.

Description of *Candidatus* Inhumella xeropago sp. nov.

Candidatus Inhumella xeropago (NL. fem. n. *xeropago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-108 sp013214075*. The type genome for the species is the GenBank assembly GCA_013214075.1. The GC content of the type genome is 34.8 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Inhumella gen. nov.

Candidatus Inhumella (NL. fem. n. *Inhumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-108*. The type species for the genus is *Candidatus* Inhumella xeropago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhumia odontitas sp. nov.

Candidatus Inhumia odontitas (NL. fem. n. *odontitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNZR01 sp003978475*. The type genome for the species is the

GenBank assembly GCA_003978475.1. The GC content of the type genome is 44.34 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Inhumia gen. nov.

Candidatus Inhumia (NL. fem. n. *Inhumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNZR01*. The type species for the genus is *Candidatus* Inhumia odontitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhumida amnigimonas sp. nov.

Candidatus Inhumida amnigimonas (NL. fem. n. *amnigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6814 sp002452635*. The type genome for the species is the GenBank assembly GCA_002452635.1. The GC content of the type genome is 68.98 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Inhumida gen. nov.

Candidatus Inhumida (NL. fem. n. *Inhumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6814*. The type species for the genus is *Candidatus* Inhumida amnigimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhumosa depasisca sp. nov.

Candidatus Inhumosa depasisca (NL. fem. n. *depasisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11808 sp900757025*. The type genome for the species is the GenBank assembly RS_GCF_900757025.1. The GC content of the type genome is 37.6 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Inhumosa gen. nov.

Candidatus Inhumosa (NL. fem. n. *Inhumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11808*. The type species for the genus is *Candidatus* Inhumosa depasisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inhumula latibimonas sp. nov.

Candidatus Inhumula latibimonas (NL. fem. n. *latibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11525 sp900770405*. The type genome for the species is the GenBank assembly RS_GCF_900770405.1. The GC content of the type genome is 52.06 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Inhumula gen. nov.

Candidatus Inhumula (NL. fem. n. *Inhumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11525*. The type species for the genus is *Candidatus* Inhumula latibimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilosaceae.

Description of *Candidatus* Ininnana admigibra sp. nov.

Candidatus Ininnana admigibra (NL. fem. n. *admigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHXM01 sp013698055*. The type genome for the species is the GenBank assembly GCA_013698055.1. The GC content of the type genome is 54.95 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Ininnana gen. nov.

Candidatus Ininnana (NL. fem. n. *Ininnana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHXM01*. The type species for the genus is *Candidatus* Ininnana admigibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ininnana proslitudo sp. nov.

Candidatus Ininnana proslitudo (NL. fem. n. *proslitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHXM01 sp003222945*. The type genome for the species is the GenBank assembly GCA_003222945.1. The GC content of the type genome is 53.46 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Ininnaria obvalicella sp. nov.

Candidatus Ininnaria obvalicella (NL. fem. n. *obvalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-444 sp003246805*. The type genome for the species is the GenBank assembly GCA_003246805.1. The GC content of the type genome is 36.9 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Ininnaria gen. nov.

Candidatus Ininnaria (NL. fem. n. *Ininnaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-444*. The type species for the genus is *Candidatus* Ininnaria obvalicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ininnella bucolitrix sp. nov.

Candidatus Ininnella bucolitrix (NL. fem. n. *bucolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-J19 sp003215635*. The type genome for the species is the GenBank assembly GCA_003215635.1. The GC content of the type genome is 38.73 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Ininnella gen. nov.

Candidatus Ininnella (NL. fem. n. *Ininnella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-J19*. The type species for the genus is *Candidatus* Ininnella bucolitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ininnia megalitoga sp. nov.

Candidatus Ininnia megalitoga (NL. fem. n. *megalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKB01 sp009778295*. The type genome for the species is the GenBank assembly GCA_009778295.1. The GC content of the type genome is 55.36 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Ininnia gen. nov.

Candidatus Ininnia (NL. fem. n. *Ininnia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKB01*. The type species for the genus is *Candidatus* Ininnia megalitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ininnida onocrilenta sp. nov.

Candidatus Ininnida onocrilenta (NL. fem. n. *onocrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM13862 sp900760825*. The type genome for the species is the

GenBank assembly RS_GCF_900760825.1. The GC content of the type genome is 47.56 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Ininnida gen. nov.

Candidatus Ininnida (NL. fem. n. *Ininnida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM13862*. The type species for the genus is *Candidatus* Ininnida onocrilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4068*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divulosaceae.

Description of *Candidatus* Ininnida sacomifica sp. nov.

Candidatus Ininnida sacomifica (NL. fem. n. *sacomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM13862 sp012515255*. The type genome for the species is the GenBank assembly GCA_012515255.1. The GC content of the type genome is 55.43 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Ininnosa appagitas sp. nov.

Candidatus Ininnosa appagitas (NL. fem. n. *appagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch61 sp013314715*. The type genome for the species is the GenBank assembly GCA_013314715.1. The GC content of the type genome is 33.23 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Ininnosa gen. nov.

Candidatus Ininnosa (NL. fem. n. *Ininnosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch61*. The type species for the genus is *Candidatus* Ininnosa appagitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-32-17*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Domigidaceae.

Description of *Candidatus* Ininnula filifimonas sp. nov.

Candidatus Ininnula filifimonas (NL. fem. n. *filifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED10-109M sp003566505*. The type genome for the species is the GenBank assembly GCA_003566505.1. The GC content of the type genome is 31.84 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Ininnula gen. nov.

Candidatus Ininnula (NL. fem. n. *Ininnula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED10-109M*. The type species for the genus is *Candidatus* Ininnula filifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Ininnula melopitio sp. nov.

Candidatus Ininnula melopitio (NL. fem. n. *melopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED10-109M sp003560455*. The type genome for the species is the GenBank assembly GCA_003560455.1. The GC content of the type genome is 32.96 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Ininnula peribicula sp. nov.

Candidatus Ininnula peribicula (NL. fem. n. *peribicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED10-109M sp003559495*. The type genome for the species is the GenBank assembly GCA_003559495.1. The GC content of the type genome is 31.6 %

and the genome length is 0.57 Mbp.

Description of *Candidatus* Inlacana exhilitica sp. nov.

Candidatus Inlacana exhilitica (NL. fem. n. *exhilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQY01 sp013202975*. The type genome for the species is the GenBank assembly GCA_013202975.1. The GC content of the type genome is 40.57 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Inlacana gen. nov.

Candidatus Inlacana (NL. fem. n. *Inlacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQY01*. The type species for the genus is *Candidatus* Inlacana exhilitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-46-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domipidaceae.

Description of *Candidatus* Inlacaria allibicula sp. nov.

Candidatus Inlacaria allibicula (NL. fem. n. *allibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMJK01 sp900299325*. The type genome for the species is the GenBank assembly GCA_900299325.1. The GC content of the type genome is 61.53 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Inlacaria gen. nov.

Candidatus Inlacaria (NL. fem. n. *Inlacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OMJK01*. The type species for the genus is *Candidatus* Inlacaria allibicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlacia octusedo sp. nov.

Candidatus Inlacia octusedo (NL. fem. n. *octusedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686995 sp002686995*. The type genome for the species is the GenBank assembly GCA_002686995.1. The GC content of the type genome is 66.53 % and the genome length is 7.8 Mbp.

Description of *Candidatus* Inlacia gen. nov.

Candidatus Inlacia (NL. fem. n. *Inlacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2686995*. The type species for the genus is *Candidatus* Inlacia octusedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlacula defalitrix sp. nov.

Candidatus Inlacula defalitrix (NL. fem. n. *defalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4441 sp002390425*. The type genome for the species is the GenBank assembly GCA_002390425.1. The GC content of the type genome is 39.89 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Inlacula gen. nov.

Candidatus Inlacula (NL. fem. n. *Inlacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4441*. The type species for the genus is *Candidatus* Inlacula defalitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlapana hexapitas sp. nov.

Candidatus Inlapana hexapitas (NL. fem. n. *hexapitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBC036 sp902826945*. The type genome for the species is the GenBank assembly GCA_902826945.1. The GC content of the type genome is 75.46 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Inlapana gen. nov.

Candidatus Inlapana (NL. fem. n. *Inlapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBC036*. The type species for the genus is *Candidatus* Inlapana hexapitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Inlaparia abluvitio sp. nov.

Candidatus Inlaparia abluvitio (NL. fem. n. *abluvitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W589 sp011170375*. The type genome for the species is the GenBank assembly GCA_011170375.1. The GC content of the type genome is 51.7 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Inlaparia gen. nov.

Candidatus Inlaparia (NL. fem. n. *Inlaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W589*. The type species for the genus is *Candidatus* Inlaparia abluvitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1064*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benifidaceae.

Description of *Candidatus* Inlaparia totidisca sp. nov.

Candidatus Inlaparia totidisca (NL. fem. n. *totidisca* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W589 sp011171075*. The type genome for the species is the GenBank assembly GCA_011171075.1. The GC content of the type genome is 52.62 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Inlapella vicatatio sp. nov.

Candidatus Inlapella vicatatio (NL. fem. n. *vicatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBCK01 sp005882215*. The type genome for the species is the GenBank assembly GCA_005882215.1. The GC content of the type genome is 65.67 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Inlapella gen. nov.

Candidatus Inlapella (NL. fem. n. *Inlapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBCK01*. The type species for the genus is *Candidatus* Inlapella vicatatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlapia femelifica sp. nov.

Candidatus Inlapia femelifica (NL. fem. n. *femelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077553 sp009697495*. The type genome for the species is the GenBank assembly GCA_009697495.1. The GC content of the type genome is 60.01 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Inlapia gen. nov.

Candidatus Inlapia (NL. fem. n. *Inlapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Ga0077553*. The type species for the genus is *Candidatus* Inlapia femelifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlapia homolugo sp. nov.

Candidatus Inlapia homolugo (NL. fem. n. *homolugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077553 sp001464575*. The type genome for the species is the GenBank assembly GCA_001464575.1. The GC content of the type genome is 62.7 % and the genome length is 6.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Inlaposa cisorax sp. nov.

Candidatus Inlaposa cisorax (NL. fem. n. *cisorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABQG01 sp011391155*. The type genome for the species is the GenBank assembly GCA_011391155.1. The GC content of the type genome is 65.03 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Inlaposa gen. nov.

Candidatus Inlaposa (NL. fem. n. *Inlaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABQG01*. The type species for the genus is *Candidatus* Inlaposa cisorax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlaposa prospicella sp. nov.

Candidatus Inlaposa prospicella (NL. fem. n. *prospicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAABQG01 sp011391595*. The type genome for the species is the GenBank assembly GCA_011391595.1. The GC content of the type genome is 64.29 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Inlapula inbecousia sp. nov.

Candidatus Inlapula inbecousia (NL. fem. n. *inbecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4732 sp002404095*. The type genome for the species is the GenBank assembly GCA_002404095.1. The GC content of the type genome is 62.45 % and the genome length is 6.8 Mbp.

Description of *Candidatus* Inlapula gen. nov.

Candidatus Inlapula (NL. fem. n. *Inlapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4732*. The type species for the genus is *Candidatus* Inlapula inbecousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlecana insemousia sp. nov.

Candidatus Inlecana insemousia (NL. fem. n. *insemousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTFZ01 sp011335035*. The type genome for the species is the GenBank assembly GCA_011335035.1. The GC content of the type genome is 54.24 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Inlecana gen. nov.

Candidatus Inlecana (NL. fem. n. *Inlecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTFZ01*. The type species for the genus is *Candidatus* Inlecana insemousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-584*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Senacosaceae.

Description of *Candidatus* Inlecaria agratigena sp. nov.

Candidatus Inlecaria agratigena (NL. fem. n. *agratigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7317 sp002474345*. The type genome for the species is the GenBank assembly GCA_002474345.1. The GC content of the type genome is 35.68 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Inlecaria gen. nov.

Candidatus Inlecaria (NL. fem. n. *Inlecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7317*. The type species for the genus is *Candidatus* Inlecaria agratigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlecaria metapousia sp. nov.

Candidatus Inlecaria metapousia (NL. fem. n. *metapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7317 sp002715375*. The type genome for the species is the GenBank assembly GCA_002715375.1. The GC content of the type genome is 35.14 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Inlecella refinatica sp. nov.

Candidatus Inlecella refinatica (NL. fem. n. *refinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch130 sp013177945*. The type genome for the species is the GenBank assembly GCA_013177945.1. The GC content of the type genome is 55.76 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Inlecella gen. nov.

Candidatus Inlecella (NL. fem. n. *Inlecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch130*. The type species for the genus is *Candidatus* Inlecella refinatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlecia viragedo sp. nov.

Candidatus Inlecia viragedo (NL. fem. n. *viragedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYP01 sp009692725*. The type genome for the species is the GenBank assembly GCA_009692725.1. The GC content of the type genome is 72.5 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Inlecia gen. nov.

Candidatus Inlecia (NL. fem. n. *Inlecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYP01*. The type species for the genus is *Candidatus* Inlecia viragedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Inlecida invecimonia sp. nov.

Candidatus Inlecida invecimonia (NL. fem. n. *invecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An2-A sp002160065*. The type genome for the species is the GenBank assembly RS_GCF_002160065.1. The GC content of the type genome is 62.39 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Inlecida gen. nov.

Candidatus Inlecida (NL. fem. n. *Inlecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *An2-A*. The type species for the genus is *Candidatus* Inlecida invecimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlecosa direcatica sp. nov.

Candidatus Inlecosa direcatica (NL. fem. n. *direcatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7477 sp001940995*. The type genome for the species is the GenBank assembly GCA_001940995.1. The GC content of the type genome is 44.73 % and the genome length is 2.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Phil the wombat".

Description of *Candidatus* Inlecosa gen. nov.

Candidatus Inlecosa (NL. fem. n. *Inlecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7477*. The type species for the genus is *Candidatus* Inlecosa direcatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlecosa viripitura sp. nov.

Candidatus Inlecosa viripitura (NL. fem. n. *viripitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7477 sp002479715*. The type genome for the species is the GenBank assembly GCA_002479715.1. The GC content of the type genome is 47.99 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Inlepella bisacilega sp. nov.

Candidatus Inlepella bisacilega (NL. fem. n. *bisacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCRT01 sp013813355*. The type genome for the species is the GenBank assembly GCA_013813355.1. The GC content of the type genome is 66.9 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Inlepella gen. nov.

Candidatus Inlepella (NL. fem. n. *Inlepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCRT01*. The type species for the genus is *Candidatus* Inlepella bisacilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-66-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunidaceae.

Description of *Candidatus* Inlepia bicapibra sp. nov.

Candidatus Inlepia bicapibra (NL. fem. n. *bicapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCJ01 sp013817655*. The type genome for the species is the GenBank assembly GCA_013817655.1. The GC content of the type genome is 68.4 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Inlepia gen. nov.

Candidatus Inlepia (NL. fem. n. *Inlepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDCJ01*. The type species for the genus is *Candidatus* Inlepia bicapibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacosaceae.

Description of *Candidatus* Inlepia defanibra sp. nov.

Candidatus Inlepia defanibra (NL. fem. n. *defanibra* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCJ01 sp013816105*. The type genome for the species is the GenBank assembly GCA_013816105.1. The GC content of the type genome is 68.35 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Inleposa subaditoga sp. nov.

Candidatus Inleposa subaditoga (NL. fem. n. *subaditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMSE01 sp013204645*. The type genome for the species is the GenBank assembly GCA_013204645.1. The GC content of the type genome is 42.53 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Inleposa gen. nov.

Candidatus Inleposa (NL. fem. n. *Inleposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMSE01*. The type species for the genus is *Candidatus* Inleposa subaditoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-12-FULL-45-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fuligariaceae.

Description of *Candidatus* Inlepula hemitivita sp. nov.

Candidatus Inlepula hemitivita (NL. fem. n. *hemitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPP01 sp012838265*. The type genome for the species is the GenBank assembly GCA_012838265.1. The GC content of the type genome is 37.61 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Inlepula gen. nov.

Candidatus Inlepula (NL. fem. n. *Inlepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPP01*. The type species for the genus is *Candidatus* Inlepula hemitivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlibana adcumimonas sp. nov.

Candidatus Inlibana adcumimonas (NL. fem. n. *adcumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDE01 sp007693635*. The type genome for the species is the GenBank assembly GCA_007693635.1. The GC content of the type genome is 43.16 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Inlibana gen. nov.

Candidatus Inlibana (NL. fem. n. *Inlibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REDE01*. The type species for the genus is *Candidatus* Inlibana adcumimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlibaria adlubatica sp. nov.

Candidatus Inlibaria adlubatica (NL. fem. n. *adlubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLM01 sp011333295*. The type genome for the species is the GenBank assembly GCA_011333295.1. The GC content of the type genome is 54.94 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Inlibaria gen. nov.

Candidatus Inlibaria (NL. fem. n. *Inlibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLM01*. The type species for the genus is *Candidatus* Inlibaria

adlubatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlibia attolitudo sp. nov.

Candidatus Inlibia attolitudo (NL. fem. n. *attolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TWA4 sp000875945*. The type genome for the species is the GenBank assembly RS_GCF_000875945.1. The GC content of the type genome is 33.65 % and the genome length is 3.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "foregut sample".

Description of *Candidatus* Inlibia gen. nov.

Candidatus Inlibia (NL. fem. n. *Inlibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TWA4*. The type species for the genus is *Candidatus* Inlibia attolitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlibida tribrimonas sp. nov.

Candidatus Inlibida tribrimonas (NL. fem. n. *tribrimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PSRH01 sp003175915*. The type genome for the species is the GenBank assembly GCA_003175915.1. The GC content of the type genome is 50.62 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Inlibida gen. nov.

Candidatus Inlibida (NL. fem. n. *Inlibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PSRH01*. The type species for the genus is *Candidatus* Inlibida tribrimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlibosa adbelitudo sp. nov.

Candidatus Inlibosa adbelitudo (NL. fem. n. *adbelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VEPB01 sp012026715*. The type genome for the species is the GenBank assembly GCA_012026715.1. The GC content of the type genome is 62.74 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Inlibosa gen. nov.

Candidatus Inlibosa (NL. fem. n. *Inlibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VEPB01*. The type species for the genus is *Candidatus* Inlibosa adbelitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlibula facunousia sp. nov.

Candidatus Inlibula facunousia (NL. fem. n. *facunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PKWO01 sp003132085*. The type genome for the species is the GenBank assembly GCA_003132085.1. The GC content of the type genome is 55.57 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Inlibula gen. nov.

Candidatus Inlibula (NL. fem. n. *Inlibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PKWO01*. The type species for the genus is *Candidatus* Inlibula facunousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlocana malogilega sp. nov.

Candidatus Inlocana malogilega (NL. fem. n. *malogilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3003 sp006226375*. The type genome for the species is the GenBank assembly GCA_006226375.1. The GC content of the type genome is 53.8 % and the genome length is 10.21 Mbp.

Description of *Candidatus* Inlocana gen. nov.

Candidatus Inlocana (NL. fem. n. *Inlocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M3003*. The type species for the genus is *Candidatus* Inlocana malogilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6777*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peradosaceae.

Description of *Candidatus* Inlocaria sitelicula sp. nov.

Candidatus Inlocaria sitelicula (NL. fem. n. *sitelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHZM01 sp003224665*. The type genome for the species is the GenBank assembly GCA_003224665.1. The GC content of the type genome is 60.33 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Inlocaria gen. nov.

Candidatus Inlocaria (NL. fem. n. *Inlocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHZM01*. The type species for the genus is *Candidatus* Inlocaria sitelicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumariaceae.

Description of *Candidatus* Inlocella asporentia sp. nov.

Candidatus Inlocella asporentia (NL. fem. n. *asporentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *18JY21-1 sp004344915*. The type genome for the species is the GenBank assembly RS_GCF_004344915.1. The GC content of the type genome is 42.17 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Inlocella gen. nov.

Candidatus Inlocella (NL. fem. n. *Inlocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *18JY21-1*. The type species for the genus is *Candidatus* Inlocella asporentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlocia assicitas sp. nov.

Candidatus Inlocia assicitas (NL. fem. n. *assicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B28-G16 sp003644175*. The type genome for the species is the GenBank assembly GCA_003644175.1. The GC content of the type genome is 53.61 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Inlocia gen. nov.

Candidatus Inlocia (NL. fem. n. *Inlocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B28-G16*. The type species for the genus is *Candidatus* Inlocia assicitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlocosa excanimonas sp. nov.

Candidatus Inlocosa excanimonas (NL. fem. n. *excanimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Glo-17 sp003353795*. The type genome for the species is the GenBank assembly GCA_003353795.1. The GC content of the type genome is 66.68 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Inlocosa gen. nov.

Candidatus Inlocosa (NL. fem. n. *Inlocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Glo-17*. The type species for the genus is *Candidatus* Inlocosa excanimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LZORAL124-64-63*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolellaceae.

Description of *Candidatus* Inlumaria accoritio sp. nov.

Candidatus Inlumaria accoritio (NL. fem. n. *accoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QZKY01 sp003605115*. The type genome for the species is the GenBank assembly GCA_003605115.1. The GC content of the type genome is 53.03 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Inlumaria gen. nov.

Candidatus Inlumaria (NL. fem. n. *Inlumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QZKY01*. The type species for the genus is *Candidatus* Inlumaria accoritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlumella armicibra sp. nov.

Candidatus Inlumella armicibra (NL. fem. n. *armicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACBWF01 sp902526175*. The type genome for the species is the GenBank assembly GCA_902526175.1. The GC content of the type genome is 29.35 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Inlumella gen. nov.

Candidatus Inlumella (NL. fem. n. *Inlumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACBWF01*. The type species for the genus is *Candidatus* Inlumella armicibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Inlumella delubatica sp. nov.

Candidatus Inlumella delubatica (NL. fem. n. *delubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACBWF01 sp902542925*. The type genome for the species is the GenBank assembly GCA_902542925.1. The GC content of the type genome is 29.48 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Inlumia adtolivita sp. nov.

Candidatus Inlumia adtolivita (NL. fem. n. *adtolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTYO01 sp012961845*. The type genome for the species is the GenBank assembly GCA_012961845.1. The GC content of the type genome is 50.84 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Inlumia gen. nov.

Candidatus Inlumia (NL. fem. n. *Inlumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTYO01*. The type species for the genus is *Candidatus* Inlumia

adtolivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3076*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catapiaceae.

Description of *Candidatus* Inlumosa abambivita sp. nov.

Candidatus Inlumosa abambivita (NL. fem. n. *abambivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNEE01 sp003645085*. The type genome for the species is the GenBank assembly GCA_003645085.1. The GC content of the type genome is 49.81 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Inlumosa gen. nov.

Candidatus Inlumosa (NL. fem. n. *Inlumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNEE01*. The type species for the genus is *Candidatus* Inlumosa abambivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6098*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehemidaceae.

Description of *Candidatus* Inlumula advigousia sp. nov.

Candidatus Inlumula advigousia (NL. fem. n. *advigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6544 sp002724555*. The type genome for the species is the GenBank assembly GCA_002724555.1. The GC content of the type genome is 49.48 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Inlumula gen. nov.

Candidatus Inlumula (NL. fem. n. *Inlumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA6544*. The type species for the genus is *Candidatus* Inlumula advigousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8366*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decenellaceae.

Description of *Candidatus* Inlumula culilastra sp. nov.

Candidatus Inlumula culilastra (NL. fem. n. *culilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6544 sp002716125*. The type genome for the species is the GenBank assembly GCA_002716125.1. The GC content of the type genome is 57.41 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Inlumula selecatio sp. nov.

Candidatus Inlumula selecatio (NL. fem. n. *selecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6544 sp002434595*. The type genome for the species is the GenBank assembly GCA_002434595.1. The GC content of the type genome is 56.11 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Inlusana cepulilenta sp. nov.

Candidatus Inlusana cepulilenta (NL. fem. n. *cepulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4581 sp002387565*. The type genome for the species is the GenBank assembly GCA_002387565.1. The GC content of the type genome is 40.14 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Inlusana gen. nov.

Candidatus Inlusana (NL. fem. n. *Inlusana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4581*. The type species for the genus is *Candidatus* Inlusana

cepulilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlusana depetentia sp. nov.

Candidatus Inlusana depetentia (NL. fem. n. *depetentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4581 sp002386905*. The type genome for the species is the GenBank assembly GCA_002386905.1. The GC content of the type genome is 38.44 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Inlusaria ecastibula sp. nov.

Candidatus Inlusaria ecastibula (NL. fem. n. *ecastibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-58843 sp009650215*. The type genome for the species is the GenBank assembly RS_GCF_009650215.1. The GC content of the type genome is 72.56 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Inlusaria gen. nov.

Candidatus Inlusaria (NL. fem. n. *Inlusaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCSIO-58843*. The type species for the genus is *Candidatus* Inlusaria ecastibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKKL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defetulaceae.

Description of *Candidatus* Inlusella miracimonia sp. nov.

Candidatus Inlusella miracimonia (NL. fem. n. *miracimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQXF01 sp009784985*. The type genome for the species is the

GenBank assembly GCA_009784985.1. The GC content of the type genome is 55.7 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Inlusella gen. nov.

Candidatus Inlusella (NL. fem. n. *Inlusella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQXF01*. The type species for the genus is *Candidatus* Inlusella miracimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Inlusia asporimonia sp. nov.

Candidatus Inlusia asporimonia (NL. fem. n. *asporimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRGJ01 sp008636105*. The type genome for the species is the GenBank assembly GCA_008636105.1. The GC content of the type genome is 38.25 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Inlusia gen. nov.

Candidatus Inlusia (NL. fem. n. *Inlusia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRGJ01*. The type species for the genus is *Candidatus* Inlusia asporimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inlusia ludibitura sp. nov.

Candidatus Inlusia ludibitura (NL. fem. n. *ludibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRGJ01 sp011050115*. The type genome for the species is the GenBank assembly GCA_011050115.1. The GC content of the type genome is 38.24 %

and the genome length is 2.96 Mbp.

Description of *Candidatus* Inlusida inmolessa sp. nov.

Candidatus Inlusida inmolessa (NL. fem. n. *inmolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLW01 sp012799135*. The type genome for the species is the GenBank assembly GCA_012799135.1. The GC content of the type genome is 50.34 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Inlusida gen. nov.

Candidatus Inlusida (NL. fem. n. *Inlusida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZLW01*. The type species for the genus is *Candidatus* Inlusida inmolessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovosaceae.

Description of *Candidatus* Inlusosa proslousia sp. nov.

Candidatus Inlusosa proslousia (NL. fem. n. *proslousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWBO01 sp002071685*. The type genome for the species is the GenBank assembly GCA_002071685.1. The GC content of the type genome is 42.31 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Inlusosa gen. nov.

Candidatus Inlusosa (NL. fem. n. *Inlusosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWBO01*. The type species for the genus is *Candidatus* Inlusosa proslousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTJR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Sifunidaceae.

Description of *Candidatus* Inlusula arcubicula sp. nov.

Candidatus Inlusula arcubicula (NL. fem. n. *arcubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-45-10-A sp001804165*. The type genome for the species is the GenBank assembly GCA_001804165.1. The GC content of the type genome is 45.16 % and the genome length is 1.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Inlusula gen. nov.

Candidatus Inlusula (NL. fem. n. *Inlusula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-45-10-A*. The type species for the genus is *Candidatus* Inlusula arcubicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-45-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxanulaceae.

Description of *Candidatus* Inmacana immacicula sp. nov.

Candidatus Inmacana immacicula (NL. fem. n. *immacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-43-13 sp001819295*. The type genome for the species is the GenBank assembly GCA_001819295.1. The GC content of the type genome is 42.92 % and the genome length is 0.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Inmacana gen. nov.

Candidatus Inmacana (NL. fem. n. *Inmacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-43-13*. The type species for the genus is *Candidatus* Inmacana immacicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MHMH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visifiaceae.

Description of *Candidatus* Inmacaria gabinigena sp. nov.

Candidatus Inmacaria gabinigena (NL. fem. n. *gabinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12657 sp900760575*. The type genome for the species is the GenBank assembly RS_GCF_900760575.1. The GC content of the type genome is 46.57 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Inmacaria gen. nov.

Candidatus Inmacaria (NL. fem. n. *Inmacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12657*. The type species for the genus is *Candidatus* Inmacaria gabinigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Inmacella revulicula sp. nov.

Candidatus Inmacella revulicula (NL. fem. n. *revulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-533 sp003250375*. The type genome for the species is the GenBank assembly GCA_003250375.1. The GC content of the type genome is 40.98 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Inmacella gen. nov.

Candidatus Inmacella (NL. fem. n. *Inmacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-533*. The type species for the genus is *Candidatus* Inmacella revulicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Inmacosa abnepibula sp. nov.

Candidatus Inmacosa abnepibula (NL. fem. n. *abnepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWME01 sp003559235*. The type genome for the species is the GenBank assembly GCA_003559235.1. The GC content of the type genome is 41.8 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Inmacosa gen. nov.

Candidatus Inmacosa (NL. fem. n. *Inmacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWME01*. The type species for the genus is *Candidatus* Inmacosa abnepibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmacula tenebago sp. nov.

Candidatus Inmacula tenebago (NL. fem. n. *tenebago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHZL01 sp009692275*. The type genome for the species is the GenBank assembly GCA_009692275.1. The GC content of the type genome is 57.86 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Inmacula gen. nov.

Candidatus Inmacula (NL. fem. n. *Inmacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHZL01*. The type species for the genus is *Candidatus* Inmacula tenebago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulellaceae.

Description of *Candidatus* Inmemana admigitia sp. nov.

Candidatus Inmemana admigitia (NL. fem. n. *admigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MGR-bin340 sp013816805*. The type genome for the species is the GenBank assembly GCA_013816805.1. The GC content of the type genome is 39.17 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Inmemana gen. nov.

Candidatus Inmemana (NL. fem. n. *Inmemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MGR-bin340*. The type species for the genus is *Candidatus* Inmemana admigitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10324*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vereciaceae.

Description of *Candidatus* Inmemaria inabsago sp. nov.

Candidatus Inmemaria inabsago (NL. fem. n. *inabsago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMJL01 sp014380625*. The type genome for the species is the GenBank assembly GCA_014380625.1. The GC content of the type genome is 31.76 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Inmemaria gen. nov.

Candidatus Inmemaria (NL. fem. n. *Inmemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMJL01*. The type species for the genus is *Candidatus* Inmemaria inabsago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmemida desucisca sp. nov.

Candidatus Inmemida desucisca (NL. fem. n. *desucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NCEH01 sp002257205*. The type genome for the species is the GenBank assembly GCA_002257205.1. The GC content of the type genome is 65.72 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Inmemida gen. nov.

Candidatus Inmemida (NL. fem. n. *Inmemida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NCEH01*. The type species for the genus is *Candidatus* Inmemida desucisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmemida voragivita sp. nov.

Candidatus Inmemida voragivita (NL. fem. n. *voragivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NCEH01 sp002304505*. The type genome for the species is the GenBank assembly GCA_002304505.1. The GC content of the type genome is 66.26 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Inmemosa attolatica sp. nov.

Candidatus Inmemosa attolatica (NL. fem. n. *attolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *PSRN01 sp003176075*. The type genome for the species is the GenBank assembly GCA_003176075.1. The GC content of the type genome is 52.44 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Inmemosa gen. nov.

Candidatus Inmemosa (NL. fem. n. *Inmemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PSRN01*. The type species for the genus is *Candidatus* Inmemosa attolatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmenana intemago sp. nov.

Candidatus Inmenana intemago (NL. fem. n. *intemago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WYBL01 sp011526565*. The type genome for the species is the GenBank assembly GCA_011526565.1. The GC content of the type genome is 72.83 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Inmenana gen. nov.

Candidatus Inmenana (NL. fem. n. *Inmenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WYBL01*. The type species for the genus is *Candidatus* Inmenana intemago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Exsanellaceae.

Description of *Candidatus* Inmenaria adpugimonas sp. nov.

Candidatus Inmenaria adpugimonas (NL. fem. n. *adpugimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYYW01 sp903897985*. The type genome for the species is the

GenBank assembly GCA_903897985.1. The GC content of the type genome is 57.1 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Inmenaria gen. nov.

Candidatus Inmenaria (NL. fem. n. *Inmenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYYW01*. The type species for the genus is *Candidatus* Inmenaria adpugimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRUE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vivifariaceae.

Description of *Candidatus* Inmenaria occenatio sp. nov.

Candidatus Inmenaria occenatio (NL. fem. n. *occenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYYW01 sp903930515*. The type genome for the species is the GenBank assembly GCA_903930515.1. The GC content of the type genome is 55.33 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Inmenella latibitoga sp. nov.

Candidatus Inmenella latibitoga (NL. fem. n. *latibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OEMS01 sp900199405*. The type genome for the species is the GenBank assembly RS_GCF_900199405.1. The GC content of the type genome is 60.76 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Inmenella gen. nov.

Candidatus Inmenella (NL. fem. n. *Inmenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OEMS01*. The type species for the genus is *Candidatus* Inmenella latibitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family

CAG-74. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Inmenida inmititudo sp. nov.

Candidatus Inmenida inmititudo (NL. fem. n. *inmititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXI01 sp004292795*. The type genome for the species is the GenBank assembly GCA_004292795.1. The GC content of the type genome is 42.6 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Inmenida gen. nov.

Candidatus Inmenida (NL. fem. n. *Inmenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDXI01*. The type species for the genus is *Candidatus* Inmenida inmititudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmenida insibimonia sp. nov.

Candidatus Inmenida insibimonia (NL. fem. n. *insibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXI01 sp013298105*. The type genome for the species is the GenBank assembly GCA_013298105.1. The GC content of the type genome is 40.54 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Inmenosa antepitia sp. nov.

Candidatus Inmenosa antepitia (NL. fem. n. *antepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WREQ01 sp009779255*. The type genome for the species is the GenBank assembly GCA_009779255.1. The GC content of the type genome is 53.44 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Inmenosa gen. nov.

Candidatus Inmenosa (NL. fem. n. *Inmenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WREQ01*. The type species for the genus is *Candidatus* Inmenosa antepitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1222*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resacidaceae.

Description of *Candidatus* Inmenula delapitia sp. nov.

Candidatus Inmenula delapitia (NL. fem. n. *delapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PPFX01 sp002898515*. The type genome for the species is the GenBank assembly RS_GCF_002898515.1. The GC content of the type genome is 59.23 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Inmenula gen. nov.

Candidatus Inmenula (NL. fem. n. *Inmenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PPFX01*. The type species for the genus is *Candidatus* Inmenula delapitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmenula herinilenta sp. nov.

Candidatus Inmenula herinilenta (NL. fem. n. *herinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PPFX01 sp002093115*. The type genome for the species is the GenBank assembly RS_GCF_002093115.1. The GC content of the type genome is 59.39 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Inmitana offirimonas sp. nov.

Candidatus Inmitana offirimonas (NL. fem. n. *offirimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCVW01 sp902806235*. The type genome for the species is the GenBank assembly GCA_902806235.1. The GC content of the type genome is 70.54 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Inmitana gen. nov.

Candidatus Inmitana (NL. fem. n. *Inmitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCVW01*. The type species for the genus is *Candidatus* Inmitana offirimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmitaria vitabago sp. nov.

Candidatus Inmitaria vitabago (NL. fem. n. *vitabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZAI01 sp012514445*. The type genome for the species is the GenBank assembly GCA_012514445.1. The GC content of the type genome is 66.2 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Inmitaria gen. nov.

Candidatus Inmitaria (NL. fem. n. *Inmitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZAI01*. The type species for the genus is *Candidatus* Inmitaria vitabago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3636*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cepuliaceae.

Description of *Candidatus* Inmitella incunitas sp. nov.

Candidatus Inmitella incunitas (NL. fem. n. *incunitas* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2688105 sp002688105*. The type genome for the species is the GenBank assembly GCA_002688105.1. The GC content of the type genome is 48.36 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Inmitella gen. nov.

Candidatus Inmitella (NL. fem. n. *Inmitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2688105*. The type species for the genus is *Candidatus* Inmitella incunitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5760*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisellaceae.

Description of *Candidatus* Inmitida fefelitrix sp. nov.

Candidatus Inmitida fefelitrix (NL. fem. n. *fefelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZAW01 sp012514125*. The type genome for the species is the GenBank assembly GCA_012514125.1. The GC content of the type genome is 50.09 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Inmitida gen. nov.

Candidatus Inmitida (NL. fem. n. *Inmitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZAW01*. The type species for the genus is *Candidatus* Inmitida fefelitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYCJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denixulaceae.

Description of *Candidatus* Inmitula oppanousia sp. nov.

Candidatus Inmitula oppanousia (NL. fem. n. *oppanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADCS01 sp013153965*. The type genome for the species is the GenBank assembly GCA_013153965.1. The GC content of the type genome is 58.23 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Inmitula gen. nov.

Candidatus Inmitula (NL. fem. n. *Inmitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADCS01*. The type species for the genus is *Candidatus* Inmitula oppanousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LBFQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigemellaceae.

Description of *Candidatus* Inmitula siligitudo sp. nov.

Candidatus Inmitula siligitudo (NL. fem. n. *siligitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADCS01 sp013154295*. The type genome for the species is the GenBank assembly GCA_013154295.1. The GC content of the type genome is 48.62 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Inmobana vagabitoga sp. nov.

Candidatus Inmobana vagabitoga (NL. fem. n. *vagabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAC01 sp014238965*. The type genome for the species is the GenBank assembly GCA_014238965.1. The GC content of the type genome is 56.95 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Inmobana gen. nov.

Candidatus Inmobana (NL. fem. n. *Inmobana* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABAAC01*. The type species for the genus is *Candidatus* Inmobana vagabitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Inmobaria nocenicella sp. nov.

Candidatus Inmobaria nocenicella (NL. fem. n. *nocenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1623 sp900553525*. The type genome for the species is the GenBank assembly GCA_900553525.1. The GC content of the type genome is 54.63 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Inmobaria gen. nov.

Candidatus Inmobaria (NL. fem. n. *Inmobaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1623*. The type species for the genus is *Candidatus* Inmobaria nocenicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmobella megalicella sp. nov.

Candidatus Inmobella megalicella (NL. fem. n. *megalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVP01 sp011368305*. The type genome for the species is the GenBank assembly GCA_011368305.1. The GC content of the type genome is 45.6 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Inmobella gen. nov.

Candidatus Inmobella (NL. fem. n. *Inmobella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVP01*. The type species for the genus is *Candidatus* Inmobella megalicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-56-20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagosaceae.

Description of *Candidatus* Inmobella subacitudo sp. nov.

Candidatus Inmobella subacitudo (NL. fem. n. *subacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVP01 sp011330905*. The type genome for the species is the GenBank assembly GCA_011330905.1. The GC content of the type genome is 47.02 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Inmobia acrobicula sp. nov.

Candidatus Inmobia acrobicula (NL. fem. n. *acrobicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFI01 sp013286595*. The type genome for the species is the GenBank assembly GCA_013286595.1. The GC content of the type genome is 42.92 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Inmobia gen. nov.

Candidatus Inmobia (NL. fem. n. *Inmobia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDFI01*. The type species for the genus is *Candidatus* Inmobia acrobicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmobida fetuticula sp. nov.

Candidatus Inmobida fetuticula (NL. fem. n. *fetuticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J124 sp003694355*. The type genome for the species is the GenBank assembly GCA_003694355.1. The GC content of the type genome is 40.31 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Inmobida gen. nov.

Candidatus Inmobida (NL. fem. n. *Inmobida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J124*. The type species for the genus is *Candidatus* Inmobida fetuticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1609*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifanaceae.

Description of *Candidatus* Inmobosa cerevatica sp. nov.

Candidatus Inmobosa cerevatica (NL. fem. n. *cerevatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCJG01 sp903970625*. The type genome for the species is the GenBank assembly GCA_903970625.1. The GC content of the type genome is 67.03 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Inmobosa gen. nov.

Candidatus Inmobosa (NL. fem. n. *Inmobosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJCJG01*. The type species for the genus is *Candidatus* Inmobosa cerevatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmodana apporitica sp. nov.

Candidatus Inmodana apporitica (NL. fem. n. *apporitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JACTMU01 sp014584465*. The type genome for the species is the GenBank assembly GCA_014584465.1. The GC content of the type genome is 46.85 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Inmodana gen. nov.

Candidatus Inmodana (NL. fem. n. *Inmodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACTMU01*. The type species for the genus is *Candidatus* Inmodana apporitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG-bin7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabulaceae.

Description of *Candidatus* Inmodella ingigax sp. nov.

Candidatus Inmodella ingigax (NL. fem. n. *ingigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VEPF01 sp012027055*. The type genome for the species is the GenBank assembly GCA_012027055.1. The GC content of the type genome is 70.44 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Inmodella gen. nov.

Candidatus Inmodella (NL. fem. n. *Inmodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VEPF01*. The type species for the genus is *Candidatus* Inmodella ingigax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RSA9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatulaceae.

Description of *Candidatus* Inmodia anaplitia sp. nov.

Candidatus Inmodia anaplitia (NL. fem. n. *anaplitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8290 sp003497445*. The type genome for the species is the GenBank assembly GCA_003497445.1. The GC content of the type genome is 33.31 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Inmodia gen. nov.

Candidatus Inmodia (NL. fem. n. *Inmodia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8290*. The type species for the genus is *Candidatus* Inmodia anaplitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmodida inordimonia sp. nov.

Candidatus Inmodida inordimonia (NL. fem. n. *inordimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGL01 sp900696525*. The type genome for the species is the GenBank assembly GCA_900696525.1. The GC content of the type genome is 69.81 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Inmodida gen. nov.

Candidatus Inmodida (NL. fem. n. *Inmodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAADGL01*. The type species for the genus is *Candidatus* Inmodida inordimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1342*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibariaceae.

Description of *Candidatus* Inmodula allubimonia sp. nov.

Candidatus Inmodula allubimonia (NL. fem. n. *allubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SpSt-398 sp011331725*. The type genome for the species is the GenBank assembly GCA_011331725.1. The GC content of the type genome is 43.49 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Inmodula gen. nov.

Candidatus Inmodula (NL. fem. n. *Inmodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-398*. The type species for the genus is *Candidatus* Inmodula allubimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmolana scombetta sp. nov.

Candidatus Inmolana scombetta (NL. fem. n. *scombetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM13222 sp900757485*. The type genome for the species is the GenBank assembly RS_GCF_900757485.1. The GC content of the type genome is 42.75 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Inmolana gen. nov.

Candidatus Inmolana (NL. fem. n. *Inmolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM13222*. The type species for the genus is *Candidatus* Inmolana scombetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmolaria acistitudo sp. nov.

Candidatus Inmolaria acistitudo (NL. fem. n. *acistitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITJF01 sp903892645*. The type genome for the species is the GenBank assembly GCA_903892645.1. The GC content of the type genome is 55.27 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Inmolaria gen. nov.

Candidatus Inmolaria (NL. fem. n. *Inmolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITJF01*. The type species for the genus is *Candidatus* Inmolaria acistitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmolaria luculastra sp. nov.

Candidatus Inmolaria luculastra (NL. fem. n. *luculastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITJF01 sp903873725*. The type genome for the species is the GenBank assembly GCA_903873725.1. The GC content of the type genome is 52.68 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Inmolella ossicicula sp. nov.

Candidatus Inmolella ossicicula (NL. fem. n. *ossicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPBY01 sp903863425*. The type genome for the species is the GenBank assembly GCA_903863425.1. The GC content of the type genome is 39.63 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Inmolella gen. nov.

Candidatus Inmolella (NL. fem. n. *Inmolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPBY01*. The type species for the genus is *Candidatus* Inmolella ossicicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-39-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dibapiaceae.

Description of *Candidatus* Inmolia insusousia sp. nov.

Candidatus Inmolia insusousia (NL. fem. n. *insusousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *9FT-COMBO-55-16 sp001795335*. The type genome for the species is the GenBank assembly GCA_001795335.1. The GC content of the type genome is 54.96 % and the genome length is 2.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 19ft depth".

Description of *Candidatus* Inmolia gen. nov.

Candidatus Inmolia (NL. fem. n. *Inmolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *9FT-COMBO-55-16*. The type species for the genus is *Candidatus* Inmolia insusousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Inmolida absorago sp. nov.

Candidatus Inmolida absorago (NL. fem. n. *absorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS577 sp900543525*. The type genome for the species is the GenBank assembly GCA_900543525.1. The GC content of the type genome is 57.94 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Inmolida gen. nov.

Candidatus Inmolida (NL. fem. n. *Inmolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS577*. The type species for the genus is *Candidatus* Inmolida absorago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmolosa apharetta sp. nov.

Candidatus Inmolosa apharetta (NL. fem. n. *apharetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDET01 sp013816255*. The type genome for the species is the GenBank assembly GCA_013816255.1. The GC content of the type genome is 39.65 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Inmolosa gen. nov.

Candidatus Inmolosa (NL. fem. n. *Inmolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDET01*. The type species for the genus is *Candidatus* Inmolosa apharetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Inmolula abagmimonia sp. nov.

Candidatus Inmolula abagmimonia (NL. fem. n. *abagmimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *N075bin59 sp004357655*. The type genome for the species is the GenBank assembly GCA_004357655.1. The GC content of the type genome is 69.62 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Inmolula gen. nov.

Candidatus Inmolula (NL. fem. n. *Inmolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *N075bin59*. The type species for the genus is *Candidatus* Inmolula abagmimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Inmoraria andabax sp. nov.

Candidatus Inmoraria andabax (NL. fem. n. *andabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCRY01 sp013817115*. The type genome for the species is the GenBank assembly GCA_013817115.1. The GC content of the type genome is 38.32 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Inmoraria gen. nov.

Candidatus Inmoraria (NL. fem. n. *Inmoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCRY01*. The type species for the genus is *Candidatus* Inmoraria andabax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmoraria dilecifica sp. nov.

Candidatus Inmoraria dilecifica (NL. fem. n. *dilecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCRY01 sp013813265*. The type genome for the species is the GenBank assembly GCA_013813265.1. The GC content of the type genome is 38.3 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Inmorella adlapitoga sp. nov.

Candidatus Inmorella adlapitoga (NL. fem. n. *adlapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B10-G4 sp003647065*. The type genome for the species is the GenBank assembly GCA_003647065.1. The GC content of the type genome is 67.57 % and the genome length is 7.08 Mbp.

Description of *Candidatus* Inmorella gen. nov.

Candidatus Inmorella (NL. fem. n. *Inmorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B10-G4*. The type species for the genus is *Candidatus* Inmorella adlapitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benivosaceae.

Description of *Candidatus* Inmoria cacopimonia sp. nov.

Candidatus Inmoria cacopimonia (NL. fem. n. *cacopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSNU01 sp011047125*. The type genome for the species is the GenBank assembly GCA_011047125.1. The GC content of the type genome is 52.83 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Inmoria gen. nov.

Candidatus Inmoria (NL. fem. n. *Inmoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSNU01*. The type species for the genus is *Candidatus* Inmoria cacopimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QEVD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomogellaceae.

Description of *Candidatus* Inmorida intemisca sp. nov.

Candidatus Inmorida intemisca (NL. fem. n. *intemisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718845 sp002718845*. The type genome for the species is the GenBank assembly GCA_002718845.1. The GC content of the type genome is 32.15 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Inmorida gen. nov.

Candidatus Inmorida (NL. fem. n. *Inmorida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2718845*. The type species for the genus is *Candidatus* Inmorida intemisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002716945*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecidaceae.

Description of *Candidatus* Inmorosa adfabago sp. nov.

Candidatus Inmorosa adfabago (NL. fem. n. *adfabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSXM01 sp011332595*. The type genome for the species is the GenBank assembly GCA_011332595.1. The GC content of the type genome is 63.21 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Inmorosa gen. nov.

Candidatus Inmorosa (NL. fem. n. *Inmorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSXM01*. The type species for the genus is *Candidatus* Inmorosa adfabago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feficariaceae.

Description of *Candidatus* Inmutana papavilega sp. nov.

Candidatus Inmutana papavilega (NL. fem. n. *papavilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSOU01 sp011054545*. The type genome for the species is the GenBank assembly GCA_011054545.1. The GC content of the type genome is 63.83 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Inmutana gen. nov.

Candidatus Inmutana (NL. fem. n. *Inmutana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSOU01*. The type species for the genus is *Candidatus* Inmutana papavilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmutaria antegitas sp. nov.

Candidatus Inmutaria antegitas (NL. fem. n. *antegitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2712985 sp002712985*. The type genome for the species is the GenBank assembly GCA_002712985.1. The GC content of the type genome is 47.49 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Inmutaria gen. nov.

Candidatus Inmutaria (NL. fem. n. *Inmutaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2712985*. The type species for the genus is *Candidatus* Inmutaria antegitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7887*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulariaceae.

Description of *Candidatus* Inmutia adposimonia sp. nov.

Candidatus Inmutia adposimonia (NL. fem. n. *adposimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-22 sp013151565*. The type genome for the species is the GenBank assembly GCA_013151565.1. The GC content of the type genome is 35.63 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Inmutia gen. nov.

Candidatus Inmutia (NL. fem. n. *Inmutia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-22*. The type species for the genus is *Candidatus* Inmutia adposimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inmutia excetitia sp. nov.

Candidatus Inmutia excetitia (NL. fem. n. *excetitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-22 sp003233295*. The type genome for the species is the GenBank assembly GCA_003233295.1. The GC content of the type genome is 35.99 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Inmutida advecicula sp. nov.

Candidatus Inmutida advecicula (NL. fem. n. *advecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5893 sp002308915*. The type genome for the species is the GenBank assembly GCA_002308915.1. The GC content of the type genome is 31.0 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Inmutida gen. nov.

Candidatus Inmutida (NL. fem. n. *Inmutida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5893*. The type species for the genus is *Candidatus* Inmutida advecicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Inmutida retunetta sp. nov.

Candidatus Inmutida retunetta (NL. fem. n. *retunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5893 sp002431905*. The type genome for the species is the GenBank assembly GCA_002431905.1. The GC content of the type genome is 31.18 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Inmutula oblanicella sp. nov.

Candidatus Inmutula oblanicella (NL. fem. n. *oblanicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2684605 sp002684605*. The type genome for the species is the GenBank assembly GCA_002684605.1. The GC content of the type genome is 29.67 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Inmutula gen. nov.

Candidatus Inmutula (NL. fem. n. *Inmutula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2684605*. The type species for the genus is *Candidatus* Inmutula oblanicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifariaceae.

Description of *Candidatus* Innabana utricisca sp. nov.

Candidatus Innabana utricisca (NL. fem. n. *utricisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZON01 sp012797725*. The type genome for the species is the GenBank assembly GCA_012797725.1. The GC content of the type genome is 41.98 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Innabana gen. nov.

Candidatus Innabana (NL. fem. n. *Innabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZON01*. The type species for the genus is *Candidatus* Innabana utricisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recuciaceae.

Description of *Candidatus* Innabaria monodimonia sp. nov.

Candidatus Innabaria monodimonia (NL. fem. n. *monodimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Alg240-R148 sp900537185*. The type genome for the species is the GenBank assembly GCA_900537185.1. The GC content of the type genome is 38.79 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Innabaria gen. nov.

Candidatus Innabaria (NL. fem. n. *Innabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Alg240-R148*. The type species for the genus is *Candidatus* Innabaria monodimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innabella adcomibula sp. nov.

Candidatus Innabella adcomibula (NL. fem. n. *adcomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLID01 sp007135805*. The type genome for the species is the GenBank assembly GCA_007135805.1. The GC content of the type genome is 49.06 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Innabella gen. nov.

Candidatus Innabella (NL. fem. n. *Innabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SLID01*. The type species for the genus is *Candidatus* Innabella adcomibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKK-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colepellaceae.

Description of *Candidatus* Innabia adperitudo sp. nov.

Candidatus Innabia adperitudo (NL. fem. n. *adperitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTL01 sp009695195*. The type genome for the species is the GenBank assembly GCA_009695195.1. The GC content of the type genome is 60.78 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Innabia gen. nov.

Candidatus Innabia (NL. fem. n. *Innabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTL01*. The type species for the genus is *Candidatus* Innabia adperitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11358*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Loceliaceae.

Description of *Candidatus* Innabia antimibula sp. nov.

Candidatus Innabia antimibula (NL. fem. n. *antimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTL01 sp004297495*. The type genome for the species is the GenBank assembly GCA_004297495.1. The GC content of the type genome is 59.59 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Innabia epistitio sp. nov.

Candidatus Innabia epistitio (NL. fem. n. *epistitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTL01 sp013140495*. The type genome for the species is the GenBank assembly GCA_013140495.1. The GC content of the type genome is 56.56 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Innabia inrecitudo sp. nov.

Candidatus Innabia inrecitudo (NL. fem. n. *inrecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTL01 sp008933055*. The type genome for the species is the GenBank assembly GCA_008933055.1. The GC content of the type genome is 54.52 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Innabosa intenigena sp. nov.

Candidatus Innabosa intenigena (NL. fem. n. *intenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFY01 sp005799745*. The type genome for the species is the GenBank assembly GCA_005799745.1. The GC content of the type genome is 56.9 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Innabosa gen. nov.

Candidatus Innabosa (NL. fem. n. *Innabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYFY01*. The type species for the genus is *Candidatus* Innabosa intenigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Innabula arnacifica sp. nov.

Candidatus Innabula arnacifica (NL. fem. n. *arnacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA701 sp002298125*. The type genome for the species is the GenBank assembly GCA_002298125.1. The GC content of the type genome is 36.2 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Innabula gen. nov.

Candidatus Innabula (NL. fem. n. *Innabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA701*. The type species for the genus is *Candidatus* Innabula arnacifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innasana lacinitas sp. nov.

Candidatus Innasana lacinitas (NL. fem. n. *lacinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10425 sp003499545*. The type genome for the species is the GenBank assembly GCA_003499545.1. The GC content of the type genome is 65.16 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Innasana gen. nov.

Candidatus Innasana (NL. fem. n. *Innasana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10425*. The type species for the genus is *Candidatus* Innasana lacinitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innasaria faticitio sp. nov.

Candidatus Innasaria faticitio (NL. fem. n. *faticitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-561 sp003249935*. The type genome for the species is the GenBank assembly GCA_003249935.1. The GC content of the type genome is 41.51 %

and the genome length is 4.27 Mbp.

Description of *Candidatus* Innasaria gen. nov.

Candidatus Innasaria (NL. fem. n. *Innasaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-561*. The type species for the genus is *Candidatus* Innasaria faticitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5342*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tametariaceae.

Description of *Candidatus* Innasella papilitica sp. nov.

Candidatus Innasella papilitica (NL. fem. n. *papilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOL01 sp012838875*. The type genome for the species is the GenBank assembly GCA_012838875.1. The GC content of the type genome is 36.52 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Innasella gen. nov.

Candidatus Innasella (NL. fem. n. *Innasella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOL01*. The type species for the genus is *Candidatus* Innasella papilitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turibosaceae.

Description of *Candidatus* Innasia sicinitoga sp. nov.

Candidatus Innasia sicinitoga (NL. fem. n. *sicinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-10802 sp000332335*. The type genome for the species is the

GenBank assembly RS_GCF_000332335.1. The GC content of the type genome is 54.1 % and the genome length is 8.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Innasia gen. nov.

Candidatus Innasia (NL. fem. n. *Innasia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-10802*. The type species for the genus is *Candidatus* Innasia sicinitoga .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Innasida delacisca sp. nov.

Candidatus Innasida delacisca (NL. fem. n. *delacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXWC01 sp013335175*. The type genome for the species is the GenBank assembly GCA_013335175.1. The GC content of the type genome is 39.8 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Innasida gen. nov.

Candidatus Innasida (NL. fem. n. *Innasida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXWC01*. The type species for the genus is *Candidatus* Innasida delacisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Innasosa appicisca sp. nov.

Candidatus Innasosa appicisca (NL. fem. n. *appicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1140 sp013153055*. The type genome for the species is the GenBank assembly GCA_013153055.1. The GC content of the type genome is 31.84 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Innasosa gen. nov.

Candidatus Innasosa (NL. fem. n. *Innasosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1140*. The type species for the genus is *Candidatus* Innasosa appicisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innasosa bulapitrix sp. nov.

Candidatus Innasosa bulapitrix (NL. fem. n. *bulapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp006212005*. The type genome for the species is the GenBank assembly GCA_006212005.1. The GC content of the type genome is 33.88 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Innasosa cacalicula sp. nov.

Candidatus Innasosa cacalicula (NL. fem. n. *cacalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp902727915*. The type genome for the species is the GenBank assembly GCA_902727915.1. The GC content of the type genome is 32.82 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Innasosa excocetta sp. nov.

Candidatus Innasosa excocetta (NL. fem. n. *excocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp902727905*. The type genome for the species is the GenBank assembly GCA_902727905.1. The GC content of the type genome is 32.99 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Innasosa impiritio sp. nov.

Candidatus Innasosa impiritio (NL. fem. n. *impiritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp902727895*. The type genome for the species is the GenBank assembly GCA_902727895.1. The GC content of the type genome is 33.01 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Innasosa lucubitudo sp. nov.

Candidatus Innasosa lucubitudo (NL. fem. n. *lucubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp902727935*. The type genome for the species is the GenBank assembly GCA_902727935.1. The GC content of the type genome is 34.18 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Innasosa menapousia sp. nov.

Candidatus Innasosa menapousia (NL. fem. n. *menapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp902727995*. The type genome for the species is the GenBank assembly GCA_902727995.1. The GC content of the type genome is 33.03 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Innasosa repecilenta sp. nov.

Candidatus Innasosa repecilenta (NL. fem. n. *repecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp010892395*. The type genome for the species is the GenBank assembly RS_GCF_010892395.1. The GC content of the type genome is 36.21 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Innasosa resulago sp. nov.

Candidatus Innasosa resulago (NL. fem. n. *resulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp003978395*. The type genome for the species is the GenBank assembly GCA_003978395.1. The GC content of the type genome is 32.52 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Innasosa thapsilenta sp. nov.

Candidatus Innasosa thapsilenta (NL. fem. n. *thapsilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp002311915*. The type genome for the species is the GenBank assembly GCA_002311915.1. The GC content of the type genome is 36.2 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Innasosa viragitudo sp. nov.

Candidatus Innasosa viragitudo (NL. fem. n. *viragitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1140 sp013153825*. The type genome for the species is the GenBank assembly GCA_013153825.1. The GC content of the type genome is 36.7 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Innasula turilitia sp. nov.

Candidatus Innasula turilitia (NL. fem. n. *turilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ORNL1 sp012971745*. The type genome for the species is the GenBank assembly RS_GCF_012971745.1. The GC content of the type genome is 66.06 % and the genome length is 6.29 Mbp.

Description of *Candidatus* Innasula gen. nov.

Candidatus Innasula (NL. fem. n. *Innasula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ORNL1*. The type species for the genus is *Candidatus* Innasula turilitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innecaria repuditura sp. nov.

Candidatus Innecaria repuditura (NL. fem. n. *repuditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1177 sp003140895*. The type genome for the species is the GenBank assembly GCA_003140895.1. The GC content of the type genome is 52.65 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Innecaria gen. nov.

Candidatus Innecaria (NL. fem. n. *Innecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1177*. The type species for the genus is *Candidatus* Innecaria repuditura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenodosaceae.

Description of *Candidatus* Innecella binocetta sp. nov.

Candidatus Innecella binocetta (NL. fem. n. *binocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W260 sp013213875*. The type genome for the species is the GenBank assembly GCA_013213875.1. The GC content of the type genome is 61.0 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Innecella gen. nov.

Candidatus Innecella (NL. fem. n. *Innecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W260*. The type species for the genus is *Candidatus* Innecella binocetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Rorulellaceae.

Description of *Candidatus* Innecella illuvivita sp. nov.

Candidatus Innecella illuvivita (NL. fem. n. *illuvivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W260 sp008725655*. The type genome for the species is the GenBank assembly RS_GCF_008725655.1. The GC content of the type genome is 64.45 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Innecia verifousia sp. nov.

Candidatus Innecia verifousia (NL. fem. n. *verifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin52 sp004375875*. The type genome for the species is the GenBank assembly GCA_004375875.1. The GC content of the type genome is 35.41 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Innecia gen. nov.

Candidatus Innecia (NL. fem. n. *Innecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin52*. The type species for the genus is *Candidatus* Innecia verifousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innecula novilessa sp. nov.

Candidatus Innecula novilessa (NL. fem. n. *novilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FLUQ01 sp900079685*. The type genome for the species is the GenBank assembly GCA_900079685.1. The GC content of the type genome is 60.09 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Innecula gen. nov.

Candidatus Innecula (NL. fem. n. *Innecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FLUQ01*. The type species for the genus is *Candidatus* Innecula novilessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innoxaria cituvax sp. nov.

Candidatus Innoxaria cituvax (NL. fem. n. *cituvax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M2410 sp006226305*. The type genome for the species is the GenBank assembly GCA_006226305.1. The GC content of the type genome is 55.89 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Innoxaria gen. nov.

Candidatus Innoxaria (NL. fem. n. *Innoxaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M2410*. The type species for the genus is *Candidatus* Innoxaria cituvax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMXP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludifosaceae.

Description of *Candidatus* Innoxaria dilogitas sp. nov.

Candidatus Innoxaria dilogitas (NL. fem. n. *dilogitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M2410 sp006226415*. The type genome for the species is the GenBank assembly GCA_006226415.1. The GC content of the type genome is 56.48 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Innoxida chernitio sp. nov.

Candidatus Innoxida chernitio (NL. fem. n. *chernitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHN01 sp013298415*. The type genome for the species is the GenBank assembly GCA_013298415.1. The GC content of the type genome is 60.86 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Innoxida gen. nov.

Candidatus Innoxida (NL. fem. n. *Innoxida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHN01*. The type species for the genus is *Candidatus* Innoxida chernitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innoxula desonastra sp. nov.

Candidatus Innoxula desonastra (NL. fem. n. *desonastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-934 sp003164305*. The type genome for the species is the GenBank assembly GCA_003164305.1. The GC content of the type genome is 64.35 % and the genome length is 6.94 Mbp.

Description of *Candidatus* Innoxula gen. nov.

Candidatus Innoxula (NL. fem. n. *Innoxula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-934*. The type species for the genus is *Candidatus* Innoxula desonastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innoxula lugubicula sp. nov.

Candidatus Innoxula lugubicula (NL. fem. n. *lugubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-934 sp009693865*. The type genome for the species is the GenBank assembly GCA_009693865.1. The GC content of the type genome is 63.55 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Innulana tubiciforma sp. nov.

Candidatus Innulana tubiciforma (NL. fem. n. *tubiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J108 sp003694825*. The type genome for the species is the GenBank assembly GCA_003694825.1. The GC content of the type genome is 65.52 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Innulana gen. nov.

Candidatus Innulana (NL. fem. n. *Innulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J108*. The type species for the genus is *Candidatus* Innulana tubiciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innularia inmutastra sp. nov.

Candidatus Innularia inmutastra (NL. fem. n. *inmutastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAHJXG01 sp903644035*. The type genome for the species is the GenBank assembly RS_GCF_903644035.1. The GC content of the type genome is 69.51 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Innularia gen. nov.

Candidatus Innularia (NL. fem. n. *Innularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAHJXG01*. The type species for the genus is *Candidatus* Innularia inmutastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innulella vilitilenta sp. nov.

Candidatus Innulella vilitilenta (NL. fem. n. *vilitilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMOV01 sp013203145*. The type genome for the species is the GenBank assembly GCA_013203145.1. The GC content of the type genome is 37.98 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Innulella gen. nov.

Candidatus Innulella (NL. fem. n. *Innulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMOV01*. The type species for the genus is *Candidatus* Innulella vilitilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabiaceae.

Description of *Candidatus* Innulula adbelastra sp. nov.

Candidatus Innulula adbelastra (NL. fem. n. *adbelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HMF7647 sp009834875*. The type genome for the species is the GenBank assembly RS_GCF_009834875.1. The GC content of the type genome is 42.32 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Innulula gen. nov.

Candidatus Innulula (NL. fem. n. *Innulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HMF7647*. The type species for the genus is *Candidatus* Innulula adbelastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innumana rosacedo sp. nov.

Candidatus Innumana rosacedo (NL. fem. n. *rosacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDZC01 sp902812365*. The type genome for the species is the GenBank assembly RS_GCF_902812365.1. The GC content of the type genome is 62.82 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Innumana gen. nov.

Candidatus Innumana (NL. fem. n. *Innumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDZC01*. The type species for the genus is *Candidatus* Innumana rosacedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumariaceae.

Description of *Candidatus* Innumaria apogrivita sp. nov.

Candidatus Innumaria apogrivita (NL. fem. n. *apogrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RHBSTW-00994 sp013782625*. The type genome for the species is the GenBank assembly RS_GCF_013782625.1. The GC content of the type genome is 51.94 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Innumaria gen. nov.

Candidatus Innumaria (NL. fem. n. *Innumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RHBSTW-00994*. The type species for the genus is *Candidatus* Innumaria apogrivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innumella immatigena sp. nov.

Candidatus Innumella immatigena (NL. fem. n. *immatigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMLA01 sp014379815*. The type genome for the species is the GenBank assembly GCA_014379815.1. The GC content of the type genome is 56.99 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Innumella gen. nov.

Candidatus Innumella (NL. fem. n. *Innumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMLA01*. The type species for the genus is *Candidatus* Innumella immatigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innumida obnunugo sp. nov.

Candidatus Innumida obnunugo (NL. fem. n. *obnunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTRS01 sp012965765*. The type genome for the species is the GenBank assembly GCA_012965765.1. The GC content of the type genome is 61.33 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Innumida gen. nov.

Candidatus Innumida (NL. fem. n. *Innumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTRS01*. The type species for the genus is *Candidatus* Innumida obnunugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1146*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenanaceae.

Description of *Candidatus* Innupana adlecax sp. nov.

Candidatus Innupana adlecax (NL. fem. n. *adlecax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGYT01 sp002839805*. The type genome for the species is the GenBank assembly GCA_002839805.1. The GC content of the type genome is 34.87 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Innupana gen. nov.

Candidatus Innupana (NL. fem. n. *Innupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGYT01*. The type species for the genus is *Candidatus* Innupana adlecax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Innupia notacisca sp. nov.

Candidatus Innupia notacisca (NL. fem. n. *notacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCTH01 sp013812505*. The type genome for the species is the GenBank assembly GCA_013812505.1. The GC content of the type genome is 62.6 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Innupia gen. nov.

Candidatus Innupia (NL. fem. n. *Innupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCTH01*. The type species for the genus is *Candidatus* Innupia notacisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ZC4RG35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidosaceae.

Description of *Candidatus* Innupida facunicula sp. nov.

Candidatus Innupida facunicula (NL. fem. n. *facunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-38 sp013214975*. The type genome for the species is the GenBank assembly GCA_013214975.1. The GC content of the type genome is 36.04 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Innupida gen. nov.

Candidatus Innupida (NL. fem. n. *Innupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-38*. The type species for the genus is *Candidatus* Innupida facunicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NORP154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinariaceae.

Description of *Candidatus* Innupida inaspimonas sp. nov.

Candidatus Innupida inaspimonas (NL. fem. n. *inaspimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-38 sp013214205*. The type genome for the species is the GenBank assembly GCA_013214205.1. The GC content of the type genome is 37.32 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Innuposa nefaribra sp. nov.

Candidatus Innuposa nefaribra (NL. fem. n. *nefaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718415 sp002718415*. The type genome for the species is the GenBank assembly GCA_002718415.1. The GC content of the type genome is 31.91 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Innuposa gen. nov.

Candidatus Innuposa (NL. fem. n. *Innuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2718415*. The type species for the genus is *Candidatus* Innuposa nefaribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelanaceae.

Description of *Candidatus* Innupula depocedo sp. nov.

Candidatus Innupula depocedo (NL. fem. n. *depocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHC01 sp012735535*. The type genome for the species is the GenBank assembly GCA_012735535.1. The GC content of the type genome is 53.43 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Innupula gen. nov.

Candidatus Innupula (NL. fem. n. *Innupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHC01*. The type species for the genus is *Candidatus* Innupula depocedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5301*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cululanaceae.

Description of *Candidatus* Inoblella selibitas sp. nov.

Candidatus Inoblella selibitas (NL. fem. n. *selibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITSH01 sp903895005*. The type genome for the species is the GenBank assembly GCA_903895005.1. The GC content of the type genome is 61.14 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Inoblella gen. nov.

Candidatus Inoblella (NL. fem. n. *Inoblella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITSH01*. The type species for the genus is *Candidatus* Inoblella selibitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Inoblia armifentia sp. nov.

Candidatus Inoblia armifentia (NL. fem. n. *armifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VEXD01 sp009391235*. The type genome for the species is the GenBank assembly GCA_009391235.1. The GC content of the type genome is 41.49 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Inoblia gen. nov.

Candidatus Inoblia (NL. fem. n. *Inoblia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VEXD01*. The type species for the genus is *Candidatus* Inoblia armifentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2712585*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonipariaceae.

Description of *Candidatus* Inoblosa denupedo sp. nov.

Candidatus Inoblosa denupedo (NL. fem. n. *denupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXQW01 sp903921675*. The type genome for the species is the GenBank assembly GCA_903921675.1. The GC content of the type genome is 33.55 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Inoblosa gen. nov.

Candidatus Inoblosa (NL. fem. n. *Inoblosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXQW01*. The type species for the genus is *Candidatus* Inoblosa denupedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inoblula vocifugo sp. nov.

Candidatus Inoblula vocifugo (NL. fem. n. *vocifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACKMC01 sp902601155*. The type genome for the species is the GenBank assembly RS_GCF_902601155.1. The GC content of the type genome is 43.87 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Inoblula gen. nov.

Candidatus Inoblula (NL. fem. n. *Inoblula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACKMC01*. The type species for the genus is *Candidatus* Inoblula vocifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA729*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedifiaceae.

Description of *Candidatus* Inobrana abluvastra sp. nov.

Candidatus Inobrana abluvastra (NL. fem. n. *abluvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFWF01 sp004560045*. The type genome for the species is the GenBank assembly GCA_004560045.1. The GC content of the type genome is 48.21 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Inobrana gen. nov.

Candidatus Inobrana (NL. fem. n. *Inobrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFWF01*. The type species for the genus is *Candidatus* Inobrana abluvastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inobrana exsufitica sp. nov.

Candidatus Inobrana exsufitica (NL. fem. n. *exsufitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFWF01 sp900769775*. The type genome for the species is the GenBank assembly RS_GCF_900769775.1. The GC content of the type genome is 44.36 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Inobraria ambiditura sp. nov.

Candidatus Inobraria ambiditura (NL. fem. n. *ambiditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52915 sp902806055*. The type genome for the species is the GenBank assembly GCA_902806055.1. The GC content of the type genome is 62.19 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Inobraria gen. nov.

Candidatus Inobraria (NL. fem. n. *Inobraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCSIO-52915*. The type species for the genus is *Candidatus* Inobraria ambiditura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inobraria ardifatio sp. nov.

Candidatus Inobraria ardifatio (NL. fem. n. *ardifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SCSIO-52915 sp902806075*. The type genome for the species is the GenBank assembly GCA_902806075.1. The GC content of the type genome is 63.45 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Inobraria bicodibra sp. nov.

Candidatus Inobraria bicodibra (NL. fem. n. *bicodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52915 sp902806105*. The type genome for the species is the GenBank assembly GCA_902806105.1. The GC content of the type genome is 67.32 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Inobraria laxitilega sp. nov.

Candidatus Inobraria laxitilega (NL. fem. n. *laxitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52915 sp011492965*. The type genome for the species is the GenBank assembly RS_GCF_011492965.1. The GC content of the type genome is 69.11 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Inobraria obambiforma sp. nov.

Candidatus Inobraria obambiforma (NL. fem. n. *obambiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCSIO-52915 sp902806065*. The type genome for the species is the GenBank assembly GCA_902806065.1. The GC content of the type genome is 61.9 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Inobrella furibessa sp. nov.

Candidatus Inobrella furibessa (NL. fem. n. *furibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-875 sp003153125*. The type genome for the species is the GenBank assembly GCA_003153125.1. The GC content of the type genome is 68.55 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Inobrella gen. nov.

Candidatus Inobrella (NL. fem. n. *Inobrella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-875*. The type species for the genus is *Candidatus* Inobrella furibessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibiaceae.

Description of *Candidatus* Inobrella unetvitudo sp. nov.

Candidatus Inobrella unetvitudo (NL. fem. n. *unetvitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-875 sp003244045*. The type genome for the species is the GenBank assembly GCA_003244045.1. The GC content of the type genome is 69.16 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Inobrida pinacago sp. nov.

Candidatus Inobrida pinacago (NL. fem. n. *pinacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VKM-B-2647 sp000829455*. The type genome for the species is the GenBank assembly RS_GCF_000829455.1. The GC content of the type genome is 55.02 % and the genome length is 6.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "frozen volcanic ash".

Description of *Candidatus* Inobrida gen. nov.

Candidatus Inobrida (NL. fem. n. *Inobrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VKM-B-2647*. The type species for the genus is *Candidatus* Inobrida pinacago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inobrosa effigitas sp. nov.

Candidatus Inobrosa effigitas (NL. fem. n. *effigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6057 sp002428995*. The type genome for the species is the GenBank assembly GCA_002428995.1. The GC content of the type genome is 49.15 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Inobrosa gen. nov.

Candidatus Inobrosa (NL. fem. n. *Inobrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6057*. The type species for the genus is *Candidatus* Inobrosa effigitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inobrula agnicigena sp. nov.

Candidatus Inobrula agnicigena (NL. fem. n. *agnicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HY038 sp014117425*. The type genome for the species is the GenBank assembly RS_GCF_014117425.1. The GC content of the type genome is 40.4 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Inobrula gen. nov.

Candidatus Inobrula (NL. fem. n. *Inobrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HY038*. The type species for the genus is *Candidatus* Inobrula agnicigena .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Inobsaria desacibra sp. nov.

Candidatus Inobsaria desacibra (NL. fem. n. *desacibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMSU01 sp013792005*. The type genome for the species is the GenBank assembly GCA_013792005.1. The GC content of the type genome is 50.34 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Inobsaria gen. nov.

Candidatus Inobsaria (NL. fem. n. *Inobsaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMSU01*. The type species for the genus is *Candidatus* Inobsaria desacibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inobsosa sceptugo sp. nov.

Candidatus Inobsosa sceptugo (NL. fem. n. *sceptugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBZ01 sp013359335*. The type genome for the species is the GenBank assembly GCA_013359335.1. The GC content of the type genome is 45.59 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Inobsosa gen. nov.

Candidatus Inobsosa (NL. fem. n. *Inobsosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBZ01*. The type species for the genus is *Candidatus* Inobsosa sceptugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SB21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifiaceae.

Description of *Candidatus* Inobsula bucolugo sp. nov.

Candidatus Inobsula bucolugo (NL. fem. n. *bucolugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRVI01 sp011374075*. The type genome for the species is the GenBank assembly GCA_011374075.1. The GC content of the type genome is 63.49 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Inobsula gen. nov.

Candidatus Inobsula (NL. fem. n. *Inobsula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRVI01*. The type species for the genus is *Candidatus* Inobsula bucolugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipalanaceae.

Description of *Candidatus* Inoccana antevilega sp. nov.

Candidatus Inoccana antevilega (NL. fem. n. *antevilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCVL01 sp013696365*. The type genome for the species is the GenBank assembly GCA_013696365.1. The GC content of the type genome is 69.18 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Inoccana gen. nov.

Candidatus Inoccana (NL. fem. n. *Inoccana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCVL01*. The type species for the genus is *Candidatus* Inoccana antevilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inoccana defalisca sp. nov.

Candidatus Inoccana defalisca (NL. fem. n. *defalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCVL01 sp013698185*. The type genome for the species is the GenBank assembly GCA_013698185.1. The GC content of the type genome is 71.13 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Inoccaria depupicula sp. nov.

Candidatus Inoccaria depupicula (NL. fem. n. *depupicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHE01 sp012271065*. The type genome for the species is the GenBank assembly GCA_012271065.1. The GC content of the type genome is 59.56 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Inoccaria gen. nov.

Candidatus Inoccaria (NL. fem. n. *Inoccaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXHE01*. The type species for the genus is *Candidatus* Inoccaria depupicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2709665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coninulaceae.

Description of *Candidatus* Inoccella affuliforma sp. nov.

Candidatus Inoccella affuliforma (NL. fem. n. *affuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTL01 sp009377435*. The type genome for the species is the GenBank assembly GCA_009377435.1. The GC content of the type genome is 65.03 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Inoccella gen. nov.

Candidatus Inoccella (NL. fem. n. *Inoccella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *WHTL01*. The type species for the genus is *Candidatus* Inoccella affuliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ZC4RG35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidosaceae.

Description of *Candidatus* Inoccella exadvedo sp. nov.

Candidatus Inoccella exadvedo (NL. fem. n. *exadvedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTL01 sp009377735*. The type genome for the species is the GenBank assembly GCA_009377735.1. The GC content of the type genome is 61.65 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Inoccia impudilega sp. nov.

Candidatus Inoccia impudilega (NL. fem. n. *impudilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZH01 sp013696045*. The type genome for the species is the GenBank assembly GCA_013696045.1. The GC content of the type genome is 59.8 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Inoccia gen. nov.

Candidatus Inoccia (NL. fem. n. *Inoccia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZH01*. The type species for the genus is *Candidatus* Inoccia impudilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CFX8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurulaceae.

Description of *Candidatus* Inoccida atrusetta sp. nov.

Candidatus Inoccida atrusetta (NL. fem. n. *atrusetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LCKU01 sp001001625*. The type genome for the species is the GenBank assembly GCA_001001625.1. The GC content of the type genome is 45.14 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Inoccida gen. nov.

Candidatus Inoccida (NL. fem. n. *Inoccida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LCKU01*. The type species for the genus is *Candidatus* Inoccida atrusetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-52-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vanitellaceae.

Description of *Candidatus* Inoccosa pudibitio sp. nov.

Candidatus Inoccosa pudibitio (NL. fem. n. *pudibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLOW01 sp003566885*. The type genome for the species is the GenBank assembly GCA_003566885.1. The GC content of the type genome is 59.29 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Inoccosa gen. nov.

Candidatus Inoccosa (NL. fem. n. *Inoccosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLOW01*. The type species for the genus is *Candidatus* Inoccosa pudibitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *T3Sed10-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depupariaceae.

Description of *Candidatus* Inoccosa renavisca sp. nov.

Candidatus Inoccosa renavisca (NL. fem. n. *renavisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLOW01 sp007132315*. The type genome for the species is the GenBank assembly GCA_007132315.1. The GC content of the type genome is 61.04 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Inoccula arbavilega sp. nov.

Candidatus Inoccula arbavilega (NL. fem. n. *arbavilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILLO01 sp903919045*. The type genome for the species is the GenBank assembly GCA_903919045.1. The GC content of the type genome is 70.42 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Inoccula gen. nov.

Candidatus Inoccula (NL. fem. n. *Inoccula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILLO01*. The type species for the genus is *Candidatus* Inoccula arbavilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5734*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropulaceae.

Description of *Candidatus* Inoccula culibicella sp. nov.

Candidatus Inoccula culibicella (NL. fem. n. *culibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILLO01 sp903835065*. The type genome for the species is the GenBank assembly GCA_903835065.1. The GC content of the type genome is 67.19 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Inoffana adhorilega sp. nov.

Candidatus Inoffana adhorilega (NL. fem. n. *adhorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFU01 sp013286805*. The type genome for the species is the GenBank assembly GCA_013286805.1. The GC content of the type genome is 41.2 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Inoffana gen. nov.

Candidatus Inoffana (NL. fem. n. *Inoffana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDFU01*. The type species for the genus is *Candidatus* Inoffana adhorilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-35-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimetiaceae.

Description of *Candidatus* Inoffana dicibicella sp. nov.

Candidatus Inoffana dicibicella (NL. fem. n. *dicibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFU01 sp013286655*. The type genome for the species is the GenBank assembly GCA_013286655.1. The GC content of the type genome is 40.59 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Inoffana peribibra sp. nov.

Candidatus Inoffana peribibra (NL. fem. n. *peribibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFU01 sp013286385*. The type genome for the species is the GenBank assembly GCA_013286385.1. The GC content of the type genome is 44.65 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Inoffaria adlenitio sp. nov.

Candidatus Inoffaria adlenitio (NL. fem. n. *adlenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADII01 sp013151415*. The type genome for the species is the GenBank assembly GCA_013151415.1. The GC content of the type genome is 58.24 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Inoffaria gen. nov.

Candidatus Inoffaria (NL. fem. n. *Inoffaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADII01*. The type species for the genus is *Candidatus* Inoffaria adlenitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deparosaceae.

Description of *Candidatus* Inoffula inlepessa sp. nov.

Candidatus Inoffula inlepessa (NL. fem. n. *inlepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7067 sp002493755*. The type genome for the species is the GenBank assembly GCA_002493755.1. The GC content of the type genome is 43.94 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Inoffula gen. nov.

Candidatus Inoffula (NL. fem. n. *Inoffula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7067*. The type species for the genus is *Candidatus* Inoffula inlepessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inordana dinupifica sp. nov.

Candidatus Inordana dinupifica (NL. fem. n. *dinupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWDR01 sp002071695*. The type genome for the species is the GenBank assembly GCA_002071695.1. The GC content of the type genome is 67.1 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Inordana gen. nov.

Candidatus Inordana (NL. fem. n. *Inordana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWDR01*. The type species for the genus is *Candidatus* Inordana dinupifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Inordaria cicilitio sp. nov.

Candidatus Inordaria cicilitio (NL. fem. n. *cicilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCUK01 sp004297445*. The type genome for the species is the GenBank assembly GCA_004297445.1. The GC content of the type genome is 60.2 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Inordaria gen. nov.

Candidatus Inordaria (NL. fem. n. *Inordaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCUK01*. The type species for the genus is *Candidatus* Inordaria cicilitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11579*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirabosaceae.

Description of *Candidatus* Inordella antimimonas sp. nov.

Candidatus Inordella antimimonas (NL. fem. n. *antimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHQ01 sp011052215*. The type genome for the species is the GenBank assembly GCA_011052215.1. The GC content of the type genome is 47.83 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Inordella gen. nov.

Candidatus Inordella (NL. fem. n. *Inordella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHQ01*. The type species for the genus is *Candidatus* Inordella antimimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cinipulaceae.

Description of *Candidatus* Inordella oscilisca sp. nov.

Candidatus Inordella oscilisca (NL. fem. n. *oscilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHQ01 sp013151795*. The type genome for the species is the GenBank assembly GCA_013151795.1. The GC content of the type genome is 42.29 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Inordia notacitia sp. nov.

Candidatus Inordia notacitia (NL. fem. n. *notacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-G20 sp003215775*. The type genome for the species is the GenBank assembly GCA_003215775.1. The GC content of the type genome is 38.36 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Inordia gen. nov.

Candidatus Inordia (NL. fem. n. *Inordia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *AG-409-G20*. The type species for the genus is *Candidatus* Inordia notacitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inordosa biparessa sp. nov.

Candidatus Inordosa biparessa (NL. fem. n. *biparessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Marseille-P2935 sp900104565*. The type genome for the species is the GenBank assembly RS_GCF_900104565.1. The GC content of the type genome is 45.21 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Inordosa gen. nov.

Candidatus Inordosa (NL. fem. n. *Inordosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Marseille-P2935*. The type species for the genus is *Candidatus* Inordosa biparessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inordula adtubitio sp. nov.

Candidatus Inordula adtubitio (NL. fem. n. *adtubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIZ01 sp012515455*. The type genome for the species is the GenBank assembly GCA_012515455.1. The GC content of the type genome is 59.33 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Inordula gen. nov.

Candidatus Inordula (NL. fem. n. *Inordula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZIZ01*. The type species for the genus is *Candidatus* Inordula adtubitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semilidaceae.

Description of *Candidatus* Inordula humecimonia sp. nov.

Candidatus Inordula humecimonia (NL. fem. n. *humecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZIZ01 sp012800565*. The type genome for the species is the GenBank assembly GCA_012800565.1. The GC content of the type genome is 56.31 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Inornaria divulatio sp. nov.

Candidatus Inornaria divulatio (NL. fem. n. *divulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2711415 sp002711415*. The type genome for the species is the GenBank assembly GCA_002711415.1. The GC content of the type genome is 60.99 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Inornaria gen. nov.

Candidatus Inornaria (NL. fem. n. *Inornaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2711415*. The type species for the genus is *Candidatus* Inornaria divulatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Inornella adgubitoga sp. nov.

Candidatus Inornella adgubitoga (NL. fem. n. *adgubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *2-02-FULL-39-14 sp001779205*. The type genome for the species is the GenBank assembly GCA_001779205.1. The GC content of the type genome is 38.43 % and the genome length is 1.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Inornella gen. nov.

Candidatus Inornella (NL. fem. n. *Inornella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-39-14*. The type species for the genus is *Candidatus* Inornella adgubitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefiaceae.

Description of *Candidatus* Inornella optabilega sp. nov.

Candidatus Inornella optabilega (NL. fem. n. *optabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-39-14 sp001779055*. The type genome for the species is the GenBank assembly GCA_001779055.1. The GC content of the type genome is 37.62 % and the genome length is 1.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Inornia colimitura sp. nov.

Candidatus Inornia colimitura (NL. fem. n. *colimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12478 sp004298405*. The type genome for the species is the GenBank assembly GCA_004298405.1. The GC content of the type genome is 50.32 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Inornia gen. nov.

Candidatus Inornia (NL. fem. n. *Inornia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12478*. The type species for the genus is *Candidatus* Inornia colimitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Inornia colubax sp. nov.

Candidatus Inornia colubax (NL. fem. n. *colubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12478 sp000993535*. The type genome for the species is the GenBank assembly GCA_000993535.1. The GC content of the type genome is 40.75 % and the genome length is 1.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Inornia enuntousia sp. nov.

Candidatus Inornia enuntousia (NL. fem. n. *enuntousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12478 sp002793515*. The type genome for the species is the GenBank assembly GCA_002793515.1. The GC content of the type genome is 47.73 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Inornia inregetta sp. nov.

Candidatus Inornia inregetta (NL. fem. n. *inregetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12478 sp013204385*. The type genome for the species is the GenBank assembly GCA_013204385.1. The GC content of the type genome is 45.69 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Inornia supelax sp. nov.

Candidatus Inornia supelax (NL. fem. n. *supelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12478 sp003485135*. The type genome for the species is the GenBank assembly GCA_003485135.1. The GC content of the type genome is 41.96 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Inornida infesitura sp. nov.

Candidatus Inornida infesitura (NL. fem. n. *infesitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2487 sp002341815*. The type genome for the species is the GenBank assembly GCA_002341815.1. The GC content of the type genome is 52.63 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Inornida gen. nov.

Candidatus Inornida (NL. fem. n. *Inornida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2487*. The type species for the genus is *Candidatus* Inornida infesitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inornosa brabrimonia sp. nov.

Candidatus Inornosa brabrimonia (NL. fem. n. *brabrimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedPE-SWsnd-G2 sp001874335*. The type genome for the species is the GenBank assembly GCA_001874335.1. The GC content of the type genome is 33.98 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mediterranean seawater enriched with a specific particulate matter".

Description of *Candidatus* Inornosa gen. nov.

Candidatus Inornosa (NL. fem. n. *Inornosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *MedPE-SWsnd-G2*. The type species for the genus is *Candidatus* Inornosa brabrimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inornula undevifica sp. nov.

Candidatus Inornula undevifica (NL. fem. n. *undevifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9338 sp003510895*. The type genome for the species is the GenBank assembly GCA_003510895.1. The GC content of the type genome is 36.1 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Inornula gen. nov.

Candidatus Inornula (NL. fem. n. *Inornula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9338*. The type species for the genus is *Candidatus* Inornula undevifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Camilariaceae.

Description of *Candidatus* Inpasana resupax sp. nov.

Candidatus Inpasana resupax (NL. fem. n. *resupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VRTS01 sp008017755*. The type genome for the species is the GenBank assembly RS_GCF_008017755.1. The GC content of the type genome is 68.67 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Inpasana gen. nov.

Candidatus Inpasana (NL. fem. n. *Inpasana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VRTS01*. The type species for the genus is *Candidatus* Inpasana resupax

.

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpasaria epogdicula sp. nov.

Candidatus Inpasaria epogdicula (NL. fem. n. *epogdicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MES5 sp009711615*. The type genome for the species is the GenBank assembly GCA_009711615.1. The GC content of the type genome is 39.44 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Inpasaria gen. nov.

Candidatus Inpasaria (NL. fem. n. *Inpasaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MES5*. The type species for the genus is *Candidatus* Inpasaria epogdicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpasella artopimonia sp. nov.

Candidatus Inpasella artopimonia (NL. fem. n. *artopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRSA01 sp903881085*. The type genome for the species is the GenBank assembly GCA_903881085.1. The GC content of the type genome is 57.6 % and the genome length is 11.88 Mbp.

Description of *Candidatus* Inpasella gen. nov.

Candidatus Inpasella (NL. fem. n. *Inpasella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRSA01*. The type species for the genus is *Candidatus* Inpasella artopimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpasia benepessa sp. nov.

Candidatus Inpasia benepessa (NL. fem. n. *benepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGT01 sp012727555*. The type genome for the species is the GenBank assembly GCA_012727555.1. The GC content of the type genome is 57.48 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Inpasia gen. nov.

Candidatus Inpasia (NL. fem. n. *Inpasia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYGT01*. The type species for the genus is *Candidatus* Inpasia benepessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpasida accenastra sp. nov.

Candidatus Inpasida accenastra (NL. fem. n. *accenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUZB01 sp013349725*. The type genome for the species is the GenBank assembly GCA_013349725.1. The GC content of the type genome is 49.74 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Inpasida gen. nov.

Candidatus Inpasida (NL. fem. n. *Inpasida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUZB01*. The type species for the genus is *Candidatus* Inpasida accenastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpasosa depicitrix sp. nov.

Candidatus Inpasosa depicitrix (NL. fem. n. *depicitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYXG01 sp012516015*. The type genome for the species is the GenBank assembly GCA_012516015.1. The GC content of the type genome is 62.88 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Inpasosa gen. nov.

Candidatus Inpasosa (NL. fem. n. *Inpasosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYXG01*. The type species for the genus is *Candidatus* Inpasosa depicitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpelana antomatio sp. nov.

Candidatus Inpelana antomatio (NL. fem. n. *antomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-413 sp003141555*. The type genome for the species is the GenBank assembly GCA_003141555.1. The GC content of the type genome is 62.83 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Inpelana gen. nov.

Candidatus Inpelana (NL. fem. n. *Inpelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-413*. The type species for the genus is *Candidatus* Inpelana antomatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4085*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomacellaceae.

Description of *Candidatus* Inpelaria ancepivita sp. nov.

Candidatus Inpelaria ancepivita (NL. fem. n. *ancepivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-43-10 sp002773655*. The type genome for the species is the GenBank assembly GCA_002773655.1. The GC content of the type genome is 42.76 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Inpelaria gen. nov.

Candidatus Inpelaria (NL. fem. n. *Inpelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-43-10*. The type species for the genus is *Candidatus* Inpelaria ancepivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-47-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defacellaceae.

Description of *Candidatus* Inpelella appugicula sp. nov.

Candidatus Inpelella appugicula (NL. fem. n. *appugicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSTP01 sp011362545*. The type genome for the species is the GenBank assembly GCA_011362545.1. The GC content of the type genome is 74.33 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Inpelella gen. nov.

Candidatus Inpelella (NL. fem. n. *Inpelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSTP01*. The type species for the genus is *Candidatus* Inpelella appugicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Inpelia irrecitrix sp. nov.

Candidatus Inpelia irrecitrix (NL. fem. n. *irrecitrix* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-461 sp003161255*. The type genome for the species is the GenBank assembly GCA_003161255.1. The GC content of the type genome is 68.38 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Inpelia gen. nov.

Candidatus Inpelia (NL. fem. n. *Inpelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-461*. The type species for the genus is *Candidatus* Inpelia irrecitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Inpelia obtecousia sp. nov.

Candidatus Inpelia obtecousia (NL. fem. n. *obtecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-461 sp003151235*. The type genome for the species is the GenBank assembly GCA_003151235.1. The GC content of the type genome is 67.08 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Inpelula fragmentia sp. nov.

Candidatus Inpelula fragmentia (NL. fem. n. *fragmentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTWD01 sp012963185*. The type genome for the species is the GenBank assembly GCA_012963185.1. The GC content of the type genome is 52.04 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Inpelula gen. nov.

Candidatus Inpelula (NL. fem. n. *Inpelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTWD01*. The type species for the genus is *Candidatus* Inpelula fragmentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8438*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citiposaceae.

Description of *Candidatus* Inpenana palifitudo sp. nov.

Candidatus Inpenana palifitudo (NL. fem. n. *palifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-188 sp002049825*. The type genome for the species is the GenBank assembly GCA_002049825.1. The GC content of the type genome is 46.16 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Inpenana gen. nov.

Candidatus Inpenana (NL. fem. n. *Inpenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-188*. The type species for the genus is *Candidatus* Inpenana palifitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogiaceae.

Description of *Candidatus* Inpenaria tenebibra sp. nov.

Candidatus Inpenaria tenebibra (NL. fem. n. *tenebibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mal4 sp007747795*. The type genome for the species is the GenBank assembly RS_GCF_007747795.1. The GC content of the type genome is 63.36 % and the genome length is 7.74 Mbp.

Description of *Candidatus* Inpenaria gen. nov.

Candidatus Inpenaria (NL. fem. n. *Inpenaria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Mal4*. The type species for the genus is *Candidatus* Inpenaria tenebibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpenia ludimessa sp. nov.

Candidatus Inpenia ludimessa (NL. fem. n. *ludimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B68-G16 sp003647945*. The type genome for the species is the GenBank assembly GCA_003647945.1. The GC content of the type genome is 46.4 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Inpenia gen. nov.

Candidatus Inpenia (NL. fem. n. *Inpenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B68-G16*. The type species for the genus is *Candidatus* Inpenia ludimessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Inpenosa agrapibra sp. nov.

Candidatus Inpenosa agrapibra (NL. fem. n. *agrapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDGB01 sp013812245*. The type genome for the species is the GenBank assembly GCA_013812245.1. The GC content of the type genome is 63.77 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Inpenosa gen. nov.

Candidatus Inpenosa (NL. fem. n. *Inpenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDGB01*. The type species for the genus is *Candidatus* Inpenosa agrapibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpenosa lubenousia sp. nov.

Candidatus Inpenosa lubenousia (NL. fem. n. *lubenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDGB01 sp013695335*. The type genome for the species is the GenBank assembly GCA_013695335.1. The GC content of the type genome is 62.65 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Inpenosa renavicula sp. nov.

Candidatus Inpenosa renavicula (NL. fem. n. *renavicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDGB01 sp013815485*. The type genome for the species is the GenBank assembly GCA_013815485.1. The GC content of the type genome is 63.29 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Inperana occalitrix sp. nov.

Candidatus Inperana occalitrix (NL. fem. n. *occalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2725625 sp002725625*. The type genome for the species is the GenBank assembly GCA_002725625.1. The GC content of the type genome is 51.69 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Inperana gen. nov.

Candidatus Inperana (NL. fem. n. *Inperana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2725625*. The type species for the genus is *Candidatus* Inperana

occalitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubanaceae.

Description of *Candidatus* Inperaria odolligena sp. nov.

Candidatus Inperaria odolligena (NL. fem. n. *odolligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMOY01 sp014377795*. The type genome for the species is the GenBank assembly GCA_014377795.1. The GC content of the type genome is 73.5 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Inperaria gen. nov.

Candidatus Inperaria (NL. fem. n. *Inperaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMOY01*. The type species for the genus is *Candidatus* Inperaria odolligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inperella hemidimonia sp. nov.

Candidatus Inperella hemidimonia (NL. fem. n. *hemidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRQV01 sp011371325*. The type genome for the species is the GenBank assembly GCA_011371325.1. The GC content of the type genome is 32.24 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Inperella gen. nov.

Candidatus Inperella (NL. fem. n. *Inperella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRQV01*. The type species for the genus is *Candidatus* Inperella hemidimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inperida rarefitia sp. nov.

Candidatus Inperida rarefitia (NL. fem. n. *rarefitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSU01 sp009379925*. The type genome for the species is the GenBank assembly GCA_009379925.1. The GC content of the type genome is 69.82 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Inperida gen. nov.

Candidatus Inperida (NL. fem. n. *Inperida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSU01*. The type species for the genus is *Candidatus* Inperida rarefitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Inperosa annecugo sp. nov.

Candidatus Inperosa annecugo (NL. fem. n. *annecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSS58A sp002403295*. The type genome for the species is the GenBank assembly GCA_002403295.1. The GC content of the type genome is 66.83 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Inperosa gen. nov.

Candidatus Inperosa (NL. fem. n. *Inperosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSS58A*. The type species for the genus is *Candidatus* Inperosa annecugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inperosa sicinivita sp. nov.

Candidatus Inperosa sicinivita (NL. fem. n. *sicinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSS58A sp002403075*. The type genome for the species is the GenBank assembly GCA_002403075.1. The GC content of the type genome is 66.57 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Inperula bugilimonas sp. nov.

Candidatus Inperula bugilimonas (NL. fem. n. *bugilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *9FT-COMBO-48-23 sp001795315*. The type genome for the species is the GenBank assembly GCA_001795315.1. The GC content of the type genome is 48.01 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 19ft depth".

Description of *Candidatus* Inperula gen. nov.

Candidatus Inperula (NL. fem. n. *Inperula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *9FT-COMBO-48-23*. The type species for the genus is *Candidatus* Inperula bugilimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5620*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semaposaceae.

Description of *Candidatus* Inpinana crastibula sp. nov.

Candidatus Inpinana crastibula (NL. fem. n. *crastibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-34 sp013215095*. The type genome for the species is the GenBank assembly GCA_013215095.1. The GC content of the type genome is 33.43 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Inpinana gen. nov.

Candidatus Inpinana (NL. fem. n. *Inpinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-34*. The type species for the genus is *Candidatus* Inpinana crastibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpinaria brabricula sp. nov.

Candidatus Inpinaria brabricula (NL. fem. n. *brabricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B24-G6 sp003643835*. The type genome for the species is the GenBank assembly GCA_003643835.1. The GC content of the type genome is 33.35 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Inpinaria gen. nov.

Candidatus Inpinaria (NL. fem. n. *Inpinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B24-G6*. The type species for the genus is *Candidatus* Inpinaria brabricula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpinella tenebastra sp. nov.

Candidatus Inpinella tenebastra (NL. fem. n. *tenebastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILKO01 sp903834835*. The type genome for the species is the GenBank assembly GCA_903834835.1. The GC content of the type genome is 64.39 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Inpinella gen. nov.

Candidatus Inpinella (NL. fem. n. *Inpinella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILKO01*. The type species for the genus is *Candidatus* Inpinella tenebastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Inpinida malogitoga sp. nov.

Candidatus Inpinida malogitoga (NL. fem. n. *malogitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKP01 sp009778035*. The type genome for the species is the GenBank assembly GCA_009778035.1. The GC content of the type genome is 52.15 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Inpinida gen. nov.

Candidatus Inpinida (NL. fem. n. *Inpinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKP01*. The type species for the genus is *Candidatus* Inpinida malogitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpinida omnifastra sp. nov.

Candidatus Inpinida omnifastra (NL. fem. n. *omnifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKP01 sp009783865*. The type genome for the species is the GenBank assembly GCA_009783865.1. The GC content of the type genome is 47.65 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Inpinosa sanabicella sp. nov.

Candidatus Inpinosa sanabicella (NL. fem. n. *sanabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIYB01 sp014360155*. The type genome for the species is the GenBank assembly GCA_014360155.1. The GC content of the type genome is 43.83 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Inpinosa gen. nov.

Candidatus Inpinosa (NL. fem. n. *Inpinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIYB01*. The type species for the genus is *Candidatus* Inpinosa sanabicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpinula colepitica sp. nov.

Candidatus Inpinula colepitica (NL. fem. n. *colepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYZB01 sp012515085*. The type genome for the species is the GenBank assembly GCA_012515085.1. The GC content of the type genome is 43.87 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Inpinula gen. nov.

Candidatus Inpinula (NL. fem. n. *Inpinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZB01*. The type species for the genus is *Candidatus* Inpinula colepitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5603*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divululaceae.

Description of *Candidatus* Inpudana meridatio sp. nov.

Candidatus Inpudana meridatio (NL. fem. n. *meridatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQG01 sp013203365*. The type genome for the species is the GenBank assembly GCA_013203365.1. The GC content of the type genome is 59.61 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Inpudana gen. nov.

Candidatus Inpudana (NL. fem. n. *Inpudana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQG01*. The type species for the genus is *Candidatus* Inpudana meridatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1343*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colapellaceae.

Description of *Candidatus* Inpudaria impigago sp. nov.

Candidatus Inpudaria impigago (NL. fem. n. *impigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWE01 sp011388385*. The type genome for the species is the GenBank assembly GCA_011388385.1. The GC content of the type genome is 68.67 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Inpudaria gen. nov.

Candidatus Inpudaria (NL. fem. n. *Inpudaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWE01*. The type species for the genus is *Candidatus* Inpudaria impigago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicilidaceae.

Description of *Candidatus* Inpudaria minagitas sp. nov.

Candidatus Inpudaria minagitas (NL. fem. n. *minagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWE01 sp011373735*. The type genome for the species is the GenBank assembly GCA_011373735.1. The GC content of the type genome is 67.67 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Inpudia innasitia sp. nov.

Candidatus Inpudia innasitia (NL. fem. n. *innasitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-56-11 sp001004885*. The type genome for the species is the GenBank assembly GCA_001004885.1. The GC content of the type genome is 55.47 % and the genome length is 1.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Inpudia gen. nov.

Candidatus Inpudia (NL. fem. n. *Inpudia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-56-11*. The type species for the genus is *Candidatus* Inpudia innasitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Inpudida infinousia sp. nov.

Candidatus Inpudida infinousia (NL. fem. n. *infinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWC01 sp004357505*. The type genome for the species is the GenBank assembly GCA_004357505.1. The GC content of the type genome is 58.13 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Inpudida gen. nov.

Candidatus Inpudida (NL. fem. n. *Inpudida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMWC01*. The type species for the genus is *Candidatus* Inpudida infinousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6522*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudecariaceae.

Description of *Candidatus* Inpurana fragmigena sp. nov.

Candidatus Inpurana fragmigena (NL. fem. n. *fragmigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCVC01 sp013698305*. The type genome for the species is the GenBank assembly GCA_013698305.1. The GC content of the type genome is 62.47 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Inpurana gen. nov.

Candidatus Inpurana (NL. fem. n. *Inpurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCVC01*. The type species for the genus is *Candidatus* Inpurana fragmigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Inpuraria cerebibra sp. nov.

Candidatus Inpuraria cerebibra (NL. fem. n. *cerebibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1766 sp900554855*. The type genome for the species is the GenBank assembly GCA_900554855.1. The GC content of the type genome is 59.17 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Inpuraria gen. nov.

Candidatus Inpuraria (NL. fem. n. *Inpuraria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1766*. The type species for the genus is *Candidatus* Inpuraria cerebibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpurella celamivita sp. nov.

Candidatus Inpurella celamivita (NL. fem. n. *celamivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMOB01 sp013204345*. The type genome for the species is the GenBank assembly GCA_013204345.1. The GC content of the type genome is 37.9 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Inpurella gen. nov.

Candidatus Inpurella (NL. fem. n. *Inpurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMOB01*. The type species for the genus is *Candidatus* Inpurella celamivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpuria manupastra sp. nov.

Candidatus Inpuria manupastra (NL. fem. n. *manupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2862585 sp002862585*. The type genome for the species is the GenBank assembly GCA_002862585.1. The GC content of the type genome is 34.86 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Inpuria gen. nov.

Candidatus Inpuria (NL. fem. n. *Inpuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2862585*. The type species for the genus is *Candidatus* Inpuria manupastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7312*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalellaceae.

Description of *Candidatus* Inpurida desonugo sp. nov.

Candidatus Inpurida desonugo (NL. fem. n. *desonugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDAU01 sp013695265*. The type genome for the species is the GenBank assembly GCA_013695265.1. The GC content of the type genome is 63.9 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Inpurida gen. nov.

Candidatus Inpurida (NL. fem. n. *Inpurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDAU01*. The type species for the genus is *Candidatus* Inpurida desonugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpurosa clancastra sp. nov.

Candidatus Inpurosa clancastra (NL. fem. n. *clancastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2733885 sp002733885*. The type genome for the species is the GenBank assembly GCA_002733885.1. The GC content of the type genome is 34.85 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Inpurosa gen. nov.

Candidatus Inpurosa (NL. fem. n. *Inpurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *GCA-2733885*. The type species for the genus is *Candidatus* Inpurosa clancastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inpurosa inadfisca sp. nov.

Candidatus Inpurosa inadfisca (NL. fem. n. *inadfisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2733885 sp012963655*. The type genome for the species is the GenBank assembly GCA_012963655.1. The GC content of the type genome is 35.74 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Inquilinus lametitudo sp. nov.

Candidatus Inquilinus lametitudo (NL. fem. n. *lametitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Inquilinus sp005938675*. The type genome for the species is the GenBank assembly RS_GCF_005938675.2. The GC content of the type genome is 68.97 % and the genome length is 8.97 Mbp.

Description of *Candidatus* Inrecana idciretta sp. nov.

Candidatus Inrecana idciretta (NL. fem. n. *idciretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3069 sp002366795*. The type genome for the species is the GenBank assembly GCA_002366795.1. The GC content of the type genome is 61.69 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Inrecana gen. nov.

Candidatus Inrecana (NL. fem. n. *Inrecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3069*. The type species for the genus is *Candidatus* Inrecana idciretta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrecaria nivomitica sp. nov.

Candidatus Inrecaria nivomitica (NL. fem. n. *nivomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2717925 sp002717925*. The type genome for the species is the GenBank assembly GCA_002717925.1. The GC content of the type genome is 36.33 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Inrecaria gen. nov.

Candidatus Inrecaria (NL. fem. n. *Inrecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2717925*. The type species for the genus is *Candidatus* Inrecaria nivomitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nivomellaceae.

Description of *Candidatus* Inrecia astapicula sp. nov.

Candidatus Inrecia astapicula (NL. fem. n. *astapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-62-17 sp903899705*. The type genome for the species is the GenBank assembly GCA_903899705.1. The GC content of the type genome is 59.85 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Inrecia gen. nov.

Candidatus Inrecia (NL. fem. n. *Inrecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-62-17*. The type species for the genus is *Candidatus* Inrecia astapicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Inrecia desacitio sp. nov.

Candidatus Inrecia desacitio (NL. fem. n. *desacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-62-17 sp903859155*. The type genome for the species is the GenBank assembly GCA_903859155.1. The GC content of the type genome is 61.36 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Inrecia pedepessa sp. nov.

Candidatus Inrecia pedepessa (NL. fem. n. *pedepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-62-17 sp001770355*. The type genome for the species is the GenBank assembly GCA_001770355.1. The GC content of the type genome is 61.86 % and the genome length is 4.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Inrecida lametessa sp. nov.

Candidatus Inrecida lametessa (NL. fem. n. *lametessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1591 sp900553255*. The type genome for the species is the GenBank assembly GCA_900553255.1. The GC content of the type genome is 59.13 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Inrecida gen. nov.

Candidatus Inrecida (NL. fem. n. *Inrecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1591*. The type species for the genus is *Candidatus* Inrecida lametessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrecosa oblivitia sp. nov.

Candidatus Inrecosa oblivitia (NL. fem. n. *oblivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFIM01 sp013297745*. The type genome for the species is the GenBank assembly GCA_013297745.1. The GC content of the type genome is 38.91 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Inrecosa gen. nov.

Candidatus Inrecosa (NL. fem. n. *Inrecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFIM01*. The type species for the genus is *Candidatus* Inrecosa oblivitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrecula sicunibula sp. nov.

Candidatus Inrecula sicunibula (NL. fem. n. *sicunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-11 sp003599505*. The type genome for the species is the GenBank assembly GCA_003599505.1. The GC content of the type genome is 47.98 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Inrecula gen. nov.

Candidatus Inrecula (NL. fem. n. *Inrecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-11*. The type species for the genus is *Candidatus* Inrecula sicunibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodosaceae.

Description of *Candidatus* Inredana cisorentia sp. nov.

Candidatus Inredana cisorentia (NL. fem. n. *cisorentia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-Chloro-G4 sp002816705*. The type genome for the species is the GenBank assembly GCA_002816705.1. The GC content of the type genome is 55.49 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Inredana gen. nov.

Candidatus Inredana (NL. fem. n. *Inredana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Casp-Chloro-G4*. The type species for the genus is *Candidatus* Inredana cisorentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resupellaceae.

Description of *Candidatus* Inredella bonitatio sp. nov.

Candidatus Inredella bonitatio (NL. fem. n. *bonitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-42-10 sp001801625*. The type genome for the species is the GenBank assembly GCA_001801625.1. The GC content of the type genome is 42.14 % and the genome length is 1.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Inredella gen. nov.

Candidatus Inredella (NL. fem. n. *Inredella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-42-10*. The type species for the genus is *Candidatus* Inredella bonitatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Inredia solifilega sp. nov.

Candidatus Inredia solifilega (NL. fem. n. *solifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-FULL-44-32 sp001823065*. The type genome for the species is the GenBank assembly GCA_001823065.1. The GC content of the type genome is 43.96 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Inredia gen. nov.

Candidatus Inredia (NL. fem. n. *Inredia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD1-FULL-44-32*. The type species for the genus is *Candidatus* Inredia solifilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD1-FULL-46-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidellaceae.

Description of *Candidatus* Inredosa cadurivita sp. nov.

Candidatus Inredosa cadurivita (NL. fem. n. *cadurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4053 sp003457075*. The type genome for the species is the GenBank assembly GCA_003457075.1. The GC content of the type genome is 48.54 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Inredosa gen. nov.

Candidatus Inredosa (NL. fem. n. *Inredosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4053*. The type species for the genus is *Candidatus* Inredosa cadurivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Nap2-2B*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Relenariaceae.

Description of *Candidatus* Inredosa inrepilega sp. nov.

Candidatus Inredosa inrepilega (NL. fem. n. *inrepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4053 sp002382125*. The type genome for the species is the GenBank assembly GCA_002382125.1. The GC content of the type genome is 47.16 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Inrefana manupimonia sp. nov.

Candidatus Inrefana manupimonia (NL. fem. n. *manupimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQUA01 sp008501825*. The type genome for the species is the GenBank assembly GCA_008501825.1. The GC content of the type genome is 57.42 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Inrefana gen. nov.

Candidatus Inrefana (NL. fem. n. *Inrefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QQUA01*. The type species for the genus is *Candidatus* Inrefana manupimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacellaceae.

Description of *Candidatus* Inrefaria susicifica sp. nov.

Candidatus Inrefaria susicifica (NL. fem. n. *susicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch67 sp013178375*. The type genome for the species is the GenBank assembly GCA_013178375.1. The GC content of the type genome is 58.34 % and the

genome length is 6.32 Mbp.

Description of *Candidatus* Inrefaria gen. nov.

Candidatus Inrefaria (NL. fem. n. *Inrefaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch67*. The type species for the genus is *Candidatus* Inrefaria susicifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrefella bugilifica sp. nov.

Candidatus Inrefella bugilifica (NL. fem. n. *bugilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJXB01 sp903824495*. The type genome for the species is the GenBank assembly GCA_903824495.1. The GC content of the type genome is 41.09 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Inrefella gen. nov.

Candidatus Inrefella (NL. fem. n. *Inrefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJXB01*. The type species for the genus is *Candidatus* Inrefella bugilifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrefida accenitia sp. nov.

Candidatus Inrefida accenitia (NL. fem. n. *accenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKJ01 sp011333555*. The type genome for the species is the GenBank assembly GCA_011333555.1. The GC content of the type genome is 58.78 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Inrefida gen. nov.

Candidatus Inrefida (NL. fem. n. *Inrefida* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKJ01*. The type species for the genus is *Candidatus* Inrefida accenitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *0-14-0-80-60-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubanaceae.

Description of *Candidatus* Inrefida anxifitica sp. nov.

Candidatus Inrefida anxifitica (NL. fem. n. *anxifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKJ01 sp011358955*. The type genome for the species is the GenBank assembly GCA_011358955.1. The GC content of the type genome is 59.62 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Inrefida exoscago sp. nov.

Candidatus Inrefida exoscago (NL. fem. n. *exoscago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKJ01 sp011389355*. The type genome for the species is the GenBank assembly GCA_011389355.1. The GC content of the type genome is 58.87 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Inrefosa cenotago sp. nov.

Candidatus Inrefosa cenotago (NL. fem. n. *cenotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBY01 sp012521915*. The type genome for the species is the GenBank assembly GCA_012521915.1. The GC content of the type genome is 52.08 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Inrefosa gen. nov.

Candidatus Inrefosa (NL. fem. n. *Inrefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBY01*. The type species for the genus is *Candidatus* Inrefosa cenotago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5734*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropulaceae.

Description of *Candidatus* Inrefosa cerucilega sp. nov.

Candidatus Inrefosa cerucilega (NL. fem. n. *cerucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBY01 sp012523135*. The type genome for the species is the GenBank assembly GCA_012523135.1. The GC content of the type genome is 60.66 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Inrefosa depasitas sp. nov.

Candidatus Inrefosa depasitas (NL. fem. n. *depasitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBY01 sp012511525*. The type genome for the species is the GenBank assembly GCA_012511525.1. The GC content of the type genome is 61.03 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Inrefosa pavicilenta sp. nov.

Candidatus Inrefosa pavicilenta (NL. fem. n. *pavicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBY01 sp012729935*. The type genome for the species is the GenBank assembly GCA_012729935.1. The GC content of the type genome is 48.6 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Inrefula inmolatio sp. nov.

Candidatus Inrefula inmolatio (NL. fem. n. *inmolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTQG01 sp011355095*. The type genome for the species is the GenBank assembly GCA_011355095.1. The GC content of the type genome is 37.54 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Inrefula gen. nov.

Candidatus Inrefula (NL. fem. n. *Inrefula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTQG01*. The type species for the genus is *Candidatus* Inrefula inmolatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-41-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditosaceae.

Description of *Candidatus* Inregana mahemifica sp. nov.

Candidatus Inregana mahemifica (NL. fem. n. *mahemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2716945 sp002716945*. The type genome for the species is the GenBank assembly GCA_002716945.1. The GC content of the type genome is 29.26 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Inregana gen. nov.

Candidatus Inregana (NL. fem. n. *Inregana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2716945*. The type species for the genus is *Candidatus* Inregana mahemifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002716945*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecidaceae.

Description of *Candidatus* Inregaria insepentia sp. nov.

Candidatus Inregaria insepentia (NL. fem. n. *insepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACPL01 sp009995495*. The type genome for the species is the GenBank assembly GCA_009995495.1. The GC content of the type genome is 33.19 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Inregaria gen. nov.

Candidatus Inregaria (NL. fem. n. *Inregaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACPL01*. The type species for the genus is *Candidatus* Inregaria insepentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Inregella opuscatica sp. nov.

Candidatus Inregella opuscatica (NL. fem. n. *opuscatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQPO01 sp903873735*. The type genome for the species is the GenBank assembly GCA_903873735.1. The GC content of the type genome is 41.58 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Inregella gen. nov.

Candidatus Inregella (NL. fem. n. *Inregella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQPO01*. The type species for the genus is *Candidatus* Inregella opuscatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MFAQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notabulaceae.

Description of *Candidatus* Inregia dilecousia sp. nov.

Candidatus Inregia dilecousia (NL. fem. n. *dilecousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNJZ01 sp014382295*. The type genome for the species is the GenBank assembly GCA_014382295.1. The GC content of the type genome is 46.02 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Inregia gen. nov.

Candidatus Inregia (NL. fem. n. *Inregia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNJZ01*. The type species for the genus is *Candidatus* Inregia dilecousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inregida valefitas sp. nov.

Candidatus Inregida valefitas (NL. fem. n. *valefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFJS01 sp009885955*. The type genome for the species is the GenBank assembly GCA_009885955.1. The GC content of the type genome is 42.79 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Inregida gen. nov.

Candidatus Inregida (NL. fem. n. *Inregida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFJS01*. The type species for the genus is *Candidatus* Inregida valefitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5550*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velivanaceae.

Description of *Candidatus* Inregosa acrotastra sp. nov.

Candidatus Inregosa acrotastra (NL. fem. n. *acrotastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-K07 sp003211755*. The type genome for the species is the GenBank assembly GCA_003211755.1. The GC content of the type genome is 40.59 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Inregosa gen. nov.

Candidatus Inregosa (NL. fem. n. *Inregosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-363-K07*. The type species for the genus is *Candidatus* Inregosa acrotastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inregosa apogrugo sp. nov.

Candidatus Inregosa apogrugo (NL. fem. n. *apogrugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-K07 sp003278225*. The type genome for the species is the GenBank assembly GCA_003278225.1. The GC content of the type genome is 38.84 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Inregosa conubigena sp. nov.

Candidatus Inregosa conubigena (NL. fem. n. *conubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-K07 sp003280295*. The type genome for the species is the GenBank assembly GCA_003280295.1. The GC content of the type genome is 38.59 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Inregosa dilecugo sp. nov.

Candidatus Inregosa dilecugo (NL. fem. n. *dilecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *AG-363-K07 sp902560875*. The type genome for the species is the GenBank assembly GCA_902560875.1. The GC content of the type genome is 38.38 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Inregosa inmiticella sp. nov.

Candidatus Inregosa inmiticella (NL. fem. n. *inmiticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-K07 sp003278175*. The type genome for the species is the GenBank assembly GCA_003278175.1. The GC content of the type genome is 39.82 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Inregosa orgetitoga sp. nov.

Candidatus Inregosa orgetitoga (NL. fem. n. *orgetitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-K07 sp003280225*. The type genome for the species is the GenBank assembly GCA_003280225.1. The GC content of the type genome is 39.66 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Inregula expecitudo sp. nov.

Candidatus Inregula expecitudo (NL. fem. n. *expecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVS01 sp009694135*. The type genome for the species is the GenBank assembly GCA_009694135.1. The GC content of the type genome is 65.45 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Inregula gen. nov.

Candidatus Inregula (NL. fem. n. *Inregula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVS01*. The type species for the genus is *Candidatus* Inregula expecitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Fumifariaceae.

Description of *Candidatus* Inrelana obfenax sp. nov.

Candidatus Inrelana obfenax (NL. fem. n. *obfenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADFS01 sp013152795*. The type genome for the species is the GenBank assembly GCA_013152795.1. The GC content of the type genome is 50.87 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Inrelana gen. nov.

Candidatus Inrelana (NL. fem. n. *Inrelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFS01*. The type species for the genus is *Candidatus* Inrelana obfenax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodosaceae.

Description of *Candidatus* Inrelaria argimugo sp. nov.

Candidatus Inrelaria argimugo (NL. fem. n. *argimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIBX01 sp009694925*. The type genome for the species is the GenBank assembly GCA_009694925.1. The GC content of the type genome is 34.99 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Inrelaria gen. nov.

Candidatus Inrelaria (NL. fem. n. *Inrelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIBX01*. The type species for the genus is *Candidatus* Inrelaria argimugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

1-14-0-10-40-38. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malediaceae.

Description of *Candidatus* Inrelella ignomessa sp. nov.

Candidatus Inrelella ignomessa (NL. fem. n. *ignomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSNT01 sp011056905*. The type genome for the species is the GenBank assembly GCA_011056905.1. The GC content of the type genome is 49.94 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Inrelella gen. nov.

Candidatus Inrelella (NL. fem. n. *Inrelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSNT01*. The type species for the genus is *Candidatus* Inrelella ignomessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-50-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defunellaceae.

Description of *Candidatus* Inrelida sicaressa sp. nov.

Candidatus Inrelida sicaressa (NL. fem. n. *sicaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12474 sp003484685*. The type genome for the species is the GenBank assembly GCA_003484685.1. The GC content of the type genome is 43.66 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Inrelida gen. nov.

Candidatus Inrelida (NL. fem. n. *Inrelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12474*. The type species for the genus is *Candidatus* Inrelida sicaressa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrelida visifentia sp. nov.

Candidatus Inrelida visifentia (NL. fem. n. *visifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12474 sp007116155*. The type genome for the species is the GenBank assembly GCA_007116155.1. The GC content of the type genome is 40.65 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Inrelosa assibitura sp. nov.

Candidatus Inrelosa assibitura (NL. fem. n. *assibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11588 sp900754755*. The type genome for the species is the GenBank assembly RS_GCF_900754755.1. The GC content of the type genome is 59.24 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Inrelosa gen. nov.

Candidatus Inrelosa (NL. fem. n. *Inrelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11588*. The type species for the genus is *Candidatus* Inrelosa assibitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Inrelula chancifica sp. nov.

Candidatus Inrelula chancifica (NL. fem. n. *chancifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-42 sp007748035*. The type genome for the species is the GenBank assembly RS_GCF_007748035.1. The GC content of the type genome is 57.96

% and the genome length is 6.61 Mbp.

Description of *Candidatus* Inrelula gen. nov.

Candidatus Inrelula (NL. fem. n. *Inrelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-42*. The type species for the genus is *Candidatus* Inrelula chancifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelariaceae.

Description of *Candidatus* Inrelula desacivita sp. nov.

Candidatus Inrelula desacivita (NL. fem. n. *desacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-42 sp003233055*. The type genome for the species is the GenBank assembly GCA_003233055.1. The GC content of the type genome is 59.25 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Inremana monogastra sp. nov.

Candidatus Inremana monogastra (NL. fem. n. *monogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SC2-9 sp003008575*. The type genome for the species is the GenBank assembly RS_GCF_003008575.1. The GC content of the type genome is 68.21 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Inremana gen. nov.

Candidatus Inremana (NL. fem. n. *Inremana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SC2-9*. The type species for the genus is *Candidatus* Inremana monogastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inremella subucilenta sp. nov.

Candidatus Inremella subucilenta (NL. fem. n. *subucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12202 sp002691725*. The type genome for the species is the GenBank assembly GCA_002691725.1. The GC content of the type genome is 47.59 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Inremella gen. nov.

Candidatus Inremella (NL. fem. n. *Inremella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12202*. The type species for the genus is *Candidatus* Inremella subucilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1172*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demigidaceae.

Description of *Candidatus* Inremida ratififorma sp. nov.

Candidatus Inremida ratififorma (NL. fem. n. *ratififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14243 sp902797185*. The type genome for the species is the GenBank assembly GCA_902797185.1. The GC content of the type genome is 51.7 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Inremida gen. nov.

Candidatus Inremida (NL. fem. n. *Inremida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14243*. The type species for the genus is *Candidatus* Inremida ratififorma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inremosa gerunicella sp. nov.

Candidatus Inremosa gerunicella (NL. fem. n. *gerunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7522 sp002476865*. The type genome for the species is the GenBank assembly GCA_002476865.1. The GC content of the type genome is 38.5 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Inremosa gen. nov.

Candidatus Inremosa (NL. fem. n. *Inremosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7522*. The type species for the genus is *Candidatus* Inremosa gerunicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1875*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicidaceae.

Description of *Candidatus* Inremula encenatica sp. nov.

Candidatus Inremula encenatica (NL. fem. n. *encenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM13233 sp900762805*. The type genome for the species is the GenBank assembly RS_GCF_900762805.1. The GC content of the type genome is 61.31 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Inremula gen. nov.

Candidatus Inremula (NL. fem. n. *Inremula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM13233*. The type species for the genus is *Candidatus* Inremula encenatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrepana admodimonia sp. nov.

Candidatus Inrepana admodimonia (NL. fem. n. *admodimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCK01 sp013812905*. The type genome for the species is the GenBank assembly GCA_013812905.1. The GC content of the type genome is 54.14 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Inrepana gen. nov.

Candidatus Inrepana (NL. fem. n. *Inrepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDCK01*. The type species for the genus is *Candidatus* Inrepana admodimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrepana oppugimonia sp. nov.

Candidatus Inrepana oppugimonia (NL. fem. n. *oppugimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCK01 sp013817595*. The type genome for the species is the GenBank assembly GCA_013817595.1. The GC content of the type genome is 54.7 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Inrepana semimentia sp. nov.

Candidatus Inrepana semimentia (NL. fem. n. *semimentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDCK01 sp013811945*. The type genome for the species is the GenBank assembly GCA_013811945.1. The GC content of the type genome is 54.58 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Inrepella conabax sp. nov.

Candidatus Inrepella conabax (NL. fem. n. *conabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFY01 sp009783445*. The type genome for the species is the GenBank assembly GCA_009783445.1. The GC content of the type genome is 40.64 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Inrepella gen. nov.

Candidatus Inrepella (NL. fem. n. *Inrepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFY01*. The type species for the genus is *Candidatus* Inrepella conabax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrepula semidigena sp. nov.

Candidatus Inrepula semidigena (NL. fem. n. *semidigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SUP05 sp000205985*. The type genome for the species is the GenBank assembly GCA_000205985.2. The GC content of the type genome is 39.26 % and the genome length is 1.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Saanich Inlet".

Description of *Candidatus* Inrepula gen. nov.

Candidatus Inrepula (NL. fem. n. *Inrepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SUP05*. The type species for the genus is *Candidatus* Inrepula semidigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inresaria adtenitas sp. nov.

Candidatus Inresaria adtenitas (NL. fem. n. *adtenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-43-11 sp001805165*. The type genome for the species is the

GenBank assembly GCA_001805165.1. The GC content of the type genome is 43.34 % and the genome length is 1.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Inresaria gen. nov.

Candidatus Inresaria (NL. fem. n. *Inresaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-43-11*. The type species for the genus is *Candidatus* Inresaria adtenitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HDB-SIOI813*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luculosaceae.

Description of *Candidatus* Inresella nutamifica sp. nov.

Candidatus Inresella nutamifica (NL. fem. n. *nutamifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-40-15 sp001816655*. The type genome for the species is the GenBank assembly GCA_001816655.1. The GC content of the type genome is 40.84 % and the genome length is 0.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Inresella gen. nov.

Candidatus Inresella (NL. fem. n. *Inresella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-40-15*. The type species for the genus is *Candidatus* Inresella nutamifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-39-9b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perexellaceae.

Description of *Candidatus* Inresida everbilega sp. nov.

Candidatus Inresida everbilega (NL. fem. n. *everbilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-275 sp002085205*. The type genome for the species is the GenBank assembly GCA_002085205.1. The GC content of the type genome is 37.39 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Inresida gen. nov.

Candidatus Inresida (NL. fem. n. *Inresida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-275*. The type species for the genus is *Candidatus* Inresida everbilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefellaceae.

Description of *Candidatus* Inresosa tenilicula sp. nov.

Candidatus Inresosa tenilicula (NL. fem. n. *tenilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMSC01 sp013204685*. The type genome for the species is the GenBank assembly GCA_013204685.1. The GC content of the type genome is 44.71 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Inresosa gen. nov.

Candidatus Inresosa (NL. fem. n. *Inresosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMSC01*. The type species for the genus is *Candidatus* Inresosa tenilicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKK-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colepellaceae.

Description of *Candidatus* Inretana cilicimonia sp. nov.

Candidatus Inretana cilicimonia (NL. fem. n. *cilicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8949 sp003532195*. The type genome for the species is the GenBank assembly GCA_003532195.1. The GC content of the type genome is 56.15 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Inretana gen. nov.

Candidatus Inretana (NL. fem. n. *Inretana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8949*. The type species for the genus is *Candidatus* Inretana cilicimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5734*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropulaceae.

Description of *Candidatus* Inretana dececax sp. nov.

Candidatus Inretana dececax (NL. fem. n. *dececax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8949 sp003451915*. The type genome for the species is the GenBank assembly GCA_003451915.1. The GC content of the type genome is 50.47 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Inretana inmacitio sp. nov.

Candidatus Inretana inmacitio (NL. fem. n. *inmacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8949 sp012520975*. The type genome for the species is the GenBank assembly GCA_012520975.1. The GC content of the type genome is 50.49 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Inretana reforastra sp. nov.

Candidatus Inretana reforastra (NL. fem. n. *reforastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8949 sp012519875*. The type genome for the species is the GenBank assembly GCA_012519875.1. The GC content of the type genome is 51.61 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Inretaria volucifica sp. nov.

Candidatus Inretaria volucifica (NL. fem. n. *volucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNKH01 sp014382155*. The type genome for the species is the GenBank assembly GCA_014382155.1. The GC content of the type genome is 44.17 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Inretaria gen. nov.

Candidatus Inretaria (NL. fem. n. *Inretaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNKH01*. The type species for the genus is *Candidatus* Inretaria volucifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodosaceae.

Description of *Candidatus* Inretida bicinastra sp. nov.

Candidatus Inretida bicinastra (NL. fem. n. *bicinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13038 sp902785135*. The type genome for the species is the GenBank assembly GCA_902785135.1. The GC content of the type genome is 25.56 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Inretida gen. nov.

Candidatus Inretida (NL. fem. n. *Inretida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13038*. The type species for the genus is *Candidatus* Inretida bicinastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Inretida subodiforma sp. nov.

Candidatus Inretida subodiforma (NL. fem. n. *subodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13038 sp902789425*. The type genome for the species is the GenBank assembly GCA_902789425.1. The GC content of the type genome is 24.45 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Inretida tolutibra sp. nov.

Candidatus Inretida tolutibra (NL. fem. n. *tolutibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13038 sp902801825*. The type genome for the species is the GenBank assembly GCA_902801825.1. The GC content of the type genome is 22.94 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Inretosa adpacifica sp. nov.

Candidatus Inretosa adpacifica (NL. fem. n. *adpacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHCC01 sp003243915*. The type genome for the species is the GenBank assembly GCA_003243915.1. The GC content of the type genome is 69.06 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Inretosa gen. nov.

Candidatus Inretosa (NL. fem. n. *Inretosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHCC01*. The type species for the genus is *Candidatus* Inretosa adpacifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inretula sonipimonas sp. nov.

Candidatus Inretula sonipimonas (NL. fem. n. *sonipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11977 sp902774525*. The type genome for the species is the GenBank assembly GCA_902774525.1. The GC content of the type genome is 44.31 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Inretula gen. nov.

Candidatus Inretula (NL. fem. n. *Inretula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11977*. The type species for the genus is *Candidatus* Inretula sonipimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrevana pedepiforma sp. nov.

Candidatus Inrevana pedepiforma (NL. fem. n. *pedepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11098 sp003534085*. The type genome for the species is the GenBank assembly GCA_003534085.1. The GC content of the type genome is 41.86 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Inrevana gen. nov.

Candidatus Inrevana (NL. fem. n. *Inrevana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11098*. The type species for the genus is *Candidatus* Inrevana pedepiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Inrevaria exentugo sp. nov.

Candidatus Inrevaria exentugo (NL. fem. n. *exentugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKSB01 sp007571095*. The type genome for the species is the GenBank assembly GCA_007571095.1. The GC content of the type genome is 54.3 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Inrevaria gen. nov.

Candidatus Inrevaria (NL. fem. n. *Inrevaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RKSB01*. The type species for the genus is *Candidatus* Inrevaria exentugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Inrevia revulitura sp. nov.

Candidatus Inrevia revulitura (NL. fem. n. *revulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCTC01 sp902805635*. The type genome for the species is the GenBank assembly GCA_902805635.1. The GC content of the type genome is 68.68 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Inrevia gen. nov.

Candidatus Inrevia (NL. fem. n. *Inrevia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCTC01*. The type species for the genus is *Candidatus* Inrevia

revulitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12225*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehonanaceae.

Description of *Candidatus* Inrevida adcesitica sp. nov.

Candidatus Inrevida adcesitica (NL. fem. n. *adcesitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1444 sp013286675*. The type genome for the species is the GenBank assembly GCA_013286675.1. The GC content of the type genome is 43.56 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Inrevida gen. nov.

Candidatus Inrevida (NL. fem. n. *Inrevida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1444*. The type species for the genus is *Candidatus* Inrevida adcesitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inrevida virecatica sp. nov.

Candidatus Inrevida virecatica (NL. fem. n. *virecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1444 sp003153295*. The type genome for the species is the GenBank assembly GCA_003153295.1. The GC content of the type genome is 42.67 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Inrevosa abambilega sp. nov.

Candidatus Inrevosa abambilega (NL. fem. n. *abambilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWCK01 sp002070005*. The type genome for the species is the

GenBank assembly GCA_002070005.1. The GC content of the type genome is 37.34 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Inrevosa gen. nov.

Candidatus Inrevosa (NL. fem. n. *Inrevosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCK01*. The type species for the genus is *Candidatus* Inrevosa abambilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5633*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carecosaceae.

Description of *Candidatus* Inrevula catagousia sp. nov.

Candidatus Inrevula catagousia (NL. fem. n. *catagousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8129 sp003517915*. The type genome for the species is the GenBank assembly GCA_003517915.1. The GC content of the type genome is 49.53 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Inrevula gen. nov.

Candidatus Inrevula (NL. fem. n. *Inrevula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8129*. The type species for the genus is *Candidatus* Inrevula catagousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insalana cerifedo sp. nov.

Candidatus Insalana cerifedo (NL. fem. n. *cerifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OCS116 sp013214705*. The type genome for the species is the GenBank assembly GCA_013214705.1. The GC content of the type genome is 44.17 %

and the genome length is 3.52 Mbp.

Description of *Candidatus* Insalana gen. nov.

Candidatus Insalana (NL. fem. n. *Insalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OCS116*. The type species for the genus is *Candidatus* Insalana cerifedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OSC116*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifanaceae.

Description of *Candidatus* Insalana exhonatica sp. nov.

Candidatus Insalana exhonatica (NL. fem. n. *exhonatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OCS116 sp002402005*. The type genome for the species is the GenBank assembly GCA_002402005.1. The GC content of the type genome is 44.88 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Insalana invigitrix sp. nov.

Candidatus Insalana invigitrix (NL. fem. n. *invigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OCS116 sp013214985*. The type genome for the species is the GenBank assembly GCA_013214985.1. The GC content of the type genome is 39.2 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Insalana uberrimonas sp. nov.

Candidatus Insalana uberrimonas (NL. fem. n. *uberrimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OCS116 sp002401855*. The type genome for the species is the GenBank assembly GCA_002401855.1. The GC content of the type genome is 43.97 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Insalella insoritica sp. nov.

Candidatus Insalella insoritica (NL. fem. n. *insoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2687715 sp002687715*. The type genome for the species is the GenBank assembly GCA_002687715.1. The GC content of the type genome is 67.05 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Insalella gen. nov.

Candidatus Insalella (NL. fem. n. *Insalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2687715*. The type species for the genus is *Candidatus* Insalella insoritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002687715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobellaceae.

Description of *Candidatus* Insalia cilicitio sp. nov.

Candidatus Insalia cilicitio (NL. fem. n. *cilicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWGR01 sp003551365*. The type genome for the species is the GenBank assembly GCA_003551365.1. The GC content of the type genome is 59.63 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Insalia gen. nov.

Candidatus Insalia (NL. fem. n. *Insalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWGR01*. The type species for the genus is *Candidatus* Insalia cilicitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUMD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reforariaceae.

Description of *Candidatus* Insalia insusessa sp. nov.

Candidatus Insalia insusessa (NL. fem. n. *insusessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWGR01 sp003554565*. The type genome for the species is the GenBank assembly GCA_003554565.1. The GC content of the type genome is 58.42 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Insalida selibastra sp. nov.

Candidatus Insalida selibastra (NL. fem. n. *selibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2683775 sp002683775*. The type genome for the species is the GenBank assembly GCA_002683775.1. The GC content of the type genome is 30.0 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Insalida gen. nov.

Candidatus Insalida (NL. fem. n. *Insalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2683775*. The type species for the genus is *Candidatus* Insalida selibastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Insalosa cerofilega sp. nov.

Candidatus Insalosa cerofilega (NL. fem. n. *cerofilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCES01 sp013416455*. The type genome for the species is the GenBank assembly RS_GCF_013416455.1. The GC content of the type genome is 63.12 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Insalosa gen. nov.

Candidatus Insalosa (NL. fem. n. *Insalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCES01*. The type species for the genus is *Candidatus* Insalosa cerofilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insalosa venucivita sp. nov.

Candidatus Insalosa venucivita (NL. fem. n. *venucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCES01 sp012512545*. The type genome for the species is the GenBank assembly GCA_012512545.1. The GC content of the type genome is 59.98 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Insalula haluciforma sp. nov.

Candidatus Insalula haluciforma (NL. fem. n. *haluciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGYU01 sp002839825*. The type genome for the species is the GenBank assembly GCA_002839825.1. The GC content of the type genome is 38.06 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Insalula gen. nov.

Candidatus Insalula (NL. fem. n. *Insalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGYU01*. The type species for the genus is *Candidatus* Insalula haluciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Insemana eccisitrix sp. nov.

Candidatus Insemana eccisitrix (NL. fem. n. *eccisitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTT01 sp011389765*. The type genome for the species is the GenBank assembly GCA_011389765.1. The GC content of the type genome is 54.28 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Insemana gen. nov.

Candidatus Insemana (NL. fem. n. *Insemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABTT01*. The type species for the genus is *Candidatus* Insemana eccisitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insemella categigena sp. nov.

Candidatus Insemella categigena (NL. fem. n. *categigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEVH01 sp013043915*. The type genome for the species is the GenBank assembly GCA_013043915.1. The GC content of the type genome is 51.01 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Insemella gen. nov.

Candidatus Insemella (NL. fem. n. *Insemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEVH01*. The type species for the genus is *Candidatus* Insemella categigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insemia delecibra sp. nov.

Candidatus Insemia delecibra (NL. fem. n. *delecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-45-22_A sp002773795*. The type genome for the species is the GenBank assembly GCA_002773795.1. The GC content of the type genome is 42.36 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Insemia gen. nov.

Candidatus Insemia (NL. fem. n. *Insemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-45-22_A*. The type species for the genus is *Candidatus* Insemia delecibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Insemula defositia sp. nov.

Candidatus Insemula defositia (NL. fem. n. *defositia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401735 sp006844635*. The type genome for the species is the GenBank assembly GCA_006844635.1. The GC content of the type genome is 43.75 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Insemula gen. nov.

Candidatus Insemula (NL. fem. n. *Insemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2401735*. The type species for the genus is *Candidatus* Insemula defositia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insemula expopessa sp. nov.

Candidatus Insemula expopessa (NL. fem. n. *expopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401735 sp002401735*. The type genome for the species is the GenBank assembly GCA_002401735.1. The GC content of the type genome is 42.59 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Insenana morigastra sp. nov.

Candidatus Insenana morigastra (NL. fem. n. *morigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBAZ01 sp005239935*. The type genome for the species is the GenBank assembly GCA_005239935.1. The GC content of the type genome is 68.09 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Insenana gen. nov.

Candidatus Insenana (NL. fem. n. *Insenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBAZ01*. The type species for the genus is *Candidatus* Insenana morigastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9649*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depetariaceae.

Description of *Candidatus* Insenida detepibra sp. nov.

Candidatus Insenida detepibra (NL. fem. n. *detepibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTI01 sp009377815*. The type genome for the species is the GenBank assembly GCA_009377815.1. The GC content of the type genome is 64.1 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Insenida gen. nov.

Candidatus Insenida (NL. fem. n. *Insenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTI01*. The type species for the genus is *Candidatus* Insenida

detepibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHSQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recumanaceae.

Description of *Candidatus* Insenosa abindax sp. nov.

Candidatus Insenosa abindax (NL. fem. n. *abindax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIOZ-UU13 sp013202635*. The type genome for the species is the GenBank assembly GCA_013202635.1. The GC content of the type genome is 46.52 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Insenosa gen. nov.

Candidatus Insenosa (NL. fem. n. *Insenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NIOZ-UU13*. The type species for the genus is *Candidatus* Insenosa abindax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Insenosa pacifedo sp. nov.

Candidatus Insenosa pacifedo (NL. fem. n. *pacifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIOZ-UU13 sp014384025*. The type genome for the species is the GenBank assembly GCA_014384025.1. The GC content of the type genome is 46.28 % and the genome length is 6.69 Mbp.

Description of *Candidatus* Insenula cinefago sp. nov.

Candidatus Insenula cinefago (NL. fem. n. *cinefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWP01 sp011373615*. The type genome for the species is the GenBank assembly GCA_011373615.1. The GC content of the type genome is 62.09 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Insenula gen. nov.

Candidatus Insenula (NL. fem. n. *Insenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWP01*. The type species for the genus is *Candidatus* Insenula cinefago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J036*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depetanaceae.

Description of *Candidatus* Insepana inargax sp. nov.

Candidatus Insepana inargax (NL. fem. n. *inargax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKIU01 sp007116275*. The type genome for the species is the GenBank assembly GCA_007116275.1. The GC content of the type genome is 34.26 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Insepana gen. nov.

Candidatus Insepana (NL. fem. n. *Insepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKIU01*. The type species for the genus is *Candidatus* Insepana inargax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *X112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Insepella edissastra sp. nov.

Candidatus Insepella edissastra (NL. fem. n. *edissastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG34 sp003242255*. The type genome for the species is the GenBank assembly GCA_003242255.1. The GC content of the type genome is 48.47 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Insepella gen. nov.

Candidatus Insepella (NL. fem. n. *Insepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG34*. The type species for the genus is *Candidatus* Insepella edissastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insepida onocribra sp. nov.

Candidatus Insepida onocribra (NL. fem. n. *onocribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWEI01 sp002071045*. The type genome for the species is the GenBank assembly GCA_002071045.1. The GC content of the type genome is 60.43 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Insepida gen. nov.

Candidatus Insepida (NL. fem. n. *Insepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWEI01*. The type species for the genus is *Candidatus* Insepida onocribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1062*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexapariaceae.

Description of *Candidatus* Inseposa bigemimonas sp. nov.

Candidatus Inseposa bigemimonas (NL. fem. n. *bigemimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-3-00-62-12 sp002785585*. The type genome for the species is the GenBank assembly GCA_002785585.1. The GC content of the type genome is 62.13 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Inseposa gen. nov.

Candidatus Inseposa (NL. fem. n. *Inseposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-3-00-62-12*. The type species for the genus is *Candidatus* Inseposa bigemimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insepula coninicella sp. nov.

Candidatus Insepula coninicella (NL. fem. n. *coninicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747805 sp002747805*. The type genome for the species is the GenBank assembly GCA_002747805.1. The GC content of the type genome is 48.77 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Insepula gen. nov.

Candidatus Insepula (NL. fem. n. *Insepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2747805*. The type species for the genus is *Candidatus* Insepula coninicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insibana antacibra sp. nov.

Candidatus Insibana antacibra (NL. fem. n. *antacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RU20A sp900155885*. The type genome for the species is the GenBank assembly RS_GCF_900155885.1. The GC content of the type genome is 63.83 % and the

genome length is 4.53 Mbp.

Description of *Candidatus* Insibana gen. nov.

Candidatus Insibana (NL. fem. n. *Insibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RU20A*. The type species for the genus is *Candidatus* Insibana antacibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insibaria disidicella sp. nov.

Candidatus Insibaria disidicella (NL. fem. n. *disidicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOIA01 sp004378665*. The type genome for the species is the GenBank assembly GCA_004378665.1. The GC content of the type genome is 47.97 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Insibaria gen. nov.

Candidatus Insibaria (NL. fem. n. *Insibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SOIA01*. The type species for the genus is *Candidatus* Insibaria disidicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insibella acceribula sp. nov.

Candidatus Insibella acceribula (NL. fem. n. *acceribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LiPW-15 sp007375645*. The type genome for the species is the GenBank assembly GCA_007375645.1. The GC content of the type genome is 48.6 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Insibella gen. nov.

Candidatus Insibella (NL. fem. n. *Insibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LiPW-15*. The type species for the genus is *Candidatus* Insibella acceribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-56-20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagosaceae.

Description of *Candidatus* Insibida tumefimonia sp. nov.

Candidatus Insibida tumefimonia (NL. fem. n. *tumefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-37-12 sp002793015*. The type genome for the species is the GenBank assembly GCA_002793015.1. The GC content of the type genome is 37.42 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Insibida gen. nov.

Candidatus Insibida (NL. fem. n. *Insibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-37-12*. The type species for the genus is *Candidatus* Insibida tumefimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Insibosa lupanicella sp. nov.

Candidatus Insibosa lupanicella (NL. fem. n. *lupanicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QVMH01 sp010501035*. The type genome for the species is the GenBank assembly RS_GCF_010501035.1. The GC content of the type genome is 39.89 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Insibosa gen. nov.

Candidatus Insibosa (NL. fem. n. *Insibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QVMH01*. The type species for the genus is *Candidatus* Insibosa lupanicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insibula ammatedo sp. nov.

Candidatus Insibula ammatedo (NL. fem. n. *ammatedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-560 sp011330835*. The type genome for the species is the GenBank assembly GCA_011330835.1. The GC content of the type genome is 61.0 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Insibula gen. nov.

Candidatus Insibula (NL. fem. n. *Insibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HyVt-560*. The type species for the genus is *Candidatus* Insibula ammatedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UWMA-0217*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanigulaceae.

Description of *Candidatus* Insicana ossucetta sp. nov.

Candidatus Insicana ossucetta (NL. fem. n. *ossucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPE01 sp011046715*. The type genome for the species is the GenBank assembly GCA_011046715.1. The GC content of the type genome is 59.66 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Insicana gen. nov.

Candidatus Insicana (NL. fem. n. *Insicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPE01*. The type species for the genus is *Candidatus* Insicana ossucetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *20CM-2-55-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viripariaceae.

Description of *Candidatus* Insicia bimetivita sp. nov.

Candidatus Insicia bimetivita (NL. fem. n. *bimetivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTHL01 sp011334775*. The type genome for the species is the GenBank assembly GCA_011334775.1. The GC content of the type genome is 37.43 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Insicia gen. nov.

Candidatus Insicia (NL. fem. n. *Insicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTHL01*. The type species for the genus is *Candidatus* Insicia bimetivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6016*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mahelosaceae.

Description of *Candidatus* Insicida resulugo sp. nov.

Candidatus Insicida resulugo (NL. fem. n. *resulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAAV01 sp004563595*. The type genome for the species is the GenBank assembly GCA_004563595.2. The GC content of the type genome is 28.87 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Insicida gen. nov.

Candidatus Insicida (NL. fem. n. *Insicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MAAV01*. The type species for the genus is *Candidatus* Insicida resulugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6164*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifellaceae.

Description of *Candidatus* Insinana catobitoga sp. nov.

Candidatus Insinana catobitoga (NL. fem. n. *catobitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM707 sp002869615*. The type genome for the species is the GenBank assembly GCA_002869615.1. The GC content of the type genome is 53.07 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Insinana gen. nov.

Candidatus Insinana (NL. fem. n. *Insinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM707*. The type species for the genus is *Candidatus* Insinana catobitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2294*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petululaceae.

Description of *Candidatus* Insinana dapifibula sp. nov.

Candidatus Insinana dapifibula (NL. fem. n. *dapifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM707 sp002868925*. The type genome for the species is the GenBank assembly GCA_002868925.1. The GC content of the type genome is 56.03 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Insinaria cenotousia sp. nov.

Candidatus Insinaria cenotousia (NL. fem. n. *cenotousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVCS01 sp002049885*. The type genome for the species is the GenBank assembly GCA_002049885.1. The GC content of the type genome is 68.28 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Insinaria gen. nov.

Candidatus Insinaria (NL. fem. n. *Insinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MVCS01*. The type species for the genus is *Candidatus* Insinaria cenotousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Insinella nefaritura sp. nov.

Candidatus Insinella nefaritura (NL. fem. n. *nefaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1045 sp900547995*. The type genome for the species is the GenBank assembly GCA_900547995.1. The GC content of the type genome is 25.69 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Insinella gen. nov.

Candidatus Insinella (NL. fem. n. *Insinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1045*. The type species for the genus is *Candidatus* Insinella nefaritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Insinia attegilenta sp. nov.

Candidatus Insinia attegilenta (NL. fem. n. *attegilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYSU-D60007 sp007859315*. The type genome for the species is the GenBank assembly RS_GCF_007859315.1. The GC content of the type genome is 66.16 % and the genome length is 9.09 Mbp.

Description of *Candidatus* Insinia gen. nov.

Candidatus Insinia (NL. fem. n. *Insinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYSU-D60007*. The type species for the genus is *Candidatus* Insinia attegilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insinia effigago sp. nov.

Candidatus Insinia effigago (NL. fem. n. *effigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYSU-D60007 sp003574685*. The type genome for the species is the GenBank assembly RS_GCF_003574685.1. The GC content of the type genome is 66.28 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Insinia utrolousia sp. nov.

Candidatus Insinia utrolousia (NL. fem. n. *utrolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYSU-D60007 sp008039615*. The type genome for the species is the GenBank assembly RS_GCF_008039615.1. The GC content of the type genome is 67.91 % and the genome length is 8.76 Mbp.

Description of *Candidatus* Insinosa negidivita sp. nov.

Candidatus Insinosa negidivita (NL. fem. n. *negidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUSY01 sp012032475*. The type genome for the species is the GenBank assembly GCA_012032475.1. The GC content of the type genome is 61.01 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Insinosa gen. nov.

Candidatus Insinosa (NL. fem. n. *Insinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUSY01*. The type species for the genus is *Candidatus* Insinosa negidivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insinula binocugo sp. nov.

Candidatus Insinula binocugo (NL. fem. n. *binocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDKV01 sp013002045*. The type genome for the species is the GenBank assembly GCA_013002045.1. The GC content of the type genome is 58.89 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Insinula gen. nov.

Candidatus Insinula (NL. fem. n. *Insinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDKV01*. The type species for the genus is *Candidatus* Insinula binocugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-146*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solaculaceae.

Description of *Candidatus* Insomana domicicella sp. nov.

Candidatus Insomana domicicella (NL. fem. n. *domicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1794 sp002315435*. The type genome for the species is the GenBank assembly GCA_002315435.1. The GC content of the type genome is 38.32 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Insomana gen. nov.

Candidatus Insomana (NL. fem. n. *Insomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1794*. The type species for the genus is *Candidatus* Insomana domicicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insomaria perexilenta sp. nov.

Candidatus Insomaria perexilenta (NL. fem. n. *perexilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PC08-66 sp000830255*. The type genome for the species is the GenBank assembly GCA_000830255.1. The GC content of the type genome is 46.89 % and the genome length is 2.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Pozzo dei Cristalli sulfidic cave stream".

Description of *Candidatus* Insomaria gen. nov.

Candidatus Insomaria (NL. fem. n. *Insomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PC08-66*. The type species for the genus is *Candidatus* Insomaria perexilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insomella adnecimonia sp. nov.

Candidatus Insomella adnecimonia (NL. fem. n. *adnecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UMGS1815 sp900555345*. The type genome for the species is the GenBank assembly GCA_900555345.1. The GC content of the type genome is 52.8 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Insomella gen. nov.

Candidatus Insomella (NL. fem. n. *Insomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1815*. The type species for the genus is *Candidatus* Insomella adnecimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Insomella recucibula sp. nov.

Candidatus Insomella recucibula (NL. fem. n. *recucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1815 sp011957885*. The type genome for the species is the GenBank assembly RS_GCF_011957885.1. The GC content of the type genome is 45.4 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Insomia viburibra sp. nov.

Candidatus Insomia viburibra (NL. fem. n. *viburibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSXQ01 sp011367795*. The type genome for the species is the GenBank assembly GCA_011367795.1. The GC content of the type genome is 37.79 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Insomia gen. nov.

Candidatus Insomia (NL. fem. n. *Insomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSXQ01*. The type species for the genus is *Candidatus* Insomia viburibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-254*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarellaceae.

Description of *Candidatus* Insomida optabessa sp. nov.

Candidatus Insomida optabessa (NL. fem. n. *optabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKIB01 sp007116635*. The type genome for the species is the GenBank assembly GCA_007116635.1. The GC content of the type genome is 51.56 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Insomida gen. nov.

Candidatus Insomida (NL. fem. n. *Insomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKIB01*. The type species for the genus is *Candidatus* Insomida optabessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insomosa ascalicella sp. nov.

Candidatus Insomosa ascalicella (NL. fem. n. *ascalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7573 sp002477905*. The type genome for the species is the GenBank assembly GCA_002477905.1. The GC content of the type genome is 50.99 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Insomosa gen. nov.

Candidatus Insomosa (NL. fem. n. *Insomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7573*. The type species for the genus is *Candidatus* Insomosa ascalicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family

CAG-272. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Insomula immedisca sp. nov.

Candidatus Insomula immedisca (NL. fem. n. *immedisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYHK01 sp903925985*. The type genome for the species is the GenBank assembly GCA_903925985.1. The GC content of the type genome is 53.65 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Insomula gen. nov.

Candidatus Insomula (NL. fem. n. *Insomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYHK01*. The type species for the genus is *Candidatus* Insomula immedisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insoparia holisimonia sp. nov.

Candidatus Insoparia holisimonia (NL. fem. n. *holisimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYXY01 sp012515645*. The type genome for the species is the GenBank assembly GCA_012515645.1. The GC content of the type genome is 54.2 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Insoparia gen. nov.

Candidatus Insoparia (NL. fem. n. *Insoparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYXY01*. The type species for the genus is *Candidatus* Insoparia holisimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insopia annicastra sp. nov.

Candidatus Insopia annicastra (NL. fem. n. *annicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCBS01 sp902773475*. The type genome for the species is the GenBank assembly GCA_902773475.1. The GC content of the type genome is 62.53 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Insopia gen. nov.

Candidatus Insopia (NL. fem. n. *Insopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCBS01*. The type species for the genus is *Candidatus* Insopia annicastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Insopia tigurugo sp. nov.

Candidatus Insopia tigurugo (NL. fem. n. *tigurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCBS01 sp902799715*. The type genome for the species is the GenBank assembly GCA_902799715.1. The GC content of the type genome is 64.8 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Insopida catagitura sp. nov.

Candidatus Insopida catagitura (NL. fem. n. *catagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14179 sp902796545*. The type genome for the species is the GenBank assembly GCA_902796545.1. The GC content of the type genome is 57.58 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Insopida gen. nov.

Candidatus Insopida (NL. fem. n. *Insopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14179*. The type species for the genus is *Candidatus* Insopida catagitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Regiganaceae.

Description of *Candidatus* Insoposa allapibra sp. nov.

Candidatus Insoposa allapibra (NL. fem. n. *allapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSNS01 sp011047195*. The type genome for the species is the GenBank assembly GCA_011047195.1. The GC content of the type genome is 54.9 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Insoposa gen. nov.

Candidatus Insoposa (NL. fem. n. *Insoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSNS01*. The type species for the genus is *Candidatus* Insoposa allapibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIJZX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detumellaceae.

Description of *Candidatus* Insopula adpagibula sp. nov.

Candidatus Insopula adpagibula (NL. fem. n. *adpagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QIAA01 sp003224905*. The type genome for the species is the GenBank assembly GCA_003224905.1. The GC content of the type genome is 55.88 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Insopula gen. nov.

Candidatus Insopula (NL. fem. n. *Insopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QIAA01*. The type species for the genus is *Candidatus* Insopula adpagibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insoraria adfunitia sp. nov.

Candidatus Insoraria adfunitia (NL. fem. n. *adfunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C-19 sp009917405*. The type genome for the species is the GenBank assembly RS_GCF_009917405.1. The GC content of the type genome is 38.75 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Insoraria gen. nov.

Candidatus Insoraria (NL. fem. n. *Insoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C-19*. The type species for the genus is *Candidatus* Insoraria adfunitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insorula acrobitica sp. nov.

Candidatus Insorula acrobitica (NL. fem. n. *acrobitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GR16-43 sp013003965*. The type genome for the species is the GenBank assembly RS_GCF_013003965.1. The GC content of the type genome is 67.02 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Insorula gen. nov.

Candidatus Insorula (NL. fem. n. *Insorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GR16-43*. The type species for the genus is *Candidatus* Insorula acrobitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponellaceae.

Description of *Candidatus* Insorula allapetta sp. nov.

Candidatus Insorula allapetta (NL. fem. n. *allapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GR16-43 sp012274175*. The type genome for the species is the GenBank assembly GCA_012274175.1. The GC content of the type genome is 68.76 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Insorula inremiforma sp. nov.

Candidatus Insorula inremiforma (NL. fem. n. *inremiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GR16-43 sp013003985*. The type genome for the species is the GenBank assembly RS_GCF_013003985.1. The GC content of the type genome is 66.12 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Insorula melopitas sp. nov.

Candidatus Insorula melopitas (NL. fem. n. *melopitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GR16-43 sp001953215*. The type genome for the species is the GenBank assembly RS_GCF_001953215.1. The GC content of the type genome is 67.12 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Insubana ephipitudo sp. nov.

Candidatus Insubana ephipitudo (NL. fem. n. *ephipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SJAQ100 sp014145335*. The type genome for the species is the GenBank assembly RS_GCF_014145335.1. The GC content of the type genome is 71.27 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Insubana gen. nov.

Candidatus Insubana (NL. fem. n. *Insubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SJAQ100*. The type species for the genus is *Candidatus* Insubana ephipitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insubella denicitia sp. nov.

Candidatus Insubella denicitia (NL. fem. n. *denicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGF01 sp009787345*. The type genome for the species is the GenBank assembly GCA_009787345.1. The GC content of the type genome is 47.21 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Insubella gen. nov.

Candidatus Insubella (NL. fem. n. *Insubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGF01*. The type species for the genus is *Candidatus* Insubella denicitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insubia artufitia sp. nov.

Candidatus Insubia artufitia (NL. fem. n. *artufitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp012798065*. The type genome for the species is the

GenBank assembly GCA_012798065.1. The GC content of the type genome is 52.12 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Insubia gen. nov.

Candidatus Insubia (NL. fem. n. *Insubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6107*. The type species for the genus is *Candidatus* Insubia artufitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insubia dibapilega sp. nov.

Candidatus Insubia dibapilega (NL. fem. n. *dibapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp003524305*. The type genome for the species is the GenBank assembly GCA_003524305.1. The GC content of the type genome is 45.86 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Insubia diritessa sp. nov.

Candidatus Insubia diritessa (NL. fem. n. *diritessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp002347485*. The type genome for the species is the GenBank assembly GCA_002347485.1. The GC content of the type genome is 54.37 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Insubia immobibula sp. nov.

Candidatus Insubia immobibula (NL. fem. n. *immobibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp009773005*. The type genome for the species is the GenBank assembly GCA_009773005.1. The GC content of the type genome is 46.91 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Insubia immodago sp. nov.

Candidatus Insubia immodago (NL. fem. n. *immodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp013824385*. The type genome for the species is the GenBank assembly GCA_013824385.1. The GC content of the type genome is 44.88 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Insubia isoscitoga sp. nov.

Candidatus Insubia isoscitoga (NL. fem. n. *isoscitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp002428455*. The type genome for the species is the GenBank assembly GCA_002428455.1. The GC content of the type genome is 52.05 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Insubia panopago sp. nov.

Candidatus Insubia panopago (NL. fem. n. *panopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp002840715*. The type genome for the species is the GenBank assembly GCA_002840715.1. The GC content of the type genome is 45.13 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Insubia plostago sp. nov.

Candidatus Insubia plostago (NL. fem. n. *plostago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp003158355*. The type genome for the species is the GenBank assembly GCA_003158355.1. The GC content of the type genome is 47.66 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Insubia reforicula sp. nov.

Candidatus Insubia reforicula (NL. fem. n. *reforicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp002402725*. The type genome for the species is the GenBank assembly GCA_002402725.1. The GC content of the type genome is 52.04 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Insubia sonabax sp. nov.

Candidatus Insubia sonabax (NL. fem. n. *sonabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp003501835*. The type genome for the species is the GenBank assembly GCA_003501835.1. The GC content of the type genome is 52.98 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Insubia tirunisca sp. nov.

Candidatus Insubia tirunisca (NL. fem. n. *tirunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6107 sp012797695*. The type genome for the species is the GenBank assembly GCA_012797695.1. The GC content of the type genome is 52.46 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Insubosa excomitoga sp. nov.

Candidatus Insubosa excomitoga (NL. fem. n. *excomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-9 sp003963365*. The type genome for the species is the GenBank assembly GCA_003963365.1. The GC content of the type genome is 38.18 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Insubosa gen. nov.

Candidatus Insubosa (NL. fem. n. *Insubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AWTP1-9*. The type species for the genus is *Candidatus* Insubosa

excomitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insubula inlacicula sp. nov.

Candidatus Insubula inlacicula (NL. fem. n. *inlacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP202 sp014238205*. The type genome for the species is the GenBank assembly GCA_014238205.1. The GC content of the type genome is 57.97 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Insubula gen. nov.

Candidatus Insubula (NL. fem. n. *Insubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SP202*. The type species for the genus is *Candidatus* Insubula inlacicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Insubula obverimonas sp. nov.

Candidatus Insubula obverimonas (NL. fem. n. *obverimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP202 sp002722935*. The type genome for the species is the GenBank assembly GCA_002722935.1. The GC content of the type genome is 61.24 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Insufana haricicula sp. nov.

Candidatus Insufana haricicula (NL. fem. n. *haricicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABLWY01 sp013178255*. The type genome for the species is the

GenBank assembly GCA_013178255.1. The GC content of the type genome is 50.57 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Insufana gen. nov.

Candidatus Insufana (NL. fem. n. *Insufana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABLWY01*. The type species for the genus is *Candidatus* Insufana haricicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insufaria immatatio sp. nov.

Candidatus Insufaria immatatio (NL. fem. n. *immatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TC-15 sp010092855*. The type genome for the species is the GenBank assembly GCA_010092855.1. The GC content of the type genome is 60.09 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Insufaria gen. nov.

Candidatus Insufaria (NL. fem. n. *Insufaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TC-15*. The type species for the genus is *Candidatus* Insufaria immatatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selibariaceae.

Description of *Candidatus* Insufella dicibivita sp. nov.

Candidatus Insufella dicibivita (NL. fem. n. *dicibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6772 sp002685115*. The type genome for the species is the GenBank assembly GCA_002685115.1. The GC content of the type genome is 35.34 %

and the genome length is 1.34 Mbp.

Description of *Candidatus* Insufella gen. nov.

Candidatus Insufella (NL. fem. n. *Insufella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6772*. The type species for the genus is *Candidatus* Insufella dicibivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7430*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desaciaceae.

Description of *Candidatus* Insufella velivivita sp. nov.

Candidatus Insufella velivivita (NL. fem. n. *velivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6772 sp002453265*. The type genome for the species is the GenBank assembly GCA_002453265.1. The GC content of the type genome is 34.03 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Insufida enigmugo sp. nov.

Candidatus Insufida enigmugo (NL. fem. n. *enigmugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CK1056 sp010500615*. The type genome for the species is the GenBank assembly RS_GCF_010500615.1. The GC content of the type genome is 53.99 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Insufida gen. nov.

Candidatus Insufida (NL. fem. n. *Insufida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CK1056*. The type species for the genus is *Candidatus* Insufida enigmugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Verruco-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Vitigidaceae.

Description of *Candidatus* Insufida semilitia sp. nov.

Candidatus Insufida semilitia (NL. fem. n. *semilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CK1056 sp009908535*. The type genome for the species is the GenBank assembly GCA_009908535.1. The GC content of the type genome is 62.46 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Insufosa abinvitoga sp. nov.

Candidatus Insufosa abinvitoga (NL. fem. n. *abinvitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYLN01 sp012514915*. The type genome for the species is the GenBank assembly GCA_012514915.1. The GC content of the type genome is 68.02 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Insufosa gen. nov.

Candidatus Insufosa (NL. fem. n. *Insufosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYLN01*. The type species for the genus is *Candidatus* Insufosa abinvitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYNR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenariaceae.

Description of *Candidatus* Insufosa abligivita sp. nov.

Candidatus Insufosa abligivita (NL. fem. n. *abligivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYLN01 sp012521875*. The type genome for the species is the GenBank assembly GCA_012521875.1. The GC content of the type genome is 63.88 %

and the genome length is 3.96 Mbp.

Description of *Candidatus* Insufula domabilega sp. nov.

Candidatus Insufula domabilega (NL. fem. n. *domabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-58-95 sp001872165*. The type genome for the species is the GenBank assembly GCA_001872165.1. The GC content of the type genome is 58.04 % and the genome length is 1.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Insufula gen. nov.

Candidatus Insufula (NL. fem. n. *Insufula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-58-95*. The type species for the genus is *Candidatus* Insufula domabilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Insurana infinastra sp. nov.

Candidatus Insurana infinastra (NL. fem. n. *infinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBP01 sp013694835*. The type genome for the species is the GenBank assembly GCA_013694835.1. The GC content of the type genome is 69.84 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Insurana gen. nov.

Candidatus Insurana (NL. fem. n. *Insurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDBP01*. The type species for the genus is *Candidatus* Insurana infinastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Insuraria incocigena sp. nov.

Candidatus Insuraria incocigena (NL. fem. n. *incocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACOMS01 sp902628375*. The type genome for the species is the GenBank assembly GCA_902628375.1. The GC content of the type genome is 34.84 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Insuraria gen. nov.

Candidatus Insuraria (NL. fem. n. *Insuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACOMS01*. The type species for the genus is *Candidatus* Insuraria incocigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SAR86*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludimulaceae.

Description of *Candidatus* Insurella defacago sp. nov.

Candidatus Insurella defacago (NL. fem. n. *defacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYXS01 sp012515775*. The type genome for the species is the GenBank assembly GCA_012515775.1. The GC content of the type genome is 63.8 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Insurella gen. nov.

Candidatus Insurella (NL. fem. n. *Insurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYXS01*. The type species for the genus is *Candidatus* Insurella

defacago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1342*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibariaceae.

Description of *Candidatus* Insuria inambibra sp. nov.

Candidatus Insuria inambibra (NL. fem. n. *inambibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZNT01 sp012798145*. The type genome for the species is the GenBank assembly GCA_012798145.1. The GC content of the type genome is 38.81 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Insuria gen. nov.

Candidatus Insuria (NL. fem. n. *Insuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZNT01*. The type species for the genus is *Candidatus* Insuria inambibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4820*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefaridaceae.

Description of *Candidatus* Insurida adgenimonia sp. nov.

Candidatus Insurida adgenimonia (NL. fem. n. *adgenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14107 sp900772685*. The type genome for the species is the GenBank assembly RS_GCF_900772685.1. The GC content of the type genome is 42.85 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Insurida gen. nov.

Candidatus Insurida (NL. fem. n. *Insurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *RUG14107*. The type species for the genus is *Candidatus* Insurida adgenimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insurida esculago sp. nov.

Candidatus Insurida esculago (NL. fem. n. *esculago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14107 sp902796005*. The type genome for the species is the GenBank assembly GCA_902796005.1. The GC content of the type genome is 55.11 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Insurida herinitoga sp. nov.

Candidatus Insurida herinitoga (NL. fem. n. *herinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14107 sp902795985*. The type genome for the species is the GenBank assembly GCA_902795985.1. The GC content of the type genome is 53.97 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Insurida inculigena sp. nov.

Candidatus Insurida inculigena (NL. fem. n. *inculigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14107 sp902795795*. The type genome for the species is the GenBank assembly GCA_902795795.1. The GC content of the type genome is 46.95 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Insurosa obsatetta sp. nov.

Candidatus Insurosa obsatetta (NL. fem. n. *obsatetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5799 sp002418185*. The type genome for the species is the GenBank assembly GCA_002418185.1. The GC content of the type genome is 59.4 %

and the genome length is 2.48 Mbp.

Description of *Candidatus* Insurosa gen. nov.

Candidatus Insurosa (NL. fem. n. *Insurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5799*. The type species for the genus is *Candidatus* Insurosa obsatetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifellaceae.

Description of *Candidatus* Insurula immacicella sp. nov.

Candidatus Insurula immacicella (NL. fem. n. *immacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUSG01 sp012842725*. The type genome for the species is the GenBank assembly GCA_012842725.1. The GC content of the type genome is 35.28 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Insurula gen. nov.

Candidatus Insurula (NL. fem. n. *Insurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUSG01*. The type species for the genus is *Candidatus* Insurula immacicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insurula indilatio sp. nov.

Candidatus Insurula indilatio (NL. fem. n. *indilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUSG01 sp012521375*. The type genome for the species is the GenBank assembly GCA_012521375.1. The GC content of the type genome is 34.71 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Insusana decacitura sp. nov.

Candidatus Insusana decacitura (NL. fem. n. *decacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZMR01 sp012798695*. The type genome for the species is the GenBank assembly GCA_012798695.1. The GC content of the type genome is 50.17 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Insusana gen. nov.

Candidatus Insusana (NL. fem. n. *Insusana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZMR01*. The type species for the genus is *Candidatus* Insusana decacitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovosaceae.

Description of *Candidatus* Insusaria disidousia sp. nov.

Candidatus Insusaria disidousia (NL. fem. n. *disidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZZU01 sp009829985*. The type genome for the species is the GenBank assembly RS_GCF_009829985.1. The GC content of the type genome is 27.93 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Insusaria gen. nov.

Candidatus Insusaria (NL. fem. n. *Insusaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZZU01*. The type species for the genus is *Candidatus* Insusaria disidousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insusella saxopitio sp. nov.

Candidatus Insusella saxopitio (NL. fem. n. *saxopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSP01 sp009380025*. The type genome for the species is the GenBank assembly GCA_009380025.1. The GC content of the type genome is 64.38 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Insusella gen. nov.

Candidatus Insusella (NL. fem. n. *Insusella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSP01*. The type species for the genus is *Candidatus* Insusella saxopitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Insusida abmatibula sp. nov.

Candidatus Insusida abmatibula (NL. fem. n. *abmatibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-174 sp007117285*. The type genome for the species is the GenBank assembly GCA_007117285.1. The GC content of the type genome is 30.73 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Insusida gen. nov.

Candidatus Insusida (NL. fem. n. *Insusida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBR16-174*. The type species for the genus is *Candidatus* Insusida abmatibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Insusula vinolatio sp. nov.

Candidatus Insusula vinolatio (NL. fem. n. *vinolatio* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEVJ01 sp013043985*. The type genome for the species is the GenBank assembly GCA_013043985.1. The GC content of the type genome is 39.97 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Insusula gen. nov.

Candidatus Insusula (NL. fem. n. *Insusula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEVJ01*. The type species for the genus is *Candidatus* Insusula vinolatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cemenellaceae.

Description of *Candidatus* Intabia chancugo sp. nov.

Candidatus Intabia chancugo (NL. fem. n. *chancugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUSC01 sp012842935*. The type genome for the species is the GenBank assembly GCA_012842935.1. The GC content of the type genome is 67.32 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Intabia gen. nov.

Candidatus Intabia (NL. fem. n. *Intabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUSC01*. The type species for the genus is *Candidatus* Intabia chancugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intabia cohuritura sp. nov.

Candidatus Intabia cohuritura (NL. fem. n. *cohuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUSC01 sp008933895*. The type genome for the species is the GenBank assembly GCA_008933895.1. The GC content of the type genome is 66.27 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Intabida hexapetta sp. nov.

Candidatus Intabida hexapetta (NL. fem. n. *hexapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1943 sp002336845*. The type genome for the species is the GenBank assembly GCA_002336845.1. The GC content of the type genome is 63.72 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Intabida gen. nov.

Candidatus Intabida (NL. fem. n. *Intabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1943*. The type species for the genus is *Candidatus* Intabida hexapetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intabida sacopigena sp. nov.

Candidatus Intabida sacopigena (NL. fem. n. *sacopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1943 sp013328815*. The type genome for the species is the GenBank assembly RS_GCF_013328815.1. The GC content of the type genome is 65.16 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Intabosa scelliforma sp. nov.

Candidatus Intabosa scelliforma (NL. fem. n. *scelliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAITRH01 sp903894755*. The type genome for the species is the GenBank assembly GCA_903894755.1. The GC content of the type genome is 62.33 % and the genome length is 6.78 Mbp.

Description of *Candidatus* Intabosa gen. nov.

Candidatus Intabosa (NL. fem. n. *Intabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITRH01*. The type species for the genus is *Candidatus* Intabosa scelliforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intacana cetarentia sp. nov.

Candidatus Intacana cetarentia (NL. fem. n. *cetarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHJ01 sp012735465*. The type genome for the species is the GenBank assembly GCA_012735465.1. The GC content of the type genome is 39.21 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Intacana gen. nov.

Candidatus Intacana (NL. fem. n. *Intacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHJ01*. The type species for the genus is *Candidatus* Intacana cetarentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SK-Y3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifanaceae.

Description of *Candidatus* Intacaria cululastra sp. nov.

Candidatus Intacaria cululastra (NL. fem. n. *cululastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-55 sp005888465*. The type genome for the species is the GenBank

assembly GCA_005888465.1. The GC content of the type genome is 68.89 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Intacaria gen. nov.

Candidatus Intacaria (NL. fem. n. *Intacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-55*. The type species for the genus is *Candidatus* Intacaria cululastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacosaceae.

Description of *Candidatus* Intacella tomogitoga sp. nov.

Candidatus Intacella tomogitoga (NL. fem. n. *tomogitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBB01 sp013695145*. The type genome for the species is the GenBank assembly GCA_013695145.1. The GC content of the type genome is 71.93 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Intacella gen. nov.

Candidatus Intacella (NL. fem. n. *Intacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDBB01*. The type species for the genus is *Candidatus* Intacella tomogitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intacia penecicula sp. nov.

Candidatus Intacia penecicula (NL. fem. n. *penecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J023 sp003697015*. The type genome for the species is the GenBank assembly GCA_003697015.1. The GC content of the type genome is 71.53 % and the

genome length is 5.34 Mbp.

Description of *Candidatus* Intacia gen. nov.

Candidatus Intacia (NL. fem. n. *Intacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J023*. The type species for the genus is *Candidatus* Intacia penecicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5704*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovidaceae.

Description of *Candidatus* Intacida foricibra sp. nov.

Candidatus Intacida foricibra (NL. fem. n. *foricibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PSRQ01 sp003176165*. The type genome for the species is the GenBank assembly GCA_003176165.1. The GC content of the type genome is 43.41 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Intacida gen. nov.

Candidatus Intacida (NL. fem. n. *Intacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PSRQ01*. The type species for the genus is *Candidatus* Intacida foricibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12028*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semimidaceae.

Description of *Candidatus* Intacosa alcalugo sp. nov.

Candidatus Intacosa alcalugo (NL. fem. n. *alcalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7524 sp002478275*. The type genome for the species is the GenBank assembly GCA_002478275.1. The GC content of the type genome is 63.48 %

and the genome length is 1.81 Mbp.

Description of *Candidatus* Intacosa gen. nov.

Candidatus Intacosa (NL. fem. n. *Intacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7524*. The type species for the genus is *Candidatus* Intacosa alcalugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA912*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Masocanaceae.

Description of *Candidatus* Intamana monocitia sp. nov.

Candidatus Intamana monocitia (NL. fem. n. *monocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXHS01 sp005773145*. The type genome for the species is the GenBank assembly GCA_005773145.1. The GC content of the type genome is 59.57 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Intamana gen. nov.

Candidatus Intamana (NL. fem. n. *Intamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXHS01*. The type species for the genus is *Candidatus* Intamana monocitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intamaria ecnepago sp. nov.

Candidatus Intamaria ecnepago (NL. fem. n. *ecnepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHVH01 sp003222245*. The type genome for the species is the GenBank assembly GCA_003222245.1. The GC content of the type genome is 55.49 % and the genome length is 7.0 Mbp.

Description of *Candidatus* Intamaria gen. nov.

Candidatus Intamaria (NL. fem. n. *Intamaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHVH01*. The type species for the genus is *Candidatus* Intamaria ecnepago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7656*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamiaceae.

Description of *Candidatus* Intamella intesicula sp. nov.

Candidatus Intamella intesicula (NL. fem. n. *intesicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMFW01 sp007376265*. The type genome for the species is the GenBank assembly GCA_007376265.1. The GC content of the type genome is 46.16 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Intamella gen. nov.

Candidatus Intamella (NL. fem. n. *Intamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMFW01*. The type species for the genus is *Candidatus* Intamella intesicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-56-20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagosaceae.

Description of *Candidatus* Intamia exaggatica sp. nov.

Candidatus Intamia exaggatica (NL. fem. n. *exaggatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RSF151 sp005116795*. The type genome for the species is the GenBank assembly GCA_005116795.1. The GC content of the type genome is 61.59 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Intamia gen. nov.

Candidatus Intamia (NL. fem. n. *Intamia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RSF151*. The type species for the genus is *Candidatus* Intamia exaggatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intamida adtacivita sp. nov.

Candidatus Intamida adtacivita (NL. fem. n. *adtacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLanc-01 sp001603075*. The type genome for the species is the GenBank assembly GCA_001603075.1. The GC content of the type genome is 62.78 % and the genome length is 5.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Intamida gen. nov.

Candidatus Intamida (NL. fem. n. *Intamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PLanc-01*. The type species for the genus is *Candidatus* Intamida adtacivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Intamida amfitatica sp. nov.

Candidatus Intamida amfitatica (NL. fem. n. *amfitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLanc-01 sp012719085*. The type genome for the species is the GenBank assembly GCA_012719085.1. The GC content of the type genome is 62.62 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Intamida bipenitura sp. nov.

Candidatus Intamida bipenitura (NL. fem. n. *bipenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLanc-01 sp012744475*. The type genome for the species is the GenBank assembly GCA_012744475.1. The GC content of the type genome is 62.61 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Intamida effunigena sp. nov.

Candidatus Intamida effunigena (NL. fem. n. *effunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLanc-01 sp012517265*. The type genome for the species is the GenBank assembly GCA_012517265.1. The GC content of the type genome is 63.47 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Intamida herinivita sp. nov.

Candidatus Intamida herinivita (NL. fem. n. *herinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLanc-01 sp002327785*. The type genome for the species is the GenBank assembly GCA_002327785.1. The GC content of the type genome is 60.78 % and the genome length is 6.32 Mbp.

Description of *Candidatus* Intamosa ulcisentia sp. nov.

Candidatus Intamosa ulcisentia (NL. fem. n. *ulcisentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQV01 sp013203065*. The type genome for the species is the GenBank assembly GCA_013203065.1. The GC content of the type genome is 50.6 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Intamosa gen. nov.

Candidatus Intamosa (NL. fem. n. *Intamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQV01*. The type species for the genus is *Candidatus* Intamosa ulcisentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intamula homogitudo sp. nov.

Candidatus Intamula homogitudo (NL. fem. n. *homogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JC640 sp010367455*. The type genome for the species is the GenBank assembly RS_GCF_010367455.1. The GC content of the type genome is 63.6 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Intamula gen. nov.

Candidatus Intamula (NL. fem. n. *Intamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JC640*. The type species for the genus is *Candidatus* Intamula homogitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intecana adfabitudo sp. nov.

Candidatus Intecana adfabitudo (NL. fem. n. *adfabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAH01 sp009788085*. The type genome for the species is the GenBank assembly GCA_009788085.1. The GC content of the type genome is 48.83 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Intecana gen. nov.

Candidatus Intecana (NL. fem. n. *Intecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAH01*. The type species for the genus is *Candidatus* Intecana

adfabitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Intecana ranunitrix sp. nov.

Candidatus Intecana ranunitrix (NL. fem. n. *ranunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAH01 sp009780315*. The type genome for the species is the GenBank assembly GCA_009780315.1. The GC content of the type genome is 40.22 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Intecaria intesibra sp. nov.

Candidatus Intecaria intesibra (NL. fem. n. *intesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTHB01 sp011334855*. The type genome for the species is the GenBank assembly GCA_011334855.1. The GC content of the type genome is 57.92 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Intecaria gen. nov.

Candidatus Intecaria (NL. fem. n. *Intecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTHB01*. The type species for the genus is *Candidatus* Intecaria intesibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *0-14-0-80-60-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubanaceae.

Description of *Candidatus* Intecella turibibra sp. nov.

Candidatus Intecella turibibra (NL. fem. n. *turibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D16-63 sp003612475*. The type genome for the species is the GenBank assembly RS_GCF_003612475.1. The GC content of the type genome is 67.37 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Intecella gen. nov.

Candidatus Intecella (NL. fem. n. *Intecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *D16-63*. The type species for the genus is *Candidatus* Intecella turibibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intecia depacedo sp. nov.

Candidatus Intecia depacedo (NL. fem. n. *depacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-64 sp005883215*. The type genome for the species is the GenBank assembly GCA_005883215.1. The GC content of the type genome is 71.76 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Intecia gen. nov.

Candidatus Intecia (NL. fem. n. *Intecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-64*. The type species for the genus is *Candidatus* Intecia depacedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intecida excerilenta sp. nov.

Candidatus Intecida excerilenta (NL. fem. n. *excerilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACKTW01 sp902603215*. The type genome for the species is the GenBank assembly GCA_902603215.1. The GC content of the type genome is 28.51 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Intecida gen. nov.

Candidatus Intecida (NL. fem. n. *Intecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACKTW01*. The type species for the genus is *Candidatus* Intecida excerilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intecosa denupitio sp. nov.

Candidatus Intecosa denupitio (NL. fem. n. *denupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPH01 sp012838435*. The type genome for the species is the GenBank assembly GCA_012838435.1. The GC content of the type genome is 60.42 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Intecosa gen. nov.

Candidatus Intecosa (NL. fem. n. *Intecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPH01*. The type species for the genus is *Candidatus* Intecosa denupitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Intecosa octacatio sp. nov.

Candidatus Intecosa octacatio (NL. fem. n. *octacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPH01 sp002071025*. The type genome for the species is the GenBank assembly GCA_002071025.1. The GC content of the type genome is 63.99 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Intecula obnoxivita sp. nov.

Candidatus Intecula obnoxivita (NL. fem. n. *obnoxivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBB01 sp013360675*. The type genome for the species is the GenBank assembly GCA_013360675.1. The GC content of the type genome is 67.25 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Intecula gen. nov.

Candidatus Intecula (NL. fem. n. *Intecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBB01*. The type species for the genus is *Candidatus* Intecula obnoxivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Intemaria incunimonas sp. nov.

Candidatus Intemaria incunimonas (NL. fem. n. *incunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B17-G2 sp003645805*. The type genome for the species is the GenBank assembly GCA_003645805.1. The GC content of the type genome is 41.83 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Intemaria gen. nov.

Candidatus Intemaria (NL. fem. n. *Intemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B17-G2*. The type species for the genus is *Candidatus* Intemaria incunimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-213*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarariaceae.

Description of *Candidatus* Intemella utrolitoga sp. nov.

Candidatus Intemella utrolitoga (NL. fem. n. *utrolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHZI01 sp009692345*. The type genome for the species is the GenBank assembly GCA_009692345.1. The GC content of the type genome is 64.77 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Intemella gen. nov.

Candidatus Intemella (NL. fem. n. *Intemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHZI01*. The type species for the genus is *Candidatus* Intemella utrolitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2729495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulidaceae.

Description of *Candidatus* Intemosa notacibula sp. nov.

Candidatus Intemosa notacibula (NL. fem. n. *notacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11214 sp902766915*. The type genome for the species is the GenBank assembly GCA_902766915.1. The GC content of the type genome is 41.05 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Intemosa gen. nov.

Candidatus Intemosa (NL. fem. n. *Intemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11214*. The type species for the genus is *Candidatus* Intemosa notacibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intemosa ranunitica sp. nov.

Candidatus Intemosa ranunitica (NL. fem. n. *ranunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11214 sp902776725*. The type genome for the species is the GenBank assembly GCA_902776725.1. The GC content of the type genome is 46.55 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Intemosa remeditoga sp. nov.

Candidatus Intemosa remeditoga (NL. fem. n. *remeditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11214 sp902797405*. The type genome for the species is the GenBank assembly GCA_902797405.1. The GC content of the type genome is 42.09 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Intemula antimilega sp. nov.

Candidatus Intemula antimilega (NL. fem. n. *antimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin22 sp009840135*. The type genome for the species is the GenBank assembly GCA_009840135.1. The GC content of the type genome is 59.23 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Intemula gen. nov.

Candidatus Intemula (NL. fem. n. *Intemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin22*. The type species for the genus is *Candidatus* Intemula antimilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Intemula immeditia sp. nov.

Candidatus Intemula immeditia (NL. fem. n. *immeditia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin22 sp002238505*. The type genome for the species is the GenBank assembly GCA_002238505.1. The GC content of the type genome is 59.2 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Intenella episcicula sp. nov.

Candidatus Intenella episcicula (NL. fem. n. *episcicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSP01 sp012518355*. The type genome for the species is the GenBank assembly GCA_012518355.1. The GC content of the type genome is 58.31 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Intenella gen. nov.

Candidatus Intenella (NL. fem. n. *Intenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSP01*. The type species for the genus is *Candidatus* Intenella episcicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11051*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semipiaceae.

Description of *Candidatus* Intenia alluvicula sp. nov.

Candidatus Intenia alluvicula (NL. fem. n. *alluvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMFP01 sp007376145*. The type genome for the species is the GenBank assembly GCA_007376145.1. The GC content of the type genome is 60.61 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Intenia gen. nov.

Candidatus Intenia (NL. fem. n. *Intenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMFP01*. The type species for the genus is *Candidatus* Intenia alluvicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIZMI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicinulaceae.

Description of *Candidatus* Intenida colubimonas sp. nov.

Candidatus Intenida colubimonas (NL. fem. n. *colubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GYS-P2D sp009833045*. The type genome for the species is the GenBank assembly RS_GCF_009833045.1. The GC content of the type genome is 43.34 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Intenida gen. nov.

Candidatus Intenida (NL. fem. n. *Intenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GYS-P2D*. The type species for the genus is *Candidatus* Intenida colubimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intenida deparisca sp. nov.

Candidatus Intenida deparisca (NL. fem. n. *deparisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GYS-P2D sp902609095*. The type genome for the species is the GenBank assembly GCA_902609095.1. The GC content of the type genome is 37.62 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Intenula necopugo sp. nov.

Candidatus Intenula necopugo (NL. fem. n. *necopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-9 sp005888295*. The type genome for the species is the GenBank assembly GCA_005888295.1. The GC content of the type genome is 70.02 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Intenula gen. nov.

Candidatus Intenula (NL. fem. n. *Intenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-9*. The type species for the genus is *Candidatus* Intenula necopugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHCF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tiroculaceae.

Description of *Candidatus* Intesaria adcomicula sp. nov.

Candidatus Intesaria adcomicula (NL. fem. n. *adcomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADFN01 sp013152895*. The type genome for the species is the GenBank assembly GCA_013152895.1. The GC content of the type genome is 65.19 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Intesaria gen. nov.

Candidatus Intesaria (NL. fem. n. *Intesaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFN01*. The type species for the genus is *Candidatus* Intesaria adcomicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEB-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denoridaceae.

Description of *Candidatus* Intesella xenodilenta sp. nov.

Candidatus Intesella xenodilenta (NL. fem. n. *xenodilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1176 sp003151975*. The type genome for the species is the GenBank assembly GCA_003151975.1. The GC content of the type genome is 63.47 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Intesella gen. nov.

Candidatus Intesella (NL. fem. n. *Intesella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1176*. The type species for the genus is *Candidatus* Intesella xenodilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9628*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recorariaceae.

Description of *Candidatus* Intesia aclasibula sp. nov.

Candidatus Intesia aclasibula (NL. fem. n. *aclasibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXHW01 sp012270675*. The type genome for the species is the GenBank assembly GCA_012270675.1. The GC content of the type genome is 60.69 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Intesia gen. nov.

Candidatus Intesia (NL. fem. n. *Intesia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXHW01*. The type species for the genus is *Candidatus* Intesia aclasibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2709665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coninulaceae.

Description of *Candidatus* Intesida denavitura sp. nov.

Candidatus Intesida denavitura (NL. fem. n. *denavitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2598 sp002339345*. The type genome for the species is the GenBank assembly GCA_002339345.1. The GC content of the type genome is 55.78 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Intesida gen. nov.

Candidatus Intesida (NL. fem. n. *Intesida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2598*. The type species for the genus is *Candidatus* Intesida denavitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PH28-bin88*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depoposaceae.

Description of *Candidatus* Intesosa alluvisca sp. nov.

Candidatus Intesosa alluvisca (NL. fem. n. *alluvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYPV01 sp012523875*. The type genome for the species is the GenBank assembly GCA_012523875.1. The GC content of the type genome is 34.23 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Intesosa gen. nov.

Candidatus Intesosa (NL. fem. n. *Intesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYPV01*. The type species for the genus is *Candidatus* Intesosa alluvisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intesosa domabiforma sp. nov.

Candidatus Intesosa domabiforma (NL. fem. n. *domabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYPV01 sp012519635*. The type genome for the species is the GenBank assembly GCA_012519635.1. The GC content of the type genome is 35.02 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Intestinibacter assubitoga sp. nov.

Candidatus Intestinibacter assubitoga (NL. fem. n. *assubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Intestinibacter sp900553485*. The type genome for the species is the GenBank assembly GCA_900553485.1. The GC content of the type genome is 30.69 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Intestinibacter turififica sp. nov.

Candidatus Intestinibacter turififica (NL. fem. n. *turififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Intestinibacter sp900540355*. The type genome for the species is the GenBank assembly GCA_900759275.1. The GC content of the type genome is 28.36 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Intestinibaculum lucifessa sp. nov.

Candidatus Intestinibaculum lucifessa (NL. fem. n. *lucifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Intestinibaculum sp900317015*. The type genome for the species is the GenBank assembly GCA_900317015.1. The GC content of the type genome is 39.1 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Intestinimonas edissilega sp. nov.

Candidatus Intestinimonas edissilega (NL. fem. n. *edissilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Intestinimonas sp900540545*. The type genome for the species is the GenBank assembly GCA_900540545.1. The GC content of the type genome is 63.68 %

and the genome length is 3.34 Mbp.

Description of *Candidatus* Intesula fatilugo sp. nov.

Candidatus Intesula fatilugo (NL. fem. n. *fatilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYBY01 sp005788585*. The type genome for the species is the GenBank assembly GCA_005788585.1. The GC content of the type genome is 72.11 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Intesula gen. nov.

Candidatus Intesula (NL. fem. n. *Intesula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYBY01*. The type species for the genus is *Candidatus* Intesula fatilugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intolana taraxilenta sp. nov.

Candidatus Intolana taraxilenta (NL. fem. n. *taraxilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBD01 sp013695115*. The type genome for the species is the GenBank assembly GCA_013695115.1. The GC content of the type genome is 70.55 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Intolana gen. nov.

Candidatus Intolana (NL. fem. n. *Intolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDBD01*. The type species for the genus is *Candidatus* Intolana taraxilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-555*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pocilulaceae.

Description of *Candidatus* Intolaria abluvessa sp. nov.

Candidatus Intolaria abluvessa (NL. fem. n. *abluvessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGVT01 sp010027105*. The type genome for the species is the GenBank assembly GCA_010027105.1. The GC content of the type genome is 68.85 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Intolaria gen. nov.

Candidatus Intolaria (NL. fem. n. *Intolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGVT01*. The type species for the genus is *Candidatus* Intolaria abluvessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subinellaceae.

Description of *Candidatus* Intolaria indififica sp. nov.

Candidatus Intolaria indififica (NL. fem. n. *indififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGVT01 sp009926295*. The type genome for the species is the GenBank assembly GCA_009926295.1. The GC content of the type genome is 69.3 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Intolaria monopilega sp. nov.

Candidatus Intolaria monopilega (NL. fem. n. *monopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGVT01 sp009923125*. The type genome for the species is the GenBank assembly GCA_009923125.1. The GC content of the type genome is 69.62 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Intolella acrotilega sp. nov.

Candidatus Intolella acrotilega (NL. fem. n. *acrotilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILRJ01 sp014377845*. The type genome for the species is the GenBank assembly GCA_014377845.1. The GC content of the type genome is 62.43 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Intolella gen. nov.

Candidatus Intolella (NL. fem. n. *Intolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILRJ01*. The type species for the genus is *Candidatus* Intolella acrotilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intolella emancessa sp. nov.

Candidatus Intolella emancessa (NL. fem. n. *emancessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILRJ01 sp010365165*. The type genome for the species is the GenBank assembly GCA_010365165.1. The GC content of the type genome is 60.08 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Intolella exaspifica sp. nov.

Candidatus Intolella exaspifica (NL. fem. n. *exaspifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILRJ01 sp903836575*. The type genome for the species is the GenBank assembly GCA_903836575.1. The GC content of the type genome is 57.76 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Intolella extipago sp. nov.

Candidatus Intolella extipago (NL. fem. n. *extipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILRJ01 sp014376645*. The type genome for the species is the GenBank assembly GCA_014376645.1. The GC content of the type genome is 61.7 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Intolella favonax sp. nov.

Candidatus Intolella favonax (NL. fem. n. *favonax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILRJ01 sp014377155*. The type genome for the species is the GenBank assembly GCA_014377155.1. The GC content of the type genome is 57.78 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Intolia desupitica sp. nov.

Candidatus Intolia desupitica (NL. fem. n. *desupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYRB01 sp012519005*. The type genome for the species is the GenBank assembly GCA_012519005.1. The GC content of the type genome is 44.85 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Intolia gen. nov.

Candidatus Intolia (NL. fem. n. *Intolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYRB01*. The type species for the genus is *Candidatus* Intolia desupitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU086*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defosidaceae.

Description of *Candidatus* Intolida omnivilega sp. nov.

Candidatus Intolida omnivilega (NL. fem. n. *omnivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSSP01 sp013213985*. The type genome for the species is the GenBank assembly GCA_013213985.1. The GC content of the type genome is 36.98 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Intolida gen. nov.

Candidatus Intolida (NL. fem. n. *Intolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSSP01*. The type species for the genus is *Candidatus* Intolida omnivilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intolosa exinditudo sp. nov.

Candidatus Intolosa exinditudo (NL. fem. n. *exinditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDC01 sp012729455*. The type genome for the species is the GenBank assembly GCA_012729455.1. The GC content of the type genome is 60.68 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Intolosa gen. nov.

Candidatus Intolosa (NL. fem. n. *Intolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYDC01*. The type species for the genus is *Candidatus* Intolosa exinditudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Intorella adhorugo sp. nov.

Candidatus Intorella adhorugo (NL. fem. n. *adhorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *WQUV01 sp009777795*. The type genome for the species is the GenBank assembly GCA_009777795.1. The GC content of the type genome is 54.55 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Intorella gen. nov.

Candidatus Intorella (NL. fem. n. *Intorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQUV01*. The type species for the genus is *Candidatus* Intorella adhorugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intorella desomitas sp. nov.

Candidatus Intorella desomitas (NL. fem. n. *desomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQUV01 sp009778015*. The type genome for the species is the GenBank assembly GCA_009778015.1. The GC content of the type genome is 53.26 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Intorella luticitura sp. nov.

Candidatus Intorella luticitura (NL. fem. n. *luticitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQUV01 sp009781895*. The type genome for the species is the GenBank assembly GCA_009781895.1. The GC content of the type genome is 49.96 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Intoria exaspitudo sp. nov.

Candidatus Intoria exaspitudo (NL. fem. n. *exaspitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFS01 sp011064965*. The type genome for the species is the GenBank assembly GCA_011064965.1. The GC content of the type genome is 46.8 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Intoria gen. nov.

Candidatus Intoria (NL. fem. n. *Intoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFS01*. The type species for the genus is *Candidatus* Intoria exaspitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intorida insopitura sp. nov.

Candidatus Intorida insopitura (NL. fem. n. *insopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RXIX01 sp003989075*. The type genome for the species is the GenBank assembly GCA_003989075.1. The GC content of the type genome is 62.27 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Intorida gen. nov.

Candidatus Intorida (NL. fem. n. *Intorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RXIX01*. The type species for the genus is *Candidatus* Intorida insopitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Intorula insoritudo sp. nov.

Candidatus Intorula insoritudo (NL. fem. n. *insoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJR01 sp012522835*. The type genome for the species is the GenBank assembly GCA_012522835.1. The GC content of the type genome is 39.54 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Intorula gen. nov.

Candidatus Intorula (NL. fem. n. *Intorula* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYJR01*. The type species for the genus is *Candidatus* Intorula insoritudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inturana inabsitas sp. nov.

Candidatus Inturana inabsitas (NL. fem. n. *inabsitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNJH01 sp014382665*. The type genome for the species is the GenBank assembly GCA_014382665.1. The GC content of the type genome is 47.92 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Inturana gen. nov.

Candidatus Inturana (NL. fem. n. *Inturana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNJH01*. The type species for the genus is *Candidatus* Inturana inabsitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11574*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momoranaceae.

Description of *Candidatus* Inturaria refunimonas sp. nov.

Candidatus Inturaria refunimonas (NL. fem. n. *refunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8514 sp003543235*. The type genome for the species is the GenBank assembly GCA_003543235.1. The GC content of the type genome is 36.08 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Inturaria gen. nov.

Candidatus Inturaria (NL. fem. n. *Inturaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8514*. The type species for the genus is *Candidatus* Inturaria refunimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inturella tetenitrix sp. nov.

Candidatus Inturella tetenitrix (NL. fem. n. *tetenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Glo-13 sp003354025*. The type genome for the species is the GenBank assembly GCA_003354025.1. The GC content of the type genome is 42.23 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Inturella gen. nov.

Candidatus Inturella (NL. fem. n. *Inturella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Glo-13*. The type species for the genus is *Candidatus* Inturella tetenitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodosaceae.

Description of *Candidatus* Inturia alcibitica sp. nov.

Candidatus Inturia alcibitica (NL. fem. n. *alcibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM503 sp002869585*. The type genome for the species is the GenBank assembly GCA_002869585.1. The GC content of the type genome is 54.55 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Inturia gen. nov.

Candidatus Inturia (NL. fem. n. *Inturia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM503*. The type species for the genus is *Candidatus* Inturia alcibitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inturosa melililega sp. nov.

Candidatus Inturosa melililega (NL. fem. n. *melililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG678 sp900321335*. The type genome for the species is the GenBank assembly GCA_900321335.1. The GC content of the type genome is 58.71 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Inturosa gen. nov.

Candidatus Inturosa (NL. fem. n. *Inturosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG678*. The type species for the genus is *Candidatus* Inturosa melililega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inturula adnubimonas sp. nov.

Candidatus Inturula adnubimonas (NL. fem. n. *adnubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLNK01 sp007133095*. The type genome for the species is the GenBank assembly GCA_007133095.1. The GC content of the type genome is 42.16 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Inturula gen. nov.

Candidatus Inturula (NL. fem. n. *Inturula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLNK01*. The type species for the genus is *Candidatus* Inturula adnubimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LOWO2-01-FULL-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifanaceae.

Description of *Candidatus* Inturula bigaribula sp. nov.

Candidatus Inturula bigaribula (NL. fem. n. *bigaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLNK01 sp003566255*. The type genome for the species is the GenBank assembly GCA_003566255.1. The GC content of the type genome is 44.09 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Inurbaria bigarugo sp. nov.

Candidatus Inurbaria bigarugo (NL. fem. n. *bigarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-884 sp000433875*. The type genome for the species is the GenBank assembly GCA_000433875.1. The GC content of the type genome is 26.68 % and the genome length is 1.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Inurbaria gen. nov.

Candidatus Inurbaria (NL. fem. n. *Inurbaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-884*. The type species for the genus is *Candidatus* Inurbaria bigarugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Inurbia ambusicella sp. nov.

Candidatus Inurbia ambusicella (NL. fem. n. *ambusicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMJB01 sp014380815*. The type genome for the species is the GenBank assembly GCA_014380815.1. The GC content of the type genome is 62.41 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Inurbia gen. nov.

Candidatus Inurbia (NL. fem. n. *Inurbia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMJB01*. The type species for the genus is *Candidatus* Inurbia ambusicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Inurbida absocicella sp. nov.

Candidatus Inurbida absocicella (NL. fem. n. *absocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1124 sp002313265*. The type genome for the species is the GenBank assembly GCA_002313265.1. The GC content of the type genome is 48.24 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Inurbida gen. nov.

Candidatus Inurbida (NL. fem. n. *Inurbida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1124*. The type species for the genus is *Candidatus* Inurbida absocicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invecana cuticicella sp. nov.

Candidatus Invecana cuticicella (NL. fem. n. *cuticicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYK01 sp013696525*. The type genome for the species is the GenBank assembly GCA_013696525.1. The GC content of the type genome is 66.18 %

and the genome length is 3.63 Mbp.

Description of *Candidatus* Invecana gen. nov.

Candidatus Invecana (NL. fem. n. *Invecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCYK01*. The type species for the genus is *Candidatus* Invecana cuticicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6265*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cibarosaceae.

Description of *Candidatus* Invecaria annicimonia sp. nov.

Candidatus Invecaria annicimonia (NL. fem. n. *annicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BX12 sp902363595*. The type genome for the species is the GenBank assembly RS_GCF_902363595.1. The GC content of the type genome is 47.21 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Invecaria gen. nov.

Candidatus Invecaria (NL. fem. n. *Invecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BX12*. The type species for the genus is *Candidatus* Invecaria annicimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invecaria ceraricula sp. nov.

Candidatus Invecaria ceraricula (NL. fem. n. *ceraricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BX12 sp014333425*. The type genome for the species is the GenBank assembly RS_GCF_014333425.1. The GC content of the type genome is 47.0 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Invecaria encepimonas sp. nov.

Candidatus Invecaria encepimonas (NL. fem. n. *encepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BX12 sp009911365*. The type genome for the species is the GenBank assembly RS_GCF_009911365.1. The GC content of the type genome is 46.9 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Invecella admoretta sp. nov.

Candidatus Invecella admoretta (NL. fem. n. *admoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCZU01 sp013289515*. The type genome for the species is the GenBank assembly GCA_013289515.1. The GC content of the type genome is 44.19 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Invecella gen. nov.

Candidatus Invecella (NL. fem. n. *Invecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCZU01*. The type species for the genus is *Candidatus* Invecella admoretta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RVW-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpanaceae.

Description of *Candidatus* Invecia negiditio sp. nov.

Candidatus Invecia negiditio (NL. fem. n. *negiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2396 sp002343325*. The type genome for the species is the GenBank assembly GCA_002343325.1. The GC content of the type genome is 67.21 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Invecia gen. nov.

Candidatus Invecia (NL. fem. n. *Invecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2396*. The type species for the genus is *Candidatus* Invecia negiditio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Invecida macilibra sp. nov.

Candidatus Invecida macilibra (NL. fem. n. *macilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11788 sp900760465*. The type genome for the species is the GenBank assembly RS_GCF_900760465.1. The GC content of the type genome is 32.05 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Invecida gen. nov.

Candidatus Invecida (NL. fem. n. *Invecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11788*. The type species for the genus is *Candidatus* Invecida macilibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-274*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negotulaceae.

Description of *Candidatus* Invecosa nucifessa sp. nov.

Candidatus Invecosa nucifessa (NL. fem. n. *nucifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002705045 sp002705045*. The type genome for the species is the GenBank assembly GCA_002705045.2. The GC content of the type genome is 37.99 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Invecosa gen. nov.

Candidatus Invecosa (NL. fem. n. *Invecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002705045*. The type species for the genus is *Candidatus* Invecosa nucifessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invecula expisitura sp. nov.

Candidatus Invecula expisitura (NL. fem. n. *expisitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFRC01 sp013141375*. The type genome for the species is the GenBank assembly GCA_013141375.1. The GC content of the type genome is 46.28 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Invecula gen. nov.

Candidatus Invecula (NL. fem. n. *Invecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFRC01*. The type species for the genus is *Candidatus* Invecula expisitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invesaria laculedo sp. nov.

Candidatus Invesaria laculedo (NL. fem. n. *laculedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-61-28 sp001767035*. The type genome for the species is the GenBank assembly GCA_001767035.1. The GC content of the type genome is 60.88 % and the genome length is 3.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Invesaria gen. nov.

Candidatus Invesaria (NL. fem. n. *Invesaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-61-28*. The type species for the genus is *Candidatus* Invesaria laculedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-54-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacosaceae.

Description of *Candidatus* Invesosa actarousia sp. nov.

Candidatus Invesosa actarousia (NL. fem. n. *actarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2658 sp002841545*. The type genome for the species is the GenBank assembly GCA_002841545.1. The GC content of the type genome is 47.29 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Invesosa gen. nov.

Candidatus Invesosa (NL. fem. n. *Invesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2658*. The type species for the genus is *Candidatus* Invesosa actarousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invesosa adposax sp. nov.

Candidatus Invesosa adposax (NL. fem. n. *adposax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2658 sp009929315*. The type genome for the species is the GenBank assembly GCA_009929315.1. The GC content of the type genome is 48.54 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Invesosa defosibula sp. nov.

Candidatus Invesosa defosibula (NL. fem. n. *defosibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2658 sp002359425*. The type genome for the species is the GenBank assembly GCA_002359425.1. The GC content of the type genome is 54.59 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Invesosa denecitas sp. nov.

Candidatus Invesosa denecitas (NL. fem. n. *denecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2658 sp012719035*. The type genome for the species is the GenBank assembly GCA_012719035.1. The GC content of the type genome is 45.54 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Invesosa homolatio sp. nov.

Candidatus Invesosa homolatio (NL. fem. n. *homolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2658 sp012729875*. The type genome for the species is the GenBank assembly GCA_012729875.1. The GC content of the type genome is 51.27 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Invesosa impinentia sp. nov.

Candidatus Invesosa impinentia (NL. fem. n. *impinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2658 sp012728025*. The type genome for the species is the GenBank assembly GCA_012728025.1. The GC content of the type genome is 45.71 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Invesosa ossaritura sp. nov.

Candidatus Invesosa ossaritura (NL. fem. n. *ossaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2658 sp012516225*. The type genome for the species is the GenBank assembly GCA_012516225.1. The GC content of the type genome is 44.71 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Invetana invinivita sp. nov.

Candidatus Invetana invinivita (NL. fem. n. *invinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6132 sp002435835*. The type genome for the species is the GenBank assembly GCA_002435835.1. The GC content of the type genome is 29.55 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Invetana gen. nov.

Candidatus Invetana (NL. fem. n. *Invetana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6132*. The type species for the genus is *Candidatus* Invetana invinivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invetella gen. nov.

Candidatus Invetella (NL. fem. n. *Invetella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRQG01*. The type species for the genus is *Candidatus* Invetella abyssi_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invetida imbeligena sp. nov.

Candidatus Invetida imbeligena (NL. fem. n. *imbeligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABRU01 sp011390755*. The type genome for the species is the GenBank assembly GCA_011390755.1. The GC content of the type genome is 47.59 %

and the genome length is 6.9 Mbp.

Description of *Candidatus* Invetida gen. nov.

Candidatus Invetida (NL. fem. n. *Invetida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABRU01*. The type species for the genus is *Candidatus* Invetida imbeligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invetula artolitia sp. nov.

Candidatus Invetula artolitia (NL. fem. n. *artolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDES01 sp013286935*. The type genome for the species is the GenBank assembly GCA_013286935.1. The GC content of the type genome is 39.83 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Invetula gen. nov.

Candidatus Invetula (NL. fem. n. *Invetula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDES01*. The type species for the genus is *Candidatus* Invetula artolitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invicaria cerofessa sp. nov.

Candidatus Invicaria cerofessa (NL. fem. n. *cerofessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCQK01 sp004321885*. The type genome for the species is the GenBank assembly GCA_004321885.1. The GC content of the type genome is 49.78 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Invicaria gen. nov.

Candidatus Invicaria (NL. fem. n. *Invicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCQK01*. The type species for the genus is *Candidatus* Invicaria cerofessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-37-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocariaceae.

Description of *Candidatus* Invicella admurentia sp. nov.

Candidatus Invicella admurentia (NL. fem. n. *admurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXUP01 sp013335935*. The type genome for the species is the GenBank assembly GCA_013335935.1. The GC content of the type genome is 41.36 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Invicella gen. nov.

Candidatus Invicella (NL. fem. n. *Invicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXUP01*. The type species for the genus is *Candidatus* Invicella admurentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invicia ciminitudo sp. nov.

Candidatus Invicia ciminitudo (NL. fem. n. *ciminitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUNI01 sp012799605*. The type genome for the species is the GenBank assembly GCA_012799605.1. The GC content of the type genome is 49.49 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Invicia gen. nov.

Candidatus Invicia (NL. fem. n. *Invicia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUNI01*. The type species for the genus is *Candidatus* Invicia ciminitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vaciliaceae.

Description of *Candidatus* Invicia rinocastra sp. nov.

Candidatus Invicia rinocastra (NL. fem. n. *rinocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUNI01 sp012837285*. The type genome for the species is the GenBank assembly GCA_012837285.1. The GC content of the type genome is 51.47 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Invicia saburitia sp. nov.

Candidatus Invicia saburitia (NL. fem. n. *saburitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUNI01 sp012839445*. The type genome for the species is the GenBank assembly GCA_012839445.1. The GC content of the type genome is 47.41 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Invicida obsigilenta sp. nov.

Candidatus Invicida obsigilenta (NL. fem. n. *obsigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-53-9 sp002791805*. The type genome for the species is the GenBank assembly GCA_002791805.1. The GC content of the type genome is 53.21 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Invicida gen. nov.

Candidatus Invicida (NL. fem. n. *Invicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-53-9*. The type species for the genus is *Candidatus* Invicida obsigilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6156*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenotidaceae.

Description of *Candidatus* Invicosa appecitas sp. nov.

Candidatus Invicosa appecitas (NL. fem. n. *appecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1267 sp902772745*. The type genome for the species is the GenBank assembly GCA_902772745.1. The GC content of the type genome is 53.59 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Invicosa gen. nov.

Candidatus Invicosa (NL. fem. n. *Invicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1267*. The type species for the genus is *Candidatus* Invicosa appecitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invicosa colapitudo sp. nov.

Candidatus Invicosa colapitudo (NL. fem. n. *colapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1267 sp002315555*. The type genome for the species is the GenBank assembly GCA_002315555.1. The GC content of the type genome is 52.57 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Invicosa decamisca sp. nov.

Candidatus Invicosa decamisca (NL. fem. n. *decamisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1267 sp902803345*. The type genome for the species is the GenBank assembly GCA_902803345.1. The GC content of the type genome is 52.62 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Invicosa depeligena sp. nov.

Candidatus Invicosa depeligena (NL. fem. n. *depeligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1267 sp902783795*. The type genome for the species is the GenBank assembly GCA_902783795.1. The GC content of the type genome is 49.54 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Invicosa effinax sp. nov.

Candidatus Invicosa effinax (NL. fem. n. *effinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1267 sp902803485*. The type genome for the species is the GenBank assembly GCA_902803485.1. The GC content of the type genome is 53.96 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Invicosa taxiletta sp. nov.

Candidatus Invicosa taxiletta (NL. fem. n. *taxiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1267 sp002315255*. The type genome for the species is the GenBank assembly GCA_002315255.1. The GC content of the type genome is 50.6 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Invicosa turicax sp. nov.

Candidatus Invicosa turicax (NL. fem. n. *turicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1267 sp902796795*. The type genome for the species is the GenBank assembly GCA_902796795.1. The GC content of the type genome is 57.8 %

and the genome length is 2.08 Mbp.

Description of *Candidatus* Invicosa xenoditudo sp. nov.

Candidatus Invicosa xenoditudo (NL. fem. n. *xenoditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1267 sp002308115*. The type genome for the species is the GenBank assembly GCA_002308115.1. The GC content of the type genome is 55.55 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Invicula offirilega sp. nov.

Candidatus Invicula offirilega (NL. fem. n. *offirilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B61-G2 sp003647605*. The type genome for the species is the GenBank assembly GCA_003647605.1. The GC content of the type genome is 38.14 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Invicula gen. nov.

Candidatus Invicula (NL. fem. n. *Invicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B61-G2*. The type species for the genus is *Candidatus* Invicula offirilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12405*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desurellaceae.

Description of *Candidatus* Invigaria cuticitas sp. nov.

Candidatus Invigaria cuticitas (NL. fem. n. *cuticitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2767 sp002897995*. The type genome for the species is the GenBank assembly GCA_002897995.1. The GC content of the type genome is 60.89 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Invigaria gen. nov.

Candidatus Invigaria (NL. fem. n. *Invigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2767*. The type species for the genus is *Candidatus* Invigaria cuticitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invigaria paracisca sp. nov.

Candidatus Invigaria paracisca (NL. fem. n. *paracisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2767 sp002352635*. The type genome for the species is the GenBank assembly GCA_002352635.1. The GC content of the type genome is 56.7 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Invigaria vivifastra sp. nov.

Candidatus Invigaria vivifastra (NL. fem. n. *vivifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2767 sp003228955*. The type genome for the species is the GenBank assembly GCA_003228955.1. The GC content of the type genome is 59.98 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Invigella ascelimonia sp. nov.

Candidatus Invigella ascelimonia (NL. fem. n. *ascelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GH1-50 sp009830125*. The type genome for the species is the GenBank assembly RS_GCF_009830125.1. The GC content of the type genome is 64.05 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Invigella gen. nov.

Candidatus Invigella (NL. fem. n. *Invigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GH1-50*. The type species for the genus is *Candidatus* Invigella ascelimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invigia ossicax sp. nov.

Candidatus Invigia ossicax (NL. fem. n. *ossicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOIA01 sp903858295*. The type genome for the species is the GenBank assembly GCA_903858295.1. The GC content of the type genome is 44.96 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Invigia gen. nov.

Candidatus Invigia (NL. fem. n. *Invigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOIA01*. The type species for the genus is *Candidatus* Invigia ossicax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malogiaceae.

Description of *Candidatus* Invigida oblivatica sp. nov.

Candidatus Invigida oblivatica (NL. fem. n. *oblivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Marseille-P3662 sp900178005*. The type genome for the species is the GenBank assembly RS_GCF_900178005.1. The GC content of the type genome is 41.69 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Invigida gen. nov.

Candidatus Invigida (NL. fem. n. *Invigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Marseille-P3662*. The type species for the genus is *Candidatus* Invigida oblivatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invigosa ecnepimonas sp. nov.

Candidatus Invigosa ecnepimonas (NL. fem. n. *ecnepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAHJWH01 sp009765965*. The type genome for the species is the GenBank assembly RS_GCF_009765965.1. The GC content of the type genome is 66.89 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Invigosa gen. nov.

Candidatus Invigosa (NL. fem. n. *Invigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAHJWH01*. The type species for the genus is *Candidatus* Invigosa ecnepimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invigosa vanidivita sp. nov.

Candidatus Invigosa vanidivita (NL. fem. n. *vanidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAHJWH01 sp903642205*. The type genome for the species is the GenBank assembly RS_GCF_903642205.1. The GC content of the type genome is 68.83 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Invigula indecastra sp. nov.

Candidatus Invigula indecastra (NL. fem. n. *indecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZJD01 sp012800525*. The type genome for the species is the

GenBank assembly GCA_012800525.1. The GC content of the type genome is 31.68 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Invigula gen. nov.

Candidatus Invigula (NL. fem. n. *Invigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZJD01*. The type species for the genus is *Candidatus* Invigula indecastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecariaceae.

Description of *Candidatus* Invigula ocissiforma sp. nov.

Candidatus Invigula ocissiforma (NL. fem. n. *ocissiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZJD01 sp012841525*. The type genome for the species is the GenBank assembly GCA_012841525.1. The GC content of the type genome is 29.46 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Invinana corocicula sp. nov.

Candidatus Invinana corocicula (NL. fem. n. *corocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFRW01 sp013140805*. The type genome for the species is the GenBank assembly GCA_013140805.1. The GC content of the type genome is 67.54 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Invinana gen. nov.

Candidatus Invinana (NL. fem. n. *Invinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFRW01*. The type species for the genus is *Candidatus* Invinana corocicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

RBG-16-71-46. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabidaceae.

Description of *Candidatus* Invinaria decamedo sp. nov.

Candidatus Invinaria decamedo (NL. fem. n. *decamedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-P03 sp003215295*. The type genome for the species is the GenBank assembly GCA_003215295.1. The GC content of the type genome is 41.4 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Invinaria gen. nov.

Candidatus Invinaria (NL. fem. n. *Invinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-P03*. The type species for the genus is *Candidatus* Invinaria decamedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invinella coninitas sp. nov.

Candidatus Invinella coninitas (NL. fem. n. *coninitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1109 sp900548675*. The type genome for the species is the GenBank assembly GCA_900548675.1. The GC content of the type genome is 30.79 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Invinella gen. nov.

Candidatus Invinella (NL. fem. n. *Invinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1109*. The type species for the genus is *Candidatus* Invinella coninitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Caliposaceae.

Description of *Candidatus* Invinia rinocitio sp. nov.

Candidatus Invinia rinocitio (NL. fem. n. *rinocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZFS01 sp012511615*. The type genome for the species is the GenBank assembly GCA_012511615.1. The GC content of the type genome is 41.08 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Invinia gen. nov.

Candidatus Invinia (NL. fem. n. *Invinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZFS01*. The type species for the genus is *Candidatus* Invinia rinocitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLGR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceruciaceae.

Description of *Candidatus* Invinida irreficella sp. nov.

Candidatus Invinida irreficella (NL. fem. n. *irreficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9639 sp003450735*. The type genome for the species is the GenBank assembly GCA_003450735.1. The GC content of the type genome is 67.93 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Invinida gen. nov.

Candidatus Invinida (NL. fem. n. *Invinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9639*. The type species for the genus is *Candidatus* Invinida irreficella .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA1565. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papiliaceae.

Description of *Candidatus* Invinosa irremastra sp. nov.

Candidatus Invinosa irremastra (NL. fem. n. *irremastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5073 sp002415845*. The type genome for the species is the GenBank assembly GCA_002415845.1. The GC content of the type genome is 40.99 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Invinosa gen. nov.

Candidatus Invinosa (NL. fem. n. *Invinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5073*. The type species for the genus is *Candidatus* Invinosa irremastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Invorana defenifica sp. nov.

Candidatus Invorana defenifica (NL. fem. n. *defenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWS01 sp011388425*. The type genome for the species is the GenBank assembly GCA_011388425.1. The GC content of the type genome is 60.18 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Invorana gen. nov.

Candidatus Invorana (NL. fem. n. *Invorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWS01*. The type species for the genus is *Candidatus* Invorana defenifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invoraria ignobitia sp. nov.

Candidatus Invoraria ignobitia (NL. fem. n. *ignobitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-B13 sp003216035*. The type genome for the species is the GenBank assembly GCA_003216035.1. The GC content of the type genome is 41.09 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Invoraria gen. nov.

Candidatus Invoraria (NL. fem. n. *Invoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-B13*. The type species for the genus is *Candidatus* Invoraria ignobitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Invoria scammimonia sp. nov.

Candidatus Invoria scammimonia (NL. fem. n. *scammimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7328 sp002471345*. The type genome for the species is the GenBank assembly GCA_002471345.1. The GC content of the type genome is 35.74 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Invoria gen. nov.

Candidatus Invoria (NL. fem. n. *Invoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7328*. The type species for the genus is *Candidatus* Invoria scammimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Iodidimonas tabitilenta sp. nov.

Candidatus Iodidimonas tabitilenta (NL. fem. n. *tabitilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Iodidimonas sp000710935*. The type genome for the species is the GenBank assembly RS_GCF_008579165.1. The GC content of the type genome is 56.13 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Iodobacter inoblitica sp. nov.

Candidatus Iodobacter inoblitica (NL. fem. n. *inoblitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Iodobacter sp002735645*. The type genome for the species is the GenBank assembly RS_GCF_002735645.1. The GC content of the type genome is 49.59 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Iodobacter mirabisca sp. nov.

Candidatus Iodobacter mirabisca (NL. fem. n. *mirabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Iodobacter sp000969645*. The type genome for the species is the GenBank assembly RS_GCF_000969645.2. The GC content of the type genome is 48.73 % and the genome length is 4.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Iodobacter tetenitas sp. nov.

Candidatus Iodobacter tetenitas (NL. fem. n. *tetenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Iodobacter sp011601265*. The type genome for the species is the GenBank assembly RS_GCF_011601265.1. The GC content of the type genome is 49.42 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Iodobacter vepalessa sp. nov.

Candidatus Iodobacter vepalessa (NL. fem. n. *vepalessa* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Iodobacter sp003952345*. The type genome for the species is the GenBank assembly RS_GCF_003952345.1. The GC content of the type genome is 48.04 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Irradana refulitas sp. nov.

Candidatus Irradana refulitas (NL. fem. n. *refulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-33-9 sp001804565*. The type genome for the species is the GenBank assembly GCA_001804565.1. The GC content of the type genome is 33.18 % and the genome length is 2.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Irradana gen. nov.

Candidatus Irradana (NL. fem. n. *Irradana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-33-9*. The type species for the genus is *Candidatus* Irradana refulitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Irradula inciventia sp. nov.

Candidatus Irradula inciventia (NL. fem. n. *inciventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKSG073 sp009711445*. The type genome for the species is the GenBank assembly RS_GCF_009711445.1. The GC content of the type genome is 42.24 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Irradula gen. nov.

Candidatus Irradula (NL. fem. n. *Irradula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RKSG073*. The type species for the genus is *Candidatus* Irradula inciventia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2696645*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubecidaceae.

Description of *Candidatus* Irrecana anastitrix sp. nov.

Candidatus Irrecana anastitrix (NL. fem. n. *anastitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA665 sp002299835*. The type genome for the species is the GenBank assembly GCA_002299835.1. The GC content of the type genome is 40.35 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Irrecana gen. nov.

Candidatus Irrecana (NL. fem. n. *Irrecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA665*. The type species for the genus is *Candidatus* Irrecana anastitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramosaceae.

Description of *Candidatus* Irrecella antevitura sp. nov.

Candidatus Irrecella antevitura (NL. fem. n. *antevitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002700125 sp002723375*. The type genome for the species is the GenBank assembly GCA_002723375.1. The GC content of the type genome is 31.99 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Irrecella gen. nov.

Candidatus Irrecella (NL. fem. n. *Irrecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002700125*. The type species for the genus is *Candidatus* Irrecella antevitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED-70*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipinanaceae.

Description of *Candidatus* Irrecella caselimonas sp. nov.

Candidatus Irrecella caselimonas (NL. fem. n. *caselimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002700125 sp002721675*. The type genome for the species is the GenBank assembly GCA_002721675.1. The GC content of the type genome is 32.7 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Irrecella defesiforma sp. nov.

Candidatus Irrecella defesiforma (NL. fem. n. *defesiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002700125 sp002702975*. The type genome for the species is the GenBank assembly GCA_002702975.1. The GC content of the type genome is 32.13 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Irrecella indepetta sp. nov.

Candidatus Irrecella indepetta (NL. fem. n. *indepetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002700125 sp009392285*. The type genome for the species is the GenBank assembly GCA_009392285.1. The GC content of the type genome is 33.4 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Irrecella ludifimonia sp. nov.

Candidatus Irrecella ludifimonia (NL. fem. n. *ludifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002700125 sp002727435*. The type genome for the species is the GenBank assembly GCA_002727435.1. The GC content of the type genome is 31.25 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Irrecella obrigimonia sp. nov.

Candidatus Irrecella obrigimonia (NL. fem. n. *obrigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002700125 sp013911545*. The type genome for the species is the GenBank assembly GCA_013911545.1. The GC content of the type genome is 31.74 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Irrecella pacifessa sp. nov.

Candidatus Irrecella pacifessa (NL. fem. n. *pacifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002700125 sp002700125*. The type genome for the species is the GenBank assembly GCA_002700125.1. The GC content of the type genome is 36.02 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Irrecella probletta sp. nov.

Candidatus Irrecella probletta (NL. fem. n. *probletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002700125 sp902620405*. The type genome for the species is the GenBank assembly GCA_902620405.1. The GC content of the type genome is 31.47 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Irrecella relapitio sp. nov.

Candidatus Irrecella relapitio (NL. fem. n. *relapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002700125 sp014239735*. The type genome for the species is the GenBank assembly GCA_014239735.1. The GC content of the type genome is 32.77 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Irrecia anatrax sp. nov.

Candidatus Irrecia anatrax (NL. fem. n. *anatrax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2705205 sp002705205*. The type genome for the species is the GenBank assembly GCA_002705205.1. The GC content of the type genome is 31.74 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Irrecia gen. nov.

Candidatus Irrecia (NL. fem. n. *Irrecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2705205*. The type species for the genus is *Candidatus* Irrecia anatrax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Irrecida agripitica sp. nov.

Candidatus Irrecida agripitica (NL. fem. n. *agripitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGU01 sp012727535*. The type genome for the species is the GenBank assembly GCA_012727535.1. The GC content of the type genome is 49.01 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Irrecida gen. nov.

Candidatus Irrecida (NL. fem. n. *Irrecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAAYGU01*. The type species for the genus is *Candidatus* Irrecida agripitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Valefulaceae.

Description of *Candidatus* Irrecosa inoblibula sp. nov.

Candidatus Irrecosa inoblibula (NL. fem. n. *inoblibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDEM01 sp013287085*. The type genome for the species is the GenBank assembly GCA_013287085.1. The GC content of the type genome is 38.19 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Irrecosa gen. nov.

Candidatus Irrecosa (NL. fem. n. *Irrecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDEM01*. The type species for the genus is *Candidatus* Irrecosa inoblibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Irrecula cicarifica sp. nov.

Candidatus Irrecula cicarifica (NL. fem. n. *cicarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6100 sp002423585*. The type genome for the species is the GenBank assembly GCA_002423585.1. The GC content of the type genome is 66.17 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Irrecula gen. nov.

Candidatus Irrecula (NL. fem. n. *Irrecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6100*. The type species for the genus is *Candidatus* Irrecula cicarifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2279*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depeciaceae.

Description of *Candidatus* Irrecula laculigena sp. nov.

Candidatus Irrecula laculigena (NL. fem. n. *laculigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6100 sp009668945*. The type genome for the species is the GenBank assembly GCA_009668945.1. The GC content of the type genome is 66.2 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Irredana adgesivita sp. nov.

Candidatus Irredana adgesivita (NL. fem. n. *adgesivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNNN01 sp013824245*. The type genome for the species is the GenBank assembly GCA_013824245.1. The GC content of the type genome is 39.97 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Irredana gen. nov.

Candidatus Irredana (NL. fem. n. *Irredana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNNN01*. The type species for the genus is *Candidatus* Irredana adgesivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-254*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cetarellaceae.

Description of *Candidatus* Irredaria navifago sp. nov.

Candidatus Irredaria navifago (NL. fem. n. *navifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4997 sp002398485*. The type genome for the species is the GenBank assembly GCA_002398485.1. The GC content of the type genome is 40.53 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Irredaria gen. nov.

Candidatus Irredaria (NL. fem. n. *Irredaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4997*. The type species for the genus is *Candidatus* Irredaria navifago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5755*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Figilulaceae.

Description of *Candidatus* Irredella anagnessa sp. nov.

Candidatus Irredella anagnessa (NL. fem. n. *anagnessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGG01 sp012735195*. The type genome for the species is the GenBank assembly GCA_012735195.1. The GC content of the type genome is 53.46 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Irredella gen. nov.

Candidatus Irredella (NL. fem. n. *Irredella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYGG01*. The type species for the genus is *Candidatus* Irredella anagnessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Valefulaceae.

Description of *Candidatus* Irredella solipugo sp. nov.

Candidatus Irredella solipugo (NL. fem. n. *solipugo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGG01 sp012839115*. The type genome for the species is the GenBank assembly GCA_012839115.1. The GC content of the type genome is 52.6 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Irredella subacitoga sp. nov.

Candidatus Irredella subacitoga (NL. fem. n. *subacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGG01 sp012727895*. The type genome for the species is the GenBank assembly GCA_012727895.1. The GC content of the type genome is 54.94 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Irredia infelitica sp. nov.

Candidatus Irredia infelitica (NL. fem. n. *infelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2861585 sp002861585*. The type genome for the species is the GenBank assembly GCA_002861585.1. The GC content of the type genome is 46.62 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Irredia gen. nov.

Candidatus Irredia (NL. fem. n. *Irredia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2861585*. The type species for the genus is *Candidatus* Irredia infelitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irredida resupitas sp. nov.

Candidatus Irredida resupitas (NL. fem. n. *resupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBBM01 sp005239725*. The type genome for the species is the GenBank assembly GCA_005239725.1. The GC content of the type genome is 44.06 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Irredida gen. nov.

Candidatus Irredida (NL. fem. n. *Irredida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBBM01*. The type species for the genus is *Candidatus* Irredida resupitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Irrefana depaciforma sp. nov.

Candidatus Irrefana depaciforma (NL. fem. n. *depaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-49-22b sp001823165*. The type genome for the species is the GenBank assembly GCA_001823165.1. The GC content of the type genome is 49.64 % and the genome length is 0.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Irrefana gen. nov.

Candidatus Irrefana (NL. fem. n. *Irrefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-49-22b*. The type species for the genus is *Candidatus* Irrefana depaciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxilidaceae.

Description of *Candidatus* Irrefaria adsulisca sp. nov.

Candidatus Irrefaria adsulisca (NL. fem. n. *adsulisca* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTE01 sp011390035*. The type genome for the species is the GenBank assembly GCA_011390035.1. The GC content of the type genome is 63.36 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Irrefaria gen. nov.

Candidatus Irrefaria (NL. fem. n. *Irrefaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABTE01*. The type species for the genus is *Candidatus* Irrefaria adsulisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrefia cimelessa sp. nov.

Candidatus Irrefia cimelessa (NL. fem. n. *cimelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs1 sp013215445*. The type genome for the species is the GenBank assembly GCA_013215445.1. The GC content of the type genome is 44.99 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Irrefia gen. nov.

Candidatus Irrefia (NL. fem. n. *Irrefia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Rs1*. The type species for the genus is *Candidatus* Irrefia cimelessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrefia dilacessa sp. nov.

Candidatus Irrefia dilacessa (NL. fem. n. *dilacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs1 sp000416315*. The type genome for the species is the GenBank assembly GCA_000416315.1. The GC content of the type genome is 45.15 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Irrefia estovifica sp. nov.

Candidatus Irrefia estovifica (NL. fem. n. *estovifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs1 sp013215505*. The type genome for the species is the GenBank assembly GCA_013215505.1. The GC content of the type genome is 45.16 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Irrefia ignicitas sp. nov.

Candidatus Irrefia ignicitas (NL. fem. n. *ignicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs1 sp002163025*. The type genome for the species is the GenBank assembly GCA_002163025.1. The GC content of the type genome is 45.79 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Irrefia inabrago sp. nov.

Candidatus Irrefia inabrago (NL. fem. n. *inabrago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs1 sp013215375*. The type genome for the species is the GenBank assembly GCA_013215375.1. The GC content of the type genome is 43.33 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Irrefia refacimonia sp. nov.

Candidatus Irrefia refacimonia (NL. fem. n. *refacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Rs1 sp000416275*. The type genome for the species is the GenBank assembly GCA_000416275.1. The GC content of the type genome is 43.43 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Irrefida emancicella sp. nov.

Candidatus Irrefida emancicella (NL. fem. n. *emancicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1494_A sp002713165*. The type genome for the species is the GenBank assembly GCA_002713165.1. The GC content of the type genome is 38.39 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Irrefida gen. nov.

Candidatus Irrefida (NL. fem. n. *Irrefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1494_A*. The type species for the genus is *Candidatus* Irrefida emancicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrefosa visifimonas sp. nov.

Candidatus Irrefosa visifimonas (NL. fem. n. *visifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUTQ01 sp012841995*. The type genome for the species is the GenBank assembly GCA_012841995.1. The GC content of the type genome is 36.56 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Irrefosa gen. nov.

Candidatus Irrefosa (NL. fem. n. *Irrefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUTQ01*. The type species for the genus is *Candidatus* Irrefosa visifimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irregana catapibula sp. nov.

Candidatus Irregana catapibula (NL. fem. n. *catapibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA945 sp900755905*. The type genome for the species is the GenBank assembly RS_GCF_900755905.1. The GC content of the type genome is 43.77 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Irregana gen. nov.

Candidatus Irregana (NL. fem. n. *Irregana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA945*. The type species for the genus is *Candidatus* Irregana catapibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irregana ecnepiforma sp. nov.

Candidatus Irregana ecnepiforma (NL. fem. n. *ecnepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA945 sp900549675*. The type genome for the species is the GenBank assembly GCA_900549675.1. The GC content of the type genome is 40.36 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Irregana entomibula sp. nov.

Candidatus Irregana entomibula (NL. fem. n. *entomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA945 sp900197595*. The type genome for the species is the GenBank assembly RS_GCF_900197595.1. The GC content of the type genome is 39.81 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Irregana inguritoga sp. nov.

Candidatus Irregana inguritoga (NL. fem. n. *inguritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA945 sp002293315*. The type genome for the species is the GenBank assembly GCA_002293315.1. The GC content of the type genome is 49.96 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Irregida nimirimonia sp. nov.

Candidatus Irregida nimirimonia (NL. fem. n. *nimirimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEDU01 sp902826155*. The type genome for the species is the GenBank assembly GCA_902826155.1. The GC content of the type genome is 64.96 % and the genome length is 7.78 Mbp.

Description of *Candidatus* Irregida gen. nov.

Candidatus Irregida (NL. fem. n. *Irregida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEDU01*. The type species for the genus is *Candidatus* Irregida nimirimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Irregosa attegitrix sp. nov.

Candidatus Irregosa attegitrix (NL. fem. n. *attegitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1430 sp013374835*. The type genome for the species is the GenBank assembly GCA_013374835.1. The GC content of the type genome is 38.03 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Irregosa gen. nov.

Candidatus Irregosa (NL. fem. n. *Irregosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1430*. The type species for the genus is *Candidatus* Irregosa

attegitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Irregosa malagilenta sp. nov.

Candidatus Irregosa malagilenta (NL. fem. n. *malagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1430 sp002329465*. The type genome for the species is the GenBank assembly GCA_002329465.1. The GC content of the type genome is 39.32 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Irrelaria latibibra sp. nov.

Candidatus Irrelaria latibibra (NL. fem. n. *latibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQVB01 sp009781815*. The type genome for the species is the GenBank assembly GCA_009781815.1. The GC content of the type genome is 43.15 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Irrelaria gen. nov.

Candidatus Irrelaria (NL. fem. n. *Irrelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQVB01*. The type species for the genus is *Candidatus* Irrelaria latibibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRAX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibulaceae.

Description of *Candidatus* Irrelella anagnicula sp. nov.

Candidatus Irrelella anagnicula (NL. fem. n. *anagnicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWAR01 sp002068715*. The type genome for the species is the GenBank assembly GCA_002068715.1. The GC content of the type genome is 60.43 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Irrelella gen. nov.

Candidatus Irrelella (NL. fem. n. *Irrelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWAR01*. The type species for the genus is *Candidatus* Irrelella anagnicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrelosa intecitoga sp. nov.

Candidatus Irrelosa intecitoga (NL. fem. n. *intecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5486 sp002427045*. The type genome for the species is the GenBank assembly GCA_002427045.1. The GC content of the type genome is 38.74 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Irrelosa gen. nov.

Candidatus Irrelosa (NL. fem. n. *Irrelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5486*. The type species for the genus is *Candidatus* Irrelosa intecitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Valefulaceae.

Description of *Candidatus* Irrelula holovimonas sp. nov.

Candidatus Irrelula holovimonas (NL. fem. n. *holovimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DUSO01 sp012842565*. The type genome for the species is the GenBank assembly GCA_012842565.1. The GC content of the type genome is 56.72 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Irrelula gen. nov.

Candidatus Irrelula (NL. fem. n. *Irrelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUSO01*. The type species for the genus is *Candidatus* Irrelula holovimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch115*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vituposaceae.

Description of *Candidatus* Irremana maledessa sp. nov.

Candidatus Irremana maledessa (NL. fem. n. *maledessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1001 sp002291875*. The type genome for the species is the GenBank assembly GCA_002291875.1. The GC content of the type genome is 69.34 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Irremana gen. nov.

Candidatus Irremana (NL. fem. n. *Irremana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1001*. The type species for the genus is *Candidatus* Irremana maledessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irremaria inreficella sp. nov.

Candidatus Irremaria inreficella (NL. fem. n. *inreficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEH01 sp011192195*. The type genome for the species is the

GenBank assembly GCA_011192195.1. The GC content of the type genome is 52.25 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Irremaria gen. nov.

Candidatus Irremaria (NL. fem. n. *Irremaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUEH01*. The type species for the genus is *Candidatus* Irremaria inreficella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4572-78*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bovicidaceae.

Description of *Candidatus* Irremella adnubousia sp. nov.

Candidatus Irremella adnubousia (NL. fem. n. *adnubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCZZ01 sp013288335*. The type genome for the species is the GenBank assembly GCA_013288335.1. The GC content of the type genome is 44.48 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Irremella gen. nov.

Candidatus Irremella (NL. fem. n. *Irremella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCZZ01*. The type species for the genus is *Candidatus* Irremella adnubousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXRF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatariaceae.

Description of *Candidatus* Irremella defulax sp. nov.

Candidatus Irremella defulax (NL. fem. n. *defulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JABCZZ01 sp013288985*. The type genome for the species is the GenBank assembly GCA_013288985.1. The GC content of the type genome is 48.36 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Irremella fumacatio sp. nov.

Candidatus Irremella fumacatio (NL. fem. n. *fumacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCZZ01 sp013289445*. The type genome for the species is the GenBank assembly GCA_013289445.1. The GC content of the type genome is 53.05 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Irremella hibisitudo sp. nov.

Candidatus Irremella hibisitudo (NL. fem. n. *hibisitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCZZ01 sp013286285*. The type genome for the species is the GenBank assembly GCA_013286285.1. The GC content of the type genome is 50.43 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Irremia insepessa sp. nov.

Candidatus Irremia insepessa (NL. fem. n. *insepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQZF01 sp009780885*. The type genome for the species is the GenBank assembly GCA_009780885.1. The GC content of the type genome is 59.68 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Irremia gen. nov.

Candidatus Irremia (NL. fem. n. *Irremia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQZF01*. The type species for the genus is *Candidatus* Irremia insepessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irremida pimenax sp. nov.

Candidatus Irremida pimenax (NL. fem. n. *pimenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077548 sp001464215*. The type genome for the species is the GenBank assembly GCA_001464215.1. The GC content of the type genome is 60.09 % and the genome length is 2.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Irremida gen. nov.

Candidatus Irremida (NL. fem. n. *Irremida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077548*. The type species for the genus is *Candidatus* Irremida pimenax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irremula infisitrix sp. nov.

Candidatus Irremula infisitrix (NL. fem. n. *infisitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *V1718 sp007993755*. The type genome for the species is the GenBank assembly RS_GCF_007993755.1. The GC content of the type genome is 55.21 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Irremula gen. nov.

Candidatus Irremula (NL. fem. n. *Irremula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *V1718*. The type species for the genus is *Candidatus* Irremula infisitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrevana vepalimonas sp. nov.

Candidatus Irrevana vepalimonas (NL. fem. n. *vepalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLT01 sp012799205*. The type genome for the species is the GenBank assembly GCA_012799205.1. The GC content of the type genome is 37.34 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Irrevana gen. nov.

Candidatus Irrevana (NL. fem. n. *Irrevana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZLT01*. The type species for the genus is *Candidatus* Irrevana vepalimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrevaria adordiforma sp. nov.

Candidatus Irrevaria adordiforma (NL. fem. n. *adordiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSQQ01 sp011370265*. The type genome for the species is the GenBank assembly GCA_011370265.1. The GC content of the type genome is 54.93 % and the genome length is 8.47 Mbp.

Description of *Candidatus* Irrevaria gen. nov.

Candidatus Irrevaria (NL. fem. n. *Irrevaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSQQ01*. The type species for the genus is *Candidatus* Irrevaria adordiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J111*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifariaceae.

Description of *Candidatus* Irrevaria holovetta sp. nov.

Candidatus Irrevaria holovetta (NL. fem. n. *holovetta* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSQQ01 sp012032575*. The type genome for the species is the GenBank assembly GCA_012032575.1. The GC content of the type genome is 54.41 % and the genome length is 7.92 Mbp.

Description of *Candidatus* Irrevia adporitio sp. nov.

Candidatus Irrevia adporitio (NL. fem. n. *adporitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSOI01 sp011054605*. The type genome for the species is the GenBank assembly GCA_011054605.1. The GC content of the type genome is 65.43 % and the genome length is 7.15 Mbp.

Description of *Candidatus* Irrevia gen. nov.

Candidatus Irrevia (NL. fem. n. *Irrevia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSOI01*. The type species for the genus is *Candidatus* Irrevia adporitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrevida adtumitudo sp. nov.

Candidatus Irrevida adtumitudo (NL. fem. n. *adtumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FS08-3 sp000830175*. The type genome for the species is the GenBank assembly GCA_000830175.1. The GC content of the type genome is 39.67 % and the genome length is 2.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sulfidic fissure spring - flowing".

Description of *Candidatus* Irrevida gen. nov.

Candidatus Irrevida (NL. fem. n. *Irrevida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *FS08-3*. The type species for the genus is *Candidatus* Irrevida adtumitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrevosa ensicitudo sp. nov.

Candidatus Irrevosa ensicitudo (NL. fem. n. *ensicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pla85-3-4 sp007751035*. The type genome for the species is the GenBank assembly RS_GCF_007751035.1. The GC content of the type genome is 61.45 % and the genome length is 9.57 Mbp.

Description of *Candidatus* Irrevosa gen. nov.

Candidatus Irrevosa (NL. fem. n. *Irrevosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pla85-3-4*. The type species for the genus is *Candidatus* Irrevosa ensicitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrevula milipitia sp. nov.

Candidatus Irrevula milipitia (NL. fem. n. *milipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-409-L14 sp003215545*. The type genome for the species is the GenBank assembly GCA_003215545.1. The GC content of the type genome is 38.58 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Irrevula gen. nov.

Candidatus Irrevula (NL. fem. n. *Irrevula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-409-L14*. The type species for the genus is *Candidatus* Irrevula milipitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrotana annifisca sp. nov.

Candidatus Irrotana annifisca (NL. fem. n. *annifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNKF01 sp013822285*. The type genome for the species is the GenBank assembly GCA_013822285.1. The GC content of the type genome is 67.94 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Irrotana gen. nov.

Candidatus Irrotana (NL. fem. n. *Irrotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNKF01*. The type species for the genus is *Candidatus* Irrotana annifisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrotana conibicula sp. nov.

Candidatus Irrotana conibicula (NL. fem. n. *conibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNKF01 sp011525845*. The type genome for the species is the GenBank assembly GCA_011525845.1. The GC content of the type genome is 71.38 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Irrotana conigisca sp. nov.

Candidatus Irrotana conigisca (NL. fem. n. *conigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNKF01 sp903906325*. The type genome for the species is the GenBank assembly GCA_903906325.1. The GC content of the type genome is 69.76 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Irrotana humecitas sp. nov.

Candidatus Irrotana humecitas (NL. fem. n. *humecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNKF01 sp902825965*. The type genome for the species is the GenBank assembly GCA_902825965.1. The GC content of the type genome is 69.99 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Irrotaria cenoticella sp. nov.

Candidatus Irrotaria cenoticella (NL. fem. n. *cenoticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXMG01 sp903920485*. The type genome for the species is the GenBank assembly GCA_903920485.1. The GC content of the type genome is 50.64 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Irrotaria gen. nov.

Candidatus Irrotaria (NL. fem. n. *Irrotaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXMG01*. The type species for the genus is *Candidatus* Irrotaria cenoticella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1006*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nehalulaceae.

Description of *Candidatus* Irrotaria regigilega sp. nov.

Candidatus Irrotaria regigilega (NL. fem. n. *regigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXMG01 sp903873095*. The type genome for the species is the GenBank assembly GCA_903873095.1. The GC content of the type genome is 39.34 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Irrotia innasitudo sp. nov.

Candidatus Irrotia innasitudo (NL. fem. n. *innasitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10424 sp003500165*. The type genome for the species is the GenBank assembly GCA_003500165.1. The GC content of the type genome is 68.3 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Irrotia gen. nov.

Candidatus Irrotia (NL. fem. n. *Irrotia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10424*. The type species for the genus is *Candidatus* Irrotia innasitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrotida fumifilenta sp. nov.

Candidatus Irrotida fumifilenta (NL. fem. n. *fumifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAAPH01 sp009908415*. The type genome for the species is the GenBank assembly GCA_009908415.1. The GC content of the type genome is 65.35 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Irrotida gen. nov.

Candidatus Irrotida (NL. fem. n. *Irrotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAAPH01*. The type species for the genus is *Candidatus* Irrotida fumifilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrotosa ceraritio sp. nov.

Candidatus Irrotosa ceraritio (NL. fem. n. *ceraritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMLC01 sp014379795*. The type genome for the species is the GenBank assembly GCA_014379795.1. The GC content of the type genome is 55.51 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Irrotosa gen. nov.

Candidatus Irrotosa (NL. fem. n. *Irrotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMLC01*. The type species for the genus is *Candidatus* Irrotosa ceraritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Irrotula adgesugo sp. nov.

Candidatus Irrotula adgesugo (NL. fem. n. *adgesugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUT01 sp012841405*. The type genome for the species is the GenBank assembly GCA_012841405.1. The GC content of the type genome is 66.74 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Irrotula gen. nov.

Candidatus Irrotula (NL. fem. n. *Irrotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUUT01*. The type species for the genus is *Candidatus* Irrotula adgesugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Isachenkonia decacatica sp. nov.

Candidatus Isachenkonia decacatica (NL. fem. n. *decacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Isachenkonia sp007118655*. The type genome for the species is the GenBank assembly GCA_007129015.1. The GC content of the type genome is 44.02 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Isachenkonia endivitura sp. nov.

Candidatus Isachenkonia endivitura (NL. fem. n. *endivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Isachenkonia sp007134725*. The type genome for the species is the GenBank assembly GCA_007134725.1. The GC content of the type genome is 41.95 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Isachenkonia pimenisca sp. nov.

Candidatus Isachenkonia pimenisca (NL. fem. n. *pimenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Isachenkonia sp003553525*. The type genome for the species is the GenBank assembly GCA_003553525.1. The GC content of the type genome is 42.02 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Isachenkonia rosacilega sp. nov.

Candidatus Isachenkonia rosacilega (NL. fem. n. *rosacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Isachenkonia sp007120165*. The type genome for the species is the GenBank assembly GCA_007120165.1. The GC content of the type genome is 43.79 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Isoptericola defanitura sp. nov.

Candidatus Isoptericola defanitura (NL. fem. n. *defanitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Isoptericola sp013085345*. The type genome for the species is the GenBank assembly RS_GCF_013085345.1. The GC content of the type genome is 73.03 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Isoptericola desoritura sp. nov.

Candidatus Isoptericola desoritura (NL. fem. n. *desoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Isoptericola sp009663185*. The type genome for the species is the GenBank assembly GCA_009663185.1. The GC content of the type genome is 72.13 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Isoptericola immobatica sp. nov.

Candidatus Isoptericola immobatica (NL. fem. n. *immobatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Isoptericola sp011634835*. The type genome for the species is the GenBank assembly RS_GCF_011634835.1. The GC content of the type genome is 73.99 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Isoscaria delubilenta sp. nov.

Candidatus Isoscaria delubilenta (NL. fem. n. *delubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLXB01 sp012103295*. The type genome for the species is the GenBank assembly GCA_012103295.1. The GC content of the type genome is 54.01 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Isoscaria gen. nov.

Candidatus Isoscaria (NL. fem. n. *Isoscaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLXB01*. The type species for the genus is *Candidatus* Isoscaria delubilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Isoscia artufivita sp. nov.

Candidatus Isoscia artufivita (NL. fem. n. *artufivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYCM01 sp012729765*. The type genome for the species is the GenBank assembly GCA_012729765.1. The GC content of the type genome is 64.19 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Isoscia gen. nov.

Candidatus Isoscia (NL. fem. n. *Isoscia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYCM01*. The type species for the genus is *Candidatus* Isoscia artufivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selibariaceae.

Description of *Candidatus* Isoscida curacilega sp. nov.

Candidatus Isoscida curacilega (NL. fem. n. *curacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746795 sp002746795*. The type genome for the species is the GenBank assembly GCA_002746795.1. The GC content of the type genome is 49.58 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Isoscida gen. nov.

Candidatus Isoscida (NL. fem. n. *Isoscida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746795*. The type species for the genus is *Candidatus* Isoscida curacilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Isoscosa adposibula sp. nov.

Candidatus Isoscosa adposibula (NL. fem. n. *adposibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFI01 sp011065125*. The type genome for the species is the GenBank assembly GCA_011065125.1. The GC content of the type genome is 26.37 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Isoscosa gen. nov.

Candidatus Isoscosa (NL. fem. n. *Isoscosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFI01*. The type species for the genus is *Candidatus* Isoscosa adposibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Istinana amatritio sp. nov.

Candidatus Istinana amatritio (NL. fem. n. *amatritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLYX01 sp009707705*. The type genome for the species is the GenBank assembly GCA_009707705.1. The GC content of the type genome is 57.35 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Istinana gen. nov.

Candidatus Istinana (NL. fem. n. *Istinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLYX01*. The type species for the genus is *Candidatus* Istinana amatritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Istinaria dupunimonia sp. nov.

Candidatus Istinaria dupunimonia (NL. fem. n. *dupunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B118-G9 sp003645845*. The type genome for the species is the GenBank assembly GCA_003645845.1. The GC content of the type genome is 44.52 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Istinaria gen. nov.

Candidatus Istinaria (NL. fem. n. *Istinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B118-G9*. The type species for the genus is *Candidatus* Istinaria dupunimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semunellaceae.

Description of *Candidatus* Istinaria tiguritio sp. nov.

Candidatus Istinaria tiguritio (NL. fem. n. *tiguritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B118-G9 sp011046365*. The type genome for the species is the GenBank assembly GCA_011046365.1. The GC content of the type genome is 48.06 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Istinella troclitia sp. nov.

Candidatus Istinella troclitia (NL. fem. n. *troclitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACCLK01 sp902546795*. The type genome for the species is the GenBank assembly GCA_902546795.1. The GC content of the type genome is 30.6 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Istinella gen. nov.

Candidatus Istinella (NL. fem. n. *Istinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACCLK01*. The type species for the genus is *Candidatus* Istinella

troclitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Istinia petulimonas sp. nov.

Candidatus Istinia petulimonas (NL. fem. n. *petulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMXF01 sp903845345*. The type genome for the species is the GenBank assembly GCA_903845345.1. The GC content of the type genome is 69.5 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Istinia gen. nov.

Candidatus Istinia (NL. fem. n. *Istinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMXF01*. The type species for the genus is *Candidatus* Istinia petulimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Istinia unetvitia sp. nov.

Candidatus Istinia unetvitia (NL. fem. n. *unetvitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMXF01 sp013289985*. The type genome for the species is the GenBank assembly GCA_013289985.1. The GC content of the type genome is 69.55 % and the genome length is 5.96 Mbp.

Description of *Candidatus* Istinula horomicula sp. nov.

Candidatus Istinula horomicula (NL. fem. n. *horomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746115 sp002746115*. The type genome for the species is the GenBank assembly GCA_002746115.1. The GC content of the type genome is 45.6 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Istinula gen. nov.

Candidatus Istinula (NL. fem. n. *Istinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746115*. The type species for the genus is *Candidatus* Istinula horomicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Izemoplasma abascedo sp. nov.

Candidatus Izemoplasma abascedo (NL. fem. n. *abascedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Izemoplasma_B sp000753575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000753575.1. The GC content of the type genome is 29.22 % and the genome length is 2.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "ocean sediment core sample 3730".

Description of *Candidatus* Izemoplasma casabedo sp. nov.

Candidatus Izemoplasma casabedo (NL. fem. n. *casabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Izemoplasma_B sp014023125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014023125.1. The GC content of the type genome is 38.21 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Izemoplasma homunicella sp. nov.

Candidatus Izemoplasma homunicella (NL. fem. n. *homunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Izemoplasma_B sp004195325*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004195325.1. The GC content of the type genome is 32.08 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Izemoplasma obsolentia sp. nov.

Candidatus Izemoplasma obsolentia (NL. fem. n. *obsolentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Izemoplasma_B sp000755705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000755705.1. The GC content of the type genome is 31.34 % and the genome length is 1.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "ocean floor sediment; ocean sediment core sample 5579".

Description of *Candidatus* Izemopslasma vecoriforma sp. nov.

Candidatus Izemopslasma vecoriforma (NL. fem. n. *vecoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Izemopslasma_C sp002285055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002285055.1. The GC content of the type genome is 29.56 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Izhakiella cacometta sp. nov.

Candidatus Izhakiella cacometta (NL. fem. n. *cacometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Izhakiella sp002752165*. The type genome for the species is the GenBank assembly RS_GCF_002751995.1. The GC content of the type genome is 51.86 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Janibacter pulegitudo sp. nov.

Candidatus Janibacter pulegitudo (NL. fem. n. *pulegitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janibacter sp001428305*. The type genome for the species is the GenBank assembly RS_GCF_001428305.1. The GC content of the type genome is 69.93 % and the genome length is 3.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Jannaschia conigessa sp. nov.

Candidatus Jannaschia conigessa (NL. fem. n. *conigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jannaschia sp013404595*. The type genome for the species is the GenBank assembly RS_GCF_013404595.1. The GC content of the type genome is 67.8 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Jannaschia depicatica sp. nov.

Candidatus Jannaschia depicatica (NL. fem. n. *depicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jannaschia sp003340555*. The type genome for the species is the GenBank assembly RS_GCF_003340555.1. The GC content of the type genome is 69.56 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Janthinobacterium abrelentia sp. nov.

Candidatus Janthinobacterium abrelentia (NL. fem. n. *abrelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002735705*. The type genome for the species is the GenBank assembly RS_GCF_002735705.1. The GC content of the type genome is 62.47 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Janthinobacterium adfabilenta sp. nov.

Candidatus Janthinobacterium adfabilenta (NL. fem. n. *adfabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002813325*. The type genome for the species is the GenBank assembly RS_GCF_002813325.1. The GC content of the type genome is 62.34 % and the genome length is 6.3 Mbp.

Description of *Candidatus* Janthinobacterium adgubitio sp. nov.

Candidatus Janthinobacterium adgubitio (NL. fem. n. *adgubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp003133225*. The type genome for the species is the GenBank assembly GCA_003133225.1. The GC content of the type genome is 57.73 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Janthinobacterium adpagitrix sp. nov.

Candidatus Janthinobacterium adpagitrix (NL. fem. n. *adpagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp009208735*. The type genome for the species is the GenBank assembly RS_GCF_009208735.1. The GC content of the type genome is 63.13 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Janthinobacterium bucelifica sp. nov.

Candidatus Janthinobacterium bucelifica (NL. fem. n. *bucelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp009208565*. The type genome for the species is the GenBank assembly RS_GCF_009208565.1. The GC content of the type genome is 61.64 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Janthinobacterium cibaritia sp. nov.

Candidatus Janthinobacterium cibaritia (NL. fem. n. *cibaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp001758725*. The type genome for the species is the GenBank assembly RS_GCF_001758725.1. The GC content of the type genome is 62.88 % and the genome length is 6.31 Mbp. The isolation source for the NCBI

BioSample associated with the type genome is descibed as "water rainwater-tap Botanic Garden Hamburg".

Description of *Candidatus* Janthinobacterium cituventia sp. nov.

Candidatus Janthinobacterium cituventia (NL. fem. n. *cituventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002127655*. The type genome for the species is the GenBank assembly RS_GCF_002127625.1. The GC content of the type genome is 62.92 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Janthinobacterium colapicella sp. nov.

Candidatus Janthinobacterium colapicella (NL. fem. n. *colapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002846335*. The type genome for the species is the GenBank assembly RS_GCF_004365495.1. The GC content of the type genome is 61.9 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Janthinobacterium coticibula sp. nov.

Candidatus Janthinobacterium coticibula (NL. fem. n. *coticibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp000344615*. The type genome for the species is the GenBank assembly RS_GCF_000344615.1. The GC content of the type genome is 65.54 % and the genome length is 6.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Janthinobacterium demagax sp. nov.

Candidatus Janthinobacterium demagax (NL. fem. n. *demagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002127585*. The type genome for the species is the GenBank assembly RS_GCF_002127585.1. The GC content of the type genome is 63.31 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Janthinobacterium desupicella sp. nov.

Candidatus Janthinobacterium desupicella (NL. fem. n. *desupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002250505*. The type genome for the species is the GenBank assembly RS_GCF_002250505.1. The GC content of the type genome is 62.59 % and the genome length is 6.39 Mbp.

Description of *Candidatus* Janthinobacterium divolitrix sp. nov.

Candidatus Janthinobacterium divolitrix (NL. fem. n. *divolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp900156175*. The type genome for the species is the GenBank assembly RS_GCF_900156175.1. The GC content of the type genome is 62.91 % and the genome length is 6.52 Mbp.

Description of *Candidatus* Janthinobacterium ensifitio sp. nov.

Candidatus Janthinobacterium ensifitio (NL. fem. n. *ensifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp001865675*. The type genome for the species is the GenBank assembly RS_GCF_001865675.1. The GC content of the type genome is 63.63 % and the genome length is 6.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil".

Description of *Candidatus* Janthinobacterium epiclitudo sp. nov.

Candidatus Janthinobacterium epiclitudo (NL. fem. n. *epiclitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002878455*. The type genome for the species is the GenBank assembly RS_GCF_002878455.1. The GC content of the type genome is 63.13 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Janthinobacterium faticago sp. nov.

Candidatus Janthinobacterium faticago (NL. fem. n. *faticago* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp000745325*. The type genome for the species is the GenBank assembly RS_GCF_000745325.1. The GC content of the type genome is 62.47 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Janthinobacterium fidenitas sp. nov.

Candidatus Janthinobacterium fidenitas (NL. fem. n. *fidenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002002885*. The type genome for the species is the GenBank assembly RS_GCF_002002885.1. The GC content of the type genome is 62.99 % and the genome length is 6.29 Mbp.

Description of *Candidatus* Janthinobacterium inmodastra sp. nov.

Candidatus Janthinobacterium inmodastra (NL. fem. n. *inmodastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp009923995*. The type genome for the species is the GenBank assembly GCA_009923995.1. The GC content of the type genome is 64.37 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Janthinobacterium invetitudo sp. nov.

Candidatus Janthinobacterium invetitudo (NL. fem. n. *invetitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp014379395*. The type genome for the species is the GenBank assembly GCA_014379395.1. The GC content of the type genome is 65.56 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Janthinobacterium lucifisca sp. nov.

Candidatus Janthinobacterium lucifisca (NL. fem. n. *lucifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002797895*. The type genome for the species is the GenBank assembly RS_GCF_900103595.1. The GC content of the type genome is 62.85 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Janthinobacterium maxumilega sp. nov.

Candidatus Janthinobacterium maxumilega (NL. fem. n. *maxumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp900112025*. The type genome for the species is the GenBank assembly RS_GCF_900112025.1. The GC content of the type genome is 63.7 % and the genome length is 6.44 Mbp.

Description of *Candidatus* Janthinobacterium nocenitrix sp. nov.

Candidatus Janthinobacterium nocenitrix (NL. fem. n. *nocenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp014200725*. The type genome for the species is the GenBank assembly RS_GCF_014200725.1. The GC content of the type genome is 59.81 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Janthinobacterium resuritura sp. nov.

Candidatus Janthinobacterium resuritura (NL. fem. n. *resuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp014200675*. The type genome for the species is the GenBank assembly RS_GCF_014200645.1. The GC content of the type genome is 60.24 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Janthinobacterium sicubifica sp. nov.

Candidatus Janthinobacterium sicubifica (NL. fem. n. *sicubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Janthinobacterium sp002869965*. The type genome for the species is the GenBank assembly RS_GCF_002869965.1. The GC content of the type genome is 62.0 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Jejuia adalgitica sp. nov.

Candidatus Jejuia adalgitica (NL. fem. n. *adalgitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jejuia sp014270105*. The type genome for the species is the GenBank assembly RS_GCF_014270105.1. The GC content of the type genome is 38.15 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Jejuia indepimonas sp. nov.

Candidatus Jejuia indepimonas (NL. fem. n. *indepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jejuia sp004310325*. The type genome for the species is the GenBank assembly RS_GCF_004310325.1. The GC content of the type genome is 34.99 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Jejuia obverilenta sp. nov.

Candidatus Jejuia obverilenta (NL. fem. n. *obverilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jejuia sp002428965*. The type genome for the species is the GenBank assembly GCA_002428965.1. The GC content of the type genome is 34.12 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Jeongeupia capuditas sp. nov.

Candidatus Jeongeupia capuditas (NL. fem. n. *capuditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jeongeupia sp001808185*. The type genome for the species is the GenBank assembly RS_GCF_001808185.1. The GC content of the type genome is 65.45 % and the genome length is 3.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil sample".

Description of *Candidatus* Jeotgalibacillus lametitia sp. nov.

Candidatus Jeotgalibacillus lametitia (NL. fem. n. *lametitia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jeotgalibacillus sp004358665*. The type genome for the species is the GenBank assembly RS_GCF_004358665.1. The GC content of the type genome is 41.41 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Jeotgalibacillus tirocifica sp. nov.

Candidatus Jeotgalibacillus tirocifica (NL. fem. n. *tirocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jeotgalibacillus sp004405105*. The type genome for the species is the GenBank assembly RS_GCF_004405105.1. The GC content of the type genome is 43.57 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Jeotgalicoccus cenotigena sp. nov.

Candidatus Jeotgalicoccus cenotigena (NL. fem. n. *cenotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jeotgalicoccus sp903994045*. The type genome for the species is the GenBank assembly RS_GCF_903994045.1. The GC content of the type genome is 36.04 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Jeotgalicoccus nucifitudo sp. nov.

Candidatus Jeotgalicoccus nucifitudo (NL. fem. n. *nucifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jeotgalicoccus sp003513765*. The type genome for the species is the GenBank assembly GCA_003513765.1. The GC content of the type genome is 40.75 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Jettenia absegitica sp. nov.

Candidatus Jettenia absegitica (NL. fem. n. *absegitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jettenia sp900696655*. The type genome for the species is the GenBank assembly GCA_900696655.1. The GC content of the type genome is 41.75 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Jiangella colipitura sp. nov.

Candidatus Jiangella colipitura (NL. fem. n. *colipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jiangella sp003427025*. The type genome for the species is the GenBank assembly RS_GCF_003427025.1. The GC content of the type genome is 72.34 % and the genome length is 7.85 Mbp.

Description of *Candidatus* Jiangella sifunax sp. nov.

Candidatus Jiangella sifunax (NL. fem. n. *sifunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jiangella sp003579925*. The type genome for the species is the GenBank assembly RS_GCF_003579925.1. The GC content of the type genome is 72.57 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Jidaibacter ecteniforma sp. nov.

Candidatus Jidaibacter ecteniforma (NL. fem. n. *ecteniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jidaibacter sp000730245*. The type genome for the species is the GenBank assembly RS_GCF_000730245.1. The GC content of the type genome is 34.76 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Jidaibacter latibigena sp. nov.

Candidatus Jidaibacter latibigena (NL. fem. n. *latibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jidaibacter sp014116815*. The type genome for the species is the GenBank assembly GCA_014116815.1. The GC content of the type genome is 34.3 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Jiella adorditia sp. nov.

Candidatus Jiella adorditia (NL. fem. n. *adorditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jiella sp010500815*. The type genome for the species is the GenBank assembly RS_GCF_010500815.1. The GC content of the type genome is 65.73 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Jiella citocitrix sp. nov.

Candidatus Jiella citocitrix (NL. fem. n. *citocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jiella sp002700095*. The type genome for the species is the GenBank assembly GCA_002700095.1. The GC content of the type genome is 67.04 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Jiella supelitia sp. nov.

Candidatus Jiella supelitia (NL. fem. n. *supelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Jiella sp002088275*. The type genome for the species is the GenBank assembly RS_GCF_002088275.1. The GC content of the type genome is 67.39 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Johnsonella semilitudo sp. nov.

Candidatus Johnsonella semilitudo (NL. fem. n. *semilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Johnsonella sp900766185*. The type genome for the species is the GenBank assembly GCA_900766185.1. The GC content of the type genome is 36.02 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Joostella utralibra sp. nov.

Candidatus Joostella utralibra (NL. fem. n. *utralibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Joostella sp013391805*. The type genome for the species is the GenBank assembly RS_GCF_013391805.1. The GC content of the type genome is 37.28 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Kaistella adpanilenta sp. nov.

Candidatus Kaistella adpanilenta (NL. fem. n. *adpanilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp001403755*. The type genome for the species is the GenBank assembly RS_GCF_001403755.1. The GC content of the type genome is 37.17 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Kaistella arnacastra sp. nov.

Candidatus Kaistella arnacastra (NL. fem. n. *arnacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp007362475*. The type genome for the species is the GenBank assembly RS_GCF_007362475.1. The GC content of the type genome is 35.21 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Kaistella buxifitrix sp. nov.

Candidatus Kaistella buxifitrix (NL. fem. n. *buxifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp008014695*. The type genome for the species is the GenBank assembly RS_GCF_008014695.1. The GC content of the type genome is 40.78 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Kaistella decitimonia sp. nov.

Candidatus Kaistella decitimonia (NL. fem. n. *decitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Kaistella sp013294015*. The type genome for the species is the GenBank assembly RS_GCF_013294015.1. The GC content of the type genome is 32.26 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Kaistella dilacitio sp. nov.

Candidatus Kaistella dilacitio (NL. fem. n. *dilacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp002477665*. The type genome for the species is the GenBank assembly GCA_002380565.1. The GC content of the type genome is 45.07 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Kaistella divulitrix sp. nov.

Candidatus Kaistella divulitrix (NL. fem. n. *divulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp003692615*. The type genome for the species is the GenBank assembly RS_GCF_003692615.1. The GC content of the type genome is 42.4 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Kaistella legifilenta sp. nov.

Candidatus Kaistella legifilenta (NL. fem. n. *legifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp000023725*. The type genome for the species is the GenBank assembly RS_GCF_000023725.1. The GC content of the type genome is 42.69 % and the genome length is 2.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "glacial ice; 3519 m depth".

Description of *Candidatus* Kaistella luculitio sp. nov.

Candidatus Kaistella luculitio (NL. fem. n. *luculitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp002197835*. The type genome for the species is the GenBank assembly RS_GCF_002197835.1. The GC content of the type genome is 39.6 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Kaistella nucifilenta sp. nov.

Candidatus Kaistella nucifilenta (NL. fem. n. *nucifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp002205795*. The type genome for the species is the GenBank assembly RS_GCF_002205795.1. The GC content of the type genome is 39.64 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Kaistella obtemax sp. nov.

Candidatus Kaistella obtemax (NL. fem. n. *obtemax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp002415135*. The type genome for the species is the GenBank assembly GCA_002415135.1. The GC content of the type genome is 35.68 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Kaistella opuscentia sp. nov.

Candidatus Kaistella opuscentia (NL. fem. n. *opuscentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp001898255*. The type genome for the species is the GenBank assembly GCA_001898255.1. The GC content of the type genome is 39.49 % and the genome length is 3.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Kaistella peneciforma sp. nov.

Candidatus Kaistella peneciforma (NL. fem. n. *peneciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp002454815*. The type genome for the species is the GenBank assembly GCA_002454815.1. The GC content of the type genome is 43.32 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Kaistella ranunilenta sp. nov.

Candidatus Kaistella ranunilenta (NL. fem. n. *ranunilenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp003860505*. The type genome for the species is the GenBank assembly RS_GCF_003860505.1. The GC content of the type genome is 39.87 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Kaistella redunibra sp. nov.

Candidatus Kaistella redunibra (NL. fem. n. *redunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp002453895*. The type genome for the species is the GenBank assembly GCA_002453895.1. The GC content of the type genome is 39.72 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Kaistella scintago sp. nov.

Candidatus Kaistella scintago (NL. fem. n. *scintago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp004359195*. The type genome for the species is the GenBank assembly RS_GCF_004359195.1. The GC content of the type genome is 37.52 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Kaistella visifugo sp. nov.

Candidatus Kaistella visifugo (NL. fem. n. *visifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kaistella sp002426785*. The type genome for the species is the GenBank assembly GCA_003536155.1. The GC content of the type genome is 36.93 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Kamptonema televax sp. nov.

Candidatus Kamptonema televax (NL. fem. n. *televax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kamptonema sp001698425*. The type genome for the species is the GenBank assembly GCA_001698425.1. The GC content of the type genome is 40.96 % and the genome length is 5.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "co-culture originated from a tropical freshwater lake".

Description of *Candidatus* Kangiella exaggitia sp. nov.

Candidatus Kangiella exaggitia (NL. fem. n. *exaggitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kangiella sp013373015*. The type genome for the species is the GenBank assembly GCA_013373015.1. The GC content of the type genome is 41.14 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Kangiella galacitio sp. nov.

Candidatus Kangiella galacitio (NL. fem. n. *galacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kangiella sp013372875*. The type genome for the species is the GenBank assembly GCA_013372875.1. The GC content of the type genome is 43.13 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Kangiella incocibra sp. nov.

Candidatus Kangiella incocibra (NL. fem. n. *incocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kangiella sp009674675*. The type genome for the species is the GenBank assembly RS_GCF_009674675.1. The GC content of the type genome is 39.5 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Kangiella verifugo sp. nov.

Candidatus Kangiella verifugo (NL. fem. n. *verifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kangiella sp003370465*. The type genome for the species is the

GenBank assembly GCA_003370465.1. The GC content of the type genome is 43.45 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Keratinibaculum infabitudo sp. nov.

Candidatus Keratinibaculum infabitudo (NL. fem. n. *infabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Keratinibaculum sp012728075*. The type genome for the species is the GenBank assembly GCA_012728075.1. The GC content of the type genome is 31.5 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Ketobacter abnoritica sp. nov.

Candidatus Ketobacter abnoritica (NL. fem. n. *abnoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ketobacter sp002701845*. The type genome for the species is the GenBank assembly GCA_002701845.1. The GC content of the type genome is 57.41 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Ketobacter ancepiforma sp. nov.

Candidatus Ketobacter ancepiforma (NL. fem. n. *ancepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ketobacter sp003671495*. The type genome for the species is the GenBank assembly GCA_003671495.1. The GC content of the type genome is 56.89 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Ketobacter catapitura sp. nov.

Candidatus Ketobacter catapitura (NL. fem. n. *catapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ketobacter sp002471665*. The type genome for the species is the GenBank assembly GCA_002701315.1. The GC content of the type genome is 54.29 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Ketobacter cemenivita sp. nov.

Candidatus Ketobacter cemenivita (NL. fem. n. *cemenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ketobacter sp003667185*. The type genome for the species is the GenBank assembly RS_GCF_009746715.1. The GC content of the type genome is 49.98 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Ketobacter denigibra sp. nov.

Candidatus Ketobacter denigibra (NL. fem. n. *denigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ketobacter sp002708905*. The type genome for the species is the GenBank assembly GCA_002708905.1. The GC content of the type genome is 52.7 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Kibdelosporangium casigax sp. nov.

Candidatus Kibdelosporangium casigax (NL. fem. n. *casigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kibdelosporangium sp001984155*. The type genome for the species is the GenBank assembly RS_GCF_001984155.1. The GC content of the type genome is 68.16 % and the genome length is 11.71 Mbp.

Description of *Candidatus* Kibdelosporangium cenodilenta sp. nov.

Candidatus Kibdelosporangium cenodilenta (NL. fem. n. *cenodilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kibdelosporangium sp000826545*. The type genome for the species is the GenBank assembly RS_GCF_000826545.1. The GC content of the type genome is 67.83 % and the genome length is 11.75 Mbp.

Description of *Candidatus* Kibdelosporangium detesatio sp. nov.

Candidatus Kibdelosporangium detesatio (NL. fem. n. *detesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kibdelosporangium sp000720375*. The type genome for the species is the GenBank assembly GCA_000720375.1. The GC content of the type genome is 66.28 % and the genome length is 12.42 Mbp.

Description of *Candidatus* Kibdelosporangium monoditia sp. nov.

Candidatus Kibdelosporangium monoditia (NL. fem. n. *monoditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kibdelosporangium sp013280595*. The type genome for the species is the GenBank assembly RS_GCF_013280595.1. The GC content of the type genome is 68.2 % and the genome length is 10.35 Mbp.

Description of *Candidatus* Kiloniella penecibra sp. nov.

Candidatus Kiloniella penecibra (NL. fem. n. *penecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kiloniella sp900313065*. The type genome for the species is the GenBank assembly RS_GCF_900313065.1. The GC content of the type genome is 45.1 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Kiloniella salubibra sp. nov.

Candidatus Kiloniella salubibra (NL. fem. n. *salubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kiloniella sp002162915*. The type genome for the species is the GenBank assembly GCA_002162915.1. The GC content of the type genome is 46.77 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Kineobactrum novilimonas sp. nov.

Candidatus Kineobactrum novilimonas (NL. fem. n. *novilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kineobactrum sp010669285*. The type genome for the species is the GenBank assembly RS_GCF_010669285.1. The GC content of the type genome is 60.68

% and the genome length is 4.65 Mbp.

Description of *Candidatus* Kineococcus impiritica sp. nov.

Candidatus Kineococcus impiritica (NL. fem. n. *impiritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kineococcus sp009906795*. The type genome for the species is the GenBank assembly RS_GCF_009906795.1. The GC content of the type genome is 75.1 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Kineococcus nucifitas sp. nov.

Candidatus Kineococcus nucifitas (NL. fem. n. *nucifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kineococcus sp009906315*. The type genome for the species is the GenBank assembly RS_GCF_009906315.1. The GC content of the type genome is 75.4 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Kineothrix benifetta sp. nov.

Candidatus Kineothrix benifetta (NL. fem. n. *benifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kineothrix sp000403275*. The type genome for the species is the GenBank assembly RS_GCF_000403275.1. The GC content of the type genome is 45.08 % and the genome length is 4.28 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Kineothrix funivifica sp. nov.

Candidatus Kineothrix funivifica (NL. fem. n. *funivifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kineothrix sp012520655*. The type genome for the species is the GenBank assembly GCA_012520655.1. The GC content of the type genome is 41.56 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Kineothrix inmutax sp. nov.

Candidatus Kineothrix inmutax (NL. fem. n. *inmutax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kineothrix sp009911195*. The type genome for the species is the GenBank assembly RS_GCF_009911195.1. The GC content of the type genome is 44.35 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Kineothrix lametigena sp. nov.

Candidatus Kineothrix lametigena (NL. fem. n. *lametigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kineothrix sp011958945*. The type genome for the species is the GenBank assembly GCA_009774675.1. The GC content of the type genome is 44.08 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Kineothrix tegumessa sp. nov.

Candidatus Kineothrix tegumessa (NL. fem. n. *tegumessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kineothrix sp003488965*. The type genome for the species is the GenBank assembly GCA_003488965.1. The GC content of the type genome is 43.82 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Kistimonas conigedo sp. nov.

Candidatus Kistimonas conigedo (NL. fem. n. *conigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kistimonas sp002238585*. The type genome for the species is the GenBank assembly GCA_002238585.1. The GC content of the type genome is 57.27 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Kitasatospora anastitas sp. nov.

Candidatus Kitasatospora anastitas (NL. fem. n. *anastitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp900105395*. The type genome for the species is the GenBank assembly RS_GCF_900105395.1. The GC content of the type genome is 73.63 % and the genome length is 9.9 Mbp.

Description of *Candidatus* Kitasatospora benivitia sp. nov.

Candidatus Kitasatospora benivitia (NL. fem. n. *benivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp002813165*. The type genome for the species is the GenBank assembly RS_GCF_002813165.1. The GC content of the type genome is 74.04 % and the genome length is 8.33 Mbp.

Description of *Candidatus* Kitasatospora canaciforma sp. nov.

Candidatus Kitasatospora canaciforma (NL. fem. n. *canaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp900199205*. The type genome for the species is the GenBank assembly RS_GCF_900199205.1. The GC content of the type genome is 72.9 % and the genome length is 8.43 Mbp.

Description of *Candidatus* Kitasatospora cuferitura sp. nov.

Candidatus Kitasatospora cuferitura (NL. fem. n. *cuferitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp000719695*. The type genome for the species is the GenBank assembly RS_GCF_000719695.1. The GC content of the type genome is 73.78 % and the genome length is 9.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "lake soil with Philodendrom oxycardium".

Description of *Candidatus* Kitasatospora debuciforma sp. nov.

Candidatus Kitasatospora debuciforma (NL. fem. n. *debuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Kitasatospora sp001625365*. The type genome for the species is the GenBank assembly RS_GCF_001625365.1. The GC content of the type genome is 72.82 % and the genome length is 9.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Kitasatospora decenousia sp. nov.

Candidatus Kitasatospora decenousia (NL. fem. n. *decenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp001424875*. The type genome for the species is the GenBank assembly RS_GCF_001424875.1. The GC content of the type genome is 71.42 % and the genome length is 8.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Kitasatospora enharilega sp. nov.

Candidatus Kitasatospora enharilega (NL. fem. n. *enharilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp002943525*. The type genome for the species is the GenBank assembly RS_GCF_002943525.1. The GC content of the type genome is 72.74 % and the genome length is 8.96 Mbp.

Description of *Candidatus* Kitasatospora excamatica sp. nov.

Candidatus Kitasatospora excamatica (NL. fem. n. *excamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp002813365*. The type genome for the species is the GenBank assembly RS_GCF_002813365.1. The GC content of the type genome is 73.11 % and the genome length is 8.81 Mbp.

Description of *Candidatus* Kitasatospora funebugo sp. nov.

Candidatus Kitasatospora funebugo (NL. fem. n. *funebugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp000717715*. The type genome for the species is the GenBank assembly RS_GCF_000717715.1. The GC content of the type genome is 73.81

% and the genome length is 8.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "ocean water".

Description of *Candidatus* Kitasatospora haricetta sp. nov.

Candidatus Kitasatospora haricetta (NL. fem. n. *haricetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp002754615*. The type genome for the species is the GenBank assembly RS_GCF_002754615.1. The GC content of the type genome is 73.24 % and the genome length is 8.4 Mbp.

Description of *Candidatus* Kitasatospora inrepiforma sp. nov.

Candidatus Kitasatospora inrepiforma (NL. fem. n. *inrepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp002300355*. The type genome for the species is the GenBank assembly RS_GCF_002300355.1. The GC content of the type genome is 73.05 % and the genome length is 9.25 Mbp.

Description of *Candidatus* Kitasatospora lanugentia sp. nov.

Candidatus Kitasatospora lanugentia (NL. fem. n. *lanugentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp000719705*. The type genome for the species is the GenBank assembly RS_GCF_000719705.1. The GC content of the type genome is 73.05 % and the genome length is 8.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Kitasatospora letifago sp. nov.

Candidatus Kitasatospora letifago (NL. fem. n. *letifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp002846355*. The type genome for the species is the GenBank assembly RS_GCF_002846355.1. The GC content of the type genome is 71.54 % and the genome length is 8.96 Mbp.

Description of *Candidatus* Kitasatospora malifigena sp. nov.

Candidatus Kitasatospora malifigena (NL. fem. n. *malifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp002953255*. The type genome for the species is the GenBank assembly RS_GCF_008107605.1. The GC content of the type genome is 73.15 % and the genome length is 12.36 Mbp.

Description of *Candidatus* Kitasatospora nitelitura sp. nov.

Candidatus Kitasatospora nitelitura (NL. fem. n. *nitelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp001905465*. The type genome for the species is the GenBank assembly RS_GCF_001905465.1. The GC content of the type genome is 72.86 % and the genome length is 7.65 Mbp.

Description of *Candidatus* Kitasatospora recucedo sp. nov.

Candidatus Kitasatospora recucedo (NL. fem. n. *recucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp001905545*. The type genome for the species is the GenBank assembly RS_GCF_003435025.1. The GC content of the type genome is 73.47 % and the genome length is 9.69 Mbp.

Description of *Candidatus* Kitasatospora rinocitas sp. nov.

Candidatus Kitasatospora rinocitas (NL. fem. n. *rinocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp014596465*. The type genome for the species is the GenBank assembly RS_GCF_014596465.1. The GC content of the type genome is 72.84 % and the genome length is 9.74 Mbp.

Description of *Candidatus* Kitasatospora sacomitoga sp. nov.

Candidatus Kitasatospora sacomitoga (NL. fem. n. *sacomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp000720635*. The type genome for the species is the GenBank assembly RS_GCF_000720635.1. The GC content of the type genome is 72.8 % and the genome length is 8.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Kitasatospora senipitas sp. nov.

Candidatus Kitasatospora senipitas (NL. fem. n. *senipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp014596515*. The type genome for the species is the GenBank assembly RS_GCF_014596515.1. The GC content of the type genome is 73.03 % and the genome length is 9.17 Mbp.

Description of *Candidatus* Kitasatospora tabifitudo sp. nov.

Candidatus Kitasatospora tabifitudo (NL. fem. n. *tabifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kitasatospora sp013364235*. The type genome for the species is the GenBank assembly RS_GCF_013364235.1. The GC content of the type genome is 74.06 % and the genome length is 8.4 Mbp.

Description of *Candidatus* Klenkia artilitura sp. nov.

Candidatus Klenkia artilitura (NL. fem. n. *artilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Klenkia sp001424485*. The type genome for the species is the GenBank assembly RS_GCF_001424485.1. The GC content of the type genome is 74.2 % and the genome length is 4.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Klenkia feculago sp. nov.

Candidatus Klenkia feculago (NL. fem. n. *feculago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Klenkia sp009296285*. The type genome for the species is the GenBank assembly RS_GCF_010685995.1. The GC content of the type genome is 74.63 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Klenkia metucatio sp. nov.

Candidatus Klenkia metucatio (NL. fem. n. *metucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Klenkia sp001424455*. The type genome for the species is the GenBank assembly RS_GCF_001424455.1. The GC content of the type genome is 74.04 % and the genome length is 4.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Kluyvera tumefatio sp. nov.

Candidatus Kluyvera tumefatio (NL. fem. n. *tumefatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kluyvera sp902363335*. The type genome for the species is the GenBank assembly RS_GCF_902363335.1. The GC content of the type genome is 52.88 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Knoellia brasmetta sp. nov.

Candidatus Knoellia brasmetta (NL. fem. n. *brasmetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Knoellia sp000152705*. The type genome for the species is the GenBank assembly RS_GCF_000152705.1. The GC content of the type genome is 68.44 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Knoellia umbilibra sp. nov.

Candidatus Knoellia umbilibra (NL. fem. n. *umbilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Knoellia sp001427985*. The type genome for the species is the

GenBank assembly RS_GCF_001427985.1. The GC content of the type genome is 69.89 % and the genome length is 3.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Kocuria semapedo sp. nov.

Candidatus Kocuria semapedo (NL. fem. n. *semapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kocuria sp003226895*. The type genome for the species is the GenBank assembly RS_GCF_003226895.2. The GC content of the type genome is 70.83 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Kocuria veridisca sp. nov.

Candidatus Kocuria veridisca (NL. fem. n. *veridisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kocuria sp003797835*. The type genome for the species is the GenBank assembly RS_GCF_003797835.1. The GC content of the type genome is 67.02 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Kordia apsolentia sp. nov.

Candidatus Kordia apsolentia (NL. fem. n. *apsolentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kordia sp003352465*. The type genome for the species is the GenBank assembly RS_GCF_003352465.1. The GC content of the type genome is 35.6 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Kordia apsolitura sp. nov.

Candidatus Kordia apsolitura (NL. fem. n. *apsolitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kordia sp014397005*. The type genome for the species is the GenBank assembly RS_GCF_014397005.1. The GC content of the type genome is 34.06 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Kordia monimivita sp. nov.

Candidatus Kordia monimivita (NL. fem. n. *monimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kordia sp006383075*. The type genome for the species is the GenBank assembly GCA_006383075.2. The GC content of the type genome is 35.83 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Kordiimonas advoricula sp. nov.

Candidatus Kordiimonas advoricula (NL. fem. n. *advoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kordiimonas sp013372975*. The type genome for the species is the GenBank assembly GCA_013372975.1. The GC content of the type genome is 53.68 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Kordiimonas bigemax sp. nov.

Candidatus Kordiimonas bigemax (NL. fem. n. *bigemax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kordiimonas sp002401685*. The type genome for the species is the GenBank assembly GCA_002401685.1. The GC content of the type genome is 50.76 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Kordiimonas ecfunitia sp. nov.

Candidatus Kordiimonas ecfunitia (NL. fem. n. *ecfunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kordiimonas sp013372925*. The type genome for the species is the GenBank assembly GCA_013372925.1. The GC content of the type genome is 54.01 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Kordiimonas medimitia sp. nov.

Candidatus Kordiimonas medimitia (NL. fem. n. *medimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kordiimonas sp011088215*. The type genome for the species is the GenBank assembly GCA_011088215.1. The GC content of the type genome is 51.23 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Kordiimonas octodifica sp. nov.

Candidatus Kordiimonas octodifica (NL. fem. n. *octodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kordiimonas sp006226495*. The type genome for the species is the GenBank assembly GCA_006226495.1. The GC content of the type genome is 61.13 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Kordiimonas oppanugo sp. nov.

Candidatus Kordiimonas oppanugo (NL. fem. n. *oppanugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kordiimonas sp014238195*. The type genome for the species is the GenBank assembly GCA_014238195.1. The GC content of the type genome is 45.25 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Koribacter absegigena sp. nov.

Candidatus Koribacter absegigena (NL. fem. n. *absegigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Koribacter sp003151155*. The type genome for the species is the GenBank assembly GCA_003151155.1. The GC content of the type genome is 57.06 % and the genome length is 5.71 Mbp.

Description of *Candidatus* Kosakonia accomivita sp. nov.

Candidatus Kosakonia accomivita (NL. fem. n. *accomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Kosakonia sp014490785*. The type genome for the species is the GenBank assembly RS_GCF_014490785.1. The GC content of the type genome is 54.91 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Kosakonia bicinitura sp. nov.

Candidatus Kosakonia bicinitura (NL. fem. n. *bicinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kosakonia sp002886105*. The type genome for the species is the GenBank assembly GCA_002886105.1. The GC content of the type genome is 54.56 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Kosakonia defasax sp. nov.

Candidatus Kosakonia defasax (NL. fem. n. *defasax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kosakonia sp000410515*. The type genome for the species is the GenBank assembly RS_GCF_009914275.1. The GC content of the type genome is 53.87 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Kosakonia inexcilega sp. nov.

Candidatus Kosakonia inexcilega (NL. fem. n. *inexcilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kosakonia sp000814905*. The type genome for the species is the GenBank assembly RS_GCF_000814905.1. The GC content of the type genome is 53.62 % and the genome length is 4.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Kosmotoga semibibula sp. nov.

Candidatus Kosmotoga semibibula (NL. fem. n. *semibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kosmotoga_B sp003643975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_003643975.1. The GC content of the type genome is 41.32 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Kribbella adnecentia sp. nov.

Candidatus Kribbella adnecentia (NL. fem. n. *adnecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp005233875*. The type genome for the species is the GenBank assembly RS_GCF_005233875.1. The GC content of the type genome is 68.03 % and the genome length is 8.66 Mbp.

Description of *Candidatus* Kribbella adnubitio sp. nov.

Candidatus Kribbella adnubitio (NL. fem. n. *adnubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004216905*. The type genome for the species is the GenBank assembly RS_GCF_004216905.1. The GC content of the type genome is 68.13 % and the genome length is 8.43 Mbp.

Description of *Candidatus* Kribbella camilitica sp. nov.

Candidatus Kribbella camilitica (NL. fem. n. *camilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp001984195*. The type genome for the species is the GenBank assembly RS_GCF_001984195.1. The GC content of the type genome is 69.79 % and the genome length is 8.1 Mbp.

Description of *Candidatus* Kribbella cuferax sp. nov.

Candidatus Kribbella cuferax (NL. fem. n. *cuferax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004331485*. The type genome for the species is the GenBank assembly RS_GCF_004331485.1. The GC content of the type genome is 68.27 % and the genome length is 8.83 Mbp.

Description of *Candidatus* Kribbella curotitia sp. nov.

Candidatus Kribbella curotitia (NL. fem. n. *curotitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004342025*. The type genome for the species is the GenBank assembly RS_GCF_004342025.1. The GC content of the type genome is 68.07 % and the genome length is 9.15 Mbp.

Description of *Candidatus* Kribbella democitura sp. nov.

Candidatus Kribbella democitura (NL. fem. n. *democitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004365355*. The type genome for the species is the GenBank assembly RS_GCF_004365355.1. The GC content of the type genome is 68.09 % and the genome length is 8.37 Mbp.

Description of *Candidatus* Kribbella genocilenta sp. nov.

Candidatus Kribbella genocilenta (NL. fem. n. *genocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004345365*. The type genome for the species is the GenBank assembly RS_GCF_004342085.1. The GC content of the type genome is 68.47 % and the genome length is 9.19 Mbp.

Description of *Candidatus* Kribbella hiruditas sp. nov.

Candidatus Kribbella hiruditas (NL. fem. n. *hiruditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004345665*. The type genome for the species is the GenBank assembly RS_GCF_004345665.1. The GC content of the type genome is 67.75 % and the genome length is 8.1 Mbp.

Description of *Candidatus* Kribbella inlepitica sp. nov.

Candidatus Kribbella inlepitica (NL. fem. n. *inlepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004365175*. The type genome for the species is the GenBank assembly RS_GCF_004365175.1. The GC content of the type genome is 68.2 % and the genome length is 8.03 Mbp.

Description of *Candidatus* Kribbella lacinousia sp. nov.

Candidatus Kribbella lacinousia (NL. fem. n. *lacinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp003261635*. The type genome for the species is the GenBank assembly RS_GCF_003261635.1. The GC content of the type genome is 67.82 % and the genome length is 8.03 Mbp.

Description of *Candidatus* Kribbella ludibifica sp. nov.

Candidatus Kribbella ludibifica (NL. fem. n. *ludibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp010548305*. The type genome for the species is the GenBank assembly RS_GCF_010548305.1. The GC content of the type genome is 67.68 % and the genome length is 8.52 Mbp.

Description of *Candidatus* Kribbella lutulugo sp. nov.

Candidatus Kribbella lutulugo (NL. fem. n. *lutulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004361855*. The type genome for the species is the GenBank assembly RS_GCF_004361855.1. The GC content of the type genome is 67.96 % and the genome length is 9.46 Mbp.

Description of *Candidatus* Kribbella murelimonas sp. nov.

Candidatus Kribbella murelimonas (NL. fem. n. *murelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004348725*. The type genome for the species is the GenBank assembly RS_GCF_004348725.1. The GC content of the type genome is 69.39

% and the genome length is 7.45 Mbp.

Description of *Candidatus* Kribbella remedetta sp. nov.

Candidatus Kribbella remedetta (NL. fem. n. *remedetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004366075*. The type genome for the species is the GenBank assembly RS_GCF_004366005.1. The GC content of the type genome is 68.22 % and the genome length is 8.67 Mbp.

Description of *Candidatus* Kribbella subaditica sp. nov.

Candidatus Kribbella subaditica (NL. fem. n. *subaditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kribbella sp004365875*. The type genome for the species is the GenBank assembly RS_GCF_004365875.1. The GC content of the type genome is 67.64 % and the genome length is 8.32 Mbp.

Description of *Candidatus* Krumholzibacterium adhinigena sp. nov.

Candidatus Krumholzibacterium adhinigena (NL. fem. n. *adhinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Krumholzibacterium sp003369535*. The type genome for the species is the GenBank assembly GCA_003369535.1. The GC content of the type genome is 50.88 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Kurthia tumeficella sp. nov.

Candidatus Kurthia tumeficella (NL. fem. n. *tumeficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kurthia sp002418445*. The type genome for the species is the GenBank assembly GCA_002418445.1. The GC content of the type genome is 39.29 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Kushneria lucubimonia sp. nov.

Candidatus Kushneria lucubimonia (NL. fem. n. *lucubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kushneria sp001854625*. The type genome for the species is the GenBank assembly RS_GCF_001854625.1. The GC content of the type genome is 59.13 % and the genome length is 3.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "36% salinity surface water".

Description of *Candidatus* Kutzneria armificella sp. nov.

Candidatus Kutzneria armificella (NL. fem. n. *armificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Kutzneria sp000568255*. The type genome for the species is the GenBank assembly RS_GCF_000568255.1. The GC content of the type genome is 69.81 % and the genome length is 11.65 Mbp.

Description of *Candidatus* Labecana vitabugo sp. nov.

Candidatus Labecana vitabugo (NL. fem. n. *vitabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2011-GWA2-47-8b sp001003205*. The type genome for the species is the GenBank assembly GCA_001003205.1. The GC content of the type genome is 47.39 % and the genome length is 0.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Labecana gen. nov.

Candidatus Labecana (NL. fem. n. *Labecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2011-GWA2-47-8b*. The type species for the genus is *Candidatus* Labecana vitabugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WO2-44-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinacellaceae.

Description of *Candidatus* Labecaria alcibimonia sp. nov.

Candidatus Labecaria alcibimonia (NL. fem. n. *alcibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E29-bin54 sp004376695*. The type genome for the species is the GenBank assembly GCA_004376695.1. The GC content of the type genome is 53.15 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Labecaria gen. nov.

Candidatus Labecaria (NL. fem. n. *Labecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E29-bin54*. The type species for the genus is *Candidatus* Labecaria alcibimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Labecaria beneviforma sp. nov.

Candidatus Labecaria beneviforma (NL. fem. n. *beneviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E29-bin54 sp003556385*. The type genome for the species is the GenBank assembly GCA_003567995.1. The GC content of the type genome is 58.16 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Labecaria cocibedo sp. nov.

Candidatus Labecaria cocibedo (NL. fem. n. *cocibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E29-bin54 sp003567655*. The type genome for the species is the GenBank assembly GCA_003567655.1. The GC content of the type genome is 54.8 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Labecaria diluvilega sp. nov.

Candidatus Labecaria diluvilega (NL. fem. n. *diluvilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E29-bin54 sp003552465*. The type genome for the species is the GenBank assembly GCA_003552465.1. The GC content of the type genome is 57.96 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Labecella omninilenta sp. nov.

Candidatus Labecella omninilenta (NL. fem. n. *omninilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-24 sp001303185*. The type genome for the species is the GenBank assembly GCA_001303185.1. The GC content of the type genome is 61.52 % and the genome length is 1.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-rich zone estuary sediments 8-12 cm".

Description of *Candidatus* Labecella gen. nov.

Candidatus Labecella (NL. fem. n. *Labecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG8-24*. The type species for the genus is *Candidatus* Labecella omninilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Labecellaceae.

Description of *Candidatus* Labecellaceae fam. nov.

Candidatus Labecellaceae (NL. fem. n. *Labecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SG8-24.* The type genus for the taxon is *Candidatus* Labecella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Labecellales ord. nov.

Candidatus Labecellales (NL. fem. n. *Labecellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SG8-24.* The type genus for the taxon is *Candidatus* Labecella .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Labecia cisorugo sp. nov.

Candidatus Labecia cisorugo (NL. fem. n. *cisorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-42 sp001303785*. The type genome for the species is the GenBank assembly GCA_001303785.1. The GC content of the type genome is 46.25 % and the genome length is 2.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Labecia gen. nov.

Candidatus Labecia (NL. fem. n. *Labecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-42*. The type species for the genus is *Candidatus* Labecia cisorugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-42*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Labeciaceae.

Description of *Candidatus* Labeciaceae fam. nov.

Candidatus Labeciaceae (NL. fem. n. *Labeciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-42.* The type genus for the taxon is *Candidatus* Labecia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-42*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labeciales.

Description of *Candidatus* Labeciales ord. nov.

Candidatus Labeciales (NL. fem. n. *Labeciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-42*. The type genus for the taxon is *Candidatus* Labecia .

According to the original version of GTDB R06-RS202, this family belongs to the class *WOR-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Tigurariae.

Description of *Candidatus* Labecida lugubiforma sp. nov.

Candidatus Labecida lugubiforma (NL. fem. n. *lugubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1135 sp003142295*. The type genome for the species is the GenBank assembly GCA_003142295.1. The GC content of the type genome is 48.0 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Labecida gen. nov.

Candidatus Labecida (NL. fem. n. *Labecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1135*. The type species for the genus is *Candidatus* Labecida lugubiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacellaceae.

Description of *Candidatus* Labecida pinifitio sp. nov.

Candidatus Labecida pinifitio (NL. fem. n. *pinifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1135 sp903893135*. The type genome for the species is the GenBank assembly GCA_903893115.1. The GC content of the type genome is 47.66 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Labecida renavitio sp. nov.

Candidatus Labecida renavitio (NL. fem. n. *renavitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1135 sp003153775*. The type genome for the species is the GenBank assembly GCA_003154275.1. The GC content of the type genome is 50.12 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Labecida telegitudo sp. nov.

Candidatus Labecida telegitudo (NL. fem. n. *telegitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1135 sp003142635*. The type genome for the species is the GenBank assembly GCA_003171175.1. The GC content of the type genome is 49.66 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Labecosa bipatitica sp. nov.

Candidatus Labecosa bipatitica (NL. fem. n. *bipatitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9414 sp003458885*. The type genome for the species is the GenBank assembly GCA_902366845.1. The GC content of the type genome is 40.91 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Labecosa gen. nov.

Candidatus Labecosa (NL. fem. n. *Labecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9414*. The type species for the genus is *Candidatus* Labecosa bipatitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Labecosa nivomitoga sp. nov.

Candidatus Labecosa nivomitoga (NL. fem. n. *nivomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9414 sp003489085*. The type genome for the species is the GenBank assembly GCA_003489085.1. The GC content of the type genome is 46.54 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Labilibaculum bisulisca sp. nov.

Candidatus Labilibaculum bisulisca (NL. fem. n. *bisulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Labilibaculum sp003863375*. The type genome for the species is the GenBank assembly RS_GCF_009795715.1. The GC content of the type genome is 36.2 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Labilithrix adreniforma sp. nov.

Candidatus Labilithrix adreniforma (NL. fem. n. *adreniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Labilithrix sp001899635*. The type genome for the species is the GenBank assembly GCA_001899635.1. The GC content of the type genome is 68.4 % and the genome length is 11.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Labilithrix ammixitrix sp. nov.

Candidatus Labilithrix ammixitrix (NL. fem. n. *ammixitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Labilithrix sp009781005*. The type genome for the species is the GenBank assembly GCA_009781005.1. The GC content of the type genome is 61.98 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Labilithrix corocilenta sp. nov.

Candidatus Labilithrix corocilenta (NL. fem. n. *corocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Labilithrix sp009780955*. The type genome for the species is the GenBank assembly GCA_009780955.1. The GC content of the type genome is 59.83 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Labrys rosaciforma sp. nov.

Candidatus Labrys rosaciforma (NL. fem. n. *rosaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Labrys sp001676615*. The type genome for the species is the GenBank assembly RS_GCF_001676615.1. The GC content of the type genome is 63.76 % and the genome length is 7.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil".

Description of *Candidatus* LacT semidibula sp. nov.

Candidatus LacT semidibula (NL. fem. n. *semidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *LacT sp009017255*. The type genome for the species is the GenBank assembly RS_GCF_009017255.1. The GC content of the type genome is 36.0 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Lachnoanaerobaculum insemitoga sp. nov.

Candidatus Lachnoanaerobaculum insemitoga (NL. fem. n. *insemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoanaerobaculum sp000209465*. The type genome for the species is the GenBank assembly RS_GCF_000209465.1. The GC content of the type genome is 35.69 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Lachnoanaerobaculum levifitas sp. nov.

Candidatus Lachnoanaerobaculum levifitas (NL. fem. n. *levifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoanaerobaculum sp000296385*. The type genome for the species is the GenBank assembly RS_GCF_000296385.1. The GC content of the type genome is

36.59 % and the genome length is 2.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Lachnoanaerobaculum malagivita sp. nov.

Candidatus Lachnoanaerobaculum malagivita (NL. fem. n. *malagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoanaerobaculum sp000287675*. The type genome for the species is the GenBank assembly RS_GCF_000287675.1. The GC content of the type genome is 35.98 % and the genome length is 2.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Lachnobacterium ensigicella sp. nov.

Candidatus Lachnobacterium ensigicella (NL. fem. n. *ensigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnobacterium sp900113385*. The type genome for the species is the GenBank assembly RS_GCF_900113385.1. The GC content of the type genome is 32.11 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Lachnoclostridium bonitisca sp. nov.

Candidatus Lachnoclostridium bonitisca (NL. fem. n. *bonitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoclostridium sp900078195*. The type genome for the species is the GenBank assembly RS_GCF_900078195.1. The GC content of the type genome is 33.21 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Lachnoclostridium catocedo sp. nov.

Candidatus Lachnoclostridium catocedo (NL. fem. n. *catocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoclostridium sp003526525*. The type genome for the species is the GenBank assembly GCA_003526525.1. The GC content of the type genome is 35.4

% and the genome length is 4.08 Mbp.

Description of *Candidatus* Lachnoclostridium bifarousia sp. nov.

Candidatus Lachnoclostridium bifarousia (NL. fem. n. *bifarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoclostridium_A sp003464085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902366925.1. The GC content of the type genome is 46.21 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Lachnoclostridium catocilenta sp. nov.

Candidatus Lachnoclostridium catocilenta (NL. fem. n. *catocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoclostridium_A sp002160755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002160755.1. The GC content of the type genome is 54.45 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Lachnoclostridium antecisca sp. nov.

Candidatus Lachnoclostridium antecisca (NL. fem. n. *antecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoclostridium_B sp002160985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002160985.1. The GC content of the type genome is 52.26 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Lachnoclostridium carucastra sp. nov.

Candidatus Lachnoclostridium carucastra (NL. fem. n. *carucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoclostridium_B sp000765215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005845155.1. The GC content of the type genome is 52.63 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Lachnoclostridium dicibetta sp. nov.

Candidatus Lachnoclostridium dicibetta (NL. fem. n. *dicibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoclostridium_B sp900066765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900066765.1. The GC content of the type genome is 43.66 % and the genome length is 3.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Lachnoclostridium doxoledo sp. nov.

Candidatus Lachnoclostridium doxoledo (NL. fem. n. *doxoledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoclostridium_B sp900543315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900771625.1. The GC content of the type genome is 44.46 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Lachnoclostridium levidimonia sp. nov.

Candidatus Lachnoclostridium levidimonia (NL. fem. n. *levidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnoclostridium_B sp900066555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly RS_GCF_902364385.1. The GC content of the type genome is 43.24 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Lachnospira adluvisca sp. nov.

Candidatus Lachnospira adluvisca (NL. fem. n. *adluvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp900772425*. The type genome for the species is the GenBank assembly GCA_900772425.1. The GC content of the type genome is 35.73 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Lachnospira bipalatica sp. nov.

Candidatus Lachnospira bipalatica (NL. fem. n. *bipalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp000437735*. The type genome for the species is the GenBank assembly GCA_008680475.1. The GC content of the type genome is 41.56 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Lachnospira cenacago sp. nov.

Candidatus Lachnospira cenacago (NL. fem. n. *cenacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp002394205*. The type genome for the species is the GenBank assembly GCA_002394565.1. The GC content of the type genome is 37.69 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Lachnospira cobalitas sp. nov.

Candidatus Lachnospira cobalitas (NL. fem. n. *cobalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp900545725*. The type genome for the species is the GenBank assembly GCA_900545725.1. The GC content of the type genome is 34.93 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Lachnospira coticastra sp. nov.

Candidatus Lachnospira coticastra (NL. fem. n. *coticastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp002435585*. The type genome for the species is the GenBank assembly GCA_002435585.1. The GC content of the type genome is 36.05 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Lachnospira defulitoga sp. nov.

Candidatus Lachnospira defulitoga (NL. fem. n. *defulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp003451515*. The type genome for the species is the GenBank assembly GCA_003451515.1. The GC content of the type genome is 37.7 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Lachnospira dicibitia sp. nov.

Candidatus Lachnospira dicibitia (NL. fem. n. *dicibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp900551945*. The type genome for the species is the GenBank assembly GCA_900551945.1. The GC content of the type genome is 32.09 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Lachnospira fetulicella sp. nov.

Candidatus Lachnospira fetulicella (NL. fem. n. *fetulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp000436535*. The type genome for the species is the GenBank assembly GCA_000436535.1. The GC content of the type genome is 36.85 % and the genome length is 2.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Lachnospira fumifitia sp. nov.

Candidatus Lachnospira fumifitia (NL. fem. n. *fumifitia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp900547255*. The type genome for the species is the GenBank assembly GCA_900547255.1. The GC content of the type genome is 38.9 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Lachnospira hegumisca sp. nov.

Candidatus Lachnospira hegumisca (NL. fem. n. *hegumisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp900316325*. The type genome for the species is the GenBank assembly GCA_900539815.1. The GC content of the type genome is 36.39 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Lachnospira monociforma sp. nov.

Candidatus Lachnospira monociforma (NL. fem. n. *monociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp000436475*. The type genome for the species is the GenBank assembly GCA_003448165.1. The GC content of the type genome is 36.02 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Lachnospira subofastra sp. nov.

Candidatus Lachnospira subofastra (NL. fem. n. *subofastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp900552795*. The type genome for the species is the GenBank assembly GCA_900754395.1. The GC content of the type genome is 36.48 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Lachnospira turibedo sp. nov.

Candidatus Lachnospira turibedo (NL. fem. n. *turibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnospira sp003537285*. The type genome for the species is the GenBank assembly GCA_900538965.1. The GC content of the type genome is 37.31 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Lachnotalea adcubilega sp. nov.

Candidatus Lachnotalea adcubilega (NL. fem. n. *adcubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lachnotalea sp900184995*. The type genome for the species is the GenBank assembly RS_GCF_900184995.1. The GC content of the type genome is 40.33 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Lacibacter adcubetta sp. nov.

Candidatus Lacibacter adcubetta (NL. fem. n. *adcubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacibacter sp009996555*. The type genome for the species is the GenBank assembly GCA_009996555.1. The GC content of the type genome is 41.21 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Lacibacter cenobiforma sp. nov.

Candidatus Lacibacter cenobiforma (NL. fem. n. *cenobiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacibacter sp002336115*. The type genome for the species is the GenBank assembly GCA_002336115.1. The GC content of the type genome is 38.21 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Lacibacter ensigitas sp. nov.

Candidatus Lacibacter ensigitas (NL. fem. n. *ensigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacibacter sp002337125*. The type genome for the species is the GenBank assembly GCA_002337125.1. The GC content of the type genome is 39.0 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Lacibacter essonicula sp. nov.

Candidatus Lacibacter essonicula (NL. fem. n. *essonicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacibacter sp014168535*. The type genome for the species is the GenBank assembly RS_GCF_014168535.1. The GC content of the type genome is 40.25 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Lacimicrobium laculifica sp. nov.

Candidatus Lacimicrobium laculifica (NL. fem. n. *laculifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacimicrobium sp002201535*. The type genome for the species is the GenBank assembly RS_GCF_002201535.1. The GC content of the type genome is 50.51 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Lacinana debucitas sp. nov.

Candidatus Lacinana debucitas (NL. fem. n. *debucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4882 sp002399265*. The type genome for the species is the GenBank assembly GCA_002397625.1. The GC content of the type genome is 50.56 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Lacinana gen. nov.

Candidatus Lacinana (NL. fem. n. *Lacinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4882*. The type species for the genus is *Candidatus* Lacinana debucitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4882*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lacinanaceae.

Description of *Candidatus* Lacinanaceae fam. nov.

Candidatus Lacinanaceae (NL. fem. n. *Lacinanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4882.* The type genus for the taxon is *Candidatus* Lacinana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4882*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lacinanales.

Description of *Candidatus* Lacinanales ord. nov.

Candidatus Lacinanales (NL. fem. n. *Lacinanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4882.* The type genus for the taxon is *Candidatus* Lacinana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4882*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Lacinanae.

Description of *Candidatus* Lacinanae class. nov.

Candidatus Lacinanae (NL. fem. n. *c__Lacinanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4882.* The type genus for the taxon is *Candidatus* Lacinana .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_G*.

Description of *Candidatus* Lacinella adnilentia sp. nov.

Candidatus Lacinella adnilentia (NL. fem. n. *adnilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1691 sp900549825*. The type genome for the species is the GenBank assembly GCA_900549825.1. The GC content of the type genome is 54.5 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Lacinella gen. nov.

Candidatus Lacinella (NL. fem. n. *Lacinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1691*. The type species for the genus is *Candidatus* Lacinella adnilentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lacinella categicula sp. nov.

Candidatus Lacinella categicula (NL. fem. n. *categicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1691 sp900544715*. The type genome for the species is the GenBank assembly GCA_900544715.1. The GC content of the type genome is 53.29 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Lacinella inresetta sp. nov.

Candidatus Lacinella inresetta (NL. fem. n. *inresetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1691 sp900552985*. The type genome for the species is the GenBank assembly GCA_900552985.1. The GC content of the type genome is 54.6 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Lacinella paralitas sp. nov.

Candidatus Lacinella paralitas (NL. fem. n. *paralitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1691 sp900544375*. The type genome for the species is the GenBank assembly RS_GCF_900762455.1. The GC content of the type genome is 51.89 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Lacinella vivifentia sp. nov.

Candidatus Lacinella vivifentia (NL. fem. n. *vivifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1691 sp002320555*. The type genome for the species is the GenBank assembly GCA_900540315.1. The GC content of the type genome is 53.23 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Lacinida bimotibula sp. nov.

Candidatus Lacinida bimotibula (NL. fem. n. *bimotibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWPS01 sp003551845*. The type genome for the species is the GenBank assembly GCA_003551845.1. The GC content of the type genome is 41.01 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Lacinida gen. nov.

Candidatus Lacinida (NL. fem. n. *Lacinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWPS01*. The type species for the genus is *Candidatus* Lacinida bimotibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWPS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lacinidaceae.

Description of *Candidatus* Lacinidaceae fam. nov.

Candidatus Lacinidaceae (NL. fem. n. *Lacinidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWPS01.* The type genus for the taxon is *Candidatus* Lacinida .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Lacinida cetaratio sp. nov.

Candidatus Lacinida cetaratio (NL. fem. n. *cetaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWPS01 sp003554445*. The type genome for the species is the GenBank assembly GCA_003554445.1. The GC content of the type genome is 39.95 %

and the genome length is 0.96 Mbp.

Description of *Candidatus* Lacinida exhonitrix sp. nov.

Candidatus Lacinida exhonitrix (NL. fem. n. *exhonitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWPS01 sp003557065*. The type genome for the species is the GenBank assembly GCA_003557065.1. The GC content of the type genome is 38.37 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Lacinida inredax sp. nov.

Candidatus Lacinida inredax (NL. fem. n. *inredax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWPS01 sp003554915*. The type genome for the species is the GenBank assembly GCA_003554915.1. The GC content of the type genome is 42.42 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Lacinosa xenopibula sp. nov.

Candidatus Lacinosa xenopibula (NL. fem. n. *xenopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-900066905 sp900066905*. The type genome for the species is the GenBank assembly GCA_900066905.1. The GC content of the type genome is 56.68 % and the genome length is 2.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Lacinosa gen. nov.

Candidatus Lacinosa (NL. fem. n. *Lacinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-900066905*. The type species for the genus is *Candidatus* Lacinosa xenopibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-900066905*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lacinosaceae.

Description of *Candidatus* Lacinosaceae fam. nov.

Candidatus Lacinosaceae (NL. fem. n. *Lacinosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-900066905.* The type genus for the taxon is *Candidatus* Lacinosa .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Lacinutrix catobax sp. nov.

Candidatus Lacinutrix catobax (NL. fem. n. *catobax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacinutrix sp002831665*. The type genome for the species is the GenBank assembly RS_GCF_002831665.1. The GC content of the type genome is 31.64 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Lacinutrix cilotilenta sp. nov.

Candidatus Lacinutrix cilotilenta (NL. fem. n. *cilotilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacinutrix sp001874145*. The type genome for the species is the GenBank assembly GCA_001874145.1. The GC content of the type genome is 30.63 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mediterranean seawater enriched with a specific particulate matter".

Description of *Candidatus* Lacinutrix citocibra sp. nov.

Candidatus Lacinutrix citocibra (NL. fem. n. *citocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacinutrix sp000211855*. The type genome for the species is the GenBank assembly RS_GCF_000211855.2. The GC content of the type genome is 30.82 % and the genome length is 3.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "deep sea".

Description of *Candidatus* Lacinutrix triclisca sp. nov.

Candidatus Lacinutrix triclisca (NL. fem. n. *triclisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacinutrix sp000934685*. The type genome for the species is the GenBank assembly RS_GCF_000934685.1. The GC content of the type genome is 34.61 % and the genome length is 3.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Surface seawater".

Description of *Candidatus* Lacipirellula dinupitia sp. nov.

Candidatus Lacipirellula dinupitia (NL. fem. n. *dinupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacipirellula sp013822725*. The type genome for the species is the GenBank assembly GCA_013822725.1. The GC content of the type genome is 61.68 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Lacipirellula semipitica sp. nov.

Candidatus Lacipirellula semipitica (NL. fem. n. *semipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacipirellula sp007746075*. The type genome for the species is the GenBank assembly RS_GCF_007746075.1. The GC content of the type genome is 61.98 % and the genome length is 6.83 Mbp.

Description of *Candidatus* Lacipirellula vepalibra sp. nov.

Candidatus Lacipirellula vepalibra (NL. fem. n. *vepalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacipirellula sp003576855*. The type genome for the species is the GenBank assembly GCA_003576855.1. The GC content of the type genome is 66.05 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Lacisediminihabitans telegitura sp. nov.

Candidatus Lacisediminihabitans telegitura (NL. fem. n. *telegitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacisediminihabitans sp014217685*. The type genome for the species is the GenBank assembly RS_GCF_014217685.1. The GC content of the type genome is 66.14 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Lacisediminihabitans vilipedo sp. nov.

Candidatus Lacisediminihabitans vilipedo (NL. fem. n. *vilipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacisediminihabitans sp003454135*. The type genome for the species is the GenBank assembly GCA_003454135.1. The GC content of the type genome is 66.74 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Lacrimispora ambidimonas sp. nov.

Candidatus Lacrimispora ambidimonas (NL. fem. n. *ambidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp002389905*. The type genome for the species is the GenBank assembly GCA_002389905.1. The GC content of the type genome is 44.93 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Lacrimispora bisulentia sp. nov.

Candidatus Lacrimispora bisulentia (NL. fem. n. *bisulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp009712635*. The type genome for the species is the GenBank assembly GCA_009712635.1. The GC content of the type genome is 41.71 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Lacrimispora ceracessa sp. nov.

Candidatus Lacrimispora ceracessa (NL. fem. n. *ceracessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp902363735*. The type genome for the species is the GenBank assembly RS_GCF_902363735.1. The GC content of the type genome is 42.89

% and the genome length is 4.65 Mbp.

Description of *Candidatus* Lacrimispora diponitas sp. nov.

Candidatus Lacrimispora diponitas (NL. fem. n. *diponitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp007115105*. The type genome for the species is the GenBank assembly RS_GCF_007115105.1. The GC content of the type genome is 41.48 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Lacrimispora divorivita sp. nov.

Candidatus Lacrimispora divorivita (NL. fem. n. *divorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp001312405*. The type genome for the species is the GenBank assembly GCA_001312405.1. The GC content of the type genome is 44.07 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Lacrimispora inabsisca sp. nov.

Candidatus Lacrimispora inabsisca (NL. fem. n. *inabsisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp902363835*. The type genome for the species is the GenBank assembly RS_GCF_902363835.1. The GC content of the type genome is 43.98 % and the genome length is 6.26 Mbp.

Description of *Candidatus* Lacrimispora inhositrix sp. nov.

Candidatus Lacrimispora inhositrix (NL. fem. n. *inhositrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp003833015*. The type genome for the species is the GenBank assembly RS_GCF_003833015.1. The GC content of the type genome is 39.63 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Lacrimispora lenimitura sp. nov.

Candidatus Lacrimispora lenimitura (NL. fem. n. *lenimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp000526575*. The type genome for the species is the GenBank assembly RS_GCF_000526575.1. The GC content of the type genome is 42.06 % and the genome length is 4.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Lacrimispora manomibula sp. nov.

Candidatus Lacrimispora manomibula (NL. fem. n. *manomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp002478865*. The type genome for the species is the GenBank assembly GCA_002455735.1. The GC content of the type genome is 40.25 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Lacrimispora nidifastra sp. nov.

Candidatus Lacrimispora nidifastra (NL. fem. n. *nidifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp002429965*. The type genome for the species is the GenBank assembly GCA_002429965.1. The GC content of the type genome is 44.52 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Lacrimispora obveritas sp. nov.

Candidatus Lacrimispora obveritas (NL. fem. n. *obveritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp002409995*. The type genome for the species is the GenBank assembly GCA_002409995.1. The GC content of the type genome is 40.64 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Lacrimispora pomifago sp. nov.

Candidatus Lacrimispora pomifago (NL. fem. n. *pomifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp002365025*. The type genome for the species is the GenBank assembly GCA_002365025.1. The GC content of the type genome is 43.95 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Lacrimispora proscetta sp. nov.

Candidatus Lacrimispora proscetta (NL. fem. n. *proscetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp900155545*. The type genome for the species is the GenBank assembly RS_GCF_900155545.1. The GC content of the type genome is 44.75 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Lacrimispora repecedo sp. nov.

Candidatus Lacrimispora repecedo (NL. fem. n. *repecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacrimispora sp002367105*. The type genome for the species is the GenBank assembly GCA_002367105.1. The GC content of the type genome is 43.75 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Lacticaseibacillus adessisca sp. nov.

Candidatus Lacticaseibacillus adessisca (NL. fem. n. *adessisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacticaseibacillus sp003946165*. The type genome for the species is the GenBank assembly RS_GCF_003946165.1. The GC content of the type genome is 50.91 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Lacticaseibacillus arancimonia sp. nov.

Candidatus Lacticaseibacillus arancimonia (NL. fem. n. *arancimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Lacticaseibacillus sp003946115*. The type genome for the species is the GenBank assembly RS_GCF_003946115.1. The GC content of the type genome is 58.0 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Lacticaseibacillus impacessa sp. nov.

Candidatus Lacticaseibacillus impacessa (NL. fem. n. *impacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacticaseibacillus sp004010095*. The type genome for the species is the GenBank assembly RS_GCF_004010095.1. The GC content of the type genome is 52.68 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Lacticaseibacillus infenedo sp. nov.

Candidatus Lacticaseibacillus infenedo (NL. fem. n. *infenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacticaseibacillus sp013407595*. The type genome for the species is the GenBank assembly RS_GCF_013407595.1. The GC content of the type genome is 59.85 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Lacticaseibacillus lametastra sp. nov.

Candidatus Lacticaseibacillus lametastra (NL. fem. n. *lametastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacticaseibacillus sp003946485*. The type genome for the species is the GenBank assembly RS_GCF_003946485.1. The GC content of the type genome is 58.28 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Lacticaseibacillus manufibula sp. nov.

Candidatus Lacticaseibacillus manufibula (NL. fem. n. *manufibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacticaseibacillus sp003946405*. The type genome for the species is the GenBank assembly RS_GCF_003946405.1. The GC content of the type genome is 55.44 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Lacticaseibacillus octinatio sp. nov.

Candidatus Lacticaseibacillus octinatio (NL. fem. n. *octinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacticaseibacillus sp900540605*. The type genome for the species is the GenBank assembly GCA_900540605.1. The GC content of the type genome is 53.36 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Lacticaseibacillus pavicousia sp. nov.

Candidatus Lacticaseibacillus pavicousia (NL. fem. n. *pavicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacticaseibacillus sp009687905*. The type genome for the species is the GenBank assembly RS_GCF_009687925.1. The GC content of the type genome is 52.31 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Lacticaseibacillus scelligena sp. nov.

Candidatus Lacticaseibacillus scelligena (NL. fem. n. *scelligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacticaseibacillus sp003946465*. The type genome for the species is the GenBank assembly RS_GCF_003946465.1. The GC content of the type genome is 55.47 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Lacticaseibacillus virecilenta sp. nov.

Candidatus Lacticaseibacillus virecilenta (NL. fem. n. *virecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacticaseibacillus sp003946175*. The type genome for the species is the GenBank assembly RS_GCF_003946175.1. The GC content of the type genome is 53.02 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Lactiplantibacillus adcucibra sp. nov.

Candidatus Lactiplantibacillus adcucibra (NL. fem. n. *adcucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactiplantibacillus sp005404945*. The type genome for the species is the GenBank assembly RS_GCF_005404945.1. The GC content of the type genome is 44.17 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Lactiplantibacillus adpelatica sp. nov.

Candidatus Lactiplantibacillus adpelatica (NL. fem. n. *adpelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactiplantibacillus sp005405005*. The type genome for the species is the GenBank assembly RS_GCF_005405005.1. The GC content of the type genome is 43.67 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Lactiplantibacillus aggenicula sp. nov.

Candidatus Lactiplantibacillus aggenicula (NL. fem. n. *aggenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactiplantibacillus sp005405125*. The type genome for the species is the GenBank assembly RS_GCF_005405125.1. The GC content of the type genome is 44.42 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Lactiplantibacillus bipatibra sp. nov.

Candidatus Lactiplantibacillus bipatibra (NL. fem. n. *bipatibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactiplantibacillus sp002970915*. The type genome for the species is the GenBank assembly RS_GCF_002970915.1. The GC content of the type genome is 42.77 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Lactiplantibacillus ecfunifica sp. nov.

Candidatus Lactiplantibacillus ecfunifica (NL. fem. n. *ecfunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Lactiplantibacillus sp005405085*. The type genome for the species is the GenBank assembly RS_GCF_005405085.1. The GC content of the type genome is 43.97 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Lactiplantibacillus intolousia sp. nov.

Candidatus Lactiplantibacillus intolousia (NL. fem. n. *intolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactiplantibacillus sp005405105*. The type genome for the species is the GenBank assembly RS_GCF_005405105.1. The GC content of the type genome is 44.73 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Lactiplantibacillus navicilega sp. nov.

Candidatus Lactiplantibacillus navicilega (NL. fem. n. *navicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactiplantibacillus sp005405065*. The type genome for the species is the GenBank assembly RS_GCF_005405065.1. The GC content of the type genome is 44.32 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Lactiplantibacillus robigugo sp. nov.

Candidatus Lactiplantibacillus robigugo (NL. fem. n. *robigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactiplantibacillus sp002970935*. The type genome for the species is the GenBank assembly RS_GCF_002970935.1. The GC content of the type genome is 43.15 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Lactobacillus catapivita sp. nov.

Candidatus Lactobacillus catapivita (NL. fem. n. *catapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactobacillus sp002417825*. The type genome for the species is the GenBank assembly GCA_002417825.1. The GC content of the type genome is 40.84 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Lactobacillus cululitica sp. nov.

Candidatus Lactobacillus cululitica (NL. fem. n. *cululitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactobacillus sp002418055*. The type genome for the species is the GenBank assembly GCA_002417865.1. The GC content of the type genome is 43.06 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Lactobacillus cululousia sp. nov.

Candidatus Lactobacillus cululousia (NL. fem. n. *cululousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactobacillus sp002911475*. The type genome for the species is the GenBank assembly RS_GCF_002911475.1. The GC content of the type genome is 37.93 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Lactobacillus nubifago sp. nov.

Candidatus Lactobacillus nubifago (NL. fem. n. *nubifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactobacillus sp003692965*. The type genome for the species is the GenBank assembly RS_GCF_003692865.1. The GC content of the type genome is 34.74 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Lactobacillus reforatio sp. nov.

Candidatus Lactobacillus reforatio (NL. fem. n. *reforatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactobacillus sp000760615*. The type genome for the species is the GenBank assembly RS_GCF_000760615.1. The GC content of the type genome is 35.35 % and the genome length is 2.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gut".

Description of *Candidatus* Lactobacillus tenilatica sp. nov.

Candidatus Lactobacillus tenilatica (NL. fem. n. *tenilatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactobacillus sp007570935*. The type genome for the species is the GenBank assembly RS_GCF_007570935.1. The GC content of the type genome is 33.48 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Lactococcus curoticella sp. nov.

Candidatus Lactococcus curoticella (NL. fem. n. *curoticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactococcus sp004210295*. The type genome for the species is the GenBank assembly RS_GCF_004210295.1. The GC content of the type genome is 39.37 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Lactococcus desonisca sp. nov.

Candidatus Lactococcus desonisca (NL. fem. n. *desonisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactococcus sp009601055*. The type genome for the species is the GenBank assembly RS_GCF_009601055.1. The GC content of the type genome is 38.5 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Lactococcus tomacitura sp. nov.

Candidatus Lactococcus tomacitura (NL. fem. n. *tomacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactococcus sp009779335*. The type genome for the species is the GenBank assembly GCA_009778765.1. The GC content of the type genome is 37.96 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Lactococcus vecoricula sp. nov.

Candidatus Lactococcus vecoricula (NL. fem. n. *vecoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactococcus sp003627095*. The type genome for the species is the GenBank assembly RS_GCF_003627095.1. The GC content of the type genome is 37.37 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Lactococcus vilititrix sp. nov.

Candidatus Lactococcus vilititrix (NL. fem. n. *vilititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactococcus sp002492185*. The type genome for the species is the GenBank assembly GCA_002490355.1. The GC content of the type genome is 39.25 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Lactococcus vivififorma sp. nov.

Candidatus Lactococcus vivififorma (NL. fem. n. *vivififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactococcus sp006965445*. The type genome for the species is the GenBank assembly RS_GCF_006965445.1. The GC content of the type genome is 37.97 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Lactonifactor detotifica sp. nov.

Candidatus Lactonifactor detotifica (NL. fem. n. *detotifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lactonifactor sp009677585*. The type genome for the species is the GenBank assembly RS_GCF_009677655.1. The GC content of the type genome is 45.61 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Laculana ascelugo sp. nov.

Candidatus Laculana ascelugo (NL. fem. n. *ascelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1193 sp902783915*. The type genome for the species is the GenBank assembly GCA_902783915.1. The GC content of the type genome is 25.5 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Laculana gen. nov.

Candidatus Laculana (NL. fem. n. *Laculana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-1193*. The type species for the genus is *Candidatus* Laculana ascelugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Laculana cerarago sp. nov.

Candidatus Laculana cerarago (NL. fem. n. *cerarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1193 sp900550145*. The type genome for the species is the GenBank assembly RS_GCF_900756145.1. The GC content of the type genome is 26.95 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Laculana impugatica sp. nov.

Candidatus Laculana impugatica (NL. fem. n. *impugatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1193 sp000436255*. The type genome for the species is the GenBank assembly GCA_000436255.1. The GC content of the type genome is 25.58 % and the genome length is 1.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Lacularia vanitibula sp. nov.

Candidatus Lacularia vanitibula (NL. fem. n. *vanitibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *16-39-46 sp002257235*. The type genome for the species is the GenBank assembly GCA_002257235.1. The GC content of the type genome is 39.33 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Lacularia gen. nov.

Candidatus Lacularia (NL. fem. n. *Lacularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *16-39-46*. The type species for the genus is *Candidatus* Lacularia vanitibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *16-39-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laculariaceae.

Description of *Candidatus* Laculariaceae fam. nov.

Candidatus Laculariaceae (NL. fem. n. *Laculariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *16-39-46.* The type genus for the taxon is *Candidatus* Lacularia .

According to the original version of GTDB R06-RS202, this family belongs to the order *16-39-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Laculariales.

Description of *Candidatus* Laculariales ord. nov.

Candidatus Laculariales (NL. fem. n. *Laculariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *16-39-46.* The type genus for the taxon is *Candidatus* Lacularia .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Laculella resulibra sp. nov.

Candidatus Laculella resulibra (NL. fem. n. *resulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REAB01 sp004293645*. The type genome for the species is the GenBank assembly GCA_004293985.1. The GC content of the type genome is 46.11 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Laculella gen. nov.

Candidatus Laculella (NL. fem. n. *Laculella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REAB01*. The type species for the genus is *Candidatus* Laculella resulibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Laculia absegifica sp. nov.

Candidatus Laculia absegifica (NL. fem. n. *absegifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM14224 sp900761905*. The type genome for the species is the GenBank assembly RS_GCF_900761905.1. The GC content of the type genome is 46.48 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Laculia gen. nov.

Candidatus Laculia (NL. fem. n. *Laculia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM14224*. The type species for the genus is *Candidatus* Laculia absegifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGM14224*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laculiaceae.

Description of *Candidatus* Laculiaceae fam. nov.

Candidatus Laculiaceae (NL. fem. n. *Laculiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HGM14224.* The type genus for the taxon is *Candidatus* Laculia .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTUO25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxifariales.

Description of *Candidatus* Laculida melopetta sp. nov.

Candidatus Laculida melopetta (NL. fem. n. *melopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKLV01 sp007121385*. The type genome for the species is the GenBank assembly GCA_007121385.1. The GC content of the type genome is 51.7 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Laculida gen. nov.

Candidatus Laculida (NL. fem. n. *Laculida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKLV01*. The type species for the genus is *Candidatus* Laculida melopetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1609*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifanaceae.

Description of *Candidatus* Laculosa lupanitrix sp. nov.

Candidatus Laculosa lupanitrix (NL. fem. n. *lupanitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DG-27 sp001302725*. The type genome for the species is the GenBank assembly GCA_001302725.1. The GC content of the type genome is 53.62 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Methane-rich estuary sediments 52-54 cm".

Description of *Candidatus* Laculosa gen. nov.

Candidatus Laculosa (NL. fem. n. *Laculosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DG-27*. The type species for the genus is *Candidatus* Laculosa lupanitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DG-27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laculosaceae.

Description of *Candidatus* Laculosaceae fam. nov.

Candidatus Laculosaceae (NL. fem. n. *Laculosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DG-27.* The type genus for the taxon is *Candidatus* Laculosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DG-27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Laculosales.

Description of *Candidatus* Laculosales ord. nov.

Candidatus Laculosales (NL. fem. n. *Laculosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DG-27.* The type genus for the taxon is *Candidatus* Laculosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Loripellae.

Description of *Candidatus* Laculula delebicula sp. nov.

Candidatus Laculula delebicula (NL. fem. n. *delebicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1312 sp900550625*. The type genome for the species is the GenBank assembly GCA_900550625.1. The GC content of the type genome is 52.48 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Laculula gen. nov.

Candidatus Laculula (NL. fem. n. *Laculula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1312*. The type species for the genus is *Candidatus* Laculula delebicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Lacunisphaera bimetatio sp. nov.

Candidatus Lacunisphaera bimetatio (NL. fem. n. *bimetatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacunisphaera sp903856725*. The type genome for the species is the GenBank assembly GCA_903856725.1. The GC content of the type genome is 54.91 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Lacunisphaera edissax sp. nov.

Candidatus Lacunisphaera edissax (NL. fem. n. *edissax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacunisphaera sp009695095*. The type genome for the species is the GenBank assembly GCA_009695095.1. The GC content of the type genome is 63.11 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Lacunisphaera enigmiforma sp. nov.

Candidatus Lacunisphaera enigmiforma (NL. fem. n. *enigmiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacunisphaera sp002304425*. The type genome for the species is the GenBank assembly GCA_002304425.1. The GC content of the type genome is 56.8 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Lacunisphaera futatax sp. nov.

Candidatus Lacunisphaera futatax (NL. fem. n. *futatax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacunisphaera sp005787865*. The type genome for the species is the GenBank assembly GCA_903919025.1. The GC content of the type genome is 56.84 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Lacunisphaera linigigena sp. nov.

Candidatus Lacunisphaera linigigena (NL. fem. n. *linigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacunisphaera sp903898675*. The type genome for the species is the GenBank assembly GCA_903845515.1. The GC content of the type genome is 65.15 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Lacunisphaera meriditas sp. nov.

Candidatus Lacunisphaera meriditas (NL. fem. n. *meriditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacunisphaera sp903906135*. The type genome for the species is the GenBank assembly GCA_903906135.1. The GC content of the type genome is 56.33 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Lacunisphaera siminatica sp. nov.

Candidatus Lacunisphaera siminatica (NL. fem. n. *siminatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacunisphaera sp001464505*. The type genome for the species is the GenBank assembly GCA_001464505.1. The GC content of the type genome is 64.27 % and the genome length is 2.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Lacunisphaera utricitoga sp. nov.

Candidatus Lacunisphaera utricitoga (NL. fem. n. *utricitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lacunisphaera sp900104925*. The type genome for the species is the GenBank assembly RS_GCF_900104925.1. The GC content of the type genome is 65.67 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Lametana semigitia sp. nov.

Candidatus Lametana semigitia (NL. fem. n. *semigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUQO01 sp012032775*. The type genome for the species is the GenBank assembly GCA_012032775.1. The GC content of the type genome is 60.65 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Lametana gen. nov.

Candidatus Lametana (NL. fem. n. *Lametana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUQO01*. The type species for the genus is *Candidatus* Lametana semigitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lametaria lanigugo sp. nov.

Candidatus Lametaria lanigugo (NL. fem. n. *lanigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILIB01 sp903834195*. The type genome for the species is the GenBank assembly GCA_903834195.1. The GC content of the type genome is 43.92 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Lametaria gen. nov.

Candidatus Lametaria (NL. fem. n. *Lametaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILIB01*. The type species for the genus is *Candidatus* Lametaria lanigugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAILIB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lametariaceae.

Description of *Candidatus* Lametariaceae fam. nov.

Candidatus Lametariaceae (NL. fem. n. *Lametariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CAILIB01*. The type genus for the taxon is *Candidatus* Lametaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAILIB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lametariales.

Description of *Candidatus* Lametariales ord. nov.

Candidatus Lametariales (NL. fem. n. *Lametariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAILIB01*. The type genus for the taxon is *Candidatus* Lametaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Panifidae.

Description of *Candidatus* Lametella actutousia sp. nov.

Candidatus Lametella actutousia (NL. fem. n. *actutousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMYC01 sp004356105*. The type genome for the species is the GenBank assembly GCA_004356105.1. The GC content of the type genome is 60.49 % and the genome length is 6.77 Mbp.

Description of *Candidatus* Lametella gen. nov.

Candidatus Lametella (NL. fem. n. *Lametella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMYC01*. The type species for the genus is *Candidatus* Lametella actutousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMYC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lametellaceae.

Description of *Candidatus* Lametellaceae fam. nov.

Candidatus Lametellaceae (NL. fem. n. *Lametellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMYC01.* The type genus for the taxon is *Candidatus* Lametella .

According to the original version of GTDB R06-RS202, this family belongs to the order *Bin61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sugilidales.

Description of *Candidatus* Lametida arillessa sp. nov.

Candidatus Lametida arillessa (NL. fem. n. *arillessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-81 sp900556965*. The type genome for the species is the GenBank assembly GCA_900556965.1. The GC content of the type genome is 47.92 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Lametida gen. nov.

Candidatus Lametida (NL. fem. n. *Lametida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-81*. The type species for the genus is *Candidatus* Lametida arillessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lametida buxifivita sp. nov.

Candidatus Lametida buxifivita (NL. fem. n. *buxifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-81 sp900066785*. The type genome for the species is the GenBank assembly RS_GCF_003477775.1. The GC content of the type genome is 48.72 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Lametida catagitica sp. nov.

Candidatus Lametida catagitica (NL. fem. n. *catagitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-81 sp900541255*. The type genome for the species is the GenBank assembly GCA_900541255.1. The GC content of the type genome is 52.21 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Lametida cuferitas sp. nov.

Candidatus Lametida cuferitas (NL. fem. n. *cuferitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-81 sp000435795*. The type genome for the species is the GenBank assembly RS_GCF_902363025.1. The GC content of the type genome is 51.89 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Lametida dedigicella sp. nov.

Candidatus Lametida dedigicella (NL. fem. n. *dedigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-81 sp900066055*. The type genome for the species is the GenBank assembly RS_GCF_003479565.1. The GC content of the type genome is 48.24 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Lametida semibatio sp. nov.

Candidatus Lametida semibatio (NL. fem. n. *semibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-81 sp900066535*. The type genome for the species is the GenBank assembly RS_GCF_003604275.1. The GC content of the type genome is 47.99 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Lametida senipibula sp. nov.

Candidatus Lametida senipibula (NL. fem. n. *senipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-81 sp009917545*. The type genome for the species is the GenBank assembly RS_GCF_009917505.1. The GC content of the type genome is 48.82 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Lametosa detumiforma sp. nov.

Candidatus Lametosa detumiforma (NL. fem. n. *detumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAU01 sp009780035*. The type genome for the species is the GenBank assembly GCA_009780035.1. The GC content of the type genome is 33.56 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Lametosa gen. nov.

Candidatus Lametosa (NL. fem. n. *Lametosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAU01*. The type species for the genus is *Candidatus* Lametosa detumiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRAU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lametosaceae.

Description of *Candidatus* Lametosaceae fam. nov.

Candidatus Lametosaceae (NL. fem. n. *Lametosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRAU01.* The type genus for the taxon is *Candidatus* Lametosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *WRAU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lametosales.

Description of *Candidatus* Lametosales ord. nov.

Candidatus Lametosales (NL. fem. n. *Lametosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRAU01.* The type genus for the taxon is *Candidatus* Lametosa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Lametula defacisca sp. nov.

Candidatus Lametula defacisca (NL. fem. n. *defacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABYIR01 sp902582715*. The type genome for the species is the GenBank assembly GCA_902582715.1. The GC content of the type genome is 32.32 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Lametula gen. nov.

Candidatus Lametula (NL. fem. n. *Lametula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABYIR01*. The type species for the genus is *Candidatus* Lametula defacisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AG-422-B15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirifosaceae.

Description of *Candidatus* Lametula forabitudo sp. nov.

Candidatus Lametula forabitudo (NL. fem. n. *forabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABYIR01 sp902536525*. The type genome for the species is the GenBank assembly GCA_902536525.1. The GC content of the type genome is 32.17 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Lametula televibra sp. nov.

Candidatus Lametula televibra (NL. fem. n. *televibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABYIR01 sp902518955*. The type genome for the species is the GenBank assembly GCA_902518955.1. The GC content of the type genome is 32.04 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Lametula tenemitas sp. nov.

Candidatus Lametula tenemitas (NL. fem. n. *tenemitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABYIR01 sp902584815*. The type genome for the species is the GenBank assembly GCA_902634765.1. The GC content of the type genome is 32.2 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Lametula vilitousia sp. nov.

Candidatus Lametula vilitousia (NL. fem. n. *vilitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABYIR01 sp902553285*. The type genome for the species is the GenBank assembly GCA_902553285.1. The GC content of the type genome is 32.54 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Lamprocystis catafifica sp. nov.

Candidatus Lamprocystis catafifica (NL. fem. n. *catafifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lamprocystis sp903933125*. The type genome for the species is the GenBank assembly GCA_903933125.1. The GC content of the type genome is 64.28 % and the genome length is 7.11 Mbp.

Description of *Candidatus* Lamprocystis valefatica sp. nov.

Candidatus Lamprocystis valefatica (NL. fem. n. *valefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lamprocystis sp013426805*. The type genome for the species is the GenBank assembly GCA_013426805.1. The GC content of the type genome is 64.09 % and the genome length is 7.61 Mbp.

Description of *Candidatus* Lampropedia desepilenta sp. nov.

Candidatus Lampropedia desepilenta (NL. fem. n. *desepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lampropedia sp003703475*. The type genome for the species is the GenBank assembly RS_GCF_003703445.1. The GC content of the type genome is 62.92 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Lampropedia taraxetta sp. nov.

Candidatus Lampropedia taraxetta (NL. fem. n. *taraxetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lampropedia sp002285285*. The type genome for the species is the GenBank assembly RS_GCF_002285255.1. The GC content of the type genome is 65.27 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Lampropedia tolutousia sp. nov.

Candidatus Lampropedia tolutousia (NL. fem. n. *tolutousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lampropedia sp002285265*. The type genome for the species is the GenBank assembly RS_GCF_003703375.1. The GC content of the type genome is 66.24 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Lancefieldella inlapentia sp. nov.

Candidatus Lancefieldella inlapentia (NL. fem. n. *inlapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lancefieldella sp900555335*. The type genome for the species is the GenBank assembly GCA_900555335.1. The GC content of the type genome is 47.5 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Lancefieldella lacinitoga sp. nov.

Candidatus Lancefieldella lacinitoga (NL. fem. n. *lacinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lancefieldella sp000411555*. The type genome for the species is the GenBank assembly RS_GCF_000411555.1. The GC content of the type genome is 51.81 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Lancefieldella lavabastra sp. nov.

Candidatus Lancefieldella lavabastra (NL. fem. n. *lavabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lancefieldella sp000564995*. The type genome for the species is the GenBank assembly RS_GCF_000758945.1. The GC content of the type genome is 48.43 % and the genome length is 1.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Lancefieldella manibedo sp. nov.

Candidatus Lancefieldella manibedo (NL. fem. n. *manibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lancefieldella sp902373375*. The type genome for the species is the GenBank assembly GCA_902373375.1. The GC content of the type genome is 46.1 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Lanifana defosago sp. nov.

Candidatus Lanifana defosago (NL. fem. n. *defosago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMQ01 sp009786275*. The type genome for the species is the GenBank assembly GCA_009786275.1. The GC content of the type genome is 60.74 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Lanifana gen. nov.

Candidatus Lanifana (NL. fem. n. *Lanifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRMQ01*. The type species for the genus is *Candidatus* Lanifana defosago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lanifana dimadicella sp. nov.

Candidatus Lanifana dimadicella (NL. fem. n. *dimadicella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMQ01 sp009779995*. The type genome for the species is the GenBank assembly GCA_009779995.1. The GC content of the type genome is 60.55 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Lanifana forabentia sp. nov.

Candidatus Lanifana forabentia (NL. fem. n. *forabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMQ01 sp009786735*. The type genome for the species is the GenBank assembly GCA_009786735.1. The GC content of the type genome is 57.37 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Lanifana infirilega sp. nov.

Candidatus Lanifana infirilega (NL. fem. n. *infirilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMQ01 sp009784445*. The type genome for the species is the GenBank assembly GCA_009784445.1. The GC content of the type genome is 54.14 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Lanifana vagabitas sp. nov.

Candidatus Lanifana vagabitas (NL. fem. n. *vagabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMQ01 sp009777055*. The type genome for the species is the GenBank assembly GCA_009777055.1. The GC content of the type genome is 58.73 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Lanifana volunago sp. nov.

Candidatus Lanifana volunago (NL. fem. n. *volunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMQ01 sp009785335*. The type genome for the species is the GenBank assembly GCA_009785335.1. The GC content of the type genome is 52.72 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Lanifaria mahelimonas sp. nov.

Candidatus Lanifaria mahelimonas (NL. fem. n. *mahelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M1805 sp006226965*. The type genome for the species is the GenBank assembly GCA_006226965.1. The GC content of the type genome is 37.9 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Lanifaria gen. nov.

Candidatus Lanifaria (NL. fem. n. *Lanifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M1805*. The type species for the genus is *Candidatus* Lanifaria mahelimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *M1805*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanifariaceae.

Description of *Candidatus* Lanifariaceae fam. nov.

Candidatus Lanifariaceae (NL. fem. n. *Lanifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *M1805.* The type genus for the taxon is *Candidatus* Lanifaria .

According to GTDB R06-RS202, this family belongs to the order *Balneolales*.

Description of *Candidatus* Lanifella antiritura sp. nov.

Candidatus Lanifella antiritura (NL. fem. n. *antiritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5266 sp012518765*. The type genome for the species is the

GenBank assembly GCA_012518765.1. The GC content of the type genome is 33.71 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Lanifella gen. nov.

Candidatus Lanifella (NL. fem. n. *Lanifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5266*. The type species for the genus is *Candidatus* Lanifella antiritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turibosaceae.

Description of *Candidatus* Lanifella detunitia sp. nov.

Candidatus Lanifella detunitia (NL. fem. n. *detunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5266 sp012519525*. The type genome for the species is the GenBank assembly GCA_012519525.1. The GC content of the type genome is 33.13 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Lanifella inciviforma sp. nov.

Candidatus Lanifella inciviforma (NL. fem. n. *inciviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5266 sp002069895*. The type genome for the species is the GenBank assembly GCA_002069895.1. The GC content of the type genome is 35.16 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Lanifella resacitoga sp. nov.

Candidatus Lanifella resacitoga (NL. fem. n. *resacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5266 sp002411545*. The type genome for the species is the GenBank assembly GCA_002411545.1. The GC content of the type genome is 36.19 %

and the genome length is 1.78 Mbp.

Description of *Candidatus* Lanifia adessentia sp. nov.

Candidatus Lanifia adessentia (NL. fem. n. *adessentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3439 sp902583715*. The type genome for the species is the GenBank assembly GCA_902583715.1. The GC content of the type genome is 48.66 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Lanifia gen. nov.

Candidatus Lanifia (NL. fem. n. *Lanifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3439*. The type species for the genus is *Candidatus* Lanifia adessentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lanifia affamitrix sp. nov.

Candidatus Lanifia affamitrix (NL. fem. n. *affamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3439 sp012269685*. The type genome for the species is the GenBank assembly GCA_012269685.1. The GC content of the type genome is 51.51 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Lanifia apposisca sp. nov.

Candidatus Lanifia apposisca (NL. fem. n. *apposisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3439 sp002378605*. The type genome for the species is the GenBank assembly GCA_002378605.1. The GC content of the type genome is 51.1 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Lanifia bimetilega sp. nov.

Candidatus Lanifia bimetilega (NL. fem. n. *bimetilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3439 sp003212345*. The type genome for the species is the GenBank assembly GCA_902592035.1. The GC content of the type genome is 46.47 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Lanifia exsoredo sp. nov.

Candidatus Lanifia exsoredo (NL. fem. n. *exsoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3439 sp902559985*. The type genome for the species is the GenBank assembly GCA_902559985.1. The GC content of the type genome is 46.0 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Lanifia inpenicella sp. nov.

Candidatus Lanifia inpenicella (NL. fem. n. *inpenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3439 sp009919335*. The type genome for the species is the GenBank assembly GCA_009919335.1. The GC content of the type genome is 52.47 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Lanifia subinitica sp. nov.

Candidatus Lanifia subinitica (NL. fem. n. *subinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3439 sp003282865*. The type genome for the species is the GenBank assembly GCA_003282865.1. The GC content of the type genome is 45.89 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Lanifida ancepessa sp. nov.

Candidatus Lanifida ancepessa (NL. fem. n. *ancepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-81 sp003554025*. The type genome for the species is the GenBank assembly GCA_003554025.1. The GC content of the type genome is 48.57 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Lanifida gen. nov.

Candidatus Lanifida (NL. fem. n. *Lanifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1SED10-81*. The type species for the genus is *Candidatus* Lanifida ancepessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lanifida armigibra sp. nov.

Candidatus Lanifida armigibra (NL. fem. n. *armigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-81 sp003551455*. The type genome for the species is the GenBank assembly GCA_003551455.1. The GC content of the type genome is 55.01 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Lanifida blactax sp. nov.

Candidatus Lanifida blactax (NL. fem. n. *blactax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-81 sp003553945*. The type genome for the species is the GenBank assembly GCA_003553945.1. The GC content of the type genome is 52.96 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Lanifida demulitura sp. nov.

Candidatus Lanifida demulitura (NL. fem. n. *demulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-81 sp003552275*. The type genome for the species is the

GenBank assembly GCA_003552275.1. The GC content of the type genome is 55.27 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Lanifida desulatio sp. nov.

Candidatus Lanifida desulatio (NL. fem. n. *desulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-81 sp003568315*. The type genome for the species is the GenBank assembly GCA_003550405.1. The GC content of the type genome is 54.16 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Lanifida dupunentia sp. nov.

Candidatus Lanifida dupunentia (NL. fem. n. *dupunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-81 sp003551005*. The type genome for the species is the GenBank assembly GCA_003554175.1. The GC content of the type genome is 55.69 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Lanifida turifitoga sp. nov.

Candidatus Lanifida turifitoga (NL. fem. n. *turifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-81 sp003552925*. The type genome for the species is the GenBank assembly GCA_003552925.1. The GC content of the type genome is 49.99 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Lanifosa expopastra sp. nov.

Candidatus Lanifosa expopastra (NL. fem. n. *expopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAR01 sp903858915*. The type genome for the species is the GenBank assembly GCA_903858915.1. The GC content of the type genome is 33.67 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Lanifosa gen. nov.

Candidatus Lanifosa (NL. fem. n. *Lanifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYAR01*. The type species for the genus is *Candidatus* Lanifosa expopastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1997*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decapiaceae.

Description of *Candidatus* Lanifosa letificula sp. nov.

Candidatus Lanifosa letificula (NL. fem. n. *letificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAR01 sp009925685*. The type genome for the species is the GenBank assembly GCA_009927945.1. The GC content of the type genome is 33.77 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Lanifosa miracifica sp. nov.

Candidatus Lanifosa miracifica (NL. fem. n. *miracifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAR01 sp005787525*. The type genome for the species is the GenBank assembly GCA_005787525.1. The GC content of the type genome is 32.46 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Lanifosa turibifica sp. nov.

Candidatus Lanifosa turibifica (NL. fem. n. *turibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAR01 sp903959715*. The type genome for the species is the GenBank assembly GCA_903959715.1. The GC content of the type genome is 32.9 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Lanifula conipifica sp. nov.

Candidatus Lanifula conipifica (NL. fem. n. *conipifica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-55 sp002084765*. The type genome for the species is the GenBank assembly GCA_002084765.1. The GC content of the type genome is 46.29 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Lanifula gen. nov.

Candidatus Lanifula (NL. fem. n. *Lanifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4572-55*. The type species for the genus is *Candidatus* Lanifula conipifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4572-55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanifulaceae.

Description of *Candidatus* Lanifulaceae fam. nov.

Candidatus Lanifulaceae (NL. fem. n. *Lanifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4572-55.* The type genus for the taxon is *Candidatus* Lanifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *4572-55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lanifulales.

Description of *Candidatus* Lanifulales ord. nov.

Candidatus Lanifulales (NL. fem. n. *Lanifulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4572-55.* The type genus for the taxon is *Candidatus* Lanifula .

According to the original version of GTDB R06-RS202, this family belongs to the class *4572-55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Lanifulae.

Description of *Candidatus* Lanifulae class. nov.

Candidatus Lanifulae (NL. fem. n. *c__Lanifulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4572-55.* The type genus for the taxon is *Candidatus* Lanifula .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *4572-55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Lanifulota.

Description of *Candidatus* Lanifulota phyl. nov.

Candidatus Lanifulota (NL. fem. n. *Lanifulota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4572-55.* The type genus for the taxon is *Candidatus* Lanifula .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Lanigana ancipicella sp. nov.

Candidatus Lanigana ancipicella (NL. fem. n. *ancipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6186 sp903907935*. The type genome for the species is the GenBank assembly GCA_903907935.1. The GC content of the type genome is 31.53 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Lanigana gen. nov.

Candidatus Lanigana (NL. fem. n. *Lanigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6186*. The type species for the genus is *Candidatus* Lanigana ancipicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6186*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laniganaceae.

Description of *Candidatus* Laniganaceae fam. nov.

Candidatus Laniganaceae (NL. fem. n. *Laniganaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6186.* The type genus for the taxon is *Candidatus* Lanigana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6186*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Laniganales.

Description of *Candidatus* Laniganales ord. nov.

Candidatus Laniganales (NL. fem. n. *Laniganales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6186.* The type genus for the taxon is *Candidatus* Lanigana .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Lanigana celamibula sp. nov.

Candidatus Lanigana celamibula (NL. fem. n. *celamibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6186 sp002422785*. The type genome for the species is the GenBank assembly GCA_903935345.1. The GC content of the type genome is 31.56 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Lanigana cerebimonas sp. nov.

Candidatus Lanigana cerebimonas (NL. fem. n. *cerebimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6186 sp903827925*. The type genome for the species is the GenBank assembly GCA_903827925.1. The GC content of the type genome is 28.53 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Lanigana impinax sp. nov.

Candidatus Lanigana impinax (NL. fem. n. *impinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6186 sp903822055*. The type genome for the species is the GenBank assembly GCA_903822055.1. The GC content of the type genome is 31.74 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Lanigaria tabifitrix sp. nov.

Candidatus Lanigaria tabifitrix (NL. fem. n. *tabifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMP01 sp007133465*. The type genome for the species is the GenBank assembly GCA_007127115.1. The GC content of the type genome is 72.65 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Lanigaria gen. nov.

Candidatus Lanigaria (NL. fem. n. *Lanigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLMP01*. The type species for the genus is *Candidatus* Lanigaria tabifitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lanigella obfirifica sp. nov.

Candidatus Lanigella obfirifica (NL. fem. n. *obfirifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYY01 sp013696235*. The type genome for the species is the GenBank assembly GCA_013696235.1. The GC content of the type genome is 71.38 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Lanigella gen. nov.

Candidatus Lanigella (NL. fem. n. *Lanigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCYY01*. The type species for the genus is *Candidatus* Lanigella obfirifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACCYY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanigellaceae.

Description of *Candidatus* Lanigellaceae fam. nov.

Candidatus Lanigellaceae (NL. fem. n. *Lanigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCYY01.* The type genus for the taxon is *Candidatus* Lanigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACCYY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lanigellales.

Description of *Candidatus* Lanigellales ord. nov.

Candidatus Lanigellales (NL. fem. n. *Lanigellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCYY01.* The type genus for the taxon is *Candidatus* Lanigella .

According to the GTDB R06-RS202, this order belongs to the class *Actinomycetia*.

Description of *Candidatus* Lanigia mirabugo sp. nov.

Candidatus Lanigia mirabugo (NL. fem. n. *mirabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1147 sp002311315*. The type genome for the species is the GenBank assembly GCA_003978585.1. The GC content of the type genome is 53.41 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Lanigia gen. nov.

Candidatus Lanigia (NL. fem. n. *Lanigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1147*. The type species for the genus is *Candidatus* Lanigia mirabugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA2778. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigidaceae.

Description of *Candidatus* Lanigida adfulicella sp. nov.

Candidatus Lanigida adfulicella (NL. fem. n. *adfulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG842 sp902796355*. The type genome for the species is the GenBank assembly GCA_902796355.1. The GC content of the type genome is 49.69 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Lanigida gen. nov.

Candidatus Lanigida (NL. fem. n. *Lanigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG842*. The type species for the genus is *Candidatus* Lanigida adfulicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lanigida inaspessa sp. nov.

Candidatus Lanigida inaspessa (NL. fem. n. *inaspessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG842 sp902773445*. The type genome for the species is the GenBank assembly GCA_902773445.1. The GC content of the type genome is 51.45 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Lanigida loripiforma sp. nov.

Candidatus Lanigida loripiforma (NL. fem. n. *loripiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG842 sp900313775*. The type genome for the species is the GenBank assembly GCA_900313775.1. The GC content of the type genome is 52.17 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Lanigosa adnulitoga sp. nov.

Candidatus Lanigosa adnulitoga (NL. fem. n. *adnulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp002685435*. The type genome for the species is the GenBank assembly GCA_002685435.1. The GC content of the type genome is 44.1 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Lanigosa gen. nov.

Candidatus Lanigosa (NL. fem. n. *Lanigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10364*. The type species for the genus is *Candidatus* Lanigosa adnulitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lanigosa advecago sp. nov.

Candidatus Lanigosa advecago (NL. fem. n. *advecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp003455605*. The type genome for the species is the GenBank assembly GCA_003455605.1. The GC content of the type genome is 46.36 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Lanigosa afranatio sp. nov.

Candidatus Lanigosa afranatio (NL. fem. n. *afranatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp002430755*. The type genome for the species is the GenBank assembly GCA_002430755.1. The GC content of the type genome is 45.73 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Lanigosa arrecousia sp. nov.

Candidatus Lanigosa arrecousia (NL. fem. n. *arrecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp003545085*. The type genome for the species is the GenBank assembly GCA_003545085.1. The GC content of the type genome is 44.35 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Lanigosa bicoredo sp. nov.

Candidatus Lanigosa bicoredo (NL. fem. n. *bicoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp003045825*. The type genome for the species is the GenBank assembly GCA_009936725.1. The GC content of the type genome is 45.04 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Lanigosa bovicedo sp. nov.

Candidatus Lanigosa bovicedo (NL. fem. n. *bovicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp002387615*. The type genome for the species is the GenBank assembly GCA_002478785.1. The GC content of the type genome is 44.19 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Lanigosa culibibra sp. nov.

Candidatus Lanigosa culibibra (NL. fem. n. *culibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp902614915*. The type genome for the species is the GenBank assembly GCA_902614915.1. The GC content of the type genome is 39.28 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Lanigosa delubigena sp. nov.

Candidatus Lanigosa delubigena (NL. fem. n. *delubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA10364 sp003445735*. The type genome for the species is the GenBank assembly GCA_011525165.1. The GC content of the type genome is 46.28 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Lanigosa denupitia sp. nov.

Candidatus Lanigosa denupitia (NL. fem. n. *denupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp012269745*. The type genome for the species is the GenBank assembly GCA_012269745.1. The GC content of the type genome is 45.38 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Lanigosa derelatio sp. nov.

Candidatus Lanigosa derelatio (NL. fem. n. *derelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp013911625*. The type genome for the species is the GenBank assembly GCA_013911625.1. The GC content of the type genome is 45.57 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Lanigosa detunisca sp. nov.

Candidatus Lanigosa detunisca (NL. fem. n. *detunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp002378005*. The type genome for the species is the GenBank assembly GCA_002378005.1. The GC content of the type genome is 47.4 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Lanigosa fatifilega sp. nov.

Candidatus Lanigosa fatifilega (NL. fem. n. *fatifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp003487785*. The type genome for the species is the GenBank assembly GCA_002339565.1. The GC content of the type genome is 41.81 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Lanigosa inexpimonas sp. nov.

Candidatus Lanigosa inexpimonas (NL. fem. n. *inexpimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp002707525*. The type genome for the species is the GenBank assembly GCA_002707525.1. The GC content of the type genome is 40.43 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Lanigosa onocritia sp. nov.

Candidatus Lanigosa onocritia (NL. fem. n. *onocritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp003023665*. The type genome for the species is the GenBank assembly GCA_003023665.1. The GC content of the type genome is 40.87 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Lanigosa selibatio sp. nov.

Candidatus Lanigosa selibatio (NL. fem. n. *selibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp011525035*. The type genome for the species is the GenBank assembly GCA_011525035.1. The GC content of the type genome is 46.41 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Lanigosa semifitia sp. nov.

Candidatus Lanigosa semifitia (NL. fem. n. *semifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10364 sp003385605*. The type genome for the species is the GenBank assembly GCA_003385605.1. The GC content of the type genome is 45.97 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Lanigula regifitudo sp. nov.

Candidatus Lanigula regifitudo (NL. fem. n. *regifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UWMA-0217 sp012961935*. The type genome for the species is the GenBank assembly GCA_012961935.1. The GC content of the type genome is 48.06 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Lanigula gen. nov.

Candidatus Lanigula (NL. fem. n. *Lanigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UWMA-0217*. The type species for the genus is *Candidatus* Lanigula regifitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UWMA-0217*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanigulaceae.

Description of *Candidatus* Lanigulaceae fam. nov.

Candidatus Lanigulaceae (NL. fem. n. *Lanigulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UWMA-0217.* The type genus for the taxon is *Candidatus* Lanigula .

According to GTDB R06-RS202, this family belongs to the order *Thiotrichales*.

Description of *Candidatus* Lanugana arbavigena sp. nov.

Candidatus Lanugana arbavigena (NL. fem. n. *arbavigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABABD01 sp014238425*. The type genome for the species is the GenBank assembly GCA_014238425.1. The GC content of the type genome is 34.83 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Lanugana gen. nov.

Candidatus Lanugana (NL. fem. n. *Lanugana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABABD01*. The type species for the genus is *Candidatus* Lanugana arbavigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lanugana semipilega sp. nov.

Candidatus Lanugana semipilega (NL. fem. n. *semipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABABD01 sp013001365*. The type genome for the species is the GenBank assembly GCA_013043265.1. The GC content of the type genome is 38.61 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Lanugaria adhorimonia sp. nov.

Candidatus Lanugaria adhorimonia (NL. fem. n. *adhorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALW01 sp900547955*. The type genome for the species is the GenBank assembly GCA_900547955.1. The GC content of the type genome is 46.79 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Lanugaria gen. nov.

Candidatus Lanugaria (NL. fem. n. *Lanugaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QALW01*. The type species for the genus is *Candidatus* Lanugaria adhorimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QALW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanugariaceae.

Description of *Candidatus* Lanugariaceae fam. nov.

Candidatus Lanugariaceae (NL. fem. n. *Lanugariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *QALW01*. The type genus for the taxon is *Candidatus* Lanugaria .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Lanugaria desepibra sp. nov.

Candidatus Lanugaria desepibra (NL. fem. n. *desepibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALW01 sp003150515*. The type genome for the species is the GenBank assembly GCA_900547535.1. The GC content of the type genome is 47.97 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Lanugaria lapicitrix sp. nov.

Candidatus Lanugaria lapicitrix (NL. fem. n. *lapicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALW01 sp900552055*. The type genome for the species is the GenBank assembly RS_GCF_900752885.1. The GC content of the type genome is 46.91 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Lanugella adaggibra sp. nov.

Candidatus Lanugella adaggibra (NL. fem. n. *adaggibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUB01 sp012517875*. The type genome for the species is the GenBank assembly GCA_012517875.1. The GC content of the type genome is 65.69 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Lanugella gen. nov.

Candidatus Lanugella (NL. fem. n. *Lanugella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUB01*. The type species for the genus is *Candidatus* Lanugella adaggibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYUB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Lanugellaceae.

Description of *Candidatus* Lanugellaceae fam. nov.

Candidatus Lanugellaceae (NL. fem. n. *Lanugellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYUB01.* The type genus for the taxon is *Candidatus* Lanugella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYUB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lanugellales.

Description of *Candidatus* Lanugellales ord. nov.

Candidatus Lanugellales (NL. fem. n. *Lanugellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYUB01.* The type genus for the taxon is *Candidatus* Lanugella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6911*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Decomulae.

Description of *Candidatus* Lanugida citipitica sp. nov.

Candidatus Lanugida citipitica (NL. fem. n. *citipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-257 sp003165795*. The type genome for the species is the GenBank assembly GCA_003167855.1. The GC content of the type genome is 58.52 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Lanugida gen. nov.

Candidatus Lanugida (NL. fem. n. *Lanugida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-257*. The type species for the genus is *Candidatus* Lanugida citipitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lanugida cocibigena sp. nov.

Candidatus Lanugida cocibigena (NL. fem. n. *cocibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-257 sp003135475*. The type genome for the species is the GenBank assembly GCA_003135475.1. The GC content of the type genome is 58.65 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Lanugida decupastra sp. nov.

Candidatus Lanugida decupastra (NL. fem. n. *decupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-257 sp003151335*. The type genome for the species is the GenBank assembly GCA_003165535.1. The GC content of the type genome is 58.8 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Lanugida effacitoga sp. nov.

Candidatus Lanugida effacitoga (NL. fem. n. *effacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-257 sp003135315*. The type genome for the species is the GenBank assembly GCA_003135315.1. The GC content of the type genome is 59.27 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Lanugida munifessa sp. nov.

Candidatus Lanugida munifessa (NL. fem. n. *munifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-257 sp003152695*. The type genome for the species is the GenBank assembly GCA_003167225.1. The GC content of the type genome is 58.72 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Lanugida rudecicula sp. nov.

Candidatus Lanugida rudecicula (NL. fem. n. *rudecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-257 sp003151875*. The type genome for the species is the GenBank assembly GCA_003151875.1. The GC content of the type genome is 59.23 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Lanugida sacomiforma sp. nov.

Candidatus Lanugida sacomiforma (NL. fem. n. *sacomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-257 sp003160215*. The type genome for the species is the GenBank assembly GCA_003160215.1. The GC content of the type genome is 58.0 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Lanugosa adsibessa sp. nov.

Candidatus Lanugosa adsibessa (NL. fem. n. *adsibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp010084195*. The type genome for the species is the GenBank assembly GCA_010084195.1. The GC content of the type genome is 59.39 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Lanugosa gen. nov.

Candidatus Lanugosa (NL. fem. n. *Lanugosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-234*. The type species for the genus is *Candidatus* Lanugosa adsibessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lanugosa cohuritia sp. nov.

Candidatus Lanugosa cohuritia (NL. fem. n. *cohuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *BOG-234 sp003136575*. The type genome for the species is the GenBank assembly GCA_003136575.1. The GC content of the type genome is 60.07 % and the genome length is 6.6 Mbp.

Description of *Candidatus* Lanugosa colopitudo sp. nov.

Candidatus Lanugosa colopitudo (NL. fem. n. *colopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903907865*. The type genome for the species is the GenBank assembly GCA_903920995.1. The GC content of the type genome is 62.45 % and the genome length is 7.48 Mbp.

Description of *Candidatus* Lanugosa culibifica sp. nov.

Candidatus Lanugosa culibifica (NL. fem. n. *culibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903929755*. The type genome for the species is the GenBank assembly GCA_903910425.1. The GC content of the type genome is 59.85 % and the genome length is 6.86 Mbp.

Description of *Candidatus* Lanugosa denavitica sp. nov.

Candidatus Lanugosa denavitica (NL. fem. n. *denavitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903925015*. The type genome for the species is the GenBank assembly GCA_903925015.1. The GC content of the type genome is 60.61 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Lanugosa depicatio sp. nov.

Candidatus Lanugosa depicatio (NL. fem. n. *depicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903875575*. The type genome for the species is the GenBank assembly GCA_903875575.1. The GC content of the type genome is 59.9 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Lanugosa echidigena sp. nov.

Candidatus Lanugosa echidigena (NL. fem. n. *echidigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903923395*. The type genome for the species is the GenBank assembly GCA_903923395.1. The GC content of the type genome is 58.66 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Lanugosa ininnitas sp. nov.

Candidatus Lanugosa ininnitas (NL. fem. n. *ininnitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903893525*. The type genome for the species is the GenBank assembly GCA_903893525.1. The GC content of the type genome is 60.62 % and the genome length is 6.67 Mbp.

Description of *Candidatus* Lanugosa lanugugo sp. nov.

Candidatus Lanugosa lanugugo (NL. fem. n. *lanugugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903825445*. The type genome for the species is the GenBank assembly GCA_903825445.1. The GC content of the type genome is 58.37 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Lanugosa reduvigena sp. nov.

Candidatus Lanugosa reduvigena (NL. fem. n. *reduvigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903851195*. The type genome for the species is the GenBank assembly GCA_903923385.1. The GC content of the type genome is 62.27 % and the genome length is 7.69 Mbp.

Description of *Candidatus* Lanugosa rubefugo sp. nov.

Candidatus Lanugosa rubefugo (NL. fem. n. *rubefugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903900705*. The type genome for the species is the GenBank assembly GCA_903890055.1. The GC content of the type genome is 61.56 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Lanugosa tomacitoga sp. nov.

Candidatus Lanugosa tomacitoga (NL. fem. n. *tomacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-234 sp903828455*. The type genome for the species is the GenBank assembly GCA_903828455.1. The GC content of the type genome is 62.85 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Lanugula acculitia sp. nov.

Candidatus Lanugula acculitia (NL. fem. n. *acculitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEB-12 sp003105265*. The type genome for the species is the GenBank assembly GCA_003105265.1. The GC content of the type genome is 57.34 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Lanugula gen. nov.

Candidatus Lanugula (NL. fem. n. *Lanugula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEB-12*. The type species for the genus is *Candidatus* Lanugula acculitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEB-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanugulaceae.

Description of *Candidatus* Lanugulaceae fam. nov.

Candidatus Lanugulaceae (NL. fem. n. *Lanugulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEB-12*. The type genus for the taxon is *Candidatus* Lanugula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GN15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Solacidales.

Description of *Candidatus* Lapicana malediforma sp. nov.

Candidatus Lapicana malediforma (NL. fem. n. *malediforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG013 sp001486445*. The type genome for the species is the GenBank assembly GCA_902755365.1. The GC content of the type genome is 63.67 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Lapicana gen. nov.

Candidatus Lapicana (NL. fem. n. *Lapicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG013*. The type species for the genus is *Candidatus* Lapicana malediforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lapicaria nivomilega sp. nov.

Candidatus Lapicaria nivomilega (NL. fem. n. *nivomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1908 sp900556185*. The type genome for the species is the GenBank assembly RS_GCF_900753745.1. The GC content of the type genome is 34.53 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Lapicaria gen. nov.

Candidatus Lapicaria (NL. fem. n. *Lapicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1908*. The type species for the genus is *Candidatus* Lapicaria

nivomilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Lapicella reduvetta sp. nov.

Candidatus Lapicella reduvetta (NL. fem. n. *reduvetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAI01 sp003567135*. The type genome for the species is the GenBank assembly GCA_003567135.1. The GC content of the type genome is 48.45 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Lapicella gen. nov.

Candidatus Lapicella (NL. fem. n. *Lapicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXAI01*. The type species for the genus is *Candidatus* Lapicella reduvetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PXAI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapicellaceae.

Description of *Candidatus* Lapicellaceae fam. nov.

Candidatus Lapicellaceae (NL. fem. n. *Lapicellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PXAI01*. The type genus for the taxon is *Candidatus* Lapicella .

According to GTDB R06-RS202, this family belongs to the order *Balneolales*.

Description of *Candidatus* Lapicia subodifica sp. nov.

Candidatus Lapicia subodifica (NL. fem. n. *subodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *PXDI01 sp003565095*. The type genome for the species is the GenBank assembly GCA_003565095.1. The GC content of the type genome is 54.23 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Lapicia gen. nov.

Candidatus Lapicia (NL. fem. n. *Lapicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXDI01*. The type species for the genus is *Candidatus* Lapicia subodifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PXDI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapiciaceae.

Description of *Candidatus* Lapiciaceae fam. nov.

Candidatus Lapiciaceae (NL. fem. n. *Lapiciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PXDI01.* The type genus for the taxon is *Candidatus* Lapicia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depupellales.

Description of *Candidatus* Lapicosa adgesigena sp. nov.

Candidatus Lapicosa adgesigena (NL. fem. n. *adgesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp003556985*. The type genome for the species is the GenBank assembly GCA_003556985.1. The GC content of the type genome is 44.66 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Lapicosa gen. nov.

Candidatus Lapicosa (NL. fem. n. *Lapicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXAP01*. The type species for the genus is *Candidatus* Lapicosa

adgesigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUMT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifidaceae.

Description of *Candidatus* Lapicosa catapimonas sp. nov.

Candidatus Lapicosa catapimonas (NL. fem. n. *catapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007132715*. The type genome for the species is the GenBank assembly GCA_007129855.1. The GC content of the type genome is 48.34 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Lapicosa cicatibra sp. nov.

Candidatus Lapicosa cicatibra (NL. fem. n. *cicatibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007120695*. The type genome for the species is the GenBank assembly GCA_003556565.1. The GC content of the type genome is 43.43 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Lapicosa cruppitio sp. nov.

Candidatus Lapicosa cruppitio (NL. fem. n. *cruppitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007132365*. The type genome for the species is the GenBank assembly GCA_007132365.1. The GC content of the type genome is 43.82 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Lapicosa extipugo sp. nov.

Candidatus Lapicosa extipugo (NL. fem. n. *extipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007134675*. The type genome for the species is the

GenBank assembly GCA_007134675.1. The GC content of the type genome is 42.66 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Lapicosa gasifedo sp. nov.

Candidatus Lapicosa gasifedo (NL. fem. n. *gasifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007123885*. The type genome for the species is the GenBank assembly GCA_007121265.1. The GC content of the type genome is 44.43 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Lapicosa indipigena sp. nov.

Candidatus Lapicosa indipigena (NL. fem. n. *indipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007695015*. The type genome for the species is the GenBank assembly GCA_007695015.1. The GC content of the type genome is 48.38 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Lapicosa inmolitudo sp. nov.

Candidatus Lapicosa inmolitudo (NL. fem. n. *inmolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007132225*. The type genome for the species is the GenBank assembly GCA_007132225.1. The GC content of the type genome is 41.3 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Lapicosa insepax sp. nov.

Candidatus Lapicosa insepax (NL. fem. n. *insepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp003567115*. The type genome for the species is the GenBank assembly GCA_003567115.1. The GC content of the type genome is 42.93 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Lapicosa insibitica sp. nov.

Candidatus Lapicosa insibitica (NL. fem. n. *insibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007131165*. The type genome for the species is the GenBank assembly GCA_007131165.1. The GC content of the type genome is 46.63 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Lapicosa socagifica sp. nov.

Candidatus Lapicosa socagifica (NL. fem. n. *socagifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007119075*. The type genome for the species is the GenBank assembly GCA_007119075.1. The GC content of the type genome is 48.42 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Lapicosa teniliforma sp. nov.

Candidatus Lapicosa teniliforma (NL. fem. n. *teniliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007133565*. The type genome for the species is the GenBank assembly GCA_007133565.1. The GC content of the type genome is 47.79 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Lapicosa viragisca sp. nov.

Candidatus Lapicosa viragisca (NL. fem. n. *viragisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAP01 sp007135095*. The type genome for the species is the GenBank assembly GCA_007135095.1. The GC content of the type genome is 45.25 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Lapicula absurago sp. nov.

Candidatus Lapicula absurago (NL. fem. n. *absurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp002353215*. The type genome for the species is the GenBank assembly GCA_002353215.1. The GC content of the type genome is 45.18 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Lapicula gen. nov.

Candidatus Lapicula (NL. fem. n. *Lapicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4334*. The type species for the genus is *Candidatus* Lapicula absurago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lapicula algebimonia sp. nov.

Candidatus Lapicula algebimonia (NL. fem. n. *algebimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp012729225*. The type genome for the species is the GenBank assembly GCA_012729225.1. The GC content of the type genome is 45.21 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Lapicula cisaledo sp. nov.

Candidatus Lapicula cisaledo (NL. fem. n. *cisaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp900316975*. The type genome for the species is the GenBank assembly GCA_900316975.1. The GC content of the type genome is 47.62 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Lapicula cucurilega sp. nov.

Candidatus Lapicula cucurilega (NL. fem. n. *cucurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp009177185*. The type genome for the species is the

GenBank assembly GCA_009177185.1. The GC content of the type genome is 49.25 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Lapicula culilicella sp. nov.

Candidatus Lapicula culilicella (NL. fem. n. *culilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp002353575*. The type genome for the species is the GenBank assembly GCA_002353575.1. The GC content of the type genome is 46.88 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Lapicula delecousia sp. nov.

Candidatus Lapicula delecousia (NL. fem. n. *delecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp902803605*. The type genome for the species is the GenBank assembly GCA_902803605.1. The GC content of the type genome is 49.04 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Lapicula dilecitrix sp. nov.

Candidatus Lapicula dilecitrix (NL. fem. n. *dilecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp902800305*. The type genome for the species is the GenBank assembly GCA_902800305.1. The GC content of the type genome is 49.23 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Lapicula ducililenta sp. nov.

Candidatus Lapicula ducililenta (NL. fem. n. *ducililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp902768125*. The type genome for the species is the GenBank assembly GCA_902768125.1. The GC content of the type genome is 48.08 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Lapicula fefeletta sp. nov.

Candidatus Lapicula fefeletta (NL. fem. n. *fefeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp902786925*. The type genome for the species is the GenBank assembly GCA_902786925.1. The GC content of the type genome is 48.55 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Lapicula habacitas sp. nov.

Candidatus Lapicula habacitas (NL. fem. n. *habacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp002393555*. The type genome for the species is the GenBank assembly GCA_002393555.1. The GC content of the type genome is 51.21 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Lapicula hemititrix sp. nov.

Candidatus Lapicula hemititrix (NL. fem. n. *hemititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp902774005*. The type genome for the species is the GenBank assembly GCA_902774005.1. The GC content of the type genome is 47.59 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Lapicula inlumiforma sp. nov.

Candidatus Lapicula inlumiforma (NL. fem. n. *inlumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp902802265*. The type genome for the species is the GenBank assembly GCA_902802265.1. The GC content of the type genome is 49.36 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Lapicula malogentia sp. nov.

Candidatus Lapicula malogentia (NL. fem. n. *malogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp002363115*. The type genome for the species is the GenBank assembly GCA_002363115.1. The GC content of the type genome is 48.8 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Lapicula mavorivita sp. nov.

Candidatus Lapicula mavorivita (NL. fem. n. *mavorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp902801475*. The type genome for the species is the GenBank assembly GCA_902801475.1. The GC content of the type genome is 48.6 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Lapicula oblucousia sp. nov.

Candidatus Lapicula oblucousia (NL. fem. n. *oblucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp002317225*. The type genome for the species is the GenBank assembly GCA_002317225.1. The GC content of the type genome is 43.37 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Lapicula panopitio sp. nov.

Candidatus Lapicula panopitio (NL. fem. n. *panopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp002342585*. The type genome for the species is the GenBank assembly GCA_902803225.1. The GC content of the type genome is 43.85 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Lapicula rudicitudo sp. nov.

Candidatus Lapicula rudicitudo (NL. fem. n. *rudicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp900318775*. The type genome for the species is the GenBank assembly GCA_002350325.1. The GC content of the type genome is 48.13 %

and the genome length is 2.74 Mbp.

Description of *Candidatus* Lapicula semibitura sp. nov.

Candidatus Lapicula semibitura (NL. fem. n. *semibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4334 sp900316505*. The type genome for the species is the GenBank assembly GCA_902760895.1. The GC content of the type genome is 48.0 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Lapidilactobacillus culigedo sp. nov.

Candidatus Lapidilactobacillus culigedo (NL. fem. n. *culigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lapidilactobacillus sp003946695*. The type genome for the species is the GenBank assembly RS_GCF_003946695.1. The GC content of the type genome is 40.11 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Lapidilactobacillus inlacetta sp. nov.

Candidatus Lapidilactobacillus inlacetta (NL. fem. n. *inlacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lapidilactobacillus sp003946215*. The type genome for the species is the GenBank assembly RS_GCF_003946215.1. The GC content of the type genome is 42.48 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Lapilana debucilenta sp. nov.

Candidatus Lapilana debucilenta (NL. fem. n. *debucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2-FULL-39-29 sp001778355*. The type genome for the species is the GenBank assembly GCA_001778355.1. The GC content of the type genome is 40.52 % and the genome length is 2.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Lapilana gen. nov.

Candidatus Lapilana (NL. fem. n. *Lapilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *D2-FULL-39-29*. The type species for the genus is *Candidatus* Lapilana debucilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2-FULL-39-29*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilanaceae.

Description of *Candidatus* Lapilanaceae fam. nov.

Candidatus Lapilanaceae (NL. fem. n. *Lapilanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *D2-FULL-39-29.* The type genus for the taxon is *Candidatus* Lapilana .

According to the original version of GTDB R06-RS202, this family belongs to the order *D2-FULL-39-29*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lapilanales.

Description of *Candidatus* Lapilanales ord. nov.

Candidatus Lapilanales (NL. fem. n. *Lapilanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *D2-FULL-39-29.* The type genus for the taxon is *Candidatus* Lapilana .

According to the original version of GTDB R06-RS202, this family belongs to the class *D2-FULL-39-29*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Lapilanae.

Description of *Candidatus* Lapilanae class. nov.

Candidatus Lapilanae (NL. fem. n. *c__Lapilanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *D2-FULL-39-29.* The type genus for the taxon is *Candidatus* Lapilana .

According to GTDB R06-RS202, this class belongs to the phylum *Firestonebacteria*.

Description of *Candidatus* Lapilana vepalicula sp. nov.

Candidatus Lapilana vepalicula (NL. fem. n. *vepalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D2-FULL-39-29 sp001778375*. The type genome for the species is the GenBank assembly GCA_001780375.1. The GC content of the type genome is 39.27 % and the genome length is 3.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Lapilaria acropetta sp. nov.

Candidatus Lapilaria acropetta (NL. fem. n. *acropetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9320 sp002746305*. The type genome for the species is the GenBank assembly GCA_002746305.1. The GC content of the type genome is 36.41 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Lapilaria gen. nov.

Candidatus Lapilaria (NL. fem. n. *Lapilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9320*. The type species for the genus is *Candidatus* Lapilaria acropetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9320*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilariaceae.

Description of *Candidatus* Lapilariaceae fam. nov.

Candidatus Lapilariaceae (NL. fem. n. *Lapilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9320.* The type genus for the taxon is *Candidatus* Lapilaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *NS11-12g*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peropanales.

Description of *Candidatus* Lapilaria alcedilenta sp. nov.

Candidatus Lapilaria alcedilenta (NL. fem. n. *alcedilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9320 sp013042025*. The type genome for the species is the GenBank assembly GCA_013042025.1. The GC content of the type genome is 35.45 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Lapilaria apruciforma sp. nov.

Candidatus Lapilaria apruciforma (NL. fem. n. *apruciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9320 sp003516975*. The type genome for the species is the GenBank assembly GCA_003516975.1. The GC content of the type genome is 37.56 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Lapilaria delubibula sp. nov.

Candidatus Lapilaria delubibula (NL. fem. n. *delubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9320 sp003485825*. The type genome for the species is the GenBank assembly GCA_003485825.1. The GC content of the type genome is 39.86 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Lapilaria diludifica sp. nov.

Candidatus Lapilaria diludifica (NL. fem. n. *diludifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9320 sp003484585*. The type genome for the species is the GenBank assembly GCA_003484585.1. The GC content of the type genome is 38.32 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Lapilaria hemidousia sp. nov.

Candidatus Lapilaria hemidousia (NL. fem. n. *hemidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9320 sp002384205*. The type genome for the species is the GenBank assembly GCA_002384205.1. The GC content of the type genome is 37.62 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Lapilella accerisca sp. nov.

Candidatus Lapilella accerisca (NL. fem. n. *accerisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8229 sp002686675*. The type genome for the species is the GenBank assembly GCA_002686675.1. The GC content of the type genome is 39.05 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Lapilella gen. nov.

Candidatus Lapilella (NL. fem. n. *Lapilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8229*. The type species for the genus is *Candidatus* Lapilella accerisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8229*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilellaceae.

Description of *Candidatus* Lapilellaceae fam. nov.

Candidatus Lapilellaceae (NL. fem. n. *Lapilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8229.* The type genus for the taxon is *Candidatus* Lapilella .

According to GTDB R06-RS202, this family belongs to the order *Marinisomatales*.

Description of *Candidatus* Lapilella inresugo sp. nov.

Candidatus Lapilella inresugo (NL. fem. n. *inresugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8229 sp003535775*. The type genome for the species is the GenBank assembly GCA_003535775.1. The GC content of the type genome is 39.24 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Lapilella monumifica sp. nov.

Candidatus Lapilella monumifica (NL. fem. n. *monumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8229 sp012964235*. The type genome for the species is the GenBank assembly GCA_012964235.1. The GC content of the type genome is 39.61 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Lapilella peripicula sp. nov.

Candidatus Lapilella peripicula (NL. fem. n. *peripicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8229 sp002726775*. The type genome for the species is the GenBank assembly GCA_002726775.1. The GC content of the type genome is 39.77 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Lapilia duricibula sp. nov.

Candidatus Lapilia duricibula (NL. fem. n. *duricibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKPT01 sp007119405*. The type genome for the species is the GenBank assembly GCA_007119405.1. The GC content of the type genome is 68.94 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Lapilia gen. nov.

Candidatus Lapilia (NL. fem. n. *Lapilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKPT01*. The type species for the genus is *Candidatus* Lapilia duricibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lapilida irraditrix sp. nov.

Candidatus Lapilida irraditrix (NL. fem. n. *irraditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWU01 sp011388375*. The type genome for the species is the GenBank assembly GCA_011388375.1. The GC content of the type genome is 29.03 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Lapilida gen. nov.

Candidatus Lapilida (NL. fem. n. *Lapilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWU01*. The type species for the genus is *Candidatus* Lapilida irraditrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRWU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilidaceae.

Description of *Candidatus* Lapilidaceae fam. nov.

Candidatus Lapilidaceae (NL. fem. n. *Lapilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRWU01*. The type genus for the taxon is *Candidatus* Lapilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Lapilosa conaribula sp. nov.

Candidatus Lapilosa conaribula (NL. fem. n. *conaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5627 sp012719115*. The type genome for the species is the

GenBank assembly GCA_012719115.1. The GC content of the type genome is 44.34 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Lapilosa gen. nov.

Candidatus Lapilosa (NL. fem. n. *Lapilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5627*. The type species for the genus is *Candidatus* Lapilosa conaribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5627*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilosaceae.

Description of *Candidatus* Lapilosaceae fam. nov.

Candidatus Lapilosaceae (NL. fem. n. *Lapilosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5627.* The type genus for the taxon is *Candidatus* Lapilosa .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Lapilosa desucentia sp. nov.

Candidatus Lapilosa desucentia (NL. fem. n. *desucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5627 sp012520835*. The type genome for the species is the GenBank assembly GCA_012520835.1. The GC content of the type genome is 46.71 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Lapilosa documicula sp. nov.

Candidatus Lapilosa documicula (NL. fem. n. *documicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5627 sp002421585*. The type genome for the species is the GenBank assembly GCA_002421585.1. The GC content of the type genome is 44.15 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Lapilosa ensifugo sp. nov.

Candidatus Lapilosa ensifugo (NL. fem. n. *ensifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5627 sp002419135*. The type genome for the species is the GenBank assembly GCA_002419135.1. The GC content of the type genome is 43.96 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Larkinella bicalentia sp. nov.

Candidatus Larkinella bicalentia (NL. fem. n. *bicalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Larkinella sp008727875*. The type genome for the species is the GenBank assembly RS_GCF_008727875.1. The GC content of the type genome is 52.27 % and the genome length is 7.86 Mbp.

Description of *Candidatus* Larkinella divolessa sp. nov.

Candidatus Larkinella divolessa (NL. fem. n. *divolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Larkinella sp003334855*. The type genome for the species is the GenBank assembly RS_GCF_003334855.1. The GC content of the type genome is 51.79 % and the genome length is 8.01 Mbp.

Description of *Candidatus* Larkinella funebitura sp. nov.

Candidatus Larkinella funebitura (NL. fem. n. *funebitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Larkinella sp006149005*. The type genome for the species is the GenBank assembly RS_GCF_006149005.1. The GC content of the type genome is 51.82 % and the genome length is 7.94 Mbp.

Description of *Candidatus* Larkinella utrariforma sp. nov.

Candidatus Larkinella utrariforma (NL. fem. n. *utrariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Larkinella sp004366505*. The type genome for the species is the GenBank assembly RS_GCF_004366505.1. The GC content of the type genome is 53.4 % and the genome length is 7.27 Mbp.

Description of *Candidatus* Latibana nimiriforma sp. nov.

Candidatus Latibana nimiriforma (NL. fem. n. *nimiriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUQR01 sp903901335*. The type genome for the species is the GenBank assembly GCA_903872855.1. The GC content of the type genome is 50.16 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Latibana gen. nov.

Candidatus Latibana (NL. fem. n. *Latibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUQR01*. The type species for the genus is *Candidatus* Latibana nimiriforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Latibaria bicubitas sp. nov.

Candidatus Latibaria bicubitas (NL. fem. n. *bicubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-80 sp002418775*. The type genome for the species is the GenBank assembly GCA_002421505.1. The GC content of the type genome is 46.07 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Latibaria gen. nov.

Candidatus Latibaria (NL. fem. n. *Latibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *46-80*. The type species for the genus is *Candidatus* Latibaria bicubitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Nap2-2B*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenariaceae.

Description of *Candidatus* Latibaria defacetta sp. nov.

Candidatus Latibaria defacetta (NL. fem. n. *defacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-80 sp003513005*. The type genome for the species is the GenBank assembly GCA_001508995.1. The GC content of the type genome is 45.75 % and the genome length is 2.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample SB1".

Description of *Candidatus* Latibaria letifugo sp. nov.

Candidatus Latibaria letifugo (NL. fem. n. *letifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-80 sp002382755*. The type genome for the species is the GenBank assembly GCA_002347425.1. The GC content of the type genome is 46.37 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Latibaria octipimonia sp. nov.

Candidatus Latibaria octipimonia (NL. fem. n. *octipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-80 sp003485325*. The type genome for the species is the GenBank assembly GCA_003485325.1. The GC content of the type genome is 45.74 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Latibia molecetta sp. nov.

Candidatus Latibia molecetta (NL. fem. n. *molecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3505 sp002728755*. The type genome for the species is the GenBank assembly GCA_002728755.1. The GC content of the type genome is 54.59 %

and the genome length is 4.14 Mbp.

Description of *Candidatus* Latibia gen. nov.

Candidatus Latibia (NL. fem. n. *Latibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3505*. The type species for the genus is *Candidatus* Latibia molecetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3505*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Latibiaceae.

Description of *Candidatus* Latibiaceae fam. nov.

Candidatus Latibiaceae (NL. fem. n. *Latibiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3505.* The type genus for the taxon is *Candidatus* Latibia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3505*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Latibiales.

Description of *Candidatus* Latibiales ord. nov.

Candidatus Latibiales (NL. fem. n. *Latibiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3505.* The type genus for the taxon is *Candidatus* Latibia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubigariae.

Description of *Candidatus* Latibida ignosicella sp. nov.

Candidatus Latibida ignosicella (NL. fem. n. *ignosicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-32-72 sp000989525*. The type genome for the species is the

GenBank assembly GCA_000989525.1. The GC content of the type genome is 32.7 % and the genome length is 0.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Latibida gen. nov.

Candidatus Latibida (NL. fem. n. *Latibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-32-72*. The type species for the genus is *Candidatus* Latibida ignosicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-32-72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Latibidaceae.

Description of *Candidatus* Latibidaceae fam. nov.

Candidatus Latibidaceae (NL. fem. n. *Latibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-32-72.* The type genus for the taxon is *Candidatus* Latibida .

According to GTDB R06-RS202, this family belongs to the order *Babeliales*.

Description of *Candidatus* Lautropia coticifica sp. nov.

Candidatus Lautropia coticifica (NL. fem. n. *coticifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lautropia sp012513675*. The type genome for the species is the GenBank assembly GCA_012513675.1. The GC content of the type genome is 69.74 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Lautropia subofisca sp. nov.

Candidatus Lautropia subofisca (NL. fem. n. *subofisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lautropia sp013813615*. The type genome for the species is the GenBank assembly GCA_013813615.1. The GC content of the type genome is 66.35 %

and the genome length is 3.28 Mbp.

Description of *Candidatus* Lavabana apercugo sp. nov.

Candidatus Lavabana apercugo (NL. fem. n. *apercugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp003152015*. The type genome for the species is the GenBank assembly GCA_003152015.1. The GC content of the type genome is 64.62 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Lavabana gen. nov.

Candidatus Lavabana (NL. fem. n. *Lavabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-756*. The type species for the genus is *Candidatus* Lavabana apercugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Lavabana betacitudo sp. nov.

Candidatus Lavabana betacitudo (NL. fem. n. *betacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp003153575*. The type genome for the species is the GenBank assembly GCA_003167335.1. The GC content of the type genome is 69.28 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Lavabana catabimonas sp. nov.

Candidatus Lavabana catabimonas (NL. fem. n. *catabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp003164095*. The type genome for the species is the GenBank assembly GCA_003164095.1. The GC content of the type genome is 69.74 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Lavabana cerarax sp. nov.

Candidatus Lavabana cerarax (NL. fem. n. *cerarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp903873395*. The type genome for the species is the GenBank assembly GCA_903848135.1. The GC content of the type genome is 64.65 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Lavabana citivugo sp. nov.

Candidatus Lavabana citivugo (NL. fem. n. *citivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp003164275*. The type genome for the species is the GenBank assembly GCA_003164275.1. The GC content of the type genome is 64.65 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Lavabana decucimonas sp. nov.

Candidatus Lavabana decucimonas (NL. fem. n. *decucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp003133325*. The type genome for the species is the GenBank assembly GCA_003133325.1. The GC content of the type genome is 64.71 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Lavabana detorifica sp. nov.

Candidatus Lavabana detorifica (NL. fem. n. *detorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp903849265*. The type genome for the species is the GenBank assembly GCA_903849265.1. The GC content of the type genome is 67.0 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Lavabana manubiforma sp. nov.

Candidatus Lavabana manubiforma (NL. fem. n. *manubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp903894295*. The type genome for the species is the GenBank assembly GCA_903853495.1. The GC content of the type genome is 67.06 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Lavabana pudibousia sp. nov.

Candidatus Lavabana pudibousia (NL. fem. n. *pudibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp003157945*. The type genome for the species is the GenBank assembly GCA_003157945.1. The GC content of the type genome is 71.81 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Lavabana recocitudo sp. nov.

Candidatus Lavabana recocitudo (NL. fem. n. *recocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp903906055*. The type genome for the species is the GenBank assembly GCA_903853155.1. The GC content of the type genome is 66.15 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Lavabana tegumastra sp. nov.

Candidatus Lavabana tegumastra (NL. fem. n. *tegumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-756 sp003138855*. The type genome for the species is the GenBank assembly GCA_003159395.1. The GC content of the type genome is 67.74 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Lavabaria nidifitica sp. nov.

Candidatus Lavabaria nidifitica (NL. fem. n. *nidifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Fen-1308 sp903822005*. The type genome for the species is the GenBank assembly GCA_903822005.1. The GC content of the type genome is 49.5 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Lavabaria gen. nov.

Candidatus Lavabaria (NL. fem. n. *Lavabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1308*. The type species for the genus is *Candidatus* Lavabaria nidifitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramosaceae.

Description of *Candidatus* Lavabaria nutamessa sp. nov.

Candidatus Lavabaria nutamessa (NL. fem. n. *nutamessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1308 sp003170655*. The type genome for the species is the GenBank assembly GCA_003162365.1. The GC content of the type genome is 49.18 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Lavabella minurentia sp. nov.

Candidatus Lavabella minurentia (NL. fem. n. *minurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPHT01 sp903864935*. The type genome for the species is the GenBank assembly GCA_903864935.1. The GC content of the type genome is 44.56 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Lavabella gen. nov.

Candidatus Lavabella (NL. fem. n. *Lavabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPHT01*. The type species for the genus is *Candidatus* Lavabella minurentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD1-FULL-46-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidellaceae.

Description of *Candidatus* Lavabella rudiciforma sp. nov.

Candidatus Lavabella rudiciforma (NL. fem. n. *rudiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPHT01 sp903825615*. The type genome for the species is the GenBank assembly GCA_903825615.1. The GC content of the type genome is 43.71 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Lavabia attorousia sp. nov.

Candidatus Lavabia attorousia (NL. fem. n. *attorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-631 sp900754115*. The type genome for the species is the GenBank assembly RS_GCF_900754115.1. The GC content of the type genome is 30.05 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Lavabia gen. nov.

Candidatus Lavabia (NL. fem. n. *Lavabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-631*. The type species for the genus is *Candidatus* Lavabia attorousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-631*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lavabiaceae.

Description of *Candidatus* Lavabiaceae fam. nov.

Candidatus Lavabiaceae (NL. fem. n. *Lavabiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-631.* The type genus for the taxon is *Candidatus* Lavabia .

According to the original version of GTDB R06-RS202, this family belongs to the order *RFN20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cerofellales.

Description of *Candidatus* Lavabia categilega sp. nov.

Candidatus Lavabia categilega (NL. fem. n. *categilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-631 sp900762575*. The type genome for the species is the GenBank assembly RS_GCF_900762575.1. The GC content of the type genome is 26.31 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Lavabia necopicella sp. nov.

Candidatus Lavabia necopicella (NL. fem. n. *necopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-631 sp000433015*. The type genome for the species is the GenBank assembly GCA_000433015.1. The GC content of the type genome is 30.08 % and the genome length is 1.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Lavabida dilecitudo sp. nov.

Candidatus Lavabida dilecitudo (NL. fem. n. *dilecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLNP01 sp007132995*. The type genome for the species is the GenBank assembly GCA_003557255.1. The GC content of the type genome is 48.4 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Lavabida gen. nov.

Candidatus Lavabida (NL. fem. n. *Lavabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLNP01*. The type species for the genus is *Candidatus* Lavabida dilecitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VadinHA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categariaceae.

Description of *Candidatus* Lavabosa manubugo sp. nov.

Candidatus Lavabosa manubugo (NL. fem. n. *manubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDLI01 sp013003065*. The type genome for the species is the GenBank assembly GCA_013043745.1. The GC content of the type genome is 68.8 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Lavabosa gen. nov.

Candidatus Lavabosa (NL. fem. n. *Lavabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDLI01*. The type species for the genus is *Candidatus* Lavabosa manubugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Lavabula linigessa sp. nov.

Candidatus Lavabula linigessa (NL. fem. n. *linigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4770 sp002403335*. The type genome for the species is the GenBank assembly GCA_002403335.1. The GC content of the type genome is 38.67 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Lavabula gen. nov.

Candidatus Lavabula (NL. fem. n. *Lavabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4770*. The type species for the genus is *Candidatus* Lavabula

linigessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lavacana vitabitica sp. nov.

Candidatus Lavacana vitabitica (NL. fem. n. *vitabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp6-AA38 sp003223835*. The type genome for the species is the GenBank assembly GCA_003223835.1. The GC content of the type genome is 67.57 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Lavacana gen. nov.

Candidatus Lavacana (NL. fem. n. *Lavacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp6-AA38*. The type species for the genus is *Candidatus* Lavacana vitabitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-66-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunidaceae.

Description of *Candidatus* Lavacaria bipenilega sp. nov.

Candidatus Lavacaria bipenilega (NL. fem. n. *bipenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Lenti-01 sp003451935*. The type genome for the species is the GenBank assembly GCA_003451935.1. The GC content of the type genome is 64.76 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Lavacaria gen. nov.

Candidatus Lavacaria (NL. fem. n. *Lavacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Lenti-01*. The type species for the genus is *Candidatus* Lavacaria bipenilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Lenti-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lavacariaceae.

Description of *Candidatus* Lavacariaceae fam. nov.

Candidatus Lavacariaceae (NL. fem. n. *Lavacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Lenti-01.* The type genus for the taxon is *Candidatus* Lavacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *LD1-PB3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delacariales.

Description of *Candidatus* Lavacaria depopedo sp. nov.

Candidatus Lavacaria depopedo (NL. fem. n. *depopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Lenti-01 sp009928955*. The type genome for the species is the GenBank assembly GCA_009928955.1. The GC content of the type genome is 65.9 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Lavacaria duponimonas sp. nov.

Candidatus Lavacaria duponimonas (NL. fem. n. *duponimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Lenti-01 sp012514035*. The type genome for the species is the GenBank assembly GCA_012514035.1. The GC content of the type genome is 63.62 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Lavacaria impigessa sp. nov.

Candidatus Lavacaria impigessa (NL. fem. n. *impigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Lenti-01 sp009930415*. The type genome for the species is the

GenBank assembly GCA_009930415.1. The GC content of the type genome is 66.12 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Lavacaria malagicella sp. nov.

Candidatus Lavacaria malagicella (NL. fem. n. *malagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Lenti-01 sp002347655*. The type genome for the species is the GenBank assembly GCA_002412675.1. The GC content of the type genome is 66.72 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Lavacaria nugivimonia sp. nov.

Candidatus Lavacaria nugivimonia (NL. fem. n. *nugivimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Lenti-01 sp002071335*. The type genome for the species is the GenBank assembly GCA_002071335.1. The GC content of the type genome is 61.0 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Lavacaria vocifisca sp. nov.

Candidatus Lavacaria vocifisca (NL. fem. n. *vocifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Lenti-01 sp002304915*. The type genome for the species is the GenBank assembly GCA_012841945.1. The GC content of the type genome is 59.93 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Lavacella admigitura sp. nov.

Candidatus Lavacella admigitura (NL. fem. n. *admigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-426-I14 sp902533695*. The type genome for the species is the GenBank assembly GCA_902533695.1. The GC content of the type genome is 30.22 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Lavacella gen. nov.

Candidatus Lavacella (NL. fem. n. *Lavacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-426-I14*. The type species for the genus is *Candidatus* Lavacella admigitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AAA536-G10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depicosaceae.

Description of *Candidatus* Lavacella dimacitica sp. nov.

Candidatus Lavacella dimacitica (NL. fem. n. *dimacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-426-I14 sp003213175*. The type genome for the species is the GenBank assembly GCA_002698075.1. The GC content of the type genome is 29.94 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Lavacella negidifica sp. nov.

Candidatus Lavacella negidifica (NL. fem. n. *negidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-426-I14 sp003210055*. The type genome for the species is the GenBank assembly GCA_902577605.1. The GC content of the type genome is 29.58 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Lavacia monimifica sp. nov.

Candidatus Lavacia monimifica (NL. fem. n. *monimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAURB01 sp012033335*. The type genome for the species is the GenBank assembly GCA_012033335.1. The GC content of the type genome is 47.85 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Lavacia gen. nov.

Candidatus Lavacia (NL. fem. n. *Lavacia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAURB01*. The type species for the genus is *Candidatus* Lavacia monimifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lavacida arrecitura sp. nov.

Candidatus Lavacida arrecitura (NL. fem. n. *arrecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINCZ01 sp903847195*. The type genome for the species is the GenBank assembly GCA_903847195.1. The GC content of the type genome is 62.6 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Lavacida gen. nov.

Candidatus Lavacida (NL. fem. n. *Lavacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINCZ01*. The type species for the genus is *Candidatus* Lavacida arrecitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAINCZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lavacidaceae.

Description of *Candidatus* Lavacidaceae fam. nov.

Candidatus Lavacidaceae (NL. fem. n. *Lavacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAINCZ01.* The type genus for the taxon is *Candidatus* Lavacida .

According to GTDB R06-RS202, this family belongs to the order *Acidobacteriales*.

Description of *Candidatus* Lavacosa undevitura sp. nov.

Candidatus Lavacosa undevitura (NL. fem. n. *undevitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-LCP sp005223185*. The type genome for the species is the GenBank assembly GCA_005223185.1. The GC content of the type genome is 46.54 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Lavacosa gen. nov.

Candidatus Lavacosa (NL. fem. n. *Lavacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B3-LCP*. The type species for the genus is *Candidatus* Lavacosa undevitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B3-LCP*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lavacosaceae.

Description of *Candidatus* Lavacosaceae fam. nov.

Candidatus Lavacosaceae (NL. fem. n. *Lavacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-LCP.* The type genus for the taxon is *Candidatus* Lavacosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *B3-LCP*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lavacosales.

Description of *Candidatus* Lavacosales ord. nov.

Candidatus Lavacosales (NL. fem. n. *Lavacosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-LCP.* The type genus for the taxon is *Candidatus* Lavacosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *B3-LCP*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Lavacosae.

Description of *Candidatus* Lavacosae class. nov.

Candidatus Lavacosae (NL. fem. n. *c__Lavacosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-LCP*. The type genus for the taxon is *Candidatus* Lavacosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *AABM5-125-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Desonellota.

Description of *Candidatus* Lavacula repudisca sp. nov.

Candidatus Lavacula repudisca (NL. fem. n. *repudisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVZY01 sp011772205*. The type genome for the species is the GenBank assembly GCA_011771545.1. The GC content of the type genome is 53.14 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Lavacula gen. nov.

Candidatus Lavacula (NL. fem. n. *Lavacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVZY01*. The type species for the genus is *Candidatus* Lavacula repudisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WVZY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lavaculaceae.

Description of *Candidatus* Lavaculaceae fam. nov.

Candidatus Lavaculaceae (NL. fem. n. *Lavaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WVZY01*. The type genus for the taxon is *Candidatus* Lavacula .

According to the original version of GTDB R06-RS202, this family belongs to the order *WVZY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lavaculales.

Description of *Candidatus* Lavaculales ord. nov.

Candidatus Lavaculales (NL. fem. n. *Lavaculales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WVZY01*. The type genus for the taxon is *Candidatus* Lavacula .

According to the GTDB R06-RS202, this order belongs to the class *Krumholzibacteria*.

Description of *Candidatus* Lawsonella inmemitica sp. nov.

Candidatus Lawsonella inmemitica (NL. fem. n. *inmemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonella sp012842085*. The type genome for the species is the GenBank assembly GCA_012842085.1. The GC content of the type genome is 51.82 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Lawsonibacter absoritica sp. nov.

Candidatus Lawsonibacter absoritica (NL. fem. n. *absoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900553135*. The type genome for the species is the GenBank assembly GCA_900553135.1. The GC content of the type genome is 61.53 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Lawsonibacter adsecedo sp. nov.

Candidatus Lawsonibacter adsecedo (NL. fem. n. *adsecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900766145*. The type genome for the species is the GenBank assembly GCA_900766145.1. The GC content of the type genome is 55.04 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Lawsonibacter altivitrix sp. nov.

Candidatus Lawsonibacter altivitrix (NL. fem. n. *altivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Lawsonibacter sp009911645*. The type genome for the species is the GenBank assembly RS_GCF_009911645.1. The GC content of the type genome is 57.77 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Lawsonibacter benevicella sp. nov.

Candidatus Lawsonibacter benevicella (NL. fem. n. *benevicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp003478995*. The type genome for the species is the GenBank assembly RS_GCF_003478995.1. The GC content of the type genome is 58.64 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Lawsonibacter catilisca sp. nov.

Candidatus Lawsonibacter catilisca (NL. fem. n. *catilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900066645*. The type genome for the species is the GenBank assembly GCA_900066645.1. The GC content of the type genome is 56.38 % and the genome length is 2.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Lawsonibacter demigugo sp. nov.

Candidatus Lawsonibacter demigugo (NL. fem. n. *demigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp009911595*. The type genome for the species is the GenBank assembly RS_GCF_009911595.1. The GC content of the type genome is 58.41 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Lawsonibacter energugo sp. nov.

Candidatus Lawsonibacter energugo (NL. fem. n. *energugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900754605*. The type genome for the species is the GenBank assembly GCA_900754605.1. The GC content of the type genome is 55.34 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Lawsonibacter fatifedo sp. nov.

Candidatus Lawsonibacter fatifedo (NL. fem. n. *fatifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp002160305*. The type genome for the species is the GenBank assembly RS_GCF_002160305.1. The GC content of the type genome is 59.86 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Lawsonibacter impilitrix sp. nov.

Candidatus Lawsonibacter impilitrix (NL. fem. n. *impilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp009917615*. The type genome for the species is the GenBank assembly RS_GCF_009917615.1. The GC content of the type genome is 55.58 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Lawsonibacter macilatica sp. nov.

Candidatus Lawsonibacter macilatica (NL. fem. n. *macilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900066825*. The type genome for the species is the GenBank assembly RS_GCF_003573975.1. The GC content of the type genome is 57.83 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Lawsonibacter mahelatio sp. nov.

Candidatus Lawsonibacter mahelatio (NL. fem. n. *mahelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900545895*. The type genome for the species is the GenBank assembly GCA_900545895.1. The GC content of the type genome is 62.18 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Lawsonibacter malagetta sp. nov.

Candidatus Lawsonibacter malagetta (NL. fem. n. *malagetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900764755*. The type genome for the species is the GenBank assembly GCA_900764755.1. The GC content of the type genome is 59.85 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Lawsonibacter oblanitura sp. nov.

Candidatus Lawsonibacter oblanitura (NL. fem. n. *oblanitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900763995*. The type genome for the species is the GenBank assembly GCA_900763995.1. The GC content of the type genome is 54.05 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Lawsonibacter pinigitio sp. nov.

Candidatus Lawsonibacter pinigitio (NL. fem. n. *pinigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp002161175*. The type genome for the species is the GenBank assembly RS_GCF_002161175.1. The GC content of the type genome is 57.17 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Lawsonibacter pluscitia sp. nov.

Candidatus Lawsonibacter pluscitia (NL. fem. n. *pluscitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900550705*. The type genome for the species is the GenBank assembly GCA_900550705.1. The GC content of the type genome is 63.3 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Lawsonibacter purulatio sp. nov.

Candidatus Lawsonibacter purulatio (NL. fem. n. *purulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Lawsonibacter sp000492175*. The type genome for the species is the GenBank assembly RS_GCF_000492175.1. The GC content of the type genome is 58.77 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Lawsonibacter rarefedo sp. nov.

Candidatus Lawsonibacter rarefedo (NL. fem. n. *rarefedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp902363045*. The type genome for the species is the GenBank assembly GCA_900766565.1. The GC content of the type genome is 60.39 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Lawsonibacter retunitica sp. nov.

Candidatus Lawsonibacter retunitica (NL. fem. n. *retunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp000177015*. The type genome for the species is the GenBank assembly RS_GCF_902374265.1. The GC content of the type genome is 56.8 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Lawsonibacter secunatio sp. nov.

Candidatus Lawsonibacter secunatio (NL. fem. n. *secunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp014287875*. The type genome for the species is the GenBank assembly GCA_900762865.1. The GC content of the type genome is 62.14 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Lawsonibacter senipago sp. nov.

Candidatus Lawsonibacter senipago (NL. fem. n. *senipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp900549405*. The type genome for the species is the GenBank assembly GCA_900549405.1. The GC content of the type genome is 62.04 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Lawsonibacter tiguritia sp. nov.

Candidatus Lawsonibacter tiguritia (NL. fem. n. *tiguritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lawsonibacter sp003612335*. The type genome for the species is the GenBank assembly RS_GCF_003612335.1. The GC content of the type genome is 60.0 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Laxitana addubivita sp. nov.

Candidatus Laxitana addubivita (NL. fem. n. *addubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG03 sp013791745*. The type genome for the species is the GenBank assembly GCA_013791745.1. The GC content of the type genome is 48.28 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Laxitana gen. nov.

Candidatus Laxitana (NL. fem. n. *Laxitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG03*. The type species for the genus is *Candidatus* Laxitana addubivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG03*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laxitanaceae.

Description of *Candidatus* Laxitanaceae fam. nov.

Candidatus Laxitanaceae (NL. fem. n. *Laxitanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG03.* The type genus for the taxon is *Candidatus* Laxitana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG03*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Laxitanales.

Description of *Candidatus* Laxitanales ord. nov.

Candidatus Laxitanales (NL. fem. n. *Laxitanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG03.* The type genus for the taxon is *Candidatus* Laxitana .

According to the original version of GTDB R06-RS202, this family belongs to the class *CG03*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Laxitanae.

Description of *Candidatus* Laxitanae class. nov.

Candidatus Laxitanae (NL. fem. n. *c__Laxitanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG03.* The type genus for the taxon is *Candidatus* Laxitana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *CG03*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Laxitanota.

Description of *Candidatus* Laxitanota phyl. nov.

Candidatus Laxitanota (NL. fem. n. *Laxitanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG03.* The type genus for the taxon is *Candidatus* Laxitana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Laxitana exoscatica sp. nov.

Candidatus Laxitana exoscatica (NL. fem. n. *exoscatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG03 sp002841685*. The type genome for the species is the GenBank assembly GCA_002841685.1. The GC content of the type genome is 47.85 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Laxitana octipatica sp. nov.

Candidatus Laxitana octipatica (NL. fem. n. *octipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG03 sp013791675*. The type genome for the species is the GenBank assembly GCA_013791675.1. The GC content of the type genome is 45.15 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Laxitana tumefitica sp. nov.

Candidatus Laxitana tumefitica (NL. fem. n. *tumefitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG03 sp002780705*. The type genome for the species is the GenBank assembly GCA_002780705.1. The GC content of the type genome is 49.89 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Laxitaria colutitoga sp. nov.

Candidatus Laxitaria colutitoga (NL. fem. n. *colutitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4166 sp002379985*. The type genome for the species is the GenBank assembly GCA_002699265.1. The GC content of the type genome is 41.5 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Laxitaria gen. nov.

Candidatus Laxitaria (NL. fem. n. *Laxitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4166*. The type species for the genus is *Candidatus* Laxitaria colutitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Laxitella dehinimonas sp. nov.

Candidatus Laxitella dehinimonas (NL. fem. n. *dehinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2193 sp002327335*. The type genome for the species is the GenBank assembly GCA_002327335.1. The GC content of the type genome is 36.16 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Laxitella gen. nov.

Candidatus Laxitella (NL. fem. n. *Laxitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2193*. The type species for the genus is *Candidatus* Laxitella dehinimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2193*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laxitellaceae.

Description of *Candidatus* Laxitellaceae fam. nov.

Candidatus Laxitellaceae (NL. fem. n. *Laxitellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2193.* The type genus for the taxon is *Candidatus* Laxitella .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Laxitia catafastra sp. nov.

Candidatus Laxitia catafastra (NL. fem. n. *catafastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1557 sp002773185*. The type genome for the species is the GenBank assembly GCA_002773185.1. The GC content of the type genome is 33.95 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Laxitia gen. nov.

Candidatus Laxitia (NL. fem. n. *Laxitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1557*. The type species for the genus is *Candidatus* Laxitia

catafastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Laxitia dicibitura sp. nov.

Candidatus Laxitia dicibitura (NL. fem. n. *dicibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1557 sp001871435*. The type genome for the species is the GenBank assembly GCA_001871435.1. The GC content of the type genome is 32.33 % and the genome length is 0.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Laxitia inmutitrix sp. nov.

Candidatus Laxitia inmutitrix (NL. fem. n. *inmutitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1557 sp002793035*. The type genome for the species is the GenBank assembly GCA_002793035.1. The GC content of the type genome is 33.32 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Laxitia refunicula sp. nov.

Candidatus Laxitia refunicula (NL. fem. n. *refunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1557 sp001783255*. The type genome for the species is the GenBank assembly GCA_001783255.1. The GC content of the type genome is 32.5 % and the genome length is 1.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point D".

Description of *Candidatus* Laxitida acrobentia sp. nov.

Candidatus Laxitida acrobentia (NL. fem. n. *acrobentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B30-G6 sp003647375*. The type genome for the species is the GenBank assembly GCA_003647375.1. The GC content of the type genome is 47.76 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Laxitida gen. nov.

Candidatus Laxitida (NL. fem. n. *Laxitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B30-G6*. The type species for the genus is *Candidatus* Laxitida acrobentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B30-G6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laxitidaceae.

Description of *Candidatus* Laxitidaceae fam. nov.

Candidatus Laxitidaceae (NL. fem. n. *Laxitidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B30-G6.* The type genus for the taxon is *Candidatus* Laxitida .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Laxitosa adnicibra sp. nov.

Candidatus Laxitosa adnicibra (NL. fem. n. *adnicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PYGY01 sp003555385*. The type genome for the species is the GenBank assembly GCA_003555385.1. The GC content of the type genome is 48.78 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Laxitosa gen. nov.

Candidatus Laxitosa (NL. fem. n. *Laxitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PYGY01*. The type species for the genus is *Candidatus* Laxitosa

adnicibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Laxitosa conabivita sp. nov.

Candidatus Laxitosa conabivita (NL. fem. n. *conabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PYGY01 sp007129945*. The type genome for the species is the GenBank assembly GCA_003554165.1. The GC content of the type genome is 48.73 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Laxitosa denomilenta sp. nov.

Candidatus Laxitosa denomilenta (NL. fem. n. *denomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PYGY01 sp003560215*. The type genome for the species is the GenBank assembly GCA_003553405.1. The GC content of the type genome is 49.67 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Laxitosa fatifax sp. nov.

Candidatus Laxitosa fatifax (NL. fem. n. *fatifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PYGY01 sp003554665*. The type genome for the species is the GenBank assembly GCA_003551825.1. The GC content of the type genome is 47.71 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Laxitula modifitoga sp. nov.

Candidatus Laxitula modifitoga (NL. fem. n. *modifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2748835 sp002748835*. The type genome for the species is the

GenBank assembly GCA_002748835.1. The GC content of the type genome is 53.49 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Laxitula gen. nov.

Candidatus Laxitula (NL. fem. n. *Laxitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2748835*. The type species for the genus is *Candidatus* Laxitula modifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2748835*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Laxitulaceae.

Description of *Candidatus* Laxitulaceae fam. nov.

Candidatus Laxitulaceae (NL. fem. n. *Laxitulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2748835.* The type genus for the taxon is *Candidatus* Laxitula .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Leadbetterella decucessa sp. nov.

Candidatus Leadbetterella decucessa (NL. fem. n. *decucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leadbetterella sp002483125*. The type genome for the species is the GenBank assembly RS_GCF_009905725.1. The GC content of the type genome is 43.65 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Leadbetterella revecetta sp. nov.

Candidatus Leadbetterella revecetta (NL. fem. n. *revecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leadbetterella sp002256295*. The type genome for the species is the GenBank assembly GCA_002256295.1. The GC content of the type genome is 36.38 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Lebetimonas cohoribula sp. nov.

Candidatus Lebetimonas cohoribula (NL. fem. n. *cohoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lebetimonas sp000523275*. The type genome for the species is the GenBank assembly RS_GCF_000522965.1. The GC content of the type genome is 31.33 % and the genome length is 1.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hydrothermal vent".

Description of *Candidatus* Leclercia bonifimonia sp. nov.

Candidatus Leclercia bonifimonia (NL. fem. n. *bonifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leclercia sp002902985*. The type genome for the species is the GenBank assembly RS_GCF_002919525.1. The GC content of the type genome is 55.62 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Leclercia cocolilenta sp. nov.

Candidatus Leclercia cocolilenta (NL. fem. n. *cocolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leclercia sp002469605*. The type genome for the species is the GenBank assembly GCA_002469605.1. The GC content of the type genome is 57.47 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Leclercia feculivita sp. nov.

Candidatus Leclercia feculivita (NL. fem. n. *feculivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leclercia sp003024485*. The type genome for the species is the GenBank assembly RS_GCF_003024485.1. The GC content of the type genome is 56.43 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Leclercia robigitrix sp. nov.

Candidatus Leclercia robigitrix (NL. fem. n. *robigitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leclercia sp000755535*. The type genome for the species is the GenBank assembly GCA_002390855.1. The GC content of the type genome is 55.03 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Lederbergia inargicula sp. nov.

Candidatus Lederbergia inargicula (NL. fem. n. *inargicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lederbergia sp008764245*. The type genome for the species is the GenBank assembly RS_GCF_008764245.1. The GC content of the type genome is 38.43 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Leeia adlecimonas sp. nov.

Candidatus Leeia adlecimonas (NL. fem. n. *adlecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leeia sp012641365*. The type genome for the species is the GenBank assembly RS_GCF_012641365.1. The GC content of the type genome is 60.7 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Leeuwenhoekiella acistousia sp. nov.

Candidatus Leeuwenhoekiella acistousia (NL. fem. n. *acistousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leeuwenhoekiella sp000733945*. The type genome for the species is the GenBank assembly RS_GCF_000733945.1. The GC content of the type genome is 40.15 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Leeuwenhoekiella alembisca sp. nov.

Candidatus Leeuwenhoekiella alembisca (NL. fem. n. *alembisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leeuwenhoekiella sp011050015*. The type genome for the species is the GenBank assembly GCA_011050015.1. The GC content of the type genome is 40.66 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Leeuwenhoekiella ancepimonia sp. nov.

Candidatus Leeuwenhoekiella ancepimonia (NL. fem. n. *ancepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leeuwenhoekiella sp000687915*. The type genome for the species is the GenBank assembly RS_GCF_000687915.1. The GC content of the type genome is 36.52 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Leeuwenhoekiella bucolatio sp. nov.

Candidatus Leeuwenhoekiella bucolatio (NL. fem. n. *bucolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leeuwenhoekiella sp002708845*. The type genome for the species is the GenBank assembly GCA_002291795.1. The GC content of the type genome is 40.66 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Leeuwenhoekiella buxifentia sp. nov.

Candidatus Leeuwenhoekiella buxifentia (NL. fem. n. *buxifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leeuwenhoekiella sp002710685*. The type genome for the species is the GenBank assembly GCA_002710685.1. The GC content of the type genome is 44.29 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Legifaria conabatica sp. nov.

Candidatus Legifaria conabatica (NL. fem. n. *conabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2163 sp001774455*. The type genome for the species is the GenBank assembly GCA_001774455.1. The GC content of the type genome is 34.99 % and the genome length is 0.36 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; 10% subassembly".

Description of *Candidatus* Legifaria gen. nov.

Candidatus Legifaria (NL. fem. n. *Legifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2163*. The type species for the genus is *Candidatus* Legifaria conabatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Legifariaceae fam. nov.

Candidatus Legifariaceae (NL. fem. n. *Legifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2163.* The type genus for the taxon is *Candidatus* Legifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Legifaria habacugo sp. nov.

Candidatus Legifaria habacugo (NL. fem. n. *habacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2163 sp002327585*. The type genome for the species is the GenBank assembly GCA_002327585.1. The GC content of the type genome is 38.28 % and the genome length is 0.48 Mbp.

Description of *Candidatus* Legifaria semiditrix sp. nov.

Candidatus Legifaria semiditrix (NL. fem. n. *semiditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2163 sp002778715*. The type genome for the species is the

GenBank assembly GCA_002778715.1. The GC content of the type genome is 35.22 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Legifella attematio sp. nov.

Candidatus Legifella attematio (NL. fem. n. *attematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1174 sp902787065*. The type genome for the species is the GenBank assembly GCA_902787065.1. The GC content of the type genome is 36.36 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Legifella gen. nov.

Candidatus Legifella (NL. fem. n. *Legifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1174*. The type species for the genus is *Candidatus* Legifella attematio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Legifella lavabentia sp. nov.

Candidatus Legifella lavabentia (NL. fem. n. *lavabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1174 sp002311025*. The type genome for the species is the GenBank assembly GCA_002311025.1. The GC content of the type genome is 36.02 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Legifella nocenatio sp. nov.

Candidatus Legifella nocenatio (NL. fem. n. *nocenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1174 sp902791965*. The type genome for the species is the GenBank assembly GCA_902791965.1. The GC content of the type genome is 38.74 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Legifella rosaribula sp. nov.

Candidatus Legifella rosaribula (NL. fem. n. *rosaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1174 sp900556855*. The type genome for the species is the GenBank assembly GCA_900556855.1. The GC content of the type genome is 45.28 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Legifia nosocimonia sp. nov.

Candidatus Legifia nosocimonia (NL. fem. n. *nosocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1756 sp002314795*. The type genome for the species is the GenBank assembly GCA_002314795.1. The GC content of the type genome is 45.11 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Legifia gen. nov.

Candidatus Legifia (NL. fem. n. *Legifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1756*. The type species for the genus is *Candidatus* Legifia nosocimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turibosaceae.

Description of *Candidatus* Legifia paropimonas sp. nov.

Candidatus Legifia paropimonas (NL. fem. n. *paropimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1756 sp900321845*. The type genome for the species is the GenBank assembly GCA_902759815.1. The GC content of the type genome is 49.07 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Legifida medimivita sp. nov.

Candidatus Legifida medimivita (NL. fem. n. *medimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *N074bin48 sp004356685*. The type genome for the species is the GenBank assembly GCA_004356685.1. The GC content of the type genome is 35.37 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Legifida gen. nov.

Candidatus Legifida (NL. fem. n. *Legifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *N074bin48*. The type species for the genus is *Candidatus* Legifida medimivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *N074bin48*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifidaceae.

Description of *Candidatus* Legifidaceae fam. nov.

Candidatus Legifidaceae (NL. fem. n. *Legifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *N074bin48.* The type genus for the taxon is *Candidatus* Legifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2774*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Siligiales.

Description of *Candidatus* Legionella allobousia sp. nov.

Candidatus Legionella allobousia (NL. fem. n. *allobousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp013697625*. The type genome for the species is the GenBank assembly GCA_013697625.1. The GC content of the type genome is 38.0 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Legionella atlanugo sp. nov.

Candidatus Legionella atlanugo (NL. fem. n. *atlanugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp003989735*. The type genome for the species is the GenBank assembly RS_GCF_003989735.1. The GC content of the type genome is 38.98 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Legionella femelousia sp. nov.

Candidatus Legionella femelousia (NL. fem. n. *femelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp014109805*. The type genome for the species is the GenBank assembly RS_GCF_014109805.1. The GC content of the type genome is 38.28 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Legionella inexpousia sp. nov.

Candidatus Legionella inexpousia (NL. fem. n. *inexpousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp001899505*. The type genome for the species is the GenBank assembly GCA_001899505.1. The GC content of the type genome is 40.49 % and the genome length is 3.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Legionella latibetta sp. nov.

Candidatus Legionella latibetta (NL. fem. n. *latibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp011764505*. The type genome for the species is the GenBank assembly RS_GCF_011764505.1. The GC content of the type genome is 39.14 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Legionella nivomitia sp. nov.

Candidatus Legionella nivomitia (NL. fem. n. *nivomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp002352055*. The type genome for the species is the GenBank assembly GCA_002352055.1. The GC content of the type genome is 38.17 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Legionella refacugo sp. nov.

Candidatus Legionella refacugo (NL. fem. n. *refacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp003184185*. The type genome for the species is the GenBank assembly RS_GCF_003990155.1. The GC content of the type genome is 37.82 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Legionella semibitudo sp. nov.

Candidatus Legionella semibitudo (NL. fem. n. *semibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp002786205*. The type genome for the species is the GenBank assembly GCA_002786245.1. The GC content of the type genome is 40.11 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Legionella sonivitia sp. nov.

Candidatus Legionella sonivitia (NL. fem. n. *sonivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp014109825*. The type genome for the species is the GenBank assembly RS_GCF_014109825.1. The GC content of the type genome is 37.87 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Legionella xeropisca sp. nov.

Candidatus Legionella xeropisca (NL. fem. n. *xeropisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella sp004297865*. The type genome for the species is the GenBank assembly GCA_004297865.1. The GC content of the type genome is 39.76 %

and the genome length is 2.73 Mbp.

Description of *Candidatus* Legionella bicapousia sp. nov.

Candidatus Legionella bicapousia (NL. fem. n. *bicapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Legionella_A sp003990055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003990055.1. The GC content of the type genome is 42.33 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Leifsonia adtilimonia sp. nov.

Candidatus Leifsonia adtilimonia (NL. fem. n. *adtilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp013359685*. The type genome for the species is the GenBank assembly RS_GCF_013359685.1. The GC content of the type genome is 70.4 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Leifsonia armifilenta sp. nov.

Candidatus Leifsonia armifilenta (NL. fem. n. *armifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp001423695*. The type genome for the species is the GenBank assembly RS_GCF_001423695.1. The GC content of the type genome is 69.61 % and the genome length is 4.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Leifsonia cinipitoga sp. nov.

Candidatus Leifsonia cinipitoga (NL. fem. n. *cinipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp002105485*. The type genome for the species is the GenBank assembly RS_GCF_012317045.1. The GC content of the type genome is 69.08 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Leifsonia cocibago sp. nov.

Candidatus Leifsonia cocibago (NL. fem. n. *cocibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp009765225*. The type genome for the species is the GenBank assembly RS_GCF_009765225.1. The GC content of the type genome is 70.14 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Leifsonia defaritrix sp. nov.

Candidatus Leifsonia defaritrix (NL. fem. n. *defaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp001898805*. The type genome for the species is the GenBank assembly GCA_001898805.1. The GC content of the type genome is 70.79 % and the genome length is 4.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Leifsonia lubenivita sp. nov.

Candidatus Leifsonia lubenivita (NL. fem. n. *lubenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp003664105*. The type genome for the species is the GenBank assembly RS_GCF_003664105.1. The GC content of the type genome is 70.63 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Leifsonia morigedo sp. nov.

Candidatus Leifsonia morigedo (NL. fem. n. *morigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp900100265*. The type genome for the species is the GenBank assembly RS_GCF_900100265.1. The GC content of the type genome is 69.77 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Leifsonia peracibula sp. nov.

Candidatus Leifsonia peracibula (NL. fem. n. *peracibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp900114565*. The type genome for the species is the GenBank assembly RS_GCF_900108465.1. The GC content of the type genome is 69.22 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Leifsonia semapibra sp. nov.

Candidatus Leifsonia semapibra (NL. fem. n. *semapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp001428745*. The type genome for the species is the GenBank assembly RS_GCF_001428745.1. The GC content of the type genome is 68.52 % and the genome length is 4.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Leifsonia subinilenta sp. nov.

Candidatus Leifsonia subinilenta (NL. fem. n. *subinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia sp003367665*. The type genome for the species is the GenBank assembly GCA_003367665.1. The GC content of the type genome is 71.0 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Leifsonia decenimonia sp. nov.

Candidatus Leifsonia decenimonia (NL. fem. n. *decenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia_A sp004801905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004801905.1. The GC content of the type genome is 68.17 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Leifsonia miracimonas sp. nov.

Candidatus Leifsonia miracimonas (NL. fem. n. *miracimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia_A sp001425325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001425325.1. The GC content of the type genome is 68.25 % and the genome length is 3.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Leifsonia panifimonas sp. nov.

Candidatus Leifsonia panifimonas (NL. fem. n. *panifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leifsonia_A sp001422325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001422325.1. The GC content of the type genome is 67.92 % and the genome length is 4.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Leisingera bicalax sp. nov.

Candidatus Leisingera bicalax (NL. fem. n. *bicalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leisingera sp000813745*. The type genome for the species is the GenBank assembly RS_GCF_000813745.1. The GC content of the type genome is 62.45 % and the genome length is 5.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "accessory nidamental gland".

Description of *Candidatus* Leisingera decamatio sp. nov.

Candidatus Leisingera decamatio (NL. fem. n. *decamatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leisingera sp001730095*. The type genome for the species is the GenBank assembly GCA_001730095.1. The GC content of the type genome is 60.34 % and the genome length is 4.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ovicells".

Description of *Candidatus* Leisingera expanitia sp. nov.

Candidatus Leisingera expanitia (NL. fem. n. *expanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leisingera sp013373325*. The type genome for the species is the GenBank assembly GCA_013373325.1. The GC content of the type genome is 62.86 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Leisingera gabinitio sp. nov.

Candidatus Leisingera gabinitio (NL. fem. n. *gabinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leisingera sp000203975*. The type genome for the species is the GenBank assembly RS_GCF_000813905.1. The GC content of the type genome is 62.75 % and the genome length is 4.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "accessory nidamental gland".

Description of *Candidatus* Leisingera insenimonia sp. nov.

Candidatus Leisingera insenimonia (NL. fem. n. *insenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leisingera sp013317235*. The type genome for the species is the GenBank assembly RS_GCF_013317235.1. The GC content of the type genome is 62.9 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Leisingera nicotitio sp. nov.

Candidatus Leisingera nicotitio (NL. fem. n. *nicotitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leisingera sp001679925*. The type genome for the species is the GenBank assembly RS_GCF_001679925.1. The GC content of the type genome is 62.26 % and the genome length is 5.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sand flats".

Description of *Candidatus* Leisingera occumitia sp. nov.

Candidatus Leisingera occumitia (NL. fem. n. *occumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leisingera sp000813725*. The type genome for the species is the GenBank assembly RS_GCF_000813725.1. The GC content of the type genome is 62.45 % and the genome length is 5.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "accessory nidamental gland".

Description of *Candidatus* Leisingera subacicella sp. nov.

Candidatus Leisingera subacicella (NL. fem. n. *subacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leisingera sp000813965*. The type genome for the species is the GenBank assembly RS_GCF_000813965.1. The GC content of the type genome is 62.44 % and the genome length is 4.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "accessory nidamental gland".

Description of *Candidatus* Leisingera vicecentia sp. nov.

Candidatus Leisingera vicecentia (NL. fem. n. *vicecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leisingera sp004123675*. The type genome for the species is the GenBank assembly RS_GCF_004123675.1. The GC content of the type genome is 61.58 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Lelliottia absocibra sp. nov.

Candidatus Lelliottia absocibra (NL. fem. n. *absocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lelliottia sp009668015*. The type genome for the species is the GenBank assembly RS_GCF_009668015.1. The GC content of the type genome is 53.57 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Lelliottia facunisca sp. nov.

Candidatus Lelliottia facunisca (NL. fem. n. *facunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lelliottia sp000016325*. The type genome for the species is the GenBank assembly RS_GCF_000016325.1. The GC content of the type genome is 52.9 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Lenimana levifibula sp. nov.

Candidatus Lenimana levifibula (NL. fem. n. *levifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQWF01 sp903875455*. The type genome for the species is the GenBank assembly GCA_903834745.1. The GC content of the type genome is 44.59 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Lenimana gen. nov.

Candidatus Lenimana (NL. fem. n. *Lenimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQWF01*. The type species for the genus is *Candidatus* Lenimana levifibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lenimaria caravedo sp. nov.

Candidatus Lenimaria caravedo (NL. fem. n. *caravedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYOX01 sp005804885*. The type genome for the species is the GenBank assembly GCA_005777485.1. The GC content of the type genome is 69.33 % and the genome length is 9.74 Mbp.

Description of *Candidatus* Lenimaria gen. nov.

Candidatus Lenimaria (NL. fem. n. *Lenimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYOX01*. The type species for the genus is *Candidatus* Lenimaria

caravedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2716585*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repepiaceae.

Description of *Candidatus* Lenimella paracax sp. nov.

Candidatus Lenimella paracax (NL. fem. n. *paracax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11795 sp002708065*. The type genome for the species is the GenBank assembly GCA_002708065.1. The GC content of the type genome is 45.72 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Lenimella gen. nov.

Candidatus Lenimella (NL. fem. n. *Lenimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11795*. The type species for the genus is *Candidatus* Lenimella paracax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivariaceae.

Description of *Candidatus* Lenimia depupitura sp. nov.

Candidatus Lenimia depupitura (NL. fem. n. *depupitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-592 sp011772965*. The type genome for the species is the GenBank assembly GCA_011771455.1. The GC content of the type genome is 48.46 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Lenimia gen. nov.

Candidatus Lenimia (NL. fem. n. *Lenimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SZUA-592*. The type species for the genus is *Candidatus* Lenimia depupitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Lenimia televicula sp. nov.

Candidatus Lenimia televicula (NL. fem. n. *televicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-592 sp003250975*. The type genome for the species is the GenBank assembly GCA_003250975.1. The GC content of the type genome is 49.32 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Lenimida dehonentia sp. nov.

Candidatus Lenimida dehonentia (NL. fem. n. *dehonentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2383 sp002343485*. The type genome for the species is the GenBank assembly GCA_002343225.1. The GC content of the type genome is 55.42 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Lenimida gen. nov.

Candidatus Lenimida (NL. fem. n. *Lenimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2383*. The type species for the genus is *Candidatus* Lenimida dehonentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lenimosa sanabilenta sp. nov.

Candidatus Lenimosa sanabilenta (NL. fem. n. *sanabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2255 sp002347565*. The type genome for the species is the GenBank assembly GCA_002347565.1. The GC content of the type genome is 65.7 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Lenimosa gen. nov.

Candidatus Lenimosa (NL. fem. n. *Lenimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2255*. The type species for the genus is *Candidatus* Lenimosa sanabilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EtOH8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cepuranaceae.

Description of *Candidatus* Lenimula cilibisca sp. nov.

Candidatus Lenimula cilibisca (NL. fem. n. *cilibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRQF01 sp011369445*. The type genome for the species is the GenBank assembly GCA_011369445.1. The GC content of the type genome is 63.52 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Lenimula gen. nov.

Candidatus Lenimula (NL. fem. n. *Lenimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRQF01*. The type species for the genus is *Candidatus* Lenimula cilibisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRQF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenimulaceae.

Description of *Candidatus* Lenimulaceae fam. nov.

Candidatus Lenimulaceae (NL. fem. n. *Lenimulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *DRQF01*. The type genus for the taxon is *Candidatus* Lenimula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-002687715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Catobellales.

Description of *Candidatus* Lenocana canacivita sp. nov.

Candidatus Lenocana canacivita (NL. fem. n. *canacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002780795 sp002780795*. The type genome for the species is the GenBank assembly GCA_002779965.1. The GC content of the type genome is 36.09 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Lenocana gen. nov.

Candidatus Lenocana (NL. fem. n. *Lenocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002780795*. The type species for the genus is *Candidatus* Lenocana canacivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Lenocaria susicentia sp. nov.

Candidatus Lenocaria susicentia (NL. fem. n. *susicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4054 sp002383495*. The type genome for the species is the GenBank assembly GCA_002424765.1. The GC content of the type genome is 52.92 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Lenocaria gen. nov.

Candidatus Lenocaria (NL. fem. n. *Lenocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA4054*. The type species for the genus is *Candidatus* Lenocaria susicentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4778*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Biverosaceae.

Description of *Candidatus* Lenocella offulitoga sp. nov.

Candidatus Lenocella offulitoga (NL. fem. n. *offulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B62-G9 sp003645695*. The type genome for the species is the GenBank assembly GCA_003645695.1. The GC content of the type genome is 34.04 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Lenocella gen. nov.

Candidatus Lenocella (NL. fem. n. *Lenocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B62-G9*. The type species for the genus is *Candidatus* Lenocella offulitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B62-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenocellaceae.

Description of *Candidatus* Lenocellaceae fam. nov.

Candidatus Lenocellaceae (NL. fem. n. *Lenocellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B62-G9.* The type genus for the taxon is *Candidatus* Lenocella .

According to the original version of GTDB R06-RS202, this family belongs to the order *B62-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lenocellales.

Description of *Candidatus* Lenocellales ord. nov.

Candidatus Lenocellales (NL. fem. n. *Lenocellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B62-G9.* The type genus for the taxon is *Candidatus* Lenocella .

According to the original version of GTDB R06-RS202, this family belongs to the class *B62-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Lenocellae.

Description of *Candidatus* Lenocellae class. nov.

Candidatus Lenocellae (NL. fem. n. *c__Lenocellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B62-G9.* The type genus for the taxon is *Candidatus* Lenocella .

According to GTDB R06-RS202, this class belongs to the phylum *Spirochaetota*.

Description of *Candidatus* Lenocia caravicula sp. nov.

Candidatus Lenocia caravicula (NL. fem. n. *caravicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12075 sp003514005*. The type genome for the species is the GenBank assembly GCA_003487185.1. The GC content of the type genome is 38.08 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Lenocia gen. nov.

Candidatus Lenocia (NL. fem. n. *Lenocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12075*. The type species for the genus is *Candidatus* Lenocia caravicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12075*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenociaceae.

Description of *Candidatus* Lenociaceae fam. nov.

Candidatus Lenociaceae (NL. fem. n. *Lenociaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12075.* The type genus for the taxon is *Candidatus* Lenocia .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Lenocida adrumitura sp. nov.

Candidatus Lenocida adrumitura (NL. fem. n. *adrumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp007692545*. The type genome for the species is the GenBank assembly GCA_007692545.1. The GC content of the type genome is 55.71 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Lenocida gen. nov.

Candidatus Lenocida (NL. fem. n. *Lenocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7441*. The type species for the genus is *Candidatus* Lenocida adrumitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-45221*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamiaceae.

Description of *Candidatus* Lenocida astapilenta sp. nov.

Candidatus Lenocida astapilenta (NL. fem. n. *astapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp902516225*. The type genome for the species is the GenBank assembly RS_GCF_902516225.1. The GC content of the type genome is 44.5 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Lenocida dilacago sp. nov.

Candidatus Lenocida dilacago (NL. fem. n. *dilacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp902587165*. The type genome for the species is the GenBank assembly RS_GCF_902587165.1. The GC content of the type genome is 49.31 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Lenocida dilacentia sp. nov.

Candidatus Lenocida dilacentia (NL. fem. n. *dilacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp002480015*. The type genome for the species is the GenBank assembly GCA_002386805.1. The GC content of the type genome is 55.28 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Lenocida latibicula sp. nov.

Candidatus Lenocida latibicula (NL. fem. n. *latibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp002729725*. The type genome for the species is the GenBank assembly GCA_002729725.1. The GC content of the type genome is 52.14 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Lenocida linigitas sp. nov.

Candidatus Lenocida linigitas (NL. fem. n. *linigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp002862945*. The type genome for the species is the GenBank assembly GCA_002364985.1. The GC content of the type genome is 49.55 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Lenocida octinitrix sp. nov.

Candidatus Lenocida octinitrix (NL. fem. n. *octinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp009908325*. The type genome for the species is the GenBank assembly GCA_009908325.1. The GC content of the type genome is 56.19 %

and the genome length is 4.3 Mbp.

Description of *Candidatus* Lenocida pepenax sp. nov.

Candidatus Lenocida pepenax (NL. fem. n. *pepenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp003331195*. The type genome for the species is the GenBank assembly GCA_003331195.1. The GC content of the type genome is 49.92 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Lenocida ruricitia sp. nov.

Candidatus Lenocida ruricitia (NL. fem. n. *ruricitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp902603705*. The type genome for the species is the GenBank assembly RS_GCF_902603705.1. The GC content of the type genome is 43.06 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Lenocida utrinitoga sp. nov.

Candidatus Lenocida utrinitoga (NL. fem. n. *utrinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7441 sp009886465*. The type genome for the species is the GenBank assembly GCA_009886465.1. The GC content of the type genome is 50.4 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Lenocosa tabititrix sp. nov.

Candidatus Lenocosa tabititrix (NL. fem. n. *tabititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-17 sp003598055*. The type genome for the species is the GenBank assembly GCA_003598055.1. The GC content of the type genome is 54.89 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Lenocosa gen. nov.

Candidatus Lenocosa (NL. fem. n. *Lenocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-17*. The type species for the genus is *Candidatus* Lenocosa tabititrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecunulaceae.

Description of *Candidatus* Lenocula lucifimonia sp. nov.

Candidatus Lenocula lucifimonia (NL. fem. n. *lucifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5962 sp002430285*. The type genome for the species is the GenBank assembly GCA_002430285.1. The GC content of the type genome is 38.07 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Lenocula gen. nov.

Candidatus Lenocula (NL. fem. n. *Lenocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5962*. The type species for the genus is *Candidatus* Lenocula lucifimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5962*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenoculaceae.

Description of *Candidatus* Lenoculaceae fam. nov.

Candidatus Lenoculaceae (NL. fem. n. *Lenoculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5962.* The type genus for the taxon is *Candidatus* Lenocula .

According to GTDB R06-RS202, this family belongs to the order *Lachnospirales*.

Description of *Candidatus* Lentibacillus codifitio sp. nov.

Candidatus Lentibacillus codifitio (NL. fem. n. *codifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentibacillus sp013373365*. The type genome for the species is the GenBank assembly RS_GCF_013373365.1. The GC content of the type genome is 42.04 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Lentibacillus depelitrix sp. nov.

Candidatus Lentibacillus depelitrix (NL. fem. n. *depelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentibacillus sp004145795*. The type genome for the species is the GenBank assembly GCA_004145795.1. The GC content of the type genome is 44.09 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Lentibacillus forabiforma sp. nov.

Candidatus Lentibacillus forabiforma (NL. fem. n. *forabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentibacillus sp902806455*. The type genome for the species is the GenBank assembly RS_GCF_902806455.1. The GC content of the type genome is 39.79 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Lentibacillus pecunibula sp. nov.

Candidatus Lentibacillus pecunibula (NL. fem. n. *pecunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentibacillus sp902726655*. The type genome for the species is the GenBank assembly RS_GCF_902726655.1. The GC content of the type genome is 41.2 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Lentibacter remedimonia sp. nov.

Candidatus Lentibacter remedimonia (NL. fem. n. *remedimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentibacter sp003417655*. The type genome for the species is the GenBank assembly RS_GCF_003417655.1. The GC content of the type genome is 63.63 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Lentilactobacillus diponicula sp. nov.

Candidatus Lentilactobacillus diponicula (NL. fem. n. *diponicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentilactobacillus sp002418005*. The type genome for the species is the GenBank assembly GCA_002418005.1. The GC content of the type genome is 37.18 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Lentilactobacillus repuricula sp. nov.

Candidatus Lentilactobacillus repuricula (NL. fem. n. *repuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentilactobacillus sp013184075*. The type genome for the species is the GenBank assembly RS_GCF_013184075.1. The GC content of the type genome is 37.82 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Lentilitoribacter ascelousia sp. nov.

Candidatus Lentilitoribacter ascelousia (NL. fem. n. *ascelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentilitoribacter sp900537175*. The type genome for the species is the GenBank assembly RS_GCF_900537175.1. The GC content of the type genome is 44.32 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Lentimicrobium anancatica sp. nov.

Candidatus Lentimicrobium anancatica (NL. fem. n. *anancatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp001603685*. The type genome for the species is the GenBank assembly GCA_001603685.1. The GC content of the type genome is 48.15 %

and the genome length is 3.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Lentimicrobium catapisca sp. nov.

Candidatus Lentimicrobium catapisca (NL. fem. n. *catapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp002433025*. The type genome for the species is the GenBank assembly GCA_002432165.1. The GC content of the type genome is 46.81 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Lentimicrobium desuritura sp. nov.

Candidatus Lentimicrobium desuritura (NL. fem. n. *desuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp002441345*. The type genome for the species is the GenBank assembly GCA_002441345.1. The GC content of the type genome is 47.82 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Lentimicrobium diludicella sp. nov.

Candidatus Lentimicrobium diludicella (NL. fem. n. *diludicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp002412885*. The type genome for the species is the GenBank assembly GCA_002842665.1. The GC content of the type genome is 41.5 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Lentimicrobium inmitimonia sp. nov.

Candidatus Lentimicrobium inmitimonia (NL. fem. n. *inmitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp009773515*. The type genome for the species is the GenBank assembly GCA_009773515.1. The GC content of the type genome is 41.42 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Lentimicrobium melopedo sp. nov.

Candidatus Lentimicrobium melopedo (NL. fem. n. *melopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp013336205*. The type genome for the species is the GenBank assembly GCA_013336205.1. The GC content of the type genome is 42.28 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Lentimicrobium perabivita sp. nov.

Candidatus Lentimicrobium perabivita (NL. fem. n. *perabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp002425985*. The type genome for the species is the GenBank assembly GCA_002425985.1. The GC content of the type genome is 47.1 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Lentimicrobium ridibastra sp. nov.

Candidatus Lentimicrobium ridibastra (NL. fem. n. *ridibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp002410555*. The type genome for the species is the GenBank assembly GCA_002410555.1. The GC content of the type genome is 42.0 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Lentimicrobium subodugo sp. nov.

Candidatus Lentimicrobium subodugo (NL. fem. n. *subodugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp002426025*. The type genome for the species is the GenBank assembly GCA_002842425.1. The GC content of the type genome is 41.84 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Lentimicrobium susicitas sp. nov.

Candidatus Lentimicrobium susicitas (NL. fem. n. *susicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentimicrobium sp009773455*. The type genome for the species is the GenBank assembly GCA_009773455.1. The GC content of the type genome is 45.01 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Lentzea astipibula sp. nov.

Candidatus Lentzea astipibula (NL. fem. n. *astipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentzea sp001279525*. The type genome for the species is the GenBank assembly RS_GCF_001279525.1. The GC content of the type genome is 70.55 % and the genome length is 9.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil #75".

Description of *Candidatus* Lentzea dilicugo sp. nov.

Candidatus Lentzea dilicugo (NL. fem. n. *dilicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentzea sp011067745*. The type genome for the species is the GenBank assembly RS_GCF_011067745.1. The GC content of the type genome is 68.71 % and the genome length is 10.21 Mbp.

Description of *Candidatus* Lentzea revecimonia sp. nov.

Candidatus Lentzea revecimonia (NL. fem. n. *revecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lentzea sp007845675*. The type genome for the species is the GenBank assembly RS_GCF_007845675.1. The GC content of the type genome is 69.5 % and the genome length is 9.37 Mbp.

Description of *Candidatus* Lenunaria hexagivita sp. nov.

Candidatus Lenunaria hexagivita (NL. fem. n. *hexagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-549 sp003162055*. The type genome for the species is the GenBank assembly GCA_003162355.1. The GC content of the type genome is 65.39 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Lenunaria gen. nov.

Candidatus Lenunaria (NL. fem. n. *Lenunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-549*. The type species for the genus is *Candidatus* Lenunaria hexagivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lenunaria inreditas sp. nov.

Candidatus Lenunaria inreditas (NL. fem. n. *inreditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-549 sp003170995*. The type genome for the species is the GenBank assembly GCA_003170995.1. The GC content of the type genome is 64.44 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Lenunaria lapicitia sp. nov.

Candidatus Lenunaria lapicitia (NL. fem. n. *lapicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-549 sp003132665*. The type genome for the species is the GenBank assembly GCA_003132665.1. The GC content of the type genome is 65.8 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Lenunaria ossifitoga sp. nov.

Candidatus Lenunaria ossifitoga (NL. fem. n. *ossifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-549 sp003162235*. The type genome for the species is the GenBank assembly GCA_003162235.1. The GC content of the type genome is 66.05 %

and the genome length is 1.87 Mbp.

Description of *Candidatus* Lenunaria vatilitrix sp. nov.

Candidatus Lenunaria vatilitrix (NL. fem. n. *vatilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-549 sp003170155*. The type genome for the species is the GenBank assembly GCA_003170155.1. The GC content of the type genome is 65.24 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Lenunella adseciforma sp. nov.

Candidatus Lenunella adseciforma (NL. fem. n. *adseciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp002457115*. The type genome for the species is the GenBank assembly GCA_002457115.1. The GC content of the type genome is 40.25 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Lenunella gen. nov.

Candidatus Lenunella (NL. fem. n. *Lenunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G52*. The type species for the genus is *Candidatus* Lenunella adseciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lenunella affirilega sp. nov.

Candidatus Lenunella affirilega (NL. fem. n. *affirilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902554705*. The type genome for the species is the GenBank assembly RS_GCF_902554705.1. The GC content of the type genome is 39.91 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Lenunella altipatica sp. nov.

Candidatus Lenunella altipatica (NL. fem. n. *altipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp002682975*. The type genome for the species is the GenBank assembly GCA_002682975.1. The GC content of the type genome is 40.45 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Lenunella arcelibula sp. nov.

Candidatus Lenunella arcelibula (NL. fem. n. *arcelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902632125*. The type genome for the species is the GenBank assembly RS_GCF_902632125.1. The GC content of the type genome is 39.41 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Lenunella assubousia sp. nov.

Candidatus Lenunella assubousia (NL. fem. n. *assubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902543185*. The type genome for the species is the GenBank assembly RS_GCF_902543185.1. The GC content of the type genome is 39.75 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Lenunella biparitura sp. nov.

Candidatus Lenunella biparitura (NL. fem. n. *biparitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp002171355*. The type genome for the species is the GenBank assembly GCA_002171355.1. The GC content of the type genome is 39.24 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Lenunella cepurisca sp. nov.

Candidatus Lenunella cepurisca (NL. fem. n. *cepurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902606585*. The type genome for the species is the GenBank assembly RS_GCF_902606585.1. The GC content of the type genome is 39.57 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Lenunella colubessa sp. nov.

Candidatus Lenunella colubessa (NL. fem. n. *colubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp002711145*. The type genome for the species is the GenBank assembly GCA_002711145.1. The GC content of the type genome is 40.38 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Lenunella decapago sp. nov.

Candidatus Lenunella decapago (NL. fem. n. *decapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp002704465*. The type genome for the species is the GenBank assembly GCA_002704465.1. The GC content of the type genome is 39.91 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Lenunella decatedo sp. nov.

Candidatus Lenunella decatedo (NL. fem. n. *decatedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902635985*. The type genome for the species is the GenBank assembly RS_GCF_902635985.1. The GC content of the type genome is 40.08 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Lenunella depecigena sp. nov.

Candidatus Lenunella depecigena (NL. fem. n. *depecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp002457055*. The type genome for the species is the GenBank assembly RS_GCF_902525685.1. The GC content of the type genome is 40.5

% and the genome length is 1.64 Mbp.

Description of *Candidatus* Lenunella detepibula sp. nov.

Candidatus Lenunella detepibula (NL. fem. n. *detepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp001627925*. The type genome for the species is the GenBank assembly RS_GCF_902535265.1. The GC content of the type genome is 40.51 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Lenunella fetifimonas sp. nov.

Candidatus Lenunella fetifimonas (NL. fem. n. *fetifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902573175*. The type genome for the species is the GenBank assembly RS_GCF_902573175.1. The GC content of the type genome is 39.79 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Lenunella gerunitura sp. nov.

Candidatus Lenunella gerunitura (NL. fem. n. *gerunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902534325*. The type genome for the species is the GenBank assembly RS_GCF_902534325.1. The GC content of the type genome is 39.75 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Lenunella homulibra sp. nov.

Candidatus Lenunella homulibra (NL. fem. n. *homulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp001627375*. The type genome for the species is the GenBank assembly GCA_001627595.1. The GC content of the type genome is 39.69 % and the genome length is 2.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 12 - depth 47m".

Description of *Candidatus* Lenunella lucubigena sp. nov.

Candidatus Lenunella lucubigena (NL. fem. n. *lucubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902605785*. The type genome for the species is the GenBank assembly RS_GCF_902605785.1. The GC content of the type genome is 40.02 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Lenunella nimiritoga sp. nov.

Candidatus Lenunella nimiritoga (NL. fem. n. *nimiritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902554885*. The type genome for the species is the GenBank assembly RS_GCF_902554885.1. The GC content of the type genome is 40.38 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Lenunella paropax sp. nov.

Candidatus Lenunella paropax (NL. fem. n. *paropax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp003332035*. The type genome for the species is the GenBank assembly RS_GCF_902515675.1. The GC content of the type genome is 40.09 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Lenunella peribedo sp. nov.

Candidatus Lenunella peribedo (NL. fem. n. *peribedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902631295*. The type genome for the species is the GenBank assembly RS_GCF_902631295.1. The GC content of the type genome is 40.02 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Lenunella selibugo sp. nov.

Candidatus Lenunella selibugo (NL. fem. n. *selibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G52 sp902602765*. The type genome for the species is the GenBank assembly RS_GCF_902602765.1. The GC content of the type genome is 40.18 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Lenunia retecicula sp. nov.

Candidatus Lenunia retecicula (NL. fem. n. *retecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-FULL-39-10 sp001792345*. The type genome for the species is the GenBank assembly GCA_001792345.1. The GC content of the type genome is 37.76 % and the genome length is 1.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Lenunia gen. nov.

Candidatus Lenunia (NL. fem. n. *Lenunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-FULL-39-10*. The type species for the genus is *Candidatus* Lenunia retecicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Lenunida semodibula sp. nov.

Candidatus Lenunida semodibula (NL. fem. n. *semodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED10-310 sp003558985*. The type genome for the species is the GenBank assembly GCA_003558985.1. The GC content of the type genome is 45.36 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Lenunida gen. nov.

Candidatus Lenunida (NL. fem. n. *Lenunida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED10-310*. The type species for the genus is *Candidatus* Lenunida semodibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSSED10-310*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenunidaceae.

Description of *Candidatus* Lenunidaceae fam. nov.

Candidatus Lenunidaceae (NL. fem. n. *Lenunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSSED10-310.* The type genus for the taxon is *Candidatus* Lenunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CSSED10-310*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lenunidales.

Description of *Candidatus* Lenunidales ord. nov.

Candidatus Lenunidales (NL. fem. n. *Lenunidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSSED10-310.* The type genus for the taxon is *Candidatus* Lenunida .

According to the original version of GTDB R06-RS202, this family belongs to the class *CSSED10-310*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Lenunidae.

Description of *Candidatus* Lenunidae class. nov.

Candidatus Lenunidae (NL. fem. n. *c__Lenunidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSSED10-310.* The type genus for the taxon is *Candidatus* Lenunida .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *CSSED10-310*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Lenunidota.

Description of *Candidatus* Lenunidota phyl. nov.

Candidatus Lenunidota (NL. fem. n. *Lenunidota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSSED10-310.* The type genus for the taxon is *Candidatus* Lenunida .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Lenunosa bifarilenta sp. nov.

Candidatus Lenunosa bifarilenta (NL. fem. n. *bifarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11272 sp902790495*. The type genome for the species is the GenBank assembly GCA_902790495.1. The GC content of the type genome is 63.89 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Lenunosa gen. nov.

Candidatus Lenunosa (NL. fem. n. *Lenunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11272*. The type species for the genus is *Candidatus* Lenunosa bifarilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Lenunosa delucitica sp. nov.

Candidatus Lenunosa delucitica (NL. fem. n. *delucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11272 sp902767565*. The type genome for the species is the GenBank assembly GCA_902767565.1. The GC content of the type genome is 63.53 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Lenunula adnunisca sp. nov.

Candidatus Lenunula adnunisca (NL. fem. n. *adnunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1252 sp002308575*. The type genome for the species is the GenBank assembly GCA_002308575.1. The GC content of the type genome is 51.12 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Lenunula gen. nov.

Candidatus Lenunula (NL. fem. n. *Lenunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-1252*. The type species for the genus is *Candidatus* Lenunula adnunisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-1252*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenunulaceae.

Description of *Candidatus* Lenunulaceae fam. nov.

Candidatus Lenunulaceae (NL. fem. n. *Lenunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-1252.* The type genus for the taxon is *Candidatus* Lenunula .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Lenunula depupitia sp. nov.

Candidatus Lenunula depupitia (NL. fem. n. *depupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1252 sp002368735*. The type genome for the species is the GenBank assembly GCA_002368735.1. The GC content of the type genome is 54.54 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Lenunula detorigena sp. nov.

Candidatus Lenunula detorigena (NL. fem. n. *detorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1252 sp002371075*. The type genome for the species is the GenBank assembly GCA_002371075.1. The GC content of the type genome is 52.42 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Lenunula luticimonas sp. nov.

Candidatus Lenunula luticimonas (NL. fem. n. *luticimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1252 sp002363545*. The type genome for the species is the GenBank assembly GCA_003542435.1. The GC content of the type genome is 49.15 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Lenunula obrigibra sp. nov.

Candidatus Lenunula obrigibra (NL. fem. n. *obrigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1252 sp002395405*. The type genome for the species is the GenBank assembly GCA_002395405.1. The GC content of the type genome is 49.27 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Lenunula roraricella sp. nov.

Candidatus Lenunula roraricella (NL. fem. n. *roraricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1252 sp003445835*. The type genome for the species is the GenBank assembly GCA_003445835.1. The GC content of the type genome is 51.83 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Leptobacterium colimitio sp. nov.

Candidatus Leptobacterium colimitio (NL. fem. n. *colimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Leptobacterium sp009901575*. The type genome for the species is the GenBank assembly RS_GCF_009901575.1. The GC content of the type genome is 33.2 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Leptolinea detunitudo sp. nov.

Candidatus Leptolinea detunitudo (NL. fem. n. *detunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptolinea sp012798535*. The type genome for the species is the GenBank assembly GCA_012798535.1. The GC content of the type genome is 50.45 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Leptolinea imbecitas sp. nov.

Candidatus Leptolinea imbecitas (NL. fem. n. *imbecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptolinea sp012798615*. The type genome for the species is the GenBank assembly GCA_012798615.1. The GC content of the type genome is 48.9 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Leptolinea scorbago sp. nov.

Candidatus Leptolinea scorbago (NL. fem. n. *scorbago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptolinea sp012515195*. The type genome for the species is the GenBank assembly GCA_012515195.1. The GC content of the type genome is 48.02 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Leptolyngbya oratrentia sp. nov.

Candidatus Leptolyngbya oratrentia (NL. fem. n. *oratrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptolyngbya sp001548435*. The type genome for the species is the GenBank assembly RS_GCF_001548435.1. The GC content of the type genome is 46.7 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Leptolyngbya sonivilega sp. nov.

Candidatus Leptolyngbya sonivilega (NL. fem. n. *sonivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptolyngbya sp001485215*. The type genome for the species is the GenBank assembly RS_GCF_001485215.1. The GC content of the type genome is 47.43 % and the genome length is 6.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biofilm material".

Description of *Candidatus* Leptospira defasitia sp. nov.

Candidatus Leptospira defasitia (NL. fem. n. *defasitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptospira_B sp000347035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000347035.1. The GC content of the type genome is 41.66 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Leptotrichia cululitia sp. nov.

Candidatus Leptotrichia cululitia (NL. fem. n. *cululitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptotrichia sp002240055*. The type genome for the species is the GenBank assembly RS_GCF_002240055.1. The GC content of the type genome is 29.62 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Leptotrichia resacitia sp. nov.

Candidatus Leptotrichia resacitia (NL. fem. n. *resacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptotrichia sp001553645*. The type genome for the species is the GenBank assembly RS_GCF_001553645.1. The GC content of the type genome is 29.79 % and the genome length is 2.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "curette".

Description of *Candidatus* Leptotrichia rosacicella sp. nov.

Candidatus Leptotrichia rosacicella (NL. fem. n. *rosacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptotrichia sp000469385*. The type genome for the species is the GenBank assembly RS_GCF_000469385.1. The GC content of the type genome is 29.64 % and the genome length is 2.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "subgingival plaque biofilm".

Description of *Candidatus* Leptotrichia ruricimonas sp. nov.

Candidatus Leptotrichia ruricimonas (NL. fem. n. *ruricimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptotrichia sp013394795*. The type genome for the species is the GenBank assembly RS_GCF_013394795.1. The GC content of the type genome is 31.38 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Leptotrichia incivitica sp. nov.

Candidatus Leptotrichia incivitica (NL. fem. n. *incivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptotrichia_A sp001274535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001274535.1. The GC content of the type genome is 31.41 % and the genome length is 2.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "curette".

Description of *Candidatus* Leptotrichia refuliforma sp. nov.

Candidatus Leptotrichia refuliforma (NL. fem. n. *refuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leptotrichia_A sp000469505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_000469505.1. The GC content of the type genome is 31.38 % and the genome length is 2.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity- mouth".

Description of *Candidatus* Letifaria adsesibula sp. nov.

Candidatus Letifaria adsesibula (NL. fem. n. *adsesibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2991 sp009838385*. The type genome for the species is the GenBank assembly GCA_009838385.1. The GC content of the type genome is 68.41 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Letifaria gen. nov.

Candidatus Letifaria (NL. fem. n. *Letifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2991*. The type species for the genus is *Candidatus* Letifaria adsesibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2991*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifariaceae.

Description of *Candidatus* Letifariaceae fam. nov.

Candidatus Letifariaceae (NL. fem. n. *Letifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2991.* The type genus for the taxon is *Candidatus* Letifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2991*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Letifariales.

Description of *Candidatus* Letifariales ord. nov.

Candidatus Letifariales (NL. fem. n. *Letifariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA2991*. The type genus for the taxon is *Candidatus* Letifaria .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Letifaria malogigena sp. nov.

Candidatus Letifaria malogigena (NL. fem. n. *malogigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2991 sp009839725*. The type genome for the species is the GenBank assembly GCA_009839725.1. The GC content of the type genome is 68.89 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Letifaria metabitura sp. nov.

Candidatus Letifaria metabitura (NL. fem. n. *metabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2991 sp009841435*. The type genome for the species is the GenBank assembly GCA_009837515.1. The GC content of the type genome is 68.21 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Letifaria vaniticula sp. nov.

Candidatus Letifaria vaniticula (NL. fem. n. *vaniticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2991 sp002346645*. The type genome for the species is the GenBank assembly GCA_002717065.1. The GC content of the type genome is 54.78 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Letifella affirifica sp. nov.

Candidatus Letifella affirifica (NL. fem. n. *affirifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10428 sp003252385*. The type genome for the species is the GenBank assembly GCA_003252385.1. The GC content of the type genome is 46.46 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Letifella gen. nov.

Candidatus Letifella (NL. fem. n. *Letifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10428*. The type species for the genus is *Candidatus* Letifella affirifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10428*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifellaceae.

Description of *Candidatus* Letifellaceae fam. nov.

Candidatus Letifellaceae (NL. fem. n. *Letifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10428.* The type genus for the taxon is *Candidatus* Letifella .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Letifella resulousia sp. nov.

Candidatus Letifella resulousia (NL. fem. n. *resulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10428 sp003508755*. The type genome for the species is the GenBank assembly GCA_003508755.1. The GC content of the type genome is 38.38 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Letifia feficitrix sp. nov.

Candidatus Letifia feficitrix (NL. fem. n. *feficitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12451 sp001805965*. The type genome for the species is the GenBank assembly GCA_001805945.1. The GC content of the type genome is 37.55 % and the genome length is 2.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Letifia gen. nov.

Candidatus Letifia (NL. fem. n. *Letifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12451*. The type species for the genus is *Candidatus* Letifia feficitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Kpj58rc*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanellaceae.

Description of *Candidatus* Letifida inobrilenta sp. nov.

Candidatus Letifida inobrilenta (NL. fem. n. *inobrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2709385 sp002709385*. The type genome for the species is the GenBank assembly GCA_002709385.1. The GC content of the type genome is 38.48 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Letifida gen. nov.

Candidatus Letifida (NL. fem. n. *Letifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2709385*. The type species for the genus is *Candidatus* Letifida inobrilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2709385*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifidaceae.

Description of *Candidatus* Letifidaceae fam. nov.

Candidatus Letifidaceae (NL. fem. n. *Letifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2709385.* The type genus for the taxon is *Candidatus* Letifida .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Letifosa faticivita sp. nov.

Candidatus Letifosa faticivita (NL. fem. n. *faticivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9983 sp000996035*. The type genome for the species is the GenBank assembly GCA_000995735.1. The GC content of the type genome is 39.8 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Letifosa gen. nov.

Candidatus Letifosa (NL. fem. n. *Letifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9983*. The type species for the genus is *Candidatus* Letifosa faticivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9983*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifosaceae.

Description of *Candidatus* Letifosaceae fam. nov.

Candidatus Letifosaceae (NL. fem. n. *Letifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9983.* The type genus for the taxon is *Candidatus* Letifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Letifosales.

Description of *Candidatus* Letifosales ord. nov.

Candidatus Letifosales (NL. fem. n. *Letifosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9983.* The type genus for the taxon is *Candidatus* Letifosa .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Letifula lenimitudo sp. nov.

Candidatus Letifula lenimitudo (NL. fem. n. *lenimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6503 sp002436405*. The type genome for the species is the GenBank assembly GCA_002360855.1. The GC content of the type genome is 47.87 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Letifula gen. nov.

Candidatus Letifula (NL. fem. n. *Letifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6503*. The type species for the genus is *Candidatus* Letifula lenimitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6503*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifulaceae.

Description of *Candidatus* Letifulaceae fam. nov.

Candidatus Letifulaceae (NL. fem. n. *Letifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6503.* The type genus for the taxon is *Candidatus* Letifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1280*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redacariales.

Description of *Candidatus* Leucobacter abligatio sp. nov.

Candidatus Leucobacter abligatio (NL. fem. n. *abligatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp900163635*. The type genome for the species is the GenBank assembly RS_GCF_900163635.1. The GC content of the type genome is 65.83 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Leucobacter adtolitio sp. nov.

Candidatus Leucobacter adtolitio (NL. fem. n. *adtolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp011382985*. The type genome for the species is the GenBank assembly RS_GCF_011382985.1. The GC content of the type genome is 60.32 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Leucobacter aruspastra sp. nov.

Candidatus Leucobacter aruspastra (NL. fem. n. *aruspastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp012511645*. The type genome for the species is the GenBank assembly GCA_012511645.1. The GC content of the type genome is 62.61 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Leucobacter caruciforma sp. nov.

Candidatus Leucobacter caruciforma (NL. fem. n. *caruciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp011382965*. The type genome for the species is the GenBank assembly RS_GCF_011382965.1. The GC content of the type genome is 62.45 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Leucobacter cilibax sp. nov.

Candidatus Leucobacter cilibax (NL. fem. n. *cilibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp011299575*. The type genome for the species is the GenBank assembly RS_GCF_011299575.1. The GC content of the type genome is 61.52 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Leucobacter conariforma sp. nov.

Candidatus Leucobacter conariforma (NL. fem. n. *conariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp001373475*. The type genome for the species is the GenBank assembly RS_GCF_001373475.1. The GC content of the type genome is 67.44 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Leucobacter desucilega sp. nov.

Candidatus Leucobacter desucilega (NL. fem. n. *desucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp000349545*. The type genome for the species is the GenBank assembly RS_GCF_004028235.1. The GC content of the type genome is 70.47 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Leucobacter excaribra sp. nov.

Candidatus Leucobacter excaribra (NL. fem. n. *excaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp002336855*. The type genome for the species is the GenBank assembly GCA_002336855.1. The GC content of the type genome is 64.82 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Leucobacter homicousia sp. nov.

Candidatus Leucobacter homicousia (NL. fem. n. *homicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp003569785*. The type genome for the species is the GenBank assembly RS_GCF_003569785.1. The GC content of the type genome is 69.87 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Leucobacter inpasitura sp. nov.

Candidatus Leucobacter inpasitura (NL. fem. n. *inpasitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Leucobacter sp014529985*. The type genome for the species is the GenBank assembly RS_GCF_014529985.1. The GC content of the type genome is 61.64 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Leucobacter monocousia sp. nov.

Candidatus Leucobacter monocousia (NL. fem. n. *monocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp002752355*. The type genome for the species is the GenBank assembly RS_GCF_002752415.1. The GC content of the type genome is 70.5 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Leucobacter opercedo sp. nov.

Candidatus Leucobacter opercedo (NL. fem. n. *opercedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp012510755*. The type genome for the species is the GenBank assembly GCA_012510755.1. The GC content of the type genome is 60.29 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Leucobacter oppanago sp. nov.

Candidatus Leucobacter oppanago (NL. fem. n. *oppanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp001482305*. The type genome for the species is the GenBank assembly RS_GCF_001482305.1. The GC content of the type genome is 65.32 % and the genome length is 3.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "chromate-contaminated soil".

Description of *Candidatus* Leucobacter practago sp. nov.

Candidatus Leucobacter practago (NL. fem. n. *practago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp014530035*. The type genome for the species is the GenBank assembly RS_GCF_014530035.1. The GC content of the type genome is 61.38 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Leucobacter recogessa sp. nov.

Candidatus Leucobacter recogessa (NL. fem. n. *recogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp000980875*. The type genome for the species is the GenBank assembly RS_GCF_000980875.1. The GC content of the type genome is 70.27 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Adult mosquito gut".

Description of *Candidatus* Leucobacter ridibisca sp. nov.

Candidatus Leucobacter ridibisca (NL. fem. n. *ridibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucobacter sp000633415*. The type genome for the species is the GenBank assembly RS_GCF_000633415.1. The GC content of the type genome is 71.32 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Carnivorous Plant Phytotelma".

Description of *Candidatus* Leuconostoc decucicula sp. nov.

Candidatus Leuconostoc decucicula (NL. fem. n. *decucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leuconostoc sp900554745*. The type genome for the species is the GenBank assembly GCA_900554745.1. The GC content of the type genome is 44.62 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Leucothrix adcucetta sp. nov.

Candidatus Leucothrix adcucetta (NL. fem. n. *adcucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Leucothrix sp002747455*. The type genome for the species is the GenBank assembly GCA_002747455.1. The GC content of the type genome is 47.88 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Levidana innabibra sp. nov.

Candidatus Levidana innabibra (NL. fem. n. *innabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIYF01 sp014360065*. The type genome for the species is the GenBank assembly GCA_014360065.1. The GC content of the type genome is 54.79 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Levidana gen. nov.

Candidatus Levidana (NL. fem. n. *Levidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIYF01*. The type species for the genus is *Candidatus* Levidana innabibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACIYF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levidanaceae.

Description of *Candidatus* Levidanaceae fam. nov.

Candidatus Levidanaceae (NL. fem. n. *Levidanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIYF01.* The type genus for the taxon is *Candidatus* Levidana .

According to GTDB R06-RS202, this family belongs to the order *Moorellales*.

Description of *Candidatus* Levidaria adcelitoga sp. nov.

Candidatus Levidaria adcelitoga (NL. fem. n. *adcelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11021 sp003511465*. The type genome for the species is the GenBank assembly GCA_003511465.1. The GC content of the type genome is 48.2 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Levidaria gen. nov.

Candidatus Levidaria (NL. fem. n. *Levidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11021*. The type species for the genus is *Candidatus* Levidaria adcelitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Valefulaceae.

Description of *Candidatus* Levidaria adnulentia sp. nov.

Candidatus Levidaria adnulentia (NL. fem. n. *adnulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11021 sp012727425*. The type genome for the species is the GenBank assembly GCA_012727425.1. The GC content of the type genome is 53.47 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Levidaria colimessa sp. nov.

Candidatus Levidaria colimessa (NL. fem. n. *colimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11021 sp012521315*. The type genome for the species is the GenBank assembly GCA_012521315.1. The GC content of the type genome is 54.08 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Levidaria depupitica sp. nov.

Candidatus Levidaria depupitica (NL. fem. n. *depupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11021 sp013664685*. The type genome for the species is the GenBank assembly RS_GCF_013664685.1. The GC content of the type genome is 52.09 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Levidaria diritugo sp. nov.

Candidatus Levidaria diritugo (NL. fem. n. *diritugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11021 sp012837705*. The type genome for the species is the GenBank assembly GCA_012837705.1. The GC content of the type genome is 50.52 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Levidaria famelifica sp. nov.

Candidatus Levidaria famelifica (NL. fem. n. *famelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11021 sp012837715*. The type genome for the species is the GenBank assembly GCA_012837715.1. The GC content of the type genome is 49.33 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Levidaria indipifica sp. nov.

Candidatus Levidaria indipifica (NL. fem. n. *indipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11021 sp012735135*. The type genome for the species is the GenBank assembly GCA_012735135.1. The GC content of the type genome is 51.01 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Levidaria maxumibula sp. nov.

Candidatus Levidaria maxumibula (NL. fem. n. *maxumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11021 sp012512605*. The type genome for the species is the GenBank assembly GCA_012512605.1. The GC content of the type genome is 50.67 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Levidella delapitica sp. nov.

Candidatus Levidella delapitica (NL. fem. n. *delapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDYW01 sp902810745*. The type genome for the species is the GenBank assembly RS_GCF_902810745.1. The GC content of the type genome is 64.33

% and the genome length is 5.59 Mbp.

Description of *Candidatus* Levidella gen. nov.

Candidatus Levidella (NL. fem. n. *Levidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDYW01*. The type species for the genus is *Candidatus* Levidella delapitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADDYW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levidellaceae.

Description of *Candidatus* Levidellaceae fam. nov.

Candidatus Levidellaceae (NL. fem. n. *Levidellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADDYW01.* The type genus for the taxon is *Candidatus* Levidella .

According to the original version of GTDB R06-RS202, this family belongs to the order *FW602-bin22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colipulales.

Description of *Candidatus* Levidia allacilenta sp. nov.

Candidatus Levidia allacilenta (NL. fem. n. *allacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MC1 sp002632265*. The type genome for the species is the GenBank assembly GCA_002632265.1. The GC content of the type genome is 35.55 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Levidia gen. nov.

Candidatus Levidia (NL. fem. n. *Levidia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MC1*. The type species for the genus is *Candidatus* Levidia allacilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family

MC1. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levidiaceae.

Description of *Candidatus* Levidiaceae fam. nov.

Candidatus Levidiaceae (NL. fem. n. *Levidiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MC1*. The type genus for the taxon is *Candidatus* Levidia .

According to the original version of GTDB R06-RS202, this family belongs to the order *MC1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Levidiales.

Description of *Candidatus* Levidiales ord. nov.

Candidatus Levidiales (NL. fem. n. *Levidiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MC1*. The type genus for the taxon is *Candidatus* Levidia .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Levidida alsiditas sp. nov.

Candidatus Levidida alsiditas (NL. fem. n. *alsiditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp002840435*. The type genome for the species is the GenBank assembly GCA_002840435.1. The GC content of the type genome is 49.46 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Levidida gen. nov.

Candidatus Levidida (NL. fem. n. *Levidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8904*. The type species for the genus is *Candidatus* Levidida alsiditas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Levidida arcebimonas sp. nov.

Candidatus Levidida arcebimonas (NL. fem. n. *arcebimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp012797505*. The type genome for the species is the GenBank assembly GCA_012797505.1. The GC content of the type genome is 54.96 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Levidida atlanimonia sp. nov.

Candidatus Levidida atlanimonia (NL. fem. n. *atlanimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp012729055*. The type genome for the species is the GenBank assembly GCA_012729055.1. The GC content of the type genome is 57.17 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Levidida cerififorma sp. nov.

Candidatus Levidida cerififorma (NL. fem. n. *cerififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp009668925*. The type genome for the species is the GenBank assembly GCA_009668925.1. The GC content of the type genome is 53.77 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Levidida ceromessa sp. nov.

Candidatus Levidida ceromessa (NL. fem. n. *ceromessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp002304995*. The type genome for the species is the GenBank assembly GCA_002304995.1. The GC content of the type genome is 57.94 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Levidida delapitoga sp. nov.

Candidatus Levidida delapitoga (NL. fem. n. *delapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp002070455*. The type genome for the species is the GenBank assembly GCA_002070455.1. The GC content of the type genome is 48.34 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Levidida delecibula sp. nov.

Candidatus Levidida delecibula (NL. fem. n. *delecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp002382045*. The type genome for the species is the GenBank assembly GCA_002382045.1. The GC content of the type genome is 49.21 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Levidida denecetta sp. nov.

Candidatus Levidida denecetta (NL. fem. n. *denecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp003506745*. The type genome for the species is the GenBank assembly GCA_003506745.1. The GC content of the type genome is 51.47 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Levidida detumitia sp. nov.

Candidatus Levidida detumitia (NL. fem. n. *detumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp002347685*. The type genome for the species is the GenBank assembly GCA_002347685.1. The GC content of the type genome is 51.55 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Levidida excorivita sp. nov.

Candidatus Levidida excorivita (NL. fem. n. *excorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA8904 sp002840635*. The type genome for the species is the GenBank assembly GCA_002840635.1. The GC content of the type genome is 47.91 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Levidida exsupifica sp. nov.

Candidatus Levidida exsupifica (NL. fem. n. *exsupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp009773315*. The type genome for the species is the GenBank assembly GCA_009773315.1. The GC content of the type genome is 48.8 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Levidida immodigena sp. nov.

Candidatus Levidida immodigena (NL. fem. n. *immodigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp903904655*. The type genome for the species is the GenBank assembly GCA_903904655.1. The GC content of the type genome is 48.91 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Levidida invecigena sp. nov.

Candidatus Levidida invecigena (NL. fem. n. *invecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp012510495*. The type genome for the species is the GenBank assembly GCA_012510495.1. The GC content of the type genome is 53.5 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Levidida irradastra sp. nov.

Candidatus Levidida irradastra (NL. fem. n. *irradastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8904 sp012522275*. The type genome for the species is the GenBank assembly GCA_012522275.1. The GC content of the type genome is 52.6 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Levidosa capilastra sp. nov.

Candidatus Levidosa capilastra (NL. fem. n. *capilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1064 sp002316235*. The type genome for the species is the GenBank assembly GCA_012517455.1. The GC content of the type genome is 44.87 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Levidosa gen. nov.

Candidatus Levidosa (NL. fem. n. *Levidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1064*. The type species for the genus is *Candidatus* Levidosa capilastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BBW3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribiaceae.

Description of *Candidatus* Levidula funebilega sp. nov.

Candidatus Levidula funebilega (NL. fem. n. *funebilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-113 sp005881995*. The type genome for the species is the GenBank assembly GCA_005881995.1. The GC content of the type genome is 54.35 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Levidula gen. nov.

Candidatus Levidula (NL. fem. n. *Levidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-113*. The type species for the genus is *Candidatus* Levidula funebilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Levifana decupitica sp. nov.

Candidatus Levifana decupitica (NL. fem. n. *decupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002723415 sp002723415*. The type genome for the species is the GenBank assembly GCA_002723415.1. The GC content of the type genome is 30.33 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Levifana gen. nov.

Candidatus Levifana (NL. fem. n. *Levifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002723415*. The type species for the genus is *Candidatus* Levifana decupitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002723415*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifanaceae.

Description of *Candidatus* Levifanaceae fam. nov.

Candidatus Levifanaceae (NL. fem. n. *Levifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002723415.* The type genus for the taxon is *Candidatus* Levifana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defulidales.

Description of *Candidatus* Levifana latibitia sp. nov.

Candidatus Levifana latibitia (NL. fem. n. *latibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002723415 sp002721445*. The type genome for the species is the GenBank assembly GCA_002721445.1. The GC content of the type genome is 30.48 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Levifaria divorax sp. nov.

Candidatus Levifaria divorax (NL. fem. n. *divorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA998 sp002291925*. The type genome for the species is the GenBank assembly GCA_002291925.1. The GC content of the type genome is 61.14 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Levifaria gen. nov.

Candidatus Levifaria (NL. fem. n. *Levifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA998*. The type species for the genus is *Candidatus* Levifaria divorax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA998*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifariaceae.

Description of *Candidatus* Levifariaceae fam. nov.

Candidatus Levifariaceae (NL. fem. n. *Levifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA998.* The type genus for the taxon is *Candidatus* Levifaria .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Levifaria inconicula sp. nov.

Candidatus Levifaria inconicula (NL. fem. n. *inconicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA998 sp002291845*. The type genome for the species is the GenBank assembly GCA_002291845.1. The GC content of the type genome is 55.51 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Levifella laculicella sp. nov.

Candidatus Levifella laculicella (NL. fem. n. *laculicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-1050 sp011373705*. The type genome for the species is the GenBank assembly GCA_011373705.1. The GC content of the type genome is 42.5 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Levifella gen. nov.

Candidatus Levifella (NL. fem. n. *Levifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-1050*. The type species for the genus is *Candidatus* Levifella laculicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-1050*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifellaceae.

Description of *Candidatus* Levifellaceae fam. nov.

Candidatus Levifellaceae (NL. fem. n. *Levifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-1050.* The type genus for the taxon is *Candidatus* Levifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-1050*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Levifellales.

Description of *Candidatus* Levifellales ord. nov.

Candidatus Levifellales (NL. fem. n. *Levifellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-1050.* The type genus for the taxon is *Candidatus* Levifella .

According to the original version of GTDB R06-RS202, this family belongs to the class *SpSt-1050*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Levifellae.

Description of *Candidatus* Levifellae class. nov.

Candidatus Levifellae (NL. fem. n. *c__Levifellae* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-1050.* The type genus for the taxon is *Candidatus* Levifella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *SpSt-1050*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Levifellota.

Description of *Candidatus* Levifellota phyl. nov.

Candidatus Levifellota (NL. fem. n. *Levifellota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-1050.* The type genus for the taxon is *Candidatus* Levifella .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Levifia tibicifica sp. nov.

Candidatus Levifia tibicifica (NL. fem. n. *tibicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-39 sp001303765*. The type genome for the species is the GenBank assembly GCA_001303765.1. The GC content of the type genome is 26.23 % and the genome length is 1.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Levifia gen. nov.

Candidatus Levifia (NL. fem. n. *Levifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-39*. The type species for the genus is *Candidatus* Levifia tibicifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Levifiaceae fam. nov.

Candidatus Levifiaceae (NL. fem. n. *Levifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-39.* The type genus for the taxon is *Candidatus* Levifia .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Levifosa nefanugo sp. nov.

Candidatus Levifosa nefanugo (NL. fem. n. *nefanugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4735 sp002404155*. The type genome for the species is the GenBank assembly GCA_002405245.1. The GC content of the type genome is 68.56 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Levifosa gen. nov.

Candidatus Levifosa (NL. fem. n. *Levifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4735*. The type species for the genus is *Candidatus* Levifosa nefanugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P2-11E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotosaceae.

Description of *Candidatus* Levifula cepulitica sp. nov.

Candidatus Levifula cepulitica (NL. fem. n. *cepulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-41-13 sp001821615*. The type genome for the species is the GenBank assembly GCA_001821615.1. The GC content of the type genome is 40.43 % and the genome length is 0.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Levifula gen. nov.

Candidatus Levifula (NL. fem. n. *Levifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-41-13*. The type species for the genus is *Candidatus* Levifula cepulitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-41-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifulaceae.

Description of *Candidatus* Levifulaceae fam. nov.

Candidatus Levifulaceae (NL. fem. n. *Levifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-41-13.* The type genus for the taxon is *Candidatus* Levifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *WO2-41-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Refulariales.

Description of *Candidatus* Levilactobacillus anatrimonia sp. nov.

Candidatus Levilactobacillus anatrimonia (NL. fem. n. *anatrimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp003946545*. The type genome for the species is the GenBank assembly RS_GCF_003946545.1. The GC content of the type genome is 49.8 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Levilactobacillus cisalitica sp. nov.

Candidatus Levilactobacillus cisalitica (NL. fem. n. *cisalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp003946095*. The type genome for the species is the GenBank assembly RS_GCF_003946095.1. The GC content of the type genome is 49.15 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Levilactobacillus exsusigena sp. nov.

Candidatus Levilactobacillus exsusigena (NL. fem. n. *exsusigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp003946335*. The type genome for the species is the GenBank assembly RS_GCF_003946335.1. The GC content of the type genome is 47.39 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Levilactobacillus famelimonia sp. nov.

Candidatus Levilactobacillus famelimonia (NL. fem. n. *famelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp003946395*. The type genome for the species is the GenBank assembly RS_GCF_003946395.1. The GC content of the type genome is 48.85 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Levilactobacillus impugilega sp. nov.

Candidatus Levilactobacillus impugilega (NL. fem. n. *impugilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp003946145*. The type genome for the species is the GenBank assembly RS_GCF_003946145.1. The GC content of the type genome is 47.54 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Levilactobacillus inbelifica sp. nov.

Candidatus Levilactobacillus inbelifica (NL. fem. n. *inbelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp007115095*. The type genome for the species is the GenBank assembly RS_GCF_007115095.1. The GC content of the type genome is 47.88 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Levilactobacillus locupatio sp. nov.

Candidatus Levilactobacillus locupatio (NL. fem. n. *locupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp012641185*. The type genome for the species is the GenBank assembly RS_GCF_012641105.1. The GC content of the type genome is 48.11 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Levilactobacillus nucifedo sp. nov.

Candidatus Levilactobacillus nucifedo (NL. fem. n. *nucifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp003946085*. The type genome for the species is the GenBank assembly RS_GCF_003946085.1. The GC content of the type genome is 50.49 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Levilactobacillus obsecetta sp. nov.

Candidatus Levilactobacillus obsecetta (NL. fem. n. *obsecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp003946345*. The type genome for the species is the GenBank assembly RS_GCF_003946345.1. The GC content of the type genome is 47.73 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Levilactobacillus recumibra sp. nov.

Candidatus Levilactobacillus recumibra (NL. fem. n. *recumibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp012641095*. The type genome for the species is the GenBank assembly RS_GCF_012641095.1. The GC content of the type genome is 50.39 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Levilactobacillus releciforma sp. nov.

Candidatus Levilactobacillus releciforma (NL. fem. n. *releciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Levilactobacillus sp003946045*. The type genome for the species is the GenBank assembly RS_GCF_003946045.1. The GC content of the type genome is 50.33

% and the genome length is 3.11 Mbp.

Description of *Candidatus* Lewinella roraritoga sp. nov.

Candidatus Lewinella roraritoga (NL. fem. n. *roraritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lewinella sp003045895*. The type genome for the species is the GenBank assembly GCA_003023605.1. The GC content of the type genome is 53.31 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Lewinella adteniforma sp. nov.

Candidatus Lewinella adteniforma (NL. fem. n. *adteniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lewinella_A sp001625015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001625015.1. The GC content of the type genome is 55.29 % and the genome length is 5.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea surface microlayer".

Description of *Candidatus* Lewinella cerucax sp. nov.

Candidatus Lewinella cerucax (NL. fem. n. *cerucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lewinella_A sp008014675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008014675.1. The GC content of the type genome is 52.83 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Lewinella insomentia sp. nov.

Candidatus Lewinella insomentia (NL. fem. n. *insomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Lewinella_A sp002591745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002591745.1. The GC content of the type genome is 50.43 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Lewinella lorarimonia sp. nov.

Candidatus Lewinella lorarimonia (NL. fem. n. *lorarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lewinella_A sp003390935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003390935.1. The GC content of the type genome is 57.59 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Lewinella notacibra sp. nov.

Candidatus Lewinella notacibra (NL. fem. n. *notacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lewinella_A sp004375085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004375085.3. The GC content of the type genome is 56.32 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Lewinella regifugo sp. nov.

Candidatus Lewinella regifugo (NL. fem. n. *regifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lewinella_A sp003390915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003390915.1. The GC content of the type genome is 61.93 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Liberibacter perabitudo sp. nov.

Candidatus Liberibacter perabitudo (NL. fem. n. *perabitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Liberibacter sp014048425*. The type genome for the species is the GenBank assembly RS_GCF_014048425.1. The GC content of the type genome is 37.34 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Licenana pecunitudo sp. nov.

Candidatus Licenana pecunitudo (NL. fem. n. *pecunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILHX01 sp903834185*. The type genome for the species is the GenBank assembly GCA_903837675.1. The GC content of the type genome is 51.96 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Licenana gen. nov.

Candidatus Licenana (NL. fem. n. *Licenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILHX01*. The type species for the genus is *Candidatus* Licenana pecunitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Licenaria coturitura sp. nov.

Candidatus Licenaria coturitura (NL. fem. n. *coturitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1231 sp903910555*. The type genome for the species is the GenBank assembly GCA_903856455.1. The GC content of the type genome is 62.65 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Licenaria gen. nov.

Candidatus Licenaria (NL. fem. n. *Licenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Fen-1231*. The type species for the genus is *Candidatus* Licenaria coturitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Licenaria inobritura sp. nov.

Candidatus Licenaria inobritura (NL. fem. n. *inobritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1231 sp903876745*. The type genome for the species is the GenBank assembly GCA_903876745.1. The GC content of the type genome is 68.45 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Licenaria pavicessa sp. nov.

Candidatus Licenaria pavicessa (NL. fem. n. *pavicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1231 sp014192065*. The type genome for the species is the GenBank assembly GCA_014192065.1. The GC content of the type genome is 64.77 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Licenaria periditudo sp. nov.

Candidatus Licenaria periditudo (NL. fem. n. *periditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1231 sp903882745*. The type genome for the species is the GenBank assembly GCA_903877525.1. The GC content of the type genome is 64.1 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Licenaria sicinimonia sp. nov.

Candidatus Licenaria sicinimonia (NL. fem. n. *sicinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1231 sp003171215*. The type genome for the species is the GenBank assembly GCA_003168085.1. The GC content of the type genome is 66.58 %

and the genome length is 3.6 Mbp.

Description of *Candidatus* Licenella prosledo sp. nov.

Candidatus Licenella prosledo (NL. fem. n. *prosledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RR4-38 sp008501705*. The type genome for the species is the GenBank assembly GCA_008501705.1. The GC content of the type genome is 41.9 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Licenella gen. nov.

Candidatus Licenella (NL. fem. n. *Licenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RR4-38*. The type species for the genus is *Candidatus* Licenella prosledo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Licenella vecorifica sp. nov.

Candidatus Licenella vecorifica (NL. fem. n. *vecorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RR4-38 sp013043685*. The type genome for the species is the GenBank assembly GCA_013043685.1. The GC content of the type genome is 41.48 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Licenella xeramentia sp. nov.

Candidatus Licenella xeramentia (NL. fem. n. *xeramentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RR4-38 sp002966125*. The type genome for the species is the GenBank assembly RS_GCF_002966125.1. The GC content of the type genome is 41.89 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Licenia echidedo sp. nov.

Candidatus Licenia echidedo (NL. fem. n. *echidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2785325 sp002785325*. The type genome for the species is the GenBank assembly GCA_002785325.1. The GC content of the type genome is 39.83 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Licenia gen. nov.

Candidatus Licenia (NL. fem. n. *Licenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2785325*. The type species for the genus is *Candidatus* Licenia echidedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2785325*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Liceniaceae.

Description of *Candidatus* Liceniaceae fam. nov.

Candidatus Liceniaceae (NL. fem. n. *Liceniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2785325.* The type genus for the taxon is *Candidatus* Licenia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1875*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tubicidales.

Description of *Candidatus* Licenida dilicimonia sp. nov.

Candidatus Licenida dilicimonia (NL. fem. n. *dilicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2720855 sp002720855*. The type genome for the species is the GenBank assembly GCA_002720855.1. The GC content of the type genome is 50.95 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Licenida gen. nov.

Candidatus Licenida (NL. fem. n. *Licenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2720855*. The type species for the genus is *Candidatus* Licenida dilicimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2964*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibidaceae.

Description of *Candidatus* Licenosa conabitica sp. nov.

Candidatus Licenosa conabitica (NL. fem. n. *conabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1561 sp001791745*. The type genome for the species is the GenBank assembly GCA_001791745.1. The GC content of the type genome is 47.13 % and the genome length is 1.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Licenosa gen. nov.

Candidatus Licenosa (NL. fem. n. *Licenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1561*. The type species for the genus is *Candidatus* Licenosa conabitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Labecellaceae.

Description of *Candidatus* Licenosa tomogisca sp. nov.

Candidatus Licenosa tomogisca (NL. fem. n. *tomogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1561 sp001872545*. The type genome for the species is the GenBank assembly GCA_002785005.1. The GC content of the type genome is 58.14 %

and the genome length is 1.07 Mbp.

Description of *Candidatus* Licenula avoncitica sp. nov.

Candidatus Licenula avoncitica (NL. fem. n. *avoncitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYM01 sp009692805*. The type genome for the species is the GenBank assembly GCA_009692805.1. The GC content of the type genome is 66.97 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Licenula gen. nov.

Candidatus Licenula (NL. fem. n. *Licenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYM01*. The type species for the genus is *Candidatus* Licenula avoncitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Licenulaceae.

Description of *Candidatus* Licenulaceae fam. nov.

Candidatus Licenulaceae (NL. fem. n. *Licenulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYM01.* The type genus for the taxon is *Candidatus* Licenula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHYM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Licenulales.

Description of *Candidatus* Licenulales ord. nov.

Candidatus Licenulales (NL. fem. n. *Licenulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYM01.* The type genus for the taxon is *Candidatus* Licenula .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Ligilactobacillus luculigena sp. nov.

Candidatus Ligilactobacillus luculigena (NL. fem. n. *luculigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ligilactobacillus sp900765635*. The type genome for the species is the GenBank assembly RS_GCF_900765635.1. The GC content of the type genome is 35.69 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Limisphaera nefanigena sp. nov.

Candidatus Limisphaera nefanigena (NL. fem. n. *nefanigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limisphaera sp011058495*. The type genome for the species is the GenBank assembly GCA_011058495.1. The GC content of the type genome is 65.25 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Limnobacter adhoribula sp. nov.

Candidatus Limnobacter adhoribula (NL. fem. n. *adhoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnobacter sp012032215*. The type genome for the species is the GenBank assembly GCA_012032215.1. The GC content of the type genome is 53.68 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Limnobacter cerifitica sp. nov.

Candidatus Limnobacter cerifitica (NL. fem. n. *cerifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnobacter sp000170915*. The type genome for the species is the GenBank assembly GCA_002377005.1. The GC content of the type genome is 52.4 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Limnobacter cobalago sp. nov.

Candidatus Limnobacter cobalago (NL. fem. n. *cobalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnobacter sp902506325*. The type genome for the species is the GenBank assembly RS_GCF_902506325.1. The GC content of the type genome is 52.22 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Limnobacter desorago sp. nov.

Candidatus Limnobacter desorago (NL. fem. n. *desorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnobacter sp002954425*. The type genome for the species is the GenBank assembly GCA_002321545.1. The GC content of the type genome is 52.68 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Limnobacter labecilega sp. nov.

Candidatus Limnobacter labecilega (NL. fem. n. *labecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnobacter sp002428895*. The type genome for the species is the GenBank assembly GCA_002428895.1. The GC content of the type genome is 42.45 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Limnobacter nosocicella sp. nov.

Candidatus Limnobacter nosocicella (NL. fem. n. *nosocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnobacter sp005871185*. The type genome for the species is the GenBank assembly RS_GCF_005871185.1. The GC content of the type genome is 52.55 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Limnobacter relenibula sp. nov.

Candidatus Limnobacter relenibula (NL. fem. n. *relenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Limnobacter sp001601825*. The type genome for the species is the GenBank assembly GCA_001601825.1. The GC content of the type genome is 52.48 % and the genome length is 3.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "CACIAM 66 non-axenic culture of unicellular cyanobacterium started from freshwater".

Description of *Candidatus* Limnobaculum domipimonia sp. nov.

Candidatus Limnobaculum domipimonia (NL. fem. n. *domipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnobaculum sp004295645*. The type genome for the species is the GenBank assembly RS_GCF_004295645.1. The GC content of the type genome is 45.68 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Limnobaculum nehalimonas sp. nov.

Candidatus Limnobaculum nehalimonas (NL. fem. n. *nehalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnobaculum sp006491675*. The type genome for the species is the GenBank assembly RS_GCF_006491675.1. The GC content of the type genome is 45.29 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Limnochorda rorifitica sp. nov.

Candidatus Limnochorda rorifitica (NL. fem. n. *rorifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnochorda sp012799445*. The type genome for the species is the GenBank assembly GCA_012799445.1. The GC content of the type genome is 69.21 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Limnohabitans allapitas sp. nov.

Candidatus Limnohabitans allapitas (NL. fem. n. *allapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp003063545*. The type genome for the species is the GenBank assembly RS_GCF_003063545.1. The GC content of the type genome is 53.95

% and the genome length is 2.63 Mbp.

Description of *Candidatus* Limnohabitans benepiforma sp. nov.

Candidatus Limnohabitans benepiforma (NL. fem. n. *benepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp903856995*. The type genome for the species is the GenBank assembly GCA_903856995.1. The GC content of the type genome is 56.28 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Limnohabitans benifilenta sp. nov.

Candidatus Limnohabitans benifilenta (NL. fem. n. *benifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp903906635*. The type genome for the species is the GenBank assembly GCA_903906635.1. The GC content of the type genome is 57.7 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Limnohabitans cotenugo sp. nov.

Candidatus Limnohabitans cotenugo (NL. fem. n. *cotenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp903886485*. The type genome for the species is the GenBank assembly GCA_903830665.1. The GC content of the type genome is 55.98 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Limnohabitans depocigena sp. nov.

Candidatus Limnohabitans depocigena (NL. fem. n. *depocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp903845315*. The type genome for the species is the GenBank assembly GCA_903845315.1. The GC content of the type genome is 57.25 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Limnohabitans desepimonia sp. nov.

Candidatus Limnohabitans desepimonia (NL. fem. n. *desepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp903952885*. The type genome for the species is the GenBank assembly GCA_903952885.1. The GC content of the type genome is 55.22 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Limnohabitans diludatio sp. nov.

Candidatus Limnohabitans diludatio (NL. fem. n. *diludatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp002778315*. The type genome for the species is the GenBank assembly RS_GCF_002778315.1. The GC content of the type genome is 57.81 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Limnohabitans extunatio sp. nov.

Candidatus Limnohabitans extunatio (NL. fem. n. *extunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp005786815*. The type genome for the species is the GenBank assembly GCA_005786815.1. The GC content of the type genome is 51.14 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Limnohabitans inpelimonia sp. nov.

Candidatus Limnohabitans inpelimonia (NL. fem. n. *inpelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp002778325*. The type genome for the species is the GenBank assembly RS_GCF_002778325.1. The GC content of the type genome is 56.54 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Limnohabitans minuritudo sp. nov.

Candidatus Limnohabitans minuritudo (NL. fem. n. *minuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp903925445*. The type genome for the species is the GenBank assembly GCA_903925445.1. The GC content of the type genome is 55.39 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Limnohabitans negotifica sp. nov.

Candidatus Limnohabitans negotifica (NL. fem. n. *negotifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp903880855*. The type genome for the species is the GenBank assembly GCA_903823475.1. The GC content of the type genome is 50.24 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Limnohabitans semifessa sp. nov.

Candidatus Limnohabitans semifessa (NL. fem. n. *semifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp903832625*. The type genome for the species is the GenBank assembly GCA_903892525.1. The GC content of the type genome is 55.48 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Limnohabitans semigibula sp. nov.

Candidatus Limnohabitans semigibula (NL. fem. n. *semigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp903892175*. The type genome for the species is the GenBank assembly GCA_903906215.1. The GC content of the type genome is 58.2 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Limnohabitans siticivita sp. nov.

Candidatus Limnohabitans siticivita (NL. fem. n. *siticivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp002282445*. The type genome for the species is the GenBank assembly GCA_002281915.1. The GC content of the type genome is 54.62 %

and the genome length is 2.63 Mbp.

Description of *Candidatus* Limnohabitans tabitedo sp. nov.

Candidatus Limnohabitans tabitedo (NL. fem. n. *tabitedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp002347905*. The type genome for the species is the GenBank assembly GCA_002347905.1. The GC content of the type genome is 51.05 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Limnohabitans vitigitrix sp. nov.

Candidatus Limnohabitans vitigitrix (NL. fem. n. *vitigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans sp009923345*. The type genome for the species is the GenBank assembly GCA_009923345.1. The GC content of the type genome is 51.36 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Limnohabitans ablepitrix sp. nov.

Candidatus Limnohabitans ablepitrix (NL. fem. n. *ablepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063315.1. The GC content of the type genome is 59.33 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Limnohabitans actaratica sp. nov.

Candidatus Limnohabitans actaratica (NL. fem. n. *actaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063505.1. The GC

content of the type genome is 59.62 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Limnohabitans adfulisca sp. nov.

Candidatus Limnohabitans adfulisca (NL. fem. n. *adfulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063665.1. The GC content of the type genome is 61.08 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Limnohabitans adobrilega sp. nov.

Candidatus Limnohabitans adobrilega (NL. fem. n. *adobrilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp001412535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001412535.1. The GC content of the type genome is 59.93 % and the genome length is 3.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater".

Description of *Candidatus* Limnohabitans adorditas sp. nov.

Candidatus Limnohabitans adorditas (NL. fem. n. *adorditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp009693505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009693505.1. The GC content of the type genome is 51.74 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Limnohabitans antacibula sp. nov.

Candidatus Limnohabitans antacibula (NL. fem. n. *antacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063355.1. The GC content of the type genome is 59.55 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Limnohabitans arcipiforma sp. nov.

Candidatus Limnohabitans arcipiforma (NL. fem. n. *arcipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp903856875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903856875.1. The GC content of the type genome is 51.67 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Limnohabitans aspilifica sp. nov.

Candidatus Limnohabitans aspilifica (NL. fem. n. *aspilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp005789685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_005789685.1. The GC content of the type genome is 51.9 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Limnohabitans bicalimonas sp. nov.

Candidatus Limnohabitans bicalimonas (NL. fem. n. *bicalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp001412575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001412575.1. The GC content of the type genome is 53.32 % and the genome length is 2.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as

"freshwater".

Description of *Candidatus* Limnohabitans bimetessa sp. nov.

Candidatus Limnohabitans bimetessa (NL. fem. n. *bimetessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp009928125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009928125.1. The GC content of the type genome is 53.47 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Limnohabitans cacopax sp. nov.

Candidatus Limnohabitans cacopax (NL. fem. n. *cacopax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp903935585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903945545.1. The GC content of the type genome is 59.06 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Limnohabitans capabitudo sp. nov.

Candidatus Limnohabitans capabitudo (NL. fem. n. *capabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp903932865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903932865.1. The GC content of the type genome is 59.4 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Limnohabitans cepulimonia sp. nov.

Candidatus Limnohabitans cepulimonia (NL. fem. n. *cepulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Limnohabitans_A sp903953985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903932905.1. The GC content of the type genome is 59.79 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Limnohabitans ceracetta sp. nov.

Candidatus Limnohabitans ceracetta (NL. fem. n. *ceracetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp903916355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903916355.1. The GC content of the type genome is 58.52 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Limnohabitans crusmitia sp. nov.

Candidatus Limnohabitans crusmitia (NL. fem. n. *crusmitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp001269365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001269365.1. The GC content of the type genome is 52.08 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Limnohabitans extinatica sp. nov.

Candidatus Limnohabitans extinatica (NL. fem. n. *extinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063645.1. The GC content of the type genome is 58.7 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Limnohabitans fibicatica sp. nov.

Candidatus Limnohabitans fibicatica (NL. fem. n. *fibicatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp903844775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903844775.1. The GC content of the type genome is 51.69 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Limnohabitans fusifibra sp. nov.

Candidatus Limnohabitans fusifibra (NL. fem. n. *fusifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063375.1. The GC content of the type genome is 51.7 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Limnohabitans impudisca sp. nov.

Candidatus Limnohabitans impudisca (NL. fem. n. *impudisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp001269345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001269345.1. The GC content of the type genome is 60.35 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Limnohabitans invecatica sp. nov.

Candidatus Limnohabitans invecatica (NL. fem. n. *invecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp001269385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001269385.1. The GC

content of the type genome is 59.52 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Limnohabitans lupanessa sp. nov.

Candidatus Limnohabitans lupanessa (NL. fem. n. *lupanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063415.1. The GC content of the type genome is 58.2 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Limnohabitans manupago sp. nov.

Candidatus Limnohabitans manupago (NL. fem. n. *manupago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063575.1. The GC content of the type genome is 59.15 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Limnohabitans masocibra sp. nov.

Candidatus Limnohabitans masocibra (NL. fem. n. *masocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp903894995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903915505.1. The GC content of the type genome is 58.67 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Limnohabitans metapatica sp. nov.

Candidatus Limnohabitans metapatica (NL. fem. n. *metapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Limnohabitans_A sp003063265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063265.1. The GC content of the type genome is 59.17 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Limnohabitans molecatio sp. nov.

Candidatus Limnohabitans molecatio (NL. fem. n. *molecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp002778275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002778275.1. The GC content of the type genome is 60.13 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Limnohabitans navicatica sp. nov.

Candidatus Limnohabitans navicatica (NL. fem. n. *navicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp001517545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000292865.1. The GC content of the type genome is 58.48 % and the genome length is 3.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water from Rimov reservoir".

Description of *Candidatus* Limnohabitans paracicella sp. nov.

Candidatus Limnohabitans paracicella (NL. fem. n. *paracicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063435.1. The GC content of the type genome is 60.15 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Limnohabitans pomifetta sp. nov.

Candidatus Limnohabitans pomifetta (NL. fem. n. *pomifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp903961095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903961095.1. The GC content of the type genome is 50.86 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Limnohabitans pulegedo sp. nov.

Candidatus Limnohabitans pulegedo (NL. fem. n. *pulegedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp000293865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000293865.2. The GC content of the type genome is 58.52 % and the genome length is 3.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water from Rimov reservoir".

Description of *Candidatus* Limnohabitans retunastra sp. nov.

Candidatus Limnohabitans retunastra (NL. fem. n. *retunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp903822825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903832095.1. The GC content of the type genome is 59.73 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Limnohabitans rosacetta sp. nov.

Candidatus Limnohabitans rosacetta (NL. fem. n. *rosacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp002256145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002256145.1. The GC content of the type genome is 58.78 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Limnohabitans rubicentia sp. nov.

Candidatus Limnohabitans rubicentia (NL. fem. n. *rubicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp903870145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903843035.1. The GC content of the type genome is 54.61 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Limnohabitans tabitimonia sp. nov.

Candidatus Limnohabitans tabitimonia (NL. fem. n. *tabitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp003063335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003063335.1. The GC content of the type genome is 59.8 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Limnohabitans tibicisca sp. nov.

Candidatus Limnohabitans tibicisca (NL. fem. n. *tibicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp002255935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002255935.1. The GC content of the type genome is 60.06 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Limnohabitans vicecibula sp. nov.

Candidatus Limnohabitans vicecibula (NL. fem. n. *vicecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnohabitans_A sp002778285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002778285.1. The GC content of the type genome is 58.2 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Limnothrix elastousia sp. nov.

Candidatus Limnothrix elastousia (NL. fem. n. *elastousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnothrix sp012033055*. The type genome for the species is the GenBank assembly GCA_012033055.1. The GC content of the type genome is 45.68 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Limnothrix lanigetta sp. nov.

Candidatus Limnothrix lanigetta (NL. fem. n. *lanigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnothrix sp001693255*. The type genome for the species is the GenBank assembly RS_GCF_001693255.1. The GC content of the type genome is 49.26 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Limnothrix monoditrix sp. nov.

Candidatus Limnothrix monoditrix (NL. fem. n. *monoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnothrix sp002356215*. The type genome for the species is the GenBank assembly RS_GCF_000485815.1. The GC content of the type genome is 49.25 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Limnothrix nitelitas sp. nov.

Candidatus Limnothrix nitelitas (NL. fem. n. *nitelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnothrix sp001693275*. The type genome for the species is the GenBank assembly RS_GCF_000715475.1. The GC content of the type genome is 49.35 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Limnothrix senipentia sp. nov.

Candidatus Limnothrix senipentia (NL. fem. n. *senipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limnothrix sp000316605*. The type genome for the species is the GenBank assembly RS_GCF_000316605.1. The GC content of the type genome is 43.87 % and the genome length is 5.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Crystal Cave (limestone)".

Description of *Candidatus* Limosilactobacillus adporessa sp. nov.

Candidatus Limosilactobacillus adporessa (NL. fem. n. *adporessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp900156885*. The type genome for the species is the GenBank assembly RS_GCF_900156885.1. The GC content of the type genome is 45.42 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Limosilactobacillus bigaressa sp. nov.

Candidatus Limosilactobacillus bigaressa (NL. fem. n. *bigaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp009663775*. The type genome for the species is the GenBank assembly RS_GCF_009663775.1. The GC content of the type genome is 38.87 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Limosilactobacillus cinefitia sp. nov.

Candidatus Limosilactobacillus cinefitia (NL. fem. n. *cinefitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp900557215*. The type genome for the species is the GenBank assembly GCA_902388645.1. The GC content of the type genome is 39.42 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Limosilactobacillus defosax sp. nov.

Candidatus Limosilactobacillus defosax (NL. fem. n. *defosax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp002299975*. The type genome for the species is the GenBank assembly GCA_002299975.1. The GC content of the type genome is 50.49 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Limosilactobacillus desupimonas sp. nov.

Candidatus Limosilactobacillus desupimonas (NL. fem. n. *desupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp014145435*. The type genome for the species is the GenBank assembly RS_GCF_014145435.1. The GC content of the type genome is 38.48 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Limosilactobacillus detotisca sp. nov.

Candidatus Limosilactobacillus detotisca (NL. fem. n. *detotisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp014145615*. The type genome for the species is the GenBank assembly RS_GCF_014145605.1. The GC content of the type genome is 38.24 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Limosilactobacillus heriniforma sp. nov.

Candidatus Limosilactobacillus heriniforma (NL. fem. n. *heriniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp014145545*. The type genome for the species is the GenBank assembly RS_GCF_014145585.1. The GC content of the type genome is 37.95 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Limosilactobacillus innecitas sp. nov.

Candidatus Limosilactobacillus innecitas (NL. fem. n. *innecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp013487845*. The type genome for the species is the GenBank assembly RS_GCF_013487845.1. The GC content of the type genome is 42.54 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Limosilactobacillus peridessa sp. nov.

Candidatus Limosilactobacillus peridessa (NL. fem. n. *peridessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp014145505*. The type genome for the species is the GenBank assembly RS_GCF_014145505.1. The GC content of the type genome is 39.12 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Limosilactobacillus peripessa sp. nov.

Candidatus Limosilactobacillus peripessa (NL. fem. n. *peripessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Limosilactobacillus sp012843675*. The type genome for the species is the GenBank assembly RS_GCF_012843675.1. The GC content of the type genome is 45.89 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Linigana bonifedo sp. nov.

Candidatus Linigana bonifedo (NL. fem. n. *bonifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFW01 sp013286305*. The type genome for the species is the GenBank assembly GCA_013286305.1. The GC content of the type genome is 40.57 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Linigana gen. nov.

Candidatus Linigana (NL. fem. n. *Linigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDFW01*. The type species for the genus is *Candidatus* Linigana bonifedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Linigana depasitio sp. nov.

Candidatus Linigana depasitio (NL. fem. n. *depasitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFW01 sp013286415*. The type genome for the species is the GenBank assembly GCA_013286415.1. The GC content of the type genome is 40.71 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Linigana lupanitica sp. nov.

Candidatus Linigana lupanitica (NL. fem. n. *lupanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFW01 sp903882935*. The type genome for the species is the GenBank assembly GCA_903835135.1. The GC content of the type genome is 44.67 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Linigana lutulitoga sp. nov.

Candidatus Linigana lutulitoga (NL. fem. n. *lutulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDFW01 sp013285915*. The type genome for the species is the GenBank assembly GCA_013285915.1. The GC content of the type genome is 41.74 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Linigaria diponifica sp. nov.

Candidatus Linigaria diponifica (NL. fem. n. *diponifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Fen-1262 sp003152875*. The type genome for the species is the GenBank assembly GCA_003155505.1. The GC content of the type genome is 60.41 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Linigaria gen. nov.

Candidatus Linigaria (NL. fem. n. *Linigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1262*. The type species for the genus is *Candidatus* Linigaria diponifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6906*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibellaceae.

Description of *Candidatus* Linigaria indubilega sp. nov.

Candidatus Linigaria indubilega (NL. fem. n. *indubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1262 sp003161755*. The type genome for the species is the GenBank assembly GCA_003161755.1. The GC content of the type genome is 52.95 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Linigia lubenessa sp. nov.

Candidatus Linigia lubenessa (NL. fem. n. *lubenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2268 sp002418685*. The type genome for the species is the GenBank assembly GCA_002423525.1. The GC content of the type genome is 34.1 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Linigia gen. nov.

Candidatus Linigia (NL. fem. n. *Linigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2268*. The type species for the genus is *Candidatus* Linigia lubenessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Linigiaceae fam. nov.

Candidatus Linigiaceae (NL. fem. n. *Linigiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2268.* The type genus for the taxon is *Candidatus* Linigia .

According to GTDB R06-RS202, this family belongs to the order *Kapabacteriales*.

Description of *Candidatus* Linigida inresitura sp. nov.

Candidatus Linigida inresitura (NL. fem. n. *inresitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2778 sp002352385*. The type genome for the species is the GenBank assembly GCA_002352385.1. The GC content of the type genome is 55.65 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Linigida gen. nov.

Candidatus Linigida (NL. fem. n. *Linigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2778*. The type species for the genus is *Candidatus* Linigida inresitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2778*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigidaceae.

Description of *Candidatus* Linigidaceae fam. nov.

Candidatus Linigidaceae (NL. fem. n. *Linigidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2778.* The type genus for the taxon is *Candidatus* Linigida .

According to GTDB R06-RS202, this family belongs to the order *Methylococcales*.

Description of *Candidatus* Linigosa indipimonia sp. nov.

Candidatus Linigosa indipimonia (NL. fem. n. *indipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-42-7-A sp001831055*. The type genome for the species is the GenBank assembly GCA_001831055.1. The GC content of the type genome is 41.76 % and the genome length is 1.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Linigosa gen. nov.

Candidatus Linigosa (NL. fem. n. *Linigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-42-7-A*. The type species for the genus is *Candidatus* Linigosa indipimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-42-7-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigosaceae.

Description of *Candidatus* Linigosaceae fam. nov.

Candidatus Linigosaceae (NL. fem. n. *Linigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-42-7-A.* The type genus for the taxon is *Candidatus* Linigosa .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Linigula viripessa sp. nov.

Candidatus Linigula viripessa (NL. fem. n. *viripessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2715505 sp002715505*. The type genome for the species is the GenBank assembly GCA_002715505.1. The GC content of the type genome is 29.48 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Linigula gen. nov.

Candidatus Linigula (NL. fem. n. *Linigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2715505*. The type species for the genus is *Candidatus* Linigula viripessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citoculaceae.

Description of *Candidatus* Lipingzhangella nutamiforma sp. nov.

Candidatus Lipingzhangella nutamiforma (NL. fem. n. *nutamiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lipingzhangella sp003725585*. The type genome for the species is the GenBank assembly RS_GCF_003725585.1. The GC content of the type genome is 69.79 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Listeria decapimonia sp. nov.

Candidatus Listeria decapimonia (NL. fem. n. *decapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Listeria sp014229095*. The type genome for the species is the GenBank assembly RS_GCF_014225985.1. The GC content of the type genome is 38.6 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Listeria facunitudo sp. nov.

Candidatus Listeria facunitudo (NL. fem. n. *facunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Listeria sp014223685*. The type genome for the species is the GenBank assembly RS_GCF_014224035.1. The GC content of the type genome is 35.92 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Listeria femelatica sp. nov.

Candidatus Listeria femelatica (NL. fem. n. *femelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Listeria sp014229345*. The type genome for the species is the GenBank assembly RS_GCF_014229345.1. The GC content of the type genome is 36.85 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Listeria loripivita sp. nov.

Candidatus Listeria loripivita (NL. fem. n. *loripivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Listeria sp014229645*. The type genome for the species is the GenBank assembly RS_GCF_014229645.1. The GC content of the type genome is 38.67 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Listeria practedo sp. nov.

Candidatus Listeria practedo (NL. fem. n. *practedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Listeria sp902806445*. The type genome for the species is the GenBank assembly RS_GCF_902806445.1. The GC content of the type genome is 36.69 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Listeria rubicicella sp. nov.

Candidatus Listeria rubicicella (NL. fem. n. *rubicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Listeria sp014227775*. The type genome for the species is the GenBank assembly RS_GCF_014224195.1. The GC content of the type genome is 38.79 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Listeria tirocago sp. nov.

Candidatus Listeria tirocago (NL. fem. n. *tirocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Listeria sp011800755*. The type genome for the species is the GenBank assembly RS_GCF_011800755.1. The GC content of the type genome is 40.07 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Listeria fecunatio sp. nov.

Candidatus Listeria fecunatio (NL. fem. n. *fecunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Listeria_A sp013820765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013820765.1. The GC content of the type genome is 42.25 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Listeria papavicella sp. nov.

Candidatus Listeria papavicella (NL. fem. n. *papavicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Listeria_A sp014322795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014322795.1. The GC content of the type genome is 41.9 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Litoreibacter dibucentia sp. nov.

Candidatus Litoreibacter dibucentia (NL. fem. n. *dibucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Litoreibacter sp013042765*. The type genome for the species is the GenBank assembly GCA_013042765.1. The GC content of the type genome is 60.21 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Litoreibacter inexpilenta sp. nov.

Candidatus Litoreibacter inexpilenta (NL. fem. n. *inexpilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Litoreibacter sp009811795*. The type genome for the species is the GenBank assembly RS_GCF_009811795.1. The GC content of the type genome is 57.52 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Litoribacter subucimonas sp. nov.

Candidatus Litoribacter subucimonas (NL. fem. n. *subucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Litoribacter sp007483685*. The type genome for the species is the GenBank assembly RS_GCF_007483685.1. The GC content of the type genome is 42.13 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Litoricola lutulentia sp. nov.

Candidatus Litoricola lutulentia (NL. fem. n. *lutulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Litoricola sp012269655*. The type genome for the species is the GenBank assembly GCA_012269785.1. The GC content of the type genome is 53.57 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Litorilituus denicitoga sp. nov.

Candidatus Litorilituus denicitoga (NL. fem. n. *denicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Litorilituus sp003545765*. The type genome for the species is the GenBank assembly RS_GCF_003545765.1. The GC content of the type genome is 37.19 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Litorivivens binocitia sp. nov.

Candidatus Litorivivens binocitia (NL. fem. n. *binocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Litorivivens sp002710725*. The type genome for the species is the GenBank assembly GCA_002710725.1. The GC content of the type genome is 56.44 %

and the genome length is 2.91 Mbp.

Description of *Candidatus* Litorivivens dilacicula sp. nov.

Candidatus Litorivivens dilacicula (NL. fem. n. *dilacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Litorivivens sp002415025*. The type genome for the species is the GenBank assembly GCA_002723235.1. The GC content of the type genome is 55.26 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Locelana idipsitudo sp. nov.

Candidatus Locelana idipsitudo (NL. fem. n. *idipsitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVV01 sp009694095*. The type genome for the species is the GenBank assembly GCA_009694095.1. The GC content of the type genome is 61.79 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Locelana gen. nov.

Candidatus Locelana (NL. fem. n. *Locelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVV01*. The type species for the genus is *Candidatus* Locelana idipsitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHVV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locelanaceae.

Description of *Candidatus* Locelanaceae fam. nov.

Candidatus Locelanaceae (NL. fem. n. *Locelanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVV01*. The type genus for the taxon is *Candidatus* Locelana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHVV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Locelanales.

Description of *Candidatus* Locelanales ord. nov.

Candidatus Locelanales (NL. fem. n. *Locelanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVV01*. The type genus for the taxon is *Candidatus* Locelana .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Locelaria viburiforma sp. nov.

Candidatus Locelaria viburiforma (NL. fem. n. *viburiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3950 sp002385475*. The type genome for the species is the GenBank assembly GCA_012728195.1. The GC content of the type genome is 41.71 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Locelaria gen. nov.

Candidatus Locelaria (NL. fem. n. *Locelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3950*. The type species for the genus is *Candidatus* Locelaria viburiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Locelella pabilitrix sp. nov.

Candidatus Locelella pabilitrix (NL. fem. n. *pabilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-69-5 sp001917535*. The type genome for the species is the GenBank assembly GCA_001918005.1. The GC content of the type genome is 69.37 % and the genome length is 4.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; 2 days after first rain event (91mm)".

Description of *Candidatus* Locelella gen. nov.

Candidatus Locelella (NL. fem. n. *Locelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40CM-4-69-5*. The type species for the genus is *Candidatus* Locelella pabilitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Locelia adalgifica sp. nov.

Candidatus Locelia adalgifica (NL. fem. n. *adalgifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp003133815*. The type genome for the species is the GenBank assembly GCA_003133815.1. The GC content of the type genome is 54.92 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Locelia gen. nov.

Candidatus Locelia (NL. fem. n. *Locelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11358*. The type species for the genus is *Candidatus* Locelia adalgifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11358*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Loceliaceae.

Description of *Candidatus* Loceliaceae fam. nov.

Candidatus Loceliaceae (NL. fem. n. *Loceliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11358.* The type genus for the taxon is *Candidatus* Locelia .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Locelia adpanilega sp. nov.

Candidatus Locelia adpanilega (NL. fem. n. *adpanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903921455*. The type genome for the species is the GenBank assembly GCA_903921455.1. The GC content of the type genome is 58.24 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Locelia adtoritas sp. nov.

Candidatus Locelia adtoritas (NL. fem. n. *adtoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903850425*. The type genome for the species is the GenBank assembly GCA_903850425.1. The GC content of the type genome is 58.07 % and the genome length is 6.89 Mbp.

Description of *Candidatus* Locelia catalatica sp. nov.

Candidatus Locelia catalatica (NL. fem. n. *catalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903878805*. The type genome for the species is the GenBank assembly GCA_903878805.1. The GC content of the type genome is 55.54 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Locelia ceromifica sp. nov.

Candidatus Locelia ceromifica (NL. fem. n. *ceromifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp003151855*. The type genome for the species is the GenBank assembly GCA_003151855.1. The GC content of the type genome is 58.66 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Locelia conarilega sp. nov.

Candidatus Locelia conarilega (NL. fem. n. *conarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903884535*. The type genome for the species is the GenBank assembly GCA_903849155.1. The GC content of the type genome is 56.86 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Locelia debucetta sp. nov.

Candidatus Locelia debucetta (NL. fem. n. *debucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903918885*. The type genome for the species is the GenBank assembly GCA_903879495.1. The GC content of the type genome is 55.99 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Locelia decacessa sp. nov.

Candidatus Locelia decacessa (NL. fem. n. *decacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903835255*. The type genome for the species is the GenBank assembly GCA_903885235.1. The GC content of the type genome is 59.65 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Locelia denicetta sp. nov.

Candidatus Locelia denicetta (NL. fem. n. *denicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903889895*. The type genome for the species is the GenBank assembly GCA_903889895.1. The GC content of the type genome is 56.77 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Locelia denomentia sp. nov.

Candidatus Locelia denomentia (NL. fem. n. *denomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903858275*. The type genome for the species is the GenBank assembly GCA_903858275.1. The GC content of the type genome is 57.32 %

and the genome length is 3.66 Mbp.

Description of *Candidatus* Locelia dilemibula sp. nov.

Candidatus Locelia dilemibula (NL. fem. n. *dilemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903827955*. The type genome for the species is the GenBank assembly GCA_903827955.1. The GC content of the type genome is 56.63 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Locelia dilogentia sp. nov.

Candidatus Locelia dilogentia (NL. fem. n. *dilogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903861445*. The type genome for the species is the GenBank assembly GCA_903861445.1. The GC content of the type genome is 56.21 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Locelia duricitoga sp. nov.

Candidatus Locelia duricitoga (NL. fem. n. *duricitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp003139955*. The type genome for the species is the GenBank assembly GCA_003139955.1. The GC content of the type genome is 55.59 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Locelia eclecisca sp. nov.

Candidatus Locelia eclecisca (NL. fem. n. *eclecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp003455565*. The type genome for the species is the GenBank assembly GCA_003455565.1. The GC content of the type genome is 56.37 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Locelia homogentia sp. nov.

Candidatus Locelia homogentia (NL. fem. n. *homogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903872345*. The type genome for the species is the GenBank assembly GCA_903911525.1. The GC content of the type genome is 58.52 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Locelia innoxax sp. nov.

Candidatus Locelia innoxax (NL. fem. n. *innoxax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903847285*. The type genome for the species is the GenBank assembly GCA_903847285.1. The GC content of the type genome is 56.04 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Locelia leviditia sp. nov.

Candidatus Locelia leviditia (NL. fem. n. *leviditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903820285*. The type genome for the species is the GenBank assembly GCA_903912905.1. The GC content of the type genome is 58.42 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Locelia malagousia sp. nov.

Candidatus Locelia malagousia (NL. fem. n. *malagousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903895255*. The type genome for the species is the GenBank assembly GCA_903854905.1. The GC content of the type genome is 59.54 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Locelia peracastra sp. nov.

Candidatus Locelia peracastra (NL. fem. n. *peracastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903936645*. The type genome for the species is the GenBank assembly GCA_903936645.1. The GC content of the type genome is 59.33 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Locelia pericetta sp. nov.

Candidatus Locelia pericetta (NL. fem. n. *pericetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903944085*. The type genome for the species is the GenBank assembly GCA_903944085.1. The GC content of the type genome is 57.44 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Locelia pinigicula sp. nov.

Candidatus Locelia pinigicula (NL. fem. n. *pinigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903917705*. The type genome for the species is the GenBank assembly GCA_903917705.1. The GC content of the type genome is 60.07 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Locelia protritica sp. nov.

Candidatus Locelia protritica (NL. fem. n. *protritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903922735*. The type genome for the species is the GenBank assembly GCA_903922735.1. The GC content of the type genome is 57.12 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Locelia risibibula sp. nov.

Candidatus Locelia risibibula (NL. fem. n. *risibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903870815*. The type genome for the species is the GenBank assembly GCA_903870815.1. The GC content of the type genome is 58.83 %

and the genome length is 3.17 Mbp.

Description of *Candidatus* Locelia robigousia sp. nov.

Candidatus Locelia robigousia (NL. fem. n. *robigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903911825*. The type genome for the species is the GenBank assembly GCA_903907945.1. The GC content of the type genome is 55.12 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Locelia semificula sp. nov.

Candidatus Locelia semificula (NL. fem. n. *semificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903842235*. The type genome for the species is the GenBank assembly GCA_903842235.1. The GC content of the type genome is 59.59 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Locelia sonabitura sp. nov.

Candidatus Locelia sonabitura (NL. fem. n. *sonabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903888765*. The type genome for the species is the GenBank assembly GCA_903831205.1. The GC content of the type genome is 56.03 % and the genome length is 6.83 Mbp.

Description of *Candidatus* Locelia subofilenta sp. nov.

Candidatus Locelia subofilenta (NL. fem. n. *subofilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903865745*. The type genome for the species is the GenBank assembly GCA_903865745.1. The GC content of the type genome is 55.82 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Locelia subucilega sp. nov.

Candidatus Locelia subucilega (NL. fem. n. *subucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903875465*. The type genome for the species is the GenBank assembly GCA_903875465.1. The GC content of the type genome is 58.59 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Locelia tresvitrix sp. nov.

Candidatus Locelia tresvitrix (NL. fem. n. *tresvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903822015*. The type genome for the species is the GenBank assembly GCA_903822015.1. The GC content of the type genome is 58.49 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Locelia viripimonia sp. nov.

Candidatus Locelia viripimonia (NL. fem. n. *viripimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11358 sp903833055*. The type genome for the species is the GenBank assembly GCA_903833055.1. The GC content of the type genome is 54.46 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Locelida abinvitudo sp. nov.

Candidatus Locelida abinvitudo (NL. fem. n. *abinvitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8639 sp013817135*. The type genome for the species is the GenBank assembly GCA_013817135.1. The GC content of the type genome is 49.93 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Locelida gen. nov.

Candidatus Locelida (NL. fem. n. *Locelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8639*. The type species for the genus is *Candidatus* Locelida abinvitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8639*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locelidaceae.

Description of *Candidatus* Locelidaceae fam. nov.

Candidatus Locelidaceae (NL. fem. n. *Locelidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8639.* The type genus for the taxon is *Candidatus* Locelida .

According to GTDB R06-RS202, this family belongs to the order *Nitrospirales*.

Description of *Candidatus* Locelida adpeniforma sp. nov.

Candidatus Locelida adpeniforma (NL. fem. n. *adpeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8639 sp003228495*. The type genome for the species is the GenBank assembly GCA_003228495.1. The GC content of the type genome is 48.4 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Locelida angipetta sp. nov.

Candidatus Locelida angipetta (NL. fem. n. *angipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8639 sp003233615*. The type genome for the species is the GenBank assembly GCA_003233615.1. The GC content of the type genome is 47.56 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Locelida artopessa sp. nov.

Candidatus Locelida artopessa (NL. fem. n. *artopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA8639 sp009377845*. The type genome for the species is the GenBank assembly GCA_009377845.1. The GC content of the type genome is 50.74 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Locelida feficatica sp. nov.

Candidatus Locelida feficatica (NL. fem. n. *feficatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8639 sp902500695*. The type genome for the species is the GenBank assembly GCA_902500695.1. The GC content of the type genome is 50.07 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Locelida inoffisca sp. nov.

Candidatus Locelida inoffisca (NL. fem. n. *inoffisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8639 sp003523945*. The type genome for the species is the GenBank assembly GCA_003523945.1. The GC content of the type genome is 49.93 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Locelida lorarisca sp. nov.

Candidatus Locelida lorarisca (NL. fem. n. *lorarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8639 sp003235785*. The type genome for the species is the GenBank assembly GCA_003235785.1. The GC content of the type genome is 49.92 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Locelosa induvitica sp. nov.

Candidatus Locelosa induvitica (NL. fem. n. *induvitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10329 sp003456455*. The type genome for the species is the GenBank assembly GCA_003456455.1. The GC content of the type genome is 42.11 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Locelosa gen. nov.

Candidatus Locelosa (NL. fem. n. *Locelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10329*. The type species for the genus is *Candidatus* Locelosa induvitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10329*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locelosaceae.

Description of *Candidatus* Locelosaceae fam. nov.

Candidatus Locelosaceae (NL. fem. n. *Locelosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10329.* The type genus for the taxon is *Candidatus* Locelosa .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Locelula albogitica sp. nov.

Candidatus Locelula albogitica (NL. fem. n. *albogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJHQ01 sp903819565*. The type genome for the species is the GenBank assembly GCA_903819565.1. The GC content of the type genome is 55.6 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Locelula gen. nov.

Candidatus Locelula (NL. fem. n. *Locelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJHQ01*. The type species for the genus is *Candidatus* Locelula albogitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2337*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panopellaceae.

Description of *Candidatus* Locelula demigigena sp. nov.

Candidatus Locelula demigigena (NL. fem. n. *demigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJHQ01 sp903820505*. The type genome for the species is the GenBank assembly GCA_903841325.1. The GC content of the type genome is 54.3 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Locupana tenemastra sp. nov.

Candidatus Locupana tenemastra (NL. fem. n. *tenemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITUV01 sp903895725*. The type genome for the species is the GenBank assembly GCA_903893645.1. The GC content of the type genome is 65.56 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Locupana gen. nov.

Candidatus Locupana (NL. fem. n. *Locupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITUV01*. The type species for the genus is *Candidatus* Locupana tenemastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITUV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locupanaceae.

Description of *Candidatus* Locupanaceae fam. nov.

Candidatus Locupanaceae (NL. fem. n. *Locupanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAITUV01.* The type genus for the taxon is *Candidatus* Locupana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIXZC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Murelariales.

Description of *Candidatus* Locuparia cimitastra sp. nov.

Candidatus Locuparia cimitastra (NL. fem. n. *cimitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9659 sp002694945*. The type genome for the species is the GenBank assembly GCA_003518165.1. The GC content of the type genome is 47.47 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Locuparia gen. nov.

Candidatus Locuparia (NL. fem. n. *Locuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9659*. The type species for the genus is *Candidatus* Locuparia cimitastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Locuparia impilicella sp. nov.

Candidatus Locuparia impilicella (NL. fem. n. *impilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9659 sp902567095*. The type genome for the species is the GenBank assembly GCA_902567095.1. The GC content of the type genome is 43.45 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Locuparia innupedo sp. nov.

Candidatus Locuparia innupedo (NL. fem. n. *innupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9659 sp012961165*. The type genome for the species is the GenBank assembly GCA_012961165.1. The GC content of the type genome is 50.92 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Locuparia refulifica sp. nov.

Candidatus Locuparia refulifica (NL. fem. n. *refulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9659 sp002711495*. The type genome for the species is the GenBank assembly GCA_002711495.1. The GC content of the type genome is 43.24 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Locuparia verifitica sp. nov.

Candidatus Locuparia verifitica (NL. fem. n. *verifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9659 sp002708765*. The type genome for the species is the GenBank assembly GCA_002708765.1. The GC content of the type genome is 44.79 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Locupella decapicula sp. nov.

Candidatus Locupella decapicula (NL. fem. n. *decapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1359 sp003141315*. The type genome for the species is the GenBank assembly GCA_003141735.1. The GC content of the type genome is 47.82 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Locupella gen. nov.

Candidatus Locupella (NL. fem. n. *Locupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1359*. The type species for the genus is *Candidatus* Locupella decapicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Locupia cruppiforma sp. nov.

Candidatus Locupia cruppiforma (NL. fem. n. *cruppiforma* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKRP01 sp007571315*. The type genome for the species is the GenBank assembly GCA_007571315.1. The GC content of the type genome is 63.48 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Locupia gen. nov.

Candidatus Locupia (NL. fem. n. *Locupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RKRP01*. The type species for the genus is *Candidatus* Locupia cruppiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RKRP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locupiaceae.

Description of *Candidatus* Locupiaceae fam. nov.

Candidatus Locupiaceae (NL. fem. n. *Locupiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RKRP01.* The type genus for the taxon is *Candidatus* Locupia .

According to the original version of GTDB R06-RS202, this family belongs to the order *RKRP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Locupiales.

Description of *Candidatus* Locupiales ord. nov.

Candidatus Locupiales (NL. fem. n. *Locupiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RKRP01.* The type genus for the taxon is *Candidatus* Locupia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Locupia fetulivita sp. nov.

Candidatus Locupia fetulivita (NL. fem. n. *fetulivita* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKRP01 sp009844425*. The type genome for the species is the GenBank assembly GCA_009844425.1. The GC content of the type genome is 64.06 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Locupia ludifentia sp. nov.

Candidatus Locupia ludifentia (NL. fem. n. *ludifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKRP01 sp009845905*. The type genome for the species is the GenBank assembly GCA_009845905.1. The GC content of the type genome is 64.58 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Locupia monocitudo sp. nov.

Candidatus Locupia monocitudo (NL. fem. n. *monocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKRP01 sp009838035*. The type genome for the species is the GenBank assembly GCA_009842185.1. The GC content of the type genome is 64.53 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Locupia novilugo sp. nov.

Candidatus Locupia novilugo (NL. fem. n. *novilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKRP01 sp011523505*. The type genome for the species is the GenBank assembly GCA_011523505.1. The GC content of the type genome is 64.64 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Locupida levidibula sp. nov.

Candidatus Locupida levidibula (NL. fem. n. *levidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVW01 sp009694085*. The type genome for the species is the GenBank assembly GCA_009694085.1. The GC content of the type genome is 64.44 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Locupida gen. nov.

Candidatus Locupida (NL. fem. n. *Locupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVW01*. The type species for the genus is *Candidatus* Locupida levidibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHVW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locupidaceae.

Description of *Candidatus* Locupidaceae fam. nov.

Candidatus Locupidaceae (NL. fem. n. *Locupidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVW01.* The type genus for the taxon is *Candidatus* Locupida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHVW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Locupidales.

Description of *Candidatus* Locupidales ord. nov.

Candidatus Locupidales (NL. fem. n. *Locupidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVW01.* The type genus for the taxon is *Candidatus* Locupida .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Locuposa istinitio sp. nov.

Candidatus Locuposa istinitio (NL. fem. n. *istinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *O2-12-FULL-59-9 sp001800185*. The type genome for the species is the GenBank assembly GCA_001800185.1. The GC content of the type genome is 58.89 % and the genome length is 1.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Locuposa gen. nov.

Candidatus Locuposa (NL. fem. n. *Locuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-12-FULL-59-9*. The type species for the genus is *Candidatus* Locuposa istinitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-12-FULL-59-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locuposaceae.

Description of *Candidatus* Locuposaceae fam. nov.

Candidatus Locuposaceae (NL. fem. n. *Locuposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *O2-12-FULL-59-9.* The type genus for the taxon is *Candidatus* Locuposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *02-12-FULL-59-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pudibanales.

Description of *Candidatus* Loigolactobacillus adsesago sp. nov.

Candidatus Loigolactobacillus adsesago (NL. fem. n. *adsesago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Loigolactobacillus sp003946385*. The type genome for the species is the GenBank assembly RS_GCF_003946385.1. The GC content of the type genome is 42.66 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Loigolactobacillus rubecivita sp. nov.

Candidatus Loigolactobacillus rubecivita (NL. fem. n. *rubecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Loigolactobacillus sp005405165*. The type genome for the species is the GenBank assembly RS_GCF_005405165.1. The GC content of the type genome is 43.47 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Loigolactobacillus semigitio sp. nov.

Candidatus Loigolactobacillus semigitio (NL. fem. n. *semigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Loigolactobacillus sp003946445*. The type genome for the species is the GenBank assembly RS_GCF_003946445.1. The GC content of the type genome is 42.58 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Loktanella holovilega sp. nov.

Candidatus Loktanella holovilega (NL. fem. n. *holovilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Loktanella sp004145405*. The type genome for the species is the GenBank assembly RS_GCF_004145405.1. The GC content of the type genome is 66.44 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Loktanella obfusimonia sp. nov.

Candidatus Loktanella obfusimonia (NL. fem. n. *obfusimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Loktanella sp001420005*. The type genome for the species is the GenBank assembly RS_GCF_001420005.1. The GC content of the type genome is 61.95 % and the genome length is 3.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Surface seawater".

Description of *Candidatus* Loktanella ocissifica sp. nov.

Candidatus Loktanella ocissifica (NL. fem. n. *ocissifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Loktanella sp900110705*. The type genome for the species is the GenBank assembly RS_GCF_900110705.1. The GC content of the type genome is 61.76 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Longibacter infatiforma sp. nov.

Candidatus Longibacter infatiforma (NL. fem. n. *infatiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Longibacter sp009908725*. The type genome for the species is the GenBank assembly GCA_009908725.1. The GC content of the type genome is 62.6 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Longibaculum agnicifica sp. nov.

Candidatus Longibaculum agnicifica (NL. fem. n. *agnicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Longibaculum sp900538465*. The type genome for the species is the GenBank assembly GCA_900538465.1. The GC content of the type genome is 30.51 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Longimicrobium acertessa sp. nov.

Candidatus Longimicrobium acertessa (NL. fem. n. *acertessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Longimicrobium sp902805735*. The type genome for the species is the GenBank assembly GCA_902805735.1. The GC content of the type genome is 70.97 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Lorarana cadavitas sp. nov.

Candidatus Lorarana cadavitas (NL. fem. n. *cadavitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4877 sp002399285*. The type genome for the species is the GenBank assembly GCA_002399285.1. The GC content of the type genome is 47.33 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Lorarana gen. nov.

Candidatus Lorarana (NL. fem. n. *Lorarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4877*. The type species for the genus is *Candidatus* Lorarana cadavitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4877*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lorararanaceae.

Description of *Candidatus* Lorararanaceae fam. nov.

Candidatus Lorararanaceae (NL. fem. n. *Lorararanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4877*. The type genus for the taxon is *Candidatus* Lorarana .

According to GTDB R06-RS202, this family belongs to the order *Caldanaerobiales*.

Description of *Candidatus* Lorarana coninilega sp. nov.

Candidatus Lorarana coninilega (NL. fem. n. *coninilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4877 sp002399345*. The type genome for the species is the GenBank assembly GCA_002396845.1. The GC content of the type genome is 41.18 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Lorararia ensifitrix sp. nov.

Candidatus Lorararia ensifitrix (NL. fem. n. *ensifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10197 sp003501255*. The type genome for the species is the GenBank assembly GCA_003501255.1. The GC content of the type genome is 45.58 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Lorararia gen. nov.

Candidatus Lorararia (NL. fem. n. *Lorararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10197*. The type species for the genus is *Candidatus* Lorararia ensifitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10197*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lorararia ceae.

Description of *Candidatus* Lorararia ceae fam. nov.

Candidatus Lorararia ceae (NL. fem. n. *Lorararia ceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10197.* The type genus for the taxon is *Candidatus* Lorararia .

According to GTDB R06-RS202, this family belongs to the order *Magasanikbacterales*.

Description of *Candidatus* Lorarella domicilega sp. nov.

Candidatus Lorarella domicilega (NL. fem. n. *domicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDAW01 sp903911135*. The type genome for the species is the GenBank assembly GCA_903925625.1. The GC content of the type genome is 40.25 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Lorarella gen. nov.

Candidatus Lorarella (NL. fem. n. *Lorarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDAW01*. The type species for the genus is *Candidatus* Lorarella domicilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDAW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lorarellaceae.

Description of *Candidatus* Lorarellaceae fam. nov.

Candidatus Lorarellaceae (NL. fem. n. *Lorarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDAW01*. The type genus for the taxon is *Candidatus* Lorarella .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lenunanales.

Description of *Candidatus* Lorarella negidastra sp. nov.

Candidatus Lorarella negidastra (NL. fem. n. *negidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDAW01 sp013288905*. The type genome for the species is the GenBank assembly GCA_013288905.1. The GC content of the type genome is 37.34 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Lorarella refinitura sp. nov.

Candidatus Lorarella refinitura (NL. fem. n. *refinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDAW01 sp903844645*. The type genome for the species is the GenBank assembly GCA_903830515.1. The GC content of the type genome is 40.82 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Loraria cicarastra sp. nov.

Candidatus Loraria cicarastra (NL. fem. n. *cicarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-41-16 sp001782805*. The type genome for the species is the GenBank assembly GCA_001784325.1. The GC content of the type genome is 40.59 % and the genome length is 0.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Loraria gen. nov.

Candidatus Loraria (NL. fem. n. *Loraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-41-16*. The type species for the genus is *Candidatus* Loraria cicarastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Lorarosa pavimitia sp. nov.

Candidatus Lorarosa pavimitia (NL. fem. n. *pavimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-43-14 sp001816835*. The type genome for the species is the GenBank assembly GCA_001816835.1. The GC content of the type genome is 42.98 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Lorarosa gen. nov.

Candidatus Lorarosa (NL. fem. n. *Lorarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-43-14*. The type species for the genus is *Candidatus* Lorarosa pavimitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-43-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lorarosaceae.

Description of *Candidatus* Lorarosaceae fam. nov.

Candidatus Lorarosaceae (NL. fem. n. *Lorarosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-43-14.* The type genus for the taxon is *Candidatus* Lorarosa .

According to GTDB R06-RS202, this family belongs to the order *Woykebacterales*.

Description of *Candidatus* Lorarula videlitura sp. nov.

Candidatus Lorarula videlitura (NL. fem. n. *videlitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-02-FULL-42-17 sp001786095*. The type genome for the species is the GenBank assembly GCA_001785635.1. The GC content of the type genome is 41.77 % and the genome length is 0.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Lorarula gen. nov.

Candidatus Lorarula (NL. fem. n. *Lorarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-02-FULL-42-17*. The type species for the genus is *Candidatus* Lorarula videlitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relaposaceae.

Description of *Candidatus* Loripana catapicula sp. nov.

Candidatus Loripana catapicula (NL. fem. n. *catapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6776 sp002453155*. The type genome for the species is the GenBank assembly GCA_002376795.1. The GC content of the type genome is 45.18 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Loripana gen. nov.

Candidatus Loripana (NL. fem. n. *Loripana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6776*. The type species for the genus is *Candidatus* Loripana catapicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1609*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Pomifanaceae.

Description of *Candidatus* Loriparia immadetta sp. nov.

Candidatus Loriparia immadetta (NL. fem. n. *immadetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-8 sp003598065*. The type genome for the species is the GenBank assembly GCA_003598065.1. The GC content of the type genome is 62.23 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Loriparia gen. nov.

Candidatus Loriparia (NL. fem. n. *Loriparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-8*. The type species for the genus is *Candidatus* Loriparia immadetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Loripariaceae.

Description of *Candidatus* Loripariaceae fam. nov.

Candidatus Loripariaceae (NL. fem. n. *Loripariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-8.* The type genus for the taxon is *Candidatus* Loriparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SURF-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Loripariales.

Description of *Candidatus* Loripariales ord. nov.

Candidatus Loripariales (NL. fem. n. *Loripariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-8.* The type genus for the taxon is *Candidatus* Loriparia .

According to the original version of GTDB R06-RS202, this family belongs to the class

SURF-8. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Loripariae.

Description of *Candidatus* Loripariae class. nov.

Candidatus Loripariae (NL. fem. n. *c__Loripariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-8.* The type genus for the taxon is *Candidatus* Loriparia .

According to GTDB R06-RS202, this class belongs to the phylum *Myxococcota*.

Description of *Candidatus* Loripia decupitrix sp. nov.

Candidatus Loripia decupitrix (NL. fem. n. *decupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTSX01 sp012965065*. The type genome for the species is the GenBank assembly GCA_012965065.1. The GC content of the type genome is 40.95 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Loripia gen. nov.

Candidatus Loripia (NL. fem. n. *Loripia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTSX01*. The type species for the genus is *Candidatus* Loripia decupitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11654*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refaciaceae.

Description of *Candidatus* Loripida ranunicella sp. nov.

Candidatus Loripida ranunicella (NL. fem. n. *ranunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG100 sp900315555*. The type genome for the species is the GenBank assembly GCA_900315555.1. The GC content of the type genome is 53.65 %

and the genome length is 1.82 Mbp.

Description of *Candidatus* Loripida gen. nov.

Candidatus Loripida (NL. fem. n. *Loripida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG100*. The type species for the genus is *Candidatus* Loripida ranunicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Loriposa decitetta sp. nov.

Candidatus Loriposa decitetta (NL. fem. n. *decitetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2565 sp002340265*. The type genome for the species is the GenBank assembly GCA_002340265.1. The GC content of the type genome is 40.88 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Loriposa gen. nov.

Candidatus Loriposa (NL. fem. n. *Loriposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2565*. The type species for the genus is *Candidatus* Loriposa decitetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Loriposaceae.

Description of *Candidatus* Loriposaceae fam. nov.

Candidatus Loriposaceae (NL. fem. n. *Loriposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2565.* The type genus for the taxon is *Candidatus* Loriposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Loriposales.

Description of *Candidatus* Loriposales ord. nov.

Candidatus Loriposales (NL. fem. n. *Loriposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2565.* The type genus for the taxon is *Candidatus* Loriposa .

According to the GTDB R06-RS202, this order belongs to the class *Lentisphaeria*.

Description of *Candidatus* Loripula latibatica sp. nov.

Candidatus Loripula latibatica (NL. fem. n. *latibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-26 sp001794125*. The type genome for the species is the GenBank assembly GCA_001794125.1. The GC content of the type genome is 42.87 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Loripula gen. nov.

Candidatus Loripula (NL. fem. n. *Loripula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-41-26*. The type species for the genus is *Candidatus* Loripula latibatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Loripula nicomatica sp. nov.

Candidatus Loripula nicomatica (NL. fem. n. *nicomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-26 sp001794055*. The type genome for the species is

the GenBank assembly GCA_001794055.1. The GC content of the type genome is 40.42 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Lubenana conopifica sp. nov.

Candidatus Lubenana conopifica (NL. fem. n. *conopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV40 sp003219215*. The type genome for the species is the GenBank assembly GCA_003218855.1. The GC content of the type genome is 55.33 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Lubenana gen. nov.

Candidatus Lubenana (NL. fem. n. *Lubenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AV40*. The type species for the genus is *Candidatus* Lubenana conopifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Lubenana debucitia sp. nov.

Candidatus Lubenana debucitia (NL. fem. n. *debucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV40 sp003220055*. The type genome for the species is the GenBank assembly GCA_003219585.1. The GC content of the type genome is 55.55 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Lubenana documitia sp. nov.

Candidatus Lubenana documitia (NL. fem. n. *documitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *AV40 sp003218705*. The type genome for the species is the GenBank assembly GCA_003218705.1. The GC content of the type genome is 55.42 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Lubenana epigritio sp. nov.

Candidatus Lubenana epigritio (NL. fem. n. *epigritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV40 sp003219495*. The type genome for the species is the GenBank assembly GCA_003219495.1. The GC content of the type genome is 56.32 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Lubenaria fetifilenta sp. nov.

Candidatus Lubenaria fetifilenta (NL. fem. n. *fetifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVP01 sp009694165*. The type genome for the species is the GenBank assembly GCA_009694165.1. The GC content of the type genome is 65.41 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Lubenaria gen. nov.

Candidatus Lubenaria (NL. fem. n. *Lubenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVP01*. The type species for the genus is *Candidatus* Lubenaria fetifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHVP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lubenariaceae.

Description of *Candidatus* Lubenariaceae fam. nov.

Candidatus Lubenariaceae (NL. fem. n. *Lubenariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVP01.* The type genus for the taxon is *Candidatus* Lubenaria .

According to the original version of GTDB R06-RS202, this family belongs to the order

SHVP01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lubenariales.

Description of *Candidatus* Lubenariales ord. nov.

Candidatus Lubenariales (NL. fem. n. *Lubenariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVP01*. The type genus for the taxon is *Candidatus* Lubenaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Lubenella admodentia sp. nov.

Candidatus Lubenella admodentia (NL. fem. n. *admodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXPK01 sp005776365*. The type genome for the species is the GenBank assembly GCA_005776365.1. The GC content of the type genome is 66.03 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Lubenella gen. nov.

Candidatus Lubenella (NL. fem. n. *Lubenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXPK01*. The type species for the genus is *Candidatus* Lubenella admodentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifulaceae.

Description of *Candidatus* Lubenella bicapicula sp. nov.

Candidatus Lubenella bicapicula (NL. fem. n. *bicapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXPK01 sp903925435*. The type genome for the species is the GenBank assembly GCA_903892055.1. The GC content of the type genome is 66.3 %

and the genome length is 3.01 Mbp.

Description of *Candidatus* Lubenia lenunugo sp. nov.

Candidatus Lubenia lenunugo (NL. fem. n. *lenunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G17 sp002457675*. The type genome for the species is the GenBank assembly GCA_002167615.1. The GC content of the type genome is 35.7 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Lubenia gen. nov.

Candidatus Lubenia (NL. fem. n. *Lubenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G17*. The type species for the genus is *Candidatus* Lubenia lenunugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9320*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilariaceae.

Description of *Candidatus* Lubenida papavigena sp. nov.

Candidatus Lubenida papavigena (NL. fem. n. *papavigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-41-21 sp002782865*. The type genome for the species is the GenBank assembly GCA_002788995.1. The GC content of the type genome is 41.04 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Lubenida gen. nov.

Candidatus Lubenida (NL. fem. n. *Lubenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-41-21*. The type species for the genus is *Candidatus* Lubenida papavigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9934*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Nugivanaceae.

Description of *Candidatus* Lubenosa negotentia sp. nov.

Candidatus Lubenosa negotentia (NL. fem. n. *negotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W0P28-013 sp004557405*. The type genome for the species is the GenBank assembly GCA_004557405.1. The GC content of the type genome is 49.4 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Lubenosa gen. nov.

Candidatus Lubenosa (NL. fem. n. *Lubenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W0P28-013*. The type species for the genus is *Candidatus* Lubenosa negotentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lubenosa vinolibra sp. nov.

Candidatus Lubenosa vinolibra (NL. fem. n. *vinolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W0P28-013 sp012837685*. The type genome for the species is the GenBank assembly GCA_002071125.1. The GC content of the type genome is 40.34 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Lubenula ludibiforma sp. nov.

Candidatus Lubenula ludibiforma (NL. fem. n. *ludibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-42-11 sp001821455*. The type genome for the species is the GenBank assembly GCA_001821455.1. The GC content of the type genome is 39.75 % and the genome length is 0.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at

13ft depth".

Description of *Candidatus* Lubenula gen. nov.

Candidatus Lubenula (NL. fem. n. *Lubenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-42-11*. The type species for the genus is *Candidatus* Lubenula ludibiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-42-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lubenulaceae.

Description of *Candidatus* Lubenulaceae fam. nov.

Candidatus Lubenulaceae (NL. fem. n. *Lubenulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-42-11.* The type genus for the taxon is *Candidatus* Lubenula .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Lucelana bisuledo sp. nov.

Candidatus Lucelana bisuledo (NL. fem. n. *bisuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin127 sp012270805*. The type genome for the species is the GenBank assembly GCA_012270805.1. The GC content of the type genome is 55.77 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Lucelana gen. nov.

Candidatus Lucelana (NL. fem. n. *Lucelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin127*. The type species for the genus is *Candidatus* Lucelana bisuledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Lucelanaceae.

Description of *Candidatus* Lucelanaceae fam. nov.

Candidatus Lucelanaceae (NL. fem. n. *Lucelanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin127.* The type genus for the taxon is *Candidatus* Lucelana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Carucellales.

Description of *Candidatus* Lucelana conigifica sp. nov.

Candidatus Lucelana conigifica (NL. fem. n. *conigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin127 sp009838175*. The type genome for the species is the GenBank assembly GCA_009846085.1. The GC content of the type genome is 56.28 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Lucelana ephipatica sp. nov.

Candidatus Lucelana ephipatica (NL. fem. n. *ephipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin127 sp009837685*. The type genome for the species is the GenBank assembly GCA_009837685.1. The GC content of the type genome is 56.16 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Lucelana irradimonia sp. nov.

Candidatus Lucelana irradimonia (NL. fem. n. *irradimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin127 sp002239045*. The type genome for the species is the GenBank assembly GCA_002239045.1. The GC content of the type genome is 56.35 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Lucelaria tirunitudo sp. nov.

Candidatus Lucelaria tirunitudo (NL. fem. n. *tirunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPJN01 sp006844605*. The type genome for the species is the GenBank assembly GCA_006844605.1. The GC content of the type genome is 54.79 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Lucelaria gen. nov.

Candidatus Lucelaria (NL. fem. n. *Lucelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPJN01*. The type species for the genus is *Candidatus* Lucelaria tirunitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SPJN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelariaceae.

Description of *Candidatus* Lucelariaceae fam. nov.

Candidatus Lucelariaceae (NL. fem. n. *Lucelariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SPJN01.* The type genus for the taxon is *Candidatus* Lucelaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SPJN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lucelariales.

Description of *Candidatus* Lucelariales ord. nov.

Candidatus Lucelariales (NL. fem. n. *Lucelariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SPJN01.* The type genus for the taxon is *Candidatus* Lucelaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Lucelella betacitia sp. nov.

Candidatus Lucelella betacitia (NL. fem. n. *betacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULZ01 sp012840125*. The type genome for the species is the GenBank assembly GCA_012840125.1. The GC content of the type genome is 53.46 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Lucelella gen. nov.

Candidatus Lucelella (NL. fem. n. *Lucelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DULZ01*. The type species for the genus is *Candidatus* Lucelella betacitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DULZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelellaceae.

Description of *Candidatus* Lucelellaceae fam. nov.

Candidatus Lucelellaceae (NL. fem. n. *Lucelellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DULZ01.* The type genus for the taxon is *Candidatus* Lucelella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DULZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lucelellales.

Description of *Candidatus* Lucelellales ord. nov.

Candidatus Lucelellales (NL. fem. n. *Lucelellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DULZ01.* The type genus for the taxon is *Candidatus* Lucelella .

According to the GTDB R06-RS202, this order belongs to the class *Moorellia*.

Description of *Candidatus* Lucelia adfirilega sp. nov.

Candidatus Lucelia adfirilega (NL. fem. n. *adfirilega* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTO01 sp009377665*. The type genome for the species is the GenBank assembly GCA_009377665.1. The GC content of the type genome is 65.58 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Lucelia gen. nov.

Candidatus Lucelia (NL. fem. n. *Lucelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTO01*. The type species for the genus is *Candidatus* Lucelia adfirilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHTO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luceliaceae.

Description of *Candidatus* Luceliaceae fam. nov.

Candidatus Luceliaceae (NL. fem. n. *Luceliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WHTO01.* The type genus for the taxon is *Candidatus* Lucelia .

According to the original version of GTDB R06-RS202, this family belongs to the order *WHTO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Luceliales.

Description of *Candidatus* Luceliales ord. nov.

Candidatus Luceliales (NL. fem. n. *Luceliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WHTO01.* The type genus for the taxon is *Candidatus* Lucelia .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Lucelida affabimonas sp. nov.

Candidatus Lucelida affabimonas (NL. fem. n. *affabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp902526535*. The type genome for the species is the GenBank assembly GCA_902526535.1. The GC content of the type genome is 32.58 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Lucelida gen. nov.

Candidatus Lucelida (NL. fem. n. *Lucelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED112*. The type species for the genus is *Candidatus* Lucelida affabimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelidaceae.

Description of *Candidatus* Lucelidaceae fam. nov.

Candidatus Lucelidaceae (NL. fem. n. *Lucelidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED112.* The type genus for the taxon is *Candidatus* Lucelida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR86*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ludimulales.

Description of *Candidatus* Lucelida aterrentia sp. nov.

Candidatus Lucelida aterrentia (NL. fem. n. *aterrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp002684055*. The type genome for the species is the GenBank assembly GCA_002684055.1. The GC content of the type genome is 35.98 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Lucelida badititio sp. nov.

Candidatus Lucelida badititio (NL. fem. n. *badititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp003213455*. The type genome for the species is the GenBank assembly GCA_003213455.1. The GC content of the type genome is 34.62 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Lucelida curacimonia sp. nov.

Candidatus Lucelida curacimonia (NL. fem. n. *curacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp002683115*. The type genome for the species is the GenBank assembly GCA_002683115.1. The GC content of the type genome is 34.68 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Lucelida dapifica sp. nov.

Candidatus Lucelida dapifica (NL. fem. n. *dapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp003278815*. The type genome for the species is the GenBank assembly GCA_003278815.1. The GC content of the type genome is 34.31 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Lucelida dimacicella sp. nov.

Candidatus Lucelida dimacicella (NL. fem. n. *dimacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp902563885*. The type genome for the species is the GenBank assembly GCA_902563885.1. The GC content of the type genome is 32.98 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Lucelida direcilenta sp. nov.

Candidatus Lucelida direcilenta (NL. fem. n. *direcilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *TMED112 sp902585315*. The type genome for the species is the GenBank assembly GCA_902527455.1. The GC content of the type genome is 34.27 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Lucelida ficulivita sp. nov.

Candidatus Lucelida ficulivita (NL. fem. n. *ficulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp003280455*. The type genome for the species is the GenBank assembly GCA_003280455.1. The GC content of the type genome is 32.92 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Lucelida filifatica sp. nov.

Candidatus Lucelida filifatica (NL. fem. n. *filifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp002716745*. The type genome for the species is the GenBank assembly GCA_013911325.1. The GC content of the type genome is 34.08 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Lucelida inbecigena sp. nov.

Candidatus Lucelida inbecigena (NL. fem. n. *inbecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp004321845*. The type genome for the species is the GenBank assembly GCA_004321845.1. The GC content of the type genome is 34.32 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Lucelida inpasugo sp. nov.

Candidatus Lucelida inpasugo (NL. fem. n. *inpasugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp002692425*. The type genome for the species is the GenBank assembly GCA_002692425.1. The GC content of the type genome is 33.67 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Lucelida lucifitio sp. nov.

Candidatus Lucelida lucifitio (NL. fem. n. *lucifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp902619265*. The type genome for the species is the GenBank assembly GCA_902604345.1. The GC content of the type genome is 34.19 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Lucelida munifitica sp. nov.

Candidatus Lucelida munifitica (NL. fem. n. *munifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp902535365*. The type genome for the species is the GenBank assembly GCA_012270425.1. The GC content of the type genome is 36.0 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Lucelida obfirilenta sp. nov.

Candidatus Lucelida obfirilenta (NL. fem. n. *obfirilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp003331605*. The type genome for the species is the GenBank assembly GCA_003331605.1. The GC content of the type genome is 36.34 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Lucelida omnifessa sp. nov.

Candidatus Lucelida omnifessa (NL. fem. n. *omnifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp002727535*. The type genome for the species is the GenBank assembly GCA_002727535.1. The GC content of the type genome is 33.13 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Lucelida sicunimonas sp. nov.

Candidatus Lucelida sicunimonas (NL. fem. n. *sicunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp902529055*. The type genome for the species is the GenBank assembly GCA_902585745.1. The GC content of the type genome is 34.78 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Lucelida spastousia sp. nov.

Candidatus Lucelida spastousia (NL. fem. n. *spastousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp002170245*. The type genome for the species is the GenBank assembly GCA_002170245.2. The GC content of the type genome is 33.84 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Lucelida subucitica sp. nov.

Candidatus Lucelida subucitica (NL. fem. n. *subucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp902610995*. The type genome for the species is the GenBank assembly GCA_902534605.1. The GC content of the type genome is 34.84 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Lucelida urbicilenta sp. nov.

Candidatus Lucelida urbicilenta (NL. fem. n. *urbicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED112 sp002690945*. The type genome for the species is the GenBank assembly GCA_002690945.1. The GC content of the type genome is 34.13 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Lucelula tenilibula sp. nov.

Candidatus Lucelula tenilibula (NL. fem. n. *tenilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *OF09-33XD sp003481995*. The type genome for the species is the GenBank assembly RS_GCF_003481995.1. The GC content of the type genome is 49.2 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Lucelula gen. nov.

Candidatus Lucelula (NL. fem. n. *Lucelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OF09-33XD*. The type species for the genus is *Candidatus* Lucelula tenilibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lucerana pedifitia sp. nov.

Candidatus Lucerana pedifitia (NL. fem. n. *pedifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWAD01 sp903910645*. The type genome for the species is the GenBank assembly GCA_903829385.1. The GC content of the type genome is 64.19 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Lucerana gen. nov.

Candidatus Lucerana (NL. fem. n. *Lucerana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWAD01*. The type species for the genus is *Candidatus* Lucerana pedifitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIWAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luceranaceae.

Description of *Candidatus* Luceranaceae fam. nov.

Candidatus Luceranaceae (NL. fem. n. *Luceranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIWAD01.* The type genus for the taxon is *Candidatus* Lucerana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIWAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Luceranales.

Description of *Candidatus* Luceranales ord. nov.

Candidatus Luceranales (NL. fem. n. *Luceranales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIWAD01*. The type genus for the taxon is *Candidatus* Lucerana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4055*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Revecariae.

Description of *Candidatus* Luceraria bonitugo sp. nov.

Candidatus Luceraria bonitugo (NL. fem. n. *bonitugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBIL01 sp903939665*. The type genome for the species is the GenBank assembly GCA_903939665.1. The GC content of the type genome is 59.3 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Luceraria gen. nov.

Candidatus Luceraria (NL. fem. n. *Luceraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBIL01*. The type species for the genus is *Candidatus* Luceraria bonitugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Luceraria tegumibra sp. nov.

Candidatus Luceraria tegumibra (NL. fem. n. *tegumibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBIL01 sp903953145*. The type genome for the species is the

GenBank assembly GCA_903953145.1. The GC content of the type genome is 56.69 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Lucerella adlubugo sp. nov.

Candidatus Lucerella adlubugo (NL. fem. n. *adlubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAN01 sp009704555*. The type genome for the species is the GenBank assembly GCA_009704555.1. The GC content of the type genome is 55.51 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Lucerella gen. nov.

Candidatus Lucerella (NL. fem. n. *Lucerella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYAN01*. The type species for the genus is *Candidatus* Lucerella adlubugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lucerella cocoditura sp. nov.

Candidatus Lucerella cocoditura (NL. fem. n. *cocoditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAN01 sp005787575*. The type genome for the species is the GenBank assembly GCA_005787575.1. The GC content of the type genome is 50.17 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Lucerella colubiforma sp. nov.

Candidatus Lucerella colubiforma (NL. fem. n. *colubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYAN01 sp010028225*. The type genome for the species is the GenBank assembly GCA_010028225.1. The GC content of the type genome is 49.76 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Lucerida ranunatica sp. nov.

Candidatus Lucerida ranunatica (NL. fem. n. *ranunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSRG01 sp013215165*. The type genome for the species is the GenBank assembly GCA_013215165.1. The GC content of the type genome is 50.86 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Lucerida gen. nov.

Candidatus Lucerida (NL. fem. n. *Lucerida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSRG01*. The type species for the genus is *Candidatus* Lucerida ranunatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABSRG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luceridaceae.

Description of *Candidatus* Luceridaceae fam. nov.

Candidatus Luceridaceae (NL. fem. n. *Luceridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABSRG01.* The type genus for the taxon is *Candidatus* Lucerida .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Lucerosa tenebitica sp. nov.

Candidatus Lucerosa tenebitica (NL. fem. n. *tenebitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-42-20 sp001785965*. The type genome for the species is the GenBank assembly GCA_001785415.1. The GC content of the type genome is 42.03 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Lucerosa gen. nov.

Candidatus Lucerosa (NL. fem. n. *Lucerosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-42-20*. The type species for the genus is *Candidatus* Lucerosa tenebitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relaposaceae.

Description of *Candidatus* Lucerula bugilisca sp. nov.

Candidatus Lucerula bugilisca (NL. fem. n. *bugilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-411 sp000437275*. The type genome for the species is the GenBank assembly GCA_000437275.1. The GC content of the type genome is 36.0 % and the genome length is 3.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Lucerula gen. nov.

Candidatus Lucerula (NL. fem. n. *Lucerula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-411*. The type species for the genus is *Candidatus* Lucerula bugilisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lucerula excanisca sp. nov.

Candidatus Lucerula excanisca (NL. fem. n. *excanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-411 sp902795895*. The type genome for the species is the GenBank assembly GCA_902795895.1. The GC content of the type genome is 36.6 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Lucerula homogitrix sp. nov.

Candidatus Lucerula homogitrix (NL. fem. n. *homogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-411 sp902786205*. The type genome for the species is the GenBank assembly GCA_902786205.1. The GC content of the type genome is 35.47 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Lucifana insorugo sp. nov.

Candidatus Lucifana insorugo (NL. fem. n. *insorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2999 sp002346475*. The type genome for the species is the GenBank assembly GCA_002346475.1. The GC content of the type genome is 46.15 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Lucifana gen. nov.

Candidatus Lucifana (NL. fem. n. *Lucifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2999*. The type species for the genus is *Candidatus* Lucifana insorugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Lucifanaceae fam. nov.

Candidatus Lucifanaceae (NL. fem. n. *Lucifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2999.* The type genus for the taxon is *Candidatus* Lucifana .

According to GTDB R06-RS202, this family belongs to the order *Vicinamibacterales*.

Description of *Candidatus* Lucifaria salubugo sp. nov.

Candidatus Lucifaria salubugo (NL. fem. n. *salubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-09 sp002385605*. The type genome for the species is the GenBank assembly GCA_012523495.1. The GC content of the type genome is 50.76 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Lucifaria gen. nov.

Candidatus Lucifaria (NL. fem. n. *Lucifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Firm-09*. The type species for the genus is *Candidatus* Lucifaria salubugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecariaceae.

Description of *Candidatus* Lucifaria volunilega sp. nov.

Candidatus Lucifaria volunilega (NL. fem. n. *volunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-09 sp001604065*. The type genome for the species is the GenBank assembly GCA_001604065.1. The GC content of the type genome is 48.14 % and the genome length is 1.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Lucifella capudibra sp. nov.

Candidatus Lucifella capudibra (NL. fem. n. *capudibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTS01 sp012031345*. The type genome for the species is the GenBank assembly GCA_012031345.1. The GC content of the type genome is 54.6 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Lucifella gen. nov.

Candidatus Lucifella (NL. fem. n. *Lucifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUTS01*. The type species for the genus is *Candidatus* Lucifella capudibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAUTS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifellaceae.

Description of *Candidatus* Lucifellaceae fam. nov.

Candidatus Lucifellaceae (NL. fem. n. *Lucifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAUTS01.* The type genus for the taxon is *Candidatus* Lucifella .

According to GTDB R06-RS202, this family belongs to the order *Methylacidiphilales*.

Description of *Candidatus* Lucifia holisibra sp. nov.

Candidatus Lucifia holisibra (NL. fem. n. *holisibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2251 sp002347815*. The type genome for the species is the GenBank assembly GCA_002381965.1. The GC content of the type genome is 62.81 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Lucifia gen. nov.

Candidatus Lucifia (NL. fem. n. *Lucifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2251*. The type species for the genus is *Candidatus* Lucifia holisibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2251*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifiaceae.

Description of *Candidatus* Lucifiaceae fam. nov.

Candidatus Lucifiaceae (NL. fem. n. *Lucifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2251.* The type genus for the taxon is *Candidatus* Lucifia .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Lucifida idipsilega sp. nov.

Candidatus Lucifida idipsilega (NL. fem. n. *idipsilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUMT01 sp003551495*. The type genome for the species is the GenBank assembly GCA_003551495.1. The GC content of the type genome is 43.05 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Lucifida gen. nov.

Candidatus Lucifida (NL. fem. n. *Lucifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUMT01*. The type species for the genus is *Candidatus* Lucifida idipsilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUMT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifidaceae.

Description of *Candidatus* Lucifidaceae fam. nov.

Candidatus Lucifidaceae (NL. fem. n. *Lucifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PUMT01.* The type genus for the taxon is *Candidatus* Lucifida .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Lucifida vecorilenta sp. nov.

Candidatus Lucifida vecorilenta (NL. fem. n. *vecorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUMT01 sp007125955*. The type genome for the species is the GenBank assembly GCA_003568385.1. The GC content of the type genome is 42.78 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Lucifida vocifibra sp. nov.

Candidatus Lucifida vocifibra (NL. fem. n. *vocifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUMT01 sp003554865*. The type genome for the species is the GenBank assembly GCA_003554865.1. The GC content of the type genome is 42.52 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Lucifosa arcifimonas sp. nov.

Candidatus Lucifosa arcifimonas (NL. fem. n. *arcifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED58 sp002708105*. The type genome for the species is the GenBank assembly GCA_002708105.2. The GC content of the type genome is 31.26 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Lucifosa gen. nov.

Candidatus Lucifosa (NL. fem. n. *Lucifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED58*. The type species for the genus is *Candidatus* Lucifosa arcifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1144*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conifellaceae.

Description of *Candidatus* Lucifosa detecifica sp. nov.

Candidatus Lucifosa detecifica (NL. fem. n. *detecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED58 sp002701865*. The type genome for the species is the GenBank assembly GCA_002701865.2. The GC content of the type genome is 32.29 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Lucifosa peridilega sp. nov.

Candidatus Lucifosa peridilega (NL. fem. n. *peridilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED58 sp002167555*. The type genome for the species is the GenBank assembly GCA_002712365.2. The GC content of the type genome is 31.16 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Lucifula coticilega sp. nov.

Candidatus Lucifula coticilega (NL. fem. n. *coticilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C254 sp002797315*. The type genome for the species is the GenBank assembly RS_GCF_001310615.1. The GC content of the type genome is 41.03 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Lucifula gen. nov.

Candidatus Lucifula (NL. fem. n. *Lucifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C254*. The type species for the genus is *Candidatus* Lucifula coticilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lucubana alectatio sp. nov.

Candidatus Lucubana alectatio (NL. fem. n. *alectatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1781 sp004554705*. The type genome for the species is the GenBank assembly GCA_004554705.1. The GC content of the type genome is 28.76 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Lucubana gen. nov.

Candidatus Lucubana (NL. fem. n. *Lucubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1781*. The type species for the genus is *Candidatus* Lucubana alectatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Lucubana navicibula sp. nov.

Candidatus Lucubana navicibula (NL. fem. n. *navicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1781 sp900553365*. The type genome for the species is the GenBank assembly RS_GCF_900767855.1. The GC content of the type genome is 28.97 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Lucubana rorifedo sp. nov.

Candidatus Lucubana rorifedo (NL. fem. n. *rorifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1781 sp900555075*. The type genome for the species is the GenBank assembly RS_GCF_900772145.1. The GC content of the type genome is 28.73 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Lucubana rubefentia sp. nov.

Candidatus Lucubana rubefentia (NL. fem. n. *rubefentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1781 sp900553695*. The type genome for the species is the GenBank assembly RS_GCF_900767795.1. The GC content of the type genome is 29.57 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Lucubana viburifica sp. nov.

Candidatus Lucubana viburifica (NL. fem. n. *viburifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1781 sp900554635*. The type genome for the species is the GenBank assembly GCA_900554635.1. The GC content of the type genome is 29.64 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Lucubaria volunicula sp. nov.

Candidatus Lucubaria volunicula (NL. fem. n. *volunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OXYB2-FULL-41-6 sp001773215*. The type genome for the species is the GenBank assembly GCA_001773015.1. The GC content of the type genome is 40.36 % and the genome length is 0.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point A".

Description of *Candidatus* Lucubaria gen. nov.

Candidatus Lucubaria (NL. fem. n. *Lucubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OXYB2-FULL-41-6*. The type species for the genus is *Candidatus* Lucubaria volunicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Lucubella documilenta sp. nov.

Candidatus Lucubella documilenta (NL. fem. n. *documilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITOL01 sp014377905*. The type genome for the species is the GenBank assembly GCA_014377905.1. The GC content of the type genome is 62.18 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Lucubella gen. nov.

Candidatus Lucubella (NL. fem. n. *Lucubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITOL01*. The type species for the genus is *Candidatus* Lucubella documilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lucubella siligilega sp. nov.

Candidatus Lucubella siligilega (NL. fem. n. *siligilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITOL01 sp903893975*. The type genome for the species is the GenBank assembly GCA_903904745.1. The GC content of the type genome is 65.99 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Lucubia abpatitura sp. nov.

Candidatus Lucubia abpatitura (NL. fem. n. *abpatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2020 sp003524565*. The type genome for the species is the GenBank assembly GCA_003524565.1. The GC content of the type genome is 58.05 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Lucubia gen. nov.

Candidatus Lucubia (NL. fem. n. *Lucubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2020*. The type species for the genus is *Candidatus* Lucubia abpatitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2020*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucubiaceae.

Description of *Candidatus* Lucubiaceae fam. nov.

Candidatus Lucubiaceae (NL. fem. n. *Lucubiaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2020.* The type genus for the taxon is *Candidatus* Lucubia .

According to GTDB R06-RS202, this family belongs to the order *Micavibrionales*.

Description of *Candidatus* Lucubia dicimicella sp. nov.

Candidatus Lucubia dicimicella (NL. fem. n. *dicimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2020 sp004297545*. The type genome for the species is the GenBank assembly GCA_004297545.1. The GC content of the type genome is 58.99 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Lucubia epogdedo sp. nov.

Candidatus Lucubia epogdedo (NL. fem. n. *epogdedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2020 sp002334985*. The type genome for the species is the GenBank assembly GCA_002334985.1. The GC content of the type genome is 57.71 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Lucubida sonipatio sp. nov.

Candidatus Lucubida sonipatio (NL. fem. n. *sonipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-601 sp003136185*. The type genome for the species is the GenBank assembly GCA_003140395.1. The GC content of the type genome is 65.69 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Lucubida gen. nov.

Candidatus Lucubida (NL. fem. n. *Lucubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-601*. The type species for the genus is *Candidatus* Lucubida

sonipatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bog-793*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semibidaceae.

Description of *Candidatus* Lucubosa manibiforma sp. nov.

Candidatus Lucubosa manibiforma (NL. fem. n. *manibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADDG01 sp013154075*. The type genome for the species is the GenBank assembly GCA_013154075.1. The GC content of the type genome is 37.39 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Lucubosa gen. nov.

Candidatus Lucubosa (NL. fem. n. *Lucubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADDG01*. The type species for the genus is *Candidatus* Lucubosa manibiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADDG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucubosaceae.

Description of *Candidatus* Lucubosaceae fam. nov.

Candidatus Lucubosaceae (NL. fem. n. *Lucubosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADDG01*. The type genus for the taxon is *Candidatus* Lucubosa .

According to GTDB R06-RS202, this family belongs to the order *Campylobacterales*.

Description of *Candidatus* Lucubula binociforma sp. nov.

Candidatus Lucubula binociforma (NL. fem. n. *binociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *BOG-930 sp903918195*. The type genome for the species is the GenBank assembly GCA_903830085.1. The GC content of the type genome is 68.0 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Lucubula gen. nov.

Candidatus Lucubula (NL. fem. n. *Lucubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-930*. The type species for the genus is *Candidatus* Lucubula binociforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lucubula desuribra sp. nov.

Candidatus Lucubula desuribra (NL. fem. n. *desuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-930 sp003164455*. The type genome for the species is the GenBank assembly GCA_003164455.1. The GC content of the type genome is 67.15 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Lucubula diponatica sp. nov.

Candidatus Lucubula diponatica (NL. fem. n. *diponatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-930 sp903907955*. The type genome for the species is the GenBank assembly GCA_903874365.1. The GC content of the type genome is 68.27 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Lucubula famelitio sp. nov.

Candidatus Lucubula famelitio (NL. fem. n. *famelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-930 sp903839965*. The type genome for the species is the GenBank assembly GCA_903839965.1. The GC content of the type genome is 67.99 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Luculana conamedo sp. nov.

Candidatus Luculana conamedo (NL. fem. n. *conamedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKZ01 sp011329335*. The type genome for the species is the GenBank assembly GCA_011329335.1. The GC content of the type genome is 52.24 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Luculana gen. nov.

Candidatus Luculana (NL. fem. n. *Luculana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKZ01*. The type species for the genus is *Candidatus* Luculana conamedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTKZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luculanaceae.

Description of *Candidatus* Luculanaceae fam. nov.

Candidatus Luculanaceae (NL. fem. n. *Luculanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTKZ01.* The type genus for the taxon is *Candidatus* Luculana .

According to GTDB R06-RS202, this family belongs to the order *Spirochaetales_A*.

Description of *Candidatus* Luculana munifilega sp. nov.

Candidatus Luculana munifilega (NL. fem. n. *munifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKZ01 sp011370345*. The type genome for the species is the GenBank assembly GCA_011370345.1. The GC content of the type genome is 53.07 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Lucularia lucerax sp. nov.

Candidatus Lucularia lucerax (NL. fem. n. *lucerax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-33-13 sp000989565*. The type genome for the species is the GenBank assembly GCA_001788765.1. The GC content of the type genome is 32.97 % and the genome length is 1.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Lucularia gen. nov.

Candidatus Lucularia (NL. fem. n. *Lucularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-33-13*. The type species for the genus is *Candidatus* Lucularia lucerax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-33-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucularia ceae.

Description of *Candidatus* Lucularia ceae fam. nov.

Candidatus Lucularia ceae (NL. fem. n. *Lucularia ceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-33-13.* The type genus for the taxon is *Candidatus* Lucularia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Luculella volucisca sp. nov.

Candidatus Luculella volucisca (NL. fem. n. *volucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUEV01 sp903898335*. The type genome for the species is the GenBank assembly GCA_903831895.1. The GC content of the type genome is 40.26 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Luculella gen. nov.

Candidatus Luculella (NL. fem. n. *Luculella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUEV01*. The type species for the genus is *Candidatus* Luculella volucisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIUEV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luculellaceae.

Description of *Candidatus* Luculellaceae fam. nov.

Candidatus Luculellaceae (NL. fem. n. *Luculellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIUEV01.* The type genus for the taxon is *Candidatus* Luculella .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIUEV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Luculellales.

Description of *Candidatus* Luculellales ord. nov.

Candidatus Luculellales (NL. fem. n. *Luculellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIUEV01.* The type genus for the taxon is *Candidatus* Luculella .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Luculida abascifica sp. nov.

Candidatus Luculida abascifica (NL. fem. n. *abascifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRYD01 sp011388315*. The type genome for the species is the GenBank assembly GCA_011388315.1. The GC content of the type genome is 30.24 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Luculida gen. nov.

Candidatus Luculida (NL. fem. n. *Luculida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRYD01*. The type species for the genus is *Candidatus* Luculida abascifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRYD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luculidaceae.

Description of *Candidatus* Luculidaceae fam. nov.

Candidatus Luculidaceae (NL. fem. n. *Luculidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRYD01.* The type genus for the taxon is *Candidatus* Luculida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRYD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Luculidales.

Description of *Candidatus* Luculidales ord. nov.

Candidatus Luculidales (NL. fem. n. *Luculidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRYD01.* The type genus for the taxon is *Candidatus* Luculida .

According to the GTDB R06-RS202, this order belongs to the class *Calescibacteriia*.

Description of *Candidatus* Luculosa monumilega sp. nov.

Candidatus Luculosa monumilega (NL. fem. n. *monumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HDB-SIOI813 sp001805205*. The type genome for the species is the GenBank assembly GCA_001805205.1. The GC content of the type genome is 41.76 % and the genome length is 2.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; 10% subassembly".

Description of *Candidatus* Luculosa gen. nov.

Candidatus Luculosa (NL. fem. n. *Luculosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HDB-SIOI813*. The type species for the genus is *Candidatus* Luculosa monumilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HDB-SIOI813*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luculosaceae.

Description of *Candidatus* Luculosaceae fam. nov.

Candidatus Luculosaceae (NL. fem. n. *Luculosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HDB-SIOI813.* The type genus for the taxon is *Candidatus* Luculosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *HDB-SIOI813*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Luculosales.

Description of *Candidatus* Luculosales ord. nov.

Candidatus Luculosales (NL. fem. n. *Luculosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HDB-SIOI813.* The type genus for the taxon is *Candidatus* Luculosa .

According to the GTDB R06-RS202, this order belongs to the class *Nitrospiria*.

Description of *Candidatus* Luculula cadavitio sp. nov.

Candidatus Luculula cadavitio (NL. fem. n. *cadavitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1518 sp900552575*. The type genome for the species is the GenBank assembly RS_GCF_903645315.1. The GC content of the type genome is 55.85 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Luculula gen. nov.

Candidatus Luculula (NL. fem. n. *Luculula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1518*. The type species for the genus is *Candidatus* Luculula cadavitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ludibana ambusatio sp. nov.

Candidatus Ludibana ambusatio (NL. fem. n. *ambusatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-46 sp013695505*. The type genome for the species is the GenBank assembly GCA_013695505.1. The GC content of the type genome is 69.52 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Ludibana gen. nov.

Candidatus Ludibana (NL. fem. n. *Ludibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-46*. The type species for the genus is *Candidatus* Ludibana ambusatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Ludibana innecitura sp. nov.

Candidatus Ludibana innecitura (NL. fem. n. *innecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-46 sp005882635*. The type genome for the species is the GenBank assembly GCA_005882635.1. The GC content of the type genome is 70.83 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Ludibana siminax sp. nov.

Candidatus Ludibana siminax (NL. fem. n. *siminax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-46 sp013698095*. The type genome for the species is the GenBank assembly GCA_013698095.1. The GC content of the type genome is 69.47 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Ludibaria rubecetta sp. nov.

Candidatus Ludibaria rubecetta (NL. fem. n. *rubecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKXS01 sp007128345*. The type genome for the species is the GenBank assembly GCA_007119085.1. The GC content of the type genome is 52.63 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Ludibaria gen. nov.

Candidatus Ludibaria (NL. fem. n. *Ludibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKXS01*. The type species for the genus is *Candidatus* Ludibaria rubecetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWKH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cimelosaceae.

Description of *Candidatus* Ludibella cerebitas sp. nov.

Candidatus Ludibella cerebitas (NL. fem. n. *cerebitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J044 sp003696465*. The type genome for the species is the GenBank assembly GCA_003696465.1. The GC content of the type genome is 64.4 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Ludibella gen. nov.

Candidatus Ludibella (NL. fem. n. *Ludibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J044*. The type species for the genus is *Candidatus* Ludibella cerebitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J044*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludibellaceae.

Description of *Candidatus* Ludibellaceae fam. nov.

Candidatus Ludibellaceae (NL. fem. n. *Ludibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J044.* The type genus for the taxon is *Candidatus* Ludibella .

According to the original version of GTDB R06-RS202, this family belongs to the order *J044*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ludibellales.

Description of *Candidatus* Ludibellales ord. nov.

Candidatus Ludibellales (NL. fem. n. *Ludibellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J044.* The type genus for the taxon is *Candidatus* Ludibella .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Ludibia negidimonas sp. nov.

Candidatus Ludibia negidimonas (NL. fem. n. *negidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12115 sp003514055*. The type genome for the species is the GenBank assembly GCA_001795995.1. The GC content of the type genome is 43.01 % and the genome length is 0.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Ludibia gen. nov.

Candidatus Ludibia (NL. fem. n. *Ludibia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12115*. The type species for the genus is *Candidatus* Ludibia negidimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Ludibida domipilega sp. nov.

Candidatus Ludibida domipilega (NL. fem. n. *domipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1031 sp000431215*. The type genome for the species is the GenBank assembly GCA_001701255.1. The GC content of the type genome is 55.21 % and the genome length is 1.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Feces".

Description of *Candidatus* Ludibida gen. nov.

Candidatus Ludibida (NL. fem. n. *Ludibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-1031*. The type species for the genus is *Candidatus* Ludibida domipilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ludibida voragitura sp. nov.

Candidatus Ludibida voragitura (NL. fem. n. *voragitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1031 sp900752535*. The type genome for the species is the GenBank assembly RS_GCF_900752535.1. The GC content of the type genome is 53.38 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Ludibosa attubax sp. nov.

Candidatus Ludibosa attubax (NL. fem. n. *attubax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBLH01 sp002084525*. The type genome for the species is the GenBank assembly GCA_002084525.1. The GC content of the type genome is 33.14 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Ludibosa gen. nov.

Candidatus Ludibosa (NL. fem. n. *Ludibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NBLH01*. The type species for the genus is *Candidatus* Ludibosa attubax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NBLH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludibosaceae.

Description of *Candidatus* Ludibosaceae fam. nov.

Candidatus Ludibosaceae (NL. fem. n. *Ludibosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NBLH01.* The type genus for the taxon is *Candidatus* Ludibosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Ludibula inmitimonas sp. nov.

Candidatus Ludibula inmitimonas (NL. fem. n. *inmitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747515 sp002747515*. The type genome for the species is the GenBank assembly GCA_002747515.1. The GC content of the type genome is 35.4 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Ludibula gen. nov.

Candidatus Ludibula (NL. fem. n. *Ludibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2747515*. The type species for the genus is *Candidatus* Ludibula inmitimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2747515*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludibulaceae.

Description of *Candidatus* Ludibulaceae fam. nov.

Candidatus Ludibulaceae (NL. fem. n. *Ludibulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2747515.* The type genus for the taxon is *Candidatus* Ludibula .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Ludifana armifitudo sp. nov.

Candidatus Ludifana armifitudo (NL. fem. n. *armifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNLC01 sp014381725*. The type genome for the species is the GenBank assembly GCA_014381725.1. The GC content of the type genome is 33.95 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Ludifana gen. nov.

Candidatus Ludifana (NL. fem. n. *Ludifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNLC01*. The type species for the genus is *Candidatus* Ludifana armifitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACNLC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludifanaceae.

Description of *Candidatus* Ludifanaceae fam. nov.

Candidatus Ludifanaceae (NL. fem. n. *Ludifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACNLC01*. The type genus for the taxon is *Candidatus* Ludifana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Ludifaria abrepicula sp. nov.

Candidatus Ludifaria abrepicula (NL. fem. n. *abrepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp002344795*. The type genome for the species is the GenBank assembly GCA_002344795.1. The GC content of the type genome is 41.04 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Ludifaria gen. nov.

Candidatus Ludifaria (NL. fem. n. *Ludifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ELB16-189*. The type species for the genus is *Candidatus* Ludifaria abrepicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ludifaria adambivita sp. nov.

Candidatus Ludifaria adambivita (NL. fem. n. *adambivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp013298505*. The type genome for the species is the GenBank assembly GCA_013298505.1. The GC content of the type genome is 41.3 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Ludifaria adgenimonas sp. nov.

Candidatus Ludifaria adgenimonas (NL. fem. n. *adgenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp003504855*. The type genome for the species is the GenBank assembly GCA_003504855.1. The GC content of the type genome is 49.3 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Ludifaria allubessa sp. nov.

Candidatus Ludifaria allubessa (NL. fem. n. *allubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp003537495*. The type genome for the species is the GenBank assembly GCA_003537495.1. The GC content of the type genome is 42.04 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Ludifaria aruspifica sp. nov.

Candidatus Ludifaria aruspifica (NL. fem. n. *aruspifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp013141055*. The type genome for the species is the GenBank assembly GCA_013141055.1. The GC content of the type genome is 42.05 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Ludifaria bovicessa sp. nov.

Candidatus Ludifaria bovicessa (NL. fem. n. *bovicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp013140395*. The type genome for the species is the GenBank assembly GCA_013140395.1. The GC content of the type genome is 42.39 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Ludifaria cadurigena sp. nov.

Candidatus Ludifaria cadurigena (NL. fem. n. *cadurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp002398365*. The type genome for the species is the GenBank assembly GCA_002398365.1. The GC content of the type genome is 42.41 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Ludifaria conificula sp. nov.

Candidatus Ludifaria conificula (NL. fem. n. *conificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp012032815*. The type genome for the species is the GenBank assembly GCA_012032815.1. The GC content of the type genome is 41.32 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Ludifaria culililenta sp. nov.

Candidatus Ludifaria culililenta (NL. fem. n. *culililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp013414665*. The type genome for the species is the GenBank assembly GCA_013414665.1. The GC content of the type genome is 43.63 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Ludifaria denunitura sp. nov.

Candidatus Ludifaria denunitura (NL. fem. n. *denunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp013140555*. The type genome for the species is the GenBank assembly GCA_013140555.1. The GC content of the type genome is 42.09 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Ludifaria detosimonas sp. nov.

Candidatus Ludifaria detosimonas (NL. fem. n. *detosimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp002345965*. The type genome for the species is the GenBank assembly GCA_003535515.1. The GC content of the type genome is 41.77 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Ludifaria navifessa sp. nov.

Candidatus Ludifaria navifessa (NL. fem. n. *navifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp002352225*. The type genome for the species is the GenBank assembly GCA_002352225.1. The GC content of the type genome is 42.19 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Ludifaria nugigastra sp. nov.

Candidatus Ludifaria nugigastra (NL. fem. n. *nugigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp001567185*. The type genome for the species is the GenBank assembly GCA_001567185.1. The GC content of the type genome is 43.94 % and the genome length is 3.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Ludifaria pabililega sp. nov.

Candidatus Ludifaria pabililega (NL. fem. n. *pabililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp003541895*. The type genome for the species is the GenBank assembly GCA_003541895.1. The GC content of the type genome is 40.58 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Ludifaria pabilimonia sp. nov.

Candidatus Ludifaria pabilimonia (NL. fem. n. *pabilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp002405445*. The type genome for the species is the GenBank assembly GCA_002405445.1. The GC content of the type genome is 46.18 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Ludifaria sonivivita sp. nov.

Candidatus Ludifaria sonivivita (NL. fem. n. *sonivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp013285845*. The type genome for the species is the GenBank assembly GCA_013285845.1. The GC content of the type genome is 42.16 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Ludifaria stercifica sp. nov.

Candidatus Ludifaria stercifica (NL. fem. n. *stercifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ELB16-189 sp013285945*. The type genome for the species is the GenBank assembly GCA_013285945.1. The GC content of the type genome is 42.09 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Ludifella dehinedo sp. nov.

Candidatus Ludifella dehinedo (NL. fem. n. *dehinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCX01 sp013287915*. The type genome for the species is the GenBank assembly GCA_013287675.1. The GC content of the type genome is 47.14 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Ludifella gen. nov.

Candidatus Ludifella (NL. fem. n. *Ludifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCX01*. The type species for the genus is *Candidatus* Ludifella dehinedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ludifia turicatica sp. nov.

Candidatus Ludifia turicatica (NL. fem. n. *turicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMEU01 sp007375675*. The type genome for the species is the

GenBank assembly GCA_007378945.1. The GC content of the type genome is 45.44 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Ludifia gen. nov.

Candidatus Ludifia (NL. fem. n. *Ludifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMEU01*. The type species for the genus is *Candidatus* Ludifia turicatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxilidaceae.

Description of *Candidatus* Ludifida amnenilenta sp. nov.

Candidatus Ludifida amnenilenta (NL. fem. n. *amnenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-668 sp003158895*. The type genome for the species is the GenBank assembly GCA_003158895.1. The GC content of the type genome is 67.82 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Ludifida gen. nov.

Candidatus Ludifida (NL. fem. n. *Ludifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-668*. The type species for the genus is *Candidatus* Ludifida amnenilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ludifida nucifimonia sp. nov.

Candidatus Ludifida nucifimonia (NL. fem. n. *nucifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-668 sp003153855*. The type genome for the species is the GenBank assembly GCA_003153855.1. The GC content of the type genome is 68.41 %

and the genome length is 3.67 Mbp.

Description of *Candidatus* Ludifosa onocrentia sp. nov.

Candidatus Ludifosa onocrentia (NL. fem. n. *onocrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMXP01 sp004356335*. The type genome for the species is the GenBank assembly GCA_004356335.1. The GC content of the type genome is 54.32 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Ludifosa gen. nov.

Candidatus Ludifosa (NL. fem. n. *Ludifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMXP01*. The type species for the genus is *Candidatus* Ludifosa onocrentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMXP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludifosaceae.

Description of *Candidatus* Ludifosaceae fam. nov.

Candidatus Ludifosaceae (NL. fem. n. *Ludifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMXP01.* The type genus for the taxon is *Candidatus* Ludifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SMXP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ludifosales.

Description of *Candidatus* Ludifosales ord. nov.

Candidatus Ludifosales (NL. fem. n. *Ludifosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMXP01.* The type genus for the taxon is *Candidatus* Ludifosa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Ludifula betacastra sp. nov.

Candidatus Ludifula betacastra (NL. fem. n. *betacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWEK01 sp003553445*. The type genome for the species is the GenBank assembly GCA_003553445.1. The GC content of the type genome is 42.36 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Ludifula gen. nov.

Candidatus Ludifula (NL. fem. n. *Ludifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWEK01*. The type species for the genus is *Candidatus* Ludifula betacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLGR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ceruciaceae.

Description of *Candidatus* Ludimana adpecitas sp. nov.

Candidatus Ludimana adpecitas (NL. fem. n. *adpecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1364 sp002422165*. The type genome for the species is the GenBank assembly GCA_002422165.1. The GC content of the type genome is 44.08 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Ludimana gen. nov.

Candidatus Ludimana (NL. fem. n. *Ludimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1364*. The type species for the genus is *Candidatus* Ludimana adpecitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Ludimana cerevitia sp. nov.

Candidatus Ludimana cerevitia (NL. fem. n. *cerevitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1364 sp903959355*. The type genome for the species is the GenBank assembly GCA_903940515.1. The GC content of the type genome is 35.54 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Ludimana cerofatica sp. nov.

Candidatus Ludimana cerofatica (NL. fem. n. *cerofatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1364 sp903842795*. The type genome for the species is the GenBank assembly GCA_903842795.1. The GC content of the type genome is 36.6 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Ludimana inabsatica sp. nov.

Candidatus Ludimana inabsatica (NL. fem. n. *inabsatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1364 sp002306345*. The type genome for the species is the GenBank assembly GCA_002306345.1. The GC content of the type genome is 36.05 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Ludimana lenocugo sp. nov.

Candidatus Ludimana lenocugo (NL. fem. n. *lenocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1364 sp903891335*. The type genome for the species is the GenBank assembly GCA_903891335.1. The GC content of the type genome is 43.26 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Ludimana nitelibra sp. nov.

Candidatus Ludimana nitelibra (NL. fem. n. *nitelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1364 sp001029715*. The type genome for the species is the GenBank assembly GCA_000993185.1. The GC content of the type genome is 35.98 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Ludimana semivicella sp. nov.

Candidatus Ludimana semivicella (NL. fem. n. *semivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1364 sp002422765*. The type genome for the species is the GenBank assembly GCA_002422765.1. The GC content of the type genome is 39.51 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Ludimaria adcomax sp. nov.

Candidatus Ludimaria adcomax (NL. fem. n. *adcomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-49-11 sp001791465*. The type genome for the species is the GenBank assembly GCA_001791465.1. The GC content of the type genome is 49.41 % and the genome length is 0.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Ludimaria gen. nov.

Candidatus Ludimaria (NL. fem. n. *Ludimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-49-11*. The type species for the genus is *Candidatus* Ludimaria adcomax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-49-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludimariaceae.

Description of *Candidatus* Ludimariaceae fam. nov.

Candidatus Ludimariaceae (NL. fem. n. *Ludimariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-49-11.* The type genus for the taxon is *Candidatus* Ludimaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-49-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ludimariales.

Description of *Candidatus* Ludimariales ord. nov.

Candidatus Ludimariales (NL. fem. n. *Ludimariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-49-11.* The type genus for the taxon is *Candidatus* Ludimaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Ludimella levidisca sp. nov.

Candidatus Ludimella levidisca (NL. fem. n. *levidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C-53 sp003612525*. The type genome for the species is the GenBank assembly RS_GCF_003612525.1. The GC content of the type genome is 43.45 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Ludimella gen. nov.

Candidatus Ludimella (NL. fem. n. *Ludimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C-53*. The type species for the genus is *Candidatus* Ludimella levidisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ludimia ambacetta sp. nov.

Candidatus Ludimia ambacetta (NL. fem. n. *ambacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-288 sp903932155*. The type genome for the species is the GenBank assembly GCA_903932155.1. The GC content of the type genome is 59.21 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Ludimia gen. nov.

Candidatus Ludimia (NL. fem. n. *Ludimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-288*. The type species for the genus is *Candidatus* Ludimia ambacetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ludimia bovicentia sp. nov.

Candidatus Ludimia bovicentia (NL. fem. n. *bovicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-288 sp003162875*. The type genome for the species is the GenBank assembly GCA_003134355.1. The GC content of the type genome is 61.6 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Ludimia catagitas sp. nov.

Candidatus Ludimia catagitas (NL. fem. n. *catagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-288 sp003142215*. The type genome for the species is the GenBank assembly GCA_003159515.1. The GC content of the type genome is 61.41 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Ludimia fiducetta sp. nov.

Candidatus Ludimia fiducetta (NL. fem. n. *fiducetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-288 sp003132145*. The type genome for the species is the GenBank assembly GCA_003159875.1. The GC content of the type genome is 61.66 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Ludimia rarefigena sp. nov.

Candidatus Ludimia rarefigena (NL. fem. n. *rarefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-288 sp003133205*. The type genome for the species is the GenBank assembly GCA_003133205.1. The GC content of the type genome is 60.1 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Ludimia serotitudo sp. nov.

Candidatus Ludimia serotitudo (NL. fem. n. *serotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-288 sp003142235*. The type genome for the species is the GenBank assembly GCA_003165995.1. The GC content of the type genome is 62.69 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Ludimida bucelastra sp. nov.

Candidatus Ludimida bucelastra (NL. fem. n. *bucelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1435 sp000433775*. The type genome for the species is the GenBank assembly GCA_900543955.1. The GC content of the type genome is 45.87 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Ludimida gen. nov.

Candidatus Ludimida (NL. fem. n. *Ludimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-1435*. The type species for the genus is *Candidatus* Ludimida bucelastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-314*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cohurariaceae.

Description of *Candidatus* Ludimida papilibula sp. nov.

Candidatus Ludimida papilibula (NL. fem. n. *papilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1435 sp900769665*. The type genome for the species is the GenBank assembly RS_GCF_900769665.1. The GC content of the type genome is 48.04 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Ludimida susicax sp. nov.

Candidatus Ludimida susicax (NL. fem. n. *susicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1435 sp003537755*. The type genome for the species is the GenBank assembly GCA_003537755.1. The GC content of the type genome is 48.7 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Ludimosa scammifica sp. nov.

Candidatus Ludimosa scammifica (NL. fem. n. *scammifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFS01 sp012728115*. The type genome for the species is the GenBank assembly GCA_012728115.1. The GC content of the type genome is 40.37 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Ludimosa gen. nov.

Candidatus Ludimosa (NL. fem. n. *Ludimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYFS01*. The type species for the genus is *Candidatus* Ludimosa scammifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

JAAYFS01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ludimosaceae.

Description of *Candidatus* Ludimosaceae fam. nov.

Candidatus Ludimosaceae (NL. fem. n. *Ludimosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYFS01*. The type genus for the taxon is *Candidatus* Ludimosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ducilidales.

Description of *Candidatus* Lugubana antipitas sp. nov.

Candidatus Lugubana antipitas (NL. fem. n. *antipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAN01 sp007126865*. The type genome for the species is the GenBank assembly GCA_007126865.1. The GC content of the type genome is 60.23 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Lugubana gen. nov.

Candidatus Lugubana (NL. fem. n. *Lugubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLAN01*. The type species for the genus is *Candidatus* Lugubana antipitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKKC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papavosaceae.

Description of *Candidatus* Lugubana coturibra sp. nov.

Candidatus Lugubana coturibra (NL. fem. n. *coturibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SLAN01 sp007135605*. The type genome for the species is the GenBank assembly GCA_003558715.1. The GC content of the type genome is 60.05 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Lugubana exsurugo sp. nov.

Candidatus Lugubana exsurugo (NL. fem. n. *exsurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAN01 sp003552745*. The type genome for the species is the GenBank assembly GCA_003552745.1. The GC content of the type genome is 60.49 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Lugubaria favonicella sp. nov.

Candidatus Lugubaria favonicella (NL. fem. n. *favonicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *66-26 sp001897745*. The type genome for the species is the GenBank assembly GCA_001897745.1. The GC content of the type genome is 66.12 % and the genome length is 4.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Lugubaria gen. nov.

Candidatus Lugubaria (NL. fem. n. *Lugubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *66-26*. The type species for the genus is *Candidatus* Lugubaria favonicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lugubella dicabicula sp. nov.

Candidatus Lugubella dicabicula (NL. fem. n. *dicabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1198 sp003132425*. The type genome for the species is the GenBank assembly GCA_003135075.1. The GC content of the type genome is 60.91 %

and the genome length is 4.09 Mbp.

Description of *Candidatus* Lugubella gen. nov.

Candidatus Lugubella (NL. fem. n. *Lugubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-1198*. The type species for the genus is *Candidatus* Lugubella dicabicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lugubella ectenitas sp. nov.

Candidatus Lugubella ectenitas (NL. fem. n. *ectenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1198 sp003165495*. The type genome for the species is the GenBank assembly GCA_003165495.1. The GC content of the type genome is 60.78 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Lugubella habacentia sp. nov.

Candidatus Lugubella habacentia (NL. fem. n. *habacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1198 sp003137095*. The type genome for the species is the GenBank assembly GCA_003138845.1. The GC content of the type genome is 65.13 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Lugubella holovessa sp. nov.

Candidatus Lugubella holovessa (NL. fem. n. *holovessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1198 sp003134045*. The type genome for the species is the GenBank assembly GCA_003156025.1. The GC content of the type genome is 62.98 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Lugubella omnigitrix sp. nov.

Candidatus Lugubella omnigitrix (NL. fem. n. *omnigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1198 sp003164785*. The type genome for the species is the GenBank assembly GCA_003164785.1. The GC content of the type genome is 62.32 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Lugubia agratatica sp. nov.

Candidatus Lugubia agratatica (NL. fem. n. *agratatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1731 sp902779565*. The type genome for the species is the GenBank assembly GCA_902779565.1. The GC content of the type genome is 60.99 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Lugubia gen. nov.

Candidatus Lugubia (NL. fem. n. *Lugubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1731*. The type species for the genus is *Candidatus* Lugubia agratatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Lugubia cimitilega sp. nov.

Candidatus Lugubia cimitilega (NL. fem. n. *cimitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1731 sp002317575*. The type genome for the species is the GenBank assembly GCA_002317575.1. The GC content of the type genome is 64.17 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Lugubida valefimonia sp. nov.

Candidatus Lugubida valefimonia (NL. fem. n. *valefimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-43-20 sp002780235*. The type genome for the species is the GenBank assembly GCA_001872655.1. The GC content of the type genome is 42.97 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Lugubida gen. nov.

Candidatus Lugubida (NL. fem. n. *Lugubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-43-20*. The type species for the genus is *Candidatus* Lugubida valefimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-43-20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lugubidaceae.

Description of *Candidatus* Lugubidaceae fam. nov.

Candidatus Lugubidaceae (NL. fem. n. *Lugubidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-43-20.* The type genus for the taxon is *Candidatus* Lugubida .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-35-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fidenellales.

Description of *Candidatus* Lugubosa cenodedo sp. nov.

Candidatus Lugubosa cenodedo (NL. fem. n. *cenodedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6668 sp002455215*. The type genome for the species is the GenBank assembly GCA_002455215.1. The GC content of the type genome is 50.22 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Lugubosa gen. nov.

Candidatus Lugubosa (NL. fem. n. *Lugubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6668*. The type species for the genus is *Candidatus* Lugubosa cenodedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6668*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lugubosaceae.

Description of *Candidatus* Lugubosaceae fam. nov.

Candidatus Lugubosaceae (NL. fem. n. *Lugubosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6668.* The type genus for the taxon is *Candidatus* Lugubosa .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Lugubula nocenifica sp. nov.

Candidatus Lugubula nocenifica (NL. fem. n. *nocenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2558 sp002340425*. The type genome for the species is the GenBank assembly GCA_012798635.1. The GC content of the type genome is 31.37 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Lugubula gen. nov.

Candidatus Lugubula (NL. fem. n. *Lugubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2558*. The type species for the genus is *Candidatus* Lugubula nocenifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5633*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carecosaceae.

Description of *Candidatus* Lujinxingia adtagedo sp. nov.

Candidatus Lujinxingia adtagedo (NL. fem. n. *adtagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lujinxingia sp007997015*. The type genome for the species is the GenBank assembly RS_GCF_007997015.1. The GC content of the type genome is 64.59 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Lujinxingia mahelilenta sp. nov.

Candidatus Lujinxingia mahelilenta (NL. fem. n. *mahelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lujinxingia sp007997005*. The type genome for the species is the GenBank assembly RS_GCF_007997005.1. The GC content of the type genome is 65.01 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Luminiphilus abnocax sp. nov.

Candidatus Luminiphilus abnocax (NL. fem. n. *abnocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp902613175*. The type genome for the species is the GenBank assembly RS_GCF_902613175.1. The GC content of the type genome is 52.31 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Luminiphilus adpicatio sp. nov.

Candidatus Luminiphilus adpicatio (NL. fem. n. *adpicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp009937065*. The type genome for the species is the GenBank assembly GCA_009937065.1. The GC content of the type genome is 52.53 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Luminiphilus adpugatica sp. nov.

Candidatus Luminiphilus adpugatica (NL. fem. n. *adpugatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp011524755*. The type genome for the species is the GenBank assembly GCA_011524755.1. The GC content of the type genome is 53.92 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Luminiphilus adtesitas sp. nov.

Candidatus Luminiphilus adtesitas (NL. fem. n. *adtesitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp008081075*. The type genome for the species is the GenBank assembly GCA_008081075.1. The GC content of the type genome is 56.54 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Luminiphilus arilletta sp. nov.

Candidatus Luminiphilus arilletta (NL. fem. n. *arilletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002691405*. The type genome for the species is the GenBank assembly GCA_002691405.1. The GC content of the type genome is 52.79 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Luminiphilus arillisca sp. nov.

Candidatus Luminiphilus arillisca (NL. fem. n. *arillisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp000227505*. The type genome for the species is the GenBank assembly RS_GCF_000227505.1. The GC content of the type genome is 52.9 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Luminiphilus assifago sp. nov.

Candidatus Luminiphilus assifago (NL. fem. n. *assifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Luminiphilus sp902518075*. The type genome for the species is the GenBank assembly RS_GCF_902518075.1. The GC content of the type genome is 55.78 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Luminiphilus assucicula sp. nov.

Candidatus Luminiphilus assucicula (NL. fem. n. *assucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002377985*. The type genome for the species is the GenBank assembly GCA_002377985.1. The GC content of the type genome is 56.92 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Luminiphilus bifisibula sp. nov.

Candidatus Luminiphilus bifisibula (NL. fem. n. *bifisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp003331335*. The type genome for the species is the GenBank assembly GCA_003331335.1. The GC content of the type genome is 52.56 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Luminiphilus bisulifica sp. nov.

Candidatus Luminiphilus bisulifica (NL. fem. n. *bisulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp000169115*. The type genome for the species is the GenBank assembly RS_GCF_000169115.1. The GC content of the type genome is 51.82 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Luminiphilus ceracatio sp. nov.

Candidatus Luminiphilus ceracatio (NL. fem. n. *ceracatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002683395*. The type genome for the species is the GenBank assembly GCA_004213755.1. The GC content of the type genome is 57.06 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Luminiphilus codifibula sp. nov.

Candidatus Luminiphilus codifibula (NL. fem. n. *codifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002689915*. The type genome for the species is the GenBank assembly GCA_002171595.1. The GC content of the type genome is 52.13 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Luminiphilus conamitas sp. nov.

Candidatus Luminiphilus conamitas (NL. fem. n. *conamitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp012270045*. The type genome for the species is the GenBank assembly GCA_012270045.1. The GC content of the type genome is 60.05 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Luminiphilus decunilega sp. nov.

Candidatus Luminiphilus decunilega (NL. fem. n. *decunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002721785*. The type genome for the species is the GenBank assembly GCA_002721785.1. The GC content of the type genome is 57.22 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Luminiphilus desepatio sp. nov.

Candidatus Luminiphilus desepatio (NL. fem. n. *desepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp011523115*. The type genome for the species is the GenBank assembly GCA_011523115.1. The GC content of the type genome is 57.7 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Luminiphilus detumitica sp. nov.

Candidatus Luminiphilus detumitica (NL. fem. n. *detumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002389505*. The type genome for the species is the GenBank assembly GCA_002390055.1. The GC content of the type genome is 53.27 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Luminiphilus ignigedo sp. nov.

Candidatus Luminiphilus ignigedo (NL. fem. n. *ignigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp009886815*. The type genome for the species is the GenBank assembly GCA_009886815.1. The GC content of the type genome is 52.91 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Luminiphilus inabsessa sp. nov.

Candidatus Luminiphilus inabsessa (NL. fem. n. *inabsessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002705465*. The type genome for the species is the GenBank assembly GCA_002705465.1. The GC content of the type genome is 57.0 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Luminiphilus inbecax sp. nov.

Candidatus Luminiphilus inbecax (NL. fem. n. *inbecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp902547755*. The type genome for the species is the GenBank assembly RS_GCF_902547755.1. The GC content of the type genome is 52.81 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Luminiphilus inlumitio sp. nov.

Candidatus Luminiphilus inlumitio (NL. fem. n. *inlumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Luminiphilus sp002469785*. The type genome for the species is the GenBank assembly GCA_002469785.1. The GC content of the type genome is 52.29 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Luminiphilus inpenatica sp. nov.

Candidatus Luminiphilus inpenatica (NL. fem. n. *inpenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp902623175*. The type genome for the species is the GenBank assembly RS_GCF_902623175.1. The GC content of the type genome is 56.16 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Luminiphilus metabetta sp. nov.

Candidatus Luminiphilus metabetta (NL. fem. n. *metabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002691565*. The type genome for the species is the GenBank assembly GCA_002691565.1. The GC content of the type genome is 53.32 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Luminiphilus mirabibula sp. nov.

Candidatus Luminiphilus mirabibula (NL. fem. n. *mirabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp902631395*. The type genome for the species is the GenBank assembly RS_GCF_902623385.1. The GC content of the type genome is 53.92 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Luminiphilus molecimonas sp. nov.

Candidatus Luminiphilus molecimonas (NL. fem. n. *molecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002390485*. The type genome for the species is the GenBank assembly GCA_002389625.1. The GC content of the type genome is 53.7 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Luminiphilus peropitrix sp. nov.

Candidatus Luminiphilus peropitrix (NL. fem. n. *peropitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp013911345*. The type genome for the species is the GenBank assembly GCA_013911345.1. The GC content of the type genome is 57.28 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Luminiphilus pomifastra sp. nov.

Candidatus Luminiphilus pomifastra (NL. fem. n. *pomifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002456975*. The type genome for the species is the GenBank assembly GCA_002704305.1. The GC content of the type genome is 53.18 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Luminiphilus remulousia sp. nov.

Candidatus Luminiphilus remulousia (NL. fem. n. *remulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp003331685*. The type genome for the species is the GenBank assembly GCA_003331685.1. The GC content of the type genome is 58.03 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Luminiphilus resalilega sp. nov.

Candidatus Luminiphilus resalilega (NL. fem. n. *resalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp902520195*. The type genome for the species is the GenBank assembly RS_GCF_902520195.1. The GC content of the type genome is 56.19 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Luminiphilus resulentia sp. nov.

Candidatus Luminiphilus resulentia (NL. fem. n. *resulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002703585*. The type genome for the species is the GenBank assembly GCA_002703585.1. The GC content of the type genome is 53.18 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Luminiphilus totidimonia sp. nov.

Candidatus Luminiphilus totidimonia (NL. fem. n. *totidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002683335*. The type genome for the species is the GenBank assembly GCA_002683335.1. The GC content of the type genome is 54.07 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Luminiphilus vanidisca sp. nov.

Candidatus Luminiphilus vanidisca (NL. fem. n. *vanidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp003523185*. The type genome for the species is the GenBank assembly GCA_003523185.1. The GC content of the type genome is 53.23 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Luminiphilus veridiforma sp. nov.

Candidatus Luminiphilus veridiforma (NL. fem. n. *veridiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luminiphilus sp002862405*. The type genome for the species is the GenBank assembly GCA_002862405.1. The GC content of the type genome is 52.68 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Luminiphilus xeropimonia sp. nov.

Candidatus Luminiphilus xeropimonia (NL. fem. n. *xeropimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Luminiphilus sp002696455*. The type genome for the species is the GenBank assembly GCA_002696455.1. The GC content of the type genome is 58.58 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Lunatimonas nivomastra sp. nov.

Candidatus Lunatimonas nivomastra (NL. fem. n. *nivomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lunatimonas sp009797935*. The type genome for the species is the GenBank assembly RS_GCF_009797935.1. The GC content of the type genome is 42.08 % and the genome length is 6.79 Mbp.

Description of *Candidatus* Lupanana cisoressa sp. nov.

Candidatus Lupanana cisoressa (NL. fem. n. *cisoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZDR01 sp012512705*. The type genome for the species is the GenBank assembly GCA_012512705.1. The GC content of the type genome is 45.11 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Lupanana gen. nov.

Candidatus Lupanana (NL. fem. n. *Lupanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZDR01*. The type species for the genus is *Candidatus* Lupanana cisoressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZDR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lupananaceae.

Description of *Candidatus* Lupananaceae fam. nov.

Candidatus Lupananaceae (NL. fem. n. *Lupananaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZDR01.* The type genus for the taxon is *Candidatus* Lupanana .

According to the original version of GTDB R06-RS202, this family belongs to the order

DTU022. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depelidales.

Description of *Candidatus* Lupanella lanigitura sp. nov.

Candidatus Lupanella lanigitura (NL. fem. n. *lanigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10105 sp000995415*. The type genome for the species is the GenBank assembly GCA_001779175.1. The GC content of the type genome is 42.51 % and the genome length is 1.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Lupanella gen. nov.

Candidatus Lupanella (NL. fem. n. *Lupanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10105*. The type species for the genus is *Candidatus* Lupanella lanigitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10105*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lupanellaceae.

Description of *Candidatus* Lupanellaceae fam. nov.

Candidatus Lupanellaceae (NL. fem. n. *Lupanellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10105.* The type genus for the taxon is *Candidatus* Lupanella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10105*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lupanellales.

Description of *Candidatus* Lupanellales ord. nov.

Candidatus Lupanellales (NL. fem. n. *Lupanellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10105.* The type genus for the taxon is *Candidatus* Lupanella .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Lupanida acratedo sp. nov.

Candidatus Lupanida acratedo (NL. fem. n. *acratedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *43-37 sp001897475*. The type genome for the species is the GenBank assembly GCA_001897475.1. The GC content of the type genome is 43.42 % and the genome length is 1.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Lupanida gen. nov.

Candidatus Lupanida (NL. fem. n. *Lupanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *43-37*. The type species for the genus is *Candidatus* Lupanida acratedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *43-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lupanidaceae.

Description of *Candidatus* Lupanidaceae fam. nov.

Candidatus Lupanidaceae (NL. fem. n. *Lupanidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *43-37.* The type genus for the taxon is *Candidatus* Lupanida .

According to the original version of GTDB R06-RS202, this family belongs to the order *43-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lupanidales.

Description of *Candidatus* Lupanidales ord. nov.

Candidatus Lupanidales (NL. fem. n. *Lupanidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *43-37*. The type genus for the taxon is *Candidatus* Lupanida .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Lupanosa cerofivita sp. nov.

Candidatus Lupanosa cerofivita (NL. fem. n. *cerofivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDQA01 sp013042475*. The type genome for the species is the GenBank assembly GCA_013002945.1. The GC content of the type genome is 51.8 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Lupanosa gen. nov.

Candidatus Lupanosa (NL. fem. n. *Lupanosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDQA01*. The type species for the genus is *Candidatus* Lupanosa cerofivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Lupanula nutabibula sp. nov.

Candidatus Lupanula nutabibula (NL. fem. n. *nutabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWAN01 sp903897765*. The type genome for the species is the GenBank assembly GCA_903867545.1. The GC content of the type genome is 43.11 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Lupanula gen. nov.

Candidatus Lupanula (NL. fem. n. *Lupanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWAN01*. The type species for the genus is *Candidatus* Lupanula nutabibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GWF2-35-9. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refuliaceae.

Description of *Candidatus* Lupanula taraxibula sp. nov.

Candidatus Lupanula taraxibula (NL. fem. n. *taraxibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWAN01 sp903910705*. The type genome for the species is the GenBank assembly GCA_903860705.1. The GC content of the type genome is 45.04 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Luteibacter decucilega sp. nov.

Candidatus Luteibacter decucilega (NL. fem. n. *decucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteibacter sp011759605*. The type genome for the species is the GenBank assembly RS_GCF_011759605.1. The GC content of the type genome is 65.76 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Luteibacter exhorimonia sp. nov.

Candidatus Luteibacter exhorimonia (NL. fem. n. *exhorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteibacter sp009912395*. The type genome for the species is the GenBank assembly GCA_009912395.1. The GC content of the type genome is 65.16 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Luteibacter faticitia sp. nov.

Candidatus Luteibacter faticitia (NL. fem. n. *faticitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteibacter sp000745055*. The type genome for the species is the GenBank assembly RS_GCF_900102405.1. The GC content of the type genome is 64.95 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Luteibacter ficedigena sp. nov.

Candidatus Luteibacter ficedigena (NL. fem. n. *ficedigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteibacter sp900119235*. The type genome for the species is the GenBank assembly RS_GCF_900119235.1. The GC content of the type genome is 64.84 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Luteibacter maledousia sp. nov.

Candidatus Luteibacter maledousia (NL. fem. n. *maledousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteibacter sp014192715*. The type genome for the species is the GenBank assembly RS_GCF_014192715.1. The GC content of the type genome is 63.0 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Luteibacter opporitura sp. nov.

Candidatus Luteibacter opporitura (NL. fem. n. *opporitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteibacter sp000745005*. The type genome for the species is the GenBank assembly RS_GCF_000745005.1. The GC content of the type genome is 66.24 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Luteibacter pabilibula sp. nov.

Candidatus Luteibacter pabilibula (NL. fem. n. *pabilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteibacter sp003050935*. The type genome for the species is the GenBank assembly RS_GCF_003050935.1. The GC content of the type genome is 64.13 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Luteibacter semilitio sp. nov.

Candidatus Luteibacter semilitio (NL. fem. n. *semilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteibacter sp900110505*. The type genome for the species is the GenBank assembly RS_GCF_900110505.1. The GC content of the type genome is 67.67 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Luteibacter voragitudo sp. nov.

Candidatus Luteibacter voragitudo (NL. fem. n. *voragitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteibacter sp900109915*. The type genome for the species is the GenBank assembly RS_GCF_900109915.1. The GC content of the type genome is 66.95 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Luteimonas artocilenta sp. nov.

Candidatus Luteimonas artocilenta (NL. fem. n. *artocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp012515985*. The type genome for the species is the GenBank assembly GCA_012515985.1. The GC content of the type genome is 69.78 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Luteimonas aruspatica sp. nov.

Candidatus Luteimonas aruspatica (NL. fem. n. *aruspatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp002307375*. The type genome for the species is the GenBank assembly RS_GCF_002307375.1. The GC content of the type genome is 68.26 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Luteimonas capabentia sp. nov.

Candidatus Luteimonas capabentia (NL. fem. n. *capabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Luteimonas sp014192745*. The type genome for the species is the GenBank assembly RS_GCF_014192745.1. The GC content of the type genome is 69.15 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Luteimonas cobaletta sp. nov.

Candidatus Luteimonas cobaletta (NL. fem. n. *cobaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp012510865*. The type genome for the species is the GenBank assembly GCA_012510865.1. The GC content of the type genome is 71.73 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Luteimonas conamigena sp. nov.

Candidatus Luteimonas conamigena (NL. fem. n. *conamigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp000472505*. The type genome for the species is the GenBank assembly RS_GCF_007829385.1. The GC content of the type genome is 71.93 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Luteimonas curabousia sp. nov.

Candidatus Luteimonas curabousia (NL. fem. n. *curabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp002324875*. The type genome for the species is the GenBank assembly RS_GCF_002324875.1. The GC content of the type genome is 68.9 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Luteimonas defaretta sp. nov.

Candidatus Luteimonas defaretta (NL. fem. n. *defaretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp008312895*. The type genome for the species is the GenBank assembly RS_GCF_008312895.1. The GC content of the type genome is 68.76 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Luteimonas depeticula sp. nov.

Candidatus Luteimonas depeticula (NL. fem. n. *depeticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp902506295*. The type genome for the species is the GenBank assembly RS_GCF_902506295.1. The GC content of the type genome is 68.69 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Luteimonas lanigifica sp. nov.

Candidatus Luteimonas lanigifica (NL. fem. n. *lanigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp008244685*. The type genome for the species is the GenBank assembly RS_GCF_008244685.1. The GC content of the type genome is 69.9 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Luteimonas ludifitas sp. nov.

Candidatus Luteimonas ludifitas (NL. fem. n. *ludifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp001717465*. The type genome for the species is the GenBank assembly RS_GCF_001717465.1. The GC content of the type genome is 69.05 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Luteimonas ludifitudo sp. nov.

Candidatus Luteimonas ludifitudo (NL. fem. n. *ludifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp013425525*. The type genome for the species is the GenBank assembly RS_GCF_013425525.1. The GC content of the type genome is 70.42 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Luteimonas myalgugo sp. nov.

Candidatus Luteimonas myalgugo (NL. fem. n. *myalgugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp001683895*. The type genome for the species is the GenBank assembly GCA_001683895.1. The GC content of the type genome is 70.27 % and the genome length is 2.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Antarctic Hypolithon".

Description of *Candidatus* Luteimonas negiditrix sp. nov.

Candidatus Luteimonas negiditrix (NL. fem. n. *negiditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp004118975*. The type genome for the species is the GenBank assembly RS_GCF_004118975.1. The GC content of the type genome is 69.34 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Luteimonas obvalessa sp. nov.

Candidatus Luteimonas obvalessa (NL. fem. n. *obvalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp013425765*. The type genome for the species is the GenBank assembly RS_GCF_013425765.1. The GC content of the type genome is 69.27 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Luteimonas peridax sp. nov.

Candidatus Luteimonas peridax (NL. fem. n. *peridax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp002849595*. The type genome for the species is the GenBank assembly RS_GCF_002849595.1. The GC content of the type genome is 69.55 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Luteimonas sacopiforma sp. nov.

Candidatus Luteimonas sacopiforma (NL. fem. n. *sacopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp007859305*. The type genome for the species is the GenBank assembly GCA_012729915.1. The GC content of the type genome is 72.32 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Luteimonas tenililega sp. nov.

Candidatus Luteimonas tenililega (NL. fem. n. *tenililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp002798175*. The type genome for the species is the GenBank assembly RS_GCF_002798175.1. The GC content of the type genome is 69.32 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Luteimonas tolutedo sp. nov.

Candidatus Luteimonas tolutedo (NL. fem. n. *tolutedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp001014645*. The type genome for the species is the GenBank assembly RS_GCF_001014645.1. The GC content of the type genome is 71.05 % and the genome length is 3.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sediment".

Description of *Candidatus* Luteimonas vitifigena sp. nov.

Candidatus Luteimonas vitifigena (NL. fem. n. *vitifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas sp014212025*. The type genome for the species is the GenBank assembly RS_GCF_014212025.1. The GC content of the type genome is 69.63 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Luteimonas adlapitio sp. nov.

Candidatus Luteimonas adlapitio (NL. fem. n. *adlapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas_B sp003416885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003416885.1. The GC content of the type genome is 70.9 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Luteimonas carecousia sp. nov.

Candidatus Luteimonas carecousia (NL. fem. n. *carecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas_B sp011320095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011320095.1. The GC content of the type genome is 68.22 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Luteimonas desucatio sp. nov.

Candidatus Luteimonas desucatio (NL. fem. n. *desucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas_B sp004297225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004297225.1. The GC content of the type genome is 68.47 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Luteimonas saxificella sp. nov.

Candidatus Luteimonas saxificella (NL. fem. n. *saxificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas_B sp009792795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009792795.1. The GC content of the type genome is 66.79 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Luteimonas inadfifica sp. nov.

Candidatus Luteimonas inadfifica (NL. fem. n. *inadfifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteimonas_C sp902825775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902825775.1. The GC content of the type genome is 64.48 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Luteitalea assucastra sp. nov.

Candidatus Luteitalea assucastra (NL. fem. n. *assucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteitalea sp013695405*. The type genome for the species is the GenBank assembly GCA_013695405.1. The GC content of the type genome is 68.75 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Luteitalea inobricella sp. nov.

Candidatus Luteitalea inobricella (NL. fem. n. *inobricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteitalea sp001464065*. The type genome for the species is the GenBank assembly GCA_001464065.1. The GC content of the type genome is 69.95 % and the genome length is 5.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Luteococcus hirunimonia sp. nov.

Candidatus Luteococcus hirunimonia (NL. fem. n. *hirunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Luteococcus sp002387005*. The type genome for the species is the GenBank assembly GCA_002387005.1. The GC content of the type genome is 67.93 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Lutibacter adrecisca sp. nov.

Candidatus Lutibacter adrecisca (NL. fem. n. *adrecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp012524075*. The type genome for the species is the GenBank assembly RS_GCF_012524075.1. The GC content of the type genome is 30.28 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Lutibacter appugibra sp. nov.

Candidatus Lutibacter appugibra (NL. fem. n. *appugibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp004195315*. The type genome for the species is the GenBank assembly GCA_004195315.1. The GC content of the type genome is 30.08 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Lutibacter bipatitia sp. nov.

Candidatus Lutibacter bipatitia (NL. fem. n. *bipatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp004121075*. The type genome for the species is the GenBank assembly RS_GCF_004121075.1. The GC content of the type genome is 31.09 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Lutibacter cenobivita sp. nov.

Candidatus Lutibacter cenobivita (NL. fem. n. *cenobivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp013139515*. The type genome for the species is the GenBank assembly GCA_013139515.1. The GC content of the type genome is 29.7 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Lutibacter enimvago sp. nov.

Candidatus Lutibacter enimvago (NL. fem. n. *enimvago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp002390165*. The type genome for the species is the GenBank assembly GCA_002390165.1. The GC content of the type genome is 29.11 %

and the genome length is 2.47 Mbp.

Description of *Candidatus* Lutibacter furibibula sp. nov.

Candidatus Lutibacter furibibula (NL. fem. n. *furibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp002842505*. The type genome for the species is the GenBank assembly GCA_002842505.1. The GC content of the type genome is 34.87 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Lutibacter lacinentia sp. nov.

Candidatus Lutibacter lacinentia (NL. fem. n. *lacinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp001800975*. The type genome for the species is the GenBank assembly GCA_001800975.1. The GC content of the type genome is 35.12 % and the genome length is 3.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Lutibacter ludimiforma sp. nov.

Candidatus Lutibacter ludimiforma (NL. fem. n. *ludimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp002733285*. The type genome for the species is the GenBank assembly GCA_002732565.1. The GC content of the type genome is 30.85 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Lutibacter reduniforma sp. nov.

Candidatus Lutibacter reduniforma (NL. fem. n. *reduniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp003516285*. The type genome for the species is the GenBank assembly GCA_003516285.1. The GC content of the type genome is 35.31 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Lutibacter resupedo sp. nov.

Candidatus Lutibacter resupedo (NL. fem. n. *resupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp010906935*. The type genome for the species is the GenBank assembly GCA_010906935.1. The GC content of the type genome is 34.28 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Lutibacter subadimonia sp. nov.

Candidatus Lutibacter subadimonia (NL. fem. n. *subadimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutibacter sp013041805*. The type genome for the species is the GenBank assembly GCA_013041805.1. The GC content of the type genome is 30.43 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Luticana vecoribra sp. nov.

Candidatus Luticana vecoribra (NL. fem. n. *vecoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADIR01 sp013151245*. The type genome for the species is the GenBank assembly GCA_013151245.1. The GC content of the type genome is 40.92 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Luticana gen. nov.

Candidatus Luticana (NL. fem. n. *Luticana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADIR01*. The type species for the genus is *Candidatus* Luticana vecoribra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Luticaria recorifica sp. nov.

Candidatus Luticaria recorifica (NL. fem. n. *recorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3906 sp002391555*. The type genome for the species is the GenBank assembly GCA_002391555.1. The GC content of the type genome is 40.82 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Luticaria gen. nov.

Candidatus Luticaria (NL. fem. n. *Luticaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3906*. The type species for the genus is *Candidatus* Luticaria recorifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU083*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petulellaceae.

Description of *Candidatus* Luticia luculatica sp. nov.

Candidatus Luticia luculatica (NL. fem. n. *luculatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OPU3-GD-OMZ sp012965425*. The type genome for the species is the GenBank assembly GCA_012964185.1. The GC content of the type genome is 42.07 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Luticia gen. nov.

Candidatus Luticia (NL. fem. n. *Luticia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OPU3-GD-OMZ*. The type species for the genus is *Candidatus* Luticia luculatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Luticia peribitas sp. nov.

Candidatus Luticia peribitas (NL. fem. n. *peribitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OPU3-GD-OMZ sp012959905*. The type genome for the species is the GenBank assembly GCA_012959905.1. The GC content of the type genome is 42.67 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Luticia tabifatica sp. nov.

Candidatus Luticia tabifatica (NL. fem. n. *tabifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OPU3-GD-OMZ sp001901525*. The type genome for the species is the GenBank assembly GCA_001901525.1. The GC content of the type genome is 42.32 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Luticida accenigena sp. nov.

Candidatus Luticida accenigena (NL. fem. n. *accenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9219 sp003504035*. The type genome for the species is the GenBank assembly GCA_003504035.1. The GC content of the type genome is 46.33 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Luticida gen. nov.

Candidatus Luticida (NL. fem. n. *Luticida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9219*. The type species for the genus is *Candidatus* Luticida accenigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9219*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luticidaceae.

Description of *Candidatus* Luticidaceae fam. nov.

Candidatus Luticidaceae (NL. fem. n. *Luticidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9219.* The type genus for the taxon is *Candidatus* Luticida .

According to GTDB R06-RS202, this family belongs to the order *Micavibrionales_A*.

Description of *Candidatus* Luticosa dicanicula sp. nov.

Candidatus Luticosa dicanicula (NL. fem. n. *dicanicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MarineAlpha5-Bin3 sp902577425*. The type genome for the species is the GenBank assembly GCA_902630545.1. The GC content of the type genome is 28.24 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Luticosa gen. nov.

Candidatus Luticosa (NL. fem. n. *Luticosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MarineAlpha5-Bin3*. The type species for the genus is *Candidatus* Luticosa dicanicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002718135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defululaceae.

Description of *Candidatus* Luticosa relenigena sp. nov.

Candidatus Luticosa relenigena (NL. fem. n. *relenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MarineAlpha5-Bin3 sp902596065*. The type genome for the species is the GenBank assembly GCA_902596065.1. The GC content of the type genome is 28.29 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Luticosa remeditia sp. nov.

Candidatus Luticosa remeditia (NL. fem. n. *remeditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MarineAlpha5-Bin3 sp902567855*. The type genome for the species is the GenBank assembly GCA_902567855.1. The GC content of the type genome is 28.34 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Luticosa visififica sp. nov.

Candidatus Luticosa visififica (NL. fem. n. *visififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MarineAlpha5-Bin3 sp002938255*. The type genome for the species is the GenBank assembly GCA_002937975.1. The GC content of the type genome is 30.77 % and the genome length is 0.45 Mbp.

Description of *Candidatus* Luticula admurisca sp. nov.

Candidatus Luticula admurisca (NL. fem. n. *admurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-474 sp003251775*. The type genome for the species is the GenBank assembly GCA_003251775.1. The GC content of the type genome is 34.29 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Luticula gen. nov.

Candidatus Luticula (NL. fem. n. *Luticula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-474*. The type species for the genus is *Candidatus* Luticula admurisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-474*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luticulaceae.

Description of *Candidatus* Luticulaceae fam. nov.

Candidatus Luticulaceae (NL. fem. n. *Luticulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-474.* The type genus for the taxon is *Candidatus* Luticula .

According to GTDB R06-RS202, this family belongs to the order *Acetivibrionales*.

Description of *Candidatus* Lutimaribacter advigitudo sp. nov.

Candidatus Lutimaribacter advigitudo (NL. fem. n. *advigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutimaribacter sp009924775*. The type genome for the species is the GenBank assembly GCA_009924775.1. The GC content of the type genome is 60.18 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Lutimaribacter inlapitia sp. nov.

Candidatus Lutimaribacter inlapitia (NL. fem. n. *inlapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lutimaribacter sp000526275*. The type genome for the species is the GenBank assembly RS_GCF_000526275.1. The GC content of the type genome is 63.94 % and the genome length is 4.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Lutulana regigitudo sp. nov.

Candidatus Lutulana regigitudo (NL. fem. n. *regigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRKV01 sp011051635*. The type genome for the species is the GenBank assembly GCA_011051635.1. The GC content of the type genome is 62.17 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Lutulana gen. nov.

Candidatus Lutulana (NL. fem. n. *Lutulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRKV01*. The type species for the genus is *Candidatus* Lutulana regigitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRKV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lutulanaceae.

Description of *Candidatus* Lutulanaceae fam. nov.

Candidatus Lutulanaceae (NL. fem. n. *Lutulanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRKV01*. The type genus for the taxon is *Candidatus* Lutulana .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Lutulella democastra sp. nov.

Candidatus Lutulella democastra (NL. fem. n. *democastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2134 sp002471805*. The type genome for the species is the GenBank assembly GCA_002327705.1. The GC content of the type genome is 42.89 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Lutulella gen. nov.

Candidatus Lutulella (NL. fem. n. *Lutulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2134*. The type species for the genus is *Candidatus* Lutulella democastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1611*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilariaceae.

Description of *Candidatus* Lutulella tametivita sp. nov.

Candidatus Lutulella tametivita (NL. fem. n. *tametivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2134 sp002718285*. The type genome for the species is the GenBank assembly GCA_002718285.1. The GC content of the type genome is 33.04 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Lutulia nugiventia sp. nov.

Candidatus Lutulia nugiventia (NL. fem. n. *nugiventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1225 sp900549725*. The type genome for the species is the GenBank assembly RS_GCF_900763125.1. The GC content of the type genome is 54.32 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Lutulia gen. nov.

Candidatus Lutulia (NL. fem. n. *Lutulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1225*. The type species for the genus is *Candidatus* Lutulia nugiventia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Lutulida bipenatio sp. nov.

Candidatus Lutulida bipenatio (NL. fem. n. *bipenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6065 sp002428865*. The type genome for the species is the GenBank assembly GCA_002428865.1. The GC content of the type genome is 49.0 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Lutulida gen. nov.

Candidatus Lutulida (NL. fem. n. *Lutulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6065*. The type species for the genus is *Candidatus* Lutulida bipenatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lutulidaceae.

Description of *Candidatus* Lutulidaceae fam. nov.

Candidatus Lutulidaceae (NL. fem. n. *Lutulidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6065.* The type genus for the taxon is *Candidatus* Lutulida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Lutulosa defacitio sp. nov.

Candidatus Lutulosa defacitio (NL. fem. n. *defacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-43-210 sp002783585*. The type genome for the species is the GenBank assembly GCA_002783585.1. The GC content of the type genome is 42.51 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Lutulosa gen. nov.

Candidatus Lutulosa (NL. fem. n. *Lutulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-43-210*. The type species for the genus is *Candidatus* Lutulosa defacitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-43-210*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lutulosaceae.

Description of *Candidatus* Lutulosaceae fam. nov.

Candidatus Lutulosaceae (NL. fem. n. *Lutulosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG1-02-43-210.* The type genus for the taxon is *Candidatus* Lutulosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG1-02-43-210*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lutulosales.

Description of *Candidatus* Lutulosales ord. nov.

Candidatus Lutulosales (NL. fem. n. *Lutulosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG1-02-43-210.* The type genus for the taxon is *Candidatus* Lutulosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Lutulula adrenicula sp. nov.

Candidatus Lutulula adrenicula (NL. fem. n. *adrenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCC01 sp009782315*. The type genome for the species is the GenBank assembly GCA_009782315.1. The GC content of the type genome is 51.29 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Lutulula gen. nov.

Candidatus Lutulula (NL. fem. n. *Lutulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRCC01*. The type species for the genus is *Candidatus* Lutulula adrenicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Rs-D84*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delapiaceae.

Description of *Candidatus* Lutulula asbesetta sp. nov.

Candidatus Lutulula asbesetta (NL. fem. n. *asbesetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCC01 sp009777955*. The type genome for the species is the GenBank assembly GCA_009777955.1. The GC content of the type genome is 43.61 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Lutulula cohuritica sp. nov.

Candidatus Lutulula cohuritica (NL. fem. n. *cohuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCC01 sp009784235*. The type genome for the species is the GenBank assembly GCA_009784235.1. The GC content of the type genome is 45.82 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Lutulula desepitrix sp. nov.

Candidatus Lutulula desepitrix (NL. fem. n. *desepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCC01 sp009782725*. The type genome for the species is the GenBank assembly GCA_009782725.1. The GC content of the type genome is 47.55 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Lutulula dinupitura sp. nov.

Candidatus Lutulula dinupitura (NL. fem. n. *dinupitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCC01 sp009783855*. The type genome for the species is the GenBank assembly GCA_009783855.1. The GC content of the type genome is 51.39 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Lutulula ininnitica sp. nov.

Candidatus Lutulula ininnitica (NL. fem. n. *ininnitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRCC01 sp009785765*. The type genome for the species is the GenBank assembly GCA_009785765.1. The GC content of the type genome is 42.55 % and the genome length is 0.51 Mbp.

Description of *Candidatus* Luxurana nubifedo sp. nov.

Candidatus Luxurana nubifedo (NL. fem. n. *nubifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2705 sp002690045*. The type genome for the species is the GenBank assembly GCA_002321835.1. The GC content of the type genome is 44.1 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Luxurana gen. nov.

Candidatus Luxurana (NL. fem. n. *Luxurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2705*. The type species for the genus is *Candidatus* Luxurana nubifedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Luxurana resacatio sp. nov.

Candidatus Luxurana resacatio (NL. fem. n. *resacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2705 sp002354205*. The type genome for the species is the GenBank assembly GCA_002354205.1. The GC content of the type genome is 45.37 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Luxuraria adfanessa sp. nov.

Candidatus Luxuraria adfanessa (NL. fem. n. *adfanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902619165*. The type genome for the species is the GenBank assembly GCA_902619165.1. The GC content of the type genome is 36.97 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Luxuraria gen. nov.

Candidatus Luxuraria (NL. fem. n. *Luxuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACIJG01*. The type species for the genus is *Candidatus* Luxuraria

adfanessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Luxuraria adsocousia sp. nov.

Candidatus Luxuraria adsocousia (NL. fem. n. *adsocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp003331935*. The type genome for the species is the GenBank assembly GCA_003331935.1. The GC content of the type genome is 37.28 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Luxuraria antipitudo sp. nov.

Candidatus Luxuraria antipitudo (NL. fem. n. *antipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902576905*. The type genome for the species is the GenBank assembly GCA_902576905.1. The GC content of the type genome is 37.08 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Luxuraria bipalitudo sp. nov.

Candidatus Luxuraria bipalitudo (NL. fem. n. *bipalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902596605*. The type genome for the species is the GenBank assembly GCA_902596605.1. The GC content of the type genome is 36.8 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Luxuraria deculitudo sp. nov.

Candidatus Luxuraria deculitudo (NL. fem. n. *deculitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902537215*. The type genome for the species is the GenBank assembly GCA_902537215.1. The GC content of the type genome is 36.81 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Luxuraria divoritrix sp. nov.

Candidatus Luxuraria divoritrix (NL. fem. n. *divoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902556405*. The type genome for the species is the GenBank assembly GCA_902556405.1. The GC content of the type genome is 37.01 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Luxuraria imbelilega sp. nov.

Candidatus Luxuraria imbelilega (NL. fem. n. *imbelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902580265*. The type genome for the species is the GenBank assembly GCA_902580265.1. The GC content of the type genome is 36.65 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Luxuraria innumibra sp. nov.

Candidatus Luxuraria innumibra (NL. fem. n. *innumibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902524845*. The type genome for the species is the GenBank assembly GCA_902524845.1. The GC content of the type genome is 37.37 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Luxuraria intorigena sp. nov.

Candidatus Luxuraria intorigena (NL. fem. n. *intorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902596985*. The type genome for the species is the GenBank assembly GCA_902596985.1. The GC content of the type genome is 37.02 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Luxuraria lavabitoga sp. nov.

Candidatus Luxuraria lavabitoga (NL. fem. n. *lavabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902540655*. The type genome for the species is the GenBank assembly GCA_902540655.1. The GC content of the type genome is 36.74 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Luxuraria levifastra sp. nov.

Candidatus Luxuraria levifastra (NL. fem. n. *levifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902537415*. The type genome for the species is the GenBank assembly GCA_902537415.1. The GC content of the type genome is 36.9 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Luxuraria maleditas sp. nov.

Candidatus Luxuraria maleditas (NL. fem. n. *maleditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902530595*. The type genome for the species is the GenBank assembly GCA_902530595.1. The GC content of the type genome is 37.2 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Luxuraria megalibra sp. nov.

Candidatus Luxuraria megalibra (NL. fem. n. *megalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902524655*. The type genome for the species is the GenBank assembly GCA_902524655.1. The GC content of the type genome is 36.66 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Luxuraria metuciforma sp. nov.

Candidatus Luxuraria metuciforma (NL. fem. n. *metuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CACIJG01 sp902611475*. The type genome for the species is the GenBank assembly GCA_902611475.1. The GC content of the type genome is 36.86 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Luxuraria milificella sp. nov.

Candidatus Luxuraria milificella (NL. fem. n. *milificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902567635*. The type genome for the species is the GenBank assembly GCA_902567635.1. The GC content of the type genome is 35.73 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Luxuraria milifitura sp. nov.

Candidatus Luxuraria milifitura (NL. fem. n. *milifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp002703515*. The type genome for the species is the GenBank assembly GCA_002703515.1. The GC content of the type genome is 36.84 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Luxuraria minurigena sp. nov.

Candidatus Luxuraria minurigena (NL. fem. n. *minurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902584635*. The type genome for the species is the GenBank assembly GCA_902584635.1. The GC content of the type genome is 36.7 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Luxuraria nicomax sp. nov.

Candidatus Luxuraria nicomax (NL. fem. n. *nicomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902581005*. The type genome for the species is the GenBank assembly GCA_902581005.1. The GC content of the type genome is 36.93 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Luxuraria nocumiforma sp. nov.

Candidatus Luxuraria nocumiforma (NL. fem. n. *nocumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902560505*. The type genome for the species is the GenBank assembly GCA_902560505.1. The GC content of the type genome is 36.94 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Luxuraria obsatitia sp. nov.

Candidatus Luxuraria obsatitia (NL. fem. n. *obsatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902586885*. The type genome for the species is the GenBank assembly GCA_902586885.1. The GC content of the type genome is 35.79 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Luxuraria rubicitoga sp. nov.

Candidatus Luxuraria rubicitoga (NL. fem. n. *rubicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902537235*. The type genome for the species is the GenBank assembly GCA_902537235.1. The GC content of the type genome is 36.95 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Luxuraria tribrilenta sp. nov.

Candidatus Luxuraria tribrilenta (NL. fem. n. *tribrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902574225*. The type genome for the species is the GenBank assembly GCA_902574225.1. The GC content of the type genome is 36.9 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Luxuraria undevastra sp. nov.

Candidatus Luxuraria undevastra (NL. fem. n. *undevastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIJG01 sp902531755*. The type genome for the species is the GenBank assembly GCA_902531755.1. The GC content of the type genome is 36.78 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Luxurella artifatio sp. nov.

Candidatus Luxurella artifatio (NL. fem. n. *artifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747355 sp002747355*. The type genome for the species is the GenBank assembly GCA_002747355.1. The GC content of the type genome is 66.81 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Luxurella gen. nov.

Candidatus Luxurella (NL. fem. n. *Luxurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2747355*. The type species for the genus is *Candidatus* Luxurella artifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2747355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luxurellaceae.

Description of *Candidatus* Luxurellaceae fam. nov.

Candidatus Luxurellaceae (NL. fem. n. *Luxurellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2747355.* The type genus for the taxon is *Candidatus* Luxurella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2747355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Luxurellales.

Description of *Candidatus* Luxurellales ord. nov.

Candidatus Luxurellales (NL. fem. n. *Luxurellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2747355.* The type genus for the taxon is *Candidatus* Luxurella .

According to the GTDB R06-RS202, this order belongs to the class *Polyangia*.

Description of *Candidatus* Luxurida arnacicula sp. nov.

Candidatus Luxurida arnacicula (NL. fem. n. *arnacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LFER01 sp902633655*. The type genome for the species is the GenBank assembly RS_GCF_902633655.1. The GC content of the type genome is 43.08 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Luxurida gen. nov.

Candidatus Luxurida (NL. fem. n. *Luxurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LFER01*. The type species for the genus is *Candidatus* Luxurida arnacicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Luxurida vatiledo sp. nov.

Candidatus Luxurida vatiledo (NL. fem. n. *vatiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LFER01 sp001510135*. The type genome for the species is the GenBank assembly GCA_008081285.1. The GC content of the type genome is 49.88 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Luxurida vicatatica sp. nov.

Candidatus Luxurida vicatatica (NL. fem. n. *vicatatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LFER01 sp011525185*. The type genome for the species is the

GenBank assembly GCA_011525185.1. The GC content of the type genome is 49.63 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Luxurosa gerunentia sp. nov.

Candidatus Luxurosa gerunentia (NL. fem. n. *gerunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WS-7 sp005893165*. The type genome for the species is the GenBank assembly GCA_005893195.1. The GC content of the type genome is 66.98 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Luxurosa gen. nov.

Candidatus Luxurosa (NL. fem. n. *Luxurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WS-7*. The type species for the genus is *Candidatus* Luxurosa gerunentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-252*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamanaceae.

Description of *Candidatus* Luxurosa manibimonia sp. nov.

Candidatus Luxurosa manibimonia (NL. fem. n. *manibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WS-7 sp005893275*. The type genome for the species is the GenBank assembly GCA_005893275.1. The GC content of the type genome is 66.25 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Luxurosa saxifago sp. nov.

Candidatus Luxurosa saxifago (NL. fem. n. *saxifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WS-7 sp005893265*. The type genome for the species is the GenBank assembly GCA_005893265.1. The GC content of the type genome is 65.52 % and the

genome length is 2.48 Mbp.

Description of *Candidatus* Luxurula endivitoga sp. nov.

Candidatus Luxurula endivitoga (NL. fem. n. *endivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AqS3 sp001750645*. The type genome for the species is the GenBank assembly GCA_001750645.1. The GC content of the type genome is 61.91 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Luxurula gen. nov.

Candidatus Luxurula (NL. fem. n. *Luxurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AqS3*. The type species for the genus is *Candidatus* Luxurula endivitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AqS3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luxurulaceae.

Description of *Candidatus* Luxurulaceae fam. nov.

Candidatus Luxurulaceae (NL. fem. n. *Luxurulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AqS3.* The type genus for the taxon is *Candidatus* Luxurula .

According to the original version of GTDB R06-RS202, this family belongs to the order *AqS3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Luxurulales.

Description of *Candidatus* Luxurulales ord. nov.

Candidatus Luxurulales (NL. fem. n. *Luxurulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AqS3.* The type genus for the taxon is *Candidatus* Luxurula .

According to the GTDB R06-RS202, this order belongs to the class

Gammaproteobacteria.

Description of *Candidatus* Lyngbya incorigena sp. nov.

Candidatus Lyngbya incorigena (NL. fem. n. *incorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lyngbya sp000169095*. The type genome for the species is the GenBank assembly RS_GCF_000169095.1. The GC content of the type genome is 41.11 % and the genome length is 7.04 Mbp.

Description of *Candidatus* Lysinibacillus bugilitica sp. nov.

Candidatus Lysinibacillus bugilitica (NL. fem. n. *bugilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinibacillus sp002237755*. The type genome for the species is the GenBank assembly RS_GCF_002237755.1. The GC content of the type genome is 36.63 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Lysinibacillus cacopastra sp. nov.

Candidatus Lysinibacillus cacopastra (NL. fem. n. *cacopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinibacillus sp001275675*. The type genome for the species is the GenBank assembly RS_GCF_001275675.1. The GC content of the type genome is 36.84 % and the genome length is 5.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Lysinibacillus hexapitica sp. nov.

Candidatus Lysinibacillus hexapitica (NL. fem. n. *hexapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinibacillus sp006864135*. The type genome for the species is the GenBank assembly GCA_004338635.1. The GC content of the type genome is 36.76 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Lysinibacillus invesitia sp. nov.

Candidatus Lysinibacillus invesitia (NL. fem. n. *invesitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinibacillus sp009724685*. The type genome for the species is the GenBank assembly RS_GCF_009724685.1. The GC content of the type genome is 37.15 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Lysinibacillus nutamitudo sp. nov.

Candidatus Lysinibacillus nutamitudo (NL. fem. n. *nutamitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinibacillus sp002973635*. The type genome for the species is the GenBank assembly GCA_002973635.1. The GC content of the type genome is 36.54 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Lysinibacillus recuciforma sp. nov.

Candidatus Lysinibacillus recuciforma (NL. fem. n. *recuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinibacillus sp002340205*. The type genome for the species is the GenBank assembly GCA_002340205.1. The GC content of the type genome is 36.77 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Lysinibacillus relapimonas sp. nov.

Candidatus Lysinibacillus relapimonas (NL. fem. n. *relapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinibacillus sp001308875*. The type genome for the species is the GenBank assembly RS_GCF_001308875.1. The GC content of the type genome is 37.03 % and the genome length is 4.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sediments".

Description of *Candidatus* Lysinibacillus subinax sp. nov.

Candidatus Lysinibacillus subinax (NL. fem. n. *subinax* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinibacillus sp001278875*. The type genome for the species is the GenBank assembly RS_GCF_001278875.1. The GC content of the type genome is 36.6 % and the genome length is 5.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Lysinibacillus obsigatio sp. nov.

Candidatus Lysinibacillus obsigatio (NL. fem. n. *obsigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinibacillus_B sp002359075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002359075.1. The GC content of the type genome is 42.1 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Lysinimonas detecibra sp. nov.

Candidatus Lysinimonas detecibra (NL. fem. n. *detecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinimonas_A sp002325245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002416035.1. The GC content of the type genome is 69.77 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Lysinimonas inlacitura sp. nov.

Candidatus Lysinimonas inlacitura (NL. fem. n. *inlacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysinimonas_A sp011620705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011620705.1. The GC content of the type genome is 69.62 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Lysobacter adpugedo sp. nov.

Candidatus Lysobacter adpugedo (NL. fem. n. *adpugedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp004322525*. The type genome for the species is the GenBank assembly GCA_004322525.1. The GC content of the type genome is 67.03 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Lysobacter ancipilenta sp. nov.

Candidatus Lysobacter ancipilenta (NL. fem. n. *ancipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp902805755*. The type genome for the species is the GenBank assembly GCA_902805755.1. The GC content of the type genome is 67.46 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Lysobacter andabifica sp. nov.

Candidatus Lysobacter andabifica (NL. fem. n. *andabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp000426005*. The type genome for the species is the GenBank assembly RS_GCF_000426005.1. The GC content of the type genome is 66.75 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Lysobacter apercitica sp. nov.

Candidatus Lysobacter apercitica (NL. fem. n. *apercitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp900107375*. The type genome for the species is the GenBank assembly RS_GCF_900107375.1. The GC content of the type genome is 70.39 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Lysobacter ardifibra sp. nov.

Candidatus Lysobacter ardifibra (NL. fem. n. *ardifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp004361065*. The type genome for the species is the GenBank assembly RS_GCF_004361065.1. The GC content of the type genome is 67.91 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Lysobacter calipibula sp. nov.

Candidatus Lysobacter calipibula (NL. fem. n. *calipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp001830245*. The type genome for the species is the GenBank assembly GCA_001830245.1. The GC content of the type genome is 69.21 % and the genome length is 3.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point A".

Description of *Candidatus* Lysobacter cucuratica sp. nov.

Candidatus Lysobacter cucuratica (NL. fem. n. *cucuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp003719825*. The type genome for the species is the GenBank assembly RS_GCF_003719825.1. The GC content of the type genome is 67.72 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Lysobacter demadibula sp. nov.

Candidatus Lysobacter demadibula (NL. fem. n. *demadibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp001429785*. The type genome for the species is the GenBank assembly RS_GCF_001429785.1. The GC content of the type genome is 68.41 % and the genome length is 4.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Lysobacter encepifica sp. nov.

Candidatus Lysobacter encepifica (NL. fem. n. *encepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp003367355*. The type genome for the species is the GenBank assembly RS_GCF_003367355.1. The GC content of the type genome is 67.58 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Lysobacter enuntibra sp. nov.

Candidatus Lysobacter enuntibra (NL. fem. n. *enuntibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp013361435*. The type genome for the species is the GenBank assembly GCA_013361435.1. The GC content of the type genome is 68.94 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Lysobacter expopatio sp. nov.

Candidatus Lysobacter expopatio (NL. fem. n. *expopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp005503055*. The type genome for the species is the GenBank assembly RS_GCF_005503055.1. The GC content of the type genome is 67.47 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Lysobacter exurredo sp. nov.

Candidatus Lysobacter exurredo (NL. fem. n. *exurredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp000855665*. The type genome for the species is the GenBank assembly RS_GCF_000855665.1. The GC content of the type genome is 65.81 % and the genome length is 2.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Decomposing penguin feathers".

Description of *Candidatus* Lysobacter indifilega sp. nov.

Candidatus Lysobacter indifilega (NL. fem. n. *indifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp003382365*. The type genome for the species is the

GenBank assembly RS_GCF_003382365.1. The GC content of the type genome is 69.23 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Lysobacter inforitoga sp. nov.

Candidatus Lysobacter inforitoga (NL. fem. n. *inforitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp003586305*. The type genome for the species is the GenBank assembly RS_GCF_003586305.1. The GC content of the type genome is 71.63 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Lysobacter inhosibula sp. nov.

Candidatus Lysobacter inhosibula (NL. fem. n. *inhosibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp001427785*. The type genome for the species is the GenBank assembly RS_GCF_001427785.1. The GC content of the type genome is 66.16 % and the genome length is 6.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Lysobacter molecitas sp. nov.

Candidatus Lysobacter molecitas (NL. fem. n. *molecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp014145395*. The type genome for the species is the GenBank assembly RS_GCF_014145395.1. The GC content of the type genome is 68.76 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Lysobacter octipigena sp. nov.

Candidatus Lysobacter octipigena (NL. fem. n. *octipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp014489475*. The type genome for the species is the GenBank assembly RS_GCF_014489475.1. The GC content of the type genome is 68.27 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Lysobacter panifessa sp. nov.

Candidatus Lysobacter panifessa (NL. fem. n. *panifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp008274655*. The type genome for the species is the GenBank assembly RS_GCF_008274655.1. The GC content of the type genome is 68.03 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Lysobacter pulegimonas sp. nov.

Candidatus Lysobacter pulegimonas (NL. fem. n. *pulegimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp001428685*. The type genome for the species is the GenBank assembly RS_GCF_001429315.1. The GC content of the type genome is 68.43 % and the genome length is 4.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Lysobacter risibax sp. nov.

Candidatus Lysobacter risibax (NL. fem. n. *risibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp900114355*. The type genome for the species is the GenBank assembly RS_GCF_900114355.1. The GC content of the type genome is 68.8 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Lysobacter semibitrix sp. nov.

Candidatus Lysobacter semibitrix (NL. fem. n. *semibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp001427225*. The type genome for the species is the GenBank assembly RS_GCF_001427225.1. The GC content of the type genome is 65.27 % and the genome length is 3.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Lysobacter visibastra sp. nov.

Candidatus Lysobacter visibastra (NL. fem. n. *visibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter sp009765215*. The type genome for the species is the GenBank assembly RS_GCF_009765215.1. The GC content of the type genome is 66.46 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Lysobacter annifax sp. nov.

Candidatus Lysobacter annifax (NL. fem. n. *annifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter_A sp009740395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009740395.1. The GC content of the type genome is 66.36 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Lysobacter andabatio sp. nov.

Candidatus Lysobacter andabatio (NL. fem. n. *andabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter_B sp002798295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002798295.1. The GC content of the type genome is 60.27 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Lysobacter arremugo sp. nov.

Candidatus Lysobacter arremugo (NL. fem. n. *arremugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter_B sp011300685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011300685.1. The GC content of the type genome is 56.82 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Lysobacter duricago sp. nov.

Candidatus Lysobacter duricago (NL. fem. n. *duricago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter_B sp002798195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002798195.1. The GC content of the type genome is 60.06 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Lysobacter lubenibula sp. nov.

Candidatus Lysobacter lubenibula (NL. fem. n. *lubenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter_B sp002798275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002798335.1. The GC content of the type genome is 60.0 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Lysobacter thapsitio sp. nov.

Candidatus Lysobacter thapsitio (NL. fem. n. *thapsitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Lysobacter_B sp002798255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002798255.1. The GC content of the type genome is 60.46 % and the genome length is 2.38 Mbp.

Description of *Candidatus* MONJU redacifica sp. nov.

Candidatus MONJU redacifica (NL. fem. n. *redacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *MONJU sp000801295*. The type genome for the species is the

GenBank assembly RS_GCF_000801295.1. The GC content of the type genome is 65.06 % and the genome length is 2.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Kairei Hydrothermal Field; Central Indian Ridge".

Description of *Candidatus* MONJU subabicula sp. nov.

Candidatus MONJU subabicula (NL. fem. n. *subabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *MONJU sp003696905*. The type genome for the species is the GenBank assembly GCA_003696905.1. The GC content of the type genome is 63.32 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Macilana conopilenta sp. nov.

Candidatus Macilana conopilenta (NL. fem. n. *conopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYRB01 sp903928445*. The type genome for the species is the GenBank assembly GCA_903921265.1. The GC content of the type genome is 56.33 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Macilana gen. nov.

Candidatus Macilana (NL. fem. n. *Macilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYRB01*. The type species for the genus is *Candidatus* Macilana conopilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RGVZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conopulaceae.

Description of *Candidatus* Macilana laciniforma sp. nov.

Candidatus Macilana laciniforma (NL. fem. n. *laciniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIYRB01 sp903915625*. The type genome for the species is the GenBank assembly GCA_903915625.1. The GC content of the type genome is 50.99 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Macilana penuritudo sp. nov.

Candidatus Macilana penuritudo (NL. fem. n. *penuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYRB01 sp900299215*. The type genome for the species is the GenBank assembly GCA_900299215.1. The GC content of the type genome is 50.2 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Macilaria metabitio sp. nov.

Candidatus Macilaria metabitio (NL. fem. n. *metabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-45-14 sp001804785*. The type genome for the species is the GenBank assembly GCA_001804785.1. The GC content of the type genome is 46.24 % and the genome length is 3.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Macilaria gen. nov.

Candidatus Macilaria (NL. fem. n. *Macilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-45-14*. The type species for the genus is *Candidatus* Macilaria metabitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-45-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilariaceae.

Description of *Candidatus* Macilariaceae fam. nov.

Candidatus Macilariaceae (NL. fem. n. *Macilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *GWF2-45-14*. The type genus for the taxon is *Candidatus* Macilaria .

According to GTDB R06-RS202, this family belongs to the order *Victivallales*.

Description of *Candidatus* Macilella laculugo sp. nov.

Candidatus Macilella laculugo (NL. fem. n. *laculugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-159 sp003551965*. The type genome for the species is the GenBank assembly GCA_003551965.1. The GC content of the type genome is 55.57 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Macilella gen. nov.

Candidatus Macilella (NL. fem. n. *Macilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1SED10-159*. The type species for the genus is *Candidatus* Macilella laculugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B1SED10-159*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilellaceae.

Description of *Candidatus* Macilellaceae fam. nov.

Candidatus Macilellaceae (NL. fem. n. *Macilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B1SED10-159.* The type genus for the taxon is *Candidatus* Macilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ducilidales.

Description of *Candidatus* Macilia dilemitoga sp. nov.

Candidatus Macilia dilemitoga (NL. fem. n. *dilemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA4312 sp002394635*. The type genome for the species is the GenBank assembly GCA_002394635.1. The GC content of the type genome is 42.33 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Macilia gen. nov.

Candidatus Macilia (NL. fem. n. *Macilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4312*. The type species for the genus is *Candidatus* Macilia dilemitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Macilida defarivita sp. nov.

Candidatus Macilida defarivita (NL. fem. n. *defarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs170 sp005777315*. The type genome for the species is the GenBank assembly GCA_005800335.1. The GC content of the type genome is 57.87 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Macilida gen. nov.

Candidatus Macilida (NL. fem. n. *Macilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-120-MAGs170*. The type species for the genus is *Candidatus* Macilida defarivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F1-12-MAGs170*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilicidaceae.

Description of *Candidatus* Macilida volubitrix sp. nov.

Candidatus Macilida volubitrix (NL. fem. n. *volubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs170 sp009695275*. The type genome for the species is

the GenBank assembly GCA_009695275.1. The GC content of the type genome is 57.64 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Macilosa inobratio sp. nov.

Candidatus Macilosa inobratio (NL. fem. n. *inobratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11320 sp003452185*. The type genome for the species is the GenBank assembly GCA_003452185.1. The GC content of the type genome is 66.43 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Macilosa gen. nov.

Candidatus Macilosa (NL. fem. n. *Macilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11320*. The type species for the genus is *Candidatus* Macilosa inobratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11320*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilosaceae.

Description of *Candidatus* Macilosaceae fam. nov.

Candidatus Macilosaceae (NL. fem. n. *Macilosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11320.* The type genus for the taxon is *Candidatus* Macilosa .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Macondimonas bipinatio sp. nov.

Candidatus Macondimonas bipinatio (NL. fem. n. *bipinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Macondimonas sp002862965*. The type genome for the species is the GenBank assembly GCA_002862965.1. The GC content of the type genome is 66.88 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Macondimonas inguritura sp. nov.

Candidatus Macondimonas inguritura (NL. fem. n. *inguritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Macondimonas sp011620145*. The type genome for the species is the GenBank assembly GCA_011620145.1. The GC content of the type genome is 64.05 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Macondimonas mahemivita sp. nov.

Candidatus Macondimonas mahemivita (NL. fem. n. *mahemivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Macondimonas sp002862435*. The type genome for the species is the GenBank assembly GCA_002862435.1. The GC content of the type genome is 63.33 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Macrococcus pecunitica sp. nov.

Candidatus Macrococcus pecunitica (NL. fem. n. *pecunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Macrococcus sp002438305*. The type genome for the species is the GenBank assembly GCA_002438305.1. The GC content of the type genome is 41.64 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Macrococcus colutilenta sp. nov.

Candidatus Macrococcus colutilenta (NL. fem. n. *colutilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Macrococcus_B sp004117835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004117835.1. The GC content of the type genome is 32.88 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Magnetaquicoccus cerebiforma sp. nov.

Candidatus Magnetaquicoccus cerebiforma (NL. fem. n. *cerebiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetaquicoccus sp002753135*. The type genome for the species is the GenBank assembly GCA_002753135.1. The GC content of the type genome is 55.32 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Magnetaquicoccus pomifilega sp. nov.

Candidatus Magnetaquicoccus pomifilega (NL. fem. n. *pomifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetaquicoccus sp002753095*. The type genome for the species is the GenBank assembly GCA_002753095.1. The GC content of the type genome is 55.67 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Magnetobacterium exhedicula sp. nov.

Candidatus Magnetobacterium exhedicula (NL. fem. n. *exhedicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetobacterium sp002753685*. The type genome for the species is the GenBank assembly GCA_002753685.1. The GC content of the type genome is 49.04 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Magnetobacterium maxumetta sp. nov.

Candidatus Magnetobacterium maxumetta (NL. fem. n. *maxumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetobacterium sp002753395*. The type genome for the species is the GenBank assembly GCA_002753395.1. The GC content of the type genome is 44.44 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Magnetomorum insomitas sp. nov.

Candidatus Magnetomorum insomitas (NL. fem. n. *insomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetomorum sp002753725*. The type genome for the species is the GenBank assembly GCA_002753725.1. The GC content of the type genome is 38.47 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Magnetospira metucitica sp. nov.

Candidatus Magnetospira metucitica (NL. fem. n. *metucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetospira sp000968135*. The type genome for the species is the GenBank assembly RS_GCF_000968135.1. The GC content of the type genome is 59.44 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Magnetospirillum cuticimonas sp. nov.

Candidatus Magnetospirillum cuticimonas (NL. fem. n. *cuticimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetospirillum sp903941095*. The type genome for the species is the GenBank assembly GCA_903941095.1. The GC content of the type genome is 66.32 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Magnetospirillum detunitio sp. nov.

Candidatus Magnetospirillum detunitio (NL. fem. n. *detunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetospirillum sp014380005*. The type genome for the species is the GenBank assembly GCA_014380005.1. The GC content of the type genome is 63.93 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Magnetospirillum lanigitica sp. nov.

Candidatus Magnetospirillum lanigitica (NL. fem. n. *lanigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetospirillum sp902729435*. The type genome for the species is the GenBank assembly RS_GCF_902729435.1. The GC content of the type genome is

68.88 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Magnetospirillum lapilisca sp. nov.

Candidatus Magnetospirillum lapilisca (NL. fem. n. *lapilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetospirillum sp006218045*. The type genome for the species is the GenBank assembly GCA_006218045.1. The GC content of the type genome is 63.92 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Magnetospirillum omnipitia sp. nov.

Candidatus Magnetospirillum omnipitia (NL. fem. n. *omnipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetospirillum sp002435715*. The type genome for the species is the GenBank assembly GCA_002435715.1. The GC content of the type genome is 62.79 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Magnetospirillum revecivita sp. nov.

Candidatus Magnetospirillum revecivita (NL. fem. n. *revecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetospirillum sp001898825*. The type genome for the species is the GenBank assembly GCA_001898825.1. The GC content of the type genome is 63.98 % and the genome length is 4.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Magnetospirillum venefitica sp. nov.

Candidatus Magnetospirillum venefitica (NL. fem. n. *venefitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetospirillum sp014379805*. The type genome for the species is the GenBank assembly GCA_014379805.1. The GC content of the type genome is 63.78 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Magnetovibrio impudugo sp. nov.

Candidatus Magnetovibrio impudugo (NL. fem. n. *impudugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetovibrio sp002732845*. The type genome for the species is the GenBank assembly GCA_002732845.1. The GC content of the type genome is 49.58 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Magnetovibrio turibugo sp. nov.

Candidatus Magnetovibrio turibugo (NL. fem. n. *turibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Magnetovibrio sp002401565*. The type genome for the species is the GenBank assembly GCA_002401565.1. The GC content of the type genome is 49.06 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Mahelana subabousia sp. nov.

Candidatus Mahelana subabousia (NL. fem. n. *subabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MarineAlpha5-Bin12 sp002937855*. The type genome for the species is the GenBank assembly GCA_002715915.1. The GC content of the type genome is 28.14 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Mahelana gen. nov.

Candidatus Mahelana (NL. fem. n. *Mahelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MarineAlpha5-Bin12*. The type species for the genus is *Candidatus* Mahelana subabousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002718135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defululaceae.

Description of *Candidatus* Mahelaria allubago sp. nov.

Candidatus Mahelaria allubago (NL. fem. n. *allubago* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9627 sp001800605*. The type genome for the species is the GenBank assembly GCA_001800605.1. The GC content of the type genome is 33.97 % and the genome length is 2.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Mahelaria gen. nov.

Candidatus Mahelaria (NL. fem. n. *Mahelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9627*. The type species for the genus is *Candidatus* Mahelaria allubago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8919*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didaciaceae.

Description of *Candidatus* Mahelaria denunastra sp. nov.

Candidatus Mahelaria denunastra (NL. fem. n. *denunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9627 sp003452965*. The type genome for the species is the GenBank assembly GCA_001800565.1. The GC content of the type genome is 33.54 % and the genome length is 1.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Mahelella arcitax sp. nov.

Candidatus Mahelella arcitax (NL. fem. n. *arcitax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10169 sp003505155*. The type genome for the species is the GenBank assembly GCA_003505155.1. The GC content of the type genome is 54.19 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Mahelella gen. nov.

Candidatus Mahelella (NL. fem. n. *Mahelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10169*. The type species for the genus is *Candidatus* Mahelella arcitax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10169*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mahelellaceae.

Description of *Candidatus* Mahelellaceae fam. nov.

Candidatus Mahelellaceae (NL. fem. n. *Mahelellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10169.* The type genus for the taxon is *Candidatus* Mahelella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Mahelia celamifica sp. nov.

Candidatus Mahelia celamifica (NL. fem. n. *celamifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZJ450 sp011751885*. The type genome for the species is the GenBank assembly RS_GCF_011751885.1. The GC content of the type genome is 66.7 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Mahelia gen. nov.

Candidatus Mahelia (NL. fem. n. *Mahelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZJ450*. The type species for the genus is *Candidatus* Mahelia celamifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mahelia notacitudo sp. nov.

Candidatus Mahelia notacitudo (NL. fem. n. *notacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZJ450 sp009755725*. The type genome for the species is the GenBank assembly RS_GCF_009755725.1. The GC content of the type genome is 66.48 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Mahelida cilotigena sp. nov.

Candidatus Mahelida cilotigena (NL. fem. n. *cilotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1409 sp002338885*. The type genome for the species is the GenBank assembly GCA_900542865.1. The GC content of the type genome is 49.07 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Mahelida gen. nov.

Candidatus Mahelida (NL. fem. n. *Mahelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1409*. The type species for the genus is *Candidatus* Mahelida cilotigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mahelida detunivita sp. nov.

Candidatus Mahelida detunivita (NL. fem. n. *detunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1409 sp900553675*. The type genome for the species is the GenBank assembly GCA_900553675.1. The GC content of the type genome is 47.47 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Mahelida elastitura sp. nov.

Candidatus Mahelida elastitura (NL. fem. n. *elastitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1409 sp900760125*. The type genome for the species is the GenBank assembly RS_GCF_900760125.1. The GC content of the type genome is 47.55 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Mahelida pinifatio sp. nov.

Candidatus Mahelida pinifatio (NL. fem. n. *pinifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1409 sp002491605*. The type genome for the species is the GenBank assembly GCA_002491605.1. The GC content of the type genome is 44.59 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Mahelida senipicula sp. nov.

Candidatus Mahelida senipicula (NL. fem. n. *senipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1409 sp002305045*. The type genome for the species is the GenBank assembly GCA_002305045.1. The GC content of the type genome is 51.1 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Mahelosa divulitudo sp. nov.

Candidatus Mahelosa divulitudo (NL. fem. n. *divulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6016 sp002428055*. The type genome for the species is the GenBank assembly GCA_002428055.1. The GC content of the type genome is 42.23 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Mahelosa gen. nov.

Candidatus Mahelosa (NL. fem. n. *Mahelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6016*. The type species for the genus is *Candidatus* Mahelosa

divulitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6016*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mahelosaceae.

Description of *Candidatus* Mahelosaceae fam. nov.

Candidatus Mahelosaceae (NL. fem. n. *Mahelosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6016.* The type genus for the taxon is *Candidatus* Mahelosa .

According to GTDB R06-RS202, this family belongs to the order *Campylobacterales*.

Description of *Candidatus* Mahelula agripitudo sp. nov.

Candidatus Mahelula agripitudo (NL. fem. n. *agripitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTIG01 sp011334535*. The type genome for the species is the GenBank assembly GCA_011334535.1. The GC content of the type genome is 41.91 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Mahelula gen. nov.

Candidatus Mahelula (NL. fem. n. *Mahelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTIG01*. The type species for the genus is *Candidatus* Mahelula agripitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTIG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mahelulaceae.

Description of *Candidatus* Mahelulaceae fam. nov.

Candidatus Mahelulaceae (NL. fem. n. *Mahelulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTIG01.* The type genus for the taxon is *Candidatus* Mahelula .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTIG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Mahelulales.

Description of *Candidatus* Mahelulales ord. nov.

Candidatus Mahelulales (NL. fem. n. *Mahelulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTIG01.* The type genus for the taxon is *Candidatus* Mahelula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Panifidae.

Description of *Candidatus* Mahemana cacopiforma sp. nov.

Candidatus Mahemana cacopiforma (NL. fem. n. *cacopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0422 sp001553345*. The type genome for the species is the GenBank assembly RS_GCF_003992235.1. The GC content of the type genome is 39.36 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Mahemana gen. nov.

Candidatus Mahemana (NL. fem. n. *Mahemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F0422*. The type species for the genus is *Candidatus* Mahemana cacopiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mahemana cadavilega sp. nov.

Candidatus Mahemana cadavilega (NL. fem. n. *cadavilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0422 sp900544365*. The type genome for the species is the GenBank

assembly GCA_900544365.1. The GC content of the type genome is 39.09 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Mahemana denorimonia sp. nov.

Candidatus Mahemana denorimonia (NL. fem. n. *denorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0422 sp003992315*. The type genome for the species is the GenBank assembly RS_GCF_003992315.1. The GC content of the type genome is 39.44 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Mahemana dirititica sp. nov.

Candidatus Mahemana dirititica (NL. fem. n. *dirititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0422 sp003999875*. The type genome for the species is the GenBank assembly RS_GCF_900759775.1. The GC content of the type genome is 40.56 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Mahemana holisentia sp. nov.

Candidatus Mahemana holisentia (NL. fem. n. *holisentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0422 sp900766245*. The type genome for the species is the GenBank assembly RS_GCF_900766245.1. The GC content of the type genome is 39.55 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Mahemana manufitudo sp. nov.

Candidatus Mahemana manufitudo (NL. fem. n. *manufitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0422 sp003992005*. The type genome for the species is the GenBank assembly RS_GCF_003992005.1. The GC content of the type genome is 39.49 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Mahemana penicugo sp. nov.

Candidatus Mahemana penicugo (NL. fem. n. *penicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0422 sp003992015*. The type genome for the species is the GenBank assembly RS_GCF_003992085.1. The GC content of the type genome is 39.54 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Mahemana tirunigena sp. nov.

Candidatus Mahemana tirunigena (NL. fem. n. *tirunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0422 sp003992055*. The type genome for the species is the GenBank assembly RS_GCF_003992255.1. The GC content of the type genome is 39.41 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Mahemana utpotousia sp. nov.

Candidatus Mahemana utpotousia (NL. fem. n. *utpotousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0422 sp003992135*. The type genome for the species is the GenBank assembly RS_GCF_003992135.1. The GC content of the type genome is 39.08 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Mahemaria ascisitoga sp. nov.

Candidatus Mahemaria ascisitoga (NL. fem. n. *ascisitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-793 sp013333395*. The type genome for the species is the GenBank assembly GCA_013333395.2. The GC content of the type genome is 28.87 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Mahemaria gen. nov.

Candidatus Mahemaria (NL. fem. n. *Mahemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-793*. The type species for the genus is *Candidatus* Mahemaria ascisitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Mahemaria divolifica sp. nov.

Candidatus Mahemaria divolifica (NL. fem. n. *divolifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-793 sp013333035*. The type genome for the species is the GenBank assembly GCA_013333035.2. The GC content of the type genome is 27.1 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Mahemaria epistetta sp. nov.

Candidatus Mahemaria epistetta (NL. fem. n. *epistetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-793 sp900557475*. The type genome for the species is the GenBank assembly GCA_900557475.1. The GC content of the type genome is 28.56 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Mahemaria munifisca sp. nov.

Candidatus Mahemaria munifisca (NL. fem. n. *munifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-793 sp000433915*. The type genome for the species is the GenBank assembly GCA_000433915.1. The GC content of the type genome is 29.01 % and the genome length is 1.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Mahemaria subodago sp. nov.

Candidatus Mahemaria subodago (NL. fem. n. *subodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-793 sp002393975*. The type genome for the species is the GenBank assembly GCA_002393975.1. The GC content of the type genome is 29.26 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Mahemaria tegumatica sp. nov.

Candidatus Mahemaria tegumatica (NL. fem. n. *tegumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-793 sp902766085*. The type genome for the species is the GenBank assembly GCA_902766085.1. The GC content of the type genome is 28.64 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Mahemella devecicula sp. nov.

Candidatus Mahemella devecicula (NL. fem. n. *devecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG191 sp002373675*. The type genome for the species is the GenBank assembly GCA_002373475.1. The GC content of the type genome is 36.19 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Mahemella gen. nov.

Candidatus Mahemella (NL. fem. n. *Mahemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG191*. The type species for the genus is *Candidatus* Mahemella devecicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mahemella feculessa sp. nov.

Candidatus Mahemella feculessa (NL. fem. n. *feculessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG191 sp900315945*. The type genome for the species is the

GenBank assembly GCA_900315945.1. The GC content of the type genome is 35.2 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Mahemella tomogicula sp. nov.

Candidatus Mahemella tomogicula (NL. fem. n. *tomogicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG191 sp900316395*. The type genome for the species is the GenBank assembly GCA_900316395.1. The GC content of the type genome is 38.34 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Mahemia podagitoga sp. nov.

Candidatus Mahemia podagitoga (NL. fem. n. *podagitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-21 sp001792305*. The type genome for the species is the GenBank assembly GCA_001793085.1. The GC content of the type genome is 38.63 % and the genome length is 0.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Mahemia gen. nov.

Candidatus Mahemia (NL. fem. n. *Mahemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-21*. The type species for the genus is *Candidatus* Mahemia podagitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Mahemia rubecitas sp. nov.

Candidatus Mahemia rubecitas (NL. fem. n. *rubecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *2-01-FULL-39-21 sp001792535*. The type genome for the species is the GenBank assembly GCA_001792935.1. The GC content of the type genome is 41.66 % and the genome length is 1.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Mahemida dilecibula sp. nov.

Candidatus Mahemida dilecibula (NL. fem. n. *dilecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLTB01 sp007122315*. The type genome for the species is the GenBank assembly GCA_003565395.1. The GC content of the type genome is 64.55 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Mahemida gen. nov.

Candidatus Mahemida (NL. fem. n. *Mahemida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLTB01*. The type species for the genus is *Candidatus* Mahemida dilecibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Mahemida hecatitura sp. nov.

Candidatus Mahemida hecatitura (NL. fem. n. *hecatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLTB01 sp007131295*. The type genome for the species is the GenBank assembly GCA_007125095.1. The GC content of the type genome is 64.83 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Mahemida necubilega sp. nov.

Candidatus Mahemida necubilega (NL. fem. n. *necubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLTB01 sp007694905*. The type genome for the species is the GenBank assembly GCA_007694905.1. The GC content of the type genome is 64.54 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Mahemida valefitoga sp. nov.

Candidatus Mahemida valefitoga (NL. fem. n. *valefitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLTB01 sp007130155*. The type genome for the species is the GenBank assembly GCA_007130155.1. The GC content of the type genome is 63.51 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Mahemosa dilemisca sp. nov.

Candidatus Mahemosa dilemisca (NL. fem. n. *dilemisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2712005 sp002712005*. The type genome for the species is the GenBank assembly GCA_002435165.1. The GC content of the type genome is 37.62 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Mahemosa gen. nov.

Candidatus Mahemosa (NL. fem. n. *Mahemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2712005*. The type species for the genus is *Candidatus* Mahemosa dilemisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mahemula paropastra sp. nov.

Candidatus Mahemula paropastra (NL. fem. n. *paropastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKHN01 sp903827265*. The type genome for the species is the GenBank assembly GCA_903825905.1. The GC content of the type genome is 50.81 %

and the genome length is 0.94 Mbp.

Description of *Candidatus* Mahemula gen. nov.

Candidatus Mahemula (NL. fem. n. *Mahemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKHN01*. The type species for the genus is *Candidatus* Mahemula paropastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9934*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivanaceae.

Description of *Candidatus* Mailhella apercifica sp. nov.

Candidatus Mailhella apercifica (NL. fem. n. *apercifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mailhella sp902783285*. The type genome for the species is the GenBank assembly GCA_902783285.1. The GC content of the type genome is 62.62 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Mailhella attorastra sp. nov.

Candidatus Mailhella attorastra (NL. fem. n. *attorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mailhella sp900553065*. The type genome for the species is the GenBank assembly GCA_900553065.1. The GC content of the type genome is 58.43 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Mailhella diponatio sp. nov.

Candidatus Mailhella diponatio (NL. fem. n. *diponatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mailhella sp003150275*. The type genome for the species is the GenBank assembly GCA_003150275.1. The GC content of the type genome is 58.93 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Mailhella exadvitura sp. nov.

Candidatus Mailhella exadvitura (NL. fem. n. *exadvitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mailhella sp900555975*. The type genome for the species is the GenBank assembly GCA_900555975.1. The GC content of the type genome is 59.28 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Mailhella lugubivita sp. nov.

Candidatus Mailhella lugubivita (NL. fem. n. *lugubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mailhella sp900770205*. The type genome for the species is the GenBank assembly RS_GCF_900770205.1. The GC content of the type genome is 52.58 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Mailhella rorifax sp. nov.

Candidatus Mailhella rorifax (NL. fem. n. *rorifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mailhella sp900541395*. The type genome for the species is the GenBank assembly GCA_003343975.1. The GC content of the type genome is 62.37 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Mailhella volubitio sp. nov.

Candidatus Mailhella volubitio (NL. fem. n. *volubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mailhella sp003512875*. The type genome for the species is the GenBank assembly GCA_003512875.1. The GC content of the type genome is 43.86 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Malaciobacter cucurastra sp. nov.

Candidatus Malaciobacter cucurastra (NL. fem. n. *cucurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Malaciobacter sp004116725*. The type genome for the species is the GenBank assembly RS_GCF_004116725.1. The GC content of the type genome is 27.12 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Malaciobacter inremimonas sp. nov.

Candidatus Malaciobacter inremimonas (NL. fem. n. *inremimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Malaciobacter sp004116495*. The type genome for the species is the GenBank assembly RS_GCF_004116495.1. The GC content of the type genome is 26.55 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Malacoplasma adtenetta sp. nov.

Candidatus Malacoplasma adtenetta (NL. fem. n. *adtenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Malacoplasma_A sp902782585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902782585.1. The GC content of the type genome is 25.19 % and the genome length is 0.55 Mbp.

Description of *Candidatus* Malacoplasma delubivita sp. nov.

Candidatus Malacoplasma delubivita (NL. fem. n. *delubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Malacoplasma_A sp002372615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902803565.1. The GC content of the type genome is 24.65 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Malacoplasma diponedo sp. nov.

Candidatus Malacoplasma diponedo (NL. fem. n. *diponedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Malacoplasma_A sp900316595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902784005.1. The GC content of the type genome is 26.67 % and the genome length is 0.51 Mbp.

Description of *Candidatus* Malacoplasma incocitia sp. nov.

Candidatus Malacoplasma incocitia (NL. fem. n. *incocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Malacoplasma_A sp902791895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902791895.1. The GC content of the type genome is 28.59 % and the genome length is 0.5 Mbp.

Description of *Candidatus* Malacoplasma monimibula sp. nov.

Candidatus Malacoplasma monimibula (NL. fem. n. *monimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Malacoplasma_A sp902800015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902800015.1. The GC content of the type genome is 27.61 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Malagella cacopitrix sp. nov.

Candidatus Malagella cacopitrix (NL. fem. n. *cacopitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-40-13 sp001789695*. The type genome for the species is the GenBank assembly GCA_001788055.1. The GC content of the type genome is 36.04 % and the genome length is 1.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Malagella gen. nov.

Candidatus Malagella (NL. fem. n. *Malagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-40-13*. The type species for the genus is *Candidatus* Malagella cacopitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Malagella detorimonia sp. nov.

Candidatus Malagella detorimonia (NL. fem. n. *detorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-40-13 sp001789745*. The type genome for the species is the GenBank assembly GCA_001789745.1. The GC content of the type genome is 39.2 % and the genome length is 1.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Malagella monimastra sp. nov.

Candidatus Malagella monimastra (NL. fem. n. *monimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-40-13 sp001788015*. The type genome for the species is the GenBank assembly GCA_001789545.1. The GC content of the type genome is 36.71 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Malagella retecago sp. nov.

Candidatus Malagella retecago (NL. fem. n. *retecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-40-13 sp001789635*. The type genome for the species is

the GenBank assembly GCA_001789285.1. The GC content of the type genome is 35.11 % and the genome length is 1.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Malagella rubefitica sp. nov.

Candidatus Malagella rubefitica (NL. fem. n. *rubefitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-40-13 sp001789645*. The type genome for the species is the GenBank assembly GCA_001789645.1. The GC content of the type genome is 36.33 % and the genome length is 1.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Malagia susiciforma sp. nov.

Candidatus Malagia susiciforma (NL. fem. n. *susiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGQ01 sp013152295*. The type genome for the species is the GenBank assembly GCA_013152295.1. The GC content of the type genome is 53.51 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Malagia gen. nov.

Candidatus Malagia (NL. fem. n. *Malagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGQ01*. The type species for the genus is *Candidatus* Malagia susiciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADGQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malagiaceae.

Description of *Candidatus* Malagiaceae fam. nov.

Candidatus Malagiaceae (NL. fem. n. *Malagiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADGQ01*. The type genus for the taxon is *Candidatus* Malagia .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAADGQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malagiales.

Description of *Candidatus* Malagiales ord. nov.

Candidatus Malagiales (NL. fem. n. *Malagiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADGQ01*. The type genus for the taxon is *Candidatus* Malagia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Malagida benepicella sp. nov.

Candidatus Malagida benepicella (NL. fem. n. *benepicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXUL01 sp009691765*. The type genome for the species is the GenBank assembly GCA_009691765.1. The GC content of the type genome is 60.64 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Malagida gen. nov.

Candidatus Malagida (NL. fem. n. *Malagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXUL01*. The type species for the genus is *Candidatus* Malagida benepicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002687715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobellaceae.

Description of *Candidatus* Malagida navifivita sp. nov.

Candidatus Malagida navifivita (NL. fem. n. *navifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXUL01 sp005790545*. The type genome for the species is the GenBank assembly GCA_005805155.1. The GC content of the type genome is 64.94 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Malagosa exorcastra sp. nov.

Candidatus Malagosa exorcastra (NL. fem. n. *exorcastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11222 sp003454415*. The type genome for the species is the GenBank assembly GCA_003454415.1. The GC content of the type genome is 59.08 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Malagosa gen. nov.

Candidatus Malagosa (NL. fem. n. *Malagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11222*. The type species for the genus is *Candidatus* Malagosa exorcastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11222*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malagosaceae.

Description of *Candidatus* Malagosaceae fam. nov.

Candidatus Malagosaceae (NL. fem. n. *Malagosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11222.* The type genus for the taxon is *Candidatus* Malagosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11222*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malagosales.

Description of *Candidatus* Malagosales ord. nov.

Candidatus Malagosales (NL. fem. n. *Malagosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11222.* The type genus for the taxon is *Candidatus* Malagosa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Malagosa lavabisca sp. nov.

Candidatus Malagosa lavabisca (NL. fem. n. *lavabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11222 sp009693835*. The type genome for the species is the GenBank assembly GCA_009693835.1. The GC content of the type genome is 58.27 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Malagula bonititura sp. nov.

Candidatus Malagula bonititura (NL. fem. n. *bonititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4093 sp002083825*. The type genome for the species is the GenBank assembly GCA_002382535.1. The GC content of the type genome is 63.89 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Malagula gen. nov.

Candidatus Malagula (NL. fem. n. *Malagula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4093*. The type species for the genus is *Candidatus* Malagula bonititura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4093*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malagulaceae.

Description of *Candidatus* Malagulaceae fam. nov.

Candidatus Malagulaceae (NL. fem. n. *Malagulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4093.* The type genus for the taxon is *Candidatus* Malagula .

According to the original version of GTDB R06-RS202, this family belongs to the order *S15B-MN24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Recumariales.

Description of *Candidatus* Maledana fumifibula sp. nov.

Candidatus Maledana fumifibula (NL. fem. n. *fumifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B15-G4 sp003644265*. The type genome for the species is the GenBank assembly GCA_003644265.1. The GC content of the type genome is 70.4 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Maledana gen. nov.

Candidatus Maledana (NL. fem. n. *Maledana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B15-G4*. The type species for the genus is *Candidatus* Maledana fumifibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B15-G4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maledanaceae.

Description of *Candidatus* Maledanaceae fam. nov.

Candidatus Maledanaceae (NL. fem. n. *Maledanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B15-G4.* The type genus for the taxon is *Candidatus* Maledana .

According to the original version of GTDB R06-RS202, this family belongs to the order *B15-G4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Maledanales.

Description of *Candidatus* Maledanales ord. nov.

Candidatus Maledanales (NL. fem. n. *Maledanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *B15-G4*. The type genus for the taxon is *Candidatus* Maledana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Didacellae.

Description of *Candidatus* Maledaria depocivita sp. nov.

Candidatus Maledaria depocivita (NL. fem. n. *depocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVO01 sp903896775*. The type genome for the species is the GenBank assembly GCA_903896775.1. The GC content of the type genome is 58.33 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Maledaria gen. nov.

Candidatus Maledaria (NL. fem. n. *Maledaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVO01*. The type species for the genus is *Candidatus* Maledaria depocivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Maledaria extunifica sp. nov.

Candidatus Maledaria extunifica (NL. fem. n. *extunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVO01 sp903888485*. The type genome for the species is the GenBank assembly GCA_903888485.1. The GC content of the type genome is 63.1 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Maledaria irremitica sp. nov.

Candidatus Maledaria irremitica (NL. fem. n. *irremitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVO01 sp009694245*. The type genome for the species is the

GenBank assembly GCA_009694245.1. The GC content of the type genome is 61.6 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Maledella capilimonia sp. nov.

Candidatus Maledella capilimonia (NL. fem. n. *capilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLFX01 sp007124045*. The type genome for the species is the GenBank assembly GCA_007124045.1. The GC content of the type genome is 41.57 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Maledella gen. nov.

Candidatus Maledella (NL. fem. n. *Maledella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLFX01*. The type species for the genus is *Candidatus* Maledella capilimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4055*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecariaceae.

Description of *Candidatus* Maledia eclecicula sp. nov.

Candidatus Maledia eclecicula (NL. fem. n. *eclecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-40-38 sp002773535*. The type genome for the species is the GenBank assembly GCA_002773535.1. The GC content of the type genome is 39.72 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Maledia gen. nov.

Candidatus Maledia (NL. fem. n. *Maledia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-40-38*. The type species for the genus is *Candidatus* Maledia eclecicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

1-14-0-10-40-38. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malediaceae.

Description of *Candidatus* Malediaceae fam. nov.

Candidatus Malediaceae (NL. fem. n. *Malediaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-10-40-38.* The type genus for the taxon is *Candidatus* Maledia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Maledida imbecatica sp. nov.

Candidatus Maledida imbecatica (NL. fem. n. *imbecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABABF01 sp014238345*. The type genome for the species is the GenBank assembly GCA_014238345.1. The GC content of the type genome is 57.37 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Maledida gen. nov.

Candidatus Maledida (NL. fem. n. *Maledida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABABF01*. The type species for the genus is *Candidatus* Maledida imbecatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABABF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maledidaceae.

Description of *Candidatus* Maledidaceae fam. nov.

Candidatus Maledidaceae (NL. fem. n. *Maledidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABABF01.* The type genus for the taxon is *Candidatus* Maledida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABABF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Maledidales.

Description of *Candidatus* Maledidales ord. nov.

Candidatus Maledidales (NL. fem. n. *Maledidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABABF01.* The type genus for the taxon is *Candidatus* Maledida .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Maledula domipitura sp. nov.

Candidatus Maledula domipitura (NL. fem. n. *domipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWAM01 sp013360985*. The type genome for the species is the GenBank assembly GCA_013360985.1. The GC content of the type genome is 64.88 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Maledula gen. nov.

Candidatus Maledula (NL. fem. n. *Maledula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWAM01*. The type species for the genus is *Candidatus* Maledula domipitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABWAM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maledulaceae.

Description of *Candidatus* Maledulaceae fam. nov.

Candidatus Maledulaceae (NL. fem. n. *Maledulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWAM01.* The type genus for the taxon is *Candidatus* Maledula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABWAM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Maledulales.

Description of *Candidatus* Maledulales ord. nov.

Candidatus Maledulales (NL. fem. n. *Maledulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWAM01.* The type genus for the taxon is *Candidatus* Maledula .

According to the GTDB R06-RS202, this order belongs to the class *Verrucomicrobiae*.

Description of *Candidatus* Malifaria indomigena sp. nov.

Candidatus Malifaria indomigena (NL. fem. n. *indomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077555 sp001464755*. The type genome for the species is the GenBank assembly GCA_001464755.1. The GC content of the type genome is 64.38 % and the genome length is 5.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Malifaria gen. nov.

Candidatus Malifaria (NL. fem. n. *Malifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077555*. The type species for the genus is *Candidatus* Malifaria indomigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Malifaria lucubilega sp. nov.

Candidatus Malifaria lucubilega (NL. fem. n. *lucubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077555 sp001464855*. The type genome for the species is the

GenBank assembly GCA_001464855.1. The GC content of the type genome is 63.42 % and the genome length is 4.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Malifaria panopicella sp. nov.

Candidatus Malifaria panopicella (NL. fem. n. *panopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077555 sp001464955*. The type genome for the species is the GenBank assembly GCA_001464955.1. The GC content of the type genome is 66.16 % and the genome length is 4.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Malifaria panopitia sp. nov.

Candidatus Malifaria panopitia (NL. fem. n. *panopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077555 sp001464655*. The type genome for the species is the GenBank assembly GCA_001464655.1. The GC content of the type genome is 63.19 % and the genome length is 5.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Malifaria sonabedo sp. nov.

Candidatus Malifaria sonabedo (NL. fem. n. *sonabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077555 sp900117415*. The type genome for the species is the GenBank assembly GCA_001724295.1. The GC content of the type genome is 64.59 % and the genome length is 3.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Malifella homogimonia sp. nov.

Candidatus Malifella homogimonia (NL. fem. n. *homogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11858 sp003513015*. The type genome for the species is the GenBank assembly GCA_003512075.1. The GC content of the type genome is 52.47 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Malifella gen. nov.

Candidatus Malifella (NL. fem. n. *Malifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11858*. The type species for the genus is *Candidatus* Malifella homogimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11858*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifellaceae.

Description of *Candidatus* Malifellaceae fam. nov.

Candidatus Malifellaceae (NL. fem. n. *Malifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11858.* The type genus for the taxon is *Candidatus* Malifella .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Malifia denigitica sp. nov.

Candidatus Malifia denigitica (NL. fem. n. *denigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLH01 sp011370285*. The type genome for the species is the GenBank assembly GCA_011370285.1. The GC content of the type genome is 46.89 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Malifia gen. nov.

Candidatus Malifia (NL. fem. n. *Malifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLH01*. The type species for the genus is *Candidatus* Malifia

denigitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTLH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifiaceae.

Description of *Candidatus* Malifiaceae fam. nov.

Candidatus Malifiaceae (NL. fem. n. *Malifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLH01.* The type genus for the taxon is *Candidatus* Malifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Susicellales.

Description of *Candidatus* Malifia hemititica sp. nov.

Candidatus Malifia hemititica (NL. fem. n. *hemititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLH01 sp011327835*. The type genome for the species is the GenBank assembly GCA_011327835.1. The GC content of the type genome is 48.33 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Malifida demigibula sp. nov.

Candidatus Malifida demigibula (NL. fem. n. *demigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002712965 sp009392815*. The type genome for the species is the GenBank assembly GCA_009392815.1. The GC content of the type genome is 43.58 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Malifida gen. nov.

Candidatus Malifida (NL. fem. n. *Malifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002712965*. The type species for the genus is *Candidatus* Malifida

demigibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivariaceae.

Description of *Candidatus* Malifida practimonas sp. nov.

Candidatus Malifida practimonas (NL. fem. n. *practimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002712965 sp009391195*. The type genome for the species is the GenBank assembly GCA_009391195.1. The GC content of the type genome is 43.76 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Malifida rubefiforma sp. nov.

Candidatus Malifida rubefiforma (NL. fem. n. *rubefiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002712965 sp002696685*. The type genome for the species is the GenBank assembly GCA_002712965.1. The GC content of the type genome is 44.18 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Malifosa adtilitio sp. nov.

Candidatus Malifosa adtilitio (NL. fem. n. *adtilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1336 sp011358605*. The type genome for the species is the GenBank assembly GCA_011358605.1. The GC content of the type genome is 48.5 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Malifosa gen. nov.

Candidatus Malifosa (NL. fem. n. *Malifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1336*. The type species for the genus is *Candidatus* Malifosa adtilitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA920*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denicosaceae.

Description of *Candidatus* Malifosa carucivita sp. nov.

Candidatus Malifosa carucivita (NL. fem. n. *carucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1336 sp903908535*. The type genome for the species is the GenBank assembly GCA_903908535.1. The GC content of the type genome is 46.55 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Malifosa futatimonia sp. nov.

Candidatus Malifosa futatimonia (NL. fem. n. *futatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1336 sp013387205*. The type genome for the species is the GenBank assembly GCA_013387205.1. The GC content of the type genome is 43.01 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Malifosa licenitrix sp. nov.

Candidatus Malifosa licenitrix (NL. fem. n. *licenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1336 sp903913365*. The type genome for the species is the GenBank assembly GCA_903913365.1. The GC content of the type genome is 42.14 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Malifosa siligimonia sp. nov.

Candidatus Malifosa siligimonia (NL. fem. n. *siligimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1336 sp003151625*. The type genome for the species is the GenBank assembly GCA_003151625.1. The GC content of the type genome is 43.15 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Malifula penuredo sp. nov.

Candidatus Malifula penuredo (NL. fem. n. *penuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-39-37 sp000995135*. The type genome for the species is the GenBank assembly GCA_000995135.1. The GC content of the type genome is 38.57 % and the genome length is 0.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Malifula gen. nov.

Candidatus Malifula (NL. fem. n. *Malifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE2-39-37*. The type species for the genus is *Candidatus* Malifula penuredo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWE2-39-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifulaceae.

Description of *Candidatus* Malifulaceae fam. nov.

Candidatus Malifulaceae (NL. fem. n. *Malifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWE2-39-37.* The type genus for the taxon is *Candidatus* Malifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Maligana conigitoga sp. nov.

Candidatus Maligana conigitoga (NL. fem. n. *conigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-43-9 sp001775355*. The type genome for the species is the GenBank assembly GCA_001775355.1. The GC content of the type genome is 43.3 % and the genome length is 1.95 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Maligana gen. nov.

Candidatus Maligana (NL. fem. n. *Maligana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-43-9*. The type species for the genus is *Candidatus* Maligana conigitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-43-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maliganaceae.

Description of *Candidatus* Maliganaceae fam. nov.

Candidatus Maliganaceae (NL. fem. n. *Maliganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-43-9.* The type genus for the taxon is *Candidatus* Maligana .

According to the original version of GTDB R06-RS202, this family belongs to the order *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Loripellales.

Description of *Candidatus* Maligaria ludifastra sp. nov.

Candidatus Maligaria ludifastra (NL. fem. n. *ludifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2562 sp002340345*. The type genome for the species is the GenBank assembly GCA_002340345.1. The GC content of the type genome is 47.94 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Maligaria gen. nov.

Candidatus Maligaria (NL. fem. n. *Maligaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2562*. The type species for the genus is *Candidatus* Maligaria ludifastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2562*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maligariaceae.

Description of *Candidatus* Maligariaceae fam. nov.

Candidatus Maligariaceae (NL. fem. n. *Maligariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2562.* The type genus for the taxon is *Candidatus* Maligaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2562*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Maligariales.

Description of *Candidatus* Maligariales ord. nov.

Candidatus Maligariales (NL. fem. n. *Maligariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2562.* The type genus for the taxon is *Candidatus* Maligaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Maligella assefigena sp. nov.

Candidatus Maligella assefigena (NL. fem. n. *assefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDQX01 sp013042035*. The type genome for the species is the GenBank assembly GCA_013042035.1. The GC content of the type genome is 53.79 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Maligella gen. nov.

Candidatus Maligella (NL. fem. n. *Maligella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDQX01*. The type species for the genus is *Candidatus* Maligella assefigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family

JABDQX01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maligellaceae.

Description of *Candidatus* Maligellaceae fam. nov.

Candidatus Maligellaceae (NL. fem. n. *Maligellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDQX01*. The type genus for the taxon is *Candidatus* Maligella .

According to the original version of GTDB R06-RS202, this family belongs to the order *HK1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rumifiales.

Description of *Candidatus* Maligida cimititia sp. nov.

Candidatus Maligida cimititia (NL. fem. n. *cimititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin07 sp002898135*. The type genome for the species is the GenBank assembly GCA_002898135.1. The GC content of the type genome is 46.98 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Maligida gen. nov.

Candidatus Maligida (NL. fem. n. *Maligida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Bbin07*. The type species for the genus is *Candidatus* Maligida cimititia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-85*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benepiaceae.

Description of *Candidatus* Maligida conififorma sp. nov.

Candidatus Maligida conififorma (NL. fem. n. *conififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *BMS3Bbin07 sp013152195*. The type genome for the species is the GenBank assembly GCA_013152195.1. The GC content of the type genome is 46.88 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Maligida manubentia sp. nov.

Candidatus Maligida manubentia (NL. fem. n. *manubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin07 sp011051565*. The type genome for the species is the GenBank assembly GCA_011051565.1. The GC content of the type genome is 58.14 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Maligida scellitoga sp. nov.

Candidatus Maligida scellitoga (NL. fem. n. *scellitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin07 sp013152485*. The type genome for the species is the GenBank assembly GCA_013152485.1. The GC content of the type genome is 56.1 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Maligida subinedo sp. nov.

Candidatus Maligida subinedo (NL. fem. n. *subinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin07 sp003232715*. The type genome for the species is the GenBank assembly GCA_003232715.1. The GC content of the type genome is 46.04 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Maligosa arbaviforma sp. nov.

Candidatus Maligosa arbaviforma (NL. fem. n. *arbaviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC2028 sp002373975*. The type genome for the species is the GenBank assembly GCA_002373975.1. The GC content of the type genome is 45.64 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Maligosa gen. nov.

Candidatus Maligosa (NL. fem. n. *Maligosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC2028*. The type species for the genus is *Candidatus* Maligosa arbaviforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Maligosa arcelitica sp. nov.

Candidatus Maligosa arcelitica (NL. fem. n. *arcelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC2028 sp002317155*. The type genome for the species is the GenBank assembly GCA_002317155.1. The GC content of the type genome is 40.22 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Maligosa denunessa sp. nov.

Candidatus Maligosa denunessa (NL. fem. n. *denunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC2028 sp902794095*. The type genome for the species is the GenBank assembly GCA_902794095.1. The GC content of the type genome is 44.34 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Maligosa inobsimonas sp. nov.

Candidatus Maligosa inobsimonas (NL. fem. n. *inobsimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC2028 sp000702085*. The type genome for the species is the GenBank assembly RS_GCF_000702085.1. The GC content of the type genome is 44.2 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Maligosa mimogiforma sp. nov.

Candidatus Maligosa mimogiforma (NL. fem. n. *mimogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC2028 sp000702685*. The type genome for the species is the GenBank assembly RS_GCF_000702685.1. The GC content of the type genome is 46.23 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Maligosa nutabitudo sp. nov.

Candidatus Maligosa nutabitudo (NL. fem. n. *nutabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC2028 sp902767075*. The type genome for the species is the GenBank assembly GCA_902767075.1. The GC content of the type genome is 45.29 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Maligosa peradugo sp. nov.

Candidatus Maligosa peradugo (NL. fem. n. *peradugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC2028 sp902761225*. The type genome for the species is the GenBank assembly GCA_902782065.1. The GC content of the type genome is 46.83 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Maligosa ranunitas sp. nov.

Candidatus Maligosa ranunitas (NL. fem. n. *ranunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC2028 sp900320825*. The type genome for the species is the GenBank assembly GCA_900320825.1. The GC content of the type genome is 42.89 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Maligosa saxopitia sp. nov.

Candidatus Maligosa saxopitia (NL. fem. n. *saxopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *AC2028 sp002373595*. The type genome for the species is the GenBank assembly GCA_002373595.1. The GC content of the type genome is 47.12 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Maligosa vitupitio sp. nov.

Candidatus Maligosa vitupitio (NL. fem. n. *vitupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC2028 sp902790935*. The type genome for the species is the GenBank assembly GCA_902790935.1. The GC content of the type genome is 44.22 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Maligula fraglatica sp. nov.

Candidatus Maligula fraglatica (NL. fem. n. *fraglatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADJA01 sp013151015*. The type genome for the species is the GenBank assembly GCA_013151015.1. The GC content of the type genome is 41.42 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Maligula gen. nov.

Candidatus Maligula (NL. fem. n. *Maligula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADJA01*. The type species for the genus is *Candidatus* Maligula fraglatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADJA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maligulaceae.

Description of *Candidatus* Maligulaceae fam. nov.

Candidatus Maligulaceae (NL. fem. n. *Maligulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADJA01.* The type genus for the taxon is *Candidatus* Maligula .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Malivana exculentia sp. nov.

Candidatus Malivana exculentia (NL. fem. n. *exculentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSC4 sp013693795*. The type genome for the species is the GenBank assembly GCA_013693795.1. The GC content of the type genome is 63.9 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Malivana gen. nov.

Candidatus Malivana (NL. fem. n. *Malivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSC4*. The type species for the genus is *Candidatus* Malivana exculentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SSC4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malivanaceae.

Description of *Candidatus* Malivanaceae fam. nov.

Candidatus Malivanaceae (NL. fem. n. *Malivanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SSC4.* The type genus for the taxon is *Candidatus* Malivana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-64-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redacidales.

Description of *Candidatus* Malivaria desepugo sp. nov.

Candidatus Malivaria desepugo (NL. fem. n. *desepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSBX01 sp011049385*. The type genome for the species is the GenBank assembly GCA_011049385.1. The GC content of the type genome is 67.15 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Malivaria gen. nov.

Candidatus Malivaria (NL. fem. n. *Malivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSBX01*. The type species for the genus is *Candidatus* Malivaria desepugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homulosaceae.

Description of *Candidatus* Malivella ridibitica sp. nov.

Candidatus Malivella ridibitica (NL. fem. n. *ridibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXOI01 sp009840175*. The type genome for the species is the GenBank assembly GCA_009840175.1. The GC content of the type genome is 61.76 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Malivella gen. nov.

Candidatus Malivella (NL. fem. n. *Malivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXOI01*. The type species for the genus is *Candidatus* Malivella ridibitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Malivia arcitimonia sp. nov.

Candidatus Malivia arcitimonia (NL. fem. n. *arcitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJO01 sp009839535*. The type genome for the species is the GenBank assembly GCA_009839535.1. The GC content of the type genome is 62.52 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Malivia gen. nov.

Candidatus Malivia (NL. fem. n. *Malivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJO01*. The type species for the genus is *Candidatus* Malivia arcitimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Malivia expecibula sp. nov.

Candidatus Malivia expecibula (NL. fem. n. *expecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJO01 sp013002465*. The type genome for the species is the GenBank assembly GCA_013002465.1. The GC content of the type genome is 59.32 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Malivia mahemousia sp. nov.

Candidatus Malivia mahemousia (NL. fem. n. *mahemousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJO01 sp009838075*. The type genome for the species is the GenBank assembly GCA_009842365.1. The GC content of the type genome is 63.48 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Malivia omnifentia sp. nov.

Candidatus Malivia omnifentia (NL. fem. n. *omnifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJO01 sp009843725*. The type genome for the species is the GenBank assembly GCA_009843725.1. The GC content of the type genome is 62.83 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Malivida alcibentia sp. nov.

Candidatus Malivida alcibentia (NL. fem. n. *alcibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11741 sp003488005*. The type genome for the species is the GenBank assembly GCA_003488005.1. The GC content of the type genome is 54.11 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Malivida gen. nov.

Candidatus Malivida (NL. fem. n. *Malivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11741*. The type species for the genus is *Candidatus* Malivida alcibentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Malivida anactitudo sp. nov.

Candidatus Malivida anactitudo (NL. fem. n. *anactitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11741 sp014380365*. The type genome for the species is the GenBank assembly GCA_014380365.1. The GC content of the type genome is 55.45 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Malivida bicinibula sp. nov.

Candidatus Malivida bicinibula (NL. fem. n. *bicinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11741 sp002427845*. The type genome for the species is the GenBank assembly GCA_002404175.1. The GC content of the type genome is 54.33 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Malivida extipousia sp. nov.

Candidatus Malivida extipousia (NL. fem. n. *extipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA11741 sp013697915*. The type genome for the species is the GenBank assembly GCA_013697915.1. The GC content of the type genome is 54.07 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Malivosa bifaricula sp. nov.

Candidatus Malivosa bifaricula (NL. fem. n. *bifaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG754 sp902780845*. The type genome for the species is the GenBank assembly GCA_902762665.1. The GC content of the type genome is 48.29 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Malivosa gen. nov.

Candidatus Malivosa (NL. fem. n. *Malivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG754*. The type species for the genus is *Candidatus* Malivosa bifaricula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Malivosa refunedo sp. nov.

Candidatus Malivosa refunedo (NL. fem. n. *refunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG754 sp900315895*. The type genome for the species is the GenBank assembly GCA_900322045.1. The GC content of the type genome is 50.85 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Malivosa selibitica sp. nov.

Candidatus Malivosa selibitica (NL. fem. n. *selibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG754 sp902778565*. The type genome for the species is the GenBank assembly GCA_902778565.1. The GC content of the type genome is 48.48 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Malivula haricilenta sp. nov.

Candidatus Malivula haricilenta (NL. fem. n. *haricilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-005 sp001189165*. The type genome for the species is the GenBank assembly GCA_001189165.1. The GC content of the type genome is 43.4 % and the genome length is 0.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Hanford 300 Area IFRC 399-1-60 Groundwater".

Description of *Candidatus* Malivula gen. nov.

Candidatus Malivula (NL. fem. n. *Malivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C7867-005*. The type species for the genus is *Candidatus* Malivula haricilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Malogana depasetta sp. nov.

Candidatus Malogana depasetta (NL. fem. n. *depasetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-53-10 sp001791035*. The type genome for the species is the GenBank assembly GCA_001791035.1. The GC content of the type genome is 53.2 % and the genome length is 0.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Malogana gen. nov.

Candidatus Malogana (NL. fem. n. *Malogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-53-10*. The type species for the genus is *Candidatus* Malogana depasetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11717*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Desomanaceae.

Description of *Candidatus* Malogaria tomacimonas sp. nov.

Candidatus Malogaria tomacimonas (NL. fem. n. *tomacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UJ101 sp001880285*. The type genome for the species is the GenBank assembly RS_GCF_001880285.1. The GC content of the type genome is 30.74 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Malogaria gen. nov.

Candidatus Malogaria (NL. fem. n. *Malogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UJ101*. The type species for the genus is *Candidatus* Malogaria tomacimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UJ101*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malogariaceae.

Description of *Candidatus* Malogariaceae fam. nov.

Candidatus Malogariaceae (NL. fem. n. *Malogariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UJ101.* The type genus for the taxon is *Candidatus* Malogaria .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Malogella metabitudo sp. nov.

Candidatus Malogella metabitudo (NL. fem. n. *metabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-44-17 sp001873565*. The type genome for the species is the GenBank assembly GCA_002783025.1. The GC content of the type genome is 43.67 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Malogella gen. nov.

Candidatus Malogella (NL. fem. n. *Malogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-44-17*. The type species for the genus is *Candidatus* Malogella metabitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12470*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penurariaceae.

Description of *Candidatus* Malogia attematica sp. nov.

Candidatus Malogia attematica (NL. fem. n. *attematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1369 sp002305925*. The type genome for the species is the GenBank assembly GCA_002305925.1. The GC content of the type genome is 51.16 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Malogia gen. nov.

Candidatus Malogia (NL. fem. n. *Malogia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1369*. The type species for the genus is *Candidatus* Malogia attematica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malogiaceae.

Description of *Candidatus* Malogiaceae fam. nov.

Candidatus Malogiaceae (NL. fem. n. *Malogiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1369.* The type genus for the taxon is *Candidatus* Malogia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Malogiales.

Description of *Candidatus* Malogida catiletta sp. nov.

Candidatus Malogida catiletta (NL. fem. n. *catiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-76 sp002011685*. The type genome for the species is the GenBank assembly GCA_002011685.1. The GC content of the type genome is 51.84 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Malogida gen. nov.

Candidatus Malogida (NL. fem. n. *Malogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-76*. The type species for the genus is *Candidatus* Malogida catiletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-76*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malogidaceae.

Description of *Candidatus* Malogidaceae fam. nov.

Candidatus Malogidaceae (NL. fem. n. *Malogidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-76.* The type genus for the taxon is *Candidatus* Malogida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JdFR-76*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogidales.

Description of *Candidatus* Malogidales ord. nov.

Candidatus Malogidales (NL. fem. n. *Malogidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-76.* The type genus for the taxon is *Candidatus* Malogida .

According to the original version of GTDB R06-RS202, this family belongs to the class

UBA2214. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Renavosae.

Description of *Candidatus* Malogosa adtacentia sp. nov.

Candidatus Malogosa adtacentia (NL. fem. n. *adtacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTPP01 sp011334325*. The type genome for the species is the GenBank assembly GCA_011334325.1. The GC content of the type genome is 68.75 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Malogosa gen. nov.

Candidatus Malogosa (NL. fem. n. *Malogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTPP01*. The type species for the genus is *Candidatus* Malogosa adtacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTPP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malogosaceae.

Description of *Candidatus* Malogosaceae fam. nov.

Candidatus Malogosaceae (NL. fem. n. *Malogosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTPP01.* The type genus for the taxon is *Candidatus* Malogosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTPP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogosales.

Description of *Candidatus* Malogosales ord. nov.

Candidatus Malogosales (NL. fem. n. *Malogosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTPP01.* The type genus for the taxon is *Candidatus* Malogosa .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Malogula gemebitrix sp. nov.

Candidatus Malogula gemebitrix (NL. fem. n. *gemebitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8958 sp903885795*. The type genome for the species is the GenBank assembly GCA_903855685.1. The GC content of the type genome is 50.59 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Malogula gen. nov.

Candidatus Malogula (NL. fem. n. *Malogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8958*. The type species for the genus is *Candidatus* Malogula gemebitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8958*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malogulaceae.

Description of *Candidatus* Malogulaceae fam. nov.

Candidatus Malogulaceae (NL. fem. n. *Malogulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8958.* The type genus for the taxon is *Candidatus* Malogula .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Malogula semifousia sp. nov.

Candidatus Malogula semifousia (NL. fem. n. *semifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8958 sp003451635*. The type genome for the species is the GenBank assembly GCA_003451635.1. The GC content of the type genome is 52.27 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Malonomonas catapitica sp. nov.

Candidatus Malonomonas catapitica (NL. fem. n. *catapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Malonomonas sp013152145*. The type genome for the species is the GenBank assembly GCA_013152145.1. The GC content of the type genome is 55.64 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Malonomonas manibilenta sp. nov.

Candidatus Malonomonas manibilenta (NL. fem. n. *manibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Malonomonas sp013138655*. The type genome for the species is the GenBank assembly GCA_013138655.1. The GC content of the type genome is 52.33 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Manganitrophus undevilenta sp. nov.

Candidatus Manganitrophus undevilenta (NL. fem. n. *undevilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Manganitrophus sp004297235*. The type genome for the species is the GenBank assembly GCA_004297235.1. The GC content of the type genome is 57.81 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Mangrovibacterium apposedo sp. nov.

Candidatus Mangrovibacterium apposedo (NL. fem. n. *apposedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mangrovibacterium sp003246935*. The type genome for the species is the GenBank assembly GCA_003246935.1. The GC content of the type genome is 42.24 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Mangrovibacterium desucetta sp. nov.

Candidatus Mangrovibacterium desucetta (NL. fem. n. *desucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mangrovibacterium sp010882175*. The type genome for the species is the GenBank assembly RS_GCF_010882175.1. The GC content of the type genome is 43.43 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Mangrovicoccus cilicilenta sp. nov.

Candidatus Mangrovicoccus cilicilenta (NL. fem. n. *cilicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mangrovicoccus sp005870025*. The type genome for the species is the GenBank assembly RS_GCF_005870025.1. The GC content of the type genome is 69.06 % and the genome length is 8.1 Mbp.

Description of *Candidatus* Mangrovicoccus defosilenta sp. nov.

Candidatus Mangrovicoccus defosilenta (NL. fem. n. *defosilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mangrovicoccus sp013184745*. The type genome for the species is the GenBank assembly RS_GCF_013184745.1. The GC content of the type genome is 68.3 % and the genome length is 7.18 Mbp.

Description of *Candidatus* Mangrovimonas pabiliforma sp. nov.

Candidatus Mangrovimonas pabiliforma (NL. fem. n. *pabiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mangrovimonas sp001280515*. The type genome for the species is the GenBank assembly RS_GCF_001280515.1. The GC content of the type genome is 36.19 % and the genome length is 3.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mangrove soil".

Description of *Candidatus* Mangrovimonas inpinilenta sp. nov.

Candidatus Mangrovimonas inpinilenta (NL. fem. n. *inpinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mangrovimonas_A sp001280505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001280505.1. The GC content of the type genome is 38.65 % and the genome length is 4.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mangrove soil".

Description of *Candidatus* Manibana aprarugo sp. nov.

Candidatus Manibana aprarugo (NL. fem. n. *aprarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Plut-88900 sp012270635*. The type genome for the species is the GenBank assembly GCA_012270635.1. The GC content of the type genome is 63.29 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Manibana gen. nov.

Candidatus Manibana (NL. fem. n. *Manibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Plut-88900*. The type species for the genus is *Candidatus* Manibana aprarugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Plut-88900*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibanaceae.

Description of *Candidatus* Manibanaceae fam. nov.

Candidatus Manibanaceae (NL. fem. n. *Manibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Plut-88900.* The type genus for the taxon is *Candidatus* Manibana .

According to the original version of GTDB R06-RS202, this family belongs to the order *Plut-88900*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Manibanales.

Description of *Candidatus* Manibanales ord. nov.

Candidatus Manibanales (NL. fem. n. *Manibanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Plut-88900.* The type genus for the taxon is *Candidatus* Manibana .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Manibaria defariforma sp. nov.

Candidatus Manibaria defariforma (NL. fem. n. *defariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9579 sp001784615*. The type genome for the species is the GenBank assembly GCA_001786555.1. The GC content of the type genome is 32.25 % and the genome length is 2.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Manibaria gen. nov.

Candidatus Manibaria (NL. fem. n. *Manibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9579*. The type species for the genus is *Candidatus* Manibaria defariforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9579*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibariaceae.

Description of *Candidatus* Manibariaceae fam. nov.

Candidatus Manibariaceae (NL. fem. n. *Manibariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9579.* The type genus for the taxon is *Candidatus* Manibaria .

According to GTDB R06-RS202, this family belongs to the order *Gastranaerophilales*.

Description of *Candidatus* Manibaria tribrentia sp. nov.

Candidatus Manibaria tribrentia (NL. fem. n. *tribrentia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9579 sp003499585*. The type genome for the species is the GenBank assembly GCA_003499585.1. The GC content of the type genome is 33.79 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Manibella desucimonas sp. nov.

Candidatus Manibella desucimonas (NL. fem. n. *desucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1470 sp900552105*. The type genome for the species is the GenBank assembly GCA_900552105.1. The GC content of the type genome is 36.99 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Manibella gen. nov.

Candidatus Manibella (NL. fem. n. *Manibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1470*. The type species for the genus is *Candidatus* Manibella desucimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Manibella obveritia sp. nov.

Candidatus Manibella obveritia (NL. fem. n. *obveritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1470 sp900766395*. The type genome for the species is the GenBank assembly RS_GCF_900766395.1. The GC content of the type genome is 36.67 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Manibida conaricella sp. nov.

Candidatus Manibida conaricella (NL. fem. n. *conaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2964 sp002348425*. The type genome for the species is the GenBank assembly GCA_002348425.1. The GC content of the type genome is 42.91 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Manibida gen. nov.

Candidatus Manibida (NL. fem. n. *Manibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2964*. The type species for the genus is *Candidatus* Manibida conaricella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2964*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibidaceae.

Description of *Candidatus* Manibidaceae fam. nov.

Candidatus Manibidaceae (NL. fem. n. *Manibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2964.* The type genus for the taxon is *Candidatus* Manibida .

According to the original version of GTDB R06-RS202, this family belongs to the order *MPNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Meridellales.

Description of *Candidatus* Manibida domabessa sp. nov.

Candidatus Manibida domabessa (NL. fem. n. *domabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2964 sp002712335*. The type genome for the species is the GenBank assembly GCA_002712335.1. The GC content of the type genome is 42.42 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Manibida impudicula sp. nov.

Candidatus Manibida impudicula (NL. fem. n. *impudicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2964 sp002719885*. The type genome for the species is the GenBank assembly GCA_002719885.1. The GC content of the type genome is 41.87 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Manibida invoratica sp. nov.

Candidatus Manibida invoratica (NL. fem. n. *invoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2964 sp002727395*. The type genome for the species is the GenBank assembly GCA_002727395.1. The GC content of the type genome is 40.87 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Manibosa direpitoga sp. nov.

Candidatus Manibosa direpitoga (NL. fem. n. *direpitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADAEX01 sp902787125*. The type genome for the species is the GenBank assembly GCA_902787125.1. The GC content of the type genome is 48.29 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Manibosa gen. nov.

Candidatus Manibosa (NL. fem. n. *Manibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADAEX01*. The type species for the genus is *Candidatus* Manibosa direpitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADAEX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manibosaceae.

Description of *Candidatus* Manibosaceae fam. nov.

Candidatus Manibosaceae (NL. fem. n. *Manibosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADAEX01*. The type genus for the taxon is *Candidatus* Manibosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CADAEX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Manibosales.

Description of *Candidatus* Manibosales ord. nov.

Candidatus Manibosales (NL. fem. n. *Manibosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADAEX01*. The type genus for the taxon is *Candidatus* Manibosa .

According to the GTDB R06-RS202, this order belongs to the class *Spirochaetia*.

Description of *Candidatus* Mannheimia acrufitura sp. nov.

Candidatus Mannheimia acrufitura (NL. fem. n. *acrufitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mannheimia sp000521605*. The type genome for the species is the GenBank assembly RS_GCF_000521605.1. The GC content of the type genome is 39.64 % and the genome length is 2.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mucus".

Description of *Candidatus* Mannheimia bicoricella sp. nov.

Candidatus Mannheimia bicoricella (NL. fem. n. *bicoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mannheimia sp014541205*. The type genome for the species is the GenBank assembly RS_GCF_014541205.1. The GC content of the type genome is 39.78 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Mannheimia lucubatica sp. nov.

Candidatus Mannheimia lucubatica (NL. fem. n. *lucubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Mannheimia sp009828705*. The type genome for the species is the GenBank assembly RS_GCF_013377975.1. The GC content of the type genome is 38.99 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Manomana devecitia sp. nov.

Candidatus Manomana devecitia (NL. fem. n. *devecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-47-10 sp001820685*. The type genome for the species is the GenBank assembly GCA_001003045.1. The GC content of the type genome is 46.68 % and the genome length is 1.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Manomana gen. nov.

Candidatus Manomana (NL. fem. n. *Manomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-47-10*. The type species for the genus is *Candidatus* Manomana devecitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-42-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conamulaceae.

Description of *Candidatus* Manomaria cadurastra sp. nov.

Candidatus Manomaria cadurastra (NL. fem. n. *cadurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIAT01 sp009691645*. The type genome for the species is the GenBank assembly GCA_009691645.1. The GC content of the type genome is 62.17 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Manomaria gen. nov.

Candidatus Manomaria (NL. fem. n. *Manomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIAT01*. The type species for the genus is *Candidatus* Manomaria

cadurastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXTU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hirunidaceae.

Description of *Candidatus* Manomella deculitica sp. nov.

Candidatus Manomella deculitica (NL. fem. n. *deculitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMMZ01 sp013205405*. The type genome for the species is the GenBank assembly GCA_013205405.1. The GC content of the type genome is 31.58 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Manomella gen. nov.

Candidatus Manomella (NL. fem. n. *Manomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMMZ01*. The type species for the genus is *Candidatus* Manomella deculitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadidaceae.

Description of *Candidatus* Manomella nivomitio sp. nov.

Candidatus Manomella nivomitio (NL. fem. n. *nivomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMMZ01 sp903953615*. The type genome for the species is the GenBank assembly GCA_903953615.1. The GC content of the type genome is 37.3 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Manomia insenitia sp. nov.

Candidatus Manomia insenitia (NL. fem. n. *insenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYD01 sp009692945*. The type genome for the species is the GenBank assembly GCA_009692945.1. The GC content of the type genome is 64.87 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Manomia gen. nov.

Candidatus Manomia (NL. fem. n. *Manomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYD01*. The type species for the genus is *Candidatus* Manomia insenitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomiaceae.

Description of *Candidatus* Manomiaceae fam. nov.

Candidatus Manomiaceae (NL. fem. n. *Manomiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYD01*. The type genus for the taxon is *Candidatus* Manomia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHYD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Manomiales.

Description of *Candidatus* Manomiales ord. nov.

Candidatus Manomiales (NL. fem. n. *Manomiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYD01*. The type genus for the taxon is *Candidatus* Manomia .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Manomida defasitura sp. nov.

Candidatus Manomida defasitura (NL. fem. n. *defasitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GN02-872 sp013368515*. The type genome for the species is the GenBank assembly GCA_013368515.1. The GC content of the type genome is 23.62 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Manomida gen. nov.

Candidatus Manomida (NL. fem. n. *Manomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GN02-872*. The type species for the genus is *Candidatus* Manomida defasitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6164*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifellaceae.

Description of *Candidatus* Manomida infisitoga sp. nov.

Candidatus Manomida infisitoga (NL. fem. n. *infisitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GN02-872 sp003260325*. The type genome for the species is the GenBank assembly GCA_003260325.1. The GC content of the type genome is 25.08 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Manomida lanugicula sp. nov.

Candidatus Manomida lanugicula (NL. fem. n. *lanugicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GN02-872 sp002761215*. The type genome for the species is the GenBank assembly GCA_013333755.2. The GC content of the type genome is 25.01 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Manomosa gasifugo sp. nov.

Candidatus Manomosa gasifugo (NL. fem. n. *gasifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12465 sp001871165*. The type genome for the species is the

GenBank assembly GCA_009992405.1. The GC content of the type genome is 37.55 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Manomosa gen. nov.

Candidatus Manomosa (NL. fem. n. *Manomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12465*. The type species for the genus is *Candidatus* Manomosa gasifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Manomosaceae fam. nov.

Candidatus Manomosaceae (NL. fem. n. *Manomosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12465.* The type genus for the taxon is *Candidatus* Manomosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Manomosa herinimonia sp. nov.

Candidatus Manomosa herinimonia (NL. fem. n. *herinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12465 sp000999715*. The type genome for the species is the GenBank assembly GCA_003489845.1. The GC content of the type genome is 43.28 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Manomosa irradedo sp. nov.

Candidatus Manomosa irradedo (NL. fem. n. *irradedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12465 sp003056205*. The type genome for the species is the

GenBank assembly GCA_003056205.1. The GC content of the type genome is 33.56 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Manomula derelitio sp. nov.

Candidatus Manomula derelitio (NL. fem. n. *derelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACPJ01 sp009995455*. The type genome for the species is the GenBank assembly GCA_009994005.1. The GC content of the type genome is 41.1 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Manomula gen. nov.

Candidatus Manomula (NL. fem. n. *Manomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACPJ01*. The type species for the genus is *Candidatus* Manomula derelitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4473*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depocosaceae.

Description of *Candidatus* Manubana vehicousia sp. nov.

Candidatus Manubana vehicousia (NL. fem. n. *vehicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7662 sp002483345*. The type genome for the species is the GenBank assembly GCA_002483345.1. The GC content of the type genome is 48.58 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Manubana gen. nov.

Candidatus Manubana (NL. fem. n. *Manubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7662*. The type species for the genus is *Candidatus* Manubana vehicousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA7662. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manubanaceae.

Description of *Candidatus* Manubanaceae fam. nov.

Candidatus Manubanaceae (NL. fem. n. *Manubanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7662.* The type genus for the taxon is *Candidatus* Manubana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7662*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Manubanales.

Description of *Candidatus* Manubanales ord. nov.

Candidatus Manubanales (NL. fem. n. *Manubanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7662.* The type genus for the taxon is *Candidatus* Manubana .

According to the GTDB R06-RS202, this order belongs to the class *Bacteroidia*.

Description of *Candidatus* Manubella appicatica sp. nov.

Candidatus Manubella appicatica (NL. fem. n. *appicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXTX01 sp013336285*. The type genome for the species is the GenBank assembly GCA_013336285.1. The GC content of the type genome is 52.75 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Manubella gen. nov.

Candidatus Manubella (NL. fem. n. *Manubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXTX01*. The type species for the genus is *Candidatus* Manubella appicatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1568*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Bicalulaceae.

Description of *Candidatus* Manubella celamimonia sp. nov.

Candidatus Manubella celamimonia (NL. fem. n. *celamimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXTX01 sp013334575*. The type genome for the species is the GenBank assembly GCA_013336155.1. The GC content of the type genome is 57.41 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Manubella obfusatio sp. nov.

Candidatus Manubella obfusatio (NL. fem. n. *obfusatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXTX01 sp903893925*. The type genome for the species is the GenBank assembly GCA_903893925.1. The GC content of the type genome is 51.53 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Manubella ontolessa sp. nov.

Candidatus Manubella ontolessa (NL. fem. n. *ontolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXTX01 sp013334245*. The type genome for the species is the GenBank assembly GCA_013334245.1. The GC content of the type genome is 54.37 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Manubella rinocentia sp. nov.

Candidatus Manubella rinocentia (NL. fem. n. *rinocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXTX01 sp903854995*. The type genome for the species is the GenBank assembly GCA_903854995.1. The GC content of the type genome is 54.75 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Manubella timefifica sp. nov.

Candidatus Manubella timefifica (NL. fem. n. *timefifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXTX01 sp903859375*. The type genome for the species is the GenBank assembly GCA_903859375.1. The GC content of the type genome is 52.14 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Manubida biparatica sp. nov.

Candidatus Manubida biparatica (NL. fem. n. *biparatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1273 sp003161955*. The type genome for the species is the GenBank assembly GCA_003161955.1. The GC content of the type genome is 60.23 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Manubida gen. nov.

Candidatus Manubida (NL. fem. n. *Manubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1273*. The type species for the genus is *Candidatus* Manubida biparatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6906*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibellaceae.

Description of *Candidatus* Manubida colopifica sp. nov.

Candidatus Manubida colopifica (NL. fem. n. *colopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1273 sp003158475*. The type genome for the species is the GenBank assembly GCA_003158475.1. The GC content of the type genome is 59.01 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Manubida desulicula sp. nov.

Candidatus Manubida desulicula (NL. fem. n. *desulicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1273 sp003157485*. The type genome for the species is the GenBank assembly GCA_003158685.1. The GC content of the type genome is 60.36 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Manubida manibifica sp. nov.

Candidatus Manubida manibifica (NL. fem. n. *manibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1273 sp003154425*. The type genome for the species is the GenBank assembly GCA_003154425.1. The GC content of the type genome is 60.58 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Manubula defasago sp. nov.

Candidatus Manubula defasago (NL. fem. n. *defasago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin65 sp002238725*. The type genome for the species is the GenBank assembly GCA_002238725.1. The GC content of the type genome is 66.16 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Manubula gen. nov.

Candidatus Manubula (NL. fem. n. *Manubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin65*. The type species for the genus is *Candidatus* Manubula defasago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin65*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manubulaceae.

Description of *Candidatus* Manubulaceae fam. nov.

Candidatus Manubulaceae (NL. fem. n. *Manubulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin65.* The type genus for the taxon is *Candidatus* Manubula .

According to the original version of GTDB R06-RS202, this family belongs to the order *Bin65*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Manubulales.

Description of *Candidatus* Manubulales ord. nov.

Candidatus Manubulales (NL. fem. n. *Manubulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin65.* The type genus for the taxon is *Candidatus* Manubula .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Manubula infatibula sp. nov.

Candidatus Manubula infatibula (NL. fem. n. *infatibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin65 sp900197615*. The type genome for the species is the GenBank assembly RS_GCF_900197615.1. The GC content of the type genome is 66.08 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Manubula linigitica sp. nov.

Candidatus Manubula linigitica (NL. fem. n. *linigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin65 sp011523655*. The type genome for the species is the GenBank assembly GCA_011523655.1. The GC content of the type genome is 66.97 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Manubula semapessa sp. nov.

Candidatus Manubula semapessa (NL. fem. n. *semapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Bin65 sp009840595*. The type genome for the species is the GenBank assembly GCA_009840595.1. The GC content of the type genome is 67.85 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Manufana cilicitia sp. nov.

Candidatus Manufana cilicitia (NL. fem. n. *cilicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WOUV01 sp009773045*. The type genome for the species is the GenBank assembly GCA_009773045.1. The GC content of the type genome is 61.18 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Manufana gen. nov.

Candidatus Manufana (NL. fem. n. *Manufana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WOUV01*. The type species for the genus is *Candidatus* Manufana cilicitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WOUV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufanaceae.

Description of *Candidatus* Manufanaceae fam. nov.

Candidatus Manufanaceae (NL. fem. n. *Manufanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WOUV01*. The type genus for the taxon is *Candidatus* Manufana .

According to GTDB R06-RS202, this family belongs to the order *Rhodospirillales*.

Description of *Candidatus* Manufaria bimetimonas sp. nov.

Candidatus Manufaria bimetimonas (NL. fem. n. *bimetimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMTB01 sp903844265*. The type genome for the species is the GenBank assembly GCA_903863355.1. The GC content of the type genome is 64.55 %

and the genome length is 6.11 Mbp.

Description of *Candidatus* Manufaria gen. nov.

Candidatus Manufaria (NL. fem. n. *Manufaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMTB01*. The type species for the genus is *Candidatus* Manufaria bimetimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIMTB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufariaceae.

Description of *Candidatus* Manufariaceae fam. nov.

Candidatus Manufariaceae (NL. fem. n. *Manufariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIMTB01.* The type genus for the taxon is *Candidatus* Manufaria .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Manufella benemibra sp. nov.

Candidatus Manufella benemibra (NL. fem. n. *benemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG306 sp900316075*. The type genome for the species is the GenBank assembly GCA_002349765.1. The GC content of the type genome is 54.87 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Manufella gen. nov.

Candidatus Manufella (NL. fem. n. *Manufella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG306*. The type species for the genus is *Candidatus* Manufella benemibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Manufella denigicella sp. nov.

Candidatus Manufella denigicella (NL. fem. n. *denigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG306 sp900317755*. The type genome for the species is the GenBank assembly GCA_900317755.1. The GC content of the type genome is 41.59 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Manufella pacifibra sp. nov.

Candidatus Manufella pacifibra (NL. fem. n. *pacifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG306 sp902772635*. The type genome for the species is the GenBank assembly GCA_902772635.1. The GC content of the type genome is 47.96 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Manufella repecax sp. nov.

Candidatus Manufella repecax (NL. fem. n. *repecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG306 sp900313435*. The type genome for the species is the GenBank assembly GCA_902783475.1. The GC content of the type genome is 47.68 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Manufella terebimonas sp. nov.

Candidatus Manufella terebimonas (NL. fem. n. *terebimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG306 sp900314085*. The type genome for the species is the GenBank assembly GCA_902804045.1. The GC content of the type genome is 54.02 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Manufia vehemivita sp. nov.

Candidatus Manufia vehemivita (NL. fem. n. *vehemivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1559 sp001871015*. The type genome for the species is the GenBank assembly GCA_002779445.1. The GC content of the type genome is 38.7 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Manufia gen. nov.

Candidatus Manufia (NL. fem. n. *Manufia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1559*. The type species for the genus is *Candidatus* Manufia vehemivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1559*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufiaceae.

Description of *Candidatus* Manufiaceae fam. nov.

Candidatus Manufiaceae (NL. fem. n. *Manufiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1559.* The type genus for the taxon is *Candidatus* Manufia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1551*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Disidariales.

Description of *Candidatus* Manufida adsusetta sp. nov.

Candidatus Manufida adsusetta (NL. fem. n. *adsusetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS55 sp002704905*. The type genome for the species is the GenBank assembly GCA_002704905.1. The GC content of the type genome is 37.17 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Manufida gen. nov.

Candidatus Manufida (NL. fem. n. *Manufida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TCS55*. The type species for the genus is *Candidatus* Manufida adsusetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufidaceae.

Description of *Candidatus* Manufidaceae fam. nov.

Candidatus Manufidaceae (NL. fem. n. *Manufidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TCS55.* The type genus for the taxon is *Candidatus* Manufida .

According to GTDB R06-RS202, this family belongs to the order *Marinisomatales*.

Description of *Candidatus* Manufida ammixastra sp. nov.

Candidatus Manufida ammixastra (NL. fem. n. *ammixastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS55 sp002716525*. The type genome for the species is the GenBank assembly GCA_002716525.1. The GC content of the type genome is 38.97 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Manufida debucentia sp. nov.

Candidatus Manufida debucentia (NL. fem. n. *debucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS55 sp012964665*. The type genome for the species is the GenBank assembly GCA_012964665.1. The GC content of the type genome is 39.51 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Manufida decucimonia sp. nov.

Candidatus Manufida decucimonia (NL. fem. n. *decucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS55 sp002715035*. The type genome for the species is the GenBank assembly GCA_002715035.1. The GC content of the type genome is 40.09 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Manufida defunitudo sp. nov.

Candidatus Manufida defunitudo (NL. fem. n. *defunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS55 sp001577025*. The type genome for the species is the GenBank assembly GCA_001626675.1. The GC content of the type genome is 41.84 % and the genome length is 1.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 34 - depth 258m".

Description of *Candidatus* Manufida direcousia sp. nov.

Candidatus Manufida direcousia (NL. fem. n. *direcousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS55 sp014382015*. The type genome for the species is the GenBank assembly GCA_014382015.1. The GC content of the type genome is 39.56 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Manufida legifago sp. nov.

Candidatus Manufida legifago (NL. fem. n. *legifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS55 sp002471845*. The type genome for the species is the GenBank assembly GCA_002328235.1. The GC content of the type genome is 43.0 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Manufida omnigimonia sp. nov.

Candidatus Manufida omnigimonia (NL. fem. n. *omnigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS55 sp014239505*. The type genome for the species is the GenBank assembly GCA_014239505.1. The GC content of the type genome is 32.39 % and the

genome length is 1.58 Mbp.

Description of *Candidatus* Manufosa eclecitudo sp. nov.

Candidatus Manufosa eclecitudo (NL. fem. n. *eclecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TS1B11 sp004124875*. The type genome for the species is the GenBank assembly RS_GCF_004124875.1. The GC content of the type genome is 56.04 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Manufosa gen. nov.

Candidatus Manufosa (NL. fem. n. *Manufosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TS1B11*. The type species for the genus is *Candidatus* Manufosa eclecitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TS1B11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufosaceae.

Description of *Candidatus* Manufosaceae fam. nov.

Candidatus Manufosaceae (NL. fem. n. *Manufosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TS1B11*. The type genus for the taxon is *Candidatus* Manufosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Manufosa ellipitrix sp. nov.

Candidatus Manufosa ellipitrix (NL. fem. n. *ellipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TS1B11 sp004124295*. The type genome for the species is the GenBank assembly RS_GCF_004124295.1. The GC content of the type genome is 59.93

% and the genome length is 2.55 Mbp.

Description of *Candidatus* Manufula lucubivita sp. nov.

Candidatus Manufula lucubivita (NL. fem. n. *lucubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6808 sp002452695*. The type genome for the species is the GenBank assembly GCA_002452695.1. The GC content of the type genome is 52.46 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Manufula gen. nov.

Candidatus Manufula (NL. fem. n. *Manufula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6808*. The type species for the genus is *Candidatus* Manufula lucubivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5629*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deneciaceae.

Description of *Candidatus* Manufula peradifica sp. nov.

Candidatus Manufula peradifica (NL. fem. n. *peradifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6808 sp002383665*. The type genome for the species is the GenBank assembly GCA_002383665.1. The GC content of the type genome is 49.95 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Manupana acratitura sp. nov.

Candidatus Manupana acratitura (NL. fem. n. *acratitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp900555885*. The type genome for the species is the GenBank assembly RS_GCF_900555885.1. The GC content of the type genome is 43.91 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Manupana gen. nov.

Candidatus Manupana (NL. fem. n. *Manupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TM7x*. The type species for the genus is *Candidatus* Manupana acratitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Manupana adcumousia sp. nov.

Candidatus Manupana adcumousia (NL. fem. n. *adcumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp002421965*. The type genome for the species is the GenBank assembly GCA_002421965.1. The GC content of the type genome is 47.17 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Manupana apsoritica sp. nov.

Candidatus Manupana apsoritica (NL. fem. n. *apsoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp013100805*. The type genome for the species is the GenBank assembly RS_GCF_013100805.1. The GC content of the type genome is 50.67 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Manupana bigarax sp. nov.

Candidatus Manupana bigarax (NL. fem. n. *bigarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp010202115*. The type genome for the species is the GenBank assembly RS_GCF_010202115.1. The GC content of the type genome is 50.78 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Manupana bigemitrix sp. nov.

Candidatus Manupana bigemitrix (NL. fem. n. *bigemitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp900557595*. The type genome for the species is the GenBank assembly GCA_902406325.1. The GC content of the type genome is 43.47 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Manupana biverifica sp. nov.

Candidatus Manupana biverifica (NL. fem. n. *biverifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp010202645*. The type genome for the species is the GenBank assembly RS_GCF_010202645.1. The GC content of the type genome is 50.79 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Manupana colimicella sp. nov.

Candidatus Manupana colimicella (NL. fem. n. *colimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp900555265*. The type genome for the species is the GenBank assembly RS_GCF_900555265.1. The GC content of the type genome is 43.16 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Manupana cosidentia sp. nov.

Candidatus Manupana cosidentia (NL. fem. n. *cosidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp013100825*. The type genome for the species is the GenBank assembly RS_GCF_013098515.1. The GC content of the type genome is 50.76 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Manupana demulibra sp. nov.

Candidatus Manupana demulibra (NL. fem. n. *demulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *TM7x sp900556355*. The type genome for the species is the GenBank assembly RS_GCF_900757685.1. The GC content of the type genome is 43.03 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Manupana depacentia sp. nov.

Candidatus Manupana depacentia (NL. fem. n. *depacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp013099195*. The type genome for the species is the GenBank assembly RS_GCF_013099195.1. The GC content of the type genome is 50.66 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Manupana depasatica sp. nov.

Candidatus Manupana depasatica (NL. fem. n. *depasatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp007845355*. The type genome for the species is the GenBank assembly RS_GCF_007845265.1. The GC content of the type genome is 43.34 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Manupana excamitudo sp. nov.

Candidatus Manupana excamitudo (NL. fem. n. *excamitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp900555675*. The type genome for the species is the GenBank assembly RS_GCF_900555675.1. The GC content of the type genome is 43.49 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Manupana exsatedo sp. nov.

Candidatus Manupana exsatedo (NL. fem. n. *exsatedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp013333695*. The type genome for the species is the GenBank assembly GCA_013333695.2. The GC content of the type genome is 51.13 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Manupana homicivita sp. nov.

Candidatus Manupana homicivita (NL. fem. n. *homicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp000803625*. The type genome for the species is the GenBank assembly RS_GCF_000803625.1. The GC content of the type genome is 44.45 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Manupana inabrousia sp. nov.

Candidatus Manupana inabrousia (NL. fem. n. *inabrousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp005697565*. The type genome for the species is the GenBank assembly RS_GCF_005697565.1. The GC content of the type genome is 47.96 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Manupana inobribra sp. nov.

Candidatus Manupana inobribra (NL. fem. n. *inobribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp900555425*. The type genome for the species is the GenBank assembly RS_GCF_900555425.1. The GC content of the type genome is 43.43 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Manupana laculitas sp. nov.

Candidatus Manupana laculitas (NL. fem. n. *laculitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp013099015*. The type genome for the species is the GenBank assembly RS_GCF_013099015.1. The GC content of the type genome is 50.74 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Manupana metapago sp. nov.

Candidatus Manupana metapago (NL. fem. n. *metapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp013333495*. The type genome for the species is the GenBank assembly GCA_013333495.2. The GC content of the type genome is 48.56 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Manupana murelago sp. nov.

Candidatus Manupana murelago (NL. fem. n. *murelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp005697215*. The type genome for the species is the GenBank assembly RS_GCF_013100845.1. The GC content of the type genome is 50.81 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Manupana nicomicella sp. nov.

Candidatus Manupana nicomicella (NL. fem. n. *nicomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp010202465*. The type genome for the species is the GenBank assembly RS_GCF_010202465.1. The GC content of the type genome is 50.94 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Manupana repecitura sp. nov.

Candidatus Manupana repecitura (NL. fem. n. *repecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TM7x sp900556885*. The type genome for the species is the GenBank assembly RS_GCF_900556885.1. The GC content of the type genome is 43.64 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Manupana sonabetta sp. nov.

Candidatus Manupana sonabetta (NL. fem. n. *sonabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *TM7x sp010202845*. The type genome for the species is the GenBank assembly RS_GCF_010202845.1. The GC content of the type genome is 50.74 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Manuparia cilibitas sp. nov.

Candidatus Manuparia cilibitas (NL. fem. n. *cilibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNIZ01 sp014382805*. The type genome for the species is the GenBank assembly GCA_014382805.1. The GC content of the type genome is 54.31 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Manuparia gen. nov.

Candidatus Manuparia (NL. fem. n. *Manuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNIZ01*. The type species for the genus is *Candidatus* Manuparia cilibitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacellaceae.

Description of *Candidatus* Manupella capudilenta sp. nov.

Candidatus Manupella capudilenta (NL. fem. n. *capudilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLPX01 sp011390535*. The type genome for the species is the GenBank assembly GCA_011390535.1. The GC content of the type genome is 48.07 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Manupella gen. nov.

Candidatus Manupella (NL. fem. n. *Manupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLPX01*. The type species for the genus is *Candidatus* Manupella capudilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLPX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manupellaceae.

Description of *Candidatus* Manupellaceae fam. nov.

Candidatus Manupellaceae (NL. fem. n. *Manupellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLPX01.* The type genus for the taxon is *Candidatus* Manupella .

According to the original version of GTDB R06-RS202, this family belongs to the order *HGW-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curacellales.

Description of *Candidatus* Manupella penecitrix sp. nov.

Candidatus Manupella penecitrix (NL. fem. n. *penecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLPX01 sp007131745*. The type genome for the species is the GenBank assembly GCA_007131745.1. The GC content of the type genome is 51.54 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Manupia depelicella sp. nov.

Candidatus Manupia depelicella (NL. fem. n. *depelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-46-25 sp001775835*. The type genome for the species is the GenBank assembly GCA_001774085.1. The GC content of the type genome is 51.37 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Manupia gen. nov.

Candidatus Manupia (NL. fem. n. *Manupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *WO2-46-25*. The type species for the genus is *Candidatus* Manupia depelicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *M10-OD1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorifidaceae.

Description of *Candidatus* Manupida catapifica sp. nov.

Candidatus Manupida catapifica (NL. fem. n. *catapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2709565 sp002709565*. The type genome for the species is the GenBank assembly GCA_002709565.1. The GC content of the type genome is 44.86 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Manupida gen. nov.

Candidatus Manupida (NL. fem. n. *Manupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2709565*. The type species for the genus is *Candidatus* Manupida catapifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cemenellaceae.

Description of *Candidatus* Manuposa rosarax sp. nov.

Candidatus Manuposa rosarax (NL. fem. n. *rosarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRDJ01 sp903877335*. The type genome for the species is the GenBank assembly GCA_903843795.1. The GC content of the type genome is 51.96 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Manuposa gen. nov.

Candidatus Manuposa (NL. fem. n. *Manuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRDJ01*. The type species for the genus is *Candidatus* Manuposa rosarax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Manupula viginago sp. nov.

Candidatus Manupula viginago (NL. fem. n. *viginago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVXW01 sp903910005*. The type genome for the species is the GenBank assembly GCA_903887595.1. The GC content of the type genome is 58.0 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Manupula gen. nov.

Candidatus Manupula (NL. fem. n. *Manupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVXW01*. The type species for the genus is *Candidatus* Manupula viginago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Maribacter bicinatio sp. nov.

Candidatus Maribacter bicinatio (NL. fem. n. *bicinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maribacter sp011050675*. The type genome for the species is the GenBank assembly GCA_011049845.1. The GC content of the type genome is 34.65 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Maribacter depasago sp. nov.

Candidatus Maribacter depasago (NL. fem. n. *depasago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maribacter sp002742365*. The type genome for the species is the GenBank assembly RS_GCF_003970695.1. The GC content of the type genome is 39.35 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Maribacter ephipentia sp. nov.

Candidatus Maribacter ephipentia (NL. fem. n. *ephipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maribacter sp002742265*. The type genome for the species is the GenBank assembly RS_GCF_002742265.1. The GC content of the type genome is 40.81 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Maribacter resulatio sp. nov.

Candidatus Maribacter resulatio (NL. fem. n. *resulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maribacter sp005771495*. The type genome for the species is the GenBank assembly RS_GCF_005771495.1. The GC content of the type genome is 36.01 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Maribacter rudicago sp. nov.

Candidatus Maribacter rudicago (NL. fem. n. *rudicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maribacter sp001913155*. The type genome for the species is the GenBank assembly RS_GCF_001673755.1. The GC content of the type genome is 34.27 % and the genome length is 4.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater from shallow-sea hydrothermal system".

Description of *Candidatus* Maribacter adbelibula sp. nov.

Candidatus Maribacter adbelibula (NL. fem. n. *adbelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maribacter_A sp000153165*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000153165.2. The GC content of the type genome is 36.98 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Maribacter arrugago sp. nov.

Candidatus Maribacter arrugago (NL. fem. n. *arrugago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maribacter_A sp002749285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002749285.1. The GC content of the type genome is 41.94 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Maribacter conigicella sp. nov.

Candidatus Maribacter conigicella (NL. fem. n. *conigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maribacter_A sp014596745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014596745.1. The GC content of the type genome is 40.08 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Maribacter refocatio sp. nov.

Candidatus Maribacter refocatio (NL. fem. n. *refocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maribacter_A sp013001935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013001935.1. The GC content of the type genome is 38.41 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Maricaulis addivessa sp. nov.

Candidatus Maricaulis addivessa (NL. fem. n. *addivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maricaulis sp005871165*. The type genome for the species is the GenBank assembly RS_GCF_005871165.1. The GC content of the type genome is 63.63 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Maricaulis desepax sp. nov.

Candidatus Maricaulis desepax (NL. fem. n. *desepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maricaulis sp002707795*. The type genome for the species is the GenBank assembly GCA_002719875.1. The GC content of the type genome is 65.58 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Maricaulis subinitura sp. nov.

Candidatus Maricaulis subinitura (NL. fem. n. *subinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maricaulis sp002694345*. The type genome for the species is the GenBank assembly GCA_002694345.1. The GC content of the type genome is 63.91 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Maridesulfovibrio dicabastra sp. nov.

Candidatus Maridesulfovibrio dicabastra (NL. fem. n. *dicabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maridesulfovibrio sp010470675*. The type genome for the species is the GenBank assembly RS_GCF_010470675.1. The GC content of the type genome is 49.86 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Maridesulfovibrio excocentia sp. nov.

Candidatus Maridesulfovibrio excocentia (NL. fem. n. *excocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Maridesulfovibrio sp010470665*. The type genome for the species is the GenBank assembly RS_GCF_010470665.1. The GC content of the type genome is 48.0 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Maridesulfovibrio mahemessa sp. nov.

Candidatus Maridesulfovibrio mahemessa (NL. fem. n. *mahemessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maridesulfovibrio sp002340305*. The type genome for the species is the GenBank assembly GCA_002340305.1. The GC content of the type genome is 47.32 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Maridesulfovibrio rorulitio sp. nov.

Candidatus Maridesulfovibrio rorulitio (NL. fem. n. *rorulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maridesulfovibrio sp004923195*. The type genome for the species is the GenBank assembly RS_GCF_004923195.1. The GC content of the type genome is 47.4 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Maridesulfovibrio rumififorma sp. nov.

Candidatus Maridesulfovibrio rumififorma (NL. fem. n. *rumififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maridesulfovibrio sp006210265*. The type genome for the species is the GenBank assembly GCA_006210265.1. The GC content of the type genome is 40.85 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Marinibacterium funivitia sp. nov.

Candidatus Marinibacterium funivitia (NL. fem. n. *funivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinibacterium sp003217735*. The type genome for the species is the GenBank assembly RS_GCF_003217735.2. The GC content of the type genome is 65.57 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Marinibacterium retunitoga sp. nov.

Candidatus Marinibacterium retunitoga (NL. fem. n. *retunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinibacterium sp002709405*. The type genome for the species is the GenBank assembly GCA_002709405.1. The GC content of the type genome is 65.73 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Mariniblastus excomivita sp. nov.

Candidatus Mariniblastus excomivita (NL. fem. n. *excomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariniblastus sp014237975*. The type genome for the species is the GenBank assembly GCA_014237975.1. The GC content of the type genome is 52.45 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Mariniblastus monimugo sp. nov.

Candidatus Mariniblastus monimugo (NL. fem. n. *monimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariniblastus sp011523945*. The type genome for the species is the GenBank assembly GCA_011523945.1. The GC content of the type genome is 47.93 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Mariniblastus pluscitrix sp. nov.

Candidatus Mariniblastus pluscitrix (NL. fem. n. *pluscitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariniblastus sp011087765*. The type genome for the species is the GenBank assembly GCA_011087765.1. The GC content of the type genome is 48.23 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Marinicaulis adtiliforma sp. nov.

Candidatus Marinicaulis adtiliforma (NL. fem. n. *adtiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinicaulis sp002704915*. The type genome for the species is the GenBank assembly GCA_002704915.1. The GC content of the type genome is 59.08 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Marinicaulis bonitatica sp. nov.

Candidatus Marinicaulis bonitatica (NL. fem. n. *bonitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinicaulis sp002388885*. The type genome for the species is the GenBank assembly GCA_002388885.1. The GC content of the type genome is 57.19 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Marinicaulis derecitrix sp. nov.

Candidatus Marinicaulis derecitrix (NL. fem. n. *derecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinicaulis sp013151255*. The type genome for the species is the GenBank assembly GCA_013151255.1. The GC content of the type genome is 57.51 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Marinicaulis excomitica sp. nov.

Candidatus Marinicaulis excomitica (NL. fem. n. *excomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinicaulis sp013151435*. The type genome for the species is the GenBank assembly GCA_013151435.1. The GC content of the type genome is 52.35 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Marinicaulis obsatibra sp. nov.

Candidatus Marinicaulis obsatibra (NL. fem. n. *obsatibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Marinicaulis sp001657385*. The type genome for the species is the GenBank assembly GCA_001657385.1. The GC content of the type genome is 64.51 % and the genome length is 4.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture inoculated with black band disease microbial mat".

Description of *Candidatus* Marinicaulis recumitura sp. nov.

Candidatus Marinicaulis recumitura (NL. fem. n. *recumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinicaulis sp013002535*. The type genome for the species is the GenBank assembly GCA_013043665.1. The GC content of the type genome is 54.04 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Marinicella arrabax sp. nov.

Candidatus Marinicella arrabax (NL. fem. n. *arrabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinicella sp008501575*. The type genome for the species is the GenBank assembly GCA_008501575.1. The GC content of the type genome is 43.69 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Marinifilum encenimonia sp. nov.

Candidatus Marinifilum encenimonia (NL. fem. n. *encenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinifilum sp009295825*. The type genome for the species is the GenBank assembly RS_GCF_009295825.1. The GC content of the type genome is 34.49 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Marinifilum vitabitas sp. nov.

Candidatus Marinifilum vitabitas (NL. fem. n. *vitabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinifilum sp013141825*. The type genome for the species is the GenBank assembly RS_GCF_013141825.1. The GC content of the type genome is 37.29

% and the genome length is 5.29 Mbp.

Description of *Candidatus* Mariniflexile mirifitas sp. nov.

Candidatus Mariniflexile mirifitas (NL. fem. n. *mirifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariniflexile sp002848895*. The type genome for the species is the GenBank assembly GCA_002848895.1. The GC content of the type genome is 34.37 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Mariniflexile selibentia sp. nov.

Candidatus Mariniflexile selibentia (NL. fem. n. *selibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariniflexile sp002426835*. The type genome for the species is the GenBank assembly RS_GCF_009746565.1. The GC content of the type genome is 37.78 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Marinilabilia carecibra sp. nov.

Candidatus Marinilabilia carecibra (NL. fem. n. *carecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinilabilia sp002411085*. The type genome for the species is the GenBank assembly GCA_002411085.1. The GC content of the type genome is 42.2 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Marinilabilia recucitura sp. nov.

Candidatus Marinilabilia recucitura (NL. fem. n. *recucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinilabilia sp003121985*. The type genome for the species is the GenBank assembly RS_GCF_003121985.1. The GC content of the type genome is 40.85 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Marinirhabdus cerucentia sp. nov.

Candidatus Marinirhabdus cerucentia (NL. fem. n. *cerucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinirhabdus sp002375495*. The type genome for the species is the GenBank assembly GCA_002693005.1. The GC content of the type genome is 39.75 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Marinirhabdus detecicella sp. nov.

Candidatus Marinirhabdus detecicella (NL. fem. n. *detecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinirhabdus sp002707745*. The type genome for the species is the GenBank assembly GCA_002388705.1. The GC content of the type genome is 38.13 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Marinirhabdus illepimonia sp. nov.

Candidatus Marinirhabdus illepimonia (NL. fem. n. *illepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinirhabdus sp011044175*. The type genome for the species is the GenBank assembly RS_GCF_011044175.1. The GC content of the type genome is 37.43 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Marinirhabdus necubetta sp. nov.

Candidatus Marinirhabdus necubetta (NL. fem. n. *necubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinirhabdus sp002337605*. The type genome for the species is the GenBank assembly GCA_002337605.1. The GC content of the type genome is 38.62 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Marinisoma allapatica sp. nov.

Candidatus Marinisoma allapatica (NL. fem. n. *allapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902624575*. The type genome for the species is the GenBank assembly GCA_902624575.1. The GC content of the type genome is 31.66 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Marinisoma anastastra sp. nov.

Candidatus Marinisoma anastastra (NL. fem. n. *anastastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp012963075*. The type genome for the species is the GenBank assembly GCA_012963075.1. The GC content of the type genome is 32.59 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Marinisoma armifessa sp. nov.

Candidatus Marinisoma armifessa (NL. fem. n. *armifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp000402755*. The type genome for the species is the GenBank assembly GCA_000402755.1. The GC content of the type genome is 32.8 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Marinisoma depubisca sp. nov.

Candidatus Marinisoma depubisca (NL. fem. n. *depubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp014240005*. The type genome for the species is the GenBank assembly GCA_012959475.1. The GC content of the type genome is 32.54 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Marinisoma domabicula sp. nov.

Candidatus Marinisoma domabicula (NL. fem. n. *domabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902538565*. The type genome for the species is the GenBank assembly GCA_902521825.1. The GC content of the type genome is 31.79 %

and the genome length is 0.91 Mbp.

Description of *Candidatus* Marinisoma ecfacimonas sp. nov.

Candidatus Marinisoma ecfacimonas (NL. fem. n. *ecfacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902525615*. The type genome for the species is the GenBank assembly GCA_902525615.1. The GC content of the type genome is 31.55 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Marinisoma inherax sp. nov.

Candidatus Marinisoma inherax (NL. fem. n. *inherax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902624275*. The type genome for the species is the GenBank assembly GCA_902624275.1. The GC content of the type genome is 31.52 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Marinisoma labecicula sp. nov.

Candidatus Marinisoma labecicula (NL. fem. n. *labecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp002348725*. The type genome for the species is the GenBank assembly GCA_002348725.1. The GC content of the type genome is 31.6 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Marinisoma notacilega sp. nov.

Candidatus Marinisoma notacilega (NL. fem. n. *notacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp002710515*. The type genome for the species is the GenBank assembly GCA_902578385.1. The GC content of the type genome is 31.24 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Marinisoma obtunugo sp. nov.

Candidatus Marinisoma obtunugo (NL. fem. n. *obtunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp002701645*. The type genome for the species is the GenBank assembly GCA_002701645.1. The GC content of the type genome is 32.34 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Marinisoma octacicella sp. nov.

Candidatus Marinisoma octacicella (NL. fem. n. *octacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902526795*. The type genome for the species is the GenBank assembly GCA_902526795.1. The GC content of the type genome is 31.06 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Marinisoma octopifica sp. nov.

Candidatus Marinisoma octopifica (NL. fem. n. *octopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902636035*. The type genome for the species is the GenBank assembly GCA_902636035.1. The GC content of the type genome is 31.42 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Marinisoma pepenousia sp. nov.

Candidatus Marinisoma pepenousia (NL. fem. n. *pepenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902576865*. The type genome for the species is the GenBank assembly GCA_902576865.1. The GC content of the type genome is 31.68 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Marinisoma pluscentia sp. nov.

Candidatus Marinisoma pluscentia (NL. fem. n. *pluscentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902575395*. The type genome for the species is the GenBank assembly GCA_902575395.1. The GC content of the type genome is 32.62 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Marinisoma repagimonia sp. nov.

Candidatus Marinisoma repagimonia (NL. fem. n. *repagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp000402655*. The type genome for the species is the GenBank assembly GCA_902597955.1. The GC content of the type genome is 31.57 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Marinisoma resupifica sp. nov.

Candidatus Marinisoma resupifica (NL. fem. n. *resupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902599655*. The type genome for the species is the GenBank assembly GCA_011523025.1. The GC content of the type genome is 31.6 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Marinisoma rosacessa sp. nov.

Candidatus Marinisoma rosacessa (NL. fem. n. *rosacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp902629855*. The type genome for the species is the GenBank assembly GCA_902624155.1. The GC content of the type genome is 31.27 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Marinisoma viripimonas sp. nov.

Candidatus Marinisoma viripimonas (NL. fem. n. *viripimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinisoma sp000494305*. The type genome for the species is the GenBank assembly GCA_000494305.1. The GC content of the type genome is 32.62 %

and the genome length is 1.12 Mbp.

Description of *Candidatus* Marinitoga carucitura sp. nov.

Candidatus Marinitoga carucitura (NL. fem. n. *carucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinitoga sp001021165*. The type genome for the species is the GenBank assembly RS_GCF_001021165.1. The GC content of the type genome is 27.4 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Marinitoga sonivedo sp. nov.

Candidatus Marinitoga sonivedo (NL. fem. n. *sonivedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinitoga sp011057715*. The type genome for the species is the GenBank assembly RS_GCF_011057715.1. The GC content of the type genome is 26.08 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Marinobacter adsibax sp. nov.

Candidatus Marinobacter adsibax (NL. fem. n. *adsibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp005871205*. The type genome for the species is the GenBank assembly RS_GCF_005871205.1. The GC content of the type genome is 57.36 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Marinobacter aglasicula sp. nov.

Candidatus Marinobacter aglasicula (NL. fem. n. *aglasicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp003441595*. The type genome for the species is the GenBank assembly RS_GCF_003441595.1. The GC content of the type genome is 57.65 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Marinobacter alembedo sp. nov.

Candidatus Marinobacter alembedo (NL. fem. n. *alembedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp008370345*. The type genome for the species is the GenBank assembly RS_GCF_008370345.1. The GC content of the type genome is 55.61 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Marinobacter antevessa sp. nov.

Candidatus Marinobacter antevessa (NL. fem. n. *antevessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp005298175*. The type genome for the species is the GenBank assembly RS_GCF_005298175.1. The GC content of the type genome is 57.37 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Marinobacter apharitia sp. nov.

Candidatus Marinobacter apharitia (NL. fem. n. *apharitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp002407605*. The type genome for the species is the GenBank assembly RS_GCF_002407605.1. The GC content of the type genome is 53.65 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Marinobacter apsocibula sp. nov.

Candidatus Marinobacter apsocibula (NL. fem. n. *apsocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp000169375*. The type genome for the species is the GenBank assembly RS_GCF_000169375.1. The GC content of the type genome is 54.34 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Marinobacter asbesicula sp. nov.

Candidatus Marinobacter asbesicula (NL. fem. n. *asbesicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp900188435*. The type genome for the species is the GenBank assembly RS_GCF_900188435.1. The GC content of the type genome is 56.87 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Marinobacter bonifibula sp. nov.

Candidatus Marinobacter bonifibula (NL. fem. n. *bonifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp004792665*. The type genome for the species is the GenBank assembly RS_GCF_012956055.1. The GC content of the type genome is 57.3 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Marinobacter cacopatica sp. nov.

Candidatus Marinobacter cacopatica (NL. fem. n. *cacopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp013393545*. The type genome for the species is the GenBank assembly GCA_013393545.1. The GC content of the type genome is 54.55 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Marinobacter colipivita sp. nov.

Candidatus Marinobacter colipivita (NL. fem. n. *colipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp004353225*. The type genome for the species is the GenBank assembly RS_GCF_004353225.1. The GC content of the type genome is 53.52 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Marinobacter dirititio sp. nov.

Candidatus Marinobacter dirititio (NL. fem. n. *dirititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp008795955*. The type genome for the species is the GenBank assembly RS_GCF_008795955.1. The GC content of the type genome is 56.92

% and the genome length is 4.93 Mbp.

Description of *Candidatus* Marinobacter duricitas sp. nov.

Candidatus Marinobacter duricitas (NL. fem. n. *duricitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp000686085*. The type genome for the species is the GenBank assembly GCA_001314605.1. The GC content of the type genome is 57.58 % and the genome length is 4.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-O from microbial mat sample; contains cyanobacterium Phormidium OSCR and associated heterotrophs".

Description of *Candidatus* Marinobacter effulitas sp. nov.

Candidatus Marinobacter effulitas (NL. fem. n. *effulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp900188315*. The type genome for the species is the GenBank assembly RS_GCF_900188315.1. The GC content of the type genome is 57.24 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Marinobacter ellebifica sp. nov.

Candidatus Marinobacter ellebifica (NL. fem. n. *ellebifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp003030785*. The type genome for the species is the GenBank assembly GCA_003030785.1. The GC content of the type genome is 56.78 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Marinobacter esculitrix sp. nov.

Candidatus Marinobacter esculitrix (NL. fem. n. *esculitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp001752365*. The type genome for the species is the GenBank assembly RS_GCF_001752365.1. The GC content of the type genome is 59.66 % and the genome length is 3.49 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "sediment".

Description of *Candidatus* Marinobacter illibitoga sp. nov.

Candidatus Marinobacter illibitoga (NL. fem. n. *illibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp011074955*. The type genome for the species is the GenBank assembly RS_GCF_011074955.1. The GC content of the type genome is 56.57 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Marinobacter immodatio sp. nov.

Candidatus Marinobacter immodatio (NL. fem. n. *immodatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp001858325*. The type genome for the species is the GenBank assembly RS_GCF_001858325.1. The GC content of the type genome is 53.85 % and the genome length is 4.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sediment sample of Kongsfizorden; Arctic".

Description of *Candidatus* Marinobacter insomimonia sp. nov.

Candidatus Marinobacter insomimonia (NL. fem. n. *insomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp002707215*. The type genome for the species is the GenBank assembly GCA_002707215.1. The GC content of the type genome is 58.13 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Marinobacter lametisca sp. nov.

Candidatus Marinobacter lametisca (NL. fem. n. *lametisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp900215155*. The type genome for the species is the GenBank assembly RS_GCF_002846515.1. The GC content of the type genome is 53.9 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Marinobacter lenunedo sp. nov.

Candidatus Marinobacter lenunedo (NL. fem. n. *lenunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp001650915*. The type genome for the species is the GenBank assembly RS_GCF_001650765.1. The GC content of the type genome is 57.2 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Marinobacter manibitia sp. nov.

Candidatus Marinobacter manibitia (NL. fem. n. *manibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp008107725*. The type genome for the species is the GenBank assembly RS_GCF_008107725.1. The GC content of the type genome is 56.95 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Marinobacter murilitia sp. nov.

Candidatus Marinobacter murilitia (NL. fem. n. *murilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp002726615*. The type genome for the species is the GenBank assembly GCA_002714765.1. The GC content of the type genome is 56.95 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Marinobacter nocumivita sp. nov.

Candidatus Marinobacter nocumivita (NL. fem. n. *nocumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp001447155*. The type genome for the species is the GenBank assembly RS_GCF_001447155.2. The GC content of the type genome is 57.17 % and the genome length is 4.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment".

Description of *Candidatus* Marinobacter ossucitrix sp. nov.

Candidatus Marinobacter ossucitrix (NL. fem. n. *ossucitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp002933275*. The type genome for the species is the GenBank assembly RS_GCF_002933275.1. The GC content of the type genome is 57.25 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Marinobacter prodrivita sp. nov.

Candidatus Marinobacter prodrivita (NL. fem. n. *prodrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp003994855*. The type genome for the species is the GenBank assembly RS_GCF_003994855.1. The GC content of the type genome is 57.11 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Marinobacter rinocitia sp. nov.

Candidatus Marinobacter rinocitia (NL. fem. n. *rinocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp002732725*. The type genome for the species is the GenBank assembly GCA_002732725.1. The GC content of the type genome is 57.03 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Marinobacter sonivastra sp. nov.

Candidatus Marinobacter sonivastra (NL. fem. n. *sonivastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp002563885*. The type genome for the species is the GenBank assembly RS_GCF_002563815.1. The GC content of the type genome is 54.55 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Marinobacter tumefitas sp. nov.

Candidatus Marinobacter tumefitas (NL. fem. n. *tumefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp003318275*. The type genome for the species is the GenBank assembly RS_GCF_003318275.1. The GC content of the type genome is 53.7 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Marinobacter vehiciforma sp. nov.

Candidatus Marinobacter vehiciforma (NL. fem. n. *vehiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter sp014359475*. The type genome for the species is the GenBank assembly GCA_014359475.1. The GC content of the type genome is 58.4 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Marinobacter adnepitica sp. nov.

Candidatus Marinobacter adnepitica (NL. fem. n. *adnepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter_A sp004327985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004327985.1. The GC content of the type genome is 60.88 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Marinobacter benemigena sp. nov.

Candidatus Marinobacter benemigena (NL. fem. n. *benemigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter_A sp003789045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003789045.1. The GC content of the type genome is 60.88 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Marinobacter rubicibra sp. nov.

Candidatus Marinobacter rubicibra (NL. fem. n. *rubicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacter_A sp002717955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002683455.1. The GC content of the type genome is 55.4 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Marinobacterium categibra sp. nov.

Candidatus Marinobacterium categibra (NL. fem. n. *categibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacterium sp003250495*. The type genome for the species is the GenBank assembly GCA_003250495.1. The GC content of the type genome is 63.36 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Marinobacterium derelivita sp. nov.

Candidatus Marinobacterium derelivita (NL. fem. n. *derelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacterium sp013868415*. The type genome for the species is the GenBank assembly RS_GCF_013868415.1. The GC content of the type genome is 56.39 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Marinobacterium impinugo sp. nov.

Candidatus Marinobacterium impinugo (NL. fem. n. *impinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacterium sp013373575*. The type genome for the species is the GenBank assembly GCA_013373575.1. The GC content of the type genome is 51.1 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Marinobacterium legifitia sp. nov.

Candidatus Marinobacterium legifitia (NL. fem. n. *legifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacterium sp000705555*. The type genome for the species is the

GenBank assembly RS_GCF_000705555.1. The GC content of the type genome is 56.45 % and the genome length is 4.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment sample from brackwater".

Description of *Candidatus* Marinobacterium tegimatica sp. nov.

Candidatus Marinobacterium tegimatica (NL. fem. n. *tegimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacterium sp013283365*. The type genome for the species is the GenBank assembly RS_GCF_013283405.1. The GC content of the type genome is 48.25 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Marinobacterium vigenitura sp. nov.

Candidatus Marinobacterium vigenitura (NL. fem. n. *vigenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacterium sp012848475*. The type genome for the species is the GenBank assembly RS_GCF_012848475.1. The GC content of the type genome is 47.73 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Marinobacterium appicilenta sp. nov.

Candidatus Marinobacterium appicilenta (NL. fem. n. *appicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinobacterium_A sp013373085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013373085.1. The GC content of the type genome is 59.99 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Marinomonas adcumentia sp. nov.

Candidatus Marinomonas adcumentia (NL. fem. n. *adcumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp013373235*. The type genome for the species is the GenBank assembly GCA_013373235.1. The GC content of the type genome is 42.3 %

and the genome length is 4.47 Mbp.

Description of *Candidatus* Marinomonas appicibula sp. nov.

Candidatus Marinomonas appicibula (NL. fem. n. *appicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp012584435*. The type genome for the species is the GenBank assembly RS_GCF_012584435.1. The GC content of the type genome is 46.03 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Marinomonas arcubugo sp. nov.

Candidatus Marinomonas arcubugo (NL. fem. n. *arcubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp004352835*. The type genome for the species is the GenBank assembly RS_GCF_004352835.1. The GC content of the type genome is 42.6 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Marinomonas biparugo sp. nov.

Candidatus Marinomonas biparugo (NL. fem. n. *biparugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp000153025*. The type genome for the species is the GenBank assembly RS_GCF_000153025.1. The GC content of the type genome is 40.87 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Marinomonas bugilousia sp. nov.

Candidatus Marinomonas bugilousia (NL. fem. n. *bugilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp000017285*. The type genome for the species is the GenBank assembly RS_GCF_012726345.1. The GC content of the type genome is 42.71 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Marinomonas ceraretta sp. nov.

Candidatus Marinomonas ceraretta (NL. fem. n. *ceraretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp006385675*. The type genome for the species is the GenBank assembly RS_GCF_006385675.1. The GC content of the type genome is 47.96 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Marinomonas diponousia sp. nov.

Candidatus Marinomonas diponousia (NL. fem. n. *diponousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp001624705*. The type genome for the species is the GenBank assembly RS_GCF_001624595.1. The GC content of the type genome is 40.43 % and the genome length is 5.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "coastal seawater".

Description of *Candidatus* Marinomonas hemiditia sp. nov.

Candidatus Marinomonas hemiditia (NL. fem. n. *hemiditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp004352855*. The type genome for the species is the GenBank assembly RS_GCF_004352855.1. The GC content of the type genome is 45.67 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Marinomonas lanifetta sp. nov.

Candidatus Marinomonas lanifetta (NL. fem. n. *lanifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp001625355*. The type genome for the species is the GenBank assembly RS_GCF_001625355.1. The GC content of the type genome is 44.63 % and the genome length is 3.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "saline water".

Description of *Candidatus* Marinomonas scaccastra sp. nov.

Candidatus Marinomonas scaccastra (NL. fem. n. *scaccastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinomonas sp008122525*. The type genome for the species is the GenBank assembly RS_GCF_008122525.1. The GC content of the type genome is 46.05 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Marinoscillum abnocousia sp. nov.

Candidatus Marinoscillum abnocousia (NL. fem. n. *abnocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinoscillum sp902506655*. The type genome for the species is the GenBank assembly RS_GCF_902506655.1. The GC content of the type genome is 45.74 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Marinoscillum culilago sp. nov.

Candidatus Marinoscillum culilago (NL. fem. n. *culilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinoscillum sp002729235*. The type genome for the species is the GenBank assembly GCA_002729235.1. The GC content of the type genome is 40.09 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Marinospirillum adhosatio sp. nov.

Candidatus Marinospirillum adhosatio (NL. fem. n. *adhosatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinospirillum sp007119985*. The type genome for the species is the GenBank assembly GCA_007119985.1. The GC content of the type genome is 52.96 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Marinospirillum allapugo sp. nov.

Candidatus Marinospirillum allapugo (NL. fem. n. *allapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Marinospirillum sp007116195*. The type genome for the species is the GenBank assembly GCA_007116195.1. The GC content of the type genome is 49.54 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Marinospirillum anastiforma sp. nov.

Candidatus Marinospirillum anastiforma (NL. fem. n. *anastiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinospirillum sp012727935*. The type genome for the species is the GenBank assembly GCA_012727935.1. The GC content of the type genome is 43.86 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Marinospirillum monocitas sp. nov.

Candidatus Marinospirillum monocitas (NL. fem. n. *monocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinospirillum sp007116865*. The type genome for the species is the GenBank assembly GCA_007116865.1. The GC content of the type genome is 54.1 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Marinosulfonomonas attelitrix sp. nov.

Candidatus Marinosulfonomonas attelitrix (NL. fem. n. *attelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinosulfonomonas sp002352425*. The type genome for the species is the GenBank assembly GCA_002352425.1. The GC content of the type genome is 55.05 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Marinosulfonomonas evangousia sp. nov.

Candidatus Marinosulfonomonas evangousia (NL. fem. n. *evangousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinosulfonomonas sp003535335*. The type genome for the species is the GenBank assembly GCA_003535335.1. The GC content of the type genome is 51.85 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Marinosulfonomonas excogastra sp. nov.

Candidatus Marinosulfonomonas excogastra (NL. fem. n. *excogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinosulfonomonas sp001321835*. The type genome for the species is the GenBank assembly GCA_001321835.1. The GC content of the type genome is 54.25 % and the genome length is 1.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "single cell amplified by MDA; hadopelagic water column of the Puerto Rico Trench at 8200 m depth".

Description of *Candidatus* Marinosulfonomonas habacigena sp. nov.

Candidatus Marinosulfonomonas habacigena (NL. fem. n. *habacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinosulfonomonas sp002732995*. The type genome for the species is the GenBank assembly GCA_002732995.1. The GC content of the type genome is 56.24 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Marinosulfonomonas irradibula sp. nov.

Candidatus Marinosulfonomonas irradibula (NL. fem. n. *irradibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinosulfonomonas sp002748285*. The type genome for the species is the GenBank assembly GCA_002748285.1. The GC content of the type genome is 58.68 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Marinosulfonomonas lanugivita sp. nov.

Candidatus Marinosulfonomonas lanugivita (NL. fem. n. *lanugivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinosulfonomonas sp003544895*. The type genome for the species is the GenBank assembly RS_GCF_003544895.1. The GC content of the type genome is 57.38 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Marinovum resacugo sp. nov.

Candidatus Marinovum resacugo (NL. fem. n. *resacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marinovum sp006226775*. The type genome for the species is the GenBank assembly GCA_006226775.1. The GC content of the type genome is 67.02 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Mariprofundus decenentia sp. nov.

Candidatus Mariprofundus decenentia (NL. fem. n. *decenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariprofundus sp013387455*. The type genome for the species is the GenBank assembly RS_GCF_013387455.1. The GC content of the type genome is 50.96 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Mariprofundus embamitica sp. nov.

Candidatus Mariprofundus embamitica (NL. fem. n. *embamitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariprofundus sp013387475*. The type genome for the species is the GenBank assembly RS_GCF_013387475.1. The GC content of the type genome is 51.94 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Mariprofundus inlapigena sp. nov.

Candidatus Mariprofundus inlapigena (NL. fem. n. *inlapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariprofundus sp003665155*. The type genome for the species is the GenBank assembly RS_GCF_003665155.1. The GC content of the type genome is 46.65 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Mariprofundus inresimonas sp. nov.

Candidatus Mariprofundus inresimonas (NL. fem. n. *inresimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariprofundus sp001871925*. The type genome for the species is the GenBank assembly GCA_001871925.1. The GC content of the type genome is 53.2 % and the genome length is 2.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Mariprofundus noninitio sp. nov.

Candidatus Mariprofundus noninitio (NL. fem. n. *noninitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mariprofundus sp002791575*. The type genome for the species is the GenBank assembly GCA_002781905.1. The GC content of the type genome is 54.38 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Marisediminicola chalbugo sp. nov.

Candidatus Marisediminicola chalbugo (NL. fem. n. *chalbugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marisediminicola sp011057645*. The type genome for the species is the GenBank assembly RS_GCF_011057645.1. The GC content of the type genome is 68.52 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Marisediminicola legifessa sp. nov.

Candidatus Marisediminicola legifessa (NL. fem. n. *legifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marisediminicola sp014378715*. The type genome for the species is the GenBank assembly GCA_014378715.1. The GC content of the type genome is 69.18 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Marisediminicola socagibra sp. nov.

Candidatus Marisediminicola socagibra (NL. fem. n. *socagibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Marisediminicola sp014377425*. The type genome for the species is the GenBank assembly GCA_014377425.1. The GC content of the type genome is 62.43 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Marithrix denecastra sp. nov.

Candidatus Marithrix denecastra (NL. fem. n. *denecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marithrix sp001723685*. The type genome for the species is the GenBank assembly RS_GCF_001723665.1. The GC content of the type genome is 34.03 % and the genome length is 3.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "segment 2 of single filament from GC246 mud volcano site".

Description of *Candidatus* Maritimibacter anactitas sp. nov.

Candidatus Maritimibacter anactitas (NL. fem. n. *anactitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maritimibacter sp011389895*. The type genome for the species is the GenBank assembly GCA_011389895.1. The GC content of the type genome is 63.33 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Maritimibacter curabitura sp. nov.

Candidatus Maritimibacter curabitura (NL. fem. n. *curabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maritimibacter sp001626765*. The type genome for the species is the GenBank assembly GCA_001626765.1. The GC content of the type genome is 64.32 % and the genome length is 4.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 149 - depth 10m".

Description of *Candidatus* Maritimibacter fetutitas sp. nov.

Candidatus Maritimibacter fetutitas (NL. fem. n. *fetutitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Maritimibacter sp002695005*. The type genome for the species is the GenBank assembly GCA_002695005.1. The GC content of the type genome is 64.42 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Maritimibacter homunentia sp. nov.

Candidatus Maritimibacter homunentia (NL. fem. n. *homunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maritimibacter sp003520545*. The type genome for the species is the GenBank assembly GCA_003520545.1. The GC content of the type genome is 62.27 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Maritimibacter recocifica sp. nov.

Candidatus Maritimibacter recocifica (NL. fem. n. *recocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maritimibacter sp009882975*. The type genome for the species is the GenBank assembly RS_GCF_009882975.1. The GC content of the type genome is 66.14 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Maritimibacter accenimonas sp. nov.

Candidatus Maritimibacter accenimonas (NL. fem. n. *accenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maritimibacter_A sp900177545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900177545.1. The GC content of the type genome is 65.74 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Maritimibacter coturitas sp. nov.

Candidatus Maritimibacter coturitas (NL. fem. n. *coturitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maritimibacter_A sp003694465*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003694465.1. The GC content of the type genome is 67.61 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Maritimibacter fatifitoga sp. nov.

Candidatus Maritimibacter fatifitoga (NL. fem. n. *fatifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maritimibacter_A sp001873585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001873585.1. The GC content of the type genome is 64.86 % and the genome length is 1.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Maritimibacter peripicella sp. nov.

Candidatus Maritimibacter peripicella (NL. fem. n. *peripicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maritimibacter_A sp011100505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008086115.1. The GC content of the type genome is 66.2 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Maritimibacter rutabitrix sp. nov.

Candidatus Maritimibacter rutabitrix (NL. fem. n. *rutabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Maritimibacter_A sp002746935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002746935.1. The GC content of the type genome is 66.49 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Marivirga ignobetta sp. nov.

Candidatus Marivirga ignobetta (NL. fem. n. *ignobetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marivirga sp003973485*. The type genome for the species is the GenBank assembly GCA_003973485.1. The GC content of the type genome is 34.48 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Marivita inturatio sp. nov.

Candidatus Marivita inturatio (NL. fem. n. *inturatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marivita sp003149565*. The type genome for the species is the GenBank assembly GCA_003149565.1. The GC content of the type genome is 58.81 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Marivivens culibibula sp. nov.

Candidatus Marivivens culibibula (NL. fem. n. *culibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marivivens sp001908835*. The type genome for the species is the GenBank assembly GCA_013373465.1. The GC content of the type genome is 56.44 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Marivivens exhedilenta sp. nov.

Candidatus Marivivens exhedilenta (NL. fem. n. *exhedilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marivivens sp004145845*. The type genome for the species is the GenBank assembly RS_GCF_004145845.1. The GC content of the type genome is 62.85 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Marivivens infiriforma sp. nov.

Candidatus Marivivens infiriforma (NL. fem. n. *infiriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marivivens sp009920775*. The type genome for the species is the GenBank assembly GCA_009920775.1. The GC content of the type genome is 62.43 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Marivivens navifousia sp. nov.

Candidatus Marivivens navifousia (NL. fem. n. *navifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marivivens sp002850435*. The type genome for the species is the GenBank assembly RS_GCF_002850435.1. The GC content of the type genome is 56.78 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Marixanthomonas bucolitas sp. nov.

Candidatus Marixanthomonas bucolitas (NL. fem. n. *bucolitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marixanthomonas sp002631855*. The type genome for the species is the GenBank assembly GCA_002631855.1. The GC content of the type genome is 36.02 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Marixanthomonas favilatio sp. nov.

Candidatus Marixanthomonas favilatio (NL. fem. n. *favilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marixanthomonas sp002360635*. The type genome for the species is the GenBank assembly GCA_002696105.1. The GC content of the type genome is 36.17 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Marixanthomonas occenilega sp. nov.

Candidatus Marixanthomonas occenilega (NL. fem. n. *occenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Marixanthomonas sp002364245*. The type genome for the species is the GenBank assembly GCA_002364245.1. The GC content of the type genome is 36.69 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Marixanthomonas semifedo sp. nov.

Candidatus Marixanthomonas semifedo (NL. fem. n. *semifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marixanthomonas sp003095375*. The type genome for the species is the GenBank assembly RS_GCF_003095375.1. The GC content of the type genome is 40.62 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Marmoricola adsulilenta sp. nov.

Candidatus Marmoricola adsulilenta (NL. fem. n. *adsulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marmoricola sp000426045*. The type genome for the species is the GenBank assembly RS_GCF_000426045.1. The GC content of the type genome is 69.85 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Marmoricola catafago sp. nov.

Candidatus Marmoricola catafago (NL. fem. n. *catafago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marmoricola sp001424755*. The type genome for the species is the GenBank assembly RS_GCF_001424755.1. The GC content of the type genome is 73.38 % and the genome length is 3.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Marmoricola eclipicula sp. nov.

Candidatus Marmoricola eclipicula (NL. fem. n. *eclipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marmoricola sp003674065*. The type genome for the species is the GenBank assembly RS_GCF_003674065.1. The GC content of the type genome is 71.97 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Marmoricola irrotitrix sp. nov.

Candidatus Marmoricola irrotitrix (NL. fem. n. *irrotitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marmoricola_A sp011299595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011299595.1. The GC content of the type genome is 72.43 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Marmoricola tetenago sp. nov.

Candidatus Marmoricola tetenago (NL. fem. n. *tetenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marmoricola_A sp902805845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902805845.1. The GC content of the type genome is 71.31 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Marmoricola viburimonia sp. nov.

Candidatus Marmoricola viburimonia (NL. fem. n. *viburimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marmoricola_A sp902805865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902805865.1. The GC content of the type genome is 70.93 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Martelella ascalatica sp. nov.

Candidatus Martelella ascalatica (NL. fem. n. *ascalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Martelella sp013184775*. The type genome for the species is the

GenBank assembly RS_GCF_013184775.1. The GC content of the type genome is 59.78 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Martelella colopicula sp. nov.

Candidatus Martelella colopicula (NL. fem. n. *colopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Martelella sp001578105*. The type genome for the species is the GenBank assembly RS_GCF_001578105.1. The GC content of the type genome is 62.29 % and the genome length is 5.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "petroleum-contaminated soil with high salinity".

Description of *Candidatus* Martelella peridibula sp. nov.

Candidatus Martelella peridibula (NL. fem. n. *peridibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Martelella sp006516955*. The type genome for the species is the GenBank assembly RS_GCF_006516955.1. The GC content of the type genome is 58.66 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Martelella rudecisca sp. nov.

Candidatus Martelella rudecisca (NL. fem. n. *rudecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Martelella sp013459645*. The type genome for the species is the GenBank assembly RS_GCF_013459645.1. The GC content of the type genome is 61.82 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Marvinbryantia abmaticula sp. nov.

Candidatus Marvinbryantia abmaticula (NL. fem. n. *abmaticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marvinbryantia sp900544685*. The type genome for the species is the GenBank assembly GCA_900544685.1. The GC content of the type genome is 43.12 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Marvinbryantia cerarimonas sp. nov.

Candidatus Marvinbryantia cerarimonas (NL. fem. n. *cerarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marvinbryantia sp900550755*. The type genome for the species is the GenBank assembly GCA_900550755.1. The GC content of the type genome is 49.77 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Marvinbryantia fidenigena sp. nov.

Candidatus Marvinbryantia fidenigena (NL. fem. n. *fidenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marvinbryantia sp900066075*. The type genome for the species is the GenBank assembly RS_GCF_003435055.1. The GC content of the type genome is 42.92 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Marvinbryantia oppugivita sp. nov.

Candidatus Marvinbryantia oppugivita (NL. fem. n. *oppugivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marvinbryantia sp014385005*. The type genome for the species is the GenBank assembly GCA_014385005.1. The GC content of the type genome is 42.72 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Marvinbryantia voragicula sp. nov.

Candidatus Marvinbryantia voragicula (NL. fem. n. *voragicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Marvinbryantia sp002473385*. The type genome for the species is the GenBank assembly GCA_002473385.1. The GC content of the type genome is 48.14 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Masocana letifimonas sp. nov.

Candidatus Masocana letifimonas (NL. fem. n. *letifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA912 sp002293965*. The type genome for the species is the GenBank assembly GCA_002293965.1. The GC content of the type genome is 60.08 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Masocana gen. nov.

Candidatus Masocana (NL. fem. n. *Masocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA912*. The type species for the genus is *Candidatus* Masocana letifimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA912*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Masocanaceae.

Description of *Candidatus* Masocanaceae fam. nov.

Candidatus Masocanaceae (NL. fem. n. *Masocanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA912.* The type genus for the taxon is *Candidatus* Masocana .

According to the original version of GTDB R06-RS202, this family belongs to the order *OPB41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodanales.

Description of *Candidatus* Masocaria bulapibula sp. nov.

Candidatus Masocaria bulapibula (NL. fem. n. *bulapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718655 sp002167345*. The type genome for the species is the GenBank assembly GCA_002167345.2. The GC content of the type genome is 36.39 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Masocaria gen. nov.

Candidatus Masocaria (NL. fem. n. *Masocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002718655*. The type species for the genus is *Candidatus* Masocaria bulapibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1611*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilariaceae.

Description of *Candidatus* Masocaria obsoressa sp. nov.

Candidatus Masocaria obsoressa (NL. fem. n. *obsoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718655 sp002718655*. The type genome for the species is the GenBank assembly GCA_002718655.1. The GC content of the type genome is 34.56 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Masocaria reduvousia sp. nov.

Candidatus Masocaria reduvousia (NL. fem. n. *reduvousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718655 sp002698235*. The type genome for the species is the GenBank assembly GCA_002704395.1. The GC content of the type genome is 36.31 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Masocaria rudecugo sp. nov.

Candidatus Masocaria rudecugo (NL. fem. n. *rudecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718655 sp902562835*. The type genome for the species is the GenBank assembly GCA_902562835.1. The GC content of the type genome is 36.19 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Masocella tomacitica sp. nov.

Candidatus Masocella tomacitica (NL. fem. n. *tomacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE1-39-12 sp001029735*. The type genome for the species is the GenBank assembly GCA_001029735.1. The GC content of the type genome is 39.01 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Masocella gen. nov.

Candidatus Masocella (NL. fem. n. *Masocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE1-39-12*. The type species for the genus is *Candidatus* Masocella tomacitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12157*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maledosaceae.

Description of *Candidatus* Masocia adnilitura sp. nov.

Candidatus Masocia adnilitura (NL. fem. n. *adnilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-35-72 sp013205245*. The type genome for the species is the GenBank assembly GCA_013205245.1. The GC content of the type genome is 33.69 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Masocia gen. nov.

Candidatus Masocia (NL. fem. n. *Masocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-35-72*. The type species for the genus is *Candidatus* Masocia adnilitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Masocia ludifetta sp. nov.

Candidatus Masocia ludifetta (NL. fem. n. *ludifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-35-72 sp002793215*. The type genome for the species is the GenBank assembly GCA_002793215.1. The GC content of the type genome is 34.95 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Masocida acrimugo sp. nov.

Candidatus Masocida acrimugo (NL. fem. n. *acrimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-582 sp900760845*. The type genome for the species is the GenBank assembly RS_GCF_900760845.1. The GC content of the type genome is 26.0 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Masocida gen. nov.

Candidatus Masocida (NL. fem. n. *Masocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-582*. The type species for the genus is *Candidatus* Masocida acrimugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Masocida hirudessa sp. nov.

Candidatus Masocida hirudessa (NL. fem. n. *hirudessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-582 sp000435515*. The type genome for the species is the GenBank assembly GCA_000435515.1. The GC content of the type genome is 27.06 % and the genome length is 1.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Masocosa cicilifica sp. nov.

Candidatus Masocosa cicilifica (NL. fem. n. *cicilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB2-FULL-36-35 sp001771505*. The type genome for the species is the GenBank assembly GCA_001771505.1. The GC content of the type genome is 36.11 % and the genome length is 1.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Masocosa gen. nov.

Candidatus Masocosa (NL. fem. n. *Masocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB2-FULL-36-35*. The type species for the genus is *Candidatus* Masocosa cicilifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-37-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumacariaceae.

Description of *Candidatus* Masocula cadavisca sp. nov.

Candidatus Masocula cadavisca (NL. fem. n. *cadavisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILQO01 sp903836285*. The type genome for the species is the GenBank assembly GCA_903836285.1. The GC content of the type genome is 66.75 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Masocula gen. nov.

Candidatus Masocula (NL. fem. n. *Masocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILQO01*. The type species for the genus is *Candidatus* Masocula cadavisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12225*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehonanaceae.

Description of *Candidatus* Massilia abnorilega sp. nov.

Candidatus Massilia abnorilega (NL. fem. n. *abnorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp005222695*. The type genome for the species is the GenBank assembly RS_GCF_005222695.1. The GC content of the type genome is 65.42 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Massilia abrelibra sp. nov.

Candidatus Massilia abrelibra (NL. fem. n. *abrelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp000759615*. The type genome for the species is the GenBank assembly RS_GCF_000759615.1. The GC content of the type genome is 66.17 % and the genome length is 7.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Peanut rhizosphere".

Description of *Candidatus* Massilia adsifibra sp. nov.

Candidatus Massilia adsifibra (NL. fem. n. *adsifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp001425685*. The type genome for the species is the GenBank assembly RS_GCF_001425685.1. The GC content of the type genome is 66.3 % and the genome length is 7.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Massilia adsulousia sp. nov.

Candidatus Massilia adsulousia (NL. fem. n. *adsulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp002428015*. The type genome for the species is the GenBank assembly GCA_002428015.1. The GC content of the type genome is 66.1 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Massilia agripilenta sp. nov.

Candidatus Massilia agripilenta (NL. fem. n. *agripilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp012927275*. The type genome for the species is the GenBank assembly RS_GCF_012927275.1. The GC content of the type genome is 63.25 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Massilia baropitia sp. nov.

Candidatus Massilia baropitia (NL. fem. n. *baropitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp013003915*. The type genome for the species is the GenBank assembly RS_GCF_013003915.1. The GC content of the type genome is 64.54 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Massilia capabitoga sp. nov.

Candidatus Massilia capabitoga (NL. fem. n. *capabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp902506415*. The type genome for the species is the GenBank assembly RS_GCF_902506415.1. The GC content of the type genome is 65.58 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Massilia caseledo sp. nov.

Candidatus Massilia caseledo (NL. fem. n. *caseledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp012849555*. The type genome for the species is the GenBank assembly RS_GCF_012849555.1. The GC content of the type genome is 66.52 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Massilia cululessa sp. nov.

Candidatus Massilia cululessa (NL. fem. n. *cululessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Massilia sp900101265*. The type genome for the species is the GenBank assembly RS_GCF_900101265.1. The GC content of the type genome is 66.39 % and the genome length is 7.52 Mbp.

Description of *Candidatus* Massilia defenatica sp. nov.

Candidatus Massilia defenatica (NL. fem. n. *defenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp003520365*. The type genome for the species is the GenBank assembly GCA_003520365.1. The GC content of the type genome is 65.21 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Massilia eclipisca sp. nov.

Candidatus Massilia eclipisca (NL. fem. n. *eclipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp004798585*. The type genome for the species is the GenBank assembly RS_GCF_004798585.1. The GC content of the type genome is 64.8 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Massilia eclipitura sp. nov.

Candidatus Massilia eclipitura (NL. fem. n. *eclipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp003484545*. The type genome for the species is the GenBank assembly GCA_003484545.1. The GC content of the type genome is 65.59 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Massilia ensifetta sp. nov.

Candidatus Massilia ensifetta (NL. fem. n. *ensifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp002339265*. The type genome for the species is the GenBank assembly GCA_002339265.1. The GC content of the type genome is 65.53 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Massilia exorcilega sp. nov.

Candidatus Massilia exorcilega (NL. fem. n. *exorcilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp000745265*. The type genome for the species is the GenBank assembly RS_GCF_000745265.1. The GC content of the type genome is 65.7 % and the genome length is 5.71 Mbp.

Description of *Candidatus* Massilia fefelibula sp. nov.

Candidatus Massilia fefelibula (NL. fem. n. *fefelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp011682055*. The type genome for the species is the GenBank assembly RS_GCF_011682055.1. The GC content of the type genome is 66.31 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Massilia fuligugo sp. nov.

Candidatus Massilia fuligugo (NL. fem. n. *fuligugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp001426525*. The type genome for the species is the GenBank assembly RS_GCF_009763355.1. The GC content of the type genome is 66.23 % and the genome length is 7.34 Mbp.

Description of *Candidatus* Massilia habacastra sp. nov.

Candidatus Massilia habacastra (NL. fem. n. *habacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp002007115*. The type genome for the species is the GenBank assembly RS_GCF_002007115.1. The GC content of the type genome is 67.12 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Massilia ignomitia sp. nov.

Candidatus Massilia ignomitia (NL. fem. n. *ignomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp900129765*. The type genome for the species is the GenBank assembly RS_GCF_900129765.1. The GC content of the type genome is 61.79 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Massilia inargimonas sp. nov.

Candidatus Massilia inargimonas (NL. fem. n. *inargimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp000740675*. The type genome for the species is the GenBank assembly RS_GCF_000740675.1. The GC content of the type genome is 65.4 % and the genome length is 5.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Biological Soil Crust".

Description of *Candidatus* Massilia linigibra sp. nov.

Candidatus Massilia linigibra (NL. fem. n. *linigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp014171595*. The type genome for the species is the GenBank assembly RS_GCF_014171775.1. The GC content of the type genome is 65.21 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Massilia ludimitica sp. nov.

Candidatus Massilia ludimitica (NL. fem. n. *ludimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp002354135*. The type genome for the species is the GenBank assembly GCA_002354135.1. The GC content of the type genome is 65.58 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Massilia luxurago sp. nov.

Candidatus Massilia luxurago (NL. fem. n. *luxurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp001424165*. The type genome for the species is the GenBank assembly RS_GCF_001424165.1. The GC content of the type genome is 65.31 % and the genome length is 5.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Massilia octacilenta sp. nov.

Candidatus Massilia octacilenta (NL. fem. n. *octacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp003953935*. The type genome for the species is the GenBank assembly RS_GCF_003953935.1. The GC content of the type genome is 65.36 % and the genome length is 7.36 Mbp.

Description of *Candidatus* Massilia pocilitura sp. nov.

Candidatus Massilia pocilitura (NL. fem. n. *pocilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp004614195*. The type genome for the species is the GenBank assembly RS_GCF_004614195.1. The GC content of the type genome is 63.82 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Massilia podagiforma sp. nov.

Candidatus Massilia podagiforma (NL. fem. n. *podagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp001412595*. The type genome for the species is the GenBank assembly RS_GCF_001028775.2. The GC content of the type genome is 65.72 % and the genome length is 6.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil".

Description of *Candidatus* Massilia ranunitudo sp. nov.

Candidatus Massilia ranunitudo (NL. fem. n. *ranunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp003590855*. The type genome for the species is the

GenBank assembly RS_GCF_003590855.1. The GC content of the type genome is 63.64 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Massilia rumifitio sp. nov.

Candidatus Massilia rumifitio (NL. fem. n. *rumifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp001485665*. The type genome for the species is the GenBank assembly RS_GCF_002900945.1. The GC content of the type genome is 63.46 % and the genome length is 7.85 Mbp.

Description of *Candidatus* Massilia sicubitudo sp. nov.

Candidatus Massilia sicubitudo (NL. fem. n. *sicubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilia sp006715485*. The type genome for the species is the GenBank assembly RS_GCF_006715485.1. The GC content of the type genome is 65.52 % and the genome length is 6.72 Mbp.

Description of *Candidatus* Massilimaliae turiletta sp. nov.

Candidatus Massilimaliae turiletta (NL. fem. n. *turiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilimaliae sp900752435*. The type genome for the species is the GenBank assembly RS_GCF_900752435.1. The GC content of the type genome is 48.38 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Massiliomicrobiota favonedo sp. nov.

Candidatus Massiliomicrobiota favonedo (NL. fem. n. *favonedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massiliomicrobiota sp002160815*. The type genome for the species is the GenBank assembly RS_GCF_002161155.1. The GC content of the type genome is 31.65 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Massiliomicrobiota tumefimonas sp. nov.

Candidatus Massiliomicrobiota tumefimonas (NL. fem. n. *tumefimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massiliomicrobiota sp002160865*. The type genome for the species is the GenBank assembly RS_GCF_002160865.1. The GC content of the type genome is 31.45 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Massilistercora orgetimonas sp. nov.

Candidatus Massilistercora orgetimonas (NL. fem. n. *orgetimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Massilistercora sp902406105*. The type genome for the species is the GenBank assembly GCA_902406105.1. The GC content of the type genome is 47.9 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Mavorana adfanigena sp. nov.

Candidatus Mavorana adfanigena (NL. fem. n. *adfanigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1865 sp902793915*. The type genome for the species is the GenBank assembly GCA_902793915.1. The GC content of the type genome is 53.24 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Mavorana gen. nov.

Candidatus Mavorana (NL. fem. n. *Mavorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1865*. The type species for the genus is *Candidatus* Mavorana adfanigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Mavorana baropitrix sp. nov.

Candidatus Mavorana baropitrix (NL. fem. n. *baropitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1865 sp900555785*. The type genome for the species is the GenBank assembly RS_GCF_900767225.1. The GC content of the type genome is 57.18 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Mavorana fetifigena sp. nov.

Candidatus Mavorana fetifigena (NL. fem. n. *fetifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1865 sp002438075*. The type genome for the species is the GenBank assembly GCA_002438075.1. The GC content of the type genome is 57.39 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Mavorana fusifilega sp. nov.

Candidatus Mavorana fusifilega (NL. fem. n. *fusifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1865 sp900769475*. The type genome for the species is the GenBank assembly RS_GCF_900769475.1. The GC content of the type genome is 53.58 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Mavorana obsoricula sp. nov.

Candidatus Mavorana obsoricula (NL. fem. n. *obsoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1865 sp900768535*. The type genome for the species is the GenBank assembly RS_GCF_900768535.1. The GC content of the type genome is 57.08 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Mavorana sicunatica sp. nov.

Candidatus Mavorana sicunatica (NL. fem. n. *sicunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1865 sp900547725*. The type genome for the species is the GenBank assembly GCA_900547725.1. The GC content of the type genome is 55.98 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Mavorana vaniticella sp. nov.

Candidatus Mavorana vaniticella (NL. fem. n. *vaniticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1865 sp902795355*. The type genome for the species is the GenBank assembly GCA_902795355.1. The GC content of the type genome is 55.71 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Mavoraria inlecimonas sp. nov.

Candidatus Mavoraria inlecimonas (NL. fem. n. *inlecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1459 sp002325765*. The type genome for the species is the GenBank assembly GCA_002325765.1. The GC content of the type genome is 23.84 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Mavoraria gen. nov.

Candidatus Mavoraria (NL. fem. n. *Mavoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1459*. The type species for the genus is *Candidatus* Mavoraria inlecimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1459*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mavorariaceae.

Description of *Candidatus* Mavorariaceae fam. nov.

Candidatus Mavorariaceae (NL. fem. n. *Mavorariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1459.* The type genus for the taxon is *Candidatus* Mavoraria .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales_B*.

Description of *Candidatus* Mavoria adfamicella sp. nov.

Candidatus Mavoria adfamicella (NL. fem. n. *adfamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZHW01 sp012510515*. The type genome for the species is the GenBank assembly GCA_012510515.1. The GC content of the type genome is 29.87 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Mavoria gen. nov.

Candidatus Mavoria (NL. fem. n. *Mavoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZHW01*. The type species for the genus is *Candidatus* Mavoria adfamicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZHW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mavoriaceae.

Description of *Candidatus* Mavoriaceae fam. nov.

Candidatus Mavoriaceae (NL. fem. n. *Mavoriaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZHW01.* The type genus for the taxon is *Candidatus* Mavoria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Mavorida catagentia sp. nov.

Candidatus Mavorida catagentia (NL. fem. n. *catagentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMMJ01 sp903842515*. The type genome for the species is the

GenBank assembly GCA_903842515.1. The GC content of the type genome is 32.95 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Mavorida gen. nov.

Candidatus Mavorida (NL. fem. n. *Mavorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMMJ01*. The type species for the genus is *Candidatus* Mavorida catagentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4408*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vavasanaceae.

Description of *Candidatus* Mavorosa solacicula sp. nov.

Candidatus Mavorosa solacicula (NL. fem. n. *solacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMO01 sp012839865*. The type genome for the species is the GenBank assembly GCA_012839865.1. The GC content of the type genome is 40.63 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Mavorosa gen. nov.

Candidatus Mavorosa (NL. fem. n. *Mavorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMO01*. The type species for the genus is *Candidatus* Mavorosa solacicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mavorosaceae.

Description of *Candidatus* Mavorosaceae fam. nov.

Candidatus Mavorosaceae (NL. fem. n. *Mavorosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMO01*. The type genus for the taxon is *Candidatus* Mavorosa .

According to GTDB R06-RS202, this family belongs to the order *Acetivibrionales*.

Description of *Candidatus* Mavorula sicubetta sp. nov.

Candidatus Mavorula sicubetta (NL. fem. n. *sicubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHLQ01 sp004282895*. The type genome for the species is the GenBank assembly GCA_013001425.1. The GC content of the type genome is 62.95 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Mavorula gen. nov.

Candidatus Mavorula (NL. fem. n. *Mavorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHLQ01*. The type species for the genus is *Candidatus* Mavorula sicubetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHLQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mavorulaceae.

Description of *Candidatus* Mavorulaceae fam. nov.

Candidatus Mavorulaceae (NL. fem. n. *Mavorulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHLQ01*. The type genus for the taxon is *Candidatus* Mavorula .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Maxilana abmatitia sp. nov.

Candidatus Maxilana abmatitia (NL. fem. n. *abmatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902783435*. The type genome for the species is the GenBank assembly GCA_902783435.1. The GC content of the type genome is 25.54 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Maxilana gen. nov.

Candidatus Maxilana (NL. fem. n. *Maxilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3789*. The type species for the genus is *Candidatus* Maxilana abmatitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Maxilana affunicula sp. nov.

Candidatus Maxilana affunicula (NL. fem. n. *affunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902788735*. The type genome for the species is the GenBank assembly GCA_902788735.1. The GC content of the type genome is 26.1 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Maxilana alcedibra sp. nov.

Candidatus Maxilana alcedibra (NL. fem. n. *alcedibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp002369415*. The type genome for the species is the GenBank assembly GCA_002369415.1. The GC content of the type genome is 27.07 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Maxilana appicago sp. nov.

Candidatus Maxilana appicago (NL. fem. n. *appicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902796215*. The type genome for the species is the GenBank assembly GCA_902796215.1. The GC content of the type genome is 26.95 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Maxilana cenoditas sp. nov.

Candidatus Maxilana cenoditas (NL. fem. n. *cenoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902793315*. The type genome for the species is the GenBank assembly GCA_902793315.1. The GC content of the type genome is 27.05 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Maxilana conaredo sp. nov.

Candidatus Maxilana conaredo (NL. fem. n. *conaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902798815*. The type genome for the species is the GenBank assembly GCA_902798815.1. The GC content of the type genome is 25.82 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Maxilana cuferifica sp. nov.

Candidatus Maxilana cuferifica (NL. fem. n. *cuferifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902783315*. The type genome for the species is the GenBank assembly GCA_902783315.1. The GC content of the type genome is 27.72 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Maxilana depasousia sp. nov.

Candidatus Maxilana depasousia (NL. fem. n. *depasousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902797265*. The type genome for the species is the GenBank assembly GCA_902797265.1. The GC content of the type genome is 27.17 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Maxilana dirititudo sp. nov.

Candidatus Maxilana dirititudo (NL. fem. n. *dirititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902782835*. The type genome for the species is the GenBank assembly GCA_902782835.1. The GC content of the type genome is 29.48 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Maxilana milipastra sp. nov.

Candidatus Maxilana milipastra (NL. fem. n. *milipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902794075*. The type genome for the species is the GenBank assembly GCA_902794075.1. The GC content of the type genome is 27.1 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Maxilana nubecibra sp. nov.

Candidatus Maxilana nubecibra (NL. fem. n. *nubecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp900543055*. The type genome for the species is the GenBank assembly GCA_900543055.1. The GC content of the type genome is 26.06 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Maxilana obsatax sp. nov.

Candidatus Maxilana obsatax (NL. fem. n. *obsatax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902768065*. The type genome for the species is the GenBank assembly GCA_902768065.1. The GC content of the type genome is 26.95 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Maxilana satacivita sp. nov.

Candidatus Maxilana satacivita (NL. fem. n. *satacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902776735*. The type genome for the species is the GenBank assembly GCA_902786055.1. The GC content of the type genome is 25.96 %

and the genome length is 1.5 Mbp.

Description of *Candidatus* Maxilana sceptetta sp. nov.

Candidatus Maxilana sceptetta (NL. fem. n. *sceptetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902780585*. The type genome for the species is the GenBank assembly GCA_902780585.1. The GC content of the type genome is 28.83 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Maxilana semivago sp. nov.

Candidatus Maxilana semivago (NL. fem. n. *semivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902764545*. The type genome for the species is the GenBank assembly GCA_902764545.1. The GC content of the type genome is 27.39 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Maxilana sicunetta sp. nov.

Candidatus Maxilana sicunetta (NL. fem. n. *sicunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp900314225*. The type genome for the species is the GenBank assembly GCA_900314225.1. The GC content of the type genome is 25.82 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Maxilana utputiforma sp. nov.

Candidatus Maxilana utputiforma (NL. fem. n. *utputiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3789 sp902780395*. The type genome for the species is the GenBank assembly GCA_902780395.1. The GC content of the type genome is 27.45 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Maxilaria catecibra sp. nov.

Candidatus Maxilaria catecibra (NL. fem. n. *catecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYVA01 sp903862885*. The type genome for the species is the GenBank assembly GCA_903830485.1. The GC content of the type genome is 56.84 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Maxilaria gen. nov.

Candidatus Maxilaria (NL. fem. n. *Maxilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYVA01*. The type species for the genus is *Candidatus* Maxilaria catecibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Maxilaria hexapimonia sp. nov.

Candidatus Maxilaria hexapimonia (NL. fem. n. *hexapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYVA01 sp903929455*. The type genome for the species is the GenBank assembly GCA_903928375.1. The GC content of the type genome is 56.18 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Maxilella cacopousia sp. nov.

Candidatus Maxilella cacopousia (NL. fem. n. *cacopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGN01 sp011334915*. The type genome for the species is the GenBank assembly GCA_011334915.1. The GC content of the type genome is 54.54 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Maxilella gen. nov.

Candidatus Maxilella (NL. fem. n. *Maxilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTGN01*. The type species for the genus is *Candidatus* Maxilella cacopousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTGN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxilellaceae.

Description of *Candidatus* Maxilellaceae fam. nov.

Candidatus Maxilellaceae (NL. fem. n. *Maxilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTGN01*. The type genus for the taxon is *Candidatus* Maxilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *BSN033*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Debucellales.

Description of *Candidatus* Maxilia anatriforma sp. nov.

Candidatus Maxilia anatriforma (NL. fem. n. *anatriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTNB01 sp011358755*. The type genome for the species is the GenBank assembly GCA_011358755.1. The GC content of the type genome is 46.96 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Maxilia gen. nov.

Candidatus Maxilia (NL. fem. n. *Maxilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTNB01*. The type species for the genus is *Candidatus* Maxilia anatriforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTNB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxiliaceae.

Description of *Candidatus* Maxiliaceae fam. nov.

Candidatus Maxiliaceae (NL. fem. n. *Maxiliaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTNB01.* The type genus for the taxon is *Candidatus* Maxilia .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTNB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Maxiliales.

Description of *Candidatus* Maxiliales ord. nov.

Candidatus Maxiliales (NL. fem. n. *Maxiliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTNB01.* The type genus for the taxon is *Candidatus* Maxilia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Domigosae.

Description of *Candidatus* Maxilida legificella sp. nov.

Candidatus Maxilida legificella (NL. fem. n. *legificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10102 sp001825035*. The type genome for the species is the GenBank assembly GCA_001823475.1. The GC content of the type genome is 49.31 % and the genome length is 0.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Maxilida gen. nov.

Candidatus Maxilida (NL. fem. n. *Maxilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10102*. The type species for the genus is *Candidatus* Maxilida legificella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxilidaceae.

Description of *Candidatus* Maxilidaceae fam. nov.

Candidatus Maxilidaceae (NL. fem. n. *Maxilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10102.* The type genus for the taxon is *Candidatus* Maxilida .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Maxilosa renavigena sp. nov.

Candidatus Maxilosa renavigena (NL. fem. n. *renavigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTQI01 sp011332705*. The type genome for the species is the GenBank assembly GCA_011332705.1. The GC content of the type genome is 43.63 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Maxilosa gen. nov.

Candidatus Maxilosa (NL. fem. n. *Maxilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTQI01*. The type species for the genus is *Candidatus* Maxilosa renavigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTQI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxilosaceae.

Description of *Candidatus* Maxilosaceae fam. nov.

Candidatus Maxilosaceae (NL. fem. n. *Maxilosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTQI01.* The type genus for the taxon is *Candidatus* Maxilosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTQI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Maxilosales.

Description of *Candidatus* Maxilosales ord. nov.

Candidatus Maxilosales (NL. fem. n. *Maxilosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTQI01*. The type genus for the taxon is *Candidatus* Maxilosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Panifidae.

Description of *Candidatus* Maxilula mirifilega sp. nov.

Candidatus Maxilula mirifilega (NL. fem. n. *mirifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-40-42 sp001789965*. The type genome for the species is the GenBank assembly GCA_001790035.1. The GC content of the type genome is 40.01 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Maxilula gen. nov.

Candidatus Maxilula (NL. fem. n. *Maxilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-40-42*. The type species for the genus is *Candidatus* Maxilula mirifilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Maxumana adhoratica sp. nov.

Candidatus Maxumana adhoratica (NL. fem. n. *adhoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6175 sp002422915*. The type genome for the species is the GenBank assembly GCA_002422915.1. The GC content of the type genome is 50.41 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Maxumana gen. nov.

Candidatus Maxumana (NL. fem. n. *Maxumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6175*. The type species for the genus is *Candidatus* Maxumana adhoratica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Maxumana affabisca sp. nov.

Candidatus Maxumana affabisca (NL. fem. n. *affabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6175 sp001897295*. The type genome for the species is the GenBank assembly GCA_001897295.1. The GC content of the type genome is 49.51 % and the genome length is 0.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Maxumana altivilega sp. nov.

Candidatus Maxumana altivilega (NL. fem. n. *altivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6175 sp003545655*. The type genome for the species is the GenBank assembly GCA_003545655.1. The GC content of the type genome is 47.62 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Maxumana caselimonia sp. nov.

Candidatus Maxumana caselimonia (NL. fem. n. *caselimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6175 sp002429245*. The type genome for the species is the GenBank assembly GCA_002429245.1. The GC content of the type genome is 46.5 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Maxumana decomitrix sp. nov.

Candidatus Maxumana decomitrix (NL. fem. n. *decomitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6175 sp002726935*. The type genome for the species is the GenBank assembly GCA_002294615.1. The GC content of the type genome is 51.47 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Maxumana eclecentia sp. nov.

Candidatus Maxumana eclecentia (NL. fem. n. *eclecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6175 sp004100325*. The type genome for the species is the GenBank assembly GCA_004100325.1. The GC content of the type genome is 46.06 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Maxumana immobitoga sp. nov.

Candidatus Maxumana immobitoga (NL. fem. n. *immobitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6175 sp001897305*. The type genome for the species is the GenBank assembly GCA_001897305.1. The GC content of the type genome is 46.59 % and the genome length is 0.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Maxumana ingigiforma sp. nov.

Candidatus Maxumana ingigiforma (NL. fem. n. *ingigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6175 sp009992235*. The type genome for the species is the GenBank assembly GCA_009992235.1. The GC content of the type genome is 47.98 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Maxumana umbilitia sp. nov.

Candidatus Maxumana umbilitia (NL. fem. n. *umbilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6175 sp002381485*. The type genome for the species is the GenBank assembly GCA_002381485.1. The GC content of the type genome is 49.68 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Maxumaria inadfitia sp. nov.

Candidatus Maxumaria inadfitia (NL. fem. n. *inadfitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7540 sp002478145*. The type genome for the species is the GenBank assembly GCA_002478145.1. The GC content of the type genome is 58.09 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Maxumaria gen. nov.

Candidatus Maxumaria (NL. fem. n. *Maxumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7540*. The type species for the genus is *Candidatus* Maxumaria inadfitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumariaceae.

Description of *Candidatus* Maxumariaceae fam. nov.

Candidatus Maxumariaceae (NL. fem. n. *Maxumariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7540.* The type genus for the taxon is *Candidatus* Maxumaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Maxumariales.

Description of *Candidatus* Maxumariales ord. nov.

Candidatus Maxumariales (NL. fem. n. *Maxumariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7540.* The type genus for the taxon is *Candidatus* Maxumaria .

According to the GTDB R06-RS202, this order belongs to the class *Acidobacteriae*.

Description of *Candidatus* Maxumella femelatio sp. nov.

Candidatus Maxumella femelatio (NL. fem. n. *femelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9002 sp003519545*. The type genome for the species is the GenBank assembly GCA_003519545.1. The GC content of the type genome is 31.42 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Maxumella gen. nov.

Candidatus Maxumella (NL. fem. n. *Maxumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9002*. The type species for the genus is *Candidatus* Maxumella femelatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-1AR*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufosaceae.

Description of *Candidatus* Maxumella penicivita sp. nov.

Candidatus Maxumella penicivita (NL. fem. n. *penicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9002 sp002455255*. The type genome for the species is the GenBank assembly GCA_002455255.1. The GC content of the type genome is 30.7 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Maxumia abrelivita sp. nov.

Candidatus Maxumia abrelivita (NL. fem. n. *abrelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *LMEP-6097 sp005110385*. The type genome for the species is the GenBank assembly GCA_005110385.1. The GC content of the type genome is 35.84 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Maxumia gen. nov.

Candidatus Maxumia (NL. fem. n. *Maxumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LMEP-6097*. The type species for the genus is *Candidatus* Maxumia abrelivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LMEP-6097*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumiaceae.

Description of *Candidatus* Maxumiaceae fam. nov.

Candidatus Maxumiaceae (NL. fem. n. *Maxumiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *LMEP-6097.* The type genus for the taxon is *Candidatus* Maxumia .

According to GTDB R06-RS202, this family belongs to the order *Caenarcaniphilales*.

Description of *Candidatus* Maxumia pomificella sp. nov.

Candidatus Maxumia pomificella (NL. fem. n. *pomificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LMEP-6097 sp009924885*. The type genome for the species is the GenBank assembly GCA_009924885.1. The GC content of the type genome is 35.78 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Maxumida insalitoga sp. nov.

Candidatus Maxumida insalitoga (NL. fem. n. *insalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTPLA1 sp002050205*. The type genome for the species is the GenBank assembly GCA_002050205.1. The GC content of the type genome is 60.82 %

and the genome length is 4.44 Mbp.

Description of *Candidatus* Maxumida gen. nov.

Candidatus Maxumida (NL. fem. n. *Maxumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UTPLA1*. The type species for the genus is *Candidatus* Maxumida insalitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UTPLA1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumidaceae.

Description of *Candidatus* Maxumidaceae fam. nov.

Candidatus Maxumidaceae (NL. fem. n. *Maxumidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UTPLA1.* The type genus for the taxon is *Candidatus* Maxumida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cacomariales.

Description of *Candidatus* Maxumida vagabicula sp. nov.

Candidatus Maxumida vagabicula (NL. fem. n. *vagabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTPLA1 sp003576905*. The type genome for the species is the GenBank assembly GCA_003576905.1. The GC content of the type genome is 63.76 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Maxumida vilipitas sp. nov.

Candidatus Maxumida vilipitas (NL. fem. n. *vilipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UTPLA1 sp900696465*. The type genome for the species is the GenBank assembly GCA_900696465.1. The GC content of the type genome is 61.55 %

and the genome length is 4.14 Mbp.

Description of *Candidatus* Maxumosa catecago sp. nov.

Candidatus Maxumosa catecago (NL. fem. n. *catecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1688 sp900545885*. The type genome for the species is the GenBank assembly GCA_900545885.1. The GC content of the type genome is 49.95 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Maxumosa gen. nov.

Candidatus Maxumosa (NL. fem. n. *Maxumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1688*. The type species for the genus is *Candidatus* Maxumosa catecago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadanaceae.

Description of *Candidatus* Maxumosa ciminibula sp. nov.

Candidatus Maxumosa ciminibula (NL. fem. n. *ciminibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1688 sp900554085*. The type genome for the species is the GenBank assembly GCA_900554085.1. The GC content of the type genome is 55.55 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Maxumosa epogditrix sp. nov.

Candidatus Maxumosa epogditrix (NL. fem. n. *epogditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1688 sp900754695*. The type genome for the species is the GenBank assembly RS_GCF_900754695.1. The GC content of the type genome is 59.57 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Maxumosa obmurifica sp. nov.

Candidatus Maxumosa obmurifica (NL. fem. n. *obmurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1688 sp900553825*. The type genome for the species is the GenBank assembly GCA_900553825.1. The GC content of the type genome is 58.7 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Maxumosa regifimonas sp. nov.

Candidatus Maxumosa regifimonas (NL. fem. n. *regifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1688 sp900544575*. The type genome for the species is the GenBank assembly RS_GCF_900761745.1. The GC content of the type genome is 56.2 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Maxumula abantiforma sp. nov.

Candidatus Maxumula abantiforma (NL. fem. n. *abantiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900754285*. The type genome for the species is the GenBank assembly RS_GCF_900754285.1. The GC content of the type genome is 27.72 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Maxumula gen. nov.

Candidatus Maxumula (NL. fem. n. *Maxumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-269*. The type species for the genus is *Candidatus* Maxumula abantiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Maxumula accapilenta sp. nov.

Candidatus Maxumula accapilenta (NL. fem. n. *accapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp902760765*. The type genome for the species is the GenBank assembly GCA_902760765.1. The GC content of the type genome is 26.63 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Maxumula advinetta sp. nov.

Candidatus Maxumula advinetta (NL. fem. n. *advinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp002372935*. The type genome for the species is the GenBank assembly GCA_002372935.1. The GC content of the type genome is 26.74 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Maxumula antegivita sp. nov.

Candidatus Maxumula antegivita (NL. fem. n. *antegivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900557115*. The type genome for the species is the GenBank assembly GCA_900557115.1. The GC content of the type genome is 26.82 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Maxumula apposicella sp. nov.

Candidatus Maxumula apposicella (NL. fem. n. *apposicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900762425*. The type genome for the species is the GenBank assembly RS_GCF_900762425.1. The GC content of the type genome is 26.39 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Maxumula arnacousia sp. nov.

Candidatus Maxumula arnacousia (NL. fem. n. *arnacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp902787685*. The type genome for the species is the GenBank assembly GCA_902787685.1. The GC content of the type genome is 26.76 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Maxumula canacessa sp. nov.

Candidatus Maxumula canacessa (NL. fem. n. *canacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp001915995*. The type genome for the species is the GenBank assembly GCA_001915995.1. The GC content of the type genome is 26.09 % and the genome length is 1.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Maxumula decapimonas sp. nov.

Candidatus Maxumula decapimonas (NL. fem. n. *decapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900556345*. The type genome for the species is the GenBank assembly GCA_900556345.1. The GC content of the type genome is 28.98 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Maxumula dibucimonas sp. nov.

Candidatus Maxumula dibucimonas (NL. fem. n. *dibucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900552555*. The type genome for the species is the GenBank assembly GCA_900552555.1. The GC content of the type genome is 26.96 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Maxumula divolitas sp. nov.

Candidatus Maxumula divolitas (NL. fem. n. *divolitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900760175*. The type genome for the species is the

GenBank assembly RS_GCF_900760175.1. The GC content of the type genome is 27.93 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Maxumula domipitrix sp. nov.

Candidatus Maxumula domipitrix (NL. fem. n. *domipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900551615*. The type genome for the species is the GenBank assembly GCA_900551615.1. The GC content of the type genome is 27.06 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Maxumula fiducentia sp. nov.

Candidatus Maxumula fiducentia (NL. fem. n. *fiducentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900554565*. The type genome for the species is the GenBank assembly GCA_900554565.1. The GC content of the type genome is 27.72 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Maxumula furibimonas sp. nov.

Candidatus Maxumula furibimonas (NL. fem. n. *furibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp000435535*. The type genome for the species is the GenBank assembly GCA_000435535.1. The GC content of the type genome is 26.43 % and the genome length is 1.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Maxumula homolimonas sp. nov.

Candidatus Maxumula homolimonas (NL. fem. n. *homolimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp001916055*. The type genome for the species is the GenBank assembly GCA_001916055.1. The GC content of the type genome is 28.11 % and the genome length is 1.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Maxumula lavabetta sp. nov.

Candidatus Maxumula lavabetta (NL. fem. n. *lavabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp001916005*. The type genome for the species is the GenBank assembly GCA_900554055.1. The GC content of the type genome is 26.72 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Maxumula lavacitudo sp. nov.

Candidatus Maxumula lavacitudo (NL. fem. n. *lavacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp001916065*. The type genome for the species is the GenBank assembly GCA_001916065.1. The GC content of the type genome is 27.78 % and the genome length is 1.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Maxumula metapivita sp. nov.

Candidatus Maxumula metapivita (NL. fem. n. *metapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900555615*. The type genome for the species is the GenBank assembly GCA_900555615.1. The GC content of the type genome is 27.9 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Maxumula negidago sp. nov.

Candidatus Maxumula negidago (NL. fem. n. *negidago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900556945*. The type genome for the species is the GenBank assembly RS_GCF_900752255.1. The GC content of the type genome is 28.23 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Maxumula nimirousia sp. nov.

Candidatus Maxumula nimirousia (NL. fem. n. *nimirousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp000438255*. The type genome for the species is the GenBank assembly GCA_000438255.1. The GC content of the type genome is 26.87 % and the genome length is 1.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Maxumula nivomicula sp. nov.

Candidatus Maxumula nivomicula (NL. fem. n. *nivomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900553125*. The type genome for the species is the GenBank assembly GCA_900553125.1. The GC content of the type genome is 27.62 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Maxumula nocenilega sp. nov.

Candidatus Maxumula nocenilega (NL. fem. n. *nocenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900554175*. The type genome for the species is the GenBank assembly RS_GCF_900752925.1. The GC content of the type genome is 26.42 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Maxumula pavicifica sp. nov.

Candidatus Maxumula pavicifica (NL. fem. n. *pavicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900753165*. The type genome for the species is the GenBank assembly RS_GCF_900753165.1. The GC content of the type genome is 26.87 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Maxumula petulicula sp. nov.

Candidatus Maxumula petulicula (NL. fem. n. *petulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp003525075*. The type genome for the species is the GenBank assembly GCA_000437875.1. The GC content of the type genome is 26.44 % and the genome length is 1.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Maxumula remulitio sp. nov.

Candidatus Maxumula remulitio (NL. fem. n. *remulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900554365*. The type genome for the species is the GenBank assembly GCA_900554365.1. The GC content of the type genome is 26.68 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Maxumula rosariforma sp. nov.

Candidatus Maxumula rosariforma (NL. fem. n. *rosariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900556865*. The type genome for the species is the GenBank assembly GCA_900556865.1. The GC content of the type genome is 26.86 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Maxumula sicarax sp. nov.

Candidatus Maxumula sicarax (NL. fem. n. *sicarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp000431335*. The type genome for the species is the GenBank assembly GCA_003534715.1. The GC content of the type genome is 26.44 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Maxumula subodivita sp. nov.

Candidatus Maxumula subodivita (NL. fem. n. *subodivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp000437215*. The type genome for the species is the

GenBank assembly GCA_000437215.1. The GC content of the type genome is 26.71 % and the genome length is 1.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Maxumula tumefisca sp. nov.

Candidatus Maxumula tumefisca (NL. fem. n. *tumefisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp001916035*. The type genome for the species is the GenBank assembly GCA_900554015.1. The GC content of the type genome is 27.46 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Maxumula uberrifica sp. nov.

Candidatus Maxumula uberrifica (NL. fem. n. *uberrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp003518755*. The type genome for the species is the GenBank assembly GCA_003518755.1. The GC content of the type genome is 26.98 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Maxumula vepalastra sp. nov.

Candidatus Maxumula vepalastra (NL. fem. n. *vepalastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900553985*. The type genome for the species is the GenBank assembly RS_GCF_900758855.1. The GC content of the type genome is 25.94 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Maxumula visifibula sp. nov.

Candidatus Maxumula visifibula (NL. fem. n. *visifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-269 sp900556695*. The type genome for the species is the GenBank assembly GCA_900556695.1. The GC content of the type genome is 26.98 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Medimana nubigicula sp. nov.

Candidatus Medimana nubigicula (NL. fem. n. *nubigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-224 sp006226225*. The type genome for the species is the GenBank assembly GCA_006226225.1. The GC content of the type genome is 51.72 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Medimana gen. nov.

Candidatus Medimana (NL. fem. n. *Medimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBR16-224*. The type species for the genus is *Candidatus* Medimana nubigicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2020*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucubiaceae.

Description of *Candidatus* Medimana rorulicula sp. nov.

Candidatus Medimana rorulicula (NL. fem. n. *rorulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-224 sp007116755*. The type genome for the species is the GenBank assembly GCA_007116755.1. The GC content of the type genome is 53.78 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Medimana ulcisax sp. nov.

Candidatus Medimana ulcisax (NL. fem. n. *ulcisax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-224 sp013285465*. The type genome for the species is the GenBank assembly GCA_013285465.1. The GC content of the type genome is 51.69 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Medimaria metapatio sp. nov.

Candidatus Medimaria metapatio (NL. fem. n. *metapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-165 sp011057335*. The type genome for the species is the GenBank assembly GCA_011057335.1. The GC content of the type genome is 64.14 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Medimaria gen. nov.

Candidatus Medimaria (NL. fem. n. *Medimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-165*. The type species for the genus is *Candidatus* Medimaria metapatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Medimariaceae.

Description of *Candidatus* Medimariaceae fam. nov.

Candidatus Medimariaceae (NL. fem. n. *Medimariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-165.* The type genus for the taxon is *Candidatus* Medimaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *CSP1-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Minagiales.

Description of *Candidatus* Medimella depasitoga sp. nov.

Candidatus Medimella depasitoga (NL. fem. n. *depasitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2968 sp002727195*. The type genome for the species is the GenBank assembly GCA_002727195.1. The GC content of the type genome is 59.09 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Medimella gen. nov.

Candidatus Medimella (NL. fem. n. *Medimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2968*. The type species for the genus is *Candidatus* Medimella depasitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Medimellaceae.

Description of *Candidatus* Medimellaceae fam. nov.

Candidatus Medimellaceae (NL. fem. n. *Medimellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2968.* The type genus for the taxon is *Candidatus* Medimella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Medimellales.

Description of *Candidatus* Medimellales ord. nov.

Candidatus Medimellales (NL. fem. n. *Medimellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2968.* The type genus for the taxon is *Candidatus* Medimella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Medimellae.

Description of *Candidatus* Medimellae class. nov.

Candidatus Medimellae (NL. fem. n. *c__Medimellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2968.* The type genus for the taxon is *Candidatus* Medimella .

According to GTDB R06-RS202, this class belongs to the phylum *Latescibacterota*.

Description of *Candidatus* Medimella turilitoga sp. nov.

Candidatus Medimella turilitoga (NL. fem. n. *turilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2968 sp002714465*. The type genome for the species is the GenBank assembly GCA_002714465.1. The GC content of the type genome is 56.54 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Medimia defasibula sp. nov.

Candidatus Medimia defasibula (NL. fem. n. *defasibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3631 sp900546275*. The type genome for the species is the GenBank assembly GCA_900546275.1. The GC content of the type genome is 25.18 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Medimia gen. nov.

Candidatus Medimia (NL. fem. n. *Medimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3631*. The type species for the genus is *Candidatus* Medimia defasibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Medimia homoletta sp. nov.

Candidatus Medimia homoletta (NL. fem. n. *homoletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3631 sp900544605*. The type genome for the species is the GenBank assembly GCA_900544605.1. The GC content of the type genome is 26.65 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Medimia utpotatio sp. nov.

Candidatus Medimia utpotatio (NL. fem. n. *utpotatio* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3631 sp002374055*. The type genome for the species is the GenBank assembly GCA_002374055.1. The GC content of the type genome is 27.04 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Medimida bifisitio sp. nov.

Candidatus Medimida bifisitio (NL. fem. n. *bifisitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWHF01 sp903912405*. The type genome for the species is the GenBank assembly GCA_903914015.1. The GC content of the type genome is 35.93 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Medimida gen. nov.

Candidatus Medimida (NL. fem. n. *Medimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWHF01*. The type species for the genus is *Candidatus* Medimida bifisitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Medimosa catalugo sp. nov.

Candidatus Medimosa catalugo (NL. fem. n. *catalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6623 sp002433055*. The type genome for the species is the GenBank assembly GCA_002716325.1. The GC content of the type genome is 47.6 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Medimosa gen. nov.

Candidatus Medimosa (NL. fem. n. *Medimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA6623*. The type species for the genus is *Candidatus* Medimosa catalugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6623*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Medimosaceae.

Description of *Candidatus* Medimosaceae fam. nov.

Candidatus Medimosaceae (NL. fem. n. *Medimosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6623.* The type genus for the taxon is *Candidatus* Medimosa .

According to GTDB R06-RS202, this family belongs to the order *Bryobacterales*.

Description of *Candidatus* Medimula repagitudo sp. nov.

Candidatus Medimula repagitudo (NL. fem. n. *repagitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLOV01 sp007132345*. The type genome for the species is the GenBank assembly GCA_007124775.1. The GC content of the type genome is 62.15 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Medimula gen. nov.

Candidatus Medimula (NL. fem. n. *Medimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLOV01*. The type species for the genus is *Candidatus* Medimula repagitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLOV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Medimulaceae.

Description of *Candidatus* Medimulaceae fam. nov.

Candidatus Medimulaceae (NL. fem. n. *Medimulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *SLOV01*. The type genus for the taxon is *Candidatus* Medimula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLOV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Medimulales.

Description of *Candidatus* Medimulales ord. nov.

Candidatus Medimulales (NL. fem. n. *Medimulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLOV01*. The type genus for the taxon is *Candidatus* Medimula .

According to the GTDB R06-RS202, this order belongs to the class *Kiritimatiellae*.

Description of *Candidatus* Mediterraneibacter ablacicula sp. nov.

Candidatus Mediterraneibacter ablacicula (NL. fem. n. *ablacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp002314255*. The type genome for the species is the GenBank assembly GCA_002314255.1. The GC content of the type genome is 51.04 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Mediterraneibacter adrecitoga sp. nov.

Candidatus Mediterraneibacter adrecitoga (NL. fem. n. *adrecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp900751785*. The type genome for the species is the GenBank assembly RS_GCF_900751785.1. The GC content of the type genome is 51.31 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Mediterraneibacter amatrax sp. nov.

Candidatus Mediterraneibacter amatrax (NL. fem. n. *amatrax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp002161355*. The type genome for the species is the GenBank assembly RS_GCF_002161355.1. The GC content of the type genome is

50.28 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Mediterraneibacter amatressa sp. nov.

Candidatus Mediterraneibacter amatressa (NL. fem. n. *amatressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp900553885*. The type genome for the species is the GenBank assembly GCA_900553885.1. The GC content of the type genome is 46.92 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Mediterraneibacter arcelax sp. nov.

Candidatus Mediterraneibacter arcelax (NL. fem. n. *arcelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp002160525*. The type genome for the species is the GenBank assembly RS_GCF_002160525.1. The GC content of the type genome is 49.45 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Mediterraneibacter cepuliforma sp. nov.

Candidatus Mediterraneibacter cepuliforma (NL. fem. n. *cepuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp900541505*. The type genome for the species is the GenBank assembly RS_GCF_900755215.1. The GC content of the type genome is 47.5 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Mediterraneibacter culilitia sp. nov.

Candidatus Mediterraneibacter culilitia (NL. fem. n. *culilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp900120155*. The type genome for the species is the GenBank assembly RS_GCF_900120155.1. The GC content of the type genome is 48.16 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Mediterraneibacter docibimonas sp. nov.

Candidatus Mediterraneibacter docibimonas (NL. fem. n. *docibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp900555215*. The type genome for the species is the GenBank assembly GCA_902388775.1. The GC content of the type genome is 48.71 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Mediterraneibacter fumifago sp. nov.

Candidatus Mediterraneibacter fumifago (NL. fem. n. *fumifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp002159505*. The type genome for the species is the GenBank assembly RS_GCF_002159505.1. The GC content of the type genome is 46.76 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Mediterraneibacter inadfimonia sp. nov.

Candidatus Mediterraneibacter inadfimonia (NL. fem. n. *inadfimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp900752395*. The type genome for the species is the GenBank assembly RS_GCF_900752395.1. The GC content of the type genome is 43.38 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Mediterraneibacter negoticula sp. nov.

Candidatus Mediterraneibacter negoticula (NL. fem. n. *negoticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp014287475*. The type genome for the species is the GenBank assembly RS_GCF_014287475.1. The GC content of the type genome is 41.49 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Mediterraneibacter resalitura sp. nov.

Candidatus Mediterraneibacter resalitura (NL. fem. n. *resalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mediterraneibacter sp900761655*. The type genome for the species is the GenBank assembly RS_GCF_900761655.1. The GC content of the type genome is 49.61 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Megalana albogax sp. nov.

Candidatus Megalana albogax (NL. fem. n. *albogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-33 sp001303665*. The type genome for the species is the GenBank assembly GCA_001303665.1. The GC content of the type genome is 67.84 % and the genome length is 3.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Megalana gen. nov.

Candidatus Megalana (NL. fem. n. *Megalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-33*. The type species for the genus is *Candidatus* Megalana albogax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Megalanaceae fam. nov.

Candidatus Megalanaceae (NL. fem. n. *Megalanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-33.* The type genus for the taxon is *Candidatus* Megalana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Megalanales.

Description of *Candidatus* Megalanales ord. nov.

Candidatus Megalanales (NL. fem. n. *Megalanales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-33.* The type genus for the taxon is *Candidatus* Megalana .

According to the GTDB R06-RS202, this order belongs to the class *Phycisphaerae*.

Description of *Candidatus* Megalella doxolugo sp. nov.

Candidatus Megalella doxolugo (NL. fem. n. *doxolugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch128b sp013177855*. The type genome for the species is the GenBank assembly GCA_013177855.1. The GC content of the type genome is 31.62 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Megalella gen. nov.

Candidatus Megalella (NL. fem. n. *Megalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch128b*. The type species for the genus is *Candidatus* Megalella doxolugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch128b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalellaceae.

Description of *Candidatus* Megalellaceae fam. nov.

Candidatus Megalellaceae (NL. fem. n. *Megalellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch128b.* The type genus for the taxon is *Candidatus* Megalella .

According to the original version of GTDB R06-RS202, this family belongs to the order *Ch128b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Megalellales.

Description of *Candidatus* Megalellales ord. nov.

Candidatus Megalellales (NL. fem. n. *Megalellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch128b.* The type genus for the taxon is *Candidatus* Megalella .

According to the GTDB R06-RS202, this order belongs to the class *Ignavibacteria*.

Description of *Candidatus* Megalella retecitrix sp. nov.

Candidatus Megalella retecitrix (NL. fem. n. *retecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch128b sp011047755*. The type genome for the species is the GenBank assembly GCA_011327465.1. The GC content of the type genome is 32.4 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Megalella voragago sp. nov.

Candidatus Megalella voragago (NL. fem. n. *voragago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch128b sp011332915*. The type genome for the species is the GenBank assembly GCA_011332915.1. The GC content of the type genome is 32.94 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Megalia secunitura sp. nov.

Candidatus Megalia secunitura (NL. fem. n. *secunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin08 sp002897775*. The type genome for the species is the GenBank assembly GCA_002897755.1. The GC content of the type genome is 45.4 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Megalia gen. nov.

Candidatus Megalia (NL. fem. n. *Megalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Bbin08*. The type species for the genus is *Candidatus* Megalia secunitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3Bbin08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megaliaceae.

Description of *Candidatus* Megaliaceae fam. nov.

Candidatus Megaliaceae (NL. fem. n. *Megaliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3Bbin08.* The type genus for the taxon is *Candidatus* Megalia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monodosales.

Description of *Candidatus* Megalida colepousia sp. nov.

Candidatus Megalida colepousia (NL. fem. n. *colepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-40-10 sp001784725*. The type genome for the species is the GenBank assembly GCA_001784725.1. The GC content of the type genome is 39.79 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Megalida gen. nov.

Candidatus Megalida (NL. fem. n. *Megalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-40-10*. The type species for the genus is *Candidatus* Megalida colepousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-40-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalidaceae.

Description of *Candidatus* Megalidaceae fam. nov.

Candidatus Megalidaceae (NL. fem. n. *Megalidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-40-10.* The type genus for the taxon is *Candidatus* Megalida .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Megalosa benifessa sp. nov.

Candidatus Megalosa benifessa (NL. fem. n. *benifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRPN01 sp011374625*. The type genome for the species is the GenBank assembly GCA_011374625.1. The GC content of the type genome is 43.38 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Megalosa gen. nov.

Candidatus Megalosa (NL. fem. n. *Megalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRPN01*. The type species for the genus is *Candidatus* Megalosa benifessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VadinHA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categariaceae.

Description of *Candidatus* Megalula defetilenta sp. nov.

Candidatus Megalula defetilenta (NL. fem. n. *defetilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZOR0006 sp000798955*. The type genome for the species is the GenBank assembly RS_GCF_000798955.1. The GC content of the type genome is 38.29 % and the genome length is 1.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "organic material".

Description of *Candidatus* Megalula gen. nov.

Candidatus Megalula (NL. fem. n. *Megalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZOR0006*. The type species for the genus is *Candidatus* Megalula defetilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ZOR0006*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalulaceae.

Description of *Candidatus* Megalulaceae fam. nov.

Candidatus Megalulaceae (NL. fem. n. *Megalulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ZOR0006.* The type genus for the taxon is *Candidatus* Megalula .

According to the original version of GTDB R06-RS202, this family belongs to the order *ZOR0006*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Megalulales.

Description of *Candidatus* Megalulales ord. nov.

Candidatus Megalulales (NL. fem. n. *Megalulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ZOR0006.* The type genus for the taxon is *Candidatus* Megalula .

According to the GTDB R06-RS202, this order belongs to the class *Bacilli*.

Description of *Candidatus* Megamonas carucicula sp. nov.

Candidatus Megamonas carucicula (NL. fem. n. *carucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megamonas sp900554895*. The type genome for the species is the GenBank assembly GCA_900554895.1. The GC content of the type genome is 39.62 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Megamonas resacicella sp. nov.

Candidatus Megamonas resacicella (NL. fem. n. *resacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megamonas sp900556715*. The type genome for the species is the GenBank assembly GCA_900753335.1. The GC content of the type genome is 31.59 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Megasphaera agravitudo sp. nov.

Candidatus Megasphaera agravitudo (NL. fem. n. *agravitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megasphaera sp900554215*. The type genome for the species is the GenBank assembly GCA_900554215.1. The GC content of the type genome is 53.48 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Megasphaera cerarimonia sp. nov.

Candidatus Megasphaera cerarimonia (NL. fem. n. *cerarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megasphaera sp002431345*. The type genome for the species is the GenBank assembly GCA_002437365.1. The GC content of the type genome is 45.23 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Megasphaera cotenitoga sp. nov.

Candidatus Megasphaera cotenitoga (NL. fem. n. *cotenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megasphaera sp001546855*. The type genome for the species is the GenBank assembly GCA_008672515.1. The GC content of the type genome is 51.88 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Megasphaera deciniforma sp. nov.

Candidatus Megasphaera deciniforma (NL. fem. n. *deciniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megasphaera sp900548635*. The type genome for the species is the GenBank assembly GCA_900758625.1. The GC content of the type genome is 55.09 %

and the genome length is 1.95 Mbp.

Description of *Candidatus* Megasphaera denicatio sp. nov.

Candidatus Megasphaera denicatio (NL. fem. n. *denicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megasphaera sp002319965*. The type genome for the species is the GenBank assembly GCA_900538535.1. The GC content of the type genome is 51.3 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Megasphaera famelitrix sp. nov.

Candidatus Megasphaera famelitrix (NL. fem. n. *famelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megasphaera sp902388315*. The type genome for the species is the GenBank assembly GCA_900765405.1. The GC content of the type genome is 52.78 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Megasphaera murelibula sp. nov.

Candidatus Megasphaera murelibula (NL. fem. n. *murelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megasphaera sp900540735*. The type genome for the species is the GenBank assembly GCA_900540735.1. The GC content of the type genome is 45.86 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Megasphaera refunatica sp. nov.

Candidatus Megasphaera refunatica (NL. fem. n. *refunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megasphaera sp000417505*. The type genome for the species is the GenBank assembly GCA_008668735.1. The GC content of the type genome is 54.88 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Megasphaera sceptitrix sp. nov.

Candidatus Megasphaera sceptitrix (NL. fem. n. *sceptitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Megasphaera sp900539295*. The type genome for the species is the GenBank assembly GCA_900539295.1. The GC content of the type genome is 51.38 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Meinhardsimonia ancipibra sp. nov.

Candidatus Meinhardsimonia ancipibra (NL. fem. n. *ancipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Meinhardsimonia sp003696705*. The type genome for the species is the GenBank assembly GCA_003696705.1. The GC content of the type genome is 67.19 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Meiothermus inpelivita sp. nov.

Candidatus Meiothermus inpelivita (NL. fem. n. *inpelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Meiothermus sp003351145*. The type genome for the species is the GenBank assembly RS_GCF_003351145.1. The GC content of the type genome is 66.83 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Meiothermus duricimonas sp. nov.

Candidatus Meiothermus duricimonas (NL. fem. n. *duricimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Meiothermus_B sp003226535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004152925.1. The GC content of the type genome is 64.57 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Melilana immacigena sp. nov.

Candidatus Melilana immacigena (NL. fem. n. *immacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA796 sp002348535*. The type genome for the species is the GenBank assembly GCA_002348535.1. The GC content of the type genome is 59.22 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Melilana gen. nov.

Candidatus Melilana (NL. fem. n. *Melilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA796*. The type species for the genus is *Candidatus* Melilana immacigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilanaceae.

Description of *Candidatus* Melilanaceae fam. nov.

Candidatus Melilanaceae (NL. fem. n. *Melilanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA796.* The type genus for the taxon is *Candidatus* Melilana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Melilanales.

Description of *Candidatus* Melilanales ord. nov.

Candidatus Melilanales (NL. fem. n. *Melilanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA796.* The type genus for the taxon is *Candidatus* Melilana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Melilanae.

Description of *Candidatus* Melilanae class. nov.

Candidatus Melilanae (NL. fem. n. *c__Melilanae* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA796.* The type genus for the taxon is *Candidatus* Melilana .

According to GTDB R06-RS202, this class belongs to the phylum *Myxococcota*.

Description of *Candidatus* Melilana palifisca sp. nov.

Candidatus Melilana palifisca (NL. fem. n. *palifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA796 sp002296975*. The type genome for the species is the GenBank assembly GCA_002425355.1. The GC content of the type genome is 57.23 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Melilaria siligicula sp. nov.

Candidatus Melilaria siligicula (NL. fem. n. *siligicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10365 sp003536295*. The type genome for the species is the GenBank assembly GCA_002384165.1. The GC content of the type genome is 51.44 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Melilaria gen. nov.

Candidatus Melilaria (NL. fem. n. *Melilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10365*. The type species for the genus is *Candidatus* Melilaria siligicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Melilella detenibula sp. nov.

Candidatus Melilella detenibula (NL. fem. n. *detenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CCMP332 sp014323545*. The type genome for the species is the GenBank assembly RS_GCF_014323545.1. The GC content of the type genome is 37.09 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Melilella gen. nov.

Candidatus Melilella (NL. fem. n. *Melilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CCMP332*. The type species for the genus is *Candidatus* Melilella detenibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CCMP332*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilellaceae.

Description of *Candidatus* Melilellaceae fam. nov.

Candidatus Melilellaceae (NL. fem. n. *Melilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CCMP332.* The type genus for the taxon is *Candidatus* Melilella .

According to GTDB R06-RS202, this family belongs to the order *Cytophagales*.

Description of *Candidatus* Melilia levidetta sp. nov.

Candidatus Melilia levidetta (NL. fem. n. *levidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5444 sp002426575*. The type genome for the species is the GenBank assembly GCA_002426575.1. The GC content of the type genome is 33.85 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Melilia gen. nov.

Candidatus Melilia (NL. fem. n. *Melilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5444*. The type species for the genus is *Candidatus* Melilia levidetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Melilida inlapax sp. nov.

Candidatus Melilida inlapax (NL. fem. n. *inlapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1874 sp002352935*. The type genome for the species is the GenBank assembly GCA_002352935.1. The GC content of the type genome is 42.25 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Melilida gen. nov.

Candidatus Melilida (NL. fem. n. *Melilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1874*. The type species for the genus is *Candidatus* Melilida inlapax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1874*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilidaceae.

Description of *Candidatus* Melilidaceae fam. nov.

Candidatus Melilidaceae (NL. fem. n. *Melilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1874.* The type genus for the taxon is *Candidatus* Melilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1874*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Melilidales.

Description of *Candidatus* Melilidales ord. nov.

Candidatus Melilidales (NL. fem. n. *Melilidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1874.* The type genus for the taxon is *Candidatus* Melilida .

According to the GTDB R06-RS202, this order belongs to the class *Moorellia*.

Description of *Candidatus* Melilosa hecatitoga sp. nov.

Candidatus Melilosa hecatitoga (NL. fem. n. *hecatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1381 sp002305435*. The type genome for the species is the GenBank assembly GCA_002305435.1. The GC content of the type genome is 47.52 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Melilosa gen. nov.

Candidatus Melilosa (NL. fem. n. *Melilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1381*. The type species for the genus is *Candidatus* Melilosa hecatitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilosaceae.

Description of *Candidatus* Melilosaceae fam. nov.

Candidatus Melilosaceae (NL. fem. n. *Melilosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1381.* The type genus for the taxon is *Candidatus* Melilosa .

According to GTDB R06-RS202, this family belongs to the order *Monoglobales_A*.

Description of *Candidatus* Melilula derelax sp. nov.

Candidatus Melilula derelax (NL. fem. n. *derelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5343 sp002410125*. The type genome for the species is the GenBank assembly GCA_002410125.1. The GC content of the type genome is 31.81 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Melilula gen. nov.

Candidatus Melilula (NL. fem. n. *Melilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5343*. The type species for the genus is *Candidatus* Melilula derelax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5343*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilulaceae.

Description of *Candidatus* Melilulaceae fam. nov.

Candidatus Melilulaceae (NL. fem. n. *Melilulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5343.* The type genus for the taxon is *Candidatus* Melilula .

According to the original version of GTDB R06-RS202, this family belongs to the order *RF32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resaculales.

Description of *Candidatus* Melopana dibapitio sp. nov.

Candidatus Melopana dibapitio (NL. fem. n. *dibapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6659 sp002344135*. The type genome for the species is the GenBank assembly GCA_002345945.1. The GC content of the type genome is 62.65 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Melopana gen. nov.

Candidatus Melopana (NL. fem. n. *Melopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6659*. The type species for the genus is *Candidatus* Melopana dibapitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Melopana effacigena sp. nov.

Candidatus Melopana effacigena (NL. fem. n. *effacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6659 sp002455425*. The type genome for the species is the GenBank assembly GCA_002455425.1. The GC content of the type genome is 63.3 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Meloparia bugilitio sp. nov.

Candidatus Meloparia bugilitio (NL. fem. n. *bugilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp900316455*. The type genome for the species is the GenBank assembly GCA_902770185.1. The GC content of the type genome is 47.85 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Meloparia gen. nov.

Candidatus Meloparia (NL. fem. n. *Meloparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG762*. The type species for the genus is *Candidatus* Meloparia bugilitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Meloparia catafitia sp. nov.

Candidatus Meloparia catafitia (NL. fem. n. *catafitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp900317765*. The type genome for the species is the GenBank assembly GCA_902757865.1. The GC content of the type genome is 50.1 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Meloparia encomimonia sp. nov.

Candidatus Meloparia encomimonia (NL. fem. n. *encomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp902802795*. The type genome for the species is the GenBank assembly GCA_902802795.1. The GC content of the type genome is 51.99 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Meloparia evangilega sp. nov.

Candidatus Meloparia evangilega (NL. fem. n. *evangilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp902803035*. The type genome for the species is the GenBank assembly GCA_902803035.1. The GC content of the type genome is 54.37 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Meloparia pluscilega sp. nov.

Candidatus Meloparia pluscilega (NL. fem. n. *pluscilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp902762615*. The type genome for the species is the GenBank assembly GCA_902762615.1. The GC content of the type genome is 49.69 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Meloparia recumastra sp. nov.

Candidatus Meloparia recumastra (NL. fem. n. *recumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp902799245*. The type genome for the species is the GenBank assembly GCA_902799245.1. The GC content of the type genome is 49.85 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Meloparia refocetta sp. nov.

Candidatus Meloparia refocetta (NL. fem. n. *refocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp900321515*. The type genome for the species is the GenBank assembly GCA_900321515.1. The GC content of the type genome is 49.55 %

and the genome length is 2.28 Mbp.

Description of *Candidatus* Meloparia regigastra sp. nov.

Candidatus Meloparia regigastra (NL. fem. n. *regigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp902762395*. The type genome for the species is the GenBank assembly GCA_902762395.1. The GC content of the type genome is 53.25 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Meloparia timefatio sp. nov.

Candidatus Meloparia timefatio (NL. fem. n. *timefatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp900316495*. The type genome for the species is the GenBank assembly GCA_902768355.1. The GC content of the type genome is 53.68 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Meloparia vivifilenta sp. nov.

Candidatus Meloparia vivifilenta (NL. fem. n. *vivifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG762 sp900322085*. The type genome for the species is the GenBank assembly GCA_902760135.1. The GC content of the type genome is 49.18 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Melopella direpitrix sp. nov.

Candidatus Melopella direpitrix (NL. fem. n. *direpitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSTG01 sp011362555*. The type genome for the species is the GenBank assembly GCA_011362555.1. The GC content of the type genome is 35.74 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Melopella gen. nov.

Candidatus Melopella (NL. fem. n. *Melopella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSTG01*. The type species for the genus is *Candidatus* Melopella direpitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSTG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melopellaceae.

Description of *Candidatus* Melopellaceae fam. nov.

Candidatus Melopellaceae (NL. fem. n. *Melopellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSTG01.* The type genus for the taxon is *Candidatus* Melopella .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Melopia detesicula sp. nov.

Candidatus Melopia detesicula (NL. fem. n. *detesicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-13 sp001303025*. The type genome for the species is the GenBank assembly GCA_001303025.1. The GC content of the type genome is 56.96 % and the genome length is 3.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-rich zone estuary sediments 8-12 cm".

Description of *Candidatus* Melopia gen. nov.

Candidatus Melopia (NL. fem. n. *Melopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG8-13*. The type species for the genus is *Candidatus* Melopia detesicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melopiaceae.

Description of *Candidatus* Melopiaceae fam. nov.

Candidatus Melopiaceae (NL. fem. n. *Melopiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SG8-13.* The type genus for the taxon is *Candidatus* Melopia .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Melopida colapousia sp. nov.

Candidatus Melopida colapousia (NL. fem. n. *colapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2402 sp903929885*. The type genome for the species is the GenBank assembly GCA_903929885.1. The GC content of the type genome is 68.35 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Melopida gen. nov.

Candidatus Melopida (NL. fem. n. *Melopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2402*. The type species for the genus is *Candidatus* Melopida colapousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Melopida inmobisca sp. nov.

Candidatus Melopida inmobisca (NL. fem. n. *inmobisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2402 sp002343715*. The type genome for the species is the GenBank assembly GCA_002343715.1. The GC content of the type genome is 64.93 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Meloposa semibibra sp. nov.

Candidatus Meloposa semibibra (NL. fem. n. *semibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-1-40CM-70-15 sp003223415*. The type genome for the species is the GenBank assembly GCA_003223415.1. The GC content of the type genome is 69.26 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Meloposa gen. nov.

Candidatus Meloposa (NL. fem. n. *Meloposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *13-1-40CM-70-15*. The type species for the genus is *Candidatus* Meloposa semibibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Melopula rudecimonas sp. nov.

Candidatus Melopula rudecimonas (NL. fem. n. *rudecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN37 sp002898375*. The type genome for the species is the GenBank assembly GCA_011053795.1. The GC content of the type genome is 41.54 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Melopula gen. nov.

Candidatus Melopula (NL. fem. n. *Melopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN37*. The type species for the genus is *Candidatus* Melopula rudecimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deteposaceae.

Description of *Candidatus* Menapana adrecousia sp. nov.

Candidatus Menapana adrecousia (NL. fem. n. *adrecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJXO01 sp903822075*. The type genome for the species is the GenBank assembly GCA_903822075.1. The GC content of the type genome is 42.67 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Menapana gen. nov.

Candidatus Menapana (NL. fem. n. *Menapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJXO01*. The type species for the genus is *Candidatus* Menapana adrecousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA1-40-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunariaceae.

Description of *Candidatus* Menapana artilibra sp. nov.

Candidatus Menapana artilibra (NL. fem. n. *artilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJXO01 sp903824735*. The type genome for the species is the GenBank assembly GCA_903824735.1. The GC content of the type genome is 41.52 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Menapana domipedo sp. nov.

Candidatus Menapana domipedo (NL. fem. n. *domipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJXO01 sp903831305*. The type genome for the species is the GenBank assembly GCA_903831305.1. The GC content of the type genome is 40.4 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Menaparia argiticula sp. nov.

Candidatus Menaparia argiticula (NL. fem. n. *argiticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1195 sp002308135*. The type genome for the species is the GenBank assembly GCA_002308135.1. The GC content of the type genome is 52.89 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Menaparia gen. nov.

Candidatus Menaparia (NL. fem. n. *Menaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1195*. The type species for the genus is *Candidatus* Menaparia argiticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turibosaceae.

Description of *Candidatus* Menaparia baditatio sp. nov.

Candidatus Menaparia baditatio (NL. fem. n. *baditatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1195 sp902774175*. The type genome for the species is the GenBank assembly GCA_902774175.1. The GC content of the type genome is 51.38 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Menaparia terebibra sp. nov.

Candidatus Menaparia terebibra (NL. fem. n. *terebibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1195 sp002309855*. The type genome for the species is the GenBank assembly GCA_002309855.1. The GC content of the type genome is 51.2 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Menapella ecfacastra sp. nov.

Candidatus Menapella ecfacastra (NL. fem. n. *ecfacastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SDB-A sp001412365*. The type genome for the species is the GenBank assembly GCA_001412365.1. The GC content of the type genome is 37.86 % and the genome length is 3.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "methanogenic consortium capable of long-chain paraffin degradation (SDB culture) enriched from contaminated sediments of San Diego Bay; California; degrades n-alkanes from C25 to C50".

Description of *Candidatus* Menapella gen. nov.

Candidatus Menapella (NL. fem. n. *Menapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SDB-A*. The type species for the genus is *Candidatus* Menapella ecfacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SDB-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Menapellaceae.

Description of *Candidatus* Menapellaceae fam. nov.

Candidatus Menapellaceae (NL. fem. n. *Menapellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SDB-A*. The type genus for the taxon is *Candidatus* Menapella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SDB-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Menapellales.

Description of *Candidatus* Menapellales ord. nov.

Candidatus Menapellales (NL. fem. n. *Menapellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SDB-A*. The type genus for the taxon is *Candidatus* Menapella .

According to the original version of GTDB R06-RS202, this family belongs to the class *SDB-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Menapellae.

Description of *Candidatus* Menapellae class. nov.

Candidatus Menapellae (NL. fem. n. *c__Menapellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SDB-A*. The type genus for the taxon is *Candidatus* Menapella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *WOR-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Tigurariota.

Description of *Candidatus* Menapida luxuritura sp. nov.

Candidatus Menapida luxuritura (NL. fem. n. *luxuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-B38 sp902505605*. The type genome for the species is the GenBank assembly GCA_902505605.1. The GC content of the type genome is 49.5 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Menapida gen. nov.

Candidatus Menapida (NL. fem. n. *Menapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B3-B38*. The type species for the genus is *Candidatus* Menapida luxuritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B3-B38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Menapidaceae.

Description of *Candidatus* Menapidaceae fam. nov.

Candidatus Menapidaceae (NL. fem. n. *Menapidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-B38.* The type genus for the taxon is *Candidatus* Menapida .

According to the original version of GTDB R06-RS202, this family belongs to the order *B3-B38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Menapidales.

Description of *Candidatus* Menapidales ord. nov.

Candidatus Menapidales (NL. fem. n. *Menapidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-B38.* The type genus for the taxon is *Candidatus* Menapida .

According to the original version of GTDB R06-RS202, this family belongs to the class *B3-B38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Menapidae.

Description of *Candidatus* Menapidae class. nov.

Candidatus Menapidae (NL. fem. n. *c__Menapidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-B38.* The type genus for the taxon is *Candidatus* Menapida .

According to GTDB R06-RS202, this class belongs to the phylum *Acidobacteriota*.

Description of *Candidatus* Menapida palifetta sp. nov.

Candidatus Menapida palifetta (NL. fem. n. *palifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-B38 sp005223145*. The type genome for the species is the GenBank assembly GCA_005223145.1. The GC content of the type genome is 49.49 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Menaposa indotax sp. nov.

Candidatus Menaposa indotax (NL. fem. n. *indotax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXUF01 sp013336165*. The type genome for the species is the GenBank assembly GCA_013336165.1. The GC content of the type genome is 61.51 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Menaposa gen. nov.

Candidatus Menaposa (NL. fem. n. *Menaposa* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXUF01*. The type species for the genus is *Candidatus* Menaposa indotax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAXUF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Menaposaceae.

Description of *Candidatus* Menaposaceae fam. nov.

Candidatus Menaposaceae (NL. fem. n. *Menaposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXUF01.* The type genus for the taxon is *Candidatus* Menaposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *OPB41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodanales.

Description of *Candidatus* Menapula semilentia sp. nov.

Candidatus Menapula semilentia (NL. fem. n. *semilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWPR01 sp003557085*. The type genome for the species is the GenBank assembly GCA_003557085.1. The GC content of the type genome is 33.64 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Menapula gen. nov.

Candidatus Menapula (NL. fem. n. *Menapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWPR01*. The type species for the genus is *Candidatus* Menapula semilentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWPR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Menapulaceae.

Description of *Candidatus* Menapulaceae fam. nov.

Candidatus Menapulaceae (NL. fem. n. *Menapulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWPR01.* The type genus for the taxon is *Candidatus* Menapula .

According to the original version of GTDB R06-RS202, this family belongs to the order *PWPR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Menapulales.

Description of *Candidatus* Menapulales ord. nov.

Candidatus Menapulales (NL. fem. n. *Menapulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWPR01.* The type genus for the taxon is *Candidatus* Menapula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA994*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Dehonellae.

Description of *Candidatus* Merdibacter acroligena sp. nov.

Candidatus Merdibacter acroligena (NL. fem. n. *acroligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Merdibacter sp900754715*. The type genome for the species is the GenBank assembly RS_GCF_900754715.1. The GC content of the type genome is 53.07 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Merdibacter attegastra sp. nov.

Candidatus Merdibacter attegastra (NL. fem. n. *attegastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Merdibacter sp900759455*. The type genome for the species is the GenBank assembly RS_GCF_900759455.1. The GC content of the type genome is 44.35 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Merdibacter refaciforma sp. nov.

Candidatus Merdibacter refaciforma (NL. fem. n. *refaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Merdibacter sp900543035*. The type genome for the species is the GenBank assembly GCA_900543035.1. The GC content of the type genome is 54.09 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Merdimonas canacitica sp. nov.

Candidatus Merdimonas canacitica (NL. fem. n. *canacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Merdimonas sp900553355*. The type genome for the species is the GenBank assembly GCA_900553355.1. The GC content of the type genome is 47.46 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Meridana impinimonas sp. nov.

Candidatus Meridana impinimonas (NL. fem. n. *impinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLK01 sp011333305*. The type genome for the species is the GenBank assembly GCA_011333305.1. The GC content of the type genome is 49.55 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Meridana gen. nov.

Candidatus Meridana (NL. fem. n. *Meridana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLK01*. The type species for the genus is *Candidatus* Meridana impinimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTLK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Meridanaceae.

Description of *Candidatus* Meridanaceae fam. nov.

Candidatus Meridanaceae (NL. fem. n. *Meridanaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLK01.* The type genus for the taxon is *Candidatus* Meridana .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Meridella humecigena sp. nov.

Candidatus Meridella humecigena (NL. fem. n. *humecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MPNO01 sp002239065*. The type genome for the species is the GenBank assembly GCA_002239065.1. The GC content of the type genome is 69.54 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Meridella gen. nov.

Candidatus Meridella (NL. fem. n. *Meridella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MPNO01*. The type species for the genus is *Candidatus* Meridella humecigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MPNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Meridellaceae.

Description of *Candidatus* Meridellaceae fam. nov.

Candidatus Meridellaceae (NL. fem. n. *Meridellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MPNO01.* The type genus for the taxon is *Candidatus* Meridella .

According to the original version of GTDB R06-RS202, this family belongs to the order *MPNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Meridellales.

Description of *Candidatus* Meridellales ord. nov.

Candidatus Meridellales (NL. fem. n. *Meridellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MPNO01*. The type genus for the taxon is *Candidatus* Meridella .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Meridida affiritica sp. nov.

Candidatus Meridida affiritica (NL. fem. n. *affiritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4665 sp003516025*. The type genome for the species is the GenBank assembly GCA_003516025.1. The GC content of the type genome is 50.75 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Meridida gen. nov.

Candidatus Meridida (NL. fem. n. *Meridida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4665*. The type species for the genus is *Candidatus* Meridida affiritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4665*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Meridídaceae.

Description of *Candidatus* Meridídaceae fam. nov.

Candidatus Meridídaceae (NL. fem. n. *Meridídaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4665*. The type genus for the taxon is *Candidatus* Meridida .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Meridida delubifica sp. nov.

Candidatus Meridida delubifica (NL. fem. n. *delubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA4665 sp002413835*. The type genome for the species is the GenBank assembly GCA_002405335.1. The GC content of the type genome is 52.15 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Meridida manibimonas sp. nov.

Candidatus Meridida manibimonas (NL. fem. n. *manibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4665 sp002413755*. The type genome for the species is the GenBank assembly GCA_002413755.1. The GC content of the type genome is 53.04 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Meridosa delecitia sp. nov.

Candidatus Meridosa delecitia (NL. fem. n. *delecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3561 sp002376005*. The type genome for the species is the GenBank assembly GCA_004366965.1. The GC content of the type genome is 63.22 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Meridosa gen. nov.

Candidatus Meridosa (NL. fem. n. *Meridosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3561*. The type species for the genus is *Candidatus* Meridosa delecitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3561*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Meridosaceae.

Description of *Candidatus* Meridosaceae fam. nov.

Candidatus Meridosaceae (NL. fem. n. *Meridosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3561*. The type genus for the taxon is *Candidatus* Meridosa .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA3561. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Meridosales.

Description of *Candidatus* Meridosales ord. nov.

Candidatus Meridosales (NL. fem. n. *Meridosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3561*. The type genus for the taxon is *Candidatus* Meridosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetariae.

Description of *Candidatus* Meridula dicimicula sp. nov.

Candidatus Meridula dicimicula (NL. fem. n. *dicimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFIP01 sp013297925*. The type genome for the species is the GenBank assembly GCA_013297925.1. The GC content of the type genome is 55.5 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Meridula gen. nov.

Candidatus Meridula (NL. fem. n. *Meridula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFIP01*. The type species for the genus is *Candidatus* Meridula dicimicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Meridula repagastra sp. nov.

Candidatus Meridula repagastra (NL. fem. n. *repagastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFIP01 sp013297865*. The type genome for the species is the GenBank assembly GCA_013297865.1. The GC content of the type genome is 59.31 %

and the genome length is 3.99 Mbp.

Description of *Candidatus* Meridula voragiforma sp. nov.

Candidatus Meridula voragiforma (NL. fem. n. *voragiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFIP01 sp012036375*. The type genome for the species is the GenBank assembly GCA_012032015.1. The GC content of the type genome is 55.06 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Mesobacillus acculentia sp. nov.

Candidatus Mesobacillus acculentia (NL. fem. n. *acculentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesobacillus sp003457145*. The type genome for the species is the GenBank assembly GCA_003457145.1. The GC content of the type genome is 41.86 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Mesobacillus favonugo sp. nov.

Candidatus Mesobacillus favonugo (NL. fem. n. *favonugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesobacillus sp001273925*. The type genome for the species is the GenBank assembly RS_GCF_001273925.1. The GC content of the type genome is 45.75 % and the genome length is 5.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Mesoflavibacter bicapax sp. nov.

Candidatus Mesoflavibacter bicapax (NL. fem. n. *bicapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesoflavibacter sp003008475*. The type genome for the species is the GenBank assembly RS_GCF_003008415.2. The GC content of the type genome is 31.19 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Mesomycoplasma abpatilenta sp. nov.

Candidatus Mesomycoplasma abpatilenta (NL. fem. n. *abpatilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesomycoplasma sp012516495*. The type genome for the species is the GenBank assembly RS_GCF_012516495.1. The GC content of the type genome is 26.1 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Mesonia categatio sp. nov.

Candidatus Mesonia categatio (NL. fem. n. *categatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesonia sp008692195*. The type genome for the species is the GenBank assembly RS_GCF_008692195.1. The GC content of the type genome is 35.19 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Mesonia cotenessa sp. nov.

Candidatus Mesonia cotenessa (NL. fem. n. *cotenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesonia sp008017835*. The type genome for the species is the GenBank assembly RS_GCF_008017835.1. The GC content of the type genome is 35.71 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Mesonia dicibitica sp. nov.

Candidatus Mesonia dicibitica (NL. fem. n. *dicibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesonia sp006546625*. The type genome for the species is the GenBank assembly RS_GCF_006546625.1. The GC content of the type genome is 35.58 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Mesonia genocentia sp. nov.

Candidatus Mesonia genocentia (NL. fem. n. *genocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesonia sp002413625*. The type genome for the species is the GenBank assembly GCA_002364385.1. The GC content of the type genome is 34.64 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Mesonia lugubisca sp. nov.

Candidatus Mesonia lugubisca (NL. fem. n. *lugubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesonia sp012964435*. The type genome for the species is the GenBank assembly GCA_012964435.1. The GC content of the type genome is 34.9 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Mesonia rubicousia sp. nov.

Candidatus Mesonia rubicousia (NL. fem. n. *rubicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesonia sp003233725*. The type genome for the species is the GenBank assembly RS_GCF_003233725.1. The GC content of the type genome is 35.81 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Mesorhizobium absurousia sp. nov.

Candidatus Mesorhizobium absurousia (NL. fem. n. *absurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp005503535*. The type genome for the species is the GenBank assembly RS_GCF_005503535.1. The GC content of the type genome is 63.53 % and the genome length is 7.36 Mbp.

Description of *Candidatus* Mesorhizobium adlacessa sp. nov.

Candidatus Mesorhizobium adlacessa (NL. fem. n. *adlacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003997495*. The type genome for the species is the GenBank assembly RS_GCF_003997495.1. The GC content of the type genome is 62.46

% and the genome length is 6.52 Mbp.

Description of *Candidatus* Mesorhizobium adtesatio sp. nov.

Candidatus Mesorhizobium adtesatio (NL. fem. n. *adtesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006439355*. The type genome for the species is the GenBank assembly RS_GCF_006439355.1. The GC content of the type genome is 63.76 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Mesorhizobium ambadousia sp. nov.

Candidatus Mesorhizobium ambadousia (NL. fem. n. *ambadousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003952365*. The type genome for the species is the GenBank assembly RS_GCF_003952365.1. The GC content of the type genome is 62.52 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Mesorhizobium appacago sp. nov.

Candidatus Mesorhizobium appacago (NL. fem. n. *appacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp001899205*. The type genome for the species is the GenBank assembly GCA_001899205.1. The GC content of the type genome is 64.74 % and the genome length is 6.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Mesorhizobium aprarax sp. nov.

Candidatus Mesorhizobium aprarax (NL. fem. n. *aprarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000824805*. The type genome for the species is the GenBank assembly RS_GCF_000824805.1. The GC content of the type genome is 63.41 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Mesorhizobium ascenicella sp. nov.

Candidatus Mesorhizobium ascenicella (NL. fem. n. *ascenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000502955*. The type genome for the species is the GenBank assembly RS_GCF_000502955.1. The GC content of the type genome is 61.98 % and the genome length is 6.82 Mbp.

Description of *Candidatus* Mesorhizobium ascenitia sp. nov.

Candidatus Mesorhizobium ascenitia (NL. fem. n. *ascenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004962925*. The type genome for the species is the GenBank assembly GCA_004962925.1. The GC content of the type genome is 61.91 % and the genome length is 6.74 Mbp.

Description of *Candidatus* Mesorhizobium ascisisca sp. nov.

Candidatus Mesorhizobium ascisisca (NL. fem. n. *ascisisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004963905*. The type genome for the species is the GenBank assembly GCA_004963905.1. The GC content of the type genome is 63.65 % and the genome length is 7.06 Mbp.

Description of *Candidatus* Mesorhizobium attorisca sp. nov.

Candidatus Mesorhizobium attorisca (NL. fem. n. *attorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp001854785*. The type genome for the species is the GenBank assembly RS_GCF_001854785.1. The GC content of the type genome is 63.24 % and the genome length is 6.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil from surrounding area".

Description of *Candidatus* Mesorhizobium baditousia sp. nov.

Candidatus Mesorhizobium baditousia (NL. fem. n. *baditousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000688075*. The type genome for the species is the GenBank assembly RS_GCF_000688075.1. The GC content of the type genome is 62.93 % and the genome length is 7.11 Mbp.

Description of *Candidatus* Mesorhizobium bifisilenta sp. nov.

Candidatus Mesorhizobium bifisilenta (NL. fem. n. *bifisilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003997935*. The type genome for the species is the GenBank assembly RS_GCF_003997935.1. The GC content of the type genome is 62.28 % and the genome length is 7.34 Mbp.

Description of *Candidatus* Mesorhizobium bipenivita sp. nov.

Candidatus Mesorhizobium bipenivita (NL. fem. n. *bipenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004136315*. The type genome for the species is the GenBank assembly RS_GCF_900119745.1. The GC content of the type genome is 62.14 % and the genome length is 6.67 Mbp.

Description of *Candidatus* Mesorhizobium bucolilenta sp. nov.

Candidatus Mesorhizobium bucolilenta (NL. fem. n. *bucolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp002294995*. The type genome for the species is the GenBank assembly RS_GCF_002294995.1. The GC content of the type genome is 63.31 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Mesorhizobium buxifibula sp. nov.

Candidatus Mesorhizobium buxifibula (NL. fem. n. *buxifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004020105*. The type genome for the species is the GenBank assembly GCA_004019795.1. The GC content of the type genome is 62.16 %

and the genome length is 6.92 Mbp.

Description of *Candidatus* Mesorhizobium cacomedo sp. nov.

Candidatus Mesorhizobium cacomedo (NL. fem. n. *cacomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004962245*. The type genome for the species is the GenBank assembly GCA_004962545.1. The GC content of the type genome is 62.21 % and the genome length is 7.54 Mbp.

Description of *Candidatus* Mesorhizobium ceracilenta sp. nov.

Candidatus Mesorhizobium ceracilenta (NL. fem. n. *ceracilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004791165*. The type genome for the species is the GenBank assembly GCA_004017165.1. The GC content of the type genome is 62.84 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Mesorhizobium cerifigena sp. nov.

Candidatus Mesorhizobium cerifigena (NL. fem. n. *cerifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004791025*. The type genome for the species is the GenBank assembly RS_GCF_004792275.1. The GC content of the type genome is 63.6 % and the genome length is 7.42 Mbp.

Description of *Candidatus* Mesorhizobium ciminitoga sp. nov.

Candidatus Mesorhizobium ciminitoga (NL. fem. n. *ciminitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003289965*. The type genome for the species is the GenBank assembly RS_GCF_003289965.1. The GC content of the type genome is 63.73 % and the genome length is 6.54 Mbp.

Description of *Candidatus* Mesorhizobium citivetta sp. nov.

Candidatus Mesorhizobium citivetta (NL. fem. n. *citivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000427725*. The type genome for the species is the GenBank assembly RS_GCF_000427725.1. The GC content of the type genome is 63.09 % and the genome length is 7.1 Mbp.

Description of *Candidatus* Mesorhizobium cobalilenta sp. nov.

Candidatus Mesorhizobium cobalilenta (NL. fem. n. *cobalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp001303895*. The type genome for the species is the GenBank assembly RS_GCF_001303895.1. The GC content of the type genome is 61.94 % and the genome length is 6.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture inoculated with cave lake water with methylated amine as carbon substrate".

Description of *Candidatus* Mesorhizobium cocolatica sp. nov.

Candidatus Mesorhizobium cocolatica (NL. fem. n. *cocolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003952385*. The type genome for the species is the GenBank assembly GCA_004016885.1. The GC content of the type genome is 63.64 % and the genome length is 6.64 Mbp.

Description of *Candidatus* Mesorhizobium codifatio sp. nov.

Candidatus Mesorhizobium codifatio (NL. fem. n. *codifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003952485*. The type genome for the species is the GenBank assembly GCA_005117035.1. The GC content of the type genome is 62.91 % and the genome length is 7.41 Mbp.

Description of *Candidatus* Mesorhizobium cohoritas sp. nov.

Candidatus Mesorhizobium cohoritas (NL. fem. n. *cohoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004791585*. The type genome for the species is the GenBank assembly RS_GCF_004022625.2. The GC content of the type genome is 63.53 % and the genome length is 6.82 Mbp.

Description of *Candidatus* Mesorhizobium cohuratio sp. nov.

Candidatus Mesorhizobium cohuratio (NL. fem. n. *cohuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006439515*. The type genome for the species is the GenBank assembly RS_GCF_006442545.1. The GC content of the type genome is 62.64 % and the genome length is 6.79 Mbp.

Description of *Candidatus* Mesorhizobium colubitica sp. nov.

Candidatus Mesorhizobium colubitica (NL. fem. n. *colubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000513935*. The type genome for the species is the GenBank assembly RS_GCF_000513935.1. The GC content of the type genome is 62.7 % and the genome length is 6.28 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Mesorhizobium colutugo sp. nov.

Candidatus Mesorhizobium colutugo (NL. fem. n. *colutugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003952505*. The type genome for the species is the GenBank assembly GCA_004017345.1. The GC content of the type genome is 63.61 % and the genome length is 6.29 Mbp.

Description of *Candidatus* Mesorhizobium conigentia sp. nov.

Candidatus Mesorhizobium conigentia (NL. fem. n. *conigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000502715*. The type genome for the species is the GenBank assembly RS_GCF_000502455.1. The GC content of the type genome is 62.47 % and the genome length is 6.52 Mbp.

Description of *Candidatus* Mesorhizobium delecatio sp. nov.

Candidatus Mesorhizobium delecatio (NL. fem. n. *delecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004010325*. The type genome for the species is the GenBank assembly GCA_005063435.1. The GC content of the type genome is 62.2 % and the genome length is 6.8 Mbp.

Description of *Candidatus* Mesorhizobium demulimonia sp. nov.

Candidatus Mesorhizobium demulimonia (NL. fem. n. *demulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006442315*. The type genome for the species is the GenBank assembly RS_GCF_006442315.1. The GC content of the type genome is 63.61 % and the genome length is 6.79 Mbp.

Description of *Candidatus* Mesorhizobium denixatio sp. nov.

Candidatus Mesorhizobium denixatio (NL. fem. n. *denixatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000824845*. The type genome for the species is the GenBank assembly RS_GCF_000824845.1. The GC content of the type genome is 63.49 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Mesorhizobium denoricella sp. nov.

Candidatus Mesorhizobium denoricella (NL. fem. n. *denoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp900199455*. The type genome for the species is the GenBank assembly RS_GCF_900199455.1. The GC content of the type genome is 62.39

% and the genome length is 8.58 Mbp.

Description of *Candidatus* Mesorhizobium denupatio sp. nov.

Candidatus Mesorhizobium denupatio (NL. fem. n. *denupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp001427385*. The type genome for the species is the GenBank assembly RS_GCF_001427385.1. The GC content of the type genome is 61.5 % and the genome length is 4.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Mesorhizobium denupitrix sp. nov.

Candidatus Mesorhizobium denupitrix (NL. fem. n. *denupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000503055*. The type genome for the species is the GenBank assembly RS_GCF_000503055.1. The GC content of the type genome is 62.08 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Mesorhizobium depacimonia sp. nov.

Candidatus Mesorhizobium depacimonia (NL. fem. n. *depacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000359125*. The type genome for the species is the GenBank assembly RS_GCF_000359125.1. The GC content of the type genome is 62.36 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Mesorhizobium depelastra sp. nov.

Candidatus Mesorhizobium depelastra (NL. fem. n. *depelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004020315*. The type genome for the species is the GenBank assembly GCA_005047105.1. The GC content of the type genome is 61.66 % and the genome length is 7.26 Mbp.

Description of *Candidatus* Mesorhizobium depicilega sp. nov.

Candidatus Mesorhizobium depicilega (NL. fem. n. *depicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp002295115*. The type genome for the species is the GenBank assembly RS_GCF_007003945.1. The GC content of the type genome is 62.8 % and the genome length is 7.42 Mbp.

Description of *Candidatus* Mesorhizobium depocimonas sp. nov.

Candidatus Mesorhizobium depocimonas (NL. fem. n. *depocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006442685*. The type genome for the species is the GenBank assembly RS_GCF_006440785.1. The GC content of the type genome is 63.16 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Mesorhizobium desonigena sp. nov.

Candidatus Mesorhizobium desonigena (NL. fem. n. *desonigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000425965*. The type genome for the species is the GenBank assembly RS_GCF_000425965.1. The GC content of the type genome is 62.81 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Mesorhizobium detositia sp. nov.

Candidatus Mesorhizobium detositia (NL. fem. n. *detositia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp007003975*. The type genome for the species is the GenBank assembly RS_GCF_007004055.1. The GC content of the type genome is 62.52 % and the genome length is 6.56 Mbp.

Description of *Candidatus* Mesorhizobium didacitura sp. nov.

Candidatus Mesorhizobium didacitura (NL. fem. n. *didacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006440775*. The type genome for the species is the GenBank assembly RS_GCF_006443065.1. The GC content of the type genome is 63.65 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Mesorhizobium dilogago sp. nov.

Candidatus Mesorhizobium dilogago (NL. fem. n. *dilogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006658505*. The type genome for the species is the GenBank assembly RS_GCF_006442395.1. The GC content of the type genome is 62.74 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Mesorhizobium diponivita sp. nov.

Candidatus Mesorhizobium diponivita (NL. fem. n. *diponivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004791255*. The type genome for the species is the GenBank assembly RS_GCF_004794755.1. The GC content of the type genome is 62.56 % and the genome length is 6.96 Mbp.

Description of *Candidatus* Mesorhizobium doxolitrix sp. nov.

Candidatus Mesorhizobium doxolitrix (NL. fem. n. *doxolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp002294945*. The type genome for the species is the GenBank assembly RS_GCF_004791945.1. The GC content of the type genome is 63.18 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Mesorhizobium duponitia sp. nov.

Candidatus Mesorhizobium duponitia (NL. fem. n. *duponitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004016445*. The type genome for the species is the GenBank assembly RS_GCF_004010465.2. The GC content of the type genome is 63.24

% and the genome length is 7.93 Mbp.

Description of *Candidatus* Mesorhizobium encepimonia sp. nov.

Candidatus Mesorhizobium encepimonia (NL. fem. n. *encepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003353565*. The type genome for the species is the GenBank assembly RS_GCF_003353565.1. The GC content of the type genome is 63.31 % and the genome length is 7.43 Mbp.

Description of *Candidatus* Mesorhizobium excoritoga sp. nov.

Candidatus Mesorhizobium excoritoga (NL. fem. n. *excoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp001897075*. The type genome for the species is the GenBank assembly GCA_001897075.1. The GC content of the type genome is 61.16 % and the genome length is 3.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Mesorhizobium facunitura sp. nov.

Candidatus Mesorhizobium facunitura (NL. fem. n. *facunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp001427025*. The type genome for the species is the GenBank assembly RS_GCF_001426965.1. The GC content of the type genome is 63.03 % and the genome length is 3.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Mesorhizobium fatilibra sp. nov.

Candidatus Mesorhizobium fatilibra (NL. fem. n. *fatilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000502875*. The type genome for the species is the GenBank assembly RS_GCF_000502875.1. The GC content of the type genome is 62.48 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Mesorhizobium faviletta sp. nov.

Candidatus Mesorhizobium faviletta (NL. fem. n. *faviletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004020365*. The type genome for the species is the GenBank assembly GCA_004019895.1. The GC content of the type genome is 62.11 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Mesorhizobium fecunitudo sp. nov.

Candidatus Mesorhizobium fecunitudo (NL. fem. n. *fecunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp005063415*. The type genome for the species is the GenBank assembly GCA_005063415.1. The GC content of the type genome is 62.08 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Mesorhizobium hiruditudo sp. nov.

Candidatus Mesorhizobium hiruditudo (NL. fem. n. *hiruditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004022705*. The type genome for the species is the GenBank assembly RS_GCF_004791235.1. The GC content of the type genome is 63.38 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Mesorhizobium homilimonas sp. nov.

Candidatus Mesorhizobium homilimonas (NL. fem. n. *homilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp002294725*. The type genome for the species is the GenBank assembly RS_GCF_002294725.1. The GC content of the type genome is 63.25 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Mesorhizobium indomax sp. nov.

Candidatus Mesorhizobium indomax (NL. fem. n. *indomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006442205*. The type genome for the species is the GenBank assembly RS_GCF_006442205.1. The GC content of the type genome is 63.48 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Mesorhizobium indotago sp. nov.

Candidatus Mesorhizobium indotago (NL. fem. n. *indotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp013520985*. The type genome for the species is the GenBank assembly RS_GCF_013520985.1. The GC content of the type genome is 62.37 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Mesorhizobium inretibula sp. nov.

Candidatus Mesorhizobium inretibula (NL. fem. n. *inretibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000502835*. The type genome for the species is the GenBank assembly RS_GCF_000502835.1. The GC content of the type genome is 62.14 % and the genome length is 7.03 Mbp.

Description of *Candidatus* Mesorhizobium irrevitrix sp. nov.

Candidatus Mesorhizobium irrevitrix (NL. fem. n. *irrevitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003242525*. The type genome for the species is the GenBank assembly GCA_003242525.1. The GC content of the type genome is 62.22 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Mesorhizobium lenunisca sp. nov.

Candidatus Mesorhizobium lenunisca (NL. fem. n. *lenunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Mesorhizobium sp004020875*. The type genome for the species is the GenBank assembly GCA_004019885.1. The GC content of the type genome is 63.23 % and the genome length is 6.68 Mbp.

Description of *Candidatus* Mesorhizobium levifisca sp. nov.

Candidatus Mesorhizobium levifisca (NL. fem. n. *levifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003996995*. The type genome for the species is the GenBank assembly RS_GCF_003997845.1. The GC content of the type genome is 62.59 % and the genome length is 6.69 Mbp.

Description of *Candidatus* Mesorhizobium locelibula sp. nov.

Candidatus Mesorhizobium locelibula (NL. fem. n. *locelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp900115245*. The type genome for the species is the GenBank assembly RS_GCF_900115245.1. The GC content of the type genome is 63.63 % and the genome length is 6.16 Mbp.

Description of *Candidatus* Mesorhizobium lubenilega sp. nov.

Candidatus Mesorhizobium lubenilega (NL. fem. n. *lubenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006442815*. The type genome for the species is the GenBank assembly RS_GCF_006440575.1. The GC content of the type genome is 63.95 % and the genome length is 6.3 Mbp.

Description of *Candidatus* Mesorhizobium luticedo sp. nov.

Candidatus Mesorhizobium luticedo (NL. fem. n. *luticedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004020545*. The type genome for the species is the GenBank assembly GCA_004962185.1. The GC content of the type genome is 63.46 % and the genome length is 6.78 Mbp.

Description of *Candidatus* Mesorhizobium macilimonas sp. nov.

Candidatus Mesorhizobium macilimonas (NL. fem. n. *macilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003952465*. The type genome for the species is the GenBank assembly GCA_004016615.1. The GC content of the type genome is 63.3 % and the genome length is 7.11 Mbp.

Description of *Candidatus* Mesorhizobium munimitio sp. nov.

Candidatus Mesorhizobium munimitio (NL. fem. n. *munimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp002295065*. The type genome for the species is the GenBank assembly RS_GCF_002295065.1. The GC content of the type genome is 63.45 % and the genome length is 6.61 Mbp.

Description of *Candidatus* Mesorhizobium murilitrix sp. nov.

Candidatus Mesorhizobium murilitrix (NL. fem. n. *murilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006440675*. The type genome for the species is the GenBank assembly RS_GCF_006439375.1. The GC content of the type genome is 63.94 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Mesorhizobium nicomastra sp. nov.

Candidatus Mesorhizobium nicomastra (NL. fem. n. *nicomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003952425*. The type genome for the species is the GenBank assembly GCA_004016805.1. The GC content of the type genome is 63.44 % and the genome length is 6.93 Mbp.

Description of *Candidatus* Mesorhizobium nugivessa sp. nov.

Candidatus Mesorhizobium nugivessa (NL. fem. n. *nugivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004017275*. The type genome for the species is the GenBank assembly GCA_004016965.1. The GC content of the type genome is 62.23 % and the genome length is 6.63 Mbp.

Description of *Candidatus* Mesorhizobium obambitio sp. nov.

Candidatus Mesorhizobium obambitio (NL. fem. n. *obambitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp003963455*. The type genome for the species is the GenBank assembly GCA_003963455.1. The GC content of the type genome is 63.8 % and the genome length is 6.9 Mbp.

Description of *Candidatus* Mesorhizobium panifousia sp. nov.

Candidatus Mesorhizobium panifousia (NL. fem. n. *panifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004017535*. The type genome for the species is the GenBank assembly GCA_004020305.1. The GC content of the type genome is 63.28 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Mesorhizobium parocimonas sp. nov.

Candidatus Mesorhizobium parocimonas (NL. fem. n. *parocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp002294985*. The type genome for the species is the GenBank assembly GCA_004018325.1. The GC content of the type genome is 63.31 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Mesorhizobium remeditudo sp. nov.

Candidatus Mesorhizobium remeditudo (NL. fem. n. *remeditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Mesorhizobium sp006440735*. The type genome for the species is the GenBank assembly RS_GCF_006440735.1. The GC content of the type genome is 64.0 % and the genome length is 7.03 Mbp.

Description of *Candidatus* Mesorhizobium rorifitudo sp. nov.

Candidatus Mesorhizobium rorifitudo (NL. fem. n. *rorifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp008520305*. The type genome for the species is the GenBank assembly RS_GCF_008520305.1. The GC content of the type genome is 62.31 % and the genome length is 7.16 Mbp.

Description of *Candidatus* Mesorhizobium rubecilega sp. nov.

Candidatus Mesorhizobium rubecilega (NL. fem. n. *rubecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp900472295*. The type genome for the species is the GenBank assembly RS_GCF_900467855.1. The GC content of the type genome is 62.77 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Mesorhizobium sanabitia sp. nov.

Candidatus Mesorhizobium sanabitia (NL. fem. n. *sanabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp013170825*. The type genome for the species is the GenBank assembly RS_GCF_013170825.1. The GC content of the type genome is 62.78 % and the genome length is 7.34 Mbp.

Description of *Candidatus* Mesorhizobium saxifitio sp. nov.

Candidatus Mesorhizobium saxifitio (NL. fem. n. *saxifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp004020645*. The type genome for the species is the GenBank assembly GCA_004019335.1. The GC content of the type genome is 61.78 % and the genome length is 7.26 Mbp.

Description of *Candidatus* Mesorhizobium selecatica sp. nov.

Candidatus Mesorhizobium selecatica (NL. fem. n. *selecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp001425625*. The type genome for the species is the GenBank assembly RS_GCF_001425625.1. The GC content of the type genome is 62.4 % and the genome length is 6.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Mesorhizobium senacifica sp. nov.

Candidatus Mesorhizobium senacifica (NL. fem. n. *senacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp001427285*. The type genome for the species is the GenBank assembly RS_GCF_001427285.1. The GC content of the type genome is 60.89 % and the genome length is 4.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Mesorhizobium subucastra sp. nov.

Candidatus Mesorhizobium subucastra (NL. fem. n. *subucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006442965*. The type genome for the species is the GenBank assembly RS_GCF_006443075.1. The GC content of the type genome is 63.74 % and the genome length is 6.3 Mbp.

Description of *Candidatus* Mesorhizobium tametugo sp. nov.

Candidatus Mesorhizobium tametugo (NL. fem. n. *tametugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp006442795*. The type genome for the species is the GenBank assembly RS_GCF_006442795.1. The GC content of the type genome is 63.23 % and the genome length is 6.12 Mbp.

Description of *Candidatus* Mesorhizobium venabatio sp. nov.

Candidatus Mesorhizobium venabatio (NL. fem. n. *venabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp000824825*. The type genome for the species is the GenBank assembly RS_GCF_000824825.2. The GC content of the type genome is 63.52 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Mesorhizobium virecilega sp. nov.

Candidatus Mesorhizobium virecilega (NL. fem. n. *virecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp900472585*. The type genome for the species is the GenBank assembly RS_GCF_900472585.1. The GC content of the type genome is 62.85 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Mesorhizobium volubetta sp. nov.

Candidatus Mesorhizobium volubetta (NL. fem. n. *volubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium sp013170805*. The type genome for the species is the GenBank assembly RS_GCF_013170745.1. The GC content of the type genome is 62.45 % and the genome length is 7.19 Mbp.

Description of *Candidatus* Mesorhizobium exforitas sp. nov.

Candidatus Mesorhizobium exforitas (NL. fem. n. *exforitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium_A sp002336975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002336975.1. The GC content of the type genome is 64.78 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Mesorhizobium abnepimonia sp. nov.

Candidatus Mesorhizobium abnepimonia (NL. fem. n. *abnepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium_D sp014595955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014595955.1. The GC content of the type genome is 63.33 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Mesorhizobium sarabicula sp. nov.

Candidatus Mesorhizobium sarabicula (NL. fem. n. *sarabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesorhizobium_E sp014495845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014495845.1. The GC content of the type genome is 67.9 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Mesosutterella ecfacitura sp. nov.

Candidatus Mesosutterella ecfacitura (NL. fem. n. *ecfacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesosutterella sp902797695*. The type genome for the species is the GenBank assembly GCA_902797695.1. The GC content of the type genome is 63.21 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Mesotoga alsisatica sp. nov.

Candidatus Mesotoga alsisatica (NL. fem. n. *alsisatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesotoga sp011620045*. The type genome for the species is the GenBank assembly GCA_011620045.1. The GC content of the type genome is 45.8 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Mesotoga carucedo sp. nov.

Candidatus Mesotoga carucedo (NL. fem. n. *carucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesotoga sp002305955*. The type genome for the species is the GenBank assembly GCA_002305955.1. The GC content of the type genome is 50.49 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Mesotoga fecunitio sp. nov.

Candidatus Mesotoga fecunitio (NL. fem. n. *fecunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesotoga sp002752635*. The type genome for the species is the GenBank assembly RS_GCF_002890355.1. The GC content of the type genome is 45.91 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Mesotoga occalimonia sp. nov.

Candidatus Mesotoga occalimonia (NL. fem. n. *occalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesotoga sp001603185*. The type genome for the species is the GenBank assembly GCA_001603185.1. The GC content of the type genome is 46.98 % and the genome length is 3.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Mesotoga rorulessa sp. nov.

Candidatus Mesotoga rorulessa (NL. fem. n. *rorulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesotoga sp003228205*. The type genome for the species is the GenBank assembly GCA_002435945.1. The GC content of the type genome is 45.64 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Mesotoga rudicitio sp. nov.

Candidatus Mesotoga rudicitio (NL. fem. n. *rudicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mesotoga sp003664995*. The type genome for the species is the GenBank assembly RS_GCF_003664995.1. The GC content of the type genome is 45.67 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Metabacillus buxificella sp. nov.

Candidatus Metabacillus buxificella (NL. fem. n. *buxificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metabacillus sp002577655*. The type genome for the species is the GenBank assembly RS_GCF_002577655.1. The GC content of the type genome is 35.29 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Metabacillus cadurousia sp. nov.

Candidatus Metabacillus cadurousia (NL. fem. n. *cadurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metabacillus sp004801455*. The type genome for the species is the GenBank assembly RS_GCF_004801455.1. The GC content of the type genome is 35.75 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Metabacillus curacitas sp. nov.

Candidatus Metabacillus curacitas (NL. fem. n. *curacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metabacillus sp002871465*. The type genome for the species is the GenBank assembly RS_GCF_903166545.1. The GC content of the type genome is 35.83 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Metabacillus melilitia sp. nov.

Candidatus Metabacillus melilitia (NL. fem. n. *melilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Metabacillus sp000518865*. The type genome for the species is the GenBank assembly RS_GCF_000518865.1. The GC content of the type genome is 36.05 % and the genome length is 5.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Metabacillus obtesifica sp. nov.

Candidatus Metabacillus obtesifica (NL. fem. n. *obtesifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metabacillus sp003259415*. The type genome for the species is the GenBank assembly RS_GCF_003259415.1. The GC content of the type genome is 36.41 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Metabacillus tribritoga sp. nov.

Candidatus Metabacillus tribritoga (NL. fem. n. *tribritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metabacillus sp000981385*. The type genome for the species is the GenBank assembly RS_GCF_000981385.1. The GC content of the type genome is 37.0 % and the genome length is 6.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "solar saltern".

Description of *Candidatus* Metabacillus aneclitio sp. nov.

Candidatus Metabacillus aneclitio (NL. fem. n. *aneclitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metabacillus_B sp003816055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003816055.1. The GC content of the type genome is 44.88 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Metabacillus luxuritudo sp. nov.

Candidatus Metabacillus luxuritudo (NL. fem. n. *luxuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metabacillus_B sp000732485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000732485.2. The GC content of the type genome is 43.3 % and the genome length is 4.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Loyalsock Creek".

Description of *Candidatus* Metabana dibucatica sp. nov.

Candidatus Metabana dibucatica (NL. fem. n. *dibucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQQQ01 sp903873995*. The type genome for the species is the GenBank assembly GCA_903873995.1. The GC content of the type genome is 66.34 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Metabana gen. nov.

Candidatus Metabana (NL. fem. n. *Metabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQQQ01*. The type species for the genus is *Candidatus* Metabana dibucatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Metabana monimitio sp. nov.

Candidatus Metabana monimitio (NL. fem. n. *monimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQQQ01 sp903924855*. The type genome for the species is the GenBank assembly GCA_903832455.1. The GC content of the type genome is 66.25 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Metabana peribatica sp. nov.

Candidatus Metabana peribatica (NL. fem. n. *peribatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQQQ01 sp903823665*. The type genome for the species is the GenBank assembly GCA_903823665.1. The GC content of the type genome is 62.05 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Metabana solivicella sp. nov.

Candidatus Metabana solivicella (NL. fem. n. *solivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQQQ01 sp903932545*. The type genome for the species is the GenBank assembly GCA_903932545.1. The GC content of the type genome is 61.16 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Metabana susicigena sp. nov.

Candidatus Metabana susicigena (NL. fem. n. *susicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQQQ01 sp903891315*. The type genome for the species is the GenBank assembly GCA_903891315.1. The GC content of the type genome is 63.22 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Metabaria visibisca sp. nov.

Candidatus Metabaria visibisca (NL. fem. n. *visibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MR-S7 sp000400995*. The type genome for the species is the GenBank assembly RS_GCF_000400995.2. The GC content of the type genome is 68.3 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Metabaria gen. nov.

Candidatus Metabaria (NL. fem. n. *Metabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MR-S7*. The type species for the genus is *Candidatus* Metabaria visibisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Metabella levidibra sp. nov.

Candidatus Metabella levidibra (NL. fem. n. *levidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-40-15 sp001819605*. The type genome for the species is the GenBank assembly GCA_001819655.1. The GC content of the type genome is 38.64 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Metabella gen. nov.

Candidatus Metabella (NL. fem. n. *Metabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-40-15*. The type species for the genus is *Candidatus* Metabella levidibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2143*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatulaceae.

Description of *Candidatus* Metabella volunitica sp. nov.

Candidatus Metabella volunitica (NL. fem. n. *volunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-40-15 sp001819555*. The type genome for the species is the GenBank assembly GCA_001819665.1. The GC content of the type genome is 39.61 % and the genome length is 0.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Metabia cerebax sp. nov.

Candidatus Metabia cerebax (NL. fem. n. *cerebax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1174 sp003153935*. The type genome for the species is the GenBank assembly GCA_003154495.1. The GC content of the type genome is 49.66 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Metabia gen. nov.

Candidatus Metabia (NL. fem. n. *Metabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1174*. The type species for the genus is *Candidatus* Metabia cerebax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6262*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semunulaceae.

Description of *Candidatus* Metabida socagastra sp. nov.

Candidatus Metabida socagastra (NL. fem. n. *socagastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6184 sp002422845*. The type genome for the species is the GenBank assembly GCA_002422845.1. The GC content of the type genome is 40.13 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Metabida gen. nov.

Candidatus Metabida (NL. fem. n. *Metabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6184*. The type species for the genus is *Candidatus* Metabida socagastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6184*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Metabidaceae.

Description of *Candidatus* Metabidaceae fam. nov.

Candidatus Metabidaceae (NL. fem. n. *Metabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6184.* The type genus for the taxon is *Candidatus* Metabida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6184*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Metabidales.

Description of *Candidatus* Metabidales ord. nov.

Candidatus Metabidales (NL. fem. n. *Metabidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6184.* The type genus for the taxon is *Candidatus* Metabida .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Metabosa defacitica sp. nov.

Candidatus Metabosa defacitica (NL. fem. n. *defacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSP1-5 sp001643535*. The type genome for the species is the GenBank assembly GCA_001643535.1. The GC content of the type genome is 60.4 % and the genome length is 1.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment sample collected at the water-sediment interface from the South Pacific gyre; IODP site U1369".

Description of *Candidatus* Metabosa gen. nov.

Candidatus Metabosa (NL. fem. n. *Metabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSP1-5*. The type species for the genus is *Candidatus* Metabosa defacitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Metabosaceae.

Description of *Candidatus* Metabosaceae fam. nov.

Candidatus Metabosaceae (NL. fem. n. *Metabosaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSP1-5*. The type genus for the taxon is *Candidatus* Metabosa .

According to GTDB R06-RS202, this family belongs to the order *Methylomirabilales*.

Description of *Candidatus* Metabosa denupago sp. nov.

Candidatus Metabosa denupago (NL. fem. n. *denupago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSP1-5 sp001443495*. The type genome for the species is the GenBank assembly GCA_001443495.1. The GC content of the type genome is 62.39 % and the genome length is 2.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment at 5m depth".

Description of *Candidatus* Metabosa obtoratica sp. nov.

Candidatus Metabosa obtoratica (NL. fem. n. *obtoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSP1-5 sp012974305*. The type genome for the species is the GenBank assembly GCA_012974305.1. The GC content of the type genome is 58.63 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Metabula ulcisilega sp. nov.

Candidatus Metabula ulcisilega (NL. fem. n. *ulcisilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHWZ01 sp009693575*. The type genome for the species is the GenBank assembly GCA_009693575.1. The GC content of the type genome is 43.77 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Metabula gen. nov.

Candidatus Metabula (NL. fem. n. *Metabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SHWZ01*. The type species for the genus is *Candidatus* Metabula ulcisilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHWZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Metabulaceae.

Description of *Candidatus* Metabulaceae fam. nov.

Candidatus Metabulaceae (NL. fem. n. *Metabulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHWZ01*. The type genus for the taxon is *Candidatus* Metabula .

According to the original version of GTDB R06-RS202, this family belongs to the order *NS11-12g*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peropanales.

Description of *Candidatus* Metallibacterium melilatio sp. nov.

Candidatus Metallibacterium melilatio (NL. fem. n. *melilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metallibacterium sp003233305*. The type genome for the species is the GenBank assembly GCA_003233305.1. The GC content of the type genome is 56.43 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Metamycoplasma benifedo sp. nov.

Candidatus Metamycoplasma benifedo (NL. fem. n. *benifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metamycoplasma sp012934885*. The type genome for the species is the GenBank assembly RS_GCF_012934885.1. The GC content of the type genome is 29.05 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Metamycoplasma galacedo sp. nov.

Candidatus Metamycoplasma galacedo (NL. fem. n. *galacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metamycoplasma sp013008815*. The type genome for the species is the GenBank assembly RS_GCF_013008815.1. The GC content of the type genome is 24.06 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Metamycoplasma obtemifica sp. nov.

Candidatus Metamycoplasma obtemifica (NL. fem. n. *obtemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metamycoplasma sp012934855*. The type genome for the species is the GenBank assembly RS_GCF_012934855.1. The GC content of the type genome is 28.49 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Metapella siticisca sp. nov.

Candidatus Metapella siticisca (NL. fem. n. *siticisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3920 sp002386065*. The type genome for the species is the GenBank assembly GCA_002386065.1. The GC content of the type genome is 34.49 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Metapella gen. nov.

Candidatus Metapella (NL. fem. n. *Metapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3920*. The type species for the genus is *Candidatus* Metapella siticisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Metapia funamitio sp. nov.

Candidatus Metapia funamitio (NL. fem. n. *funamitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA823 sp002296225*. The type genome for the species is the GenBank assembly GCA_002715285.1. The GC content of the type genome is 52.6 %

and the genome length is 3.74 Mbp.

Description of *Candidatus* Metapia gen. nov.

Candidatus Metapia (NL. fem. n. *Metapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA823*. The type species for the genus is *Candidatus* Metapia funamitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Metapiaceae.

Description of *Candidatus* Metapiaceae fam. nov.

Candidatus Metapiaceae (NL. fem. n. *Metapiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA823.* The type genus for the taxon is *Candidatus* Metapia .

According to GTDB R06-RS202, this family belongs to the order *Vicinamibacterales*.

Description of *Candidatus* Metapida anastitoga sp. nov.

Candidatus Metapida anastitoga (NL. fem. n. *anastitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-46 sp003231955*. The type genome for the species is the GenBank assembly GCA_003231955.1. The GC content of the type genome is 46.14 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Metapida gen. nov.

Candidatus Metapida (NL. fem. n. *Metapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-46*. The type species for the genus is *Candidatus* Metapida anastitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-60-25*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Nugigulaceae.

Description of *Candidatus* Metapida recocilega sp. nov.

Candidatus Metapida recocilega (NL. fem. n. *recocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-46 sp903893445*. The type genome for the species is the GenBank assembly GCA_903830935.1. The GC content of the type genome is 51.09 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Metaposa armidetta sp. nov.

Candidatus Metaposa armidetta (NL. fem. n. *armidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1424 sp012522695*. The type genome for the species is the GenBank assembly GCA_012522695.1. The GC content of the type genome is 31.75 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Metaposa gen. nov.

Candidatus Metaposa (NL. fem. n. *Metaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1424*. The type species for the genus is *Candidatus* Metaposa armidetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Metaposa proclugo sp. nov.

Candidatus Metaposa proclugo (NL. fem. n. *proclugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1424 sp012971835*. The type genome for the species is the GenBank assembly GCA_012971835.1. The GC content of the type genome is 38.44 %

and the genome length is 0.85 Mbp.

Description of *Candidatus* Metaposa tubicousia sp. nov.

Candidatus Metaposa tubicousia (NL. fem. n. *tubicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1424 sp002329705*. The type genome for the species is the GenBank assembly GCA_012511715.1. The GC content of the type genome is 46.55 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Metasolibacillus reduvitoga sp. nov.

Candidatus Metasolibacillus reduvitoga (NL. fem. n. *reduvitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Metasolibacillus sp002360295*. The type genome for the species is the GenBank assembly GCA_002360295.1. The GC content of the type genome is 36.14 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Methylacidimicrobium octacatica sp. nov.

Candidatus Methylacidimicrobium octacatica (NL. fem. n. *octacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylacidimicrobium sp000526255*. The type genome for the species is the GenBank assembly RS_GCF_000526255.1. The GC content of the type genome is 62.74 % and the genome length is 2.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Methylacidimicrobium tirunibula sp. nov.

Candidatus Methylacidimicrobium tirunibula (NL. fem. n. *tirunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylacidimicrobium sp000379365*. The type genome for the species is the GenBank assembly RS_GCF_000379365.1. The GC content of the type genome is 60.89 % and the genome length is 2.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted

under MIGS 2.1".

Description of *Candidatus* Methylacidiphilum ensicago sp. nov.

Candidatus Methylacidiphilum ensicago (NL. fem. n. *ensicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylacidiphilum sp004421185*. The type genome for the species is the GenBank assembly RS_GCF_004421185.1. The GC content of the type genome is 41.1 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Methylacidiphilum immacitio sp. nov.

Candidatus Methylacidiphilum immacitio (NL. fem. n. *immacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylacidiphilum sp004421255*. The type genome for the species is the GenBank assembly RS_GCF_004421255.1. The GC content of the type genome is 41.38 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Methylibium buxifetta sp. nov.

Candidatus Methylibium buxifetta (NL. fem. n. *buxifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylibium sp013817365*. The type genome for the species is the GenBank assembly GCA_013817365.1. The GC content of the type genome is 67.42 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Methylibium nidifitio sp. nov.

Candidatus Methylibium nidifitio (NL. fem. n. *nidifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylibium sp013817345*. The type genome for the species is the GenBank assembly GCA_013817345.1. The GC content of the type genome is 67.34 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Methylibium patibedo sp. nov.

Candidatus Methylibium patibedo (NL. fem. n. *patibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylibium sp903889735*. The type genome for the species is the GenBank assembly GCA_903889735.1. The GC content of the type genome is 69.23 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Methylibium semimicula sp. nov.

Candidatus Methylibium semimicula (NL. fem. n. *semimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylibium sp902826655*. The type genome for the species is the GenBank assembly GCA_902826655.1. The GC content of the type genome is 70.19 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Methylibium sotulitica sp. nov.

Candidatus Methylibium sotulitica (NL. fem. n. *sotulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylibium sp001425905*. The type genome for the species is the GenBank assembly RS_GCF_001425905.1. The GC content of the type genome is 69.04 % and the genome length is 4.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Methylobacter dimacisca sp. nov.

Candidatus Methylobacter dimacisca (NL. fem. n. *dimacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacter_A sp903832775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903862195.1. The GC content of the type genome is 43.08 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Methylobacter hegumibra sp. nov.

Candidatus Methylobacter hegumibra (NL. fem. n. *hegumibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacter_A sp903831545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903831545.1. The GC content of the type genome is 44.3 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Methylobacter insomugo sp. nov.

Candidatus Methylobacter insomugo (NL. fem. n. *insomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacter_A sp004299305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004299305.1. The GC content of the type genome is 48.0 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Methylobacter offiricella sp. nov.

Candidatus Methylobacter offiricella (NL. fem. n. *offiricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacter_A sp004322395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004322395.1. The GC content of the type genome is 47.45 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Methylobacterium abhinitura sp. nov.

Candidatus Methylobacterium abhinitura (NL. fem. n. *abhinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp014191355*. The type genome for the species is the GenBank assembly RS_GCF_014191355.1. The GC content of the type genome is 67.55 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Methylobacterium adaggilenta sp. nov.

Candidatus Methylobacterium adaggilenta (NL. fem. n. *adaggilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp003173735*. The type genome for the species is the GenBank assembly RS_GCF_003173735.1. The GC content of the type genome is 70.45 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Methylobacterium allibago sp. nov.

Candidatus Methylobacterium allibago (NL. fem. n. *allibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp006151805*. The type genome for the species is the GenBank assembly RS_GCF_006151805.1. The GC content of the type genome is 70.42 % and the genome length is 7.87 Mbp.

Description of *Candidatus* Methylobacterium aplesitia sp. nov.

Candidatus Methylobacterium aplesitia (NL. fem. n. *aplesitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp011043735*. The type genome for the species is the GenBank assembly RS_GCF_011043735.1. The GC content of the type genome is 70.34 % and the genome length is 7.58 Mbp.

Description of *Candidatus* Methylobacterium appicimonas sp. nov.

Candidatus Methylobacterium appicimonas (NL. fem. n. *appicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp008806345*. The type genome for the species is the GenBank assembly RS_GCF_008806345.1. The GC content of the type genome is 70.19 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Methylobacterium arnacitoga sp. nov.

Candidatus Methylobacterium arnacitoga (NL. fem. n. *arnacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp003201865*. The type genome for the species is the GenBank assembly RS_GCF_003201865.1. The GC content of the type genome is 69.58 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Methylobacterium baditimonia sp. nov.

Candidatus Methylobacterium baditimonia (NL. fem. n. *baditimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp000372825*. The type genome for the species is the GenBank assembly RS_GCF_000372825.1. The GC content of the type genome is 66.68 % and the genome length is 4.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Methylobacterium bipaligena sp. nov.

Candidatus Methylobacterium bipaligena (NL. fem. n. *bipaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp900103195*. The type genome for the species is the GenBank assembly RS_GCF_008329595.1. The GC content of the type genome is 68.98 % and the genome length is 6.78 Mbp.

Description of *Candidatus* Methylobacterium capabetta sp. nov.

Candidatus Methylobacterium capabetta (NL. fem. n. *capabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp008039875*. The type genome for the species is the GenBank assembly RS_GCF_008039935.1. The GC content of the type genome is 69.46 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Methylobacterium cepuricella sp. nov.

Candidatus Methylobacterium cepuricella (NL. fem. n. *cepuricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001423295*. The type genome for the species is the GenBank assembly RS_GCF_001422775.1. The GC content of the type genome is 68.66 % and the genome length is 4.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylobacterium cepuritia sp. nov.

Candidatus Methylobacterium cepuritia (NL. fem. n. *cepuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001423265*. The type genome for the species is the GenBank assembly RS_GCF_001423265.1. The GC content of the type genome is 69.62 % and the genome length is 4.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylobacterium cisorisca sp. nov.

Candidatus Methylobacterium cisorisca (NL. fem. n. *cisorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp008040045*. The type genome for the species is the GenBank assembly RS_GCF_008040045.1. The GC content of the type genome is 69.68 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Methylobacterium colimitica sp. nov.

Candidatus Methylobacterium colimitica (NL. fem. n. *colimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp003217615*. The type genome for the species is the GenBank assembly RS_GCF_003217615.1. The GC content of the type genome is 69.38 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Methylobacterium curotatica sp. nov.

Candidatus Methylobacterium curotatica (NL. fem. n. *curotatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Methylobacterium sp001422815*. The type genome for the species is the GenBank assembly RS_GCF_001422815.1. The GC content of the type genome is 65.92 % and the genome length is 5.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylobacterium decamifica sp. nov.

Candidatus Methylobacterium decamifica (NL. fem. n. *decamifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp003111705*. The type genome for the species is the GenBank assembly RS_GCF_003111705.1. The GC content of the type genome is 68.26 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Methylobacterium dedigessa sp. nov.

Candidatus Methylobacterium dedigessa (NL. fem. n. *dedigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp009806555*. The type genome for the species is the GenBank assembly RS_GCF_009806555.1. The GC content of the type genome is 69.51 % and the genome length is 6.4 Mbp.

Description of *Candidatus* Methylobacterium defulitio sp. nov.

Candidatus Methylobacterium defulitio (NL. fem. n. *defulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp000019365*. The type genome for the species is the GenBank assembly RS_GCF_000019365.1. The GC content of the type genome is 71.5 % and the genome length is 7.74 Mbp.

Description of *Candidatus* Methylobacterium dehinetta sp. nov.

Candidatus Methylobacterium dehinetta (NL. fem. n. *dehinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp004745635*. The type genome for the species is the GenBank assembly RS_GCF_004745635.1. The GC content of the type genome is 70.97 % and the genome length is 7.83 Mbp.

Description of *Candidatus* Methylobacterium demagicella sp. nov.

Candidatus Methylobacterium demagicella (NL. fem. n. *demagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001542815*. The type genome for the species is the GenBank assembly RS_GCF_001542815.1. The GC content of the type genome is 68.41 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Methylobacterium denoredo sp. nov.

Candidatus Methylobacterium denoredo (NL. fem. n. *denoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001422375*. The type genome for the species is the GenBank assembly RS_GCF_001422375.1. The GC content of the type genome is 69.6 % and the genome length is 4.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylobacterium derunatio sp. nov.

Candidatus Methylobacterium derunatio (NL. fem. n. *derunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp003173775*. The type genome for the species is the GenBank assembly RS_GCF_003173775.1. The GC content of the type genome is 70.63 % and the genome length is 6.54 Mbp.

Description of *Candidatus* Methylobacterium diluvitura sp. nov.

Candidatus Methylobacterium diluvitura (NL. fem. n. *diluvitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp008000895*. The type genome for the species is the GenBank assembly RS_GCF_008000895.1. The GC content of the type genome is 69.03 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Methylobacterium holovitrix sp. nov.

Candidatus Methylobacterium holovitrix (NL. fem. n. *holovitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp004004555*. The type genome for the species is the GenBank assembly RS_GCF_004004555.2. The GC content of the type genome is 71.86 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Methylobacterium irreditio sp. nov.

Candidatus Methylobacterium irreditio (NL. fem. n. *irreditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001425465*. The type genome for the species is the GenBank assembly RS_GCF_001425465.1. The GC content of the type genome is 69.43 % and the genome length is 5.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylobacterium mirificella sp. nov.

Candidatus Methylobacterium mirificella (NL. fem. n. *mirificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp900112625*. The type genome for the species is the GenBank assembly RS_GCF_004340765.1. The GC content of the type genome is 70.99 % and the genome length is 6.64 Mbp.

Description of *Candidatus* Methylobacterium monogago sp. nov.

Candidatus Methylobacterium monogago (NL. fem. n. *monogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp010692745*. The type genome for the species is the GenBank assembly RS_GCF_010692745.1. The GC content of the type genome is 66.54 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Methylobacterium pocilibra sp. nov.

Candidatus Methylobacterium pocilibra (NL. fem. n. *pocilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp002778835*. The type genome for the species is the GenBank assembly GCA_003864615.1. The GC content of the type genome is 71.08 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Methylobacterium problicella sp. nov.

Candidatus Methylobacterium problicella (NL. fem. n. *problicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp005502455*. The type genome for the species is the GenBank assembly RS_GCF_005502455.1. The GC content of the type genome is 67.91 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Methylobacterium resupibula sp. nov.

Candidatus Methylobacterium resupibula (NL. fem. n. *resupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp000376345*. The type genome for the species is the GenBank assembly RS_GCF_000376345.1. The GC content of the type genome is 67.14 % and the genome length is 4.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Methylobacterium roraratica sp. nov.

Candidatus Methylobacterium roraratica (NL. fem. n. *roraratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001424705*. The type genome for the species is the GenBank assembly RS_GCF_001424705.1. The GC content of the type genome is 69.44 % and the genome length is 5.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylobacterium sanabessa sp. nov.

Candidatus Methylobacterium sanabessa (NL. fem. n. *sanabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp000519085*. The type genome for the species is the GenBank assembly RS_GCF_000519085.1. The GC content of the type genome is 66.67 % and the genome length is 4.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Methylobacterium selibedo sp. nov.

Candidatus Methylobacterium selibedo (NL. fem. n. *selibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001455965*. The type genome for the species is the GenBank assembly RS_GCF_001455965.1. The GC content of the type genome is 68.5 % and the genome length is 5.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "xylem sap".

Description of *Candidatus* Methylobacterium sicinilega sp. nov.

Candidatus Methylobacterium sicinilega (NL. fem. n. *sicinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001422885*. The type genome for the species is the GenBank assembly RS_GCF_001422885.1. The GC content of the type genome is 70.04 % and the genome length is 4.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylobacterium tenilastra sp. nov.

Candidatus Methylobacterium tenilastra (NL. fem. n. *tenilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp008040035*. The type genome for the species is the GenBank assembly RS_GCF_008040035.1. The GC content of the type genome is 67.42 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Methylobacterium vagabitrix sp. nov.

Candidatus Methylobacterium vagabitrix (NL. fem. n. *vagabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001423085*. The type genome for the species is the GenBank assembly RS_GCF_002917135.1. The GC content of the type genome is 68.15 % and the genome length is 5.93 Mbp.

Description of *Candidatus* Methylobacterium venunitura sp. nov.

Candidatus Methylobacterium venunitura (NL. fem. n. *venunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp008040085*. The type genome for the species is the GenBank assembly RS_GCF_008040085.1. The GC content of the type genome is 69.03 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Methylobacterium verecitudo sp. nov.

Candidatus Methylobacterium verecitudo (NL. fem. n. *verecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001423405*. The type genome for the species is the GenBank assembly RS_GCF_001423405.1. The GC content of the type genome is 68.51 % and the genome length is 5.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylobacterium verecugo sp. nov.

Candidatus Methylobacterium verecugo (NL. fem. n. *verecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylobacterium sp001422985*. The type genome for the species is the GenBank assembly RS_GCF_001422985.1. The GC content of the type genome is 67.7 % and the genome length is 5.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylocaldum desupitio sp. nov.

Candidatus Methylocaldum desupitio (NL. fem. n. *desupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocaldum sp002005105*. The type genome for the species is the

GenBank assembly GCA_009749305.1. The GC content of the type genome is 58.07 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Methyloceanibacter categax sp. nov.

Candidatus Methyloceanibacter categax (NL. fem. n. *categax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloceanibacter sp002383105*. The type genome for the species is the GenBank assembly GCA_002405275.1. The GC content of the type genome is 64.26 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Methyloceanibacter cenobibra sp. nov.

Candidatus Methyloceanibacter cenobibra (NL. fem. n. *cenobibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloceanibacter sp003071365*. The type genome for the species is the GenBank assembly RS_GCF_003071365.1. The GC content of the type genome is 63.08 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Methyloceanibacter optabigena sp. nov.

Candidatus Methyloceanibacter optabigena (NL. fem. n. *optabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloceanibacter sp002390155*. The type genome for the species is the GenBank assembly GCA_002390155.1. The GC content of the type genome is 63.7 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Methyloceanibacter redunitica sp. nov.

Candidatus Methyloceanibacter redunitica (NL. fem. n. *redunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloceanibacter sp014380485*. The type genome for the species is the GenBank assembly GCA_014380485.1. The GC content of the type genome is 64.25 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Methyloceanibacter refunigena sp. nov.

Candidatus Methyloceanibacter refunigena (NL. fem. n. *refunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloceanibacter sp002482645*. The type genome for the species is the GenBank assembly GCA_013391925.1. The GC content of the type genome is 62.78 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Methyloceanibacter tumefatica sp. nov.

Candidatus Methyloceanibacter tumefatica (NL. fem. n. *tumefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloceanibacter sp003135455*. The type genome for the species is the GenBank assembly GCA_003134835.1. The GC content of the type genome is 64.11 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Methylocella carunifica sp. nov.

Candidatus Methylocella carunifica (NL. fem. n. *carunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocella sp006514895*. The type genome for the species is the GenBank assembly GCA_006514895.1. The GC content of the type genome is 59.11 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Methylocella energisca sp. nov.

Candidatus Methylocella energisca (NL. fem. n. *energisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocella sp004564215*. The type genome for the species is the GenBank assembly RS_GCF_004564215.1. The GC content of the type genome is 58.94 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Methylocella fumifigena sp. nov.

Candidatus Methylocella fumifigena (NL. fem. n. *fumifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocella sp003162995*. The type genome for the species is the GenBank assembly GCA_003162995.1. The GC content of the type genome is 58.22 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Methylocella horomatio sp. nov.

Candidatus Methylocella horomatio (NL. fem. n. *horomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocella sp002890675*. The type genome for the species is the GenBank assembly GCA_002890675.1. The GC content of the type genome is 59.84 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Methylocella nicotisca sp. nov.

Candidatus Methylocella nicotisca (NL. fem. n. *nicotisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocella sp003244015*. The type genome for the species is the GenBank assembly GCA_003244015.1. The GC content of the type genome is 59.76 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Methylococcus necubago sp. nov.

Candidatus Methylococcus necubago (NL. fem. n. *necubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylococcus sp012769535*. The type genome for the species is the GenBank assembly RS_GCF_012769535.1. The GC content of the type genome is 63.25 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Methylocystis adfulago sp. nov.

Candidatus Methylocystis adfulago (NL. fem. n. *adfulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp011058845*. The type genome for the species is the GenBank assembly RS_GCF_011058845.1. The GC content of the type genome is 62.44

% and the genome length is 4.47 Mbp.

Description of *Candidatus* Methylocystis advicitudo sp. nov.

Candidatus Methylocystis advicitudo (NL. fem. n. *advicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp000188155*. The type genome for the species is the GenBank assembly RS_GCF_000188155.2. The GC content of the type genome is 62.82 % and the genome length is 4.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer (aquifer; Canoga Park)".

Description of *Candidatus* Methylocystis artifimonia sp. nov.

Candidatus Methylocystis artifimonia (NL. fem. n. *artifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp005771425*. The type genome for the species is the GenBank assembly RS_GCF_005771425.1. The GC content of the type genome is 61.19 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Methylocystis buxanentia sp. nov.

Candidatus Methylocystis buxanentia (NL. fem. n. *buxanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp903891065*. The type genome for the species is the GenBank assembly GCA_903891065.1. The GC content of the type genome is 48.99 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Methylocystis buxanimonas sp. nov.

Candidatus Methylocystis buxanimonas (NL. fem. n. *buxanimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp002929055*. The type genome for the species is the GenBank assembly GCA_002929055.1. The GC content of the type genome is 64.86 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Methylocystis cotenetta sp. nov.

Candidatus Methylocystis cotenetta (NL. fem. n. *cotenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp903870245*. The type genome for the species is the GenBank assembly GCA_903854565.1. The GC content of the type genome is 59.04 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Methylocystis decomedo sp. nov.

Candidatus Methylocystis decomedo (NL. fem. n. *decomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp003134075*. The type genome for the species is the GenBank assembly GCA_003133935.1. The GC content of the type genome is 62.55 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Methylocystis dehonatio sp. nov.

Candidatus Methylocystis dehonatio (NL. fem. n. *dehonatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp002862095*. The type genome for the species is the GenBank assembly GCA_002862095.1. The GC content of the type genome is 61.27 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Methylocystis depocibra sp. nov.

Candidatus Methylocystis depocibra (NL. fem. n. *depocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp002412985*. The type genome for the species is the GenBank assembly GCA_005798165.1. The GC content of the type genome is 48.77 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Methylocystis detepetta sp. nov.

Candidatus Methylocystis detepetta (NL. fem. n. *detepetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp009773555*. The type genome for the species is the GenBank assembly GCA_009773555.1. The GC content of the type genome is 62.57 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Methylocystis gerunitudo sp. nov.

Candidatus Methylocystis gerunitudo (NL. fem. n. *gerunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp003963405*. The type genome for the species is the GenBank assembly GCA_003963405.1. The GC content of the type genome is 63.89 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Methylocystis inambitoga sp. nov.

Candidatus Methylocystis inambitoga (NL. fem. n. *inambitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp014190435*. The type genome for the species is the GenBank assembly GCA_014190435.1. The GC content of the type genome is 45.48 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Methylocystis obsurentia sp. nov.

Candidatus Methylocystis obsurentia (NL. fem. n. *obsurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp000304315*. The type genome for the species is the GenBank assembly RS_GCF_000304315.1. The GC content of the type genome is 63.35 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Methylocystis proclilega sp. nov.

Candidatus Methylocystis proclilega (NL. fem. n. *proclilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp013350005*. The type genome for the species is the GenBank assembly RS_GCF_013350005.1. The GC content of the type genome is 62.6

% and the genome length is 3.85 Mbp.

Description of *Candidatus* Methylocystis solivitura sp. nov.

Candidatus Methylocystis solivitura (NL. fem. n. *solivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp003152255*. The type genome for the species is the GenBank assembly GCA_003152255.1. The GC content of the type genome is 61.51 % and the genome length is 5.95 Mbp.

Description of *Candidatus* Methylocystis triclentia sp. nov.

Candidatus Methylocystis triclentia (NL. fem. n. *triclentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp900299115*. The type genome for the species is the GenBank assembly GCA_900299115.1. The GC content of the type genome is 48.07 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Methylocystis xenodiforma sp. nov.

Candidatus Methylocystis xenodiforma (NL. fem. n. *xenodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylocystis sp009921565*. The type genome for the species is the GenBank assembly GCA_009921565.1. The GC content of the type genome is 49.85 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Methylogaea serotatio sp. nov.

Candidatus Methylogaea serotatio (NL. fem. n. *serotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylogaea sp004299145*. The type genome for the species is the GenBank assembly GCA_004299145.1. The GC content of the type genome is 59.27 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Methyloglobulus adpecetta sp. nov.

Candidatus Methyloglobulus adpecetta (NL. fem. n. *adpecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloglobulus sp009695535*. The type genome for the species is the GenBank assembly GCA_009695535.1. The GC content of the type genome is 45.63 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Methyloglobulus amnigatio sp. nov.

Candidatus Methyloglobulus amnigatio (NL. fem. n. *amnigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloglobulus sp002483425*. The type genome for the species is the GenBank assembly GCA_002483425.1. The GC content of the type genome is 46.81 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Methyloglobulus expenigena sp. nov.

Candidatus Methyloglobulus expenigena (NL. fem. n. *expenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloglobulus sp013141505*. The type genome for the species is the GenBank assembly GCA_013141505.1. The GC content of the type genome is 45.73 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Methyloglobulus luxurousia sp. nov.

Candidatus Methyloglobulus luxurousia (NL. fem. n. *luxurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloglobulus sp003155565*. The type genome for the species is the GenBank assembly GCA_003155565.1. The GC content of the type genome is 45.96 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Methyloglobulus penecitio sp. nov.

Candidatus Methyloglobulus penecitio (NL. fem. n. *penecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloglobulus sp013140405*. The type genome for the species is the GenBank assembly GCA_013140405.1. The GC content of the type genome is 45.96 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Methylohalobius luticisca sp. nov.

Candidatus Methylohalobius luticisca (NL. fem. n. *luticisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylohalobius sp001566965*. The type genome for the species is the GenBank assembly GCA_011321975.1. The GC content of the type genome is 51.42 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Methyloligella impudimonas sp. nov.

Candidatus Methyloligella impudimonas (NL. fem. n. *impudimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloligella sp013341275*. The type genome for the species is the GenBank assembly RS_GCF_013341275.1. The GC content of the type genome is 63.7 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Methylomarinum detosentia sp. nov.

Candidatus Methylomarinum detosentia (NL. fem. n. *detosentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomarinum sp006844585*. The type genome for the species is the GenBank assembly GCA_006844585.1. The GC content of the type genome is 44.19 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Methylomarinum octusessa sp. nov.

Candidatus Methylomarinum octusessa (NL. fem. n. *octusessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomarinum sp006844705*. The type genome for the species is the GenBank assembly GCA_006844705.1. The GC content of the type genome is 45.4 %

and the genome length is 3.08 Mbp.

Description of *Candidatus* Methylomicrobium dilibetta sp. nov.

Candidatus Methylomicrobium dilibetta (NL. fem. n. *dilibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomicrobium_A sp007135635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007135635.1. The GC content of the type genome is 48.4 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Methylomicrobium lenimimonas sp. nov.

Candidatus Methylomicrobium lenimimonas (NL. fem. n. *lenimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomicrobium_A sp003932755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003932755.1. The GC content of the type genome is 48.61 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Methylomirabilis adselilenta sp. nov.

Candidatus Methylomirabilis adselilenta (NL. fem. n. *adselilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomirabilis sp003105305*. The type genome for the species is the GenBank assembly GCA_003105305.1. The GC content of the type genome is 59.48 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Methylomirabilis arcubitura sp. nov.

Candidatus Methylomirabilis arcubitura (NL. fem. n. *arcubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomirabilis sp002634395*. The type genome for the species is the

GenBank assembly GCA_002634395.1. The GC content of the type genome is 58.22 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Methylomirabilis patibilega sp. nov.

Candidatus Methylomirabilis patibilega (NL. fem. n. *patibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomirabilis sp003104975*. The type genome for the species is the GenBank assembly GCA_003104975.1. The GC content of the type genome is 60.1 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Methylomonas adhosifica sp. nov.

Candidatus Methylomonas adhosifica (NL. fem. n. *adhosifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp903858105*. The type genome for the species is the GenBank assembly GCA_903858105.1. The GC content of the type genome is 50.56 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Methylomonas adremigena sp. nov.

Candidatus Methylomonas adremigena (NL. fem. n. *adremigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp008632455*. The type genome for the species is the GenBank assembly RS_GCF_008632455.1. The GC content of the type genome is 53.67 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Methylomonas catafitoga sp. nov.

Candidatus Methylomonas catafitoga (NL. fem. n. *catafitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp903918375*. The type genome for the species is the GenBank assembly GCA_903903675.1. The GC content of the type genome is 44.4 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Methylomonas cosigibula sp. nov.

Candidatus Methylomonas cosigibula (NL. fem. n. *cosigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp000702925*. The type genome for the species is the GenBank assembly RS_GCF_000702925.2. The GC content of the type genome is 51.82 % and the genome length is 5.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment".

Description of *Candidatus* Methylomonas defetibra sp. nov.

Candidatus Methylomonas defetibra (NL. fem. n. *defetibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp000515215*. The type genome for the species is the GenBank assembly RS_GCF_000515215.1. The GC content of the type genome is 51.4 % and the genome length is 5.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Methylomonas defetitio sp. nov.

Candidatus Methylomonas defetitio (NL. fem. n. *defetitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp903902945*. The type genome for the species is the GenBank assembly GCA_903902945.1. The GC content of the type genome is 50.2 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Methylomonas doxolilenta sp. nov.

Candidatus Methylomonas doxolilenta (NL. fem. n. *doxolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp903928965*. The type genome for the species is the GenBank assembly GCA_903958375.1. The GC content of the type genome is 53.76 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Methylomonas expopivita sp. nov.

Candidatus Methylomonas expopivita (NL. fem. n. *expopivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp002083615*. The type genome for the species is the GenBank assembly GCA_002083615.1. The GC content of the type genome is 50.41 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Methylomonas lapilitrix sp. nov.

Candidatus Methylomonas lapilitrix (NL. fem. n. *lapilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp002928965*. The type genome for the species is the GenBank assembly GCA_002928965.1. The GC content of the type genome is 48.36 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Methylomonas ludibessa sp. nov.

Candidatus Methylomonas ludibessa (NL. fem. n. *ludibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp002929135*. The type genome for the species is the GenBank assembly GCA_002929135.1. The GC content of the type genome is 56.11 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Methylomonas metabifica sp. nov.

Candidatus Methylomonas metabifica (NL. fem. n. *metabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp903881345*. The type genome for the species is the GenBank assembly GCA_903881345.1. The GC content of the type genome is 48.47 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Methylomonas pecunilega sp. nov.

Candidatus Methylomonas pecunilega (NL. fem. n. *pecunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp009925045*. The type genome for the species is the GenBank assembly GCA_009925045.1. The GC content of the type genome is 46.11 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Methylomonas revulousia sp. nov.

Candidatus Methylomonas revulousia (NL. fem. n. *revulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylomonas sp903931355*. The type genome for the species is the GenBank assembly GCA_903931355.1. The GC content of the type genome is 44.44 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Methylophaga adtumugo sp. nov.

Candidatus Methylophaga adtumugo (NL. fem. n. *adtumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophaga sp007117275*. The type genome for the species is the GenBank assembly GCA_007117275.1. The GC content of the type genome is 49.65 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Methylophaga benemago sp. nov.

Candidatus Methylophaga benemago (NL. fem. n. *benemago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophaga sp002706095*. The type genome for the species is the GenBank assembly GCA_002341285.1. The GC content of the type genome is 43.67 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Methylophaga curabitica sp. nov.

Candidatus Methylophaga curabitica (NL. fem. n. *curabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophaga sp002354555*. The type genome for the species is the GenBank assembly GCA_002354415.1. The GC content of the type genome is 44.79 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Methylophaga demigitudo sp. nov.

Candidatus Methylophaga demigitudo (NL. fem. n. *demigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophaga sp002696735*. The type genome for the species is the GenBank assembly GCA_002375685.1. The GC content of the type genome is 44.67 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Methylophaga reduvitica sp. nov.

Candidatus Methylophaga reduvitica (NL. fem. n. *reduvitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophaga sp002363955*. The type genome for the species is the GenBank assembly GCA_002341635.1. The GC content of the type genome is 45.53 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Methylophaga scintitio sp. nov.

Candidatus Methylophaga scintitio (NL. fem. n. *scintitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophaga sp009711715*. The type genome for the species is the GenBank assembly GCA_009711715.1. The GC content of the type genome is 51.0 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Methylophilus bicoditas sp. nov.

Candidatus Methylophilus bicoditas (NL. fem. n. *bicoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophilus sp002281475*. The type genome for the species is the GenBank assembly GCA_002282135.1. The GC content of the type genome is 43.54 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Methylophilus cuticicula sp. nov.

Candidatus Methylophilus cuticicula (NL. fem. n. *cuticicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophilus sp008015755*. The type genome for the species is the GenBank assembly GCA_008015755.1. The GC content of the type genome is 50.49 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Methylophilus diritatio sp. nov.

Candidatus Methylophilus diritatio (NL. fem. n. *diritatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophilus sp001464125*. The type genome for the species is the GenBank assembly GCA_001464125.1. The GC content of the type genome is 45.19 % and the genome length is 2.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Methylophilus fatilivita sp. nov.

Candidatus Methylophilus fatilivita (NL. fem. n. *fatilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophilus sp000384155*. The type genome for the species is the GenBank assembly RS_GCF_000374225.1. The GC content of the type genome is 50.43 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Methylophilus gasomiforma sp. nov.

Candidatus Methylophilus gasomiforma (NL. fem. n. *gasomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophilus sp000515275*. The type genome for the species is the GenBank assembly RS_GCF_000515275.1. The GC content of the type genome is 50.25 % and the genome length is 3.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Methylophilus manomibra sp. nov.

Candidatus Methylophilus manomibra (NL. fem. n. *manomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophilus sp001183865*. The type genome for the species is the GenBank assembly RS_GCF_001183865.1. The GC content of the type genome is 49.54 % and the genome length is 3.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "tap water incubated with methane".

Description of *Candidatus* Methylophilus pepenitura sp. nov.

Candidatus Methylophilus pepenitura (NL. fem. n. *pepenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophilus sp002414145*. The type genome for the species is the GenBank assembly GCA_003454695.1. The GC content of the type genome is 43.09 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Methylophilus semifax sp. nov.

Candidatus Methylophilus semifax (NL. fem. n. *semifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophilus sp001424665*. The type genome for the species is the GenBank assembly RS_GCF_001424665.1. The GC content of the type genome is 48.25 % and the genome length is 2.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Methylophilus turicigena sp. nov.

Candidatus Methylophilus turicigena (NL. fem. n. *turicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylophilus sp000525025*. The type genome for the species is the GenBank assembly RS_GCF_000384355.1. The GC content of the type genome is 45.61 % and the genome length is 2.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Lake Washington".

Description of *Candidatus* Methylopila antomiforma sp. nov.

Candidatus Methylopila antomiforma (NL. fem. n. *antomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopila sp000526315*. The type genome for the species is the GenBank assembly RS_GCF_000526315.1. The GC content of the type genome is 69.35 % and the genome length is 4.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Methylopila repagitia sp. nov.

Candidatus Methylopila repagitia (NL. fem. n. *repagitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopila sp002897035*. The type genome for the species is the GenBank assembly RS_GCF_002897035.1. The GC content of the type genome is 69.18 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Methyloprofundus acrotilenta sp. nov.

Candidatus Methyloprofundus acrotilenta (NL. fem. n. *acrotilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloprofundus sp002189065*. The type genome for the species is the GenBank assembly RS_GCF_002189065.1. The GC content of the type genome is 39.78 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Methyloprofundus bisulousia sp. nov.

Candidatus Methyloprofundus bisulousia (NL. fem. n. *bisulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloprofundus sp013138555*. The type genome for the species is the GenBank assembly GCA_013138555.1. The GC content of the type genome is 41.07 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Methyloprofundus incorifica sp. nov.

Candidatus Methyloprofundus incorifica (NL. fem. n. *incorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Methyloprofundus sp013138595*. The type genome for the species is the GenBank assembly GCA_013138595.1. The GC content of the type genome is 40.07 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Methyloprofundus macilugo sp. nov.

Candidatus Methyloprofundus macilugo (NL. fem. n. *macilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloprofundus sp900128525*. The type genome for the species is the GenBank assembly RS_GCF_900128525.1. The GC content of the type genome is 39.55 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Methyloprofundus ratifilenta sp. nov.

Candidatus Methyloprofundus ratifilenta (NL. fem. n. *ratifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloprofundus sp012960135*. The type genome for the species is the GenBank assembly GCA_012960135.1. The GC content of the type genome is 41.9 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Methylopumilus apercatio sp. nov.

Candidatus Methylopumilus apercatio (NL. fem. n. *apercatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus sp009693175*. The type genome for the species is the GenBank assembly GCA_009693175.1. The GC content of the type genome is 35.72 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Methylopumilus catafibula sp. nov.

Candidatus Methylopumilus catafibula (NL. fem. n. *catafibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus sp903849185*. The type genome for the species is the GenBank assembly GCA_903822165.1. The GC content of the type genome is 36.68 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Methylopumilus cuferedo sp. nov.

Candidatus Methylopumilus cuferedo (NL. fem. n. *cuferedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus sp009926035*. The type genome for the species is the GenBank assembly GCA_009926035.1. The GC content of the type genome is 36.36 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Methylopumilus favilitura sp. nov.

Candidatus Methylopumilus favilitura (NL. fem. n. *favilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus sp014190615*. The type genome for the species is the GenBank assembly GCA_014190615.1. The GC content of the type genome is 37.14 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Methylopumilus homunousia sp. nov.

Candidatus Methylopumilus homunousia (NL. fem. n. *homunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus sp903914945*. The type genome for the species is the GenBank assembly GCA_903835605.1. The GC content of the type genome is 37.11 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Methylopumilus megalicula sp. nov.

Candidatus Methylopumilus megalicula (NL. fem. n. *megalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus sp003533095*. The type genome for the species is the GenBank assembly GCA_900299015.1. The GC content of the type genome is 36.37 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Methylopumilus supelibula sp. nov.

Candidatus Methylopumilus supelibula (NL. fem. n. *supelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus sp010031285*. The type genome for the species is the GenBank assembly GCA_010024245.1. The GC content of the type genome is 36.53 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Methylopumilus vecoritrix sp. nov.

Candidatus Methylopumilus vecoritrix (NL. fem. n. *vecoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus sp005797835*. The type genome for the species is the GenBank assembly GCA_005790855.1. The GC content of the type genome is 35.38 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Methylopumilus calipago sp. nov.

Candidatus Methylopumilus calipago (NL. fem. n. *calipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus_A sp009926525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009926525.1. The GC content of the type genome is 45.41 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Methylopumilus mirabessa sp. nov.

Candidatus Methylopumilus mirabessa (NL. fem. n. *mirabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus_A sp903870165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903870165.1. The GC content of the type genome is 43.32 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Methylopumilus papavessa sp. nov.

Candidatus Methylopumilus papavessa (NL. fem. n. *papavessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus_A sp903870995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903834105.1. The GC content of the type genome is 44.69 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Methylopumilus rorarigena sp. nov.

Candidatus Methylopumilus rorarigena (NL. fem. n. *rorarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus_A sp903909015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903869245.1. The GC content of the type genome is 43.37 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Methylopumilus selibitio sp. nov.

Candidatus Methylopumilus selibitio (NL. fem. n. *selibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus_A sp903953055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903934025.1. The GC content of the type genome is 43.44 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Methylopumilus semibicula sp. nov.

Candidatus Methylopumilus semibicula (NL. fem. n. *semibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylopumilus_A sp903899965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903871485.1. The GC content of the type genome is 45.43 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Methylosinus cenobimonia sp. nov.

Candidatus Methylosinus cenobimonia (NL. fem. n. *cenobimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylosinus sp009936375*. The type genome for the species is the GenBank assembly RS_GCF_009936375.1. The GC content of the type genome is 64.81 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Methylosinus dehisimonas sp. nov.

Candidatus Methylosinus dehisimonas (NL. fem. n. *dehisimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylosinus sp000745215*. The type genome for the species is the GenBank assembly RS_GCF_000745215.1. The GC content of the type genome is 64.68 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Methylosinus fuligetta sp. nov.

Candidatus Methylosinus fuligetta (NL. fem. n. *fuligetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylosinus sp000685825*. The type genome for the species is the GenBank assembly RS_GCF_004366495.1. The GC content of the type genome is 64.9 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Methylosinus malififorma sp. nov.

Candidatus Methylosinus malififorma (NL. fem. n. *malififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylosinus sp000379125*. The type genome for the species is the GenBank assembly RS_GCF_000379125.1. The GC content of the type genome is 64.93 % and the genome length is 4.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Lake Washington".

Description of *Candidatus* Methylosinus salubilega sp. nov.

Candidatus Methylosinus salubilega (NL. fem. n. *salubilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylosinus sp003105285*. The type genome for the species is the GenBank assembly GCA_003105285.1. The GC content of the type genome is 64.1 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Methylosinus solacitrix sp. nov.

Candidatus Methylosinus solacitrix (NL. fem. n. *solacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylosinus sp009811655*. The type genome for the species is the GenBank assembly RS_GCF_009811655.1. The GC content of the type genome is 65.38 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Methylotenera acisciforma sp. nov.

Candidatus Methylotenera acisciforma (NL. fem. n. *acisciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp013141425*. The type genome for the species is the GenBank assembly GCA_013141425.1. The GC content of the type genome is 43.24 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Methylotenera aneclitudo sp. nov.

Candidatus Methylotenera aneclitudo (NL. fem. n. *aneclitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp000799735*. The type genome for the species is the GenBank assembly RS_GCF_000799735.1. The GC content of the type genome is 50.68 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Methylotenera cacomessa sp. nov.

Candidatus Methylotenera cacomessa (NL. fem. n. *cacomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp013816325*. The type genome for the species is the GenBank assembly GCA_013816325.1. The GC content of the type genome is 44.21 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Methylotenera canacedo sp. nov.

Candidatus Methylotenera canacedo (NL. fem. n. *canacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp013141075*. The type genome for the species is the GenBank assembly GCA_013140665.1. The GC content of the type genome is 43.55 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Methylotenera coticiforma sp. nov.

Candidatus Methylotenera coticiforma (NL. fem. n. *coticiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp002842195*. The type genome for the species is the GenBank assembly GCA_002842195.1. The GC content of the type genome is 44.66 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Methylotenera deforetta sp. nov.

Candidatus Methylotenera deforetta (NL. fem. n. *deforetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp005791685*. The type genome for the species is the GenBank assembly GCA_005791685.1. The GC content of the type genome is 50.25 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Methylotenera desulessa sp. nov.

Candidatus Methylotenera desulessa (NL. fem. n. *desulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp903833595*. The type genome for the species is the GenBank assembly GCA_903833595.1. The GC content of the type genome is 42.57 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Methylotenera diluvifica sp. nov.

Candidatus Methylotenera diluvifica (NL. fem. n. *diluvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp903846555*. The type genome for the species is the GenBank assembly GCA_903846555.1. The GC content of the type genome is 43.68 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Methylotenera direpifica sp. nov.

Candidatus Methylotenera direpifica (NL. fem. n. *direpifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp001803395*. The type genome for the species is the GenBank assembly GCA_001803395.1. The GC content of the type genome is 44.67 % and the genome length is 2.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Methylotenera ficedago sp. nov.

Candidatus Methylotenera ficedago (NL. fem. n. *ficedago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp903860085*. The type genome for the species is the GenBank assembly GCA_903887305.1. The GC content of the type genome is 43.93 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Methylotenera fidenago sp. nov.

Candidatus Methylotenera fidenago (NL. fem. n. *fidenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp903951385*. The type genome for the species is the GenBank assembly GCA_903858215.1. The GC content of the type genome is 49.86 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Methylotenera funivax sp. nov.

Candidatus Methylotenera funivax (NL. fem. n. *funivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp903882525*. The type genome for the species is the GenBank assembly GCA_903850165.1. The GC content of the type genome is 44.33 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Methylotenera incivilega sp. nov.

Candidatus Methylotenera incivilega (NL. fem. n. *incivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp013140755*. The type genome for the species is the GenBank assembly GCA_013140755.1. The GC content of the type genome is 42.8 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Methylotenera isoscitia sp. nov.

Candidatus Methylotenera isoscitia (NL. fem. n. *isoscitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp002429455*. The type genome for the species is the GenBank assembly GCA_002429455.1. The GC content of the type genome is 45.62 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Methylotenera lanifilega sp. nov.

Candidatus Methylotenera lanifilega (NL. fem. n. *lanifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp002928535*. The type genome for the species is the GenBank assembly GCA_002928535.1. The GC content of the type genome is 45.13 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Methylotenera lanugibula sp. nov.

Candidatus Methylotenera lanugibula (NL. fem. n. *lanugibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp009693255*. The type genome for the species is the GenBank assembly GCA_009693125.1. The GC content of the type genome is 44.79 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Methylotenera locelicella sp. nov.

Candidatus Methylotenera locelicella (NL. fem. n. *locelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp000744605*. The type genome for the species is the GenBank assembly RS_GCF_000744605.1. The GC content of the type genome is 43.32 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Methylotenera mirabitoga sp. nov.

Candidatus Methylotenera mirabitoga (NL. fem. n. *mirabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp014378495*. The type genome for the species is the GenBank assembly GCA_014378495.1. The GC content of the type genome is 40.94 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Methylotenera momorilenta sp. nov.

Candidatus Methylotenera momorilenta (NL. fem. n. *momorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp002281815*. The type genome for the species is the GenBank assembly GCA_002281815.1. The GC content of the type genome is 45.02 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Methylotenera oblanedo sp. nov.

Candidatus Methylotenera oblanedo (NL. fem. n. *oblanedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp004661485*. The type genome for the species is the GenBank assembly RS_GCF_004661485.1. The GC content of the type genome is 44.88

% and the genome length is 2.66 Mbp.

Description of *Candidatus* Methylotenera obsorentia sp. nov.

Candidatus Methylotenera obsorentia (NL. fem. n. *obsorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp903854305*. The type genome for the species is the GenBank assembly GCA_903854305.1. The GC content of the type genome is 43.62 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Methylotenera redacousia sp. nov.

Candidatus Methylotenera redacousia (NL. fem. n. *redacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp903876765*. The type genome for the species is the GenBank assembly GCA_903873695.1. The GC content of the type genome is 44.46 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Methylotenera retunitrix sp. nov.

Candidatus Methylotenera retunitrix (NL. fem. n. *retunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp013141495*. The type genome for the species is the GenBank assembly GCA_013140655.1. The GC content of the type genome is 44.67 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Methylotenera semigisca sp. nov.

Candidatus Methylotenera semigisca (NL. fem. n. *semigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp903838125*. The type genome for the species is the GenBank assembly GCA_903838125.1. The GC content of the type genome is 43.62 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Methylotenera sicunitio sp. nov.

Candidatus Methylotenera sicunitio (NL. fem. n. *sicunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp002842285*. The type genome for the species is the GenBank assembly GCA_002842285.1. The GC content of the type genome is 46.42 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Methylotenera solipilega sp. nov.

Candidatus Methylotenera solipilega (NL. fem. n. *solipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp005777825*. The type genome for the species is the GenBank assembly GCA_005790275.1. The GC content of the type genome is 49.96 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Methylotenera vagabessa sp. nov.

Candidatus Methylotenera vagabessa (NL. fem. n. *vagabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera sp903926935*. The type genome for the species is the GenBank assembly GCA_903926935.1. The GC content of the type genome is 42.25 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Methylotenera arcitedo sp. nov.

Candidatus Methylotenera arcitedo (NL. fem. n. *arcitedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera_A sp014378845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014378845.1. The GC content of the type genome is 44.2 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Methylotenera decunentia sp. nov.

Candidatus Methylotenera decunentia (NL. fem. n. *decunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera_A sp011391175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011391175.1. The GC content of the type genome is 44.07 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Methylotenera sonivatio sp. nov.

Candidatus Methylotenera sonivatio (NL. fem. n. *sonivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotenera_A sp002083635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002929155.1. The GC content of the type genome is 42.51 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Methylotetracoccus homicitrix sp. nov.

Candidatus Methylotetracoccus homicitrix (NL. fem. n. *homicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylotetracoccus sp004168015*. The type genome for the species is the GenBank assembly RS_GCF_004168015.1. The GC content of the type genome is 62.95 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Methyloumidiphilus adtagicella sp. nov.

Candidatus Methyloumidiphilus adtagicella (NL. fem. n. *adtagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloumidiphilus sp903857165*. The type genome for the species is the GenBank assembly GCA_903857165.1. The GC content of the type genome is 52.88 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Methyloumidiphilus minagiforma sp. nov.

Candidatus Methyloumidiphilus minagiforma (NL. fem. n. *minagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloumidiphilus sp903859815*. The type genome for the species is the GenBank assembly GCA_903891545.1. The GC content of the type genome is 49.65 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Methyloumidiphilus obfusugo sp. nov.

Candidatus Methyloumidiphilus obfusugo (NL. fem. n. *obfusugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloumidiphilus sp903930145*. The type genome for the species is the GenBank assembly GCA_903930145.1. The GC content of the type genome is 50.01 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Methyloumidiphilus pepenatio sp. nov.

Candidatus Methyloumidiphilus pepenatio (NL. fem. n. *pepenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloumidiphilus sp903934875*. The type genome for the species is the GenBank assembly GCA_903838185.1. The GC content of the type genome is 53.09 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Methyloumidiphilus solacago sp. nov.

Candidatus Methyloumidiphilus solacago (NL. fem. n. *solacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methyloumidiphilus sp903911305*. The type genome for the species is the GenBank assembly GCA_903911305.1. The GC content of the type genome is 49.01 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Methyloversatilis gasomentia sp. nov.

Candidatus Methyloversatilis gasomentia (NL. fem. n. *gasomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Methyloversatilis sp001713355*. The type genome for the species is the GenBank assembly RS_GCF_001713355.1. The GC content of the type genome is 65.02 % and the genome length is 3.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Algal phycosphere".

Description of *Candidatus* Methylovirgula illibastra sp. nov.

Candidatus Methylovirgula illibastra (NL. fem. n. *illibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovirgula sp004298435*. The type genome for the species is the GenBank assembly GCA_004298435.1. The GC content of the type genome is 59.95 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Methylovulum aggesibra sp. nov.

Candidatus Methylovulum aggesibra (NL. fem. n. *aggesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp007280895*. The type genome for the species is the GenBank assembly GCA_007280895.1. The GC content of the type genome is 41.73 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Methylovulum attolago sp. nov.

Candidatus Methylovulum attolago (NL. fem. n. *attolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp004299465*. The type genome for the species is the GenBank assembly GCA_004299465.1. The GC content of the type genome is 50.96 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Methylovulum dececicella sp. nov.

Candidatus Methylovulum dececicella (NL. fem. n. *dececicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp903945605*. The type genome for the species is the GenBank assembly GCA_903945605.1. The GC content of the type genome is 49.41 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Methylovulum didacimonia sp. nov.

Candidatus Methylovulum didacimonia (NL. fem. n. *didacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp903945375*. The type genome for the species is the GenBank assembly GCA_903953015.1. The GC content of the type genome is 43.72 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Methylovulum enuntitrix sp. nov.

Candidatus Methylovulum enuntitrix (NL. fem. n. *enuntitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp002299495*. The type genome for the species is the GenBank assembly GCA_002299495.1. The GC content of the type genome is 51.4 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Methylovulum homagitica sp. nov.

Candidatus Methylovulum homagitica (NL. fem. n. *homagitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp002299425*. The type genome for the species is the GenBank assembly GCA_002299425.1. The GC content of the type genome is 52.99 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Methylovulum repepicella sp. nov.

Candidatus Methylovulum repepicella (NL. fem. n. *repepicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp002422395*. The type genome for the species is the GenBank assembly GCA_002422395.1. The GC content of the type genome is 48.5 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Methylovulum rosarousia sp. nov.

Candidatus Methylovulum rosarousia (NL. fem. n. *rosarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp903944165*. The type genome for the species is the GenBank assembly GCA_903873595.1. The GC content of the type genome is 41.18 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Methylovulum sicarago sp. nov.

Candidatus Methylovulum sicarago (NL. fem. n. *sicarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp903927955*. The type genome for the species is the GenBank assembly GCA_903912305.1. The GC content of the type genome is 48.8 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Methylovulum valefatio sp. nov.

Candidatus Methylovulum valefatio (NL. fem. n. *valefatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Methylovulum sp903928685*. The type genome for the species is the GenBank assembly GCA_903885145.1. The GC content of the type genome is 46.75 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Metucana solipitudo sp. nov.

Candidatus Metucana solipitudo (NL. fem. n. *solipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMJM01 sp014380615*. The type genome for the species is the GenBank assembly GCA_014380615.1. The GC content of the type genome is 40.77 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Metucana gen. nov.

Candidatus Metucana (NL. fem. n. *Metucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMJM01*. The type species for the genus is *Candidatus* Metucana

solipitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Metucaria defacitrix sp. nov.

Candidatus Metucaria defacitrix (NL. fem. n. *defacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2897 sp900316275*. The type genome for the species is the GenBank assembly GCA_902786085.1. The GC content of the type genome is 58.88 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Metucaria gen. nov.

Candidatus Metucaria (NL. fem. n. *Metucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2897*. The type species for the genus is *Candidatus* Metucaria defacitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Metucaria defosigena sp. nov.

Candidatus Metucaria defosigena (NL. fem. n. *defosigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2897 sp900315155*. The type genome for the species is the GenBank assembly GCA_900315155.1. The GC content of the type genome is 56.95 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Metucaria lavacitas sp. nov.

Candidatus Metucaria lavacitas (NL. fem. n. *lavacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2897 sp002350105*. The type genome for the species is the GenBank assembly GCA_902800785.1. The GC content of the type genome is 57.86 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Metucella astipilenta sp. nov.

Candidatus Metucella astipilenta (NL. fem. n. *astipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPJ01 sp013203785*. The type genome for the species is the GenBank assembly GCA_013203785.1. The GC content of the type genome is 59.52 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Metucella gen. nov.

Candidatus Metucella (NL. fem. n. *Metucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPJ01*. The type species for the genus is *Candidatus* Metucella astipilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMPJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Metucellaceae.

Description of *Candidatus* Metucellaceae fam. nov.

Candidatus Metucellaceae (NL. fem. n. *Metucellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMPJ01.* The type genus for the taxon is *Candidatus* Metucella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depupellales.

Description of *Candidatus* Metucia antefastra sp. nov.

Candidatus Metucia antefastra (NL. fem. n. *antefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5078 sp002416505*. The type genome for the species is the GenBank assembly GCA_002416505.1. The GC content of the type genome is 55.64 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Metucia gen. nov.

Candidatus Metucia (NL. fem. n. *Metucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5078*. The type species for the genus is *Candidatus* Metucia antefastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Metucia catalitudo sp. nov.

Candidatus Metucia catalitudo (NL. fem. n. *catalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5078 sp903876785*. The type genome for the species is the GenBank assembly GCA_903933845.1. The GC content of the type genome is 58.03 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Metucia monodatica sp. nov.

Candidatus Metucia monodatica (NL. fem. n. *monodatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5078 sp001802565*. The type genome for the species is the GenBank assembly GCA_001802565.1. The GC content of the type genome is 57.1 % and the genome length is 3.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Metucia pepenago sp. nov.

Candidatus Metucia pepenago (NL. fem. n. *pepenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5078 sp903889815*. The type genome for the species is the GenBank assembly GCA_903889815.1. The GC content of the type genome is 59.35 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Metucia susicisca sp. nov.

Candidatus Metucia susicisca (NL. fem. n. *susicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5078 sp903862645*. The type genome for the species is the GenBank assembly GCA_903862645.1. The GC content of the type genome is 56.35 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Metucida exsusago sp. nov.

Candidatus Metucida exsusago (NL. fem. n. *exsusago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1515 sp002323935*. The type genome for the species is the GenBank assembly GCA_002323935.1. The GC content of the type genome is 40.35 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Metucida gen. nov.

Candidatus Metucida (NL. fem. n. *Metucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1515*. The type species for the genus is *Candidatus* Metucida exsusago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1515*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Metucidaceae.

Description of *Candidatus* Metucidaceae fam. nov.

Candidatus Metucidaceae (NL. fem. n. *Metucidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1515.* The type genus for the taxon is *Candidatus* Metucida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7916*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venuniales.

Description of *Candidatus* Metucosa cululitudo sp. nov.

Candidatus Metucosa cululitudo (NL. fem. n. *cululitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG658 sp900321055*. The type genome for the species is the GenBank assembly GCA_900321055.1. The GC content of the type genome is 29.25 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Metucosa gen. nov.

Candidatus Metucosa (NL. fem. n. *Metucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG658*. The type species for the genus is *Candidatus* Metucosa cululitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Metucosa desoritio sp. nov.

Candidatus Metucosa desoritio (NL. fem. n. *desoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG658 sp902761395*. The type genome for the species is the GenBank assembly GCA_902761395.1. The GC content of the type genome is 32.6 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Metucosa sacomastra sp. nov.

Candidatus Metucosa sacomastra (NL. fem. n. *sacomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG658 sp002448285*. The type genome for the species is the GenBank assembly GCA_002369435.1. The GC content of the type genome is 32.24 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Metucula decapitrix sp. nov.

Candidatus Metucula decapitrix (NL. fem. n. *decapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4080 sp002381865*. The type genome for the species is the GenBank assembly GCA_002419375.1. The GC content of the type genome is 34.05 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Metucula gen. nov.

Candidatus Metucula (NL. fem. n. *Metucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4080*. The type species for the genus is *Candidatus* Metucula decapitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Micavibrio extipicula sp. nov.

Candidatus Micavibrio extipicula (NL. fem. n. *extipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micavibrio_A sp002482805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002482805.1. The GC content of the type genome is 51.91 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Microbacter dibapigena sp. nov.

Candidatus Microbacter dibapigena (NL. fem. n. *dibapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacter sp009712605*. The type genome for the species is the GenBank assembly GCA_009712605.1. The GC content of the type genome is 42.46 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Microbacterium abinditrix sp. nov.

Candidatus Microbacterium abinditrix (NL. fem. n. *abinditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001513675*. The type genome for the species is the GenBank assembly RS_GCF_001513675.1. The GC content of the type genome is 69.39 % and the genome length is 3.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "garden soil".

Description of *Candidatus* Microbacterium adnecibula sp. nov.

Candidatus Microbacterium adnecibula (NL. fem. n. *adnecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp000967865*. The type genome for the species is the GenBank assembly RS_GCF_000967865.1. The GC content of the type genome is 68.26 % and the genome length is 3.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rhizosphere of Alyssum serpyllifolium ssp. lusitanicum".

Description of *Candidatus* Microbacterium adpanatica sp. nov.

Candidatus Microbacterium adpanatica (NL. fem. n. *adpanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002848265*. The type genome for the species is the GenBank assembly RS_GCF_002848265.1. The GC content of the type genome is 69.84 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Microbacterium adpiniforma sp. nov.

Candidatus Microbacterium adpiniforma (NL. fem. n. *adpiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003075395*. The type genome for the species is the GenBank assembly RS_GCF_003075395.1. The GC content of the type genome is 69.19 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Microbacterium adrumitas sp. nov.

Candidatus Microbacterium adrumitas (NL. fem. n. *adrumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Microbacterium sp001424225*. The type genome for the species is the GenBank assembly RS_GCF_001424225.1. The GC content of the type genome is 69.78 % and the genome length is 3.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Microbacterium adtesousia sp. nov.

Candidatus Microbacterium adtesousia (NL. fem. n. *adtesousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp000799385*. The type genome for the species is the GenBank assembly RS_GCF_000799385.1. The GC content of the type genome is 70.83 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Microbacterium advorivita sp. nov.

Candidatus Microbacterium advorivita (NL. fem. n. *advorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001897945*. The type genome for the species is the GenBank assembly GCA_001897945.1. The GC content of the type genome is 69.34 % and the genome length is 3.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Microbacterium alsiditica sp. nov.

Candidatus Microbacterium alsiditica (NL. fem. n. *alsiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp903645325*. The type genome for the species is the GenBank assembly RS_GCF_903645325.1. The GC content of the type genome is 68.46 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Microbacterium amercatica sp. nov.

Candidatus Microbacterium amercatica (NL. fem. n. *amercatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp900155915*. The type genome for the species is the GenBank assembly RS_GCF_900155915.1. The GC content of the type genome is 70.02

% and the genome length is 3.41 Mbp.

Description of *Candidatus* Microbacterium anaclisca sp. nov.

Candidatus Microbacterium anaclisca (NL. fem. n. *anaclisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp004366135*. The type genome for the species is the GenBank assembly RS_GCF_004366135.1. The GC content of the type genome is 69.98 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Microbacterium apharitudo sp. nov.

Candidatus Microbacterium apharitudo (NL. fem. n. *apharitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp013410955*. The type genome for the species is the GenBank assembly RS_GCF_013410955.1. The GC content of the type genome is 69.58 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Microbacterium apsoledo sp. nov.

Candidatus Microbacterium apsoledo (NL. fem. n. *apsoledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp902506375*. The type genome for the species is the GenBank assembly RS_GCF_902506375.1. The GC content of the type genome is 70.83 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Microbacterium arillicella sp. nov.

Candidatus Microbacterium arillicella (NL. fem. n. *arillicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp008271365*. The type genome for the species is the GenBank assembly RS_GCF_008271365.1. The GC content of the type genome is 69.82 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Microbacterium artilitica sp. nov.

Candidatus Microbacterium artilitica (NL. fem. n. *artilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001724425*. The type genome for the species is the GenBank assembly GCA_001724425.1. The GC content of the type genome is 70.05 % and the genome length is 2.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Microbacterium ascelimonas sp. nov.

Candidatus Microbacterium ascelimonas (NL. fem. n. *ascelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp005347485*. The type genome for the species is the GenBank assembly RS_GCF_005347485.1. The GC content of the type genome is 69.52 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Microbacterium assefatica sp. nov.

Candidatus Microbacterium assefatica (NL. fem. n. *assefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp005774735*. The type genome for the species is the GenBank assembly RS_GCF_005774735.1. The GC content of the type genome is 70.01 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Microbacterium attorilenta sp. nov.

Candidatus Microbacterium attorilenta (NL. fem. n. *attorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp000685355*. The type genome for the species is the GenBank assembly RS_GCF_000685355.1. The GC content of the type genome is 63.84 % and the genome length is 3.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Water".

Description of *Candidatus* Microbacterium benevastra sp. nov.

Candidatus Microbacterium benevastra (NL. fem. n. *benevastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp007828185*. The type genome for the species is the GenBank assembly RS_GCF_007828185.1. The GC content of the type genome is 69.74 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Microbacterium butubibula sp. nov.

Candidatus Microbacterium butubibula (NL. fem. n. *butubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp900156435*. The type genome for the species is the GenBank assembly RS_GCF_900104435.1. The GC content of the type genome is 70.7 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Microbacterium cacomentia sp. nov.

Candidatus Microbacterium cacomentia (NL. fem. n. *cacomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001984105*. The type genome for the species is the GenBank assembly RS_GCF_009832945.1. The GC content of the type genome is 70.72 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Microbacterium capilitio sp. nov.

Candidatus Microbacterium capilitio (NL. fem. n. *capilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001620065*. The type genome for the species is the GenBank assembly RS_GCF_001620065.1. The GC content of the type genome is 69.6 % and the genome length is 3.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water from Great Artesian Basin bore well".

Description of *Candidatus* Microbacterium capuditudo sp. nov.

Candidatus Microbacterium capuditudo (NL. fem. n. *capuditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001428485*. The type genome for the species is the GenBank assembly RS_GCF_001428485.1. The GC content of the type genome is 70.0 % and the genome length is 3.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Microbacterium celumitica sp. nov.

Candidatus Microbacterium celumitica (NL. fem. n. *celumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp011620715*. The type genome for the species is the GenBank assembly GCA_011620715.1. The GC content of the type genome is 68.57 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Microbacterium cibicousia sp. nov.

Candidatus Microbacterium cibicousia (NL. fem. n. *cibicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001639925*. The type genome for the species is the GenBank assembly GCA_001639925.1. The GC content of the type genome is 70.11 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Microbacterium cilicago sp. nov.

Candidatus Microbacterium cilicago (NL. fem. n. *cilicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001889265*. The type genome for the species is the GenBank assembly RS_GCF_001889265.1. The GC content of the type genome is 68.14 % and the genome length is 3.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "roots".

Description of *Candidatus* Microbacterium cohurimonia sp. nov.

Candidatus Microbacterium cohurimonia (NL. fem. n. *cohurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Microbacterium sp003121305*. The type genome for the species is the GenBank assembly RS_GCF_003121305.1. The GC content of the type genome is 70.51 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Microbacterium colopibra sp. nov.

Candidatus Microbacterium colopibra (NL. fem. n. *colopibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp008727755*. The type genome for the species is the GenBank assembly RS_GCF_008727755.1. The GC content of the type genome is 70.21 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Microbacterium crabribula sp. nov.

Candidatus Microbacterium crabribula (NL. fem. n. *crabribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp000380605*. The type genome for the species is the GenBank assembly RS_GCF_000380605.1. The GC content of the type genome is 70.65 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Microbacterium cufericella sp. nov.

Candidatus Microbacterium cufericella (NL. fem. n. *cufericella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp008727775*. The type genome for the species is the GenBank assembly RS_GCF_008727775.1. The GC content of the type genome is 70.65 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Microbacterium dehonitica sp. nov.

Candidatus Microbacterium dehonitica (NL. fem. n. *dehonitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp004794315*. The type genome for the species is the GenBank assembly RS_GCF_004794315.1. The GC content of the type genome is 70.74 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Microbacterium delapatio sp. nov.

Candidatus Microbacterium delapatio (NL. fem. n. *delapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001897105*. The type genome for the species is the GenBank assembly GCA_001897105.1. The GC content of the type genome is 70.2 % and the genome length is 2.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Microbacterium derelitrix sp. nov.

Candidatus Microbacterium derelitrix (NL. fem. n. *derelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003095395*. The type genome for the species is the GenBank assembly RS_GCF_003095395.1. The GC content of the type genome is 69.38 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Microbacterium desepago sp. nov.

Candidatus Microbacterium desepago (NL. fem. n. *desepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002979475*. The type genome for the species is the GenBank assembly RS_GCF_002979475.1. The GC content of the type genome is 68.74 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Microbacterium desomimonas sp. nov.

Candidatus Microbacterium desomimonas (NL. fem. n. *desomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp000411455*. The type genome for the species is the GenBank assembly GCA_000255595.2. The GC content of the type genome is 68.03 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Microbacterium detepitas sp. nov.

Candidatus Microbacterium detepitas (NL. fem. n. *detepitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003289625*. The type genome for the species is the GenBank assembly RS_GCF_003289625.1. The GC content of the type genome is 69.91 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Microbacterium dimidilega sp. nov.

Candidatus Microbacterium dimidilega (NL. fem. n. *dimidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003626735*. The type genome for the species is the GenBank assembly RS_GCF_003626735.1. The GC content of the type genome is 67.16 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Microbacterium diminimonia sp. nov.

Candidatus Microbacterium diminimonia (NL. fem. n. *diminimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp006715565*. The type genome for the species is the GenBank assembly RS_GCF_006715565.1. The GC content of the type genome is 69.58 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Microbacterium doxolatio sp. nov.

Candidatus Microbacterium doxolatio (NL. fem. n. *doxolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp000333395*. The type genome for the species is the GenBank assembly RS_GCF_000333395.1. The GC content of the type genome is 70.56 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Microbacterium eccisibula sp. nov.

Candidatus Microbacterium eccisibula (NL. fem. n. *eccisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp004216995*. The type genome for the species is the GenBank assembly RS_GCF_004216995.1. The GC content of the type genome is 68.83 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Microbacterium effosifica sp. nov.

Candidatus Microbacterium effosifica (NL. fem. n. *effosifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp014201255*. The type genome for the species is the GenBank assembly RS_GCF_014201255.1. The GC content of the type genome is 69.43 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Microbacterium excalax sp. nov.

Candidatus Microbacterium excalax (NL. fem. n. *excalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002362255*. The type genome for the species is the GenBank assembly RS_GCF_002362255.1. The GC content of the type genome is 69.21 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Microbacterium excanentia sp. nov.

Candidatus Microbacterium excanentia (NL. fem. n. *excanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002257455*. The type genome for the species is the GenBank assembly GCA_002257455.1. The GC content of the type genome is 70.59 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Microbacterium exhedivita sp. nov.

Candidatus Microbacterium exhedivita (NL. fem. n. *exhedivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp009649635*. The type genome for the species is the GenBank assembly RS_GCF_009649635.1. The GC content of the type genome is 70.67 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Microbacterium expenatio sp. nov.

Candidatus Microbacterium expenatio (NL. fem. n. *expenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp011620665*. The type genome for the species is the GenBank assembly GCA_011620665.1. The GC content of the type genome is 68.0 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Microbacterium fefelastra sp. nov.

Candidatus Microbacterium fefelastra (NL. fem. n. *fefelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003635115*. The type genome for the species is the GenBank assembly RS_GCF_003635115.1. The GC content of the type genome is 69.91 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Microbacterium fefelatio sp. nov.

Candidatus Microbacterium fefelatio (NL. fem. n. *fefelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp902706225*. The type genome for the species is the GenBank assembly RS_GCF_902706225.1. The GC content of the type genome is 70.0 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Microbacterium feficitio sp. nov.

Candidatus Microbacterium feficitio (NL. fem. n. *feficitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001426925*. The type genome for the species is the GenBank assembly RS_GCF_004514465.1. The GC content of the type genome is 71.79 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Microbacterium femelentia sp. nov.

Candidatus Microbacterium femelentia (NL. fem. n. *femelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001049495*. The type genome for the species is the GenBank assembly RS_GCF_001049495.1. The GC content of the type genome is 69.1 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Microbacterium fiducicula sp. nov.

Candidatus Microbacterium fiducicula (NL. fem. n. *fiducicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp000800925*. The type genome for the species is the GenBank assembly RS_GCF_004337555.1. The GC content of the type genome is 68.16 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Microbacterium figililenta sp. nov.

Candidatus Microbacterium figililenta (NL. fem. n. *figililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp006715145*. The type genome for the species is the GenBank assembly RS_GCF_006715145.1. The GC content of the type genome is 68.46 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Microbacterium forabigena sp. nov.

Candidatus Microbacterium forabigena (NL. fem. n. *forabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp006715675*. The type genome for the species is the GenBank assembly RS_GCF_006715675.1. The GC content of the type genome is 70.14 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Microbacterium funebisca sp. nov.

Candidatus Microbacterium funebisca (NL. fem. n. *funebisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Microbacterium sp010634855*. The type genome for the species is the GenBank assembly RS_GCF_010634855.1. The GC content of the type genome is 69.98 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Microbacterium furibicella sp. nov.

Candidatus Microbacterium furibicella (NL. fem. n. *furibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001792815*. The type genome for the species is the GenBank assembly RS_GCF_001792815.1. The GC content of the type genome is 70.47 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Microbacterium fusififica sp. nov.

Candidatus Microbacterium fusififica (NL. fem. n. *fusififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp005502885*. The type genome for the species is the GenBank assembly RS_GCF_005502885.1. The GC content of the type genome is 69.34 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Microbacterium futatessa sp. nov.

Candidatus Microbacterium futatessa (NL. fem. n. *futatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001422925*. The type genome for the species is the GenBank assembly RS_GCF_001422925.1. The GC content of the type genome is 70.0 % and the genome length is 4.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Microbacterium gasificella sp. nov.

Candidatus Microbacterium gasificella (NL. fem. n. *gasificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001619615*. The type genome for the species is the GenBank assembly RS_GCF_001619615.1. The GC content of the type genome is 70.27 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Ulu Slim Hot Spring".

Description of *Candidatus* Microbacterium gralletta sp. nov.

Candidatus Microbacterium gralletta (NL. fem. n. *gralletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003999995*. The type genome for the species is the GenBank assembly RS_GCF_003999995.1. The GC content of the type genome is 69.94 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Microbacterium habaciforma sp. nov.

Candidatus Microbacterium habaciforma (NL. fem. n. *habaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003248845*. The type genome for the species is the GenBank assembly GCA_003248845.1. The GC content of the type genome is 70.01 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Microbacterium herinigena sp. nov.

Candidatus Microbacterium herinigena (NL. fem. n. *herinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp013409015*. The type genome for the species is the GenBank assembly RS_GCF_013409015.1. The GC content of the type genome is 69.11 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Microbacterium holisedo sp. nov.

Candidatus Microbacterium holisedo (NL. fem. n. *holisedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp009758255*. The type genome for the species is the GenBank assembly RS_GCF_009758255.1. The GC content of the type genome is 69.34 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Microbacterium homogicula sp. nov.

Candidatus Microbacterium homogicula (NL. fem. n. *homogicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001426995*. The type genome for the species is the GenBank assembly RS_GCF_008369345.1. The GC content of the type genome is 68.77 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Microbacterium humecousia sp. nov.

Candidatus Microbacterium humecousia (NL. fem. n. *humecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002313585*. The type genome for the species is the GenBank assembly GCA_002320745.1. The GC content of the type genome is 67.04 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Microbacterium impacitrix sp. nov.

Candidatus Microbacterium impacitrix (NL. fem. n. *impacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001262495*. The type genome for the species is the GenBank assembly RS_GCF_001262495.1. The GC content of the type genome is 69.51 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Microbacterium incunicella sp. nov.

Candidatus Microbacterium incunicella (NL. fem. n. *incunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001427525*. The type genome for the species is the GenBank assembly RS_GCF_001427525.1. The GC content of the type genome is 68.68 % and the genome length is 4.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Microbacterium indecitrix sp. nov.

Candidatus Microbacterium indecitrix (NL. fem. n. *indecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp900114345*. The type genome for the species is the GenBank assembly RS_GCF_900114345.1. The GC content of the type genome is 68.92 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Microbacterium indevousia sp. nov.

Candidatus Microbacterium indevousia (NL. fem. n. *indevousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001314225*. The type genome for the species is the GenBank assembly RS_GCF_001314225.1. The GC content of the type genome is 71.01 % and the genome length is 4.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "activated sludge".

Description of *Candidatus* Microbacterium ingurilenta sp. nov.

Candidatus Microbacterium ingurilenta (NL. fem. n. *ingurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003248605*. The type genome for the species is the GenBank assembly GCA_003248605.1. The GC content of the type genome is 70.11 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Microbacterium inhosisca sp. nov.

Candidatus Microbacterium inhosisca (NL. fem. n. *inhosisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002979435*. The type genome for the species is the GenBank assembly RS_GCF_002979435.1. The GC content of the type genome is 68.82 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Microbacterium innecivita sp. nov.

Candidatus Microbacterium innecivita (NL. fem. n. *innecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002703245*. The type genome for the species is the

GenBank assembly GCA_002703245.1. The GC content of the type genome is 68.51 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Microbacterium insopifica sp. nov.

Candidatus Microbacterium insopifica (NL. fem. n. *insopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003248655*. The type genome for the species is the GenBank assembly GCA_003248655.1. The GC content of the type genome is 69.24 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Microbacterium irrevitoga sp. nov.

Candidatus Microbacterium irrevitoga (NL. fem. n. *irrevitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp004010105*. The type genome for the species is the GenBank assembly RS_GCF_004010105.1. The GC content of the type genome is 69.88 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Microbacterium lapicessa sp. nov.

Candidatus Microbacterium lapicessa (NL. fem. n. *lapicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003610405*. The type genome for the species is the GenBank assembly RS_GCF_003610405.1. The GC content of the type genome is 69.77 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Microbacterium letificella sp. nov.

Candidatus Microbacterium letificella (NL. fem. n. *letificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001898315*. The type genome for the species is the GenBank assembly GCA_001898315.1. The GC content of the type genome is 69.57 % and the genome length is 3.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Microbacterium leviditoga sp. nov.

Candidatus Microbacterium leviditoga (NL. fem. n. *leviditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001898325*. The type genome for the species is the GenBank assembly GCA_001898325.1. The GC content of the type genome is 67.01 % and the genome length is 3.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Microbacterium licenedo sp. nov.

Candidatus Microbacterium licenedo (NL. fem. n. *licenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp012847295*. The type genome for the species is the GenBank assembly RS_GCF_014595845.1. The GC content of the type genome is 69.84 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Microbacterium ludifitura sp. nov.

Candidatus Microbacterium ludifitura (NL. fem. n. *ludifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp000383475*. The type genome for the species is the GenBank assembly RS_GCF_003384875.1. The GC content of the type genome is 69.76 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Microbacterium lupanetta sp. nov.

Candidatus Microbacterium lupanetta (NL. fem. n. *lupanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp900078385*. The type genome for the species is the GenBank assembly GCA_900078385.1. The GC content of the type genome is 70.92 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Microbacterium luticatio sp. nov.

Candidatus Microbacterium luticatio (NL. fem. n. *luticatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002837415*. The type genome for the species is the GenBank assembly RS_GCF_002837415.1. The GC content of the type genome is 68.9 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Microbacterium manubax sp. nov.

Candidatus Microbacterium manubax (NL. fem. n. *manubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002979655*. The type genome for the species is the GenBank assembly RS_GCF_004794415.1. The GC content of the type genome is 68.69 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Microbacterium masocigena sp. nov.

Candidatus Microbacterium masocigena (NL. fem. n. *masocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001595495*. The type genome for the species is the GenBank assembly RS_GCF_002114135.1. The GC content of the type genome is 70.22 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Microbacterium mirabousia sp. nov.

Candidatus Microbacterium mirabousia (NL. fem. n. *mirabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp000425985*. The type genome for the species is the GenBank assembly RS_GCF_002975345.1. The GC content of the type genome is 67.55 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Microbacterium momoritio sp. nov.

Candidatus Microbacterium momoritio (NL. fem. n. *momoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp011326725*. The type genome for the species is the GenBank assembly RS_GCF_009709595.1. The GC content of the type genome is 69.9 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Microbacterium monacedo sp. nov.

Candidatus Microbacterium monacedo (NL. fem. n. *monacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp009858275*. The type genome for the species is the GenBank assembly RS_GCF_009858275.1. The GC content of the type genome is 69.73 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Microbacterium monumitudo sp. nov.

Candidatus Microbacterium monumitudo (NL. fem. n. *monumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001427145*. The type genome for the species is the GenBank assembly RS_GCF_001427145.1. The GC content of the type genome is 69.79 % and the genome length is 3.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Microbacterium morigifica sp. nov.

Candidatus Microbacterium morigifica (NL. fem. n. *morigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp007667425*. The type genome for the species is the GenBank assembly RS_GCF_007667425.1. The GC content of the type genome is 69.32 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Microbacterium musulibula sp. nov.

Candidatus Microbacterium musulibula (NL. fem. n. *musulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp009745985*. The type genome for the species is the GenBank assembly RS_GCF_009745985.1. The GC content of the type genome is 69.51

% and the genome length is 4.03 Mbp.

Description of *Candidatus* Microbacterium nefanisca sp. nov.

Candidatus Microbacterium nefanisca (NL. fem. n. *nefanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp013408285*. The type genome for the species is the GenBank assembly RS_GCF_013408285.1. The GC content of the type genome is 69.85 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Microbacterium nefarimonas sp. nov.

Candidatus Microbacterium nefarimonas (NL. fem. n. *nefarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002456035*. The type genome for the species is the GenBank assembly RS_GCF_904066215.1. The GC content of the type genome is 70.13 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Microbacterium notacago sp. nov.

Candidatus Microbacterium notacago (NL. fem. n. *notacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp014171575*. The type genome for the species is the GenBank assembly RS_GCF_014171575.1. The GC content of the type genome is 68.5 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Microbacterium notacessa sp. nov.

Candidatus Microbacterium notacessa (NL. fem. n. *notacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003524435*. The type genome for the species is the GenBank assembly GCA_003524435.1. The GC content of the type genome is 62.67 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Microbacterium nugacifica sp. nov.

Candidatus Microbacterium nugacifica (NL. fem. n. *nugacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp004794515*. The type genome for the species is the GenBank assembly RS_GCF_004794515.1. The GC content of the type genome is 68.53 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Microbacterium nugigatio sp. nov.

Candidatus Microbacterium nugigatio (NL. fem. n. *nugigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003293595*. The type genome for the species is the GenBank assembly RS_GCF_004794085.1. The GC content of the type genome is 69.47 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Microbacterium obrigatio sp. nov.

Candidatus Microbacterium obrigatio (NL. fem. n. *obrigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp004794465*. The type genome for the species is the GenBank assembly RS_GCF_004794465.1. The GC content of the type genome is 68.91 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Microbacterium obsecitica sp. nov.

Candidatus Microbacterium obsecitica (NL. fem. n. *obsecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001878835*. The type genome for the species is the GenBank assembly RS_GCF_001878835.1. The GC content of the type genome is 69.17 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Microbacterium obsoritio sp. nov.

Candidatus Microbacterium obsoritio (NL. fem. n. *obsoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp012524205*. The type genome for the species is the GenBank assembly RS_GCF_012524205.1. The GC content of the type genome is 69.57 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Microbacterium octusitica sp. nov.

Candidatus Microbacterium octusitica (NL. fem. n. *octusitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003850245*. The type genome for the species is the GenBank assembly RS_GCF_003850245.1. The GC content of the type genome is 69.73 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Microbacterium panificula sp. nov.

Candidatus Microbacterium panificula (NL. fem. n. *panificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002979415*. The type genome for the species is the GenBank assembly RS_GCF_002979415.1. The GC content of the type genome is 69.43 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Microbacterium panifilega sp. nov.

Candidatus Microbacterium panifilega (NL. fem. n. *panifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003931875*. The type genome for the species is the GenBank assembly RS_GCF_003931875.1. The GC content of the type genome is 71.63 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Microbacterium paralitura sp. nov.

Candidatus Microbacterium paralitura (NL. fem. n. *paralitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp011046485*. The type genome for the species is the GenBank assembly RS_GCF_011046485.1. The GC content of the type genome is 69.99

% and the genome length is 3.91 Mbp.

Description of *Candidatus* Microbacterium parocigena sp. nov.

Candidatus Microbacterium parocigena (NL. fem. n. *parocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp004362195*. The type genome for the species is the GenBank assembly RS_GCF_004362195.1. The GC content of the type genome is 70.57 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Microbacterium pepenessa sp. nov.

Candidatus Microbacterium pepenessa (NL. fem. n. *pepenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp900102175*. The type genome for the species is the GenBank assembly RS_GCF_900102175.1. The GC content of the type genome is 70.7 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Microbacterium peraditura sp. nov.

Candidatus Microbacterium peraditura (NL. fem. n. *peraditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003387575*. The type genome for the species is the GenBank assembly RS_GCF_003387575.1. The GC content of the type genome is 69.31 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Microbacterium repagiforma sp. nov.

Candidatus Microbacterium repagiforma (NL. fem. n. *repagiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003254645*. The type genome for the species is the GenBank assembly RS_GCF_003208015.1. The GC content of the type genome is 68.5 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Microbacterium resuribra sp. nov.

Candidatus Microbacterium resuribra (NL. fem. n. *resuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001650405*. The type genome for the species is the GenBank assembly RS_GCF_001650405.1. The GC content of the type genome is 69.64 % and the genome length is 3.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Air".

Description of *Candidatus* Microbacterium rorulitoga sp. nov.

Candidatus Microbacterium rorulitoga (NL. fem. n. *rorulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp003476465*. The type genome for the species is the GenBank assembly GCA_003476465.1. The GC content of the type genome is 68.31 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Microbacterium senacitura sp. nov.

Candidatus Microbacterium senacitura (NL. fem. n. *senacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp900163665*. The type genome for the species is the GenBank assembly RS_GCF_003335195.1. The GC content of the type genome is 67.92 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Microbacterium subinastra sp. nov.

Candidatus Microbacterium subinastra (NL. fem. n. *subinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp900156455*. The type genome for the species is the GenBank assembly RS_GCF_900156455.1. The GC content of the type genome is 70.32 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Microbacterium tegumifica sp. nov.

Candidatus Microbacterium tegumifica (NL. fem. n. *tegumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp900098805*. The type genome for the species is the GenBank assembly GCA_002358725.1. The GC content of the type genome is 69.36 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Microbacterium totiditudo sp. nov.

Candidatus Microbacterium totiditudo (NL. fem. n. *totiditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp007679045*. The type genome for the species is the GenBank assembly RS_GCF_007679235.1. The GC content of the type genome is 70.23 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Microbacterium utroligena sp. nov.

Candidatus Microbacterium utroligena (NL. fem. n. *utroligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002245215*. The type genome for the species is the GenBank assembly RS_GCF_002245215.1. The GC content of the type genome is 70.29 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Microbacterium vanitastra sp. nov.

Candidatus Microbacterium vanitastra (NL. fem. n. *vanitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp001423485*. The type genome for the species is the GenBank assembly RS_GCF_001423485.1. The GC content of the type genome is 67.85 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Microbacterium vanitetta sp. nov.

Candidatus Microbacterium vanitetta (NL. fem. n. *vanitetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002812725*. The type genome for the species is the

GenBank assembly RS_GCF_002911615.1. The GC content of the type genome is 68.27 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Microbacterium visifilenta sp. nov.

Candidatus Microbacterium visifilenta (NL. fem. n. *visifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp002970975*. The type genome for the species is the GenBank assembly RS_GCF_002970975.1. The GC content of the type genome is 70.75 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Microbacterium vocifilenta sp. nov.

Candidatus Microbacterium vocifilenta (NL. fem. n. *vocifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium sp900102005*. The type genome for the species is the GenBank assembly RS_GCF_004358865.1. The GC content of the type genome is 69.37 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Microbacterium bucolivita sp. nov.

Candidatus Microbacterium bucolivita (NL. fem. n. *bucolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium_A sp011751785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011751765.1. The GC content of the type genome is 61.96 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Microbacterium visocentia sp. nov.

Candidatus Microbacterium visocentia (NL. fem. n. *visocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbacterium_A sp011751795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into

a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011751795.1. The GC content of the type genome is 63.3 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Microbispora apsegetta sp. nov.

Candidatus Microbispora apsegetta (NL. fem. n. *apsegetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbispora sp002027145*. The type genome for the species is the GenBank assembly RS_GCF_002027145.1. The GC content of the type genome is 71.28 % and the genome length is 9.43 Mbp.

Description of *Candidatus* Microbispora ascalifica sp. nov.

Candidatus Microbispora ascalifica (NL. fem. n. *ascalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbispora sp000511135*. The type genome for the species is the GenBank assembly RS_GCF_000511135.2. The GC content of the type genome is 72.34 % and the genome length is 8.54 Mbp.

Description of *Candidatus* Microbispora indotivita sp. nov.

Candidatus Microbispora indotivita (NL. fem. n. *indotivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbispora sp012999535*. The type genome for the species is the GenBank assembly RS_GCF_012999535.1. The GC content of the type genome is 71.46 % and the genome length is 7.38 Mbp.

Description of *Candidatus* Microbispora rudecax sp. nov.

Candidatus Microbispora rudecax (NL. fem. n. *rudecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbispora sp008728085*. The type genome for the species is the GenBank assembly RS_GCF_008728085.1. The GC content of the type genome is 71.58 % and the genome length is 8.45 Mbp.

Description of *Candidatus* Microbispora vanititia sp. nov.

Candidatus Microbispora vanititia (NL. fem. n. *vanititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbispora sp014161445*. The type genome for the species is the GenBank assembly RS_GCF_012999525.1. The GC content of the type genome is 71.32 % and the genome length is 8.83 Mbp.

Description of *Candidatus* Microbulbifer abantatio sp. nov.

Candidatus Microbulbifer abantatio (NL. fem. n. *abantatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbulbifer sp013367775*. The type genome for the species is the GenBank assembly RS_GCF_013367775.1. The GC content of the type genome is 57.64 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Microbulbifer adsucibula sp. nov.

Candidatus Microbulbifer adsucibula (NL. fem. n. *adsucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbulbifer sp000708675*. The type genome for the species is the GenBank assembly RS_GCF_000708675.1. The GC content of the type genome is 56.7 % and the genome length is 4.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Microbulbifer camiletta sp. nov.

Candidatus Microbulbifer camiletta (NL. fem. n. *camiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbulbifer sp007183175*. The type genome for the species is the GenBank assembly RS_GCF_007183175.1. The GC content of the type genome is 49.55 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Microbulbifer coticax sp. nov.

Candidatus Microbulbifer coticax (NL. fem. n. *coticax* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbulbifer sp001641755*. The type genome for the species is the GenBank assembly RS_GCF_001507605.1. The GC content of the type genome is 59.88 % and the genome length is 3.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Erba brine-seawater interface".

Description of *Candidatus* Microbulbifer hexamitudo sp. nov.

Candidatus Microbulbifer hexamitudo (NL. fem. n. *hexamitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbulbifer sp009363535*. The type genome for the species is the GenBank assembly RS_GCF_009363535.1. The GC content of the type genome is 50.17 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Microbulbifer inlacilega sp. nov.

Candidatus Microbulbifer inlacilega (NL. fem. n. *inlacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbulbifer sp003076275*. The type genome for the species is the GenBank assembly RS_GCF_003076275.1. The GC content of the type genome is 48.75 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Microbulbifer intenedo sp. nov.

Candidatus Microbulbifer intenedo (NL. fem. n. *intenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbulbifer sp009903625*. The type genome for the species is the GenBank assembly RS_GCF_009903625.1. The GC content of the type genome is 56.86 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Microbulbifer sicaribra sp. nov.

Candidatus Microbulbifer sicaribra (NL. fem. n. *sicaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microbulbifer sp001639145*. The type genome for the species is the GenBank assembly RS_GCF_001639145.1. The GC content of the type genome is 58.36 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Microcoleus absurisca sp. nov.

Candidatus Microcoleus absurisca (NL. fem. n. *absurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp013179805*. The type genome for the species is the GenBank assembly RS_GCF_013179805.1. The GC content of the type genome is 45.61 % and the genome length is 7.55 Mbp.

Description of *Candidatus* Microcoleus catalentia sp. nov.

Candidatus Microcoleus catalentia (NL. fem. n. *catalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp004294385*. The type genome for the species is the GenBank assembly GCA_004293745.1. The GC content of the type genome is 44.31 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Microcoleus cilicedo sp. nov.

Candidatus Microcoleus cilicedo (NL. fem. n. *cilicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp013299185*. The type genome for the species is the GenBank assembly GCA_013299185.1. The GC content of the type genome is 45.34 % and the genome length is 7.52 Mbp.

Description of *Candidatus* Microcoleus colipugo sp. nov.

Candidatus Microcoleus colipugo (NL. fem. n. *colipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp004293365*. The type genome for the species is the GenBank assembly GCA_004293835.1. The GC content of the type genome is 45.91 %

and the genome length is 6.54 Mbp.

Description of *Candidatus* Microcoleus decitatica sp. nov.

Candidatus Microcoleus decitatica (NL. fem. n. *decitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp004292955*. The type genome for the species is the GenBank assembly GCA_004292955.1. The GC content of the type genome is 45.44 % and the genome length is 7.3 Mbp.

Description of *Candidatus* Microcoleus depecitia sp. nov.

Candidatus Microcoleus depecitia (NL. fem. n. *depecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp004292745*. The type genome for the species is the GenBank assembly GCA_004292745.1. The GC content of the type genome is 44.58 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Microcoleus ignobibra sp. nov.

Candidatus Microcoleus ignobibra (NL. fem. n. *ignobibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp013299165*. The type genome for the species is the GenBank assembly GCA_013299165.1. The GC content of the type genome is 45.81 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Microcoleus luculitica sp. nov.

Candidatus Microcoleus luculitica (NL. fem. n. *luculitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp000317475*. The type genome for the species is the GenBank assembly RS_GCF_000317475.1. The GC content of the type genome is 45.78 % and the genome length is 8.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil in orchid house".

Description of *Candidatus* Microcoleus nefanitrix sp. nov.

Candidatus Microcoleus nefanitrix (NL. fem. n. *nefanitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp003542015*. The type genome for the species is the GenBank assembly GCA_003542015.1. The GC content of the type genome is 44.88 % and the genome length is 5.43 Mbp.

Description of *Candidatus* Microcoleus penecisca sp. nov.

Candidatus Microcoleus penecisca (NL. fem. n. *penecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp003003725*. The type genome for the species is the GenBank assembly RS_GCF_003003715.1. The GC content of the type genome is 45.28 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Microcoleus resurugo sp. nov.

Candidatus Microcoleus resurugo (NL. fem. n. *resurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp012034575*. The type genome for the species is the GenBank assembly GCA_012031535.1. The GC content of the type genome is 45.51 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Microcoleus telegousia sp. nov.

Candidatus Microcoleus telegousia (NL. fem. n. *telegousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcoleus sp012035135*. The type genome for the species is the GenBank assembly GCA_012035135.1. The GC content of the type genome is 44.99 % and the genome length is 5.43 Mbp.

Description of *Candidatus* Microcystis coninentia sp. nov.

Candidatus Microcystis coninentia (NL. fem. n. *coninentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcystis sp002282935*. The type genome for the species is the GenBank assembly GCA_009995725.1. The GC content of the type genome is 42.5 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Microcystis tametibula sp. nov.

Candidatus Microcystis tametibula (NL. fem. n. *tametibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microcystis sp000297435*. The type genome for the species is the GenBank assembly RS_GCF_008579225.1. The GC content of the type genome is 42.66 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Microlunatus altivetta sp. nov.

Candidatus Microlunatus altivetta (NL. fem. n. *altivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microlunatus_A sp007362775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007362775.1. The GC content of the type genome is 66.86 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Microlunatus paropigena sp. nov.

Candidatus Microlunatus paropigena (NL. fem. n. *paropigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microlunatus_A sp009707365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009707365.1. The GC content of the type genome is 67.07 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Micromonospora adnunicula sp. nov.

Candidatus Micromonospora adnunicula (NL. fem. n. *adnunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp002754655*. The type genome for the species is the GenBank assembly RS_GCF_002754655.1. The GC content of the type genome is 70.96 % and the genome length is 6.59 Mbp.

Description of *Candidatus* Micromonospora alticago sp. nov.

Candidatus Micromonospora alticago (NL. fem. n. *alticago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp004348525*. The type genome for the species is the GenBank assembly RS_GCF_004348525.1. The GC content of the type genome is 72.4 % and the genome length is 6.96 Mbp.

Description of *Candidatus* Micromonospora ammixax sp. nov.

Candidatus Micromonospora ammixax (NL. fem. n. *ammixax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp010560025*. The type genome for the species is the GenBank assembly RS_GCF_010560025.1. The GC content of the type genome is 71.21 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Micromonospora amneniforma sp. nov.

Candidatus Micromonospora amneniforma (NL. fem. n. *amneniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp005402585*. The type genome for the species is the GenBank assembly RS_GCF_005402585.1. The GC content of the type genome is 71.46 % and the genome length is 7.2 Mbp.

Description of *Candidatus* Micromonospora ancipatio sp. nov.

Candidatus Micromonospora ancipatio (NL. fem. n. *ancipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003434305*. The type genome for the species is the GenBank assembly RS_GCF_003434305.1. The GC content of the type genome is 73.28

% and the genome length is 7.09 Mbp.

Description of *Candidatus* Micromonospora argititoga sp. nov.

Candidatus Micromonospora argititoga (NL. fem. n. *argititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp008868175*. The type genome for the species is the GenBank assembly RS_GCF_008868175.1. The GC content of the type genome is 73.5 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Micromonospora ascelentia sp. nov.

Candidatus Micromonospora ascelentia (NL. fem. n. *ascelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp004217235*. The type genome for the species is the GenBank assembly RS_GCF_004217235.1. The GC content of the type genome is 71.71 % and the genome length is 7.62 Mbp.

Description of *Candidatus* Micromonospora bicinilega sp. nov.

Candidatus Micromonospora bicinilega (NL. fem. n. *bicinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp002846275*. The type genome for the species is the GenBank assembly RS_GCF_002846275.1. The GC content of the type genome is 71.47 % and the genome length is 8.07 Mbp.

Description of *Candidatus* Micromonospora bipatitoga sp. nov.

Candidatus Micromonospora bipatitoga (NL. fem. n. *bipatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp004345505*. The type genome for the species is the GenBank assembly RS_GCF_004345505.1. The GC content of the type genome is 73.35 % and the genome length is 7.49 Mbp.

Description of *Candidatus* Micromonospora bovicitas sp. nov.

Candidatus Micromonospora bovicitas (NL. fem. n. *bovicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp009908295*. The type genome for the species is the GenBank assembly RS_GCF_009908295.1. The GC content of the type genome is 72.79 % and the genome length is 7.47 Mbp.

Description of *Candidatus* Micromonospora detosilega sp. nov.

Candidatus Micromonospora detosilega (NL. fem. n. *detosilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp004307965*. The type genome for the species is the GenBank assembly RS_GCF_004307965.1. The GC content of the type genome is 71.68 % and the genome length is 6.8 Mbp.

Description of *Candidatus* Micromonospora dicimitoga sp. nov.

Candidatus Micromonospora dicimitoga (NL. fem. n. *dicimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp004217535*. The type genome for the species is the GenBank assembly RS_GCF_004217535.1. The GC content of the type genome is 72.85 % and the genome length is 6.44 Mbp.

Description of *Candidatus* Micromonospora dilacugo sp. nov.

Candidatus Micromonospora dilacugo (NL. fem. n. *dilacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp004348325*. The type genome for the species is the GenBank assembly RS_GCF_004348325.1. The GC content of the type genome is 71.6 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Micromonospora effosibra sp. nov.

Candidatus Micromonospora effosibra (NL. fem. n. *effosibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp004348595*. The type genome for the species is the GenBank assembly RS_GCF_004348595.1. The GC content of the type genome is 72.2 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Micromonospora exforetta sp. nov.

Candidatus Micromonospora exforetta (NL. fem. n. *exforetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp001905095*. The type genome for the species is the GenBank assembly RS_GCF_001905095.1. The GC content of the type genome is 71.5 % and the genome length is 9.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Micromonospora expurastra sp. nov.

Candidatus Micromonospora expurastra (NL. fem. n. *expurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003027925*. The type genome for the species is the GenBank assembly RS_GCF_003027925.1. The GC content of the type genome is 72.98 % and the genome length is 7.13 Mbp.

Description of *Candidatus* Micromonospora fragmivita sp. nov.

Candidatus Micromonospora fragmivita (NL. fem. n. *fragmivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp013694245*. The type genome for the species is the GenBank assembly RS_GCF_013694245.1. The GC content of the type genome is 73.69 % and the genome length is 6.64 Mbp.

Description of *Candidatus* Micromonospora genufugo sp. nov.

Candidatus Micromonospora genufugo (NL. fem. n. *genufugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp000158815*. The type genome for the species is the

GenBank assembly RS_GCF_000158815.1. The GC content of the type genome is 72.33 % and the genome length is 6.82 Mbp.

Description of *Candidatus* Micromonospora idciritoga sp. nov.

Candidatus Micromonospora idciritoga (NL. fem. n. *idciritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp008119785*. The type genome for the species is the GenBank assembly RS_GCF_008119785.1. The GC content of the type genome is 71.92 % and the genome length is 9.17 Mbp.

Description of *Candidatus* Micromonospora idciritudo sp. nov.

Candidatus Micromonospora idciritudo (NL. fem. n. *idciritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003172955*. The type genome for the species is the GenBank assembly RS_GCF_003172955.1. The GC content of the type genome is 72.3 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Micromonospora intabisca sp. nov.

Candidatus Micromonospora intabisca (NL. fem. n. *intabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp009707425*. The type genome for the species is the GenBank assembly RS_GCF_009707425.1. The GC content of the type genome is 72.78 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Micromonospora linigitudo sp. nov.

Candidatus Micromonospora linigitudo (NL. fem. n. *linigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003725545*. The type genome for the species is the GenBank assembly RS_GCF_003725545.1. The GC content of the type genome is 73.13 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Micromonospora luceritrix sp. nov.

Candidatus Micromonospora luceritrix (NL. fem. n. *luceritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003667505*. The type genome for the species is the GenBank assembly RS_GCF_003667455.1. The GC content of the type genome is 72.15 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Micromonospora nitelimonas sp. nov.

Candidatus Micromonospora nitelimonas (NL. fem. n. *nitelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp002285795*. The type genome for the species is the GenBank assembly RS_GCF_002285795.1. The GC content of the type genome is 72.91 % and the genome length is 6.69 Mbp.

Description of *Candidatus* Micromonospora nubigastra sp. nov.

Candidatus Micromonospora nubigastra (NL. fem. n. *nubigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003030345*. The type genome for the species is the GenBank assembly RS_GCF_003030345.1. The GC content of the type genome is 72.38 % and the genome length is 8.33 Mbp.

Description of *Candidatus* Micromonospora nugigitio sp. nov.

Candidatus Micromonospora nugigitio (NL. fem. n. *nugigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003751085*. The type genome for the species is the GenBank assembly RS_GCF_003751085.1. The GC content of the type genome is 70.63 % and the genome length is 8.9 Mbp.

Description of *Candidatus* Micromonospora obfirigena sp. nov.

Candidatus Micromonospora obfirigena (NL. fem. n. *obfirigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp000982955*. The type genome for the species is the GenBank assembly RS_GCF_000982955.1. The GC content of the type genome is 73.39 % and the genome length is 6.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Micromonospora obrigilenta sp. nov.

Candidatus Micromonospora obrigilenta (NL. fem. n. *obrigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp008868155*. The type genome for the species is the GenBank assembly RS_GCF_008868155.1. The GC content of the type genome is 71.42 % and the genome length is 6.72 Mbp.

Description of *Candidatus* Micromonospora obtemitica sp. nov.

Candidatus Micromonospora obtemitica (NL. fem. n. *obtemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp012034245*. The type genome for the species is the GenBank assembly RS_GCF_012034245.1. The GC content of the type genome is 72.73 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Micromonospora omnipimonas sp. nov.

Candidatus Micromonospora omnipimonas (NL. fem. n. *omnipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003172935*. The type genome for the species is the GenBank assembly RS_GCF_003172935.1. The GC content of the type genome is 72.02 % and the genome length is 7.88 Mbp.

Description of *Candidatus* Micromonospora paropessa sp. nov.

Candidatus Micromonospora paropessa (NL. fem. n. *paropessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003664255*. The type genome for the species is the

GenBank assembly RS_GCF_003664255.1. The GC content of the type genome is 73.19 % and the genome length is 7.81 Mbp.

Description of *Candidatus* Micromonospora penicimonia sp. nov.

Candidatus Micromonospora penicimonia (NL. fem. n. *penicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp002140155*. The type genome for the species is the GenBank assembly RS_GCF_002140155.1. The GC content of the type genome is 73.07 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Micromonospora relecitio sp. nov.

Candidatus Micromonospora relecitio (NL. fem. n. *relecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp003762835*. The type genome for the species is the GenBank assembly RS_GCF_003762835.1. The GC content of the type genome is 72.38 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Micromonospora subinigena sp. nov.

Candidatus Micromonospora subinigena (NL. fem. n. *subinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp012726175*. The type genome for the species is the GenBank assembly RS_GCF_012726175.1. The GC content of the type genome is 69.96 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Micromonospora subinitas sp. nov.

Candidatus Micromonospora subinitas (NL. fem. n. *subinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp009712475*. The type genome for the species is the GenBank assembly RS_GCF_009712475.1. The GC content of the type genome is 70.87 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Micromonospora sugilibula sp. nov.

Candidatus Micromonospora sugilibula (NL. fem. n. *sugilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micromonospora sp004348675*. The type genome for the species is the GenBank assembly RS_GCF_004348675.1. The GC content of the type genome is 71.71 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Micropelagos bucelitoga sp. nov.

Candidatus Micropelagos bucelitoga (NL. fem. n. *bucelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micropelagos sp003535555*. The type genome for the species is the GenBank assembly GCA_009937005.1. The GC content of the type genome is 45.05 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Micropelagos cerifentia sp. nov.

Candidatus Micropelagos cerifentia (NL. fem. n. *cerifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micropelagos sp002683515*. The type genome for the species is the GenBank assembly GCA_002683515.1. The GC content of the type genome is 45.08 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Micropelagos malagimonas sp. nov.

Candidatus Micropelagos malagimonas (NL. fem. n. *malagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micropelagos sp000293845*. The type genome for the species is the GenBank assembly RS_GCF_000293845.2. The GC content of the type genome is 47.4 % and the genome length is 1.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Micropelagos masocentia sp. nov.

Candidatus Micropelagos masocentia (NL. fem. n. *masocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micropelagos sp002450335*. The type genome for the species is the GenBank assembly GCA_002430505.1. The GC content of the type genome is 46.11 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Micropelagos peripilega sp. nov.

Candidatus Micropelagos peripilega (NL. fem. n. *peripilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micropelagos sp002700915*. The type genome for the species is the GenBank assembly GCA_002700915.1. The GC content of the type genome is 45.66 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Micropruina algifilenta sp. nov.

Candidatus Micropruina algifilenta (NL. fem. n. *algifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Micropruina sp013693855*. The type genome for the species is the GenBank assembly GCA_013693855.1. The GC content of the type genome is 70.09 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Microscilla adnilibra sp. nov.

Candidatus Microscilla adnilibra (NL. fem. n. *adnilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microscilla sp001890965*. The type genome for the species is the GenBank assembly GCA_001890965.1. The GC content of the type genome is 38.66 % and the genome length is 11.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "non-axenic enrichment culture inoculated from diseased coral".

Description of *Candidatus* Microscilla affanilega sp. nov.

Candidatus Microscilla affanilega (NL. fem. n. *affanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Microscilla sp003483885*. The type genome for the species is the GenBank assembly GCA_003483885.1. The GC content of the type genome is 39.73 % and the genome length is 11.44 Mbp.

Description of *Candidatus* Microterricola actutivita sp. nov.

Candidatus Microterricola actutivita (NL. fem. n. *actutivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microterricola sp000799285*. The type genome for the species is the GenBank assembly RS_GCF_000799285.1. The GC content of the type genome is 62.04 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Microterricola adselitio sp. nov.

Candidatus Microterricola adselitio (NL. fem. n. *adselitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microterricola sp003610585*. The type genome for the species is the GenBank assembly RS_GCF_003610585.1. The GC content of the type genome is 67.98 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Microterricola catapetta sp. nov.

Candidatus Microterricola catapetta (NL. fem. n. *catapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microterricola sp001425085*. The type genome for the species is the GenBank assembly RS_GCF_001425085.1. The GC content of the type genome is 67.69 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Microthrix vilitastra sp. nov.

Candidatus Microthrix vilitastra (NL. fem. n. *vilitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microthrix sp002473265*. The type genome for the species is the GenBank assembly GCA_002473265.1. The GC content of the type genome is 68.28 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Microvirga advecibra sp. nov.

Candidatus Microvirga advecibra (NL. fem. n. *advecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microvirga sp003290125*. The type genome for the species is the GenBank assembly RS_GCF_003290125.1. The GC content of the type genome is 62.17 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Microvirga advecicella sp. nov.

Candidatus Microvirga advecicella (NL. fem. n. *advecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microvirga sp009363855*. The type genome for the species is the GenBank assembly RS_GCF_009363855.1. The GC content of the type genome is 67.71 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Microvirga anarretta sp. nov.

Candidatus Microvirga anarretta (NL. fem. n. *anarretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microvirga sp000739015*. The type genome for the species is the GenBank assembly RS_GCF_000739015.1. The GC content of the type genome is 62.94 % and the genome length is 5.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Biological Soil Crust".

Description of *Candidatus* Microvirga conopitio sp. nov.

Candidatus Microvirga conopitio (NL. fem. n. *conopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microvirga sp009910705*. The type genome for the species is the GenBank assembly RS_GCF_009910705.1. The GC content of the type genome is 65.07 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Microvirga detotatica sp. nov.

Candidatus Microvirga detotatica (NL. fem. n. *detotatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microvirga sp011777495*. The type genome for the species is the GenBank assembly RS_GCF_011777495.1. The GC content of the type genome is 62.22 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Microvirga incunitura sp. nov.

Candidatus Microvirga incunitura (NL. fem. n. *incunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microvirga sp000745135*. The type genome for the species is the GenBank assembly RS_GCF_000745135.1. The GC content of the type genome is 67.33 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Microvirga momorax sp. nov.

Candidatus Microvirga momorax (NL. fem. n. *momorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microvirga sp003151255*. The type genome for the species is the GenBank assembly RS_GCF_003151255.1. The GC content of the type genome is 64.01 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Microvirga obtunicula sp. nov.

Candidatus Microvirga obtunicula (NL. fem. n. *obtunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microvirga sp003075415*. The type genome for the species is the GenBank assembly RS_GCF_003075415.1. The GC content of the type genome is 61.27 % and the genome length is 6.86 Mbp.

Description of *Candidatus* Microvirga stercivita sp. nov.

Candidatus Microvirga stercivita (NL. fem. n. *stercivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Microvirga sp013520865*. The type genome for the species is the GenBank assembly RS_GCF_013520865.1. The GC content of the type genome is 63.83 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Mikella foricessa sp. nov.

Candidatus Mikella foricessa (NL. fem. n. *foricessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mikella sp900090215*. The type genome for the species is the GenBank assembly RS_GCF_900090215.1. The GC content of the type genome is 32.57 % and the genome length is 0.3 Mbp.

Description of *Candidatus* Milifana videlatica sp. nov.

Candidatus Milifana videlatica (NL. fem. n. *videlatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718455 sp002718455*. The type genome for the species is the GenBank assembly GCA_002718455.1. The GC content of the type genome is 30.68 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Milifana gen. nov.

Candidatus Milifana (NL. fem. n. *Milifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2718455*. The type species for the genus is *Candidatus* Milifana videlatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED-70*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipinanaceae.

Description of *Candidatus* Milifaria relenitia sp. nov.

Candidatus Milifaria relenitia (NL. fem. n. *relenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RUG11204 sp902766845*. The type genome for the species is the GenBank assembly GCA_902783225.1. The GC content of the type genome is 62.71 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Milifaria gen. nov.

Candidatus Milifaria (NL. fem. n. *Milifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11204*. The type species for the genus is *Candidatus* Milifaria relenitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Milifella devecastra sp. nov.

Candidatus Milifella devecastra (NL. fem. n. *devecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5540 sp903826865*. The type genome for the species is the GenBank assembly GCA_903826865.1. The GC content of the type genome is 54.3 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Milifella gen. nov.

Candidatus Milifella (NL. fem. n. *Milifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5540*. The type species for the genus is *Candidatus* Milifella devecastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Milifella didacisca sp. nov.

Candidatus Milifella didacisca (NL. fem. n. *didacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5540 sp014381785*. The type genome for the species is the GenBank assembly GCA_014381785.1. The GC content of the type genome is 54.71 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Milifella exsisicula sp. nov.

Candidatus Milifella exsisicula (NL. fem. n. *exsisicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5540 sp002423675*. The type genome for the species is the GenBank assembly GCA_002423675.1. The GC content of the type genome is 53.04 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Milifella murelitica sp. nov.

Candidatus Milifella murelitica (NL. fem. n. *murelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5540 sp009905215*. The type genome for the species is the GenBank assembly RS_GCF_009905215.1. The GC content of the type genome is 53.13 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Milifella refunitrix sp. nov.

Candidatus Milifella refunitrix (NL. fem. n. *refunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5540 sp903831085*. The type genome for the species is the GenBank assembly GCA_903863605.1. The GC content of the type genome is 55.61 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Milifella vicatastra sp. nov.

Candidatus Milifella vicatastra (NL. fem. n. *vicatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5540 sp013141415*. The type genome for the species is the GenBank assembly GCA_013141415.1. The GC content of the type genome is 54.6 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Milifia morigitrix sp. nov.

Candidatus Milifia morigitrix (NL. fem. n. *morigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QS-4-48-99 sp003021505*. The type genome for the species is the GenBank assembly GCA_003021405.1. The GC content of the type genome is 48.26 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Milifia gen. nov.

Candidatus Milifia (NL. fem. n. *Milifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QS-4-48-99*. The type species for the genus is *Candidatus* Milifia morigitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Milifida docibigena sp. nov.

Candidatus Milifida docibigena (NL. fem. n. *docibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUMM01 sp903875225*. The type genome for the species is the GenBank assembly GCA_903880145.1. The GC content of the type genome is 69.46 % and the genome length is 7.47 Mbp.

Description of *Candidatus* Milifida gen. nov.

Candidatus Milifida (NL. fem. n. *Milifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUMM01*. The type species for the genus is *Candidatus* Milifida docibigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXON01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucellaceae.

Description of *Candidatus* Milifida homogicella sp. nov.

Candidatus Milifida homogicella (NL. fem. n. *homogicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUMM01 sp903844155*. The type genome for the species is the GenBank assembly GCA_903864985.1. The GC content of the type genome is 68.69 % and the genome length is 7.98 Mbp.

Description of *Candidatus* Milifida vehematica sp. nov.

Candidatus Milifida vehematica (NL. fem. n. *vehematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUMM01 sp009692605*. The type genome for the species is the GenBank assembly GCA_009692605.1. The GC content of the type genome is 67.96 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Milifida vicatugo sp. nov.

Candidatus Milifida vicatugo (NL. fem. n. *vicatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUMM01 sp903900265*. The type genome for the species is the GenBank assembly GCA_903865785.1. The GC content of the type genome is 66.79 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Milifosa alsiditudo sp. nov.

Candidatus Milifosa alsiditudo (NL. fem. n. *alsiditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPQK01 sp003819755*. The type genome for the species is the GenBank assembly GCA_003819755.1. The GC content of the type genome is 59.04 % and the genome length is 7.34 Mbp.

Description of *Candidatus* Milifosa gen. nov.

Candidatus Milifosa (NL. fem. n. *Milifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPQK01*. The type species for the genus is *Candidatus* Milifosa alsiditudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RPQK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Milifosaceae.

Description of *Candidatus* Milifosaceae fam. nov.

Candidatus Milifosaceae (NL. fem. n. *Milifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RPQK01.* The type genus for the taxon is *Candidatus* Milifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *RPQK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Milifosales.

Description of *Candidatus* Milifosales ord. nov.

Candidatus Milifosales (NL. fem. n. *Milifosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RPQK01.* The type genus for the taxon is *Candidatus* Milifosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6911*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Decomulae.

Description of *Candidatus* Milifula nehalitoga sp. nov.

Candidatus Milifula nehalitoga (NL. fem. n. *nehalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-3-00-41-53 sp002780895*. The type genome for the species is the GenBank assembly GCA_002790775.1. The GC content of the type genome is 40.63 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Milifula gen. nov.

Candidatus Milifula (NL. fem. n. *Milifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-3-00-41-53*. The type species for the genus is *Candidatus* Milifula

nehalitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peridulaceae.

Description of *Candidatus* Milipana aggubimonia sp. nov.

Candidatus Milipana aggubimonia (NL. fem. n. *aggubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQDA01 sp903858055*. The type genome for the species is the GenBank assembly GCA_903858055.1. The GC content of the type genome is 69.41 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Milipana gen. nov.

Candidatus Milipana (NL. fem. n. *Milipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQDA01*. The type species for the genus is *Candidatus* Milipana aggubimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Milipana mavoribra sp. nov.

Candidatus Milipana mavoribra (NL. fem. n. *mavoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQDA01 sp903870415*. The type genome for the species is the GenBank assembly GCA_903894625.1. The GC content of the type genome is 64.61 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Miliparia nocumitio sp. nov.

Candidatus Miliparia nocumitio (NL. fem. n. *nocumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAKW01 sp003343605*. The type genome for the species is the

GenBank assembly GCA_003343605.1. The GC content of the type genome is 51.41 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Miliparia gen. nov.

Candidatus Miliparia (NL. fem. n. *Miliparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAKW01*. The type species for the genus is *Candidatus* Miliparia nocumitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QAKW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Milipariaceae.

Description of *Candidatus* Milipariaceae fam. nov.

Candidatus Milipariaceae (NL. fem. n. *Milipariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QAKW01.* The type genus for the taxon is *Candidatus* Miliparia .

According to GTDB R06-RS202, this family belongs to the order *Oscillospirales*.

Description of *Candidatus* Milipella desurigena sp. nov.

Candidatus Milipella desurigena (NL. fem. n. *desurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-113 sp002050035*. The type genome for the species is the GenBank assembly GCA_002050035.1. The GC content of the type genome is 58.97 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Milipella gen. nov.

Candidatus Milipella (NL. fem. n. *Milipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-113*. The type species for the genus is *Candidatus* Milipella desurigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family

4484-113. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Milipellaceae.

Description of *Candidatus* Milipellaceae fam. nov.

Candidatus Milipellaceae (NL. fem. n. *Milipellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-113.* The type genus for the taxon is *Candidatus* Milipella .

According to the original version of GTDB R06-RS202, this family belongs to the order *4484-113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Milipellales.

Description of *Candidatus* Milipellales ord. nov.

Candidatus Milipellales (NL. fem. n. *Milipellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-113.* The type genus for the taxon is *Candidatus* Milipella .

According to the original version of GTDB R06-RS202, this family belongs to the class *4484-113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Milipellae.

Description of *Candidatus* Milipellae class. nov.

Candidatus Milipellae (NL. fem. n. *c__Milipellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-113.* The type genus for the taxon is *Candidatus* Milipella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBP7_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Sonivanota.

Description of *Candidatus* Milipia attesiforma sp. nov.

Candidatus Milipia attesiforma (NL. fem. n. *attesiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-238 sp900754805*. The type genome for the species is the GenBank assembly RS_GCF_900754805.1. The GC content of the type genome is 46.3 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Milipia gen. nov.

Candidatus Milipia (NL. fem. n. *Milipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-238*. The type species for the genus is *Candidatus* Milipia attesiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Milipia denicousia sp. nov.

Candidatus Milipia denicousia (NL. fem. n. *denicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-238 sp000435615*. The type genome for the species is the GenBank assembly GCA_900541405.1. The GC content of the type genome is 45.53 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Milipia gabinifica sp. nov.

Candidatus Milipia gabinifica (NL. fem. n. *gabinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-238 sp900542245*. The type genome for the species is the GenBank assembly RS_GCF_900754975.1. The GC content of the type genome is 52.0 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Milipia minagago sp. nov.

Candidatus Milipia minagago (NL. fem. n. *minagago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-238 sp002439735*. The type genome for the species is the GenBank assembly GCA_002439735.1. The GC content of the type genome is 50.95 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Milipia venunigena sp. nov.

Candidatus Milipia venunigena (NL. fem. n. *venunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-238 sp900551415*. The type genome for the species is the GenBank assembly GCA_900551415.1. The GC content of the type genome is 50.68 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Milipida anaclitio sp. nov.

Candidatus Milipida anaclitio (NL. fem. n. *anaclitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6398 sp900555645*. The type genome for the species is the GenBank assembly GCA_900555645.1. The GC content of the type genome is 48.25 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Milipida gen. nov.

Candidatus Milipida (NL. fem. n. *Milipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6398*. The type species for the genus is *Candidatus* Milipida anaclitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Milipida domicigena sp. nov.

Candidatus Milipida domicigena (NL. fem. n. *domicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6398 sp002437495*. The type genome for the species is the GenBank assembly GCA_002436905.1. The GC content of the type genome is 49.17 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Milipida lucubetta sp. nov.

Candidatus Milipida lucubetta (NL. fem. n. *lucubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6398 sp003150315*. The type genome for the species is the GenBank assembly RS_GCF_900766425.1. The GC content of the type genome is 44.27 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Milipida molecax sp. nov.

Candidatus Milipida molecax (NL. fem. n. *molecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6398 sp002451695*. The type genome for the species is the GenBank assembly GCA_002321235.1. The GC content of the type genome is 51.37 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Milipida nicomitia sp. nov.

Candidatus Milipida nicomitia (NL. fem. n. *nicomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6398 sp900314335*. The type genome for the species is the GenBank assembly GCA_902803875.1. The GC content of the type genome is 55.0 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Milipida nutabivita sp. nov.

Candidatus Milipida nutabivita (NL. fem. n. *nutabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6398 sp900550635*. The type genome for the species is the GenBank assembly RS_GCF_900754685.1. The GC content of the type genome is 48.79 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Miliposa bovicitia sp. nov.

Candidatus Miliposa bovicitia (NL. fem. n. *bovicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA5209 sp002840365*. The type genome for the species is the GenBank assembly GCA_002840365.1. The GC content of the type genome is 33.9 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Miliposa gen. nov.

Candidatus Miliposa (NL. fem. n. *Miliposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5209*. The type species for the genus is *Candidatus* Miliposa bovicitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Miliposa lucelitudo sp. nov.

Candidatus Miliposa lucelitudo (NL. fem. n. *lucelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5209 sp002412645*. The type genome for the species is the GenBank assembly GCA_002347525.1. The GC content of the type genome is 34.11 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Milipula abantibra sp. nov.

Candidatus Milipula abantibra (NL. fem. n. *abantibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp903821715*. The type genome for the species is the GenBank assembly GCA_903821715.1. The GC content of the type genome is 57.46 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Milipula gen. nov.

Candidatus Milipula (NL. fem. n. *Milipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED14*. The type species for the genus is *Candidatus* Milipula abantibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Milipula colubitio sp. nov.

Candidatus Milipula colubitio (NL. fem. n. *colubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp001438205*. The type genome for the species is the GenBank assembly GCA_001438175.1. The GC content of the type genome is 49.01 % and the genome length is 1.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water; brackish water collected from the surface of the Baltic Sea".

Description of *Candidatus* Milipula ensifibula sp. nov.

Candidatus Milipula ensifibula (NL. fem. n. *ensifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp003451355*. The type genome for the species is the GenBank assembly GCA_003451355.1. The GC content of the type genome is 57.91 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Milipula feditax sp. nov.

Candidatus Milipula feditax (NL. fem. n. *feditax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp002292855*. The type genome for the species is the GenBank assembly GCA_002292855.1. The GC content of the type genome is 56.05 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Milipula ficulimonia sp. nov.

Candidatus Milipula ficulimonia (NL. fem. n. *ficulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp003507115*. The type genome for the species is the GenBank assembly GCA_003507115.1. The GC content of the type genome is 54.65 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Milipula indecimonas sp. nov.

Candidatus Milipula indecimonas (NL. fem. n. *indecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp005786915*. The type genome for the species is the GenBank assembly GCA_005786915.1. The GC content of the type genome is 60.52 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Milipula lenocitio sp. nov.

Candidatus Milipula lenocitio (NL. fem. n. *lenocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp002737315*. The type genome for the species is the GenBank assembly GCA_002737315.1. The GC content of the type genome is 55.0 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Milipula monumedo sp. nov.

Candidatus Milipula monumedo (NL. fem. n. *monumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp002381225*. The type genome for the species is the GenBank assembly GCA_002346905.1. The GC content of the type genome is 54.6 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Milipula obmutousia sp. nov.

Candidatus Milipula obmutousia (NL. fem. n. *obmutousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp013205365*. The type genome for the species is the GenBank assembly GCA_013205365.1. The GC content of the type genome is 55.0 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Milipula peracilenta sp. nov.

Candidatus Milipula peracilenta (NL. fem. n. *peracilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp002167805*. The type genome for the species is the GenBank assembly GCA_002167805.1. The GC content of the type genome is 36.09 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Milipula repepiforma sp. nov.

Candidatus Milipula repepiforma (NL. fem. n. *repepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp002682945*. The type genome for the species is the GenBank assembly GCA_002682945.1. The GC content of the type genome is 36.5 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Milipula sonabicula sp. nov.

Candidatus Milipula sonabicula (NL. fem. n. *sonabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED14 sp003444795*. The type genome for the species is the GenBank assembly GCA_003444795.1. The GC content of the type genome is 52.97 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Mimogaria fraglivita sp. nov.

Candidatus Mimogaria fraglivita (NL. fem. n. *fraglivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2779 sp002084135*. The type genome for the species is the GenBank assembly GCA_002084135.1. The GC content of the type genome is 50.04 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Mimogaria gen. nov.

Candidatus Mimogaria (NL. fem. n. *Mimogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2779*. The type species for the genus is *Candidatus* Mimogaria

fraglivita .

According to GTDB R06-RS202, this genus belongs to the family _B.

Description of *Candidatus* Mimogaria inhumugo sp. nov.

Candidatus Mimogaria inhumugo (NL. fem. n. *inhumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2779 sp002748225*. The type genome for the species is the GenBank assembly GCA_002748225.1. The GC content of the type genome is 50.76 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Mimogaria inurbiforma sp. nov.

Candidatus Mimogaria inurbiforma (NL. fem. n. *inurbiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2779 sp900608495*. The type genome for the species is the GenBank assembly RS_GCF_900608495.1. The GC content of the type genome is 47.05 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Mimogaria peribatio sp. nov.

Candidatus Mimogaria peribatio (NL. fem. n. *peribatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2779 sp003644105*. The type genome for the species is the GenBank assembly GCA_003641715.1. The GC content of the type genome is 47.97 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Mimogaria roraredo sp. nov.

Candidatus Mimogaria roraredo (NL. fem. n. *roraredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2779 sp002352375*. The type genome for the species is the GenBank assembly GCA_002352375.1. The GC content of the type genome is 46.87 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Mimogella citipugo sp. nov.

Candidatus Mimogella citipugo (NL. fem. n. *citipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5359 sp002410925*. The type genome for the species is the GenBank assembly GCA_002410925.1. The GC content of the type genome is 49.01 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Mimogella gen. nov.

Candidatus Mimogella (NL. fem. n. *Mimogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5359*. The type species for the genus is *Candidatus* Mimogella citipugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5359*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mimogellaceae.

Description of *Candidatus* Mimogellaceae fam. nov.

Candidatus Mimogellaceae (NL. fem. n. *Mimogellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5359.* The type genus for the taxon is *Candidatus* Mimogella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5359*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Mimogellales.

Description of *Candidatus* Mimogellales ord. nov.

Candidatus Mimogellales (NL. fem. n. *Mimogellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5359.* The type genus for the taxon is *Candidatus* Mimogella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA5359*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Mimogellae.

Description of *Candidatus* Mimogellae class. nov.

Candidatus Mimogellae (NL. fem. n. *c__Mimogellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5359.* The type genus for the taxon is *Candidatus* Mimogella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBP13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Taxilellota.

Description of *Candidatus* Mimogia visifessa sp. nov.

Candidatus Mimogia visifessa (NL. fem. n. *visifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-33-38 sp001769505*. The type genome for the species is the GenBank assembly GCA_001769695.1. The GC content of the type genome is 32.81 % and the genome length is 2.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Mimogia gen. nov.

Candidatus Mimogia (NL. fem. n. *Mimogia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-33-38*. The type species for the genus is *Candidatus* Mimogia visifessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-33-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mimogiaceae.

Description of *Candidatus* Mimogiaceae fam. nov.

Candidatus Mimogiaceae (NL. fem. n. *Mimogiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-33-38.* The type genus for the taxon is *Candidatus* Mimogia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Mimogida oppanilega sp. nov.

Candidatus Mimogida oppanilega (NL. fem. n. *oppanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9568 sp003497135*. The type genome for the species is the GenBank assembly GCA_003497135.1. The GC content of the type genome is 43.31 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Mimogida gen. nov.

Candidatus Mimogida (NL. fem. n. *Mimogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9568*. The type species for the genus is *Candidatus* Mimogida oppanilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9568*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mimogidaceae.

Description of *Candidatus* Mimogidaceae fam. nov.

Candidatus Mimogidaceae (NL. fem. n. *Mimogidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9568.* The type genus for the taxon is *Candidatus* Mimogida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Mimogosa penecedo sp. nov.

Candidatus Mimogosa penecedo (NL. fem. n. *penecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AcAMD-5 sp009704345*. The type genome for the species is the GenBank assembly GCA_009704345.1. The GC content of the type genome is 46.23 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Mimogosa gen. nov.

Candidatus Mimogosa (NL. fem. n. *Mimogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AcAMD-5*. The type species for the genus is *Candidatus* Mimogosa penecedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AcAMD-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mimogosaceae.

Description of *Candidatus* Mimogosaceae fam. nov.

Candidatus Mimogosaceae (NL. fem. n. *Mimogosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AcAMD-5.* The type genus for the taxon is *Candidatus* Mimogosa .

According to GTDB R06-RS202, this family belongs to the order *Nanopelagicales*.

Description of *Candidatus* Mimogosa vigenitudo sp. nov.

Candidatus Mimogosa vigenitudo (NL. fem. n. *vigenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AcAMD-5 sp002293025*. The type genome for the species is the GenBank assembly GCA_002293025.1. The GC content of the type genome is 44.41 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Mimogula atricitas sp. nov.

Candidatus Mimogula atricitas (NL. fem. n. *atricitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1924 sp009827215*. The type genome for the species is the GenBank assembly GCA_009827215.1. The GC content of the type genome is 56.25 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Mimogula gen. nov.

Candidatus Mimogula (NL. fem. n. *Mimogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1924*. The type species for the genus is *Candidatus* Mimogula atricitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Mimogula demigitrix sp. nov.

Candidatus Mimogula demigitrix (NL. fem. n. *demigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1924 sp002337545*. The type genome for the species is the GenBank assembly GCA_002337265.1. The GC content of the type genome is 59.77 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Mimogula obmurastra sp. nov.

Candidatus Mimogula obmurastra (NL. fem. n. *obmurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1924 sp002401225*. The type genome for the species is the GenBank assembly GCA_002401225.1. The GC content of the type genome is 52.8 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Mimogula semunitia sp. nov.

Candidatus Mimogula semunitia (NL. fem. n. *semunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1924 sp002364005*. The type genome for the species is the GenBank assembly GCA_002416105.1. The GC content of the type genome is 61.57 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Minagana fraglugo sp. nov.

Candidatus Minagana fraglugo (NL. fem. n. *fraglugo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-660 sp003133285*. The type genome for the species is the GenBank assembly GCA_003133285.1. The GC content of the type genome is 68.4 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Minagana gen. nov.

Candidatus Minagana (NL. fem. n. *Minagana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-660*. The type species for the genus is *Candidatus* Minagana fraglugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minaganaceae.

Description of *Candidatus* Minaganaceae fam. nov.

Candidatus Minaganaceae (NL. fem. n. *Minaganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PALSA-660.* The type genus for the taxon is *Candidatus* Minagana .

According to the original version of GTDB R06-RS202, this family belongs to the order *OPB41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodanales.

Description of *Candidatus* Minagana rorifisca sp. nov.

Candidatus Minagana rorifisca (NL. fem. n. *rorifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-660 sp903831865*. The type genome for the species is the GenBank assembly GCA_903831865.1. The GC content of the type genome is 67.78 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Minagaria culibitura sp. nov.

Candidatus Minagaria culibitura (NL. fem. n. *culibitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1942 sp002337085*. The type genome for the species is the GenBank assembly GCA_002337085.1. The GC content of the type genome is 41.44 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Minagaria gen. nov.

Candidatus Minagaria (NL. fem. n. *Minagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1942*. The type species for the genus is *Candidatus* Minagaria culibitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Minagaria hexapax sp. nov.

Candidatus Minagaria hexapax (NL. fem. n. *hexapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1942 sp002336965*. The type genome for the species is the GenBank assembly GCA_002336965.1. The GC content of the type genome is 41.44 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Minagaria remeditio sp. nov.

Candidatus Minagaria remeditio (NL. fem. n. *remeditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1942 sp009773395*. The type genome for the species is the GenBank assembly GCA_009773395.1. The GC content of the type genome is 46.27 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Minagella chernibra sp. nov.

Candidatus Minagella chernibra (NL. fem. n. *chernibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G40 sp902567685*. The type genome for the species is the GenBank assembly GCA_902567685.1. The GC content of the type genome is 29.44 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Minagella gen. nov.

Candidatus Minagella (NL. fem. n. *Minagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G40*. The type species for the genus is *Candidatus* Minagella chernibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Minagella dedigibula sp. nov.

Candidatus Minagella dedigibula (NL. fem. n. *dedigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G40 sp003213115*. The type genome for the species is the GenBank assembly GCA_902554215.1. The GC content of the type genome is 29.78 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Minagella inhosedo sp. nov.

Candidatus Minagella inhosedo (NL. fem. n. *inhosedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G40 sp002171845*. The type genome for the species is the GenBank assembly GCA_002171845.1. The GC content of the type genome is 31.33 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Minagella inpenitrix sp. nov.

Candidatus Minagella inpenitrix (NL. fem. n. *inpenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G40 sp002457515*. The type genome for the species is the GenBank assembly GCA_002457515.1. The GC content of the type genome is 29.61 %

and the genome length is 0.91 Mbp.

Description of *Candidatus* Minagella intenimonia sp. nov.

Candidatus Minagella intenimonia (NL. fem. n. *intenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G40 sp902602655*. The type genome for the species is the GenBank assembly GCA_902602655.1. The GC content of the type genome is 29.65 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Minagella lavabitica sp. nov.

Candidatus Minagella lavabitica (NL. fem. n. *lavabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G40 sp902597875*. The type genome for the species is the GenBank assembly GCA_902597875.1. The GC content of the type genome is 29.46 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Minagella obvaletta sp. nov.

Candidatus Minagella obvaletta (NL. fem. n. *obvaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G40 sp902515355*. The type genome for the species is the GenBank assembly GCA_902515355.1. The GC content of the type genome is 29.7 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Minagia gemebitia sp. nov.

Candidatus Minagia gemebitia (NL. fem. n. *gemebitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSP1-3 sp011047475*. The type genome for the species is the GenBank assembly GCA_011047475.1. The GC content of the type genome is 69.32 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Minagia gen. nov.

Candidatus Minagia (NL. fem. n. *Minagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSP1-3*. The type species for the genus is *Candidatus* Minagia gemebitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minagiaceae.

Description of *Candidatus* Minagiaceae fam. nov.

Candidatus Minagiaceae (NL. fem. n. *Minagiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSP1-3.* The type genus for the taxon is *Candidatus* Minagia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CSP1-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Minagiales.

Description of *Candidatus* Minagiales ord. nov.

Candidatus Minagiales (NL. fem. n. *Minagiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSP1-3.* The type genus for the taxon is *Candidatus* Minagia .

According to the original version of GTDB R06-RS202, this family belongs to the class *CSP1-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Minagiae.

Description of *Candidatus* Minagiae class. nov.

Candidatus Minagiae (NL. fem. n. *c__Minagiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSP1-3.* The type genus for the taxon is *Candidatus* Minagia .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *CSP1-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Minagiota.

Description of *Candidatus* Minagiota phyl. nov.

Candidatus Minagiota (NL. fem. n. *Minagiota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSP1-3.* The type genus for the taxon is *Candidatus* Minagia .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Minagia totidago sp. nov.

Candidatus Minagia totidago (NL. fem. n. *totidago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSP1-3 sp001443485*. The type genome for the species is the GenBank assembly GCA_001443485.1. The GC content of the type genome is 68.26 % and the genome length is 2.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment at 5m depth".

Description of *Candidatus* Minagida rorarimonas sp. nov.

Candidatus Minagida rorarimonas (NL. fem. n. *rorarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NAK82 sp011362805*. The type genome for the species is the GenBank assembly GCA_011362805.1. The GC content of the type genome is 58.01 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Minagida gen. nov.

Candidatus Minagida (NL. fem. n. *Minagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NAK82*. The type species for the genus is *Candidatus* Minagida rorarimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NAK82*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minagidaceae.

Description of *Candidatus* Minagidaceae fam. nov.

Candidatus Minagidaceae (NL. fem. n. *Minagidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NAK82*. The type genus for the taxon is *Candidatus* Minagida .

According to the original version of GTDB R06-RS202, this family belongs to the order *4572-78*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bovicidales.

Description of *Candidatus* Minagida timefousia sp. nov.

Candidatus Minagida timefousia (NL. fem. n. *timefousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NAK82 sp003130875*. The type genome for the species is the GenBank assembly GCA_003130875.1. The GC content of the type genome is 58.72 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Minagosa admutitrix sp. nov.

Candidatus Minagosa admutitrix (NL. fem. n. *admutitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1872 sp014237695*. The type genome for the species is the GenBank assembly GCA_014237695.1. The GC content of the type genome is 59.41 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Minagosa gen. nov.

Candidatus Minagosa (NL. fem. n. *Minagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1872*. The type species for the genus is *Candidatus* Minagosa admutitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Minagosa bucolentia sp. nov.

Candidatus Minagosa bucolentia (NL. fem. n. *bucolentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1872 sp009774055*. The type genome for the species is the GenBank assembly GCA_009774055.1. The GC content of the type genome is 59.96 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Minagosa infabivita sp. nov.

Candidatus Minagosa infabivita (NL. fem. n. *infabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1872 sp902373635*. The type genome for the species is the GenBank assembly GCA_902373635.1. The GC content of the type genome is 60.16 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Minagosa inperax sp. nov.

Candidatus Minagosa inperax (NL. fem. n. *inperax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1872 sp900555795*. The type genome for the species is the GenBank assembly GCA_900555795.1. The GC content of the type genome is 61.11 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Minagosa viburedo sp. nov.

Candidatus Minagosa viburedo (NL. fem. n. *viburedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1872 sp900549475*. The type genome for the species is the GenBank assembly GCA_900549475.1. The GC content of the type genome is 57.24 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Minagula solifetta sp. nov.

Candidatus Minagula solifetta (NL. fem. n. *solifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *S15-B10 sp001626655*. The type genome for the species is the GenBank assembly GCA_001626655.1. The GC content of the type genome is 54.35 % and the genome length is 1.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 34 - depth 200m".

Description of *Candidatus* Minagula gen. nov.

Candidatus Minagula (NL. fem. n. *Minagula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *S15-B10*. The type species for the genus is *Candidatus* Minagula solifetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S15-B10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minagulaceae.

Description of *Candidatus* Minagulaceae fam. nov.

Candidatus Minagulaceae (NL. fem. n. *Minagulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *S15-B10.* The type genus for the taxon is *Candidatus* Minagula .

According to GTDB R06-RS202, this family belongs to the order *Marinisomatales*.

Description of *Candidatus* Minagula vagabousia sp. nov.

Candidatus Minagula vagabousia (NL. fem. n. *vagabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S15-B10 sp002448795*. The type genome for the species is the GenBank assembly GCA_002346965.1. The GC content of the type genome is 48.21 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Miniphocibacter exentitia sp. nov.

Candidatus Miniphocibacter exentitia (NL. fem. n. *exentitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Miniphocibacter sp012841535*. The type genome for the species is the GenBank assembly GCA_012841535.1. The GC content of the type genome is 28.93 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Minurana retunilenta sp. nov.

Candidatus Minurana retunilenta (NL. fem. n. *retunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSYL01 sp011367535*. The type genome for the species is the GenBank assembly GCA_011334745.1. The GC content of the type genome is 29.91 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Minurana gen. nov.

Candidatus Minurana (NL. fem. n. *Minurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSYL01*. The type species for the genus is *Candidatus* Minurana retunilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSYL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minuranaceae.

Description of *Candidatus* Minuranaceae fam. nov.

Candidatus Minuranaceae (NL. fem. n. *Minuranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSYL01.* The type genus for the taxon is *Candidatus* Minurana .

According to the original version of GTDB R06-RS202, this family belongs to the order *PGYV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decinulales.

Description of *Candidatus* Minuraria ambifilenta sp. nov.

Candidatus Minuraria ambifilenta (NL. fem. n. *ambifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MedAcidi-G2B sp012959995*. The type genome for the species is the GenBank assembly GCA_012959995.1. The GC content of the type genome is 55.75 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Minuraria gen. nov.

Candidatus Minuraria (NL. fem. n. *Minuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MedAcidi-G2B*. The type species for the genus is *Candidatus* Minuraria ambifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MedAcidi-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funamidaceae.

Description of *Candidatus* Minuraria cacopitica sp. nov.

Candidatus Minuraria cacopitica (NL. fem. n. *cacopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2B sp902634555*. The type genome for the species is the GenBank assembly RS_GCF_902634555.1. The GC content of the type genome is 44.97 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Minuraria ignobigena sp. nov.

Candidatus Minuraria ignobigena (NL. fem. n. *ignobigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2B sp000817115*. The type genome for the species is the GenBank assembly GCA_000817115.1. The GC content of the type genome is 44.77 % and the genome length is 1.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "deep chlorophyll maximum in the Mediterranean off the coast of Alicante; Spain; 75m below sea surface".

Description of *Candidatus* Minuraria sacopedo sp. nov.

Candidatus Minuraria sacopedo (NL. fem. n. *sacopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2B sp003215175*. The type genome for the species is the GenBank assembly GCA_002321535.1. The GC content of the type genome is 44.51 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Minurida arrecatio sp. nov.

Candidatus Minurida arrecatio (NL. fem. n. *arrecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2715645 sp902529805*. The type genome for the species is the GenBank assembly GCA_902529805.1. The GC content of the type genome is 27.95 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Minurida gen. nov.

Candidatus Minurida (NL. fem. n. *Minurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2715645*. The type species for the genus is *Candidatus* Minurida arrecatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Minurida carunitas sp. nov.

Candidatus Minurida carunitas (NL. fem. n. *carunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2715645 sp902628365*. The type genome for the species is the GenBank assembly GCA_902584065.1. The GC content of the type genome is 27.98 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Minurida pluscimonia sp. nov.

Candidatus Minurida pluscimonia (NL. fem. n. *pluscimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2715645 sp002715645*. The type genome for the species is the GenBank assembly GCA_002715645.1. The GC content of the type genome is 27.6 %

and the genome length is 1.27 Mbp.

Description of *Candidatus* Minurosa andabitoga sp. nov.

Candidatus Minurosa andabitoga (NL. fem. n. *andabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCADC1-2-3 sp003445555*. The type genome for the species is the GenBank assembly GCA_003445555.1. The GC content of the type genome is 43.26 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Minurosa gen. nov.

Candidatus Minurosa (NL. fem. n. *Minurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCADC1-2-3*. The type species for the genus is *Candidatus* Minurosa andabitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Nap2-2B*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenariaceae.

Description of *Candidatus* Minurosa gabinicula sp. nov.

Candidatus Minurosa gabinicula (NL. fem. n. *gabinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCADC1-2-3 sp000681355*. The type genome for the species is the GenBank assembly GCA_000740805.1. The GC content of the type genome is 43.05 % and the genome length is 1.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "1 cell amplified by MDA; sorted single cells from oil sands tailings pond".

Description of *Candidatus* Minurosa laculisca sp. nov.

Candidatus Minurosa laculisca (NL. fem. n. *laculisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCADC1-2-3 sp002402825*. The type genome for the species is the

GenBank assembly GCA_002402825.1. The GC content of the type genome is 42.21 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Minurosa sicinitura sp. nov.

Candidatus Minurosa sicinitura (NL. fem. n. *sicinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCADC1-2-3 sp002327235*. The type genome for the species is the GenBank assembly GCA_002327235.1. The GC content of the type genome is 43.09 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Minurula purulax sp. nov.

Candidatus Minurula purulax (NL. fem. n. *purulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFTN01 sp009923445*. The type genome for the species is the GenBank assembly GCA_009927175.1. The GC content of the type genome is 41.6 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Minurula gen. nov.

Candidatus Minurula (NL. fem. n. *Minurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFTN01*. The type species for the genus is *Candidatus* Minurula purulax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-47*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticidaceae.

Description of *Candidatus* Mirabana refunitudo sp. nov.

Candidatus Mirabana refunitudo (NL. fem. n. *refunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12578 sp002729195*. The type genome for the species is the GenBank assembly GCA_002729195.1. The GC content of the type genome is 57.74 %

and the genome length is 2.38 Mbp.

Description of *Candidatus* Mirabana gen. nov.

Candidatus Mirabana (NL. fem. n. *Mirabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12578*. The type species for the genus is *Candidatus* Mirabana refunitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA868*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bimotanaceae.

Description of *Candidatus* Mirabaria dilecicella sp. nov.

Candidatus Mirabaria dilecicella (NL. fem. n. *dilecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS911 sp900546695*. The type genome for the species is the GenBank assembly RS_GCF_900772275.1. The GC content of the type genome is 55.31 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Mirabaria gen. nov.

Candidatus Mirabaria (NL. fem. n. *Mirabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS911*. The type species for the genus is *Candidatus* Mirabaria dilecicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Mirabaria minurivita sp. nov.

Candidatus Mirabaria minurivita (NL. fem. n. *minurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS911 sp003343545*. The type genome for the species is the

GenBank assembly GCA_003343545.1. The GC content of the type genome is 40.17 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Mirabaria occucentia sp. nov.

Candidatus Mirabaria occucentia (NL. fem. n. *occucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS911 sp900557415*. The type genome for the species is the GenBank assembly GCA_900557415.1. The GC content of the type genome is 40.62 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Mirabaria telefessa sp. nov.

Candidatus Mirabaria telefessa (NL. fem. n. *telefessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS911 sp900545935*. The type genome for the species is the GenBank assembly RS_GCF_900761195.1. The GC content of the type genome is 53.39 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Mirabia lugubibula sp. nov.

Candidatus Mirabia lugubibula (NL. fem. n. *lugubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-12-FULL-45-9-A sp001771365*. The type genome for the species is the GenBank assembly GCA_001772375.1. The GC content of the type genome is 45.28 % and the genome length is 1.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Mirabia gen. nov.

Candidatus Mirabia (NL. fem. n. *Mirabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-12-FULL-45-9-A*. The type species for the genus is *Candidatus* Mirabia lugubibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

O2-12-FULL-45-9. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fuligariaceae.

Description of *Candidatus* Mirabida adpagimonia sp. nov.

Candidatus Mirabida adpagimonia (NL. fem. n. *adpagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2689995 sp002689995*. The type genome for the species is the GenBank assembly GCA_002689995.1. The GC content of the type genome is 29.54 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Mirabida gen. nov.

Candidatus Mirabida (NL. fem. n. *Mirabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2689995*. The type species for the genus is *Candidatus* Mirabida adpagimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2689995*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirabidaceae.

Description of *Candidatus* Mirabidaceae fam. nov.

Candidatus Mirabidaceae (NL. fem. n. *Mirabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2689995.* The type genus for the taxon is *Candidatus* Mirabida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Mirabida desaciforma sp. nov.

Candidatus Mirabida desaciforma (NL. fem. n. *desaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2689995 sp014381925*. The type genome for the species is the GenBank assembly GCA_014381925.1. The GC content of the type genome is 29.69 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Mirabosa attelitudo sp. nov.

Candidatus Mirabosa attelitudo (NL. fem. n. *attelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11579 sp003250455*. The type genome for the species is the GenBank assembly GCA_003250455.1. The GC content of the type genome is 54.83 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Mirabosa gen. nov.

Candidatus Mirabosa (NL. fem. n. *Mirabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11579*. The type species for the genus is *Candidatus* Mirabosa attelitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11579*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirabosaceae.

Description of *Candidatus* Mirabosaceae fam. nov.

Candidatus Mirabosaceae (NL. fem. n. *Mirabosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11579.* The type genus for the taxon is *Candidatus* Mirabosa .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Mirabosa tirunimonas sp. nov.

Candidatus Mirabosa tirunimonas (NL. fem. n. *tirunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11579 sp003486225*. The type genome for the species is the GenBank assembly GCA_003486225.1. The GC content of the type genome is 52.57 %

and the genome length is 2.67 Mbp.

Description of *Candidatus* Mirabula sicunigena sp. nov.

Candidatus Mirabula sicunigena (NL. fem. n. *sicunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7526 sp002478245*. The type genome for the species is the GenBank assembly GCA_002478245.1. The GC content of the type genome is 47.46 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Mirabula gen. nov.

Candidatus Mirabula (NL. fem. n. *Mirabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7526*. The type species for the genus is *Candidatus* Mirabula sicunigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7526*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirabulaceae.

Description of *Candidatus* Mirabulaceae fam. nov.

Candidatus Mirabulaceae (NL. fem. n. *Mirabulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7526.* The type genus for the taxon is *Candidatus* Mirabula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7526*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Mirabulales.

Description of *Candidatus* Mirabulales ord. nov.

Candidatus Mirabulales (NL. fem. n. *Mirabulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7526.* The type genus for the taxon is *Candidatus* Mirabula .

According to the original version of GTDB R06-RS202, this family belongs to the class

UBA7526. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Mirabulae.

Description of *Candidatus* Mirabulae class. nov.

Candidatus Mirabulae (NL. fem. n. *c__Mirabulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7526.* The type genus for the taxon is *Candidatus* Mirabula .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBP18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Futatidota.

Description of *Candidatus* Miracana forabetta sp. nov.

Candidatus Miracana forabetta (NL. fem. n. *forabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6803 sp002452795*. The type genome for the species is the GenBank assembly GCA_002452795.1. The GC content of the type genome is 49.5 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Miracana gen. nov.

Candidatus Miracana (NL. fem. n. *Miracana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6803*. The type species for the genus is *Candidatus* Miracana forabetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Miracaria cibicisca sp. nov.

Candidatus Miracaria cibicisca (NL. fem. n. *cibicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *BMS3Abin13 sp002897615*. The type genome for the species is the GenBank assembly GCA_002897615.1. The GC content of the type genome is 55.73 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Miracaria gen. nov.

Candidatus Miracaria (NL. fem. n. *Miracaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Abin13*. The type species for the genus is *Candidatus* Miracaria cibicisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Miracaria exsupitura sp. nov.

Candidatus Miracaria exsupitura (NL. fem. n. *exsupitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Abin13 sp013151365*. The type genome for the species is the GenBank assembly GCA_013151365.1. The GC content of the type genome is 57.01 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Miracida cululitrix sp. nov.

Candidatus Miracida cululitrix (NL. fem. n. *cululitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28L sp000177555*. The type genome for the species is the GenBank assembly RS_GCF_001553395.1. The GC content of the type genome is 45.99 % and the genome length is 1.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Miracida gen. nov.

Candidatus Miracida (NL. fem. n. *Miracida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *28L*. The type species for the genus is *Candidatus* Miracida cululitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Miracida dececastra sp. nov.

Candidatus Miracida dececastra (NL. fem. n. *dececastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28L sp002892445*. The type genome for the species is the GenBank assembly RS_GCF_002892445.1. The GC content of the type genome is 38.79 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Miracosa milifigena sp. nov.

Candidatus Miracosa milifigena (NL. fem. n. *milifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-605 sp000433255*. The type genome for the species is the GenBank assembly GCA_003537795.1. The GC content of the type genome is 29.77 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Miracosa gen. nov.

Candidatus Miracosa (NL. fem. n. *Miracosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-605*. The type species for the genus is *Candidatus* Miracosa milifigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Miracosa pomifousia sp. nov.

Candidatus Miracosa pomifousia (NL. fem. n. *pomifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-605 sp900545005*. The type genome for the species is the GenBank assembly RS_GCF_900761585.1. The GC content of the type genome is 29.28 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Miracosa tolutastra sp. nov.

Candidatus Miracosa tolutastra (NL. fem. n. *tolutastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-605 sp000433475*. The type genome for the species is the GenBank assembly GCA_900549165.1. The GC content of the type genome is 27.22 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Mirifana fetutitio sp. nov.

Candidatus Mirifana fetutitio (NL. fem. n. *fetutitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1184 sp003164335*. The type genome for the species is the GenBank assembly GCA_003164335.1. The GC content of the type genome is 54.73 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Mirifana gen. nov.

Candidatus Mirifana (NL. fem. n. *Mirifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-1184*. The type species for the genus is *Candidatus* Mirifana fetutitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mirifana venefatio sp. nov.

Candidatus Mirifana venefatio (NL. fem. n. *venefatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-1184 sp903888815*. The type genome for the species is the GenBank assembly GCA_903888815.1. The GC content of the type genome is 52.69 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Mirifaria hexamatio sp. nov.

Candidatus Mirifaria hexamatio (NL. fem. n. *hexamatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-343-D04 sp003265885*. The type genome for the species is the GenBank assembly RS_GCF_902530045.1. The GC content of the type genome is 35.44 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Mirifaria gen. nov.

Candidatus Mirifaria (NL. fem. n. *Mirifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-343-D04*. The type species for the genus is *Candidatus* Mirifaria hexamatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002719695*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifosaceae.

Description of *Candidatus* Mirifella alticicella sp. nov.

Candidatus Mirifella alticicella (NL. fem. n. *alticicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746335 sp002746335*. The type genome for the species is the GenBank assembly GCA_002746335.1. The GC content of the type genome is 41.64 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Mirifella gen. nov.

Candidatus Mirifella (NL. fem. n. *Mirifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746335*. The type species for the genus is *Candidatus* Mirifella alticicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2746335*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirifellaceae.

Description of *Candidatus* Mirifellaceae fam. nov.

Candidatus Mirifellaceae (NL. fem. n. *Mirifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2746335*. The type genus for the taxon is *Candidatus* Mirifella .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Mirifia atrusatica sp. nov.

Candidatus Mirifia atrusatica (NL. fem. n. *atrusatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK3B98 sp900758315*. The type genome for the species is the GenBank assembly GCA_900758315.1. The GC content of the type genome is 54.31 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Mirifia gen. nov.

Candidatus Mirifia (NL. fem. n. *Mirifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NK3B98*. The type species for the genus is *Candidatus* Mirifia atrusatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mirifia categilenta sp. nov.

Candidatus Mirifia categilenta (NL. fem. n. *categilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK3B98 sp900752305*. The type genome for the species is the GenBank assembly GCA_900752305.1. The GC content of the type genome is 58.58 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Mirifia detumousia sp. nov.

Candidatus Mirifia detumousia (NL. fem. n. *detumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK3B98 sp900545815*. The type genome for the species is the

GenBank assembly GCA_900545815.1. The GC content of the type genome is 57.15 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Mirifia echidimonas sp. nov.

Candidatus Mirifia echidimonas (NL. fem. n. *echidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK3B98 sp000421005*. The type genome for the species is the GenBank assembly RS_GCF_000421005.1. The GC content of the type genome is 54.86 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Mirifia elastax sp. nov.

Candidatus Mirifia elastax (NL. fem. n. *elastax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK3B98 sp003150485*. The type genome for the species is the GenBank assembly GCA_003150485.1. The GC content of the type genome is 59.54 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Mirifia masocastra sp. nov.

Candidatus Mirifia masocastra (NL. fem. n. *masocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK3B98 sp001941075*. The type genome for the species is the GenBank assembly GCA_001941075.1. The GC content of the type genome is 58.43 % and the genome length is 1.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Zagget the koala".

Description of *Candidatus* Mirifia maxumisca sp. nov.

Candidatus Mirifia maxumisca (NL. fem. n. *maxumisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NK3B98 sp900314485*. The type genome for the species is the GenBank assembly GCA_900314735.1. The GC content of the type genome is 57.48 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Mirifida monodastra sp. nov.

Candidatus Mirifida monodastra (NL. fem. n. *monodastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYMF01 sp009699025*. The type genome for the species is the GenBank assembly GCA_009697575.1. The GC content of the type genome is 66.82 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Mirifida gen. nov.

Candidatus Mirifida (NL. fem. n. *Mirifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYMF01*. The type species for the genus is *Candidatus* Mirifida monodastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirifidaceae.

Description of *Candidatus* Mirifidaceae fam. nov.

Candidatus Mirifidaceae (NL. fem. n. *Mirifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYMF01.* The type genus for the taxon is *Candidatus* Mirifida .

According to GTDB R06-RS202, this family belongs to the order *Nanopelagicales*.

Description of *Candidatus* Mirifida peripastra sp. nov.

Candidatus Mirifida peripastra (NL. fem. n. *peripastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYMF01 sp903927265*. The type genome for the species is the GenBank assembly GCA_903927265.1. The GC content of the type genome is 62.03 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Mirifosa adcesetta sp. nov.

Candidatus Mirifosa adcesetta (NL. fem. n. *adcesetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902521655*. The type genome for the species is the GenBank assembly GCA_902521655.1. The GC content of the type genome is 33.58 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Mirifosa gen. nov.

Candidatus Mirifosa (NL. fem. n. *Mirifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-422-B15*. The type species for the genus is *Candidatus* Mirifosa adcesetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AG-422-B15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirifosaceae.

Description of *Candidatus* Mirifosaceae fam. nov.

Candidatus Mirifosaceae (NL. fem. n. *Mirifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AG-422-B15.* The type genus for the taxon is *Candidatus* Mirifosa .

According to GTDB R06-RS202, this family belongs to the order *Pelagibacterales*.

Description of *Candidatus* Mirifosa adnubugo sp. nov.

Candidatus Mirifosa adnubugo (NL. fem. n. *adnubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902525575*. The type genome for the species is the GenBank assembly GCA_902525575.1. The GC content of the type genome is 33.22 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Mirifosa adsicilega sp. nov.

Candidatus Mirifosa adsicilega (NL. fem. n. *adsicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp014653725*. The type genome for the species is the GenBank assembly GCA_014653725.1. The GC content of the type genome is 32.97 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Mirifosa armigisca sp. nov.

Candidatus Mirifosa armigisca (NL. fem. n. *armigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902544065*. The type genome for the species is the GenBank assembly GCA_902544065.1. The GC content of the type genome is 33.32 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Mirifosa arnogibula sp. nov.

Candidatus Mirifosa arnogibula (NL. fem. n. *arnogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902554325*. The type genome for the species is the GenBank assembly GCA_902554325.1. The GC content of the type genome is 33.25 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Mirifosa capabilega sp. nov.

Candidatus Mirifosa capabilega (NL. fem. n. *capabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902570675*. The type genome for the species is the GenBank assembly GCA_902570675.1. The GC content of the type genome is 32.88 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Mirifosa casigibra sp. nov.

Candidatus Mirifosa casigibra (NL. fem. n. *casigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902617525*. The type genome for the species is the GenBank assembly GCA_902617525.1. The GC content of the type genome is 32.79 %

and the genome length is 1.1 Mbp.

Description of *Candidatus* Mirifosa cepuletta sp. nov.

Candidatus Mirifosa cepuletta (NL. fem. n. *cepuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902518415*. The type genome for the species is the GenBank assembly GCA_902518415.1. The GC content of the type genome is 33.18 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Mirifosa ceromitrix sp. nov.

Candidatus Mirifosa ceromitrix (NL. fem. n. *ceromitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp003213515*. The type genome for the species is the GenBank assembly GCA_003213515.1. The GC content of the type genome is 32.98 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Mirifosa chancicella sp. nov.

Candidatus Mirifosa chancicella (NL. fem. n. *chancicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902524285*. The type genome for the species is the GenBank assembly GCA_902524285.1. The GC content of the type genome is 33.15 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Mirifosa cituvugo sp. nov.

Candidatus Mirifosa cituvugo (NL. fem. n. *cituvugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902604225*. The type genome for the species is the GenBank assembly GCA_902604225.1. The GC content of the type genome is 33.57 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Mirifosa cocibibra sp. nov.

Candidatus Mirifosa cocibibra (NL. fem. n. *cocibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902515235*. The type genome for the species is the GenBank assembly GCA_902515235.1. The GC content of the type genome is 33.58 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Mirifosa cucuredo sp. nov.

Candidatus Mirifosa cucuredo (NL. fem. n. *cucuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902564025*. The type genome for the species is the GenBank assembly GCA_902564025.1. The GC content of the type genome is 33.05 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Mirifosa democatio sp. nov.

Candidatus Mirifosa democatio (NL. fem. n. *democatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902524795*. The type genome for the species is the GenBank assembly GCA_902524795.1. The GC content of the type genome is 33.46 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Mirifosa detecilenta sp. nov.

Candidatus Mirifosa detecilenta (NL. fem. n. *detecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp003211835*. The type genome for the species is the GenBank assembly GCA_003211835.1. The GC content of the type genome is 33.27 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Mirifosa diminatio sp. nov.

Candidatus Mirifosa diminatio (NL. fem. n. *diminatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp003213715*. The type genome for the species is the GenBank assembly GCA_003213715.1. The GC content of the type genome is 33.34 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Mirifosa emancugo sp. nov.

Candidatus Mirifosa emancugo (NL. fem. n. *emancugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902598405*. The type genome for the species is the GenBank assembly GCA_902598405.1. The GC content of the type genome is 33.54 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Mirifosa emortitoga sp. nov.

Candidatus Mirifosa emortitoga (NL. fem. n. *emortitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902578305*. The type genome for the species is the GenBank assembly GCA_902578305.1. The GC content of the type genome is 33.08 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Mirifosa feculicula sp. nov.

Candidatus Mirifosa feculicula (NL. fem. n. *feculicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902622985*. The type genome for the species is the GenBank assembly GCA_902622985.1. The GC content of the type genome is 33.28 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Mirifosa feculitrix sp. nov.

Candidatus Mirifosa feculitrix (NL. fem. n. *feculitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902533965*. The type genome for the species is the GenBank assembly GCA_902533965.1. The GC content of the type genome is 32.96 %

and the genome length is 0.73 Mbp.

Description of *Candidatus* Mirifosa ficulatica sp. nov.

Candidatus Mirifosa ficulatica (NL. fem. n. *ficulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902523535*. The type genome for the species is the GenBank assembly GCA_902523535.1. The GC content of the type genome is 33.48 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Mirifosa funamugo sp. nov.

Candidatus Mirifosa funamugo (NL. fem. n. *funamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp003282175*. The type genome for the species is the GenBank assembly GCA_902525645.1. The GC content of the type genome is 33.46 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Mirifosa funivastra sp. nov.

Candidatus Mirifosa funivastra (NL. fem. n. *funivastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902546615*. The type genome for the species is the GenBank assembly GCA_902540635.1. The GC content of the type genome is 33.23 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Mirifosa impavicula sp. nov.

Candidatus Mirifosa impavicula (NL. fem. n. *impavicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902564295*. The type genome for the species is the GenBank assembly GCA_902564295.1. The GC content of the type genome is 33.1 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Mirifosa indecisca sp. nov.

Candidatus Mirifosa indecisca (NL. fem. n. *indecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902590345*. The type genome for the species is the GenBank assembly GCA_902590345.1. The GC content of the type genome is 32.74 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Mirifosa indilimonas sp. nov.

Candidatus Mirifosa indilimonas (NL. fem. n. *indilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902526565*. The type genome for the species is the GenBank assembly GCA_902526565.1. The GC content of the type genome is 33.53 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Mirifosa linigetta sp. nov.

Candidatus Mirifosa linigetta (NL. fem. n. *linigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902547315*. The type genome for the species is the GenBank assembly GCA_902547315.1. The GC content of the type genome is 32.9 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Mirifosa luticilenta sp. nov.

Candidatus Mirifosa luticilenta (NL. fem. n. *luticilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902526005*. The type genome for the species is the GenBank assembly GCA_902588785.1. The GC content of the type genome is 33.4 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Mirifosa malogifica sp. nov.

Candidatus Mirifosa malogifica (NL. fem. n. *malogifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902580665*. The type genome for the species is the GenBank assembly GCA_902580665.1. The GC content of the type genome is 33.17 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Mirifosa mimogisca sp. nov.

Candidatus Mirifosa mimogisca (NL. fem. n. *mimogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902523455*. The type genome for the species is the GenBank assembly GCA_902523455.1. The GC content of the type genome is 33.01 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Mirifosa monodedo sp. nov.

Candidatus Mirifosa monodedo (NL. fem. n. *monodedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902589175*. The type genome for the species is the GenBank assembly GCA_902622775.1. The GC content of the type genome is 32.89 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Mirifosa nefaritica sp. nov.

Candidatus Mirifosa nefaritica (NL. fem. n. *nefaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp003282485*. The type genome for the species is the GenBank assembly GCA_902518445.1. The GC content of the type genome is 33.38 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Mirifosa negidugo sp. nov.

Candidatus Mirifosa negidugo (NL. fem. n. *negidugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902619105*. The type genome for the species is the GenBank assembly GCA_902520455.1. The GC content of the type genome is 33.31 %

and the genome length is 1.01 Mbp.

Description of *Candidatus* Mirifosa nicomigena sp. nov.

Candidatus Mirifosa nicomigena (NL. fem. n. *nicomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902517885*. The type genome for the species is the GenBank assembly GCA_902620495.1. The GC content of the type genome is 33.42 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Mirifosa nutabentia sp. nov.

Candidatus Mirifosa nutabentia (NL. fem. n. *nutabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902613805*. The type genome for the species is the GenBank assembly GCA_902613805.1. The GC content of the type genome is 32.97 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Mirifosa obfenisca sp. nov.

Candidatus Mirifosa obfenisca (NL. fem. n. *obfenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902525595*. The type genome for the species is the GenBank assembly GCA_902525595.1. The GC content of the type genome is 32.9 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Mirifosa obnunimonas sp. nov.

Candidatus Mirifosa obnunimonas (NL. fem. n. *obnunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902571005*. The type genome for the species is the GenBank assembly GCA_902571005.1. The GC content of the type genome is 33.07 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Mirifosa obsorisca sp. nov.

Candidatus Mirifosa obsorisca (NL. fem. n. *obsorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902605215*. The type genome for the species is the GenBank assembly GCA_902605215.1. The GC content of the type genome is 33.55 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Mirifosa paralivita sp. nov.

Candidatus Mirifosa paralivita (NL. fem. n. *paralivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902565955*. The type genome for the species is the GenBank assembly GCA_902565955.1. The GC content of the type genome is 33.1 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Mirifosa plostitudo sp. nov.

Candidatus Mirifosa plostitudo (NL. fem. n. *plostitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902577765*. The type genome for the species is the GenBank assembly GCA_902577765.1. The GC content of the type genome is 33.22 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Mirifosa proclessa sp. nov.

Candidatus Mirifosa proclessa (NL. fem. n. *proclessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902584215*. The type genome for the species is the GenBank assembly GCA_902584215.1. The GC content of the type genome is 33.26 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Mirifosa rorulibula sp. nov.

Candidatus Mirifosa rorulibula (NL. fem. n. *rorulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902610585*. The type genome for the species is the GenBank assembly GCA_902542135.1. The GC content of the type genome is 33.43 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Mirifosa televago sp. nov.

Candidatus Mirifosa televago (NL. fem. n. *televago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902519835*. The type genome for the species is the GenBank assembly GCA_902519835.1. The GC content of the type genome is 33.28 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Mirifosa vitifatica sp. nov.

Candidatus Mirifosa vitifatica (NL. fem. n. *vitifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-422-B15 sp902614655*. The type genome for the species is the GenBank assembly GCA_902609985.1. The GC content of the type genome is 33.5 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Mirifula abnocatio sp. nov.

Candidatus Mirifula abnocatio (NL. fem. n. *abnocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp013816895*. The type genome for the species is the GenBank assembly GCA_013816895.1. The GC content of the type genome is 39.86 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Mirifula gen. nov.

Candidatus Mirifula (NL. fem. n. *Mirifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2475*. The type species for the genus is *Candidatus* Mirifula abnocatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-17BO*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogariaceae.

Description of *Candidatus* Mirifula adpeligena sp. nov.

Candidatus Mirifula adpeligena (NL. fem. n. *adpeligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp013816615*. The type genome for the species is the GenBank assembly GCA_013816615.1. The GC content of the type genome is 34.61 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Mirifula apsolatio sp. nov.

Candidatus Mirifula apsolatio (NL. fem. n. *apsolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp013297775*. The type genome for the species is the GenBank assembly GCA_013297775.1. The GC content of the type genome is 37.27 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Mirifula exhedago sp. nov.

Candidatus Mirifula exhedago (NL. fem. n. *exhedago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp002319075*. The type genome for the species is the GenBank assembly RS_GCF_002319075.1. The GC content of the type genome is 38.41 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Mirifula hexamimonia sp. nov.

Candidatus Mirifula hexamimonia (NL. fem. n. *hexamimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp002342065*. The type genome for the species is the GenBank assembly GCA_002342065.1. The GC content of the type genome is 34.79 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Mirifula imbecibra sp. nov.

Candidatus Mirifula imbecibra (NL. fem. n. *imbecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp013288385*. The type genome for the species is the GenBank assembly GCA_013288385.1. The GC content of the type genome is 32.66 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Mirifula lenunastra sp. nov.

Candidatus Mirifula lenunastra (NL. fem. n. *lenunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp005787585*. The type genome for the species is the GenBank assembly GCA_005787585.1. The GC content of the type genome is 29.52 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Mirifula roraritrix sp. nov.

Candidatus Mirifula roraritrix (NL. fem. n. *roraritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp013697245*. The type genome for the species is the GenBank assembly GCA_013697245.1. The GC content of the type genome is 35.1 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Mirifula semapitia sp. nov.

Candidatus Mirifula semapitia (NL. fem. n. *semapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp009927275*. The type genome for the species is the GenBank assembly GCA_009927275.1. The GC content of the type genome is 37.68 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Mirifula sonivilenta sp. nov.

Candidatus Mirifula sonivilenta (NL. fem. n. *sonivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2475 sp013298715*. The type genome for the species is the GenBank assembly GCA_013298715.1. The GC content of the type genome is 32.91 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Mitsuaria altifago sp. nov.

Candidatus Mitsuaria altifago (NL. fem. n. *altifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mitsuaria sp004210455*. The type genome for the species is the GenBank assembly GCA_004210455.1. The GC content of the type genome is 68.38 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Mitsuaria attegilega sp. nov.

Candidatus Mitsuaria attegilega (NL. fem. n. *attegilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mitsuaria sp002761755*. The type genome for the species is the GenBank assembly RS_GCF_002761755.1. The GC content of the type genome is 69.46 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Mitsuaria ecfunedo sp. nov.

Candidatus Mitsuaria ecfunedo (NL. fem. n. *ecfunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mitsuaria sp001653795*. The type genome for the species is the GenBank assembly RS_GCF_001653795.1. The GC content of the type genome is 68.33 % and the genome length is 6.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "forest soil".

Description of *Candidatus* Mitsuaria notabousia sp. nov.

Candidatus Mitsuaria notabousia (NL. fem. n. *notabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mitsuaria sp900113225*. The type genome for the species is the GenBank assembly RS_GCF_900113225.1. The GC content of the type genome is 69.96 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Mitsuokella adcumitia sp. nov.

Candidatus Mitsuokella adcumitia (NL. fem. n. *adcumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mitsuokella sp000469545*. The type genome for the species is the GenBank assembly RS_GCF_000469545.1. The GC content of the type genome is 56.57 % and the genome length is 2.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity- mouth".

Description of *Candidatus* Mitsuokella pericisca sp. nov.

Candidatus Mitsuokella pericisca (NL. fem. n. *pericisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mitsuokella sp900770825*. The type genome for the species is the GenBank assembly GCA_900770825.1. The GC content of the type genome is 55.87 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Mitsuokella subabitas sp. nov.

Candidatus Mitsuokella subabitas (NL. fem. n. *subabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mitsuokella sp003458855*. The type genome for the species is the GenBank assembly GCA_900550725.1. The GC content of the type genome is 57.26 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Mitsuokella vagabisca sp. nov.

Candidatus Mitsuokella vagabisca (NL. fem. n. *vagabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mitsuokella sp900552565*. The type genome for the species is the GenBank assembly GCA_900552565.1. The GC content of the type genome is 54.11 %

and the genome length is 1.84 Mbp.

Description of *Candidatus* Mobilibacterium biveritoga sp. nov.

Candidatus Mobilibacterium biveritoga (NL. fem. n. *biveritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mobilibacterium sp900315625*. The type genome for the species is the GenBank assembly GCA_900315625.1. The GC content of the type genome is 46.59 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Mobilicoccus arrecibra sp. nov.

Candidatus Mobilicoccus arrecibra (NL. fem. n. *arrecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mobilicoccus sp012277275*. The type genome for the species is the GenBank assembly RS_GCF_012277275.1. The GC content of the type genome is 67.03 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Modestobacter apercedo sp. nov.

Candidatus Modestobacter apercedo (NL. fem. n. *apercedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Modestobacter sp000620205*. The type genome for the species is the GenBank assembly RS_GCF_000620205.1. The GC content of the type genome is 73.92 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Modestobacter inabsibra sp. nov.

Candidatus Modestobacter inabsibra (NL. fem. n. *inabsibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Modestobacter sp013408865*. The type genome for the species is the GenBank assembly RS_GCF_013408865.1. The GC content of the type genome is 74.07 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Modestobacter vivifigena sp. nov.

Candidatus Modestobacter vivifigena (NL. fem. n. *vivifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Modestobacter sp900107175*. The type genome for the species is the GenBank assembly RS_GCF_900107175.1. The GC content of the type genome is 72.63 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Modifana celamitica sp. nov.

Candidatus Modifana celamitica (NL. fem. n. *celamitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-51-10 sp001823605*. The type genome for the species is the GenBank assembly GCA_001823605.1. The GC content of the type genome is 51.68 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Modifana gen. nov.

Candidatus Modifana (NL. fem. n. *Modifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-51-10*. The type species for the genus is *Candidatus* Modifana celamitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramellaceae.

Description of *Candidatus* Modifana cisalitrix sp. nov.

Candidatus Modifana cisalitrix (NL. fem. n. *cisalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-51-10 sp001823505*. The type genome for the species is the GenBank assembly GCA_001823505.1. The GC content of the type genome is 51.1 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Modifaria cucuritio sp. nov.

Candidatus Modifaria cucuritio (NL. fem. n. *cucuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJXV01 sp903824675*. The type genome for the species is the GenBank assembly GCA_903824675.1. The GC content of the type genome is 57.29 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Modifaria gen. nov.

Candidatus Modifaria (NL. fem. n. *Modifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJXV01*. The type species for the genus is *Candidatus* Modifaria cucuritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIJXV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Modifariaceae.

Description of *Candidatus* Modifariaceae fam. nov.

Candidatus Modifariaceae (NL. fem. n. *Modifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIJXV01.* The type genus for the taxon is *Candidatus* Modifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIKKV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defacanales.

Description of *Candidatus* Modifella crabritas sp. nov.

Candidatus Modifella crabritas (NL. fem. n. *crabritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEEL01 sp013389015*. The type genome for the species is the GenBank assembly GCA_013389015.1. The GC content of the type genome is 67.79 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Modifella gen. nov.

Candidatus Modifella (NL. fem. n. *Modifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEEL01*. The type species for the genus is *Candidatus* Modifella crabritas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Modifella penurousia sp. nov.

Candidatus Modifella penurousia (NL. fem. n. *penurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEEL01 sp902826335*. The type genome for the species is the GenBank assembly GCA_902826335.1. The GC content of the type genome is 65.16 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Modifida denomatio sp. nov.

Candidatus Modifida denomatio (NL. fem. n. *denomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8473 sp009773075*. The type genome for the species is the GenBank assembly GCA_009773075.1. The GC content of the type genome is 42.58 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Modifida gen. nov.

Candidatus Modifida (NL. fem. n. *Modifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8473*. The type species for the genus is *Candidatus* Modifida denomatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8473*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Modifidaceae.

Description of *Candidatus* Modifidaceae fam. nov.

Candidatus Modifidaceae (NL. fem. n. *Modifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8473.* The type genus for the taxon is *Candidatus* Modifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8473*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Modifidales.

Description of *Candidatus* Modifidales ord. nov.

Candidatus Modifidales (NL. fem. n. *Modifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8473.* The type genus for the taxon is *Candidatus* Modifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *SM23-61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Forinosae.

Description of *Candidatus* Modifida duricicella sp. nov.

Candidatus Modifida duricicella (NL. fem. n. *duricicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8473 sp002782605*. The type genome for the species is the GenBank assembly GCA_002789935.1. The GC content of the type genome is 43.18 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Modifida obvolicella sp. nov.

Candidatus Modifida obvolicella (NL. fem. n. *obvolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8473 sp003599365*. The type genome for the species is the GenBank assembly GCA_003599365.1. The GC content of the type genome is 43.36 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Modifosa offirax sp. nov.

Candidatus Modifosa offirax (NL. fem. n. *offirax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGN01 sp013285995*. The type genome for the species is the GenBank assembly GCA_013285995.1. The GC content of the type genome is 42.12 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Modifosa gen. nov.

Candidatus Modifosa (NL. fem. n. *Modifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDGN01*. The type species for the genus is *Candidatus* Modifosa offirax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDGN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Modifosaceae.

Description of *Candidatus* Modifosaceae fam. nov.

Candidatus Modifosaceae (NL. fem. n. *Modifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDGN01.* The type genus for the taxon is *Candidatus* Modifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABDGN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Modifosales.

Description of *Candidatus* Modifosales ord. nov.

Candidatus Modifosales (NL. fem. n. *Modifosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDGN01.* The type genus for the taxon is *Candidatus* Modifosa .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Modifula caselibula sp. nov.

Candidatus Modifula caselibula (NL. fem. n. *caselibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC1-27-15 sp001829125*. The type genome for the species is the GenBank assembly GCA_001830585.1. The GC content of the type genome is 27.0 % and the genome length is 4.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 4 / D; 5m depth; 0.1 filter".

Description of *Candidatus* Modifula gen. nov.

Candidatus Modifula (NL. fem. n. *Modifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC1-27-15*. The type species for the genus is *Candidatus* Modifula caselibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWE2-31-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemanaceae.

Description of *Candidatus* Moheibacter diminatica sp. nov.

Candidatus Moheibacter diminatica (NL. fem. n. *diminatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moheibacter sp012522185*. The type genome for the species is the GenBank assembly GCA_012522185.1. The GC content of the type genome is 37.98 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Moheibacter exsufitura sp. nov.

Candidatus Moheibacter exsufitura (NL. fem. n. *exsufitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moheibacter sp014042165*. The type genome for the species is the GenBank assembly RS_GCF_014042165.1. The GC content of the type genome is 36.9 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Molecana cohoricula sp. nov.

Candidatus Molecana cohoricula (NL. fem. n. *cohoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1406 sp001788295*. The type genome for the species is the GenBank assembly GCA_001790165.1. The GC content of the type genome is 40.82 % and the genome length is 0.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Molecana gen. nov.

Candidatus Molecana (NL. fem. n. *Molecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1406*. The type species for the genus is *Candidatus* Molecana cohoricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1406*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Molecanaceae.

Description of *Candidatus* Molecanaceae fam. nov.

Candidatus Molecanaceae (NL. fem. n. *Molecanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1406.* The type genus for the taxon is *Candidatus* Molecana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1406*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Molecanales.

Description of *Candidatus* Molecanales ord. nov.

Candidatus Molecanales (NL. fem. n. *Molecanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1406.* The type genus for the taxon is *Candidatus* Molecana .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Molecana pinacicella sp. nov.

Candidatus Molecana pinacicella (NL. fem. n. *pinacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1406 sp002305675*. The type genome for the species is the GenBank assembly GCA_002305675.1. The GC content of the type genome is 52.35 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Molecaria acrolatica sp. nov.

Candidatus Molecaria acrolatica (NL. fem. n. *acrolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6987 sp002449955*. The type genome for the species is the GenBank assembly GCA_002449955.1. The GC content of the type genome is 53.88 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Molecaria gen. nov.

Candidatus Molecaria (NL. fem. n. *Molecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6987*. The type species for the genus is *Candidatus* Molecaria acrolatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Molecaria adculiforma sp. nov.

Candidatus Molecaria adculiforma (NL. fem. n. *adculiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6987 sp902797385*. The type genome for the species is the GenBank assembly GCA_902797385.1. The GC content of the type genome is 55.52 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Molecaria bicubitudo sp. nov.

Candidatus Molecaria bicubitudo (NL. fem. n. *bicubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6987 sp902789555*. The type genome for the species is the GenBank assembly GCA_902787695.1. The GC content of the type genome is 57.94 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Molecaria cenoditrix sp. nov.

Candidatus Molecaria cenoditrix (NL. fem. n. *cenoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6987 sp902803355*. The type genome for the species is the GenBank assembly GCA_902803355.1. The GC content of the type genome is 56.58 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Molecaria omninastra sp. nov.

Candidatus Molecaria omninastra (NL. fem. n. *omninastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6987 sp902761665*. The type genome for the species is the GenBank assembly GCA_902761665.1. The GC content of the type genome is 57.74 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Molecaria revulugo sp. nov.

Candidatus Molecaria revulugo (NL. fem. n. *revulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6987 sp902783765*. The type genome for the species is the GenBank assembly GCA_902783765.1. The GC content of the type genome is 54.04 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Molecaria sicubibra sp. nov.

Candidatus Molecaria sicubibra (NL. fem. n. *sicubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA6987 sp902793995*. The type genome for the species is the GenBank assembly GCA_902793995.1. The GC content of the type genome is 53.9 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Molecaria vilititica sp. nov.

Candidatus Molecaria vilititica (NL. fem. n. *vilititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6987 sp902796695*. The type genome for the species is the GenBank assembly GCA_902796695.1. The GC content of the type genome is 59.31 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Molecella bicapitrix sp. nov.

Candidatus Molecella bicapitrix (NL. fem. n. *bicapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-279 sp900544305*. The type genome for the species is the GenBank assembly GCA_900544305.1. The GC content of the type genome is 46.29 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Molecella gen. nov.

Candidatus Molecella (NL. fem. n. *Molecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-279*. The type species for the genus is *Candidatus* Molecella bicapitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Molecella codifousia sp. nov.

Candidatus Molecella codifousia (NL. fem. n. *codifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-279 sp000437795*. The type genome for the species is the GenBank assembly GCA_000437795.1. The GC content of the type genome is 50.15 % and the genome length is 2.42 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Molecella exsanicula sp. nov.

Candidatus Molecella exsanicula (NL. fem. n. *exsanicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-279 sp900548875*. The type genome for the species is the GenBank assembly GCA_900548875.1. The GC content of the type genome is 46.67 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Molecella exturilega sp. nov.

Candidatus Molecella exturilega (NL. fem. n. *exturilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-279 sp900556245*. The type genome for the species is the GenBank assembly GCA_900556245.1. The GC content of the type genome is 48.35 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Molecella inpinitrix sp. nov.

Candidatus Molecella inpinitrix (NL. fem. n. *inpinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-279 sp900541555*. The type genome for the species is the GenBank assembly GCA_900541555.1. The GC content of the type genome is 47.74 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Molecella lucubicella sp. nov.

Candidatus Molecella lucubicella (NL. fem. n. *lucubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-279 sp900541935*. The type genome for the species is the GenBank assembly GCA_900541935.1. The GC content of the type genome is 39.63 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Molecella parocousia sp. nov.

Candidatus Molecella parocousia (NL. fem. n. *parocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-279 sp900550025*. The type genome for the species is the GenBank assembly RS_GCF_900754335.1. The GC content of the type genome is 48.13 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Molecella velifentia sp. nov.

Candidatus Molecella velifentia (NL. fem. n. *velifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-279 sp004561555*. The type genome for the species is the GenBank assembly GCA_004561555.1. The GC content of the type genome is 47.42 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Molecella videlilenta sp. nov.

Candidatus Molecella videlilenta (NL. fem. n. *videlilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-279 sp004555955*. The type genome for the species is the GenBank assembly GCA_004555955.1. The GC content of the type genome is 49.75 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Molecia bigemifica sp. nov.

Candidatus Molecia bigemifica (NL. fem. n. *bigemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVQB01 sp903922605*. The type genome for the species is the GenBank assembly GCA_903922605.1. The GC content of the type genome is 63.77 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Molecia gen. nov.

Candidatus Molecia (NL. fem. n. *Molecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVQB01*. The type species for the genus is *Candidatus* Molecia bigemifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9464*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilariaceae.

Description of *Candidatus* Molecia catalicula sp. nov.

Candidatus Molecia catalicula (NL. fem. n. *catalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVQB01 sp903907995*. The type genome for the species is the GenBank assembly GCA_903865455.1. The GC content of the type genome is 63.94 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Molecia milifilega sp. nov.

Candidatus Molecia milifilega (NL. fem. n. *milifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVQB01 sp903907925*. The type genome for the species is the GenBank assembly GCA_903907925.1. The GC content of the type genome is 61.96 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Molecia pulegago sp. nov.

Candidatus Molecia pulegago (NL. fem. n. *pulegago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVQB01 sp903916195*. The type genome for the species is the GenBank assembly GCA_903916195.1. The GC content of the type genome is 67.21 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Molecida nehalivita sp. nov.

Candidatus Molecida nehalivita (NL. fem. n. *nehalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3067 sp002366835*. The type genome for the species is the GenBank assembly GCA_002366835.1. The GC content of the type genome is 46.5 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Molecida gen. nov.

Candidatus Molecida (NL. fem. n. *Molecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3067*. The type species for the genus is *Candidatus* Molecida nehalivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Molecidaceae.

Description of *Candidatus* Molecidaceae fam. nov.

Candidatus Molecidaceae (NL. fem. n. *Molecidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3067*. The type genus for the taxon is *Candidatus* Molecida .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Molecosa domabigena sp. nov.

Candidatus Molecosa domabigena (NL. fem. n. *domabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOTO01 sp903861255*. The type genome for the species is the GenBank assembly GCA_903861255.1. The GC content of the type genome is 40.75 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Molecosa gen. nov.

Candidatus Molecosa (NL. fem. n. *Molecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOTO01*. The type species for the genus is *Candidatus* Molecosa domabigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11393*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatifanaceae.

Description of *Candidatus* Momorana abnociforma sp. nov.

Candidatus Momorana abnociforma (NL. fem. n. *abnociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11574 sp002868985*. The type genome for the species is the GenBank assembly GCA_002868985.1. The GC content of the type genome is 43.45 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Momorana gen. nov.

Candidatus Momorana (NL. fem. n. *Momorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11574*. The type species for the genus is *Candidatus* Momorana abnociforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11574*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momoranaceae.

Description of *Candidatus* Momoranaceae fam. nov.

Candidatus Momoranaceae (NL. fem. n. *Momoranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11574.* The type genus for the taxon is *Candidatus* Momorana .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Momorana irrotax sp. nov.

Candidatus Momorana irrotax (NL. fem. n. *irrotax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11574 sp003486165*. The type genome for the species is the

GenBank assembly GCA_003486165.1. The GC content of the type genome is 43.35 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Momoraria colipatica sp. nov.

Candidatus Momoraria colipatica (NL. fem. n. *colipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRVO01 sp011373995*. The type genome for the species is the GenBank assembly GCA_011373995.1. The GC content of the type genome is 62.85 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Momoraria gen. nov.

Candidatus Momoraria (NL. fem. n. *Momoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRVO01*. The type species for the genus is *Candidatus* Momoraria colipatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRVO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momorariaceae.

Description of *Candidatus* Momorariaceae fam. nov.

Candidatus Momorariaceae (NL. fem. n. *Momorariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRVO01.* The type genus for the taxon is *Candidatus* Momoraria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRVO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Momorariales.

Description of *Candidatus* Momorariales ord. nov.

Candidatus Momorariales (NL. fem. n. *Momorariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRVO01.* The type genus for the taxon is *Candidatus* Momoraria .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Momorella maheledo sp. nov.

Candidatus Momorella maheledo (NL. fem. n. *maheledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMXQ01 sp004356985*. The type genome for the species is the GenBank assembly GCA_004356985.1. The GC content of the type genome is 64.7 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Momorella gen. nov.

Candidatus Momorella (NL. fem. n. *Momorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMXQ01*. The type species for the genus is *Candidatus* Momorella maheledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMXQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Momorellaceae.

Description of *Candidatus* Momorellaceae fam. nov.

Candidatus Momorellaceae (NL. fem. n. *Momorellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMXQ01.* The type genus for the taxon is *Candidatus* Momorella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SMXQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Momorellales.

Description of *Candidatus* Momorellales ord. nov.

Candidatus Momorellales (NL. fem. n. *Momorellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMXQ01.* The type genus for the taxon is *Candidatus* Momorella .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Momorida abascago sp. nov.

Candidatus Momorida abascago (NL. fem. n. *abascago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012567545*. The type genome for the species is the GenBank assembly GCA_012567545.1. The GC content of the type genome is 19.61 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida gen. nov.

Candidatus Momorida (NL. fem. n. *Momorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-012562765*. The type species for the genus is *Candidatus* Momorida abascago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Momorida adgenitio sp. nov.

Candidatus Momorida adgenitio (NL. fem. n. *adgenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012567955*. The type genome for the species is the GenBank assembly RS_GCF_012567955.1. The GC content of the type genome is 20.57 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Momorida agravedo sp. nov.

Candidatus Momorida agravedo (NL. fem. n. *agravedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012569045*. The type genome for the species is the GenBank assembly RS_GCF_012569045.1. The GC content of the type genome is 19.87 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida alcedax sp. nov.

Candidatus Momorida alcedax (NL. fem. n. *alcedax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012562765*. The type genome for the species is the GenBank assembly RS_GCF_012562765.1. The GC content of the type genome is 20.32 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Momorida annecitura sp. nov.

Candidatus Momorida annecitura (NL. fem. n. *annecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012571135*. The type genome for the species is the GenBank assembly RS_GCF_012571135.1. The GC content of the type genome is 22.16 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Momorida antiratica sp. nov.

Candidatus Momorida antiratica (NL. fem. n. *antiratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012571605*. The type genome for the species is the GenBank assembly RS_GCF_012571605.1. The GC content of the type genome is 22.95 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida appugisca sp. nov.

Candidatus Momorida appugisca (NL. fem. n. *appugisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012569285*. The type genome for the species is the GenBank assembly RS_GCF_012569285.1. The GC content of the type genome is 20.18 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Momorida apsimimonas sp. nov.

Candidatus Momorida apsimimonas (NL. fem. n. *apsimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-012562765 sp012568445*. The type genome for the species is the GenBank assembly RS_GCF_012568445.1. The GC content of the type genome is 20.47 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida butubigena sp. nov.

Candidatus Momorida butubigena (NL. fem. n. *butubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012568245*. The type genome for the species is the GenBank assembly RS_GCF_012568245.1. The GC content of the type genome is 20.05 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida calipetta sp. nov.

Candidatus Momorida calipetta (NL. fem. n. *calipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012570745*. The type genome for the species is the GenBank assembly RS_GCF_012570745.1. The GC content of the type genome is 19.85 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida catobibra sp. nov.

Candidatus Momorida catobibra (NL. fem. n. *catobibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012562605*. The type genome for the species is the GenBank assembly RS_GCF_012562605.1. The GC content of the type genome is 20.39 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Momorida dehinilenta sp. nov.

Candidatus Momorida dehinilenta (NL. fem. n. *dehinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012568845*. The type genome for the species is the GenBank assembly RS_GCF_012568845.1. The GC content of the type genome is 20.24 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Momorida denoritas sp. nov.

Candidatus Momorida denoritas (NL. fem. n. *denoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012570365*. The type genome for the species is the GenBank assembly RS_GCF_012570365.1. The GC content of the type genome is 19.61 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Momorida desacilega sp. nov.

Candidatus Momorida desacilega (NL. fem. n. *desacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012570145*. The type genome for the species is the GenBank assembly RS_GCF_012570145.1. The GC content of the type genome is 19.98 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Momorida incenatica sp. nov.

Candidatus Momorida incenatica (NL. fem. n. *incenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012571795*. The type genome for the species is the GenBank assembly GCA_012571795.1. The GC content of the type genome is 21.44 % and the genome length is 0.48 Mbp.

Description of *Candidatus* Momorida inculousia sp. nov.

Candidatus Momorida inculousia (NL. fem. n. *inculousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012567685*. The type genome for the species is the GenBank assembly RS_GCF_012567685.1. The GC content of the type genome is 20.21 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida inexpigena sp. nov.

Candidatus Momorida inexpigena (NL. fem. n. *inexpigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012569785*. The type genome for the species is the GenBank assembly RS_GCF_012569785.1. The GC content of the type genome is 19.96 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Momorida inoffago sp. nov.

Candidatus Momorida inoffago (NL. fem. n. *inoffago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012562965*. The type genome for the species is the GenBank assembly RS_GCF_012562965.1. The GC content of the type genome is 20.15 % and the genome length is 0.5 Mbp.

Description of *Candidatus* Momorida insenitio sp. nov.

Candidatus Momorida insenitio (NL. fem. n. *insenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012569525*. The type genome for the species is the GenBank assembly RS_GCF_012569525.1. The GC content of the type genome is 20.06 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida invicitas sp. nov.

Candidatus Momorida invicitas (NL. fem. n. *invicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012571345*. The type genome for the species is the GenBank assembly RS_GCF_012571345.1. The GC content of the type genome is 23.33 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida locelousia sp. nov.

Candidatus Momorida locelousia (NL. fem. n. *locelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-012562765 sp012568645*. The type genome for the species is the GenBank assembly RS_GCF_012568645.1. The GC content of the type genome is 19.95 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida ludifilega sp. nov.

Candidatus Momorida ludifilega (NL. fem. n. *ludifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012563145*. The type genome for the species is the GenBank assembly RS_GCF_012563145.1. The GC content of the type genome is 20.78 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Momorida rosarisca sp. nov.

Candidatus Momorida rosarisca (NL. fem. n. *rosarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012569925*. The type genome for the species is the GenBank assembly RS_GCF_012569925.1. The GC content of the type genome is 20.17 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Momorida rubicitudo sp. nov.

Candidatus Momorida rubicitudo (NL. fem. n. *rubicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-012562765 sp012563325*. The type genome for the species is the GenBank assembly RS_GCF_012563325.1. The GC content of the type genome is 20.84 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Momorosa lavabitrix sp. nov.

Candidatus Momorosa lavabitrix (NL. fem. n. *lavabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YC2-FULL-38-9 sp002784505*. The type genome for the species is the GenBank assembly GCA_002784505.1. The GC content of the type genome is 39.41 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Momorosa gen. nov.

Candidatus Momorosa (NL. fem. n. *Momorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YC2-FULL-38-9*. The type species for the genus is *Candidatus* Momorosa lavabitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Momorosa rorifitrix sp. nov.

Candidatus Momorosa rorifitrix (NL. fem. n. *rorifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YC2-FULL-38-9 sp001790095*. The type genome for the species is the GenBank assembly GCA_001790195.1. The GC content of the type genome is 37.33 % and the genome length is 1.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point C".

Description of *Candidatus* Momorula artilastra sp. nov.

Candidatus Momorula artilastra (NL. fem. n. *artilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXWH01 sp014189875*. The type genome for the species is the GenBank assembly GCA_014189875.1. The GC content of the type genome is 62.86 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Momorula gen. nov.

Candidatus Momorula (NL. fem. n. *Momorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXWH01*. The type species for the genus is *Candidatus* Momorula artilastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Momorula categivita sp. nov.

Candidatus Momorula categivita (NL. fem. n. *categivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXWH01 sp903929475*. The type genome for the species is the GenBank assembly GCA_903834585.1. The GC content of the type genome is 58.89 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Momorula diliciforma sp. nov.

Candidatus Momorula diliciforma (NL. fem. n. *diliciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXWH01 sp903882875*. The type genome for the species is the GenBank assembly GCA_903888925.1. The GC content of the type genome is 62.52 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Momorula ratifitrix sp. nov.

Candidatus Momorula ratifitrix (NL. fem. n. *ratifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXWH01 sp005791535*. The type genome for the species is the GenBank assembly GCA_005791535.1. The GC content of the type genome is 60.23 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Monacana catobicula sp. nov.

Candidatus Monacana catobicula (NL. fem. n. *catobicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin134 sp009843565*. The type genome for the species is the GenBank assembly GCA_009843565.1. The GC content of the type genome is 64.07 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Monacana gen. nov.

Candidatus Monacana (NL. fem. n. *Monacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin134*. The type species for the genus is *Candidatus* Monacana catobicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin134*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monacanaceae.

Description of *Candidatus* Monacanaceae fam. nov.

Candidatus Monacanaceae (NL. fem. n. *Monacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin134.* The type genus for the taxon is *Candidatus* Monacana .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Monacana patibifica sp. nov.

Candidatus Monacana patibifica (NL. fem. n. *patibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin134 sp009842675*. The type genome for the species is the GenBank assembly GCA_009844745.1. The GC content of the type genome is 64.8 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Monacana perabitica sp. nov.

Candidatus Monacana perabitica (NL. fem. n. *perabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin134 sp009843865*. The type genome for the species is the GenBank assembly GCA_009840495.1. The GC content of the type genome is 53.63 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Monacana xenopilega sp. nov.

Candidatus Monacana xenopilega (NL. fem. n. *xenopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin134 sp002239105*. The type genome for the species is the GenBank assembly GCA_002239105.1. The GC content of the type genome is 64.29 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Monacaria benemitoga sp. nov.

Candidatus Monacaria benemitoga (NL. fem. n. *benemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKLM01 sp007123205*. The type genome for the species is the GenBank assembly GCA_007123205.1. The GC content of the type genome is 63.46 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Monacaria gen. nov.

Candidatus Monacaria (NL. fem. n. *Monacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKLM01*. The type species for the genus is *Candidatus* Monacaria benemitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B4-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubulaceae.

Description of *Candidatus* Monacaria cetarilenta sp. nov.

Candidatus Monacaria cetarilenta (NL. fem. n. *cetarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKLM01 sp007118795*. The type genome for the species is the GenBank assembly GCA_007125335.1. The GC content of the type genome is 62.91 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Monacia adremibra sp. nov.

Candidatus Monacia adremibra (NL. fem. n. *adremibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *21-14-0-20-44-7 sp002787615*. The type genome for the species is the GenBank assembly GCA_002787615.1. The GC content of the type genome is 43.59 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Monacia gen. nov.

Candidatus Monacia (NL. fem. n. *Monacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-0-20-44-7*. The type species for the genus is *Candidatus* Monacia adremibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *21-14-0-20-44-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monaciaceae.

Description of *Candidatus* Monaciaceae fam. nov.

Candidatus Monaciaceae (NL. fem. n. *Monaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *21-14-0-20-44-7.* The type genus for the taxon is *Candidatus* Monacia .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Monacida denunitas sp. nov.

Candidatus Monacida denunitas (NL. fem. n. *denunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKZJ01 sp903901375*. The type genome for the species is the GenBank assembly GCA_903898795.1. The GC content of the type genome is 36.29 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Monacida gen. nov.

Candidatus Monacida (NL. fem. n. *Monacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKZJ01*. The type species for the genus is *Candidatus* Monacida denunitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-1AR*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufosaceae.

Description of *Candidatus* Monacida homunigena sp. nov.

Candidatus Monacida homunigena (NL. fem. n. *homunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKZJ01 sp903831845*. The type genome for the species is the GenBank assembly GCA_903915795.1. The GC content of the type genome is 44.53 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Monacosa ammigiforma sp. nov.

Candidatus Monacosa ammigiforma (NL. fem. n. *ammigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4582 sp002725285*. The type genome for the species is the GenBank assembly GCA_002725285.1. The GC content of the type genome is 48.75 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Monacosa gen. nov.

Candidatus Monacosa (NL. fem. n. *Monacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4582*. The type species for the genus is *Candidatus* Monacosa ammigiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Monacosa detositudo sp. nov.

Candidatus Monacosa detositudo (NL. fem. n. *detositudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA4582 sp002389265*. The type genome for the species is the GenBank assembly GCA_002390385.1. The GC content of the type genome is 52.64 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Monacosa filifax sp. nov.

Candidatus Monacosa filifax (NL. fem. n. *filifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4582 sp002386885*. The type genome for the species is the GenBank assembly GCA_002386885.1. The GC content of the type genome is 53.16 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Monacosa petulibula sp. nov.

Candidatus Monacosa petulibula (NL. fem. n. *petulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4582 sp012960755*. The type genome for the species is the GenBank assembly GCA_012960755.1. The GC content of the type genome is 49.73 % and the genome length is 6.62 Mbp.

Description of *Candidatus* Monacosa utpotisca sp. nov.

Candidatus Monacosa utpotisca (NL. fem. n. *utpotisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4582 sp013204195*. The type genome for the species is the GenBank assembly GCA_013204195.1. The GC content of the type genome is 53.09 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Monaibacterium denoriforma sp. nov.

Candidatus Monaibacterium denoriforma (NL. fem. n. *denoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Monaibacterium sp011290545*. The type genome for the species is the GenBank assembly RS_GCF_011290545.1. The GC content of the type genome is 62.17 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Mongoliibacter cibicibula sp. nov.

Candidatus Mongoliibacter cibicibula (NL. fem. n. *cibicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mongoliibacter sp007692705*. The type genome for the species is the GenBank assembly GCA_007692705.1. The GC content of the type genome is 39.14 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Mongoliimonas decenitrix sp. nov.

Candidatus Mongoliimonas decenitrix (NL. fem. n. *decenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mongoliimonas sp013839525*. The type genome for the species is the GenBank assembly RS_GCF_013839525.1. The GC content of the type genome is 69.87 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Monimana funebousia sp. nov.

Candidatus Monimana funebousia (NL. fem. n. *funebousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7239 sp002333095*. The type genome for the species is the GenBank assembly GCA_002472985.1. The GC content of the type genome is 51.45 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Monimana gen. nov.

Candidatus Monimana (NL. fem. n. *Monimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7239*. The type species for the genus is *Candidatus* Monimana funebousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7239*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monimanaceae.

Description of *Candidatus* Monimanaceae fam. nov.

Candidatus Monimanaceae (NL. fem. n. *Monimanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7239.* The type genus for the taxon is *Candidatus* Monimana .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Monimaria altifitudo sp. nov.

Candidatus Monimaria altifitudo (NL. fem. n. *altifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2883 sp902797985*. The type genome for the species is the GenBank assembly GCA_902797985.1. The GC content of the type genome is 31.76 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Monimaria gen. nov.

Candidatus Monimaria (NL. fem. n. *Monimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2883*. The type species for the genus is *Candidatus* Monimaria altifitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Monimaria cilicessa sp. nov.

Candidatus Monimaria cilicessa (NL. fem. n. *cilicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2883 sp900313115*. The type genome for the species is the GenBank assembly GCA_902760105.1. The GC content of the type genome is 32.31 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Monimaria decunimonia sp. nov.

Candidatus Monimaria decunimonia (NL. fem. n. *decunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2883 sp902783125*. The type genome for the species is the GenBank assembly GCA_902783125.1. The GC content of the type genome is 33.0 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Monimaria inmoratio sp. nov.

Candidatus Monimaria inmoratio (NL. fem. n. *inmoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2883 sp902767275*. The type genome for the species is the GenBank assembly GCA_902767275.1. The GC content of the type genome is 32.24 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Monimaria monogitio sp. nov.

Candidatus Monimaria monogitio (NL. fem. n. *monogitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2883 sp002103075*. The type genome for the species is the GenBank assembly GCA_002103075.1. The GC content of the type genome is 31.89 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Monimaria panifimonia sp. nov.

Candidatus Monimaria panifimonia (NL. fem. n. *panifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2883 sp902765215*. The type genome for the species is the GenBank assembly GCA_902765215.1. The GC content of the type genome is 36.26 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Monimaria sonivessa sp. nov.

Candidatus Monimaria sonivessa (NL. fem. n. *sonivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2883 sp900768915*. The type genome for the species is the GenBank assembly RS_GCF_900768915.1. The GC content of the type genome is 29.79

% and the genome length is 1.63 Mbp.

Description of *Candidatus* Monimaria viragifica sp. nov.

Candidatus Monimaria viragifica (NL. fem. n. *viragifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2883 sp002481545*. The type genome for the species is the GenBank assembly GCA_002481055.1. The GC content of the type genome is 37.13 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Monimella cibicicula sp. nov.

Candidatus Monimella cibicicula (NL. fem. n. *cibicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10092 sp003455995*. The type genome for the species is the GenBank assembly GCA_000999665.1. The GC content of the type genome is 42.3 % and the genome length is 0.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Monimella gen. nov.

Candidatus Monimella (NL. fem. n. *Monimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10092*. The type species for the genus is *Candidatus* Monimella cibicicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10092*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monimellaceae.

Description of *Candidatus* Monimellaceae fam. nov.

Candidatus Monimellaceae (NL. fem. n. *Monimellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10092.* The type genus for the taxon is *Candidatus* Monimella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10092*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Monimellales.

Description of *Candidatus* Monimellales ord. nov.

Candidatus Monimellales (NL. fem. n. *Monimellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10092.* The type genus for the taxon is *Candidatus* Monimella .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Monimida mirifatio sp. nov.

Candidatus Monimida mirifatio (NL. fem. n. *mirifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J002 sp003697105*. The type genome for the species is the GenBank assembly GCA_003697105.1. The GC content of the type genome is 48.47 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Monimida gen. nov.

Candidatus Monimida (NL. fem. n. *Monimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J002*. The type species for the genus is *Candidatus* Monimida mirifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monimidaceae.

Description of *Candidatus* Monimidaceae fam. nov.

Candidatus Monimidaceae (NL. fem. n. *Monimidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J002.* The type genus for the taxon is *Candidatus* Monimida .

According to the original version of GTDB R06-RS202, this family belongs to the order *J002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monimidales.

Description of *Candidatus* Monimidales ord. nov.

Candidatus Monimidales (NL. fem. n. *Monimidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J002.* The type genus for the taxon is *Candidatus* Monimida .

According to the original version of GTDB R06-RS202, this family belongs to the class *4572-55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Lanifulae.

Description of *Candidatus* Monimosa buxanago sp. nov.

Candidatus Monimosa buxanago (NL. fem. n. *buxanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6807 sp002441265*. The type genome for the species is the GenBank assembly GCA_002441265.1. The GC content of the type genome is 60.78 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Monimosa gen. nov.

Candidatus Monimosa (NL. fem. n. *Monimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6807*. The type species for the genus is *Candidatus* Monimosa buxanago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6807*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monimosaceae.

Description of *Candidatus* Monimosaceae fam. nov.

Candidatus Monimosaceae (NL. fem. n. *Monimosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6807.* The type genus for the taxon is *Candidatus* Monimosa .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Monimula decitago sp. nov.

Candidatus Monimula decitago (NL. fem. n. *decitago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1049 sp003452915*. The type genome for the species is the GenBank assembly GCA_001795415.1. The GC content of the type genome is 36.53 % and the genome length is 2.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Monimula gen. nov.

Candidatus Monimula (NL. fem. n. *Monimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1049*. The type species for the genus is *Candidatus* Monimula decitago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Monimula habacax sp. nov.

Candidatus Monimula habacax (NL. fem. n. *habacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1049 sp002841455*. The type genome for the species is the GenBank assembly GCA_002841455.1. The GC content of the type genome is 43.81 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Monocana buxanivita sp. nov.

Candidatus Monocana buxanivita (NL. fem. n. *buxanivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Opi-474 sp903862955*. The type genome for the species is the GenBank assembly GCA_903897835.1. The GC content of the type genome is 65.69 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Monocana gen. nov.

Candidatus Monocana (NL. fem. n. *Monocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Opi-474*. The type species for the genus is *Candidatus* Monocana buxanivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Monocana denigitrix sp. nov.

Candidatus Monocana denigitrix (NL. fem. n. *denigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Opi-474 sp903855985*. The type genome for the species is the GenBank assembly GCA_903864675.1. The GC content of the type genome is 66.19 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Monocana ducilessa sp. nov.

Candidatus Monocana ducilessa (NL. fem. n. *ducilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Opi-474 sp903872505*. The type genome for the species is the GenBank assembly GCA_903862405.1. The GC content of the type genome is 67.48 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Monocana exaggitudo sp. nov.

Candidatus Monocana exaggitudo (NL. fem. n. *exaggitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Opi-474 sp003402695*. The type genome for the species is the GenBank assembly GCA_003402695.1. The GC content of the type genome is 65.6 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Monocana fumifitio sp. nov.

Candidatus Monocana fumifitio (NL. fem. n. *fumifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Opi-474 sp903830425*. The type genome for the species is the GenBank assembly GCA_903885135.1. The GC content of the type genome is 69.73 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Monocana lenocitas sp. nov.

Candidatus Monocana lenocitas (NL. fem. n. *lenocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Opi-474 sp903825285*. The type genome for the species is the GenBank assembly GCA_903824305.1. The GC content of the type genome is 68.67 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Monocana mavoressa sp. nov.

Candidatus Monocana mavoressa (NL. fem. n. *mavoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Opi-474 sp903839035*. The type genome for the species is the GenBank assembly GCA_903869915.1. The GC content of the type genome is 65.74 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Monocana revecatica sp. nov.

Candidatus Monocana revecatica (NL. fem. n. *revecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Opi-474 sp903859715*. The type genome for the species is the GenBank assembly GCA_903877045.1. The GC content of the type genome is 63.93 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Monocana volunigena sp. nov.

Candidatus Monocana volunigena (NL. fem. n. *volunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Opi-474 sp903881475*. The type genome for the species is the GenBank assembly GCA_903883125.1. The GC content of the type genome is 65.55 %

and the genome length is 3.35 Mbp.

Description of *Candidatus* Monocaria adtubax sp. nov.

Candidatus Monocaria adtubax (NL. fem. n. *adtubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp900769205*. The type genome for the species is the GenBank assembly RS_GCF_900769205.1. The GC content of the type genome is 49.65 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Monocaria gen. nov.

Candidatus Monocaria (NL. fem. n. *Monocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-475*. The type species for the genus is *Candidatus* Monocaria adtubax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadanaceae.

Description of *Candidatus* Monocaria advinatio sp. nov.

Candidatus Monocaria advinatio (NL. fem. n. *advinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp900549225*. The type genome for the species is the GenBank assembly GCA_900549225.1. The GC content of the type genome is 47.48 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Monocaria ambidedo sp. nov.

Candidatus Monocaria ambidedo (NL. fem. n. *ambidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp900763875*. The type genome for the species is the GenBank assembly RS_GCF_900763875.1. The GC content of the type genome is 47.49 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Monocaria bifaritoga sp. nov.

Candidatus Monocaria bifaritoga (NL. fem. n. *bifaritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp000434435*. The type genome for the species is the GenBank assembly GCA_900548015.1. The GC content of the type genome is 46.74 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Monocaria cinipitudo sp. nov.

Candidatus Monocaria cinipitudo (NL. fem. n. *cinipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp900550855*. The type genome for the species is the GenBank assembly GCA_900550855.1. The GC content of the type genome is 47.76 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Monocaria conibugo sp. nov.

Candidatus Monocaria conibugo (NL. fem. n. *conibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp002449145*. The type genome for the species is the GenBank assembly GCA_003513525.1. The GC content of the type genome is 47.26 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Monocaria devecitas sp. nov.

Candidatus Monocaria devecitas (NL. fem. n. *devecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp002297185*. The type genome for the species is the GenBank assembly GCA_002297185.1. The GC content of the type genome is 46.14 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Monocaria dilacousia sp. nov.

Candidatus Monocaria dilacousia (NL. fem. n. *dilacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp002478945*. The type genome for the species is the GenBank assembly GCA_002478945.1. The GC content of the type genome is 45.84 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Monocaria herinago sp. nov.

Candidatus Monocaria herinago (NL. fem. n. *herinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp900548005*. The type genome for the species is the GenBank assembly GCA_900548005.1. The GC content of the type genome is 47.9 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Monocaria herinimonas sp. nov.

Candidatus Monocaria herinimonas (NL. fem. n. *herinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp900322215*. The type genome for the species is the GenBank assembly GCA_902756965.1. The GC content of the type genome is 47.83 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Monocaria inconitia sp. nov.

Candidatus Monocaria inconitia (NL. fem. n. *inconitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp002308155*. The type genome for the species is the GenBank assembly GCA_002308155.1. The GC content of the type genome is 45.95 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Monocaria inexpibula sp. nov.

Candidatus Monocaria inexpibula (NL. fem. n. *inexpibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-475 sp002476605*. The type genome for the species is the GenBank assembly GCA_002476605.1. The GC content of the type genome is 46.31 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Monocaria infisentia sp. nov.

Candidatus Monocaria infisentia (NL. fem. n. *infisentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp900551145*. The type genome for the species is the GenBank assembly GCA_900551145.1. The GC content of the type genome is 46.74 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Monocaria invesimonas sp. nov.

Candidatus Monocaria invesimonas (NL. fem. n. *invesimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp002308215*. The type genome for the species is the GenBank assembly GCA_002308215.1. The GC content of the type genome is 37.66 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Monocaria luxuricella sp. nov.

Candidatus Monocaria luxuricella (NL. fem. n. *luxuricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp900550915*. The type genome for the species is the GenBank assembly RS_GCF_900768835.1. The GC content of the type genome is 46.52 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Monocaria tirocicella sp. nov.

Candidatus Monocaria tirocicella (NL. fem. n. *tirocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-475 sp900547975*. The type genome for the species is the GenBank assembly GCA_900547975.1. The GC content of the type genome is 46.89 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Monocella enuclitia sp. nov.

Candidatus Monocella enuclitia (NL. fem. n. *enuclitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9087 sp003491635*. The type genome for the species is the GenBank assembly GCA_003491635.1. The GC content of the type genome is 51.58 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Monocella gen. nov.

Candidatus Monocella (NL. fem. n. *Monocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9087*. The type species for the genus is *Candidatus* Monocella enuclitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monocellaceae.

Description of *Candidatus* Monocellaceae fam. nov.

Candidatus Monocellaceae (NL. fem. n. *Monocellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9087*. The type genus for the taxon is *Candidatus* Monocella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monocellales.

Description of *Candidatus* Monocellales ord. nov.

Candidatus Monocellales (NL. fem. n. *Monocellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9087*. The type genus for the taxon is *Candidatus* Monocella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Monocellae.

Description of *Candidatus* Monocellae class. nov.

Candidatus Monocellae (NL. fem. n. *c__Monocellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9087*. The type genus for the taxon is *Candidatus* Monocella .

According to GTDB R06-RS202, this class belongs to the phylum *Actinobacteriota*.

Description of *Candidatus* Monocia insalitica sp. nov.

Candidatus Monocia insalitica (NL. fem. n. *insalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12189 sp003530835*. The type genome for the species is the GenBank assembly GCA_003530835.1. The GC content of the type genome is 45.89 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Monocia gen. nov.

Candidatus Monocia (NL. fem. n. *Monocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12189*. The type species for the genus is *Candidatus* Monocia insalitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Monocia noninax sp. nov.

Candidatus Monocia noninax (NL. fem. n. *noninax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12189 sp014189895*. The type genome for the species is the GenBank assembly GCA_903829455.1. The GC content of the type genome is 46.86 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Monocia vilipivita sp. nov.

Candidatus Monocia vilipivita (NL. fem. n. *vilipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12189 sp005788175*. The type genome for the species is the GenBank assembly GCA_005788175.1. The GC content of the type genome is 43.46 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Monocula maledago sp. nov.

Candidatus Monocula maledago (NL. fem. n. *maledago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11650 sp002401285*. The type genome for the species is the GenBank assembly GCA_002401285.1. The GC content of the type genome is 57.34 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Monocula gen. nov.

Candidatus Monocula (NL. fem. n. *Monocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11650*. The type species for the genus is *Candidatus* Monocula maledago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Monocula ratifitudo sp. nov.

Candidatus Monocula ratifitudo (NL. fem. n. *ratifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11650 sp002708395*. The type genome for the species is the GenBank assembly GCA_002708395.1. The GC content of the type genome is 57.21 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Monocula taxilimonas sp. nov.

Candidatus Monocula taxilimonas (NL. fem. n. *taxilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11650 sp002710215*. The type genome for the species is the GenBank assembly GCA_012964995.1. The GC content of the type genome is 57.59 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Monodana bipinitas sp. nov.

Candidatus Monodana bipinitas (NL. fem. n. *bipinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002704045 sp002703375*. The type genome for the species is the GenBank assembly GCA_002703375.1. The GC content of the type genome is 28.83 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Monodana gen. nov.

Candidatus Monodana (NL. fem. n. *Monodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002704045*. The type species for the genus is *Candidatus* Monodana bipinitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002704045*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodanaceae.

Description of *Candidatus* Monodanaceae fam. nov.

Candidatus Monodanaceae (NL. fem. n. *Monodanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002704045.* The type genus for the taxon is *Candidatus* Monodana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Monodana protrilenta sp. nov.

Candidatus Monodana protrilenta (NL. fem. n. *protrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002704045 sp002704045*. The type genome for the species is the GenBank assembly GCA_002704045.1. The GC content of the type genome is 28.99 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Monodaria revuletta sp. nov.

Candidatus Monodaria revuletta (NL. fem. n. *revuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-47-50 sp001801885*. The type genome for the species is the GenBank assembly GCA_001801885.1. The GC content of the type genome is 47.09 % and the genome length is 2.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; 10% subassembly".

Description of *Candidatus* Monodaria gen. nov.

Candidatus Monodaria (NL. fem. n. *Monodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-47-50*. The type species for the genus is *Candidatus* Monodaria revuletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Monodida tametax sp. nov.

Candidatus Monodida tametax (NL. fem. n. *tametax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-42-15 sp000998185*. The type genome for the species is the GenBank assembly GCA_000998185.1. The GC content of the type genome is 41.91 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Monodida gen. nov.

Candidatus Monodida (NL. fem. n. *Monodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-42-15*. The type species for the genus is *Candidatus* Monodida tametax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-42-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodidaceae.

Description of *Candidatus* Monodidaceae fam. nov.

Candidatus Monodidaceae (NL. fem. n. *Monodidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-42-15.* The type genus for the taxon is *Candidatus* Monodida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2196*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Totidulales.

Description of *Candidatus* Monodosa bugilatio sp. nov.

Candidatus Monodosa bugilatio (NL. fem. n. *bugilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6902 sp002451135*. The type genome for the species is the GenBank assembly GCA_003508235.1. The GC content of the type genome is 46.46 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Monodosa gen. nov.

Candidatus Monodosa (NL. fem. n. *Monodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6902*. The type species for the genus is *Candidatus* Monodosa bugilatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodosaceae.

Description of *Candidatus* Monodosaceae fam. nov.

Candidatus Monodosaceae (NL. fem. n. *Monodosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6902.* The type genus for the taxon is *Candidatus* Monodosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monodosales.

Description of *Candidatus* Monodosales ord. nov.

Candidatus Monodosales (NL. fem. n. *Monodosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6902.* The type genus for the taxon is *Candidatus* Monodosa .

According to the GTDB R06-RS202, this order belongs to the class *Thermodesulfovibrionia*.

Description of *Candidatus* Monodosa nubecitia sp. nov.

Candidatus Monodosa nubecitia (NL. fem. n. *nubecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6902 sp003599025*. The type genome for the species is the GenBank assembly GCA_003599025.1. The GC content of the type genome is 45.88 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Monodula cosidugo sp. nov.

Candidatus Monodula cosidugo (NL. fem. n. *cosidugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKYF01 sp007128005*. The type genome for the species is the GenBank assembly GCA_007128005.1. The GC content of the type genome is 51.2 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Monodula gen. nov.

Candidatus Monodula (NL. fem. n. *Monodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKYF01*. The type species for the genus is *Candidatus* Monodula cosidugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1609*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifanaceae.

Description of *Candidatus* Monogana rubefitia sp. nov.

Candidatus Monogana rubefitia (NL. fem. n. *rubefitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFSY01 sp001785175*. The type genome for the species is the GenBank assembly GCA_001785175.1. The GC content of the type genome is 65.38 % and the genome length is 1.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Monogana gen. nov.

Candidatus Monogana (NL. fem. n. *Monogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFSY01*. The type species for the genus is *Candidatus* Monogana rubefitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Monogaria desurago sp. nov.

Candidatus Monogaria desurago (NL. fem. n. *desurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG25 sp003242645*. The type genome for the species is the GenBank assembly GCA_003242645.1. The GC content of the type genome is 60.92 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Monogaria gen. nov.

Candidatus Monogaria (NL. fem. n. *Monogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG25*. The type species for the genus is *Candidatus* Monogaria desurago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Monogaria locupigena sp. nov.

Candidatus Monogaria locupigena (NL. fem. n. *locupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG25 sp002919265*. The type genome for the species is the GenBank assembly GCA_003242575.1. The GC content of the type genome is 60.64 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Monogella vehicilega sp. nov.

Candidatus Monogella vehicilega (NL. fem. n. *vehicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJAVM01 sp903945435*. The type genome for the species is the GenBank assembly GCA_903934965.1. The GC content of the type genome is 34.54 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Monogella gen. nov.

Candidatus Monogella (NL. fem. n. *Monogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJAVM01*. The type species for the genus is *Candidatus* Monogella vehicilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Monogella volucousia sp. nov.

Candidatus Monogella volucousia (NL. fem. n. *volucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJAVM01 sp903857815*. The type genome for the species is the GenBank assembly GCA_903857815.1. The GC content of the type genome is 34.04 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Monogia bigemitas sp. nov.

Candidatus Monogia bigemitas (NL. fem. n. *bigemitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8910 sp012517635*. The type genome for the species is the GenBank assembly GCA_012517635.1. The GC content of the type genome is 38.3 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Monogia gen. nov.

Candidatus Monogia (NL. fem. n. *Monogia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8910*. The type species for the genus is *Candidatus* Monogia bigemitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8910*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monogiaceae.

Description of *Candidatus* Monogiaceae fam. nov.

Candidatus Monogiaceae (NL. fem. n. *Monogiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8910.* The type genus for the taxon is *Candidatus* Monogia .

According to GTDB R06-RS202, this family belongs to the order *Caldatribacteriales*.

Description of *Candidatus* Monogia decapibula sp. nov.

Candidatus Monogia decapibula (NL. fem. n. *decapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8910 sp003542295*. The type genome for the species is the GenBank assembly GCA_003486325.1. The GC content of the type genome is 38.87 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Monogia lenocousia sp. nov.

Candidatus Monogia lenocousia (NL. fem. n. *lenocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8910 sp012517485*. The type genome for the species is the GenBank assembly GCA_012517485.1. The GC content of the type genome is 37.56 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Monogia sifunilega sp. nov.

Candidatus Monogia sifunilega (NL. fem. n. *sifunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8910 sp002069605*. The type genome for the species is the GenBank assembly GCA_012837485.1. The GC content of the type genome is 38.28 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Monogida desoritudo sp. nov.

Candidatus Monogida desoritudo (NL. fem. n. *desoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0428 sp003043955*. The type genome for the species is the GenBank assembly GCA_003640345.1. The GC content of the type genome is 40.13 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Monogida gen. nov.

Candidatus Monogida (NL. fem. n. *Monogida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F0428*. The type species for the genus is *Candidatus* Monogida

desoritudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Monoglobus errabifica sp. nov.

Candidatus Monoglobus errabifica (NL. fem. n. *errabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Monoglobus sp900542675*. The type genome for the species is the GenBank assembly GCA_900542675.1. The GC content of the type genome is 44.51 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Monoglobus infanilega sp. nov.

Candidatus Monoglobus infanilega (NL. fem. n. *infanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Monoglobus sp900554105*. The type genome for the species is the GenBank assembly GCA_900554105.1. The GC content of the type genome is 44.24 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Monogosa adpacitoga sp. nov.

Candidatus Monogosa adpacitoga (NL. fem. n. *adpacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077554 sp001464965*. The type genome for the species is the GenBank assembly GCA_001464965.1. The GC content of the type genome is 56.45 % and the genome length is 2.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Monogosa gen. nov.

Candidatus Monogosa (NL. fem. n. *Monogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077554*. The type species for the genus is *Candidatus* Monogosa adpacitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga007554*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicarulaceae.

Description of *Candidatus* Monogosales ord. nov.

Candidatus Monogosales (NL. fem. n. *Monogosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ga0077554.* The type genus for the taxon is *Candidatus* Monogosa .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Monogosa affulivita sp. nov.

Candidatus Monogosa affulivita (NL. fem. n. *affulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077554 sp001464585*. The type genome for the species is the GenBank assembly GCA_001464585.1. The GC content of the type genome is 53.05 % and the genome length is 2.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Monogosa alcedousia sp. nov.

Candidatus Monogosa alcedousia (NL. fem. n. *alcedousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077554 sp005240065*. The type genome for the species is the GenBank assembly GCA_005240065.1. The GC content of the type genome is 59.1 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Monogula cobalugo sp. nov.

Candidatus Monogula cobalugo (NL. fem. n. *cobalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DTU052 sp001512495*. The type genome for the species is the GenBank assembly GCA_001512495.1. The GC content of the type genome is 51.29 % and the genome length is 2.28 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Monogula gen. nov.

Candidatus Monogula (NL. fem. n. *Monogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU052*. The type species for the genus is *Candidatus* Monogula cobalugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU052*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monogulaceae.

Description of *Candidatus* Monogulaceae fam. nov.

Candidatus Monogulaceae (NL. fem. n. *Monogulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU052.* The type genus for the taxon is *Candidatus* Monogula .

According to GTDB R06-RS202, this family belongs to the order *Syntrophomonadales*.

Description of *Candidatus* Monogula obfusatica sp. nov.

Candidatus Monogula obfusatica (NL. fem. n. *obfusatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU052 sp002329495*. The type genome for the species is the GenBank assembly GCA_002329495.1. The GC content of the type genome is 50.83 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Monogula obsolessa sp. nov.

Candidatus Monogula obsolessa (NL. fem. n. *obsolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU052 sp012728655*. The type genome for the species is the GenBank assembly GCA_012728655.1. The GC content of the type genome is 52.22 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Monogula odontitia sp. nov.

Candidatus Monogula odontitia (NL. fem. n. *odontitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU052 sp012729505*. The type genome for the species is the GenBank assembly GCA_012729505.1. The GC content of the type genome is 46.52 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Monopana nubifilega sp. nov.

Candidatus Monopana nubifilega (NL. fem. n. *nubifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AL-N1 sp013122435*. The type genome for the species is the GenBank assembly GCA_013122405.1. The GC content of the type genome is 48.93 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Monopana gen. nov.

Candidatus Monopana (NL. fem. n. *Monopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AL-N1*. The type species for the genus is *Candidatus* Monopana nubifilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Monoparia dehiniforma sp. nov.

Candidatus Monoparia dehiniforma (NL. fem. n. *dehiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10174 sp003528115*. The type genome for the species is the GenBank assembly GCA_003528115.1. The GC content of the type genome is 46.26 %

and the genome length is 2.39 Mbp.

Description of *Candidatus* Monoparia gen. nov.

Candidatus Monoparia (NL. fem. n. *Monoparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10174*. The type species for the genus is *Candidatus* Monoparia dehiniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Kpj58rc*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanellaceae.

Description of *Candidatus* Monoposa bicipetta sp. nov.

Candidatus Monoposa bicipetta (NL. fem. n. *bicipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-603 sp900314555*. The type genome for the species is the GenBank assembly GCA_900314555.1. The GC content of the type genome is 33.4 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Monoposa gen. nov.

Candidatus Monoposa (NL. fem. n. *Monoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-603*. The type species for the genus is *Candidatus* Monoposa bicipetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Monoposa cisaliforma sp. nov.

Candidatus Monoposa cisaliforma (NL. fem. n. *cisaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-603 sp900315425*. The type genome for the species is the GenBank assembly GCA_900315425.1. The GC content of the type genome is 34.74 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Monoposa cruppilenta sp. nov.

Candidatus Monoposa cruppilenta (NL. fem. n. *cruppilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-603 sp902786365*. The type genome for the species is the GenBank assembly GCA_902786365.1. The GC content of the type genome is 35.62 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Monoposa democitrix sp. nov.

Candidatus Monoposa democitrix (NL. fem. n. *democitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-603 sp902767015*. The type genome for the species is the GenBank assembly GCA_902767015.1. The GC content of the type genome is 39.71 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Monoposa fefelousia sp. nov.

Candidatus Monoposa fefelousia (NL. fem. n. *fefelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-603 sp900110975*. The type genome for the species is the GenBank assembly RS_GCF_900110975.1. The GC content of the type genome is 31.86 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Monoposa invigousia sp. nov.

Candidatus Monoposa invigousia (NL. fem. n. *invigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-603 sp902773095*. The type genome for the species is the GenBank assembly GCA_902773095.1. The GC content of the type genome is 36.82 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Monoposa renavetta sp. nov.

Candidatus Monoposa renavetta (NL. fem. n. *renavetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-603 sp900321855*. The type genome for the species is the GenBank assembly GCA_902778195.1. The GC content of the type genome is 36.91 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Monoposa tegimentia sp. nov.

Candidatus Monoposa tegimentia (NL. fem. n. *tegimentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-603 sp900314525*. The type genome for the species is the GenBank assembly GCA_902801535.1. The GC content of the type genome is 33.9 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Monoposa tibicitura sp. nov.

Candidatus Monoposa tibicitura (NL. fem. n. *tibicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-603 sp900066105*. The type genome for the species is the GenBank assembly GCA_900066105.1. The GC content of the type genome is 34.03 % and the genome length is 3.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Monopula filifigena sp. nov.

Candidatus Monopula filifigena (NL. fem. n. *filifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1355 sp003153375*. The type genome for the species is the GenBank assembly GCA_003153375.1. The GC content of the type genome is 61.76 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Monopula gen. nov.

Candidatus Monopula (NL. fem. n. *Monopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *PALSA-1355*. The type species for the genus is *Candidatus* Monopula filifigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-1355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopulaceae.

Description of *Candidatus* Monopulaceae fam. nov.

Candidatus Monopulaceae (NL. fem. n. *Monopulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PALSA-1355.* The type genus for the taxon is *Candidatus* Monopula .

According to GTDB R06-RS202, this family belongs to the order *Pirellulales*.

Description of *Candidatus* Monumana addubigena sp. nov.

Candidatus Monumana addubigena (NL. fem. n. *addubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGW01 sp011334875*. The type genome for the species is the GenBank assembly GCA_011334875.1. The GC content of the type genome is 42.76 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Monumana gen. nov.

Candidatus Monumana (NL. fem. n. *Monumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTGW01*. The type species for the genus is *Candidatus* Monumana addubigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTGW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monumanaceae.

Description of *Candidatus* Monumanaceae fam. nov.

Candidatus Monumanaceae (NL. fem. n. *Monumanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *DTGW01*. The type genus for the taxon is *Candidatus* Monumana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Monumaria ranunigena sp. nov.

Candidatus Monumaria ranunigena (NL. fem. n. *ranunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-G15 sp003648845*. The type genome for the species is the GenBank assembly GCA_003648845.1. The GC content of the type genome is 40.35 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Monumaria gen. nov.

Candidatus Monumaria (NL. fem. n. *Monumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B3-G15*. The type species for the genus is *Candidatus* Monumaria ranunigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B3-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monumariaceae.

Description of *Candidatus* Monumariaceae fam. nov.

Candidatus Monumariaceae (NL. fem. n. *Monumariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-G15*. The type genus for the taxon is *Candidatus* Monumaria .

According to GTDB R06-RS202, this family belongs to the order *Aerophobales*.

Description of *Candidatus* Monumella socagatio sp. nov.

Candidatus Monumella socagatio (NL. fem. n. *socagatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002790575 sp002773095*. The type genome for the species is the GenBank assembly GCA_002790575.1. The GC content of the type genome is 35.37 %

and the genome length is 0.79 Mbp.

Description of *Candidatus* Monumella gen. nov.

Candidatus Monumella (NL. fem. n. *Monumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002790575*. The type species for the genus is *Candidatus* Monumella socagatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Monumia amfitedo sp. nov.

Candidatus Monumia amfitedo (NL. fem. n. *amfitedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp001917735*. The type genome for the species is the GenBank assembly GCA_001917735.1. The GC content of the type genome is 68.03 % and the genome length is 1.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; pre rain".

Description of *Candidatus* Monumia gen. nov.

Candidatus Monumia (NL. fem. n. *Monumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *3-1-20CM-2-70-9*. The type species for the genus is *Candidatus* Monumia amfitedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P2-11E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotosaceae.

Description of *Candidatus* Monumia argumilega sp. nov.

Candidatus Monumia argumilega (NL. fem. n. *argumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005881885*. The type genome for the species is the GenBank assembly GCA_005881885.1. The GC content of the type genome is 67.42 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Monumia ceraritoga sp. nov.

Candidatus Monumia ceraritoga (NL. fem. n. *ceraritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005889075*. The type genome for the species is the GenBank assembly GCA_005881735.1. The GC content of the type genome is 67.54 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Monumia decinigena sp. nov.

Candidatus Monumia decinigena (NL. fem. n. *decinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005889275*. The type genome for the species is the GenBank assembly GCA_005889415.1. The GC content of the type genome is 69.2 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Monumia dicabax sp. nov.

Candidatus Monumia dicabax (NL. fem. n. *dicabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005880575*. The type genome for the species is the GenBank assembly GCA_005880575.1. The GC content of the type genome is 67.43 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Monumia encomatio sp. nov.

Candidatus Monumia encomatio (NL. fem. n. *encomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005889445*. The type genome for the species is the GenBank assembly GCA_005889445.1. The GC content of the type genome is 68.46 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Monumia favilastra sp. nov.

Candidatus Monumia favilastra (NL. fem. n. *favilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp001920645*. The type genome for the species is the GenBank assembly GCA_001920645.1. The GC content of the type genome is 70.41 % and the genome length is 1.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 20cm depth; 4 days after first rain event (27mm)".

Description of *Candidatus* Monumia frigdago sp. nov.

Candidatus Monumia frigdago (NL. fem. n. *frigdago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005889295*. The type genome for the species is the GenBank assembly GCA_005889295.1. The GC content of the type genome is 66.88 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Monumia habacitica sp. nov.

Candidatus Monumia habacitica (NL. fem. n. *habacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp001919195*. The type genome for the species is the GenBank assembly GCA_005883525.1. The GC content of the type genome is 70.53 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Monumia mavoribula sp. nov.

Candidatus Monumia mavoribula (NL. fem. n. *mavoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005881085*. The type genome for the species is the GenBank assembly GCA_005881085.1. The GC content of the type genome is 67.24 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Monumia peropitas sp. nov.

Candidatus Monumia peropitas (NL. fem. n. *peropitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005883775*. The type genome for the species is the GenBank assembly GCA_005880335.1. The GC content of the type genome is 67.14 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Monumia refunousia sp. nov.

Candidatus Monumia refunousia (NL. fem. n. *refunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005882765*. The type genome for the species is the GenBank assembly GCA_005881975.1. The GC content of the type genome is 66.95 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Monumia venefisca sp. nov.

Candidatus Monumia venefisca (NL. fem. n. *venefisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-2-70-9 sp005879975*. The type genome for the species is the GenBank assembly GCA_005879975.1. The GC content of the type genome is 67.35 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Monumida recumitio sp. nov.

Candidatus Monumida recumitio (NL. fem. n. *recumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKBD01 sp903825565*. The type genome for the species is the GenBank assembly GCA_903825565.1. The GC content of the type genome is 58.12 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Monumida gen. nov.

Candidatus Monumida (NL. fem. n. *Monumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKBD01*. The type species for the genus is *Candidatus* Monumida recumitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4142*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobellaceae.

Description of *Candidatus* Monumosa sicaratio sp. nov.

Candidatus Monumosa sicaratio (NL. fem. n. *sicaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B30-G15 sp003648085*. The type genome for the species is the GenBank assembly GCA_003648085.1. The GC content of the type genome is 61.9 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Monumosa gen. nov.

Candidatus Monumosa (NL. fem. n. *Monumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B30-G15*. The type species for the genus is *Candidatus* Monumosa sicaratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B4-G1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubulaceae.

Description of *Candidatus* Monumula almucisca sp. nov.

Candidatus Monumula almucisca (NL. fem. n. *almucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-42-10 sp001773455*. The type genome for the species is the GenBank assembly GCA_001773455.1. The GC content of the type genome is 41.32 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Monumula gen. nov.

Candidatus Monumula (NL. fem. n. *Monumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-42-10*. The type species for the genus is *Candidatus* Monumula almucisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-42-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monumulaceae.

Description of *Candidatus* Monumulaceae fam. nov.

Candidatus Monumulaceae (NL. fem. n. *Monumulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-42-10.* The type genus for the taxon is *Candidatus* Monumula .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-16-42-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monumulales.

Description of *Candidatus* Monumulales ord. nov.

Candidatus Monumulales (NL. fem. n. *Monumulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-42-10.* The type genus for the taxon is *Candidatus* Monumula .

According to the GTDB R06-RS202, this order belongs to the class *Gracilibacteria*.

Description of *Candidatus* Moorea bonifitia sp. nov.

Candidatus Moorea bonifitia (NL. fem. n. *bonifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moorea sp010692325*. The type genome for the species is the GenBank assembly GCA_010692325.1. The GC content of the type genome is 43.63 % and the genome length is 7.99 Mbp.

Description of *Candidatus* Moorea obvalivita sp. nov.

Candidatus Moorea obvalivita (NL. fem. n. *obvalivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moorea sp010671925*. The type genome for the species is the GenBank assembly GCA_010671925.1. The GC content of the type genome is 43.67 % and the genome length is 9.94 Mbp.

Description of *Candidatus* Moorea omnigicula sp. nov.

Candidatus Moorea omnigicula (NL. fem. n. *omnigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moorea sp010692395*. The type genome for the species is the GenBank assembly GCA_010692395.1. The GC content of the type genome is 43.17 % and the genome length is 8.36 Mbp.

Description of *Candidatus* Moorea senipicella sp. nov.

Candidatus Moorea senipicella (NL. fem. n. *senipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moorea sp011524395*. The type genome for the species is the GenBank assembly GCA_011524395.1. The GC content of the type genome is 43.1 % and the genome length is 7.75 Mbp.

Description of *Candidatus* Moorella abrumedo sp. nov.

Candidatus Moorella abrumedo (NL. fem. n. *abrumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moorella sp002383405*. The type genome for the species is the GenBank assembly GCA_002383405.1. The GC content of the type genome is 56.83 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Moorella pecunitia sp. nov.

Candidatus Moorella pecunitia (NL. fem. n. *pecunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moorella sp003116935*. The type genome for the species is the GenBank assembly RS_GCF_003116935.1. The GC content of the type genome is 56.61 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Moorella vicatilega sp. nov.

Candidatus Moorella vicatilega (NL. fem. n. *vicatilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moorella sp006538365*. The type genome for the species is the GenBank assembly RS_GCF_006538365.1. The GC content of the type genome is 53.98 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Moraxella volunimonas sp. nov.

Candidatus Moraxella volunimonas (NL. fem. n. *volunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moraxella sp002224245*. The type genome for the species is the GenBank assembly RS_GCF_002224245.2. The GC content of the type genome is 43.09 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Moraxella homulitas sp. nov.

Candidatus Moraxella homulitas (NL. fem. n. *homulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moraxella_A sp002478835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002478835.1. The GC content of the type genome is 44.09 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Morigana bugilitia sp. nov.

Candidatus Morigana bugilitia (NL. fem. n. *bugilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS363 sp900550695*. The type genome for the species is the

GenBank assembly RS_GCF_900772515.1. The GC content of the type genome is 43.33 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Morigana gen. nov.

Candidatus Morigana (NL. fem. n. *Morigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS363*. The type species for the genus is *Candidatus* Morigana bugilitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Morigana manomousia sp. nov.

Candidatus Morigana manomousia (NL. fem. n. *manomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS363 sp900543105*. The type genome for the species is the GenBank assembly GCA_900543105.1. The GC content of the type genome is 45.21 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Morigana obtorifica sp. nov.

Candidatus Morigana obtorifica (NL. fem. n. *obtorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS363 sp900768245*. The type genome for the species is the GenBank assembly RS_GCF_900768245.1. The GC content of the type genome is 41.51 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Morigana sotulitoga sp. nov.

Candidatus Morigana sotulitoga (NL. fem. n. *sotulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS363 sp900541495*. The type genome for the species is the GenBank assembly RS_GCF_900770065.1. The GC content of the type genome is 45.56 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Morigaria conipimonas sp. nov.

Candidatus Morigaria conipimonas (NL. fem. n. *conipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXQG01 sp012974445*. The type genome for the species is the GenBank assembly GCA_012974445.1. The GC content of the type genome is 57.31 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Morigaria gen. nov.

Candidatus Morigaria (NL. fem. n. *Morigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXQG01*. The type species for the genus is *Candidatus* Morigaria conipimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAXQG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Morigariaceae.

Description of *Candidatus* Morigariaceae fam. nov.

Candidatus Morigariaceae (NL. fem. n. *Morigariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAXQG01*. The type genus for the taxon is *Candidatus* Morigaria .

According to GTDB R06-RS202, this family belongs to the order *Desulfuromonadales*.

Description of *Candidatus* Morigella cenodastra sp. nov.

Candidatus Morigella cenodastra (NL. fem. n. *cenodastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-1 sp000447245*. The type genome for the species is the GenBank assembly GCA_000447245.1. The GC content of the type genome is 41.89 % and the genome length is 2.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment at 5 m depth in an aquifer adjacent to the Colorado River".

Description of *Candidatus* Morigella gen. nov.

Candidatus Morigella (NL. fem. n. *Morigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-1*. The type species for the genus is *Candidatus* Morigella cenodastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Morigellaceae.

Description of *Candidatus* Morigellaceae fam. nov.

Candidatus Morigellaceae (NL. fem. n. *Morigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-1.* The type genus for the taxon is *Candidatus* Morigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Loripellales.

Description of *Candidatus* Morigia affuletta sp. nov.

Candidatus Morigia affuletta (NL. fem. n. *affuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCRA01 sp004298665*. The type genome for the species is the GenBank assembly GCA_004298665.1. The GC content of the type genome is 65.57 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Morigia gen. nov.

Candidatus Morigia (NL. fem. n. *Morigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCRA01*. The type species for the genus is *Candidatus* Morigia affuletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCRA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Morigiaceae.

Description of *Candidatus* Morigiaceae fam. nov.

Candidatus Morigiaceae (NL. fem. n. *Morigiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCRA01*. The type genus for the taxon is *Candidatus* Morigia .

According to GTDB R06-RS202, this family belongs to the order *Baltobacterales*.

Description of *Candidatus* Morigia cinefessa sp. nov.

Candidatus Morigia cinefessa (NL. fem. n. *cinefessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCRA01 sp004298675*. The type genome for the species is the GenBank assembly GCA_004298675.1. The GC content of the type genome is 66.48 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Morigia minagax sp. nov.

Candidatus Morigia minagax (NL. fem. n. *minagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCRA01 sp004297985*. The type genome for the species is the GenBank assembly GCA_004297985.1. The GC content of the type genome is 66.13 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Morigida esculigena sp. nov.

Candidatus Morigida esculigena (NL. fem. n. *esculigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10799 sp003452655*. The type genome for the species is the GenBank assembly GCA_003452655.1. The GC content of the type genome is 60.91 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Morigida gen. nov.

Candidatus Morigida (NL. fem. n. *Morigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10799*. The type species for the genus is *Candidatus* Morigida esculigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10799*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Morigidaceae.

Description of *Candidatus* Morigidaceae fam. nov.

Candidatus Morigidaceae (NL. fem. n. *Morigidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10799.* The type genus for the taxon is *Candidatus* Morigida .

According to GTDB R06-RS202, this family belongs to the order *Nanopelagicales*.

Description of *Candidatus* Morigosa delapatica sp. nov.

Candidatus Morigosa delapatica (NL. fem. n. *delapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3073 sp002774315*. The type genome for the species is the GenBank assembly GCA_002774315.1. The GC content of the type genome is 39.88 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Morigosa gen. nov.

Candidatus Morigosa (NL. fem. n. *Morigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3073*. The type species for the genus is *Candidatus* Morigosa delapatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Morigosaceae.

Description of *Candidatus* Morigosaceae fam. nov.

Candidatus Morigosaceae (NL. fem. n. *Morigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3073.* The type genus for the taxon is *Candidatus* Morigosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Morigosales.

Description of *Candidatus* Morigosales ord. nov.

Candidatus Morigosales (NL. fem. n. *Morigosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3073.* The type genus for the taxon is *Candidatus* Morigosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA3073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Morigosae.

Description of *Candidatus* Morigosae class. nov.

Candidatus Morigosae (NL. fem. n. *c__Morigosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3073.* The type genus for the taxon is *Candidatus* Morigosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *WOR-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Tigurariota.

Description of *Candidatus* Morigosa semifitas sp. nov.

Candidatus Morigosa semifitas (NL. fem. n. *semifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3073 sp002366725*. The type genome for the species is the GenBank assembly GCA_002245405.1. The GC content of the type genome is 44.19 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Morigula advinitura sp. nov.

Candidatus Morigula advinitura (NL. fem. n. *advinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3633 sp002374095*. The type genome for the species is the GenBank assembly GCA_002374095.1. The GC content of the type genome is 33.19 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Morigula gen. nov.

Candidatus Morigula (NL. fem. n. *Morigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3633*. The type species for the genus is *Candidatus* Morigula advinitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Morigula bicinedo sp. nov.

Candidatus Morigula bicinedo (NL. fem. n. *bicinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3633 sp902803205*. The type genome for the species is the GenBank assembly GCA_902803205.1. The GC content of the type genome is 28.89 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Morigula curotivita sp. nov.

Candidatus Morigula curotivita (NL. fem. n. *curotivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3633 sp900313535*. The type genome for the species is the GenBank assembly GCA_900313535.1. The GC content of the type genome is 32.01 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Morigula forabisca sp. nov.

Candidatus Morigula forabisca (NL. fem. n. *forabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3633 sp002392345*. The type genome for the species is the GenBank assembly GCA_002392345.1. The GC content of the type genome is 34.66 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Moritella accomisca sp. nov.

Candidatus Moritella accomisca (NL. fem. n. *accomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moritella sp001574435*. The type genome for the species is the GenBank assembly RS_GCF_001574435.1. The GC content of the type genome is 39.97 % and the genome length is 4.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sediment from Japan Trench".

Description of *Candidatus* Moritella cosigitrix sp. nov.

Candidatus Moritella cosigitrix (NL. fem. n. *cosigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moritella sp000170855*. The type genome for the species is the GenBank assembly RS_GCF_000170855.1. The GC content of the type genome is 41.0 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Moritella defalitura sp. nov.

Candidatus Moritella defalitura (NL. fem. n. *defalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moritella sp002836355*. The type genome for the species is the GenBank assembly RS_GCF_002836355.1. The GC content of the type genome is 40.85 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Moritella relenatica sp. nov.

Candidatus Moritella relenatica (NL. fem. n. *relenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Moritella sp013215705*. The type genome for the species is the

GenBank assembly GCA_013215705.1. The GC content of the type genome is 40.71 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Motilimonas cerevisca sp. nov.

Candidatus Motilimonas cerevisca (NL. fem. n. *cerevisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Motilimonas sp003596335*. The type genome for the species is the GenBank assembly RS_GCF_003596335.1. The GC content of the type genome is 45.49 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Motiliproteus carucitrix sp. nov.

Candidatus Motiliproteus carucitrix (NL. fem. n. *carucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Motiliproteus sp004195305*. The type genome for the species is the GenBank assembly GCA_004195305.1. The GC content of the type genome is 54.46 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Motiliproteus exsatimonas sp. nov.

Candidatus Motiliproteus exsatimonas (NL. fem. n. *exsatimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Motiliproteus sp001968815*. The type genome for the species is the GenBank assembly RS_GCF_001968815.1. The GC content of the type genome is 46.81 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Mucilaginibacter adpecimonia sp. nov.

Candidatus Mucilaginibacter adpecimonia (NL. fem. n. *adpecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp007846095*. The type genome for the species is the GenBank assembly RS_GCF_007846095.1. The GC content of the type genome is 43.04 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Mucilaginibacter adrecitia sp. nov.

Candidatus Mucilaginibacter adrecitia (NL. fem. n. *adrecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp900110415*. The type genome for the species is the GenBank assembly RS_GCF_900110415.1. The GC content of the type genome is 43.06 % and the genome length is 7.19 Mbp.

Description of *Candidatus* Mucilaginibacter adsicicula sp. nov.

Candidatus Mucilaginibacter adsicicula (NL. fem. n. *adsicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp009770985*. The type genome for the species is the GenBank assembly RS_GCF_009770985.1. The GC content of the type genome is 42.09 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Mucilaginibacter alismessa sp. nov.

Candidatus Mucilaginibacter alismessa (NL. fem. n. *alismessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp014200575*. The type genome for the species is the GenBank assembly RS_GCF_014200575.1. The GC content of the type genome is 41.68 % and the genome length is 6.24 Mbp.

Description of *Candidatus* Mucilaginibacter amatrilenta sp. nov.

Candidatus Mucilaginibacter amatrilenta (NL. fem. n. *amatrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp011089895*. The type genome for the species is the GenBank assembly RS_GCF_011089895.1. The GC content of the type genome is 41.98 % and the genome length is 7.15 Mbp.

Description of *Candidatus* Mucilaginibacter anamnicula sp. nov.

Candidatus Mucilaginibacter anamnicula (NL. fem. n. *anamnicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903915155*. The type genome for the species is the GenBank assembly GCA_903915155.1. The GC content of the type genome is 42.36 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Mucilaginibacter andabentia sp. nov.

Candidatus Mucilaginibacter andabentia (NL. fem. n. *andabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013289045*. The type genome for the species is the GenBank assembly GCA_013289045.1. The GC content of the type genome is 44.4 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Mucilaginibacter apsimitura sp. nov.

Candidatus Mucilaginibacter apsimitura (NL. fem. n. *apsimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013286565*. The type genome for the species is the GenBank assembly GCA_013286565.1. The GC content of the type genome is 41.92 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Mucilaginibacter arvecicula sp. nov.

Candidatus Mucilaginibacter arvecicula (NL. fem. n. *arvecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp001636615*. The type genome for the species is the GenBank assembly RS_GCF_001636615.1. The GC content of the type genome is 43.45 % and the genome length is 5.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "forest soil".

Description of *Candidatus* Mucilaginibacter ascalitoga sp. nov.

Candidatus Mucilaginibacter ascalitoga (NL. fem. n. *ascalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013289005*. The type genome for the species is the

GenBank assembly GCA_013289005.1. The GC content of the type genome is 40.3 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Mucilaginibacter aseptedo sp. nov.

Candidatus Mucilaginibacter aseptedo (NL. fem. n. *aseptedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013288685*. The type genome for the species is the GenBank assembly GCA_013288685.1. The GC content of the type genome is 42.78 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Mucilaginibacter benevatio sp. nov.

Candidatus Mucilaginibacter benevatio (NL. fem. n. *benevatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp010093045*. The type genome for the species is the GenBank assembly RS_GCF_010093045.1. The GC content of the type genome is 44.81 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Mucilaginibacter bicapago sp. nov.

Candidatus Mucilaginibacter bicapago (NL. fem. n. *bicapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp003208075*. The type genome for the species is the GenBank assembly RS_GCF_003208075.1. The GC content of the type genome is 42.27 % and the genome length is 7.38 Mbp.

Description of *Candidatus* Mucilaginibacter bifaritura sp. nov.

Candidatus Mucilaginibacter bifaritura (NL. fem. n. *bifaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903885865*. The type genome for the species is the GenBank assembly GCA_903911175.1. The GC content of the type genome is 42.25 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Mucilaginibacter biverousia sp. nov.

Candidatus Mucilaginibacter biverousia (NL. fem. n. *biverousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013286985*. The type genome for the species is the GenBank assembly GCA_013286985.1. The GC content of the type genome is 40.43 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Mucilaginibacter bulapitas sp. nov.

Candidatus Mucilaginibacter bulapitas (NL. fem. n. *bulapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp007846085*. The type genome for the species is the GenBank assembly RS_GCF_007846085.1. The GC content of the type genome is 43.09 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Mucilaginibacter buxanitas sp. nov.

Candidatus Mucilaginibacter buxanitas (NL. fem. n. *buxanitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp014376655*. The type genome for the species is the GenBank assembly GCA_014376655.1. The GC content of the type genome is 41.34 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Mucilaginibacter ceraritica sp. nov.

Candidatus Mucilaginibacter ceraritica (NL. fem. n. *ceraritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp003432065*. The type genome for the species is the GenBank assembly RS_GCF_003432065.1. The GC content of the type genome is 44.04 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Mucilaginibacter cinipicula sp. nov.

Candidatus Mucilaginibacter cinipicula (NL. fem. n. *cinipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp002413785*. The type genome for the species is the GenBank assembly GCA_002429195.1. The GC content of the type genome is 41.44 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Mucilaginibacter cituvitura sp. nov.

Candidatus Mucilaginibacter cituvitura (NL. fem. n. *cituvitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp003576455*. The type genome for the species is the GenBank assembly RS_GCF_003576455.2. The GC content of the type genome is 43.94 % and the genome length is 7.15 Mbp.

Description of *Candidatus* Mucilaginibacter cocodastra sp. nov.

Candidatus Mucilaginibacter cocodastra (NL. fem. n. *cocodastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp900142915*. The type genome for the species is the GenBank assembly RS_GCF_900142915.1. The GC content of the type genome is 41.06 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Mucilaginibacter conopimonia sp. nov.

Candidatus Mucilaginibacter conopimonia (NL. fem. n. *conopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013288485*. The type genome for the species is the GenBank assembly GCA_013288485.1. The GC content of the type genome is 42.15 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Mucilaginibacter culibago sp. nov.

Candidatus Mucilaginibacter culibago (NL. fem. n. *culibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp001596135*. The type genome for the species is the GenBank assembly RS_GCF_001596135.1. The GC content of the type genome is 43.34

% and the genome length is 5.62 Mbp.

Description of *Candidatus* Mucilaginibacter decupicella sp. nov.

Candidatus Mucilaginibacter decupicella (NL. fem. n. *decupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013285685*. The type genome for the species is the GenBank assembly GCA_013285685.1. The GC content of the type genome is 45.37 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Mucilaginibacter defetimonas sp. nov.

Candidatus Mucilaginibacter defetimonas (NL. fem. n. *defetimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013287005*. The type genome for the species is the GenBank assembly GCA_013287005.1. The GC content of the type genome is 40.38 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Mucilaginibacter exhonibula sp. nov.

Candidatus Mucilaginibacter exhonibula (NL. fem. n. *exhonibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp012849215*. The type genome for the species is the GenBank assembly RS_GCF_012849215.1. The GC content of the type genome is 41.39 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Mucilaginibacter expanetta sp. nov.

Candidatus Mucilaginibacter expanetta (NL. fem. n. *expanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp003664165*. The type genome for the species is the GenBank assembly RS_GCF_003664165.1. The GC content of the type genome is 43.01 % and the genome length is 7.72 Mbp.

Description of *Candidatus* Mucilaginibacter gerunitia sp. nov.

Candidatus Mucilaginibacter gerunitia (NL. fem. n. *gerunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp001898335*. The type genome for the species is the GenBank assembly GCA_001898335.1. The GC content of the type genome is 43.73 % and the genome length is 4.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Mucilaginibacter hibisax sp. nov.

Candidatus Mucilaginibacter hibisax (NL. fem. n. *hibisax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013408825*. The type genome for the species is the GenBank assembly RS_GCF_013408825.1. The GC content of the type genome is 39.95 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Mucilaginibacter immigetta sp. nov.

Candidatus Mucilaginibacter immigetta (NL. fem. n. *immigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp003432115*. The type genome for the species is the GenBank assembly RS_GCF_003432115.1. The GC content of the type genome is 44.6 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Mucilaginibacter incucibula sp. nov.

Candidatus Mucilaginibacter incucibula (NL. fem. n. *incucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp009755275*. The type genome for the species is the GenBank assembly RS_GCF_009755275.1. The GC content of the type genome is 41.63 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Mucilaginibacter inlocibula sp. nov.

Candidatus Mucilaginibacter inlocibula (NL. fem. n. *inlocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903644075*. The type genome for the species is the GenBank assembly RS_GCF_903644075.1. The GC content of the type genome is 42.07 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Mucilaginibacter insibibula sp. nov.

Candidatus Mucilaginibacter insibibula (NL. fem. n. *insibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp014200495*. The type genome for the species is the GenBank assembly RS_GCF_014200495.1. The GC content of the type genome is 41.27 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Mucilaginibacter lanigessa sp. nov.

Candidatus Mucilaginibacter lanigessa (NL. fem. n. *lanigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903891475*. The type genome for the species is the GenBank assembly GCA_903891475.1. The GC content of the type genome is 36.68 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Mucilaginibacter maxumiforma sp. nov.

Candidatus Mucilaginibacter maxumiforma (NL. fem. n. *maxumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903927645*. The type genome for the species is the GenBank assembly GCA_903927645.1. The GC content of the type genome is 35.47 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Mucilaginibacter metabisca sp. nov.

Candidatus Mucilaginibacter metabisca (NL. fem. n. *metabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp003635105*. The type genome for the species is the GenBank assembly RS_GCF_003635105.1. The GC content of the type genome is 41.79

% and the genome length is 4.76 Mbp.

Description of *Candidatus* Mucilaginibacter monocicula sp. nov.

Candidatus Mucilaginibacter monocicula (NL. fem. n. *monocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903887275*. The type genome for the species is the GenBank assembly GCA_903887275.1. The GC content of the type genome is 42.61 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Mucilaginibacter monogessa sp. nov.

Candidatus Mucilaginibacter monogessa (NL. fem. n. *monogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp900103125*. The type genome for the species is the GenBank assembly RS_GCF_900103125.1. The GC content of the type genome is 42.42 % and the genome length is 7.16 Mbp.

Description of *Candidatus* Mucilaginibacter nitelibula sp. nov.

Candidatus Mucilaginibacter nitelibula (NL. fem. n. *nitelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp001705515*. The type genome for the species is the GenBank assembly RS_GCF_001705515.1. The GC content of the type genome is 45.71 % and the genome length is 5.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Amazon soil (pasture)".

Description of *Candidatus* Mucilaginibacter nubecilega sp. nov.

Candidatus Mucilaginibacter nubecilega (NL. fem. n. *nubecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp005938025*. The type genome for the species is the GenBank assembly RS_GCF_005938025.2. The GC content of the type genome is 42.5 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Mucilaginibacter nubigilenta sp. nov.

Candidatus Mucilaginibacter nubigilenta (NL. fem. n. *nubigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013283875*. The type genome for the species is the GenBank assembly RS_GCF_013283875.1. The GC content of the type genome is 46.4 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Mucilaginibacter omninilega sp. nov.

Candidatus Mucilaginibacter omninilega (NL. fem. n. *omninilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp009765905*. The type genome for the species is the GenBank assembly RS_GCF_009765905.1. The GC content of the type genome is 40.08 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Mucilaginibacter onocrugo sp. nov.

Candidatus Mucilaginibacter onocrugo (NL. fem. n. *onocrugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903913935*. The type genome for the species is the GenBank assembly GCA_903913935.1. The GC content of the type genome is 42.71 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Mucilaginibacter peradedo sp. nov.

Candidatus Mucilaginibacter peradedo (NL. fem. n. *peradedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903864275*. The type genome for the species is the GenBank assembly GCA_903864275.1. The GC content of the type genome is 42.96 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Mucilaginibacter pluscitio sp. nov.

Candidatus Mucilaginibacter pluscitio (NL. fem. n. *pluscitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp009928685*. The type genome for the species is the GenBank assembly RS_GCF_009928685.1. The GC content of the type genome is 42.71 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Mucilaginibacter recocago sp. nov.

Candidatus Mucilaginibacter recocago (NL. fem. n. *recocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp009754905*. The type genome for the species is the GenBank assembly RS_GCF_009754905.1. The GC content of the type genome is 43.88 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Mucilaginibacter regifousia sp. nov.

Candidatus Mucilaginibacter regifousia (NL. fem. n. *regifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013149275*. The type genome for the species is the GenBank assembly RS_GCF_013149275.1. The GC content of the type genome is 42.76 % and the genome length is 6.83 Mbp.

Description of *Candidatus* Mucilaginibacter resupitrix sp. nov.

Candidatus Mucilaginibacter resupitrix (NL. fem. n. *resupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp002403905*. The type genome for the species is the GenBank assembly GCA_002403905.1. The GC content of the type genome is 41.02 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Mucilaginibacter rubigentia sp. nov.

Candidatus Mucilaginibacter rubigentia (NL. fem. n. *rubigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903866915*. The type genome for the species is the GenBank assembly GCA_903866915.1. The GC content of the type genome is 43.07 %

and the genome length is 3.75 Mbp.

Description of *Candidatus* Mucilaginibacter scaccisca sp. nov.

Candidatus Mucilaginibacter scaccisca (NL. fem. n. *scaccisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013288465*. The type genome for the species is the GenBank assembly GCA_013288465.1. The GC content of the type genome is 41.73 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Mucilaginibacter semifibra sp. nov.

Candidatus Mucilaginibacter semifibra (NL. fem. n. *semifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013287375*. The type genome for the species is the GenBank assembly GCA_013287375.1. The GC content of the type genome is 40.44 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Mucilaginibacter telegatica sp. nov.

Candidatus Mucilaginibacter telegatica (NL. fem. n. *telegatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903893715*. The type genome for the species is the GenBank assembly GCA_903845845.1. The GC content of the type genome is 44.39 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Mucilaginibacter tomacousia sp. nov.

Candidatus Mucilaginibacter tomacousia (NL. fem. n. *tomacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp004054195*. The type genome for the species is the GenBank assembly RS_GCF_004054195.1. The GC content of the type genome is 44.76 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Mucilaginibacter turilibula sp. nov.

Candidatus Mucilaginibacter turilibula (NL. fem. n. *turilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp903863845*. The type genome for the species is the GenBank assembly GCA_903904675.1. The GC content of the type genome is 43.08 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Mucilaginibacter verificula sp. nov.

Candidatus Mucilaginibacter verificula (NL. fem. n. *verificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp014205845*. The type genome for the species is the GenBank assembly RS_GCF_014205845.1. The GC content of the type genome is 42.05 % and the genome length is 6.95 Mbp.

Description of *Candidatus* Mucilaginibacter vicatitudo sp. nov.

Candidatus Mucilaginibacter vicatitudo (NL. fem. n. *vicatitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013286235*. The type genome for the species is the GenBank assembly GCA_013286235.1. The GC content of the type genome is 45.83 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Mucilaginibacter videlimonia sp. nov.

Candidatus Mucilaginibacter videlimonia (NL. fem. n. *videlimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013286325*. The type genome for the species is the GenBank assembly GCA_013286325.1. The GC content of the type genome is 39.94 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Mucilaginibacter vinolitoga sp. nov.

Candidatus Mucilaginibacter vinolitoga (NL. fem. n. *vinolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp013288235*. The type genome for the species is the GenBank assembly GCA_013289285.1. The GC content of the type genome is 41.74 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Mucilaginibacter xenopitudo sp. nov.

Candidatus Mucilaginibacter xenopitudo (NL. fem. n. *xenopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucilaginibacter sp002288635*. The type genome for the species is the GenBank assembly RS_GCF_002288635.1. The GC content of the type genome is 43.81 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Mucinivorans repagigena sp. nov.

Candidatus Mucinivorans repagigena (NL. fem. n. *repagigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mucinivorans sp002315675*. The type genome for the species is the GenBank assembly GCA_002315675.1. The GC content of the type genome is 39.13 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Mumia maxumifica sp. nov.

Candidatus Mumia maxumifica (NL. fem. n. *maxumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mumia sp014127285*. The type genome for the species is the GenBank assembly RS_GCF_011751845.1. The GC content of the type genome is 70.39 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Munifana adlacitudo sp. nov.

Candidatus Munifana adlacitudo (NL. fem. n. *adlacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11606 sp002699625*. The type genome for the species is the GenBank assembly GCA_002699625.1. The GC content of the type genome is 65.9 %

and the genome length is 2.44 Mbp.

Description of *Candidatus* Munifana gen. nov.

Candidatus Munifana (NL. fem. n. *Munifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11606*. The type species for the genus is *Candidatus* Munifana adlacitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11606*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifanaceae.

Description of *Candidatus* Munifanaceae fam. nov.

Candidatus Munifanaceae (NL. fem. n. *Munifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11606.* The type genus for the taxon is *Candidatus* Munifana .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Munifana feficitia sp. nov.

Candidatus Munifana feficitia (NL. fem. n. *feficitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11606 sp002729125*. The type genome for the species is the GenBank assembly GCA_003444815.1. The GC content of the type genome is 65.18 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Munifana semilicella sp. nov.

Candidatus Munifana semilicella (NL. fem. n. *semilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11606 sp009937405*. The type genome for the species is the GenBank assembly GCA_009937115.1. The GC content of the type genome is 61.63 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Munifana tegumimonia sp. nov.

Candidatus Munifana tegumimonia (NL. fem. n. *tegumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11606 sp002694825*. The type genome for the species is the GenBank assembly GCA_002320305.1. The GC content of the type genome is 65.41 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Munifaria grallifica sp. nov.

Candidatus Munifaria grallifica (NL. fem. n. *grallifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2780 sp002352345*. The type genome for the species is the GenBank assembly GCA_002352345.1. The GC content of the type genome is 44.9 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Munifaria gen. nov.

Candidatus Munifaria (NL. fem. n. *Munifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2780*. The type species for the genus is *Candidatus* Munifaria grallifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2780*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifariaceae.

Description of *Candidatus* Munifariaceae fam. nov.

Candidatus Munifariaceae (NL. fem. n. *Munifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2780.* The type genus for the taxon is *Candidatus* Munifaria .

According to GTDB R06-RS202, this family belongs to the order *Methylococcales*.

Description of *Candidatus* Munifaria semilibula sp. nov.

Candidatus Munifaria semilibula (NL. fem. n. *semilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2780 sp003646305*. The type genome for the species is the GenBank assembly GCA_003646305.1. The GC content of the type genome is 45.8 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Munifella cohuritudo sp. nov.

Candidatus Munifella cohuritudo (NL. fem. n. *cohuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA931 sp002293615*. The type genome for the species is the GenBank assembly GCA_002293385.1. The GC content of the type genome is 51.54 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Munifella gen. nov.

Candidatus Munifella (NL. fem. n. *Munifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA931*. The type species for the genus is *Candidatus* Munifella cohuritudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Munifella feculitudo sp. nov.

Candidatus Munifella feculitudo (NL. fem. n. *feculitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA931 sp009786085*. The type genome for the species is the GenBank assembly GCA_009786135.1. The GC content of the type genome is 57.72 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Munifella rumifitudo sp. nov.

Candidatus Munifella rumifitudo (NL. fem. n. *rumifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA931 sp009786025*. The type genome for the species is the GenBank assembly GCA_009786025.1. The GC content of the type genome is 56.2 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Munifella vatilimonia sp. nov.

Candidatus Munifella vatilimonia (NL. fem. n. *vatilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA931 sp009778785*. The type genome for the species is the GenBank assembly GCA_009778785.1. The GC content of the type genome is 57.37 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Munifia feditigena sp. nov.

Candidatus Munifia feditigena (NL. fem. n. *feditigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YIM-78166 sp004123195*. The type genome for the species is the GenBank assembly RS_GCF_004123195.1. The GC content of the type genome is 42.33 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Munifia gen. nov.

Candidatus Munifia (NL. fem. n. *Munifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YIM-78166*. The type species for the genus is *Candidatus* Munifia feditigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAOX-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luticellaceae.

Description of *Candidatus* Munifia sitelitrix sp. nov.

Candidatus Munifia sitelitrix (NL. fem. n. *sitelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YIM-78166 sp004522215*. The type genome for the species is the GenBank assembly RS_GCF_004522215.1. The GC content of the type genome is 44.52 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Munifida pocilicula sp. nov.

Candidatus Munifida pocilicula (NL. fem. n. *pocilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSSB01 sp011331325*. The type genome for the species is the GenBank assembly GCA_011331325.1. The GC content of the type genome is 63.33 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Munifida gen. nov.

Candidatus Munifida (NL. fem. n. *Munifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSSB01*. The type species for the genus is *Candidatus* Munifida pocilicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSSB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifidaceae.

Description of *Candidatus* Munifidaceae fam. nov.

Candidatus Munifidaceae (NL. fem. n. *Munifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSSB01.* The type genus for the taxon is *Candidatus* Munifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSSB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Munifidales.

Description of *Candidatus* Munifidales ord. nov.

Candidatus Munifidales (NL. fem. n. *Munifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *DSSB01*. The type genus for the taxon is *Candidatus* Munifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Domigosae.

Description of *Candidatus* Munifosa capudigena sp. nov.

Candidatus Munifosa capudigena (NL. fem. n. *capudigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-515 sp003155135*. The type genome for the species is the GenBank assembly GCA_003163095.1. The GC content of the type genome is 69.54 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Munifosa gen. nov.

Candidatus Munifosa (NL. fem. n. *Munifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-515*. The type species for the genus is *Candidatus* Munifosa capudigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Munifula immurentia sp. nov.

Candidatus Munifula immurentia (NL. fem. n. *immurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *V1-33 sp003402705*. The type genome for the species is the GenBank assembly GCA_003402705.1. The GC content of the type genome is 63.31 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Munifula gen. nov.

Candidatus Munifula (NL. fem. n. *Munifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *V1-33*. The type species for the genus is *Candidatus* Munifula immurentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *V1-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifulaceae.

Description of *Candidatus* Munifulaceae fam. nov.

Candidatus Munifulaceae (NL. fem. n. *Munifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *V1-33.* The type genus for the taxon is *Candidatus* Munifula .

According to GTDB R06-RS202, this family belongs to the order *Verrucomicrobiales*.

Description of *Candidatus* Munimana prodritio sp. nov.

Candidatus Munimana prodritio (NL. fem. n. *prodritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIAN01 sp009691715*. The type genome for the species is the GenBank assembly GCA_009691715.1. The GC content of the type genome is 68.68 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Munimana gen. nov.

Candidatus Munimana (NL. fem. n. *Munimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIAN01*. The type species for the genus is *Candidatus* Munimana prodritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SIAN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munimanaceae.

Description of *Candidatus* Munimanaceae fam. nov.

Candidatus Munimanaceae (NL. fem. n. *Munimanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *SIAN01*. The type genus for the taxon is *Candidatus* Munimana .

According to the original version of GTDB R06-RS202, this family belongs to the order *B15-G4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Maledanales.

Description of *Candidatus* Munimaria ulcisibula sp. nov.

Candidatus Munimaria ulcisibula (NL. fem. n. *ulcisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHT01 sp013151705*. The type genome for the species is the GenBank assembly GCA_013151705.1. The GC content of the type genome is 51.37 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Munimaria gen. nov.

Candidatus Munimaria (NL. fem. n. *Munimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHT01*. The type species for the genus is *Candidatus* Munimaria ulcisibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADHT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munimariaceae.

Description of *Candidatus* Munimariaceae fam. nov.

Candidatus Munimariaceae (NL. fem. n. *Munimariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADHT01*. The type genus for the taxon is *Candidatus* Munimaria .

According to GTDB R06-RS202, this family belongs to the order *Victivallales*.

Description of *Candidatus* Munimella excariforma sp. nov.

Candidatus Munimella excariforma (NL. fem. n. *excariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2717185 sp012103325*. The type genome for the species is the GenBank assembly GCA_012103325.1. The GC content of the type genome is 59.32 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Munimella gen. nov.

Candidatus Munimella (NL. fem. n. *Munimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2717185*. The type species for the genus is *Candidatus* Munimella excariforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2717185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munimellaceae.

Description of *Candidatus* Munimellaceae fam. nov.

Candidatus Munimellaceae (NL. fem. n. *Munimellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2717185.* The type genus for the taxon is *Candidatus* Munimella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8366*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decenellales.

Description of *Candidatus* Munimella regifilenta sp. nov.

Candidatus Munimella regifilenta (NL. fem. n. *regifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2717185 sp002717185*. The type genome for the species is the GenBank assembly GCA_002717185.1. The GC content of the type genome is 55.07 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Munimia acrotitoga sp. nov.

Candidatus Munimia acrotitoga (NL. fem. n. *acrotitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2289 sp002419445*. The type genome for the species is the GenBank assembly GCA_002419445.1. The GC content of the type genome is 32.94 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Munimia gen. nov.

Candidatus Munimia (NL. fem. n. *Munimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2289*. The type species for the genus is *Candidatus* Munimia acrotitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5603*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divululaceae.

Description of *Candidatus* Munimia adnaribra sp. nov.

Candidatus Munimia adnaribra (NL. fem. n. *adnaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2289 sp002345425*. The type genome for the species is the GenBank assembly GCA_002345425.1. The GC content of the type genome is 31.52 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Munimia catabifica sp. nov.

Candidatus Munimia catabifica (NL. fem. n. *catabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2289 sp002419505*. The type genome for the species is the GenBank assembly GCA_002424895.1. The GC content of the type genome is 32.33 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Munimia exherentia sp. nov.

Candidatus Munimia exherentia (NL. fem. n. *exherentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2289 sp002839125*. The type genome for the species is the

GenBank assembly GCA_002839125.1. The GC content of the type genome is 31.77 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Munimia lubenatica sp. nov.

Candidatus Munimia lubenatica (NL. fem. n. *lubenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2289 sp002345505*. The type genome for the species is the GenBank assembly GCA_002345505.1. The GC content of the type genome is 31.66 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Munimida conibicella sp. nov.

Candidatus Munimida conibicella (NL. fem. n. *conibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGXB01 sp002838945*. The type genome for the species is the GenBank assembly GCA_002838945.1. The GC content of the type genome is 48.43 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Munimida gen. nov.

Candidatus Munimida (NL. fem. n. *Munimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGXB01*. The type species for the genus is *Candidatus* Munimida conibicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PGXB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munimidaceae.

Description of *Candidatus* Munimidaceae fam. nov.

Candidatus Munimidaceae (NL. fem. n. *Munimidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PGXB01.* The type genus for the taxon is *Candidatus* Munimida .

According to the original version of GTDB R06-RS202, this family belongs to the order *GN15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the

order *Candidatus* Solacidales.

Description of *Candidatus* Munimida curacentia sp. nov.

Candidatus Munimida curacentia (NL. fem. n. *curacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGXB01 sp003641425*. The type genome for the species is the GenBank assembly GCA_011040955.1. The GC content of the type genome is 48.15 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Munimosa insalivita sp. nov.

Candidatus Munimosa insalivita (NL. fem. n. *insalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFT01 sp013203475*. The type genome for the species is the GenBank assembly GCA_013203475.1. The GC content of the type genome is 62.86 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Munimosa gen. nov.

Candidatus Munimosa (NL. fem. n. *Munimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYFT01*. The type species for the genus is *Candidatus* Munimosa insalivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCN-69-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Democulaceae.

Description of *Candidatus* Munimosa rorificella sp. nov.

Candidatus Munimosa rorificella (NL. fem. n. *rorificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFT01 sp009694745*. The type genome for the species is the GenBank assembly GCA_009694745.1. The GC content of the type genome is 64.34 %

and the genome length is 2.79 Mbp.

Description of *Candidatus* Munimosa vereciforma sp. nov.

Candidatus Munimosa vereciforma (NL. fem. n. *vereciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFT01 sp005799825*. The type genome for the species is the GenBank assembly GCA_005793715.1. The GC content of the type genome is 63.76 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Munimula cisalimonas sp. nov.

Candidatus Munimula cisalimonas (NL. fem. n. *cisalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MMGLQ5-1 sp013155265*. The type genome for the species is the GenBank assembly RS_GCF_013155325.1. The GC content of the type genome is 35.88 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Munimula gen. nov.

Candidatus Munimula (NL. fem. n. *Munimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MMGLQ5-1*. The type species for the genus is *Candidatus* Munimula cisalimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Murelana capabitrix sp. nov.

Candidatus Murelana capabitrix (NL. fem. n. *capabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1394 sp902783235*. The type genome for the species is the GenBank assembly GCA_902783235.1. The GC content of the type genome is 42.34 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Murelana gen. nov.

Candidatus Murelana (NL. fem. n. *Murelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1394*. The type species for the genus is *Candidatus* Murelana capabitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Murelana desuritrix sp. nov.

Candidatus Murelana desuritrix (NL. fem. n. *desuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1394 sp900538575*. The type genome for the species is the GenBank assembly RS_GCF_900752225.1. The GC content of the type genome is 39.58 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Murelana insepitoga sp. nov.

Candidatus Murelana insepitoga (NL. fem. n. *insepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1394 sp902796865*. The type genome for the species is the GenBank assembly GCA_902796865.1. The GC content of the type genome is 39.71 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Murelana necubitura sp. nov.

Candidatus Murelana necubitura (NL. fem. n. *necubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1394 sp900066845*. The type genome for the species is the GenBank assembly RS_GCF_902362965.1. The GC content of the type genome is 37.01 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Murelana televatica sp. nov.

Candidatus Murelana televatica (NL. fem. n. *televatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1394 sp900554975*. The type genome for the species is the GenBank assembly RS_GCF_900759615.1. The GC content of the type genome is 39.28 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Murelana tiguricula sp. nov.

Candidatus Murelana tiguricula (NL. fem. n. *tiguricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1394 sp002305725*. The type genome for the species is the GenBank assembly GCA_002305725.1. The GC content of the type genome is 42.07 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Murelaria inrecisca sp. nov.

Candidatus Murelaria inrecisca (NL. fem. n. *inrecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXZC01 sp903923815*. The type genome for the species is the GenBank assembly GCA_903923815.1. The GC content of the type genome is 67.1 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Murelaria gen. nov.

Candidatus Murelaria (NL. fem. n. *Murelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXZC01*. The type species for the genus is *Candidatus* Murelaria inrecisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIXZC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Murelariaceae.

Description of *Candidatus* Murelariaceae fam. nov.

Candidatus Murelariaceae (NL. fem. n. *Murelariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CAIXZC01*. The type genus for the taxon is *Candidatus* Murelaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIXZC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Murelariales.

Description of *Candidatus* Murelariales ord. nov.

Candidatus Murelariales (NL. fem. n. *Murelariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIXZC01*. The type genus for the taxon is *Candidatus* Murelaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubigariae.

Description of *Candidatus* Murelella cohurilenta sp. nov.

Candidatus Murelella cohurilenta (NL. fem. n. *cohurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA724 sp002723075*. The type genome for the species is the GenBank assembly GCA_002690415.1. The GC content of the type genome is 41.8 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Murelella gen. nov.

Candidatus Murelella (NL. fem. n. *Murelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA724*. The type species for the genus is *Candidatus* Murelella cohurilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Murelella exindago sp. nov.

Candidatus Murelella exindago (NL. fem. n. *exindago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA724 sp902586905*. The type genome for the species is the GenBank assembly GCA_902586905.1. The GC content of the type genome is 39.53 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Murelella fatilessa sp. nov.

Candidatus Murelella fatilessa (NL. fem. n. *fatilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA724 sp902536935*. The type genome for the species is the GenBank assembly GCA_902536935.1. The GC content of the type genome is 39.12 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Murelella incucitio sp. nov.

Candidatus Murelella incucitio (NL. fem. n. *incucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA724 sp902619855*. The type genome for the species is the GenBank assembly GCA_902619855.1. The GC content of the type genome is 38.81 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Murelella insenousia sp. nov.

Candidatus Murelella insenousia (NL. fem. n. *insenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA724 sp902631125*. The type genome for the species is the GenBank assembly GCA_902631125.1. The GC content of the type genome is 38.15 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Murelella papavilenta sp. nov.

Candidatus Murelella papavilenta (NL. fem. n. *papavilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA724 sp002430545*. The type genome for the species is the GenBank assembly GCA_002430545.1. The GC content of the type genome is 39.75 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Murelella tetenessa sp. nov.

Candidatus Murelella tetenessa (NL. fem. n. *tetenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA724 sp002171575*. The type genome for the species is the GenBank assembly GCA_002171575.2. The GC content of the type genome is 42.24 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Murelella tetenicella sp. nov.

Candidatus Murelella tetenicella (NL. fem. n. *tetenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA724 sp902566635*. The type genome for the species is the GenBank assembly GCA_902566635.1. The GC content of the type genome is 38.41 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Murelia oppugilega sp. nov.

Candidatus Murelia oppugilega (NL. fem. n. *oppugilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J153 sp003693905*. The type genome for the species is the GenBank assembly GCA_003693905.1. The GC content of the type genome is 66.01 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Murelia gen. nov.

Candidatus Murelia (NL. fem. n. *Murelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J153*. The type species for the genus is *Candidatus* Murelia oppugilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J153*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mureliaceae.

Description of *Candidatus* Mureliaceae fam. nov.

Candidatus Mureliaceae (NL. fem. n. *Mureliaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J153.* The type genus for the taxon is *Candidatus* Murelia .

According to GTDB R06-RS202, this family belongs to the order *Kiloniellales*.

Description of *Candidatus* Murelida emortitia sp. nov.

Candidatus Murelida emortitia (NL. fem. n. *emortitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ARS1013 sp002690375*. The type genome for the species is the GenBank assembly GCA_002690375.1. The GC content of the type genome is 47.41 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Murelida gen. nov.

Candidatus Murelida (NL. fem. n. *Murelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ARS1013*. The type species for the genus is *Candidatus* Murelida emortitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ARS1013*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Murelidaceae.

Description of *Candidatus* Murelidaceae fam. nov.

Candidatus Murelidaceae (NL. fem. n. *Murelidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ARS1013.* The type genus for the taxon is *Candidatus* Murelida .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Murelosa nefaribula sp. nov.

Candidatus Murelosa nefaribula (NL. fem. n. *nefaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJPN01 sp903822545*. The type genome for the species is the GenBank assembly GCA_903883525.1. The GC content of the type genome is 55.02 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Murelosa gen. nov.

Candidatus Murelosa (NL. fem. n. *Murelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJPN01*. The type species for the genus is *Candidatus* Murelosa nefaribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Murelula adhosicella sp. nov.

Candidatus Murelula adhosicella (NL. fem. n. *adhosicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSQY01 sp011362725*. The type genome for the species is the GenBank assembly GCA_011362725.1. The GC content of the type genome is 67.5 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Murelula gen. nov.

Candidatus Murelula (NL. fem. n. *Murelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSQY01*. The type species for the genus is *Candidatus* Murelula adhosicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSQY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Murelulaceae.

Description of *Candidatus* Murelulaceae fam. nov.

Candidatus Murelulaceae (NL. fem. n. *Murelulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSQY01*. The type genus for the taxon is *Candidatus* Murelula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4820*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nefaridales.

Description of *Candidatus* Muribaculum adperago sp. nov.

Candidatus Muribaculum adperago (NL. fem. n. *adperago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muribaculum sp001701065*. The type genome for the species is the GenBank assembly GCA_001701065.1. The GC content of the type genome is 47.31 % and the genome length is 2.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Feces".

Description of *Candidatus* Muribaculum coturatio sp. nov.

Candidatus Muribaculum coturatio (NL. fem. n. *coturatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muribaculum sp002492595*. The type genome for the species is the GenBank assembly GCA_002491405.1. The GC content of the type genome is 50.59 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Muribaculum cuferimonas sp. nov.

Candidatus Muribaculum cuferimonas (NL. fem. n. *cuferimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muribaculum sp002358615*. The type genome for the species is the GenBank assembly GCA_002358425.1. The GC content of the type genome is 48.59 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Muribaculum delacedo sp. nov.

Candidatus Muribaculum delacedo (NL. fem. n. *delacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muribaculum sp002473395*. The type genome for the species is the GenBank assembly RS_GCF_004801635.1. The GC content of the type genome is 45.65 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Muribaculum diponastra sp. nov.

Candidatus Muribaculum diponastra (NL. fem. n. *diponastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muribaculum sp003150235*. The type genome for the species is the GenBank assembly GCA_900542695.1. The GC content of the type genome is 48.48 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Muribaculum fecunitoga sp. nov.

Candidatus Muribaculum fecunitoga (NL. fem. n. *fecunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muribaculum sp001701195*. The type genome for the species is the GenBank assembly RS_GCF_004570975.1. The GC content of the type genome is 48.41 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Muribaculum ignosigena sp. nov.

Candidatus Muribaculum ignosigena (NL. fem. n. *ignosigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muribaculum sp009775095*. The type genome for the species is the GenBank assembly GCA_009775095.1. The GC content of the type genome is 48.74 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Muribaculum pinacentia sp. nov.

Candidatus Muribaculum pinacentia (NL. fem. n. *pinacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muribaculum sp009177195*. The type genome for the species is the GenBank assembly GCA_009177195.1. The GC content of the type genome is 49.49 %

and the genome length is 2.67 Mbp.

Description of *Candidatus* Muricauda acceratio sp. nov.

Candidatus Muricauda acceratio (NL. fem. n. *acceratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp009903685*. The type genome for the species is the GenBank assembly RS_GCF_009903685.1. The GC content of the type genome is 41.11 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Muricauda armigiforma sp. nov.

Candidatus Muricauda armigiforma (NL. fem. n. *armigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp004804315*. The type genome for the species is the GenBank assembly RS_GCF_004804315.1. The GC content of the type genome is 39.07 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Muricauda aruspousia sp. nov.

Candidatus Muricauda aruspousia (NL. fem. n. *aruspousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp008040165*. The type genome for the species is the GenBank assembly RS_GCF_008040165.1. The GC content of the type genome is 37.83 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Muricauda benifimonia sp. nov.

Candidatus Muricauda benifimonia (NL. fem. n. *benifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp003269425*. The type genome for the species is the GenBank assembly RS_GCF_003269425.1. The GC content of the type genome is 38.07 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Muricauda cenaciforma sp. nov.

Candidatus Muricauda cenaciforma (NL. fem. n. *cenaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp003382275*. The type genome for the species is the GenBank assembly RS_GCF_003382275.1. The GC content of the type genome is 40.71 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Muricauda cocoditoga sp. nov.

Candidatus Muricauda cocoditoga (NL. fem. n. *cocoditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp002699205*. The type genome for the species is the GenBank assembly GCA_002699205.1. The GC content of the type genome is 41.4 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Muricauda dehonitia sp. nov.

Candidatus Muricauda dehonitia (NL. fem. n. *dehonitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp003057865*. The type genome for the species is the GenBank assembly RS_GCF_003057865.1. The GC content of the type genome is 41.62 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Muricauda ducilax sp. nov.

Candidatus Muricauda ducilax (NL. fem. n. *ducilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp003584165*. The type genome for the species is the GenBank assembly RS_GCF_008017345.1. The GC content of the type genome is 43.37 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Muricauda ecligedo sp. nov.

Candidatus Muricauda ecligedo (NL. fem. n. *ecligedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp004296335*. The type genome for the species is the GenBank assembly RS_GCF_004296335.1. The GC content of the type genome is 41.67 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Muricauda enigmousia sp. nov.

Candidatus Muricauda enigmousia (NL. fem. n. *enigmousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp011068285*. The type genome for the species is the GenBank assembly RS_GCF_011068285.1. The GC content of the type genome is 42.78 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Muricauda expalago sp. nov.

Candidatus Muricauda expalago (NL. fem. n. *expalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp003385855*. The type genome for the species is the GenBank assembly RS_GCF_003385855.1. The GC content of the type genome is 43.81 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Muricauda exsusitica sp. nov.

Candidatus Muricauda exsusitica (NL. fem. n. *exsusitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp002813125*. The type genome for the species is the GenBank assembly RS_GCF_002813125.1. The GC content of the type genome is 40.29 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Muricauda genocitudo sp. nov.

Candidatus Muricauda genocitudo (NL. fem. n. *genocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp013911645*. The type genome for the species is the GenBank assembly GCA_013911645.1. The GC content of the type genome is 41.65 %

and the genome length is 3.98 Mbp.

Description of *Candidatus* Muricauda homuledo sp. nov.

Candidatus Muricauda homuledo (NL. fem. n. *homuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp001683915*. The type genome for the species is the GenBank assembly RS_GCF_001683915.1. The GC content of the type genome is 42.91 % and the genome length is 4.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "single strain isolated from microbial consortium enriched at the cathode of a solar microbial fuel cell originally enriched from seawater collected near Rutgers; NJ".

Description of *Candidatus* Muricauda inaccedo sp. nov.

Candidatus Muricauda inaccedo (NL. fem. n. *inaccedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp013090115*. The type genome for the species is the GenBank assembly RS_GCF_013090115.1. The GC content of the type genome is 38.92 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Muricauda lugubilega sp. nov.

Candidatus Muricauda lugubilega (NL. fem. n. *lugubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp010468565*. The type genome for the species is the GenBank assembly RS_GCF_010468565.1. The GC content of the type genome is 41.75 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Muricauda minagastra sp. nov.

Candidatus Muricauda minagastra (NL. fem. n. *minagastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp003058265*. The type genome for the species is the GenBank assembly RS_GCF_003058265.1. The GC content of the type genome is 45.67 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Muricauda morigitura sp. nov.

Candidatus Muricauda morigitura (NL. fem. n. *morigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp010993855*. The type genome for the species is the GenBank assembly RS_GCF_010993855.1. The GC content of the type genome is 37.43 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Muricauda negotitura sp. nov.

Candidatus Muricauda negotitura (NL. fem. n. *negotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp002452975*. The type genome for the species is the GenBank assembly RS_GCF_003992595.1. The GC content of the type genome is 42.42 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Muricauda obfiriforma sp. nov.

Candidatus Muricauda obfiriforma (NL. fem. n. *obfiriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp000745185*. The type genome for the species is the GenBank assembly RS_GCF_000745185.1. The GC content of the type genome is 42.03 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Muricauda papavicula sp. nov.

Candidatus Muricauda papavicula (NL. fem. n. *papavicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp003973595*. The type genome for the species is the GenBank assembly GCA_003973595.1. The GC content of the type genome is 45.9 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Muricauda protredo sp. nov.

Candidatus Muricauda protredo (NL. fem. n. *protredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp013407935*. The type genome for the species is the GenBank assembly RS_GCF_013407935.1. The GC content of the type genome is 43.84 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Muricauda pudibiforma sp. nov.

Candidatus Muricauda pudibiforma (NL. fem. n. *pudibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp010500845*. The type genome for the species is the GenBank assembly RS_GCF_010500845.1. The GC content of the type genome is 42.93 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Muricauda reforisca sp. nov.

Candidatus Muricauda reforisca (NL. fem. n. *reforisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp010993815*. The type genome for the species is the GenBank assembly RS_GCF_010993815.1. The GC content of the type genome is 38.43 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Muricauda tabiticula sp. nov.

Candidatus Muricauda tabiticula (NL. fem. n. *tabiticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp002167435*. The type genome for the species is the GenBank assembly GCA_002167435.2. The GC content of the type genome is 41.18 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Muricauda tabitousia sp. nov.

Candidatus Muricauda tabitousia (NL. fem. n. *tabitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Muricauda sp003584135*. The type genome for the species is the GenBank assembly RS_GCF_008017365.1. The GC content of the type genome is 43.38 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Muricauda vinulitrix sp. nov.

Candidatus Muricauda vinulitrix (NL. fem. n. *vinulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda sp002711825*. The type genome for the species is the GenBank assembly GCA_003513625.1. The GC content of the type genome is 41.51 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Muricauda inaspitica sp. nov.

Candidatus Muricauda inaspitica (NL. fem. n. *inaspitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricauda_A sp003712125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003712125.1. The GC content of the type genome is 41.95 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Muricomes derunetta sp. nov.

Candidatus Muricomes derunetta (NL. fem. n. *derunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricomes sp900604355*. The type genome for the species is the GenBank assembly RS_GCF_900764535.1. The GC content of the type genome is 44.39 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Muricomes eclipitudo sp. nov.

Candidatus Muricomes eclipitudo (NL. fem. n. *eclipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricomes sp013911065*. The type genome for the species is the GenBank assembly GCA_013911065.1. The GC content of the type genome is 42.11 %

and the genome length is 4.34 Mbp.

Description of *Candidatus* Muricomes rorariforma sp. nov.

Candidatus Muricomes rorariforma (NL. fem. n. *rorariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricomes sp001517425*. The type genome for the species is the GenBank assembly RS_GCF_001517425.1. The GC content of the type genome is 42.62 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Muricomes vireciforma sp. nov.

Candidatus Muricomes vireciforma (NL. fem. n. *vireciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muricomes sp000509105*. The type genome for the species is the GenBank assembly RS_GCF_902364045.1. The GC content of the type genome is 45.99 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Muriicola agricitia sp. nov.

Candidatus Muriicola agricitia (NL. fem. n. *agricitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muriicola sp004139715*. The type genome for the species is the GenBank assembly RS_GCF_004139715.1. The GC content of the type genome is 42.43 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Muriicola depopitudo sp. nov.

Candidatus Muriicola depopitudo (NL. fem. n. *depopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muriicola sp013042255*. The type genome for the species is the GenBank assembly GCA_013043175.1. The GC content of the type genome is 42.64 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Muriicola inpinigena sp. nov.

Candidatus Muriicola inpinigena (NL. fem. n. *inpinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muriicola sp013042125*. The type genome for the species is the GenBank assembly GCA_013042125.1. The GC content of the type genome is 41.0 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Muriicola nefaritudo sp. nov.

Candidatus Muriicola nefaritudo (NL. fem. n. *nefaritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Muriicola sp013042315*. The type genome for the species is the GenBank assembly GCA_013042315.1. The GC content of the type genome is 42.61 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Murilana malagessa sp. nov.

Candidatus Murilana malagessa (NL. fem. n. *malagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UWMA-0277 sp012960805*. The type genome for the species is the GenBank assembly GCA_012960805.1. The GC content of the type genome is 33.24 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Murilana gen. nov.

Candidatus Murilana (NL. fem. n. *Murilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UWMA-0277*. The type species for the genus is *Candidatus* Murilana malagessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Murilana rosacugo sp. nov.

Candidatus Murilana rosacugo (NL. fem. n. *rosacugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UWMA-0277 sp014384505*. The type genome for the species is the GenBank assembly GCA_014384505.1. The GC content of the type genome is 32.58 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Murilaria armicigena sp. nov.

Candidatus Murilaria armicigena (NL. fem. n. *armicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA738 sp002315975*. The type genome for the species is the GenBank assembly GCA_002315975.1. The GC content of the type genome is 58.3 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Murilaria gen. nov.

Candidatus Murilaria (NL. fem. n. *Murilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA738*. The type species for the genus is *Candidatus* Murilaria armicigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Murilaria cemenitia sp. nov.

Candidatus Murilaria cemenitia (NL. fem. n. *cemenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA738 sp900763675*. The type genome for the species is the GenBank assembly GCA_900763675.1. The GC content of the type genome is 60.93 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Murilaria cunabilenta sp. nov.

Candidatus Murilaria cunabilenta (NL. fem. n. *cunabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA738 sp003522945*. The type genome for the species is the GenBank assembly GCA_003522945.1. The GC content of the type genome is 59.79 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Murilaria domigitica sp. nov.

Candidatus Murilaria domigitica (NL. fem. n. *domigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA738 sp004557735*. The type genome for the species is the GenBank assembly GCA_004556665.1. The GC content of the type genome is 60.15 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Murilaria renavatica sp. nov.

Candidatus Murilaria renavatica (NL. fem. n. *renavatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA738 sp002404605*. The type genome for the species is the GenBank assembly GCA_002404605.1. The GC content of the type genome is 59.75 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Murilella bacifilega sp. nov.

Candidatus Murilella bacifilega (NL. fem. n. *bacifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-35-18 sp001771135*. The type genome for the species is the GenBank assembly GCA_001771155.1. The GC content of the type genome is 34.97 % and the genome length is 1.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Murilella gen. nov.

Candidatus Murilella (NL. fem. n. *Murilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-35-18*. The type species for the genus is *Candidatus* Murilella bacifilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-35-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Murilellaceae.

Description of *Candidatus* Murilellaceae fam. nov.

Candidatus Murilellaceae (NL. fem. n. *Murilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-35-18.* The type genus for the taxon is *Candidatus* Murilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *CPR3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tolutellales.

Description of *Candidatus* Murilia abnepigena sp. nov.

Candidatus Murilia abnepigena (NL. fem. n. *abnepigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-822 sp000432855*. The type genome for the species is the GenBank assembly GCA_000432855.1. The GC content of the type genome is 29.04 % and the genome length is 1.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Murilia gen. nov.

Candidatus Murilia (NL. fem. n. *Murilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-822*. The type species for the genus is *Candidatus* Murilia abnepigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Murilia artifitoga sp. nov.

Candidatus Murilia artifitoga (NL. fem. n. *artifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-822 sp902783265*. The type genome for the species is the GenBank assembly GCA_902783265.1. The GC content of the type genome is 28.66 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Murilia cerofugo sp. nov.

Candidatus Murilia cerofugo (NL. fem. n. *cerofugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-822 sp900546055*. The type genome for the species is the GenBank assembly GCA_900546055.1. The GC content of the type genome is 30.57 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Murilia exsisitudo sp. nov.

Candidatus Murilia exsisitudo (NL. fem. n. *exsisitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-822 sp902783895*. The type genome for the species is the GenBank assembly GCA_902783895.1. The GC content of the type genome is 27.2 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Murilia facunitica sp. nov.

Candidatus Murilia facunitica (NL. fem. n. *facunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-822 sp900318075*. The type genome for the species is the GenBank assembly GCA_900318075.1. The GC content of the type genome is 28.47 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Murilida derelitia sp. nov.

Candidatus Murilida derelitia (NL. fem. n. *derelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBBU01 sp005239585*. The type genome for the species is the GenBank assembly GCA_005239585.1. The GC content of the type genome is 43.36 %

and the genome length is 2.54 Mbp.

Description of *Candidatus* Murilida gen. nov.

Candidatus Murilida (NL. fem. n. *Murilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBBU01*. The type species for the genus is *Candidatus* Murilida derelitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBBU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Murilidaceae.

Description of *Candidatus* Murilidaceae fam. nov.

Candidatus Murilidaceae (NL. fem. n. *Murilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBU01*. The type genus for the taxon is *Candidatus* Murilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *MHYJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetifosales.

Description of *Candidatus* Murilosa bonififorma sp. nov.

Candidatus Murilosa bonififorma (NL. fem. n. *bonififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1004 sp900761685*. The type genome for the species is the GenBank assembly RS_GCF_900761685.1. The GC content of the type genome is 52.29 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Murilosa gen. nov.

Candidatus Murilosa (NL. fem. n. *Murilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1004*. The type species for the genus is *Candidatus* Murilosa bonififorma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Murilosa cerucivita sp. nov.

Candidatus Murilosa cerucivita (NL. fem. n. *cerucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1004 sp900547645*. The type genome for the species is the GenBank assembly RS_GCF_900761755.1. The GC content of the type genome is 57.73 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Murilosa colopitura sp. nov.

Candidatus Murilosa colopitura (NL. fem. n. *colopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1004 sp900548845*. The type genome for the species is the GenBank assembly GCA_900548845.1. The GC content of the type genome is 58.79 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Murilosa legifedo sp. nov.

Candidatus Murilosa legifedo (NL. fem. n. *legifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1004 sp003343805*. The type genome for the species is the GenBank assembly GCA_003343805.1. The GC content of the type genome is 57.86 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Murilula negidibra sp. nov.

Candidatus Murilula negidibra (NL. fem. n. *negidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQJJ01 sp903872065*. The type genome for the species is the GenBank assembly GCA_903872065.1. The GC content of the type genome is 57.94 % and the genome length is 7.49 Mbp.

Description of *Candidatus* Murilula gen. nov.

Candidatus Murilula (NL. fem. n. *Murilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQJJ01*. The type species for the genus is *Candidatus* Murilula negidibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Musulana invinibula sp. nov.

Candidatus Musulana invinibula (NL. fem. n. *invinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1253 sp900550065*. The type genome for the species is the GenBank assembly GCA_900550065.1. The GC content of the type genome is 49.85 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Musulana gen. nov.

Candidatus Musulana (NL. fem. n. *Musulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1253*. The type species for the genus is *Candidatus* Musulana invinibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1253*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulanaceae.

Description of *Candidatus* Musulanaceae fam. nov.

Candidatus Musulanaceae (NL. fem. n. *Musulanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1253.* The type genus for the taxon is *Candidatus* Musulana .

According to GTDB R06-RS202, this family belongs to the order *Monoglobales_A*.

Description of *Candidatus* Musularia manufax sp. nov.

Candidatus Musularia manufax (NL. fem. n. *manufax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABJBCQ01 sp903951595*. The type genome for the species is the GenBank assembly GCA_903951595.1. The GC content of the type genome is 57.85 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Musularia gen. nov.

Candidatus Musularia (NL. fem. n. *Musularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABJBCQ01*. The type species for the genus is *Candidatus* Musularia manufax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Musulella cerimimonia sp. nov.

Candidatus Musulella cerimimonia (NL. fem. n. *cerimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10185 sp000994815*. The type genome for the species is the GenBank assembly GCA_003485585.1. The GC content of the type genome is 44.09 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Musulella gen. nov.

Candidatus Musulella (NL. fem. n. *Musulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10185*. The type species for the genus is *Candidatus* Musulella cerimimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Musulellaceae fam. nov.

Candidatus Musulellaceae (NL. fem. n. *Musulellaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10185.* The type genus for the taxon is *Candidatus* Musulella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA101185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deceniales.

Description of *Candidatus* Musulia purulimonas sp. nov.

Candidatus Musulia purulimonas (NL. fem. n. *purulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077539 sp013298625*. The type genome for the species is the GenBank assembly GCA_013298625.1. The GC content of the type genome is 69.2 % and the genome length is 9.81 Mbp.

Description of *Candidatus* Musulia gen. nov.

Candidatus Musulia (NL. fem. n. *Musulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077539*. The type species for the genus is *Candidatus* Musulia purulimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musuliaceae.

Description of *Candidatus* Musuliaceae fam. nov.

Candidatus Musuliaceae (NL. fem. n. *Musuliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ga0077539.* The type genus for the taxon is *Candidatus* Musulia .

According to GTDB R06-RS202, this family belongs to the order *Polyangiales*.

Description of *Candidatus* Musulia vocamimonia sp. nov.

Candidatus Musulia vocamimonia (NL. fem. n. *vocamimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077539 sp001465015*. The type genome for the species is the GenBank assembly GCA_001465015.1. The GC content of the type genome is 67.9 % and the genome length is 9.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Musulida relenousia sp. nov.

Candidatus Musulida relenousia (NL. fem. n. *relenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCM01 sp013288105*. The type genome for the species is the GenBank assembly GCA_013288105.1. The GC content of the type genome is 42.82 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Musulida gen. nov.

Candidatus Musulida (NL. fem. n. *Musulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCM01*. The type species for the genus is *Candidatus* Musulida relenousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAKFR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recucanaceae.

Description of *Candidatus* Musulosa milipibula sp. nov.

Candidatus Musulosa milipibula (NL. fem. n. *milipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J088 sp003695505*. The type genome for the species is the GenBank assembly GCA_003695505.1. The GC content of the type genome is 62.4 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Musulosa gen. nov.

Candidatus Musulosa (NL. fem. n. *Musulosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J088*. The type species for the genus is *Candidatus* Musulosa milipibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulosaceae.

Description of *Candidatus* Musulosaceae fam. nov.

Candidatus Musulosaceae (NL. fem. n. *Musulosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J088.* The type genus for the taxon is *Candidatus* Musulosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *J088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Musulosales.

Description of *Candidatus* Musulosales ord. nov.

Candidatus Musulosales (NL. fem. n. *Musulosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J088.* The type genus for the taxon is *Candidatus* Musulosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *J088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Musulosae.

Description of *Candidatus* Musulosae class. nov.

Candidatus Musulosae (NL. fem. n. *c__Musulosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J088.* The type genus for the taxon is *Candidatus* Musulosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *J088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Musulosota.

Description of *Candidatus* Musulosota phyl. nov.

Candidatus Musulosota (NL. fem. n. *Musulosota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J088.* The type genus for the taxon is *Candidatus* Musulosa .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Musulula coturetta sp. nov.

Candidatus Musulula coturetta (NL. fem. n. *coturetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITLU01 sp903893315*. The type genome for the species is the GenBank assembly GCA_903893315.1. The GC content of the type genome is 64.13 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Musulula gen. nov.

Candidatus Musulula (NL. fem. n. *Musulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITLU01*. The type species for the genus is *Candidatus* Musulula coturetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1149*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recuculaceae.

Description of *Candidatus* Mutabana regifetta sp. nov.

Candidatus Mutabana regifetta (NL. fem. n. *regifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5701 sp002420015*. The type genome for the species is the GenBank assembly GCA_003529165.1. The GC content of the type genome is 53.78 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Mutabana gen. nov.

Candidatus Mutabana (NL. fem. n. *Mutabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5701*. The type species for the genus is *Candidatus* Mutabana regifetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mutabaria desepiforma sp. nov.

Candidatus Mutabaria desepiforma (NL. fem. n. *desepiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2804 sp902782145*. The type genome for the species is the GenBank assembly GCA_902782145.1. The GC content of the type genome is 58.31 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Mutabaria gen. nov.

Candidatus Mutabaria (NL. fem. n. *Mutabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2804*. The type species for the genus is *Candidatus* Mutabaria desepiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mutabaria ensigatio sp. nov.

Candidatus Mutabaria ensigatio (NL. fem. n. *ensigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2804 sp902796095*. The type genome for the species is the GenBank assembly GCA_902796095.1. The GC content of the type genome is 44.67 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Mutabaria excucibra sp. nov.

Candidatus Mutabaria excucibra (NL. fem. n. *excucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2804 sp902761645*. The type genome for the species is the GenBank assembly GCA_902761645.1. The GC content of the type genome is 40.49 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Mutabaria refacousia sp. nov.

Candidatus Mutabaria refacousia (NL. fem. n. *refacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2804 sp900319705*. The type genome for the species is the GenBank assembly GCA_900319705.1. The GC content of the type genome is 43.61 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Mutabaria viragatica sp. nov.

Candidatus Mutabaria viragatica (NL. fem. n. *viragatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2804 sp900768635*. The type genome for the species is the GenBank assembly RS_GCF_900768635.1. The GC content of the type genome is 41.11 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Mutabia absorimonas sp. nov.

Candidatus Mutabia absorimonas (NL. fem. n. *absorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-36-10 sp000991205*. The type genome for the species is the GenBank assembly GCA_000991205.1. The GC content of the type genome is 36.24 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Mutabia gen. nov.

Candidatus Mutabia (NL. fem. n. *Mutabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-36-10*. The type species for the genus is *Candidatus* Mutabia absorimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-36-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mutabiaceae.

Description of *Candidatus* Mutabiaceae fam. nov.

Candidatus Mutabiaceae (NL. fem. n. *Mutabiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-36-10.* The type genus for the taxon is *Candidatus* Mutabia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1558*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nugivellales.

Description of *Candidatus* Mutabia denunitudo sp. nov.

Candidatus Mutabia denunitudo (NL. fem. n. *denunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-36-10 sp903855135*. The type genome for the species is the GenBank assembly GCA_903841015.1. The GC content of the type genome is 35.6 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Mutabida indirentia sp. nov.

Candidatus Mutabida indirentia (NL. fem. n. *indirentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS52 sp001577215*. The type genome for the species is the GenBank assembly GCA_001577215.1. The GC content of the type genome is 29.31 % and the genome length is 1.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biofilm from deap sea brine pool".

Description of *Candidatus* Mutabida gen. nov.

Candidatus Mutabida (NL. fem. n. *Mutabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TCS52*. The type species for the genus is *Candidatus* Mutabida

indirentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS52*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mutabidaceae.

Description of *Candidatus* Mutabidaceae fam. nov.

Candidatus Mutabidaceae (NL. fem. n. *Mutabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TCS52.* The type genus for the taxon is *Candidatus* Mutabida .

According to the original version of GTDB R06-RS202, this family belongs to the order *AB16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tomogidales.

Description of *Candidatus* Mutabosa celamicella sp. nov.

Candidatus Mutabosa celamicella (NL. fem. n. *celamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZDL01 sp903931735*. The type genome for the species is the GenBank assembly GCA_903907775.1. The GC content of the type genome is 60.16 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Mutabosa gen. nov.

Candidatus Mutabosa (NL. fem. n. *Mutabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZDL01*. The type species for the genus is *Candidatus* Mutabosa celamicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Mutabosa defunitrix sp. nov.

Candidatus Mutabosa defunitrix (NL. fem. n. *defunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIZDL01 sp903856295*. The type genome for the species is the GenBank assembly GCA_903928145.1. The GC content of the type genome is 65.15 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Mutabula rubicago sp. nov.

Candidatus Mutabula rubicago (NL. fem. n. *rubicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs120 sp005799265*. The type genome for the species is the GenBank assembly GCA_005808465.1. The GC content of the type genome is 60.56 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Mutabula gen. nov.

Candidatus Mutabula (NL. fem. n. *Mutabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-60-MAGs120*. The type species for the genus is *Candidatus* Mutabula rubicago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Myalgana peribitio sp. nov.

Candidatus Myalgana peribitio (NL. fem. n. *peribitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRHN01 sp009783235*. The type genome for the species is the GenBank assembly GCA_009783235.1. The GC content of the type genome is 45.84 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Myalgana gen. nov.

Candidatus Myalgana (NL. fem. n. *Myalgana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRHN01*. The type species for the genus is *Candidatus* Myalgana peribitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Myalgaria cibarousia sp. nov.

Candidatus Myalgaria cibarousia (NL. fem. n. *cibarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKRZ01 sp007571105*. The type genome for the species is the GenBank assembly GCA_007571105.1. The GC content of the type genome is 56.55 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Myalgaria gen. nov.

Candidatus Myalgaria (NL. fem. n. *Myalgaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RKRZ01*. The type species for the genus is *Candidatus* Myalgaria cibarousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Myalgella bipalimonas sp. nov.

Candidatus Myalgella bipalimonas (NL. fem. n. *bipalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULO01 sp012840345*. The type genome for the species is the GenBank assembly GCA_012840345.1. The GC content of the type genome is 57.36 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Myalgella gen. nov.

Candidatus Myalgella (NL. fem. n. *Myalgella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DULO01*. The type species for the genus is *Candidatus* Myalgella bipalimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicatosaceae.

Description of *Candidatus* Myalgosa inmodax sp. nov.

Candidatus Myalgosa inmodax (NL. fem. n. *inmodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSSA01 sp013214665*. The type genome for the species is the GenBank assembly GCA_013214665.1. The GC content of the type genome is 57.82 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Myalgosa gen. nov.

Candidatus Myalgosa (NL. fem. n. *Myalgosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSSA01*. The type species for the genus is *Candidatus* Myalgosa inmodax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Myalgula illepitas sp. nov.

Candidatus Myalgula illepitas (NL. fem. n. *illepitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM10873 sp900753645*. The type genome for the species is the GenBank assembly RS_GCF_900753645.1. The GC content of the type genome is 29.03 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Myalgula gen. nov.

Candidatus Myalgula (NL. fem. n. *Myalgula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM10873*. The type species for the genus is *Candidatus* Myalgula illepitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Mycetocola cimitetta sp. nov.

Candidatus Mycetocola cimitetta (NL. fem. n. *cimitetta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycetocola_A sp003065425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003065425.1. The GC content of the type genome is 64.88 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Mycetohabitans catecifica sp. nov.

Candidatus Mycetohabitans catecifica (NL. fem. n. *catecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycetohabitans sp900155955*. The type genome for the species is the GenBank assembly RS_GCF_900156195.1. The GC content of the type genome is 60.56 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Mycoavidus exsomatio sp. nov.

Candidatus Mycoavidus exsomatio (NL. fem. n. *exsomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycoavidus sp014218255*. The type genome for the species is the GenBank assembly RS_GCF_014218255.1. The GC content of the type genome is 48.93 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Mycobacterium abligimonia sp. nov.

Candidatus Mycobacterium abligimonia (NL. fem. n. *abligimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667585*. The type genome for the species is the GenBank assembly RS_GCF_001667585.1. The GC content of the type genome is 67.42 % and the genome length is 5.71 Mbp.

Description of *Candidatus* Mycobacterium acrocigena sp. nov.

Candidatus Mycobacterium acrocigena (NL. fem. n. *acrocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp004298145*. The type genome for the species is the GenBank assembly GCA_004298145.1. The GC content of the type genome is 66.66 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Mycobacterium adbelifica sp. nov.

Candidatus Mycobacterium adbelifica (NL. fem. n. *adbelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp013404075*. The type genome for the species is the GenBank assembly RS_GCF_013404075.1. The GC content of the type genome is 66.29 % and the genome length is 7.2 Mbp.

Description of *Candidatus* Mycobacterium adessatica sp. nov.

Candidatus Mycobacterium adessatica (NL. fem. n. *adessatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667265*. The type genome for the species is the GenBank assembly RS_GCF_001667265.1. The GC content of the type genome is 68.03 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Mycobacterium adnunibula sp. nov.

Candidatus Mycobacterium adnunibula (NL. fem. n. *adnunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001426545*. The type genome for the species is the GenBank assembly RS_GCF_001426545.1. The GC content of the type genome is 67.43 % and the genome length is 6.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Mycobacterium adordousia sp. nov.

Candidatus Mycobacterium adordousia (NL. fem. n. *adordousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001499995*. The type genome for the species is the

GenBank assembly RS_GCF_001499995.1. The GC content of the type genome is 69.01 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Mycobacterium advinatica sp. nov.

Candidatus Mycobacterium advinatica (NL. fem. n. *advinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001668575*. The type genome for the species is the GenBank assembly RS_GCF_001668575.1. The GC content of the type genome is 67.01 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Mycobacterium affanitas sp. nov.

Candidatus Mycobacterium affanitas (NL. fem. n. *affanitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp011334635*. The type genome for the species is the GenBank assembly GCA_011334635.1. The GC content of the type genome is 66.3 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Mycobacterium affirimonas sp. nov.

Candidatus Mycobacterium affirimonas (NL. fem. n. *affirimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001672815*. The type genome for the species is the GenBank assembly RS_GCF_001672815.1. The GC content of the type genome is 67.78 % and the genome length is 6.53 Mbp.

Description of *Candidatus* Mycobacterium agraventia sp. nov.

Candidatus Mycobacterium agraventia (NL. fem. n. *agraventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp014202335*. The type genome for the species is the GenBank assembly RS_GCF_014202335.1. The GC content of the type genome is 66.12 % and the genome length is 8.62 Mbp.

Description of *Candidatus* Mycobacterium agripibra sp. nov.

Candidatus Mycobacterium agripibra (NL. fem. n. *agripibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001673555*. The type genome for the species is the GenBank assembly RS_GCF_001673555.1. The GC content of the type genome is 66.61 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Mycobacterium almucugo sp. nov.

Candidatus Mycobacterium almucugo (NL. fem. n. *almucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp011694515*. The type genome for the species is the GenBank assembly RS_GCF_011694515.1. The GC content of the type genome is 67.4 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Mycobacterium ambidousia sp. nov.

Candidatus Mycobacterium ambidousia (NL. fem. n. *ambidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001510415*. The type genome for the species is the GenBank assembly GCA_001510415.1. The GC content of the type genome is 67.63 % and the genome length is 2.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Capian Sea".

Description of *Candidatus* Mycobacterium anaclilega sp. nov.

Candidatus Mycobacterium anaclilega (NL. fem. n. *anaclilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001665575*. The type genome for the species is the GenBank assembly RS_GCF_001665575.1. The GC content of the type genome is 68.72 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Mycobacterium anancax sp. nov.

Candidatus Mycobacterium anancax (NL. fem. n. *anancax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp902826815*. The type genome for the species is the GenBank assembly GCA_902826815.1. The GC content of the type genome is 65.8 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Mycobacterium ardifessa sp. nov.

Candidatus Mycobacterium ardifessa (NL. fem. n. *ardifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001665395*. The type genome for the species is the GenBank assembly RS_GCF_001665395.1. The GC content of the type genome is 65.57 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Mycobacterium argimentia sp. nov.

Candidatus Mycobacterium argimentia (NL. fem. n. *argimentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp003402475*. The type genome for the species is the GenBank assembly RS_GCF_003402475.1. The GC content of the type genome is 66.83 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Mycobacterium ascelitica sp. nov.

Candidatus Mycobacterium ascelitica (NL. fem. n. *ascelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp900240945*. The type genome for the species is the GenBank assembly RS_GCF_900240945.1. The GC content of the type genome is 66.35 % and the genome length is 7.31 Mbp.

Description of *Candidatus* Mycobacterium atrusimonia sp. nov.

Candidatus Mycobacterium atrusimonia (NL. fem. n. *atrusimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp004762045*. The type genome for the species is the GenBank assembly RS_GCF_004762045.1. The GC content of the type genome is 66.43

% and the genome length is 6.61 Mbp.

Description of *Candidatus* Mycobacterium bicaletta sp. nov.

Candidatus Mycobacterium bicaletta (NL. fem. n. *bicaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp000426065*. The type genome for the species is the GenBank assembly RS_GCF_000426065.1. The GC content of the type genome is 66.28 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Mycobacterium bicalitrix sp. nov.

Candidatus Mycobacterium bicalitrix (NL. fem. n. *bicalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp009729205*. The type genome for the species is the GenBank assembly RS_GCF_009729205.1. The GC content of the type genome is 64.03 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Mycobacterium bipalimonia sp. nov.

Candidatus Mycobacterium bipalimonia (NL. fem. n. *bipalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp009729095*. The type genome for the species is the GenBank assembly RS_GCF_009729215.1. The GC content of the type genome is 66.23 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Mycobacterium bipatago sp. nov.

Candidatus Mycobacterium bipatago (NL. fem. n. *bipatago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp004363795*. The type genome for the species is the GenBank assembly RS_GCF_004363795.1. The GC content of the type genome is 66.35 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Mycobacterium bipatigena sp. nov.

Candidatus Mycobacterium bipatigena (NL. fem. n. *bipatigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001499855*. The type genome for the species is the GenBank assembly RS_GCF_001499855.1. The GC content of the type genome is 66.92 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Mycobacterium bonitastra sp. nov.

Candidatus Mycobacterium bonitastra (NL. fem. n. *bonitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp002887815*. The type genome for the species is the GenBank assembly RS_GCF_002887815.1. The GC content of the type genome is 66.72 % and the genome length is 6.23 Mbp.

Description of *Candidatus* Mycobacterium bovicatio sp. nov.

Candidatus Mycobacterium bovicatio (NL. fem. n. *bovicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp003165155*. The type genome for the species is the GenBank assembly GCA_003158025.1. The GC content of the type genome is 64.97 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Mycobacterium cepurimonia sp. nov.

Candidatus Mycobacterium cepurimonia (NL. fem. n. *cepurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667735*. The type genome for the species is the GenBank assembly RS_GCF_001666955.1. The GC content of the type genome is 68.39 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Mycobacterium cibaretta sp. nov.

Candidatus Mycobacterium cibaretta (NL. fem. n. *cibaretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001668625*. The type genome for the species is the GenBank assembly RS_GCF_001668625.1. The GC content of the type genome is 70.47 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Mycobacterium cotenitica sp. nov.

Candidatus Mycobacterium cotenitica (NL. fem. n. *cotenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp005787665*. The type genome for the species is the GenBank assembly GCA_005787665.1. The GC content of the type genome is 68.73 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Mycobacterium cuferitrix sp. nov.

Candidatus Mycobacterium cuferitrix (NL. fem. n. *cuferitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp002013465*. The type genome for the species is the GenBank assembly RS_GCF_004367265.1. The GC content of the type genome is 64.22 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Mycobacterium decatitudo sp. nov.

Candidatus Mycobacterium decatitudo (NL. fem. n. *decatitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp903877095*. The type genome for the species is the GenBank assembly GCA_903847345.1. The GC content of the type genome is 67.64 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Mycobacterium decucitoga sp. nov.

Candidatus Mycobacterium decucitoga (NL. fem. n. *decucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp903884065*. The type genome for the species is the GenBank assembly GCA_903884065.1. The GC content of the type genome is 67.74 %

and the genome length is 4.09 Mbp.

Description of *Candidatus* Mycobacterium dehonitio sp. nov.

Candidatus Mycobacterium dehonitio (NL. fem. n. *dehonitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp002946335*. The type genome for the species is the GenBank assembly RS_GCF_010725485.1. The GC content of the type genome is 68.39 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Mycobacterium deparimonas sp. nov.

Candidatus Mycobacterium deparimonas (NL. fem. n. *deparimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001668725*. The type genome for the species is the GenBank assembly RS_GCF_001668725.1. The GC content of the type genome is 68.93 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Mycobacterium desacago sp. nov.

Candidatus Mycobacterium desacago (NL. fem. n. *desacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001665685*. The type genome for the species is the GenBank assembly RS_GCF_001665685.1. The GC content of the type genome is 66.33 % and the genome length is 7.85 Mbp.

Description of *Candidatus* Mycobacterium desomatio sp. nov.

Candidatus Mycobacterium desomatio (NL. fem. n. *desomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp009729415*. The type genome for the species is the GenBank assembly RS_GCF_009729295.1. The GC content of the type genome is 65.46 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Mycobacterium desoribra sp. nov.

Candidatus Mycobacterium desoribra (NL. fem. n. *desoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001666835*. The type genome for the species is the GenBank assembly RS_GCF_001666835.1. The GC content of the type genome is 67.69 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Mycobacterium detepicella sp. nov.

Candidatus Mycobacterium detepicella (NL. fem. n. *detepicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp903927745*. The type genome for the species is the GenBank assembly GCA_903927745.1. The GC content of the type genome is 68.36 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Mycobacterium didacessa sp. nov.

Candidatus Mycobacterium didacessa (NL. fem. n. *didacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001665605*. The type genome for the species is the GenBank assembly RS_GCF_001665605.1. The GC content of the type genome is 67.47 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Mycobacterium dilogilega sp. nov.

Candidatus Mycobacterium dilogilega (NL. fem. n. *dilogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001666755*. The type genome for the species is the GenBank assembly RS_GCF_001672685.1. The GC content of the type genome is 69.81 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Mycobacterium diluventia sp. nov.

Candidatus Mycobacterium diluventia (NL. fem. n. *diluventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp000373905*. The type genome for the species is the GenBank assembly RS_GCF_000373905.1. The GC content of the type genome is 65.63 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Mycobacterium dimidousia sp. nov.

Candidatus Mycobacterium dimidousia (NL. fem. n. *dimidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp002043095*. The type genome for the species is the GenBank assembly RS_GCF_002043095.1. The GC content of the type genome is 67.23 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Mycobacterium domipisca sp. nov.

Candidatus Mycobacterium domipisca (NL. fem. n. *domipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001665875*. The type genome for the species is the GenBank assembly RS_GCF_001665875.1. The GC content of the type genome is 66.36 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Mycobacterium ecligisca sp. nov.

Candidatus Mycobacterium ecligisca (NL. fem. n. *ecligisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001905655*. The type genome for the species is the GenBank assembly RS_GCF_001905655.1. The GC content of the type genome is 66.77 % and the genome length is 5.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "activated sludge".

Description of *Candidatus* Mycobacterium ecnepilenta sp. nov.

Candidatus Mycobacterium ecnepilenta (NL. fem. n. *ecnepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001545925*. The type genome for the species is the

GenBank assembly RS_GCF_001545925.1. The GC content of the type genome is 68.23 % and the genome length is 6.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "abdominal cerebrospinal fluid pseudocyst".

Description of *Candidatus* Mycobacterium effarastra sp. nov.

Candidatus Mycobacterium effarastra (NL. fem. n. *effarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp903862565*. The type genome for the species is the GenBank assembly GCA_903862565.1. The GC content of the type genome is 66.95 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Mycobacterium effinitrix sp. nov.

Candidatus Mycobacterium effinitrix (NL. fem. n. *effinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp008329605*. The type genome for the species is the GenBank assembly RS_GCF_008329605.1. The GC content of the type genome is 66.46 % and the genome length is 7.27 Mbp.

Description of *Candidatus* Mycobacterium elastedo sp. nov.

Candidatus Mycobacterium elastedo (NL. fem. n. *elastedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001672915*. The type genome for the species is the GenBank assembly RS_GCF_001672915.1. The GC content of the type genome is 68.43 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Mycobacterium energitica sp. nov.

Candidatus Mycobacterium energitica (NL. fem. n. *energitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp902652685*. The type genome for the species is the GenBank assembly RS_GCF_902652685.1. The GC content of the type genome is 69.33 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Mycobacterium epogdimonia sp. nov.

Candidatus Mycobacterium epogdimonia (NL. fem. n. *epogdimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001021385*. The type genome for the species is the GenBank assembly RS_GCF_001021385.1. The GC content of the type genome is 66.35 % and the genome length is 6.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "PAH contaminated soil".

Description of *Candidatus* Mycobacterium esculitia sp. nov.

Candidatus Mycobacterium esculitia (NL. fem. n. *esculitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp008709575*. The type genome for the species is the GenBank assembly GCA_008709575.1. The GC content of the type genome is 67.25 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Mycobacterium exaggimonia sp. nov.

Candidatus Mycobacterium exaggimonia (NL. fem. n. *exaggimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp000620625*. The type genome for the species is the GenBank assembly RS_GCF_000620625.1. The GC content of the type genome is 66.84 % and the genome length is 7.49 Mbp.

Description of *Candidatus* Mycobacterium excanitura sp. nov.

Candidatus Mycobacterium excanitura (NL. fem. n. *excanitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001665295*. The type genome for the species is the GenBank assembly RS_GCF_001665295.1. The GC content of the type genome is 68.05 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Mycobacterium exceritudo sp. nov.

Candidatus Mycobacterium exceritudo (NL. fem. n. *exceritudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667185*. The type genome for the species is the GenBank assembly RS_GCF_001667185.1. The GC content of the type genome is 68.47 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Mycobacterium excetibula sp. nov.

Candidatus Mycobacterium excetibula (NL. fem. n. *excetibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp002838065*. The type genome for the species is the GenBank assembly RS_GCF_002838065.1. The GC content of the type genome is 66.51 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Mycobacterium exforitia sp. nov.

Candidatus Mycobacterium exforitia (NL. fem. n. *exforitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp013449725*. The type genome for the species is the GenBank assembly RS_GCF_013449725.1. The GC content of the type genome is 63.84 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Mycobacterium exorbibra sp. nov.

Candidatus Mycobacterium exorbibra (NL. fem. n. *exorbibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001954135*. The type genome for the species is the GenBank assembly RS_GCF_001954135.1. The GC content of the type genome is 66.31 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Mycobacterium exsufax sp. nov.

Candidatus Mycobacterium exsufax (NL. fem. n. *exsufax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667315*. The type genome for the species is the GenBank assembly RS_GCF_001667315.1. The GC content of the type genome is 67.27 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Mycobacterium fecunimonas sp. nov.

Candidatus Mycobacterium fecunimonas (NL. fem. n. *fecunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001665535*. The type genome for the species is the GenBank assembly RS_GCF_001666865.1. The GC content of the type genome is 67.22 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Mycobacterium fetulax sp. nov.

Candidatus Mycobacterium fetulax (NL. fem. n. *fetulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001886515*. The type genome for the species is the GenBank assembly RS_GCF_002335685.1. The GC content of the type genome is 66.46 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Mycobacterium fetulilega sp. nov.

Candidatus Mycobacterium fetulilega (NL. fem. n. *fetulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667075*. The type genome for the species is the GenBank assembly RS_GCF_001667075.1. The GC content of the type genome is 67.63 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Mycobacterium filifitrix sp. nov.

Candidatus Mycobacterium filifitrix (NL. fem. n. *filifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp000328565*. The type genome for the species is the GenBank assembly RS_GCF_000328565.1. The GC content of the type genome is 65.14 % and the genome length is 7.22 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "human smegma".

Description of *Candidatus* Mycobacterium fragmitoga sp. nov.

Candidatus Mycobacterium fragmitoga (NL. fem. n. *fragmitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp003719305*. The type genome for the species is the GenBank assembly RS_GCF_003719305.1. The GC content of the type genome is 65.82 % and the genome length is 6.96 Mbp.

Description of *Candidatus* Mycobacterium hegumax sp. nov.

Candidatus Mycobacterium hegumax (NL. fem. n. *hegumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001500025*. The type genome for the species is the GenBank assembly RS_GCF_001500025.1. The GC content of the type genome is 67.12 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Mycobacterium hibisedo sp. nov.

Candidatus Mycobacterium hibisedo (NL. fem. n. *hibisedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001644575*. The type genome for the species is the GenBank assembly RS_GCF_001644575.1. The GC content of the type genome is 67.4 % and the genome length is 6.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Mycobacterium homogisca sp. nov.

Candidatus Mycobacterium homogisca (NL. fem. n. *homogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001673155*. The type genome for the species is the GenBank assembly RS_GCF_001673155.1. The GC content of the type genome is 66.23 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Mycobacterium idcirimonia sp. nov.

Candidatus Mycobacterium idcirimonia (NL. fem. n. *idcirimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667035*. The type genome for the species is the GenBank assembly RS_GCF_001667035.1. The GC content of the type genome is 67.52 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Mycobacterium immusitio sp. nov.

Candidatus Mycobacterium immusitio (NL. fem. n. *immusitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp005222675*. The type genome for the species is the GenBank assembly RS_GCF_005222675.1. The GC content of the type genome is 66.89 % and the genome length is 6.54 Mbp.

Description of *Candidatus* Mycobacterium inambitrix sp. nov.

Candidatus Mycobacterium inambitrix (NL. fem. n. *inambitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp005789055*. The type genome for the species is the GenBank assembly GCA_005789055.1. The GC content of the type genome is 66.26 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Mycobacterium inargitrix sp. nov.

Candidatus Mycobacterium inargitrix (NL. fem. n. *inargitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp008329905*. The type genome for the species is the GenBank assembly RS_GCF_008329905.1. The GC content of the type genome is 66.62 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Mycobacterium inbelitia sp. nov.

Candidatus Mycobacterium inbelitia (NL. fem. n. *inbelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp008329585*. The type genome for the species is the GenBank assembly RS_GCF_008329585.1. The GC content of the type genome is 66.89 % and the genome length is 6.79 Mbp.

Description of *Candidatus* Mycobacterium incenessa sp. nov.

Candidatus Mycobacterium incenessa (NL. fem. n. *incenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667775*. The type genome for the species is the GenBank assembly RS_GCF_001667775.1. The GC content of the type genome is 67.37 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Mycobacterium incocicella sp. nov.

Candidatus Mycobacterium incocicella (NL. fem. n. *incocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp002723835*. The type genome for the species is the GenBank assembly RS_GCF_002723835.1. The GC content of the type genome is 67.64 % and the genome length is 6.53 Mbp.

Description of *Candidatus* Mycobacterium indidiforma sp. nov.

Candidatus Mycobacterium indidiforma (NL. fem. n. *indidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp003284965*. The type genome for the species is the GenBank assembly RS_GCF_003284965.1. The GC content of the type genome is 66.66 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Mycobacterium infenago sp. nov.

Candidatus Mycobacterium infenago (NL. fem. n. *infenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp007096635*. The type genome for the species is the GenBank assembly RS_GCF_007096635.1. The GC content of the type genome is 68.06

% and the genome length is 5.78 Mbp.

Description of *Candidatus* Mycobacterium infisitica sp. nov.

Candidatus Mycobacterium infisitica (NL. fem. n. *infisitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001673405*. The type genome for the species is the GenBank assembly RS_GCF_001673405.1. The GC content of the type genome is 65.86 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Mycobacterium inlepitrix sp. nov.

Candidatus Mycobacterium inlepitrix (NL. fem. n. *inlepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp002863225*. The type genome for the species is the GenBank assembly GCA_002863225.1. The GC content of the type genome is 66.06 % and the genome length is 5.95 Mbp.

Description of *Candidatus* Mycobacterium inmodatio sp. nov.

Candidatus Mycobacterium inmodatio (NL. fem. n. *inmodatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp003987775*. The type genome for the species is the GenBank assembly GCA_003987775.1. The GC content of the type genome is 66.9 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Mycobacterium inpuritia sp. nov.

Candidatus Mycobacterium inpuritia (NL. fem. n. *inpuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667925*. The type genome for the species is the GenBank assembly RS_GCF_001667925.1. The GC content of the type genome is 66.06 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Mycobacterium inredivita sp. nov.

Candidatus Mycobacterium inredivita (NL. fem. n. *inredivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp009729075*. The type genome for the species is the GenBank assembly RS_GCF_009729075.1. The GC content of the type genome is 66.44 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Mycobacterium invetatio sp. nov.

Candidatus Mycobacterium invetatio (NL. fem. n. *invetatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp900078375*. The type genome for the species is the GenBank assembly GCA_900078375.1. The GC content of the type genome is 66.22 % and the genome length is 6.83 Mbp.

Description of *Candidatus* Mycobacterium irrevugo sp. nov.

Candidatus Mycobacterium irrevugo (NL. fem. n. *irrevugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp008329565*. The type genome for the species is the GenBank assembly RS_GCF_008329565.1. The GC content of the type genome is 66.11 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Mycobacterium laculibula sp. nov.

Candidatus Mycobacterium laculibula (NL. fem. n. *laculibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001672975*. The type genome for the species is the GenBank assembly RS_GCF_001672975.1. The GC content of the type genome is 65.87 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Mycobacterium lavacibula sp. nov.

Candidatus Mycobacterium lavacibula (NL. fem. n. *lavacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667015*. The type genome for the species is the GenBank assembly RS_GCF_001667015.1. The GC content of the type genome is 68.85 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Mycobacterium linigimonas sp. nov.

Candidatus Mycobacterium linigimonas (NL. fem. n. *linigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667275*. The type genome for the species is the GenBank assembly RS_GCF_001666915.1. The GC content of the type genome is 68.82 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Mycobacterium lucericula sp. nov.

Candidatus Mycobacterium lucericula (NL. fem. n. *lucericula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp000455205*. The type genome for the species is the GenBank assembly RS_GCF_001672675.1. The GC content of the type genome is 68.23 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Mycobacterium molecilenta sp. nov.

Candidatus Mycobacterium molecilenta (NL. fem. n. *molecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667505*. The type genome for the species is the GenBank assembly RS_GCF_001667505.1. The GC content of the type genome is 66.16 % and the genome length is 6.8 Mbp.

Description of *Candidatus* Mycobacterium monocifica sp. nov.

Candidatus Mycobacterium monocifica (NL. fem. n. *monocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp008329535*. The type genome for the species is the GenBank assembly RS_GCF_008329535.1. The GC content of the type genome is 68.76

% and the genome length is 6.7 Mbp.

Description of *Candidatus* Mycobacterium novilifica sp. nov.

Candidatus Mycobacterium novilifica (NL. fem. n. *novilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp903911165*. The type genome for the species is the GenBank assembly GCA_903911165.1. The GC content of the type genome is 66.18 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Mycobacterium oblivessa sp. nov.

Candidatus Mycobacterium oblivessa (NL. fem. n. *oblivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001500125*. The type genome for the species is the GenBank assembly RS_GCF_001500125.1. The GC content of the type genome is 69.21 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Mycobacterium obtenentia sp. nov.

Candidatus Mycobacterium obtenentia (NL. fem. n. *obtenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001672895*. The type genome for the species is the GenBank assembly RS_GCF_001672895.1. The GC content of the type genome is 67.44 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Mycobacterium obtoritrix sp. nov.

Candidatus Mycobacterium obtoritrix (NL. fem. n. *obtoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001984215*. The type genome for the species is the GenBank assembly RS_GCF_001984215.1. The GC content of the type genome is 66.06 % and the genome length is 6.83 Mbp.

Description of *Candidatus* Mycobacterium optabitio sp. nov.

Candidatus Mycobacterium optabitio (NL. fem. n. *optabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667145*. The type genome for the species is the GenBank assembly RS_GCF_001667145.1. The GC content of the type genome is 66.77 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Mycobacterium ossifitica sp. nov.

Candidatus Mycobacterium ossifitica (NL. fem. n. *ossifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001428895*. The type genome for the species is the GenBank assembly RS_GCF_001428895.1. The GC content of the type genome is 67.2 % and the genome length is 6.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Mycobacterium paraliforma sp. nov.

Candidatus Mycobacterium paraliforma (NL. fem. n. *paraliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001954195*. The type genome for the species is the GenBank assembly RS_GCF_001954195.1. The GC content of the type genome is 67.28 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Mycobacterium peribax sp. nov.

Candidatus Mycobacterium peribax (NL. fem. n. *peribax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001494595*. The type genome for the species is the GenBank assembly RS_GCF_001494595.1. The GC content of the type genome is 67.54 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Mycobacterium refinilega sp. nov.

Candidatus Mycobacterium refinilega (NL. fem. n. *refinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001499905*. The type genome for the species is the GenBank assembly RS_GCF_001499905.1. The GC content of the type genome is 66.78 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Mycobacterium relapiforma sp. nov.

Candidatus Mycobacterium relapiforma (NL. fem. n. *relapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp004570325*. The type genome for the species is the GenBank assembly RS_GCF_004570325.1. The GC content of the type genome is 69.92 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Mycobacterium repepimonas sp. nov.

Candidatus Mycobacterium repepimonas (NL. fem. n. *repepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001954275*. The type genome for the species is the GenBank assembly RS_GCF_001954045.1. The GC content of the type genome is 67.12 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Mycobacterium resupivita sp. nov.

Candidatus Mycobacterium resupivita (NL. fem. n. *resupivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001665255*. The type genome for the species is the GenBank assembly RS_GCF_001665255.1. The GC content of the type genome is 65.79 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Mycobacterium robigedo sp. nov.

Candidatus Mycobacterium robigedo (NL. fem. n. *robigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001667115*. The type genome for the species is the GenBank assembly RS_GCF_001667115.1. The GC content of the type genome is 65.6

% and the genome length is 5.53 Mbp.

Description of *Candidatus* Mycobacterium rosacigena sp. nov.

Candidatus Mycobacterium rosacigena (NL. fem. n. *rosacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001668615*. The type genome for the species is the GenBank assembly RS_GCF_001668615.1. The GC content of the type genome is 66.1 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Mycobacterium rudicatio sp. nov.

Candidatus Mycobacterium rudicatio (NL. fem. n. *rudicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp002013375*. The type genome for the species is the GenBank assembly RS_GCF_002013545.1. The GC content of the type genome is 64.29 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Mycobacterium rumifugo sp. nov.

Candidatus Mycobacterium rumifugo (NL. fem. n. *rumifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001499965*. The type genome for the species is the GenBank assembly RS_GCF_001499965.1. The GC content of the type genome is 68.64 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Mycobacterium rutabitio sp. nov.

Candidatus Mycobacterium rutabitio (NL. fem. n. *rutabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp007714185*. The type genome for the species is the GenBank assembly RS_GCF_007714185.1. The GC content of the type genome is 68.68 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Mycobacterium satacitoga sp. nov.

Candidatus Mycobacterium satacitoga (NL. fem. n. *satacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp002013415*. The type genome for the species is the GenBank assembly RS_GCF_002013785.1. The GC content of the type genome is 64.2 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Mycobacterium scorbastra sp. nov.

Candidatus Mycobacterium scorbastra (NL. fem. n. *scorbastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp011620645*. The type genome for the species is the GenBank assembly GCA_011620645.1. The GC content of the type genome is 66.47 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Mycobacterium solifitoga sp. nov.

Candidatus Mycobacterium solifitoga (NL. fem. n. *solifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001673535*. The type genome for the species is the GenBank assembly RS_GCF_001673535.1. The GC content of the type genome is 68.85 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Mycobacterium soliventia sp. nov.

Candidatus Mycobacterium soliventia (NL. fem. n. *soliventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001500065*. The type genome for the species is the GenBank assembly RS_GCF_001500065.1. The GC content of the type genome is 67.02 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Mycobacterium tirocastra sp. nov.

Candidatus Mycobacterium tirocastra (NL. fem. n. *tirocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp003053865*. The type genome for the species is the GenBank assembly RS_GCF_004345925.1. The GC content of the type genome is 66.25 % and the genome length is 6.91 Mbp.

Description of *Candidatus* Mycobacterium tolutigena sp. nov.

Candidatus Mycobacterium tolutigena (NL. fem. n. *tolutigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp000455125*. The type genome for the species is the GenBank assembly RS_GCF_000455125.1. The GC content of the type genome is 67.66 % and the genome length is 4.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sputum sample from patient with suspected TB".

Description of *Candidatus* Mycobacterium tolutitrix sp. nov.

Candidatus Mycobacterium tolutitrix (NL. fem. n. *tolutitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp004362315*. The type genome for the species is the GenBank assembly RS_GCF_014195025.1. The GC content of the type genome is 66.4 % and the genome length is 6.95 Mbp.

Description of *Candidatus* Mycobacterium utrolibra sp. nov.

Candidatus Mycobacterium utrolibra (NL. fem. n. *utrolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp004745805*. The type genome for the species is the GenBank assembly RS_GCF_004745805.1. The GC content of the type genome is 66.74 % and the genome length is 6.05 Mbp.

Description of *Candidatus* Mycobacterium vehicago sp. nov.

Candidatus Mycobacterium vehicago (NL. fem. n. *vehicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Mycobacterium sp001665235*. The type genome for the species is the GenBank assembly RS_GCF_001665235.1. The GC content of the type genome is 66.34 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Mycobacterium vilitatio sp. nov.

Candidatus Mycobacterium vilitatio (NL. fem. n. *vilitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp000382405*. The type genome for the species is the GenBank assembly RS_GCF_000382405.1. The GC content of the type genome is 65.64 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Mycobacterium virecitura sp. nov.

Candidatus Mycobacterium virecitura (NL. fem. n. *virecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp900240975*. The type genome for the species is the GenBank assembly RS_GCF_001668695.1. The GC content of the type genome is 68.33 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Mycobacterium vocamisca sp. nov.

Candidatus Mycobacterium vocamisca (NL. fem. n. *vocamisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp001953975*. The type genome for the species is the GenBank assembly RS_GCF_001666875.1. The GC content of the type genome is 66.36 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Mycobacterium volucatica sp. nov.

Candidatus Mycobacterium volucatica (NL. fem. n. *volucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycobacterium sp011745145*. The type genome for the species is the GenBank assembly RS_GCF_011745145.1. The GC content of the type genome is 66.09 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Mycoplana ceromilenta sp. nov.

Candidatus Mycoplana ceromilenta (NL. fem. n. *ceromilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycoplana sp900469965*. The type genome for the species is the GenBank assembly GCA_900466295.1. The GC content of the type genome is 66.28 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Mycoplana fetutimonas sp. nov.

Candidatus Mycoplana fetutimonas (NL. fem. n. *fetutimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycoplana sp013378445*. The type genome for the species is the GenBank assembly RS_GCF_013378445.1. The GC content of the type genome is 63.08 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Mycoplasma ambacessa sp. nov.

Candidatus Mycoplasma ambacessa (NL. fem. n. *ambacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycoplasma sp001199495*. The type genome for the species is the GenBank assembly RS_GCF_001199495.1. The GC content of the type genome is 25.39 % and the genome length is 1.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "tissue culture".

Description of *Candidatus* Mycoplasma obtesilega sp. nov.

Candidatus Mycoplasma obtesilega (NL. fem. n. *obtesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycoplasma_K sp013215715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013215715.1. The GC content of the type genome is 28.62 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Mycoplasmopsis adgubisca sp. nov.

Candidatus Mycoplasmopsis adgubisca (NL. fem. n. *adgubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycoplasmopsis sp013008635*. The type genome for the species is the GenBank assembly RS_GCF_013008635.1. The GC content of the type genome is 30.09 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Mycoplasmopsis demulitudo sp. nov.

Candidatus Mycoplasmopsis demulitudo (NL. fem. n. *demulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycoplasmopsis_A sp009792315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009792315.1. The GC content of the type genome is 25.49 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Mycoplasmopsis hexamitia sp. nov.

Candidatus Mycoplasmopsis hexamitia (NL. fem. n. *hexamitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycoplasmopsis_A sp014352955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014352955.1. The GC content of the type genome is 28.73 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Mycoplasmopsis lenimugo sp. nov.

Candidatus Mycoplasmopsis lenimugo (NL. fem. n. *lenimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Mycoplasmopsis_A sp013348745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly RS_GCF_013348745.1. The GC content of the type genome is 26.53 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Myroides dedigicula sp. nov.

Candidatus Myroides dedigicula (NL. fem. n. *dedigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp013874595*. The type genome for the species is the GenBank assembly RS_GCF_011007495.1. The GC content of the type genome is 32.16 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Myroides domigedo sp. nov.

Candidatus Myroides domigedo (NL. fem. n. *domigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp004151275*. The type genome for the species is the GenBank assembly RS_GCF_004151275.1. The GC content of the type genome is 34.61 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Myroides intenetta sp. nov.

Candidatus Myroides intenetta (NL. fem. n. *intenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp014145665*. The type genome for the species is the GenBank assembly RS_GCF_014145665.1. The GC content of the type genome is 37.59 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Myroides malagitas sp. nov.

Candidatus Myroides malagitas (NL. fem. n. *malagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp002286775*. The type genome for the species is the GenBank assembly RS_GCF_002286775.1. The GC content of the type genome is 34.3 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Myroides masocessa sp. nov.

Candidatus Myroides masocessa (NL. fem. n. *masocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp013389595*. The type genome for the species is the GenBank assembly RS_GCF_013389595.1. The GC content of the type genome is 31.21 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Myroides nitelicula sp. nov.

Candidatus Myroides nitelicula (NL. fem. n. *nitelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp014145635*. The type genome for the species is the GenBank assembly RS_GCF_014145635.1. The GC content of the type genome is 35.67 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Myroides recomousia sp. nov.

Candidatus Myroides recomousia (NL. fem. n. *recomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp009711045*. The type genome for the species is the GenBank assembly RS_GCF_009711045.1. The GC content of the type genome is 33.98 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Myroides revecicula sp. nov.

Candidatus Myroides revecicula (NL. fem. n. *revecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp008629655*. The type genome for the species is the GenBank assembly RS_GCF_008629655.1. The GC content of the type genome is 34.45 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Myroides rubigedo sp. nov.

Candidatus Myroides rubigedo (NL. fem. n. *rubigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp009792295*. The type genome for the species is the GenBank assembly RS_GCF_009792295.1. The GC content of the type genome is 36.47 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Myroides scammousia sp. nov.

Candidatus Myroides scammousia (NL. fem. n. *scammousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp002360925*. The type genome for the species is the GenBank assembly GCA_002360925.1. The GC content of the type genome is 33.07 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Myroides xeramibula sp. nov.

Candidatus Myroides xeramibula (NL. fem. n. *xeramibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myroides sp002320285*. The type genome for the species is the GenBank assembly GCA_002320285.1. The GC content of the type genome is 37.33 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Myxococcus bipalessa sp. nov.

Candidatus Myxococcus bipalessa (NL. fem. n. *bipalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myxococcus sp010894405*. The type genome for the species is the GenBank assembly RS_GCF_010894405.1. The GC content of the type genome is 70.2 % and the genome length is 13.43 Mbp.

Description of *Candidatus* Myxococcus catapitio sp. nov.

Candidatus Myxococcus catapitio (NL. fem. n. *catapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Myxococcus sp014656495*. The type genome for the species is the GenBank assembly GCA_014656495.1. The GC content of the type genome is 70.06 % and the genome length is 9.01 Mbp.

Description of *Candidatus* Myxococcus cibicetta sp. nov.

Candidatus Myxococcus cibicetta (NL. fem. n. *cibicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myxococcus sp010894455*. The type genome for the species is the GenBank assembly RS_GCF_010894455.1. The GC content of the type genome is 68.92 % and the genome length is 11.39 Mbp.

Description of *Candidatus* Myxococcus dicimitio sp. nov.

Candidatus Myxococcus dicimitio (NL. fem. n. *dicimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myxococcus sp013372585*. The type genome for the species is the GenBank assembly RS_GCF_013372605.1. The GC content of the type genome is 70.01 % and the genome length is 8.8 Mbp.

Description of *Candidatus* Myxococcus semapitas sp. nov.

Candidatus Myxococcus semapitas (NL. fem. n. *semapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myxococcus sp010998615*. The type genome for the species is the GenBank assembly GCA_006519755.1. The GC content of the type genome is 68.88 % and the genome length is 9.05 Mbp.

Description of *Candidatus* Myxococcus semipitrix sp. nov.

Candidatus Myxococcus semipitrix (NL. fem. n. *semipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myxococcus sp010894435*. The type genome for the species is the GenBank assembly RS_GCF_010894435.1. The GC content of the type genome is 70.3 % and the genome length is 12.67 Mbp.

Description of *Candidatus* Myxococcus sifunetta sp. nov.

Candidatus Myxococcus sifunetta (NL. fem. n. *sifunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myxococcus sp013336725*. The type genome for the species is the GenBank assembly RS_GCF_013336705.1. The GC content of the type genome is 68.9 % and the genome length is 11.45 Mbp.

Description of *Candidatus* Myxosarcina dilibivita sp. nov.

Candidatus Myxosarcina dilibivita (NL. fem. n. *dilibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Myxosarcina sp000756305*. The type genome for the species is the GenBank assembly RS_GCF_000756305.1. The GC content of the type genome is 40.1 % and the genome length is 7.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "coral reef".

Description of *Candidatus* Naasia aggenedo sp. nov.

Candidatus Naasia aggenedo (NL. fem. n. *aggenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Naasia sp003097495*. The type genome for the species is the GenBank assembly RS_GCF_003097495.1. The GC content of the type genome is 68.64 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Nakamurella cerofitas sp. nov.

Candidatus Nakamurella cerofitas (NL. fem. n. *cerofitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nakamurella sp013002705*. The type genome for the species is the GenBank assembly RS_GCF_013002705.1. The GC content of the type genome is 69.5 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Nakamurella detepimonia sp. nov.

Candidatus Nakamurella detepimonia (NL. fem. n. *detepimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nakamurella sp014303395*. The type genome for the species is the GenBank assembly RS_GCF_014303395.1. The GC content of the type genome is 67.94 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Nakamurella dicimago sp. nov.

Candidatus Nakamurella dicimago (NL. fem. n. *dicimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nakamurella sp009707545*. The type genome for the species is the GenBank assembly RS_GCF_009707545.1. The GC content of the type genome is 71.3 % and the genome length is 6.05 Mbp.

Description of *Candidatus* Nakamurella elasticella sp. nov.

Candidatus Nakamurella elasticella (NL. fem. n. *elasticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nakamurella sp003860405*. The type genome for the species is the GenBank assembly RS_GCF_003860405.1. The GC content of the type genome is 61.55 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Nakamurella spastentia sp. nov.

Candidatus Nakamurella spastentia (NL. fem. n. *spastentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nakamurella sp001897425*. The type genome for the species is the GenBank assembly GCA_001897425.1. The GC content of the type genome is 68.62 % and the genome length is 4.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Nannocystis artolatica sp. nov.

Candidatus Nannocystis artolatica (NL. fem. n. *artolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nannocystis sp013812955*. The type genome for the species is the GenBank assembly GCA_013812955.1. The GC content of the type genome is 69.93 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Nanopelagicus cibicigena sp. nov.

Candidatus Nanopelagicus cibicigena (NL. fem. n. *cibicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp005793655*. The type genome for the species is the GenBank assembly GCA_005793655.1. The GC content of the type genome is 42.03 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Nanopelagicus cineficella sp. nov.

Candidatus Nanopelagicus cineficella (NL. fem. n. *cineficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp009698515*. The type genome for the species is the GenBank assembly GCA_009697785.1. The GC content of the type genome is 41.53 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Nanopelagicus citipitura sp. nov.

Candidatus Nanopelagicus citipitura (NL. fem. n. *citipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp903897475*. The type genome for the species is the GenBank assembly GCA_903840365.1. The GC content of the type genome is 40.12 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Nanopelagicus colipessa sp. nov.

Candidatus Nanopelagicus colipessa (NL. fem. n. *colipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp000294575*. The type genome for the species is the GenBank assembly GCA_000294575.1. The GC content of the type genome is 41.69 %

and the genome length is 1.16 Mbp.

Description of *Candidatus* Nanopelagicus decatifica sp. nov.

Candidatus Nanopelagicus decatifica (NL. fem. n. *decatifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp009700155*. The type genome for the species is the GenBank assembly GCA_009698855.1. The GC content of the type genome is 39.94 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Nanopelagicus denorigena sp. nov.

Candidatus Nanopelagicus denorigena (NL. fem. n. *denorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp009705675*. The type genome for the species is the GenBank assembly GCA_009705675.1. The GC content of the type genome is 40.71 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Nanopelagicus domabitio sp. nov.

Candidatus Nanopelagicus domabitio (NL. fem. n. *domabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp009702465*. The type genome for the species is the GenBank assembly GCA_009702465.1. The GC content of the type genome is 43.27 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Nanopelagicus immemibula sp. nov.

Candidatus Nanopelagicus immemibula (NL. fem. n. *immemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp000378865*. The type genome for the species is the GenBank assembly GCA_000378865.1. The GC content of the type genome is 41.4 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Nanopelagicus inturax sp. nov.

Candidatus Nanopelagicus inturax (NL. fem. n. *inturax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp000383815*. The type genome for the species is the GenBank assembly GCA_000383815.1. The GC content of the type genome is 42.16 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Nanopelagicus melopicella sp. nov.

Candidatus Nanopelagicus melopicella (NL. fem. n. *melopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp003569185*. The type genome for the species is the GenBank assembly GCA_003569185.1. The GC content of the type genome is 42.12 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Nanopelagicus necopitoga sp. nov.

Candidatus Nanopelagicus necopitoga (NL. fem. n. *necopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp001437855*. The type genome for the species is the GenBank assembly GCA_009704875.1. The GC content of the type genome is 40.71 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Nanopelagicus omnivatio sp. nov.

Candidatus Nanopelagicus omnivatio (NL. fem. n. *omnivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp903892335*. The type genome for the species is the GenBank assembly GCA_903892335.1. The GC content of the type genome is 42.45 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Nanopelagicus refinimonas sp. nov.

Candidatus Nanopelagicus refinimonas (NL. fem. n. *refinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp009691185*. The type genome for the species is the GenBank assembly GCA_009691185.1. The GC content of the type genome is 42.14 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Nanopelagicus rudecitura sp. nov.

Candidatus Nanopelagicus rudecitura (NL. fem. n. *rudecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp010030895*. The type genome for the species is the GenBank assembly GCA_010025195.1. The GC content of the type genome is 40.43 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Nanopelagicus sonipilenta sp. nov.

Candidatus Nanopelagicus sonipilenta (NL. fem. n. *sonipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nanopelagicus sp009704285*. The type genome for the species is the GenBank assembly GCA_009704285.1. The GC content of the type genome is 42.19 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Nardonella adluvimonas sp. nov.

Candidatus Nardonella adluvimonas (NL. fem. n. *adluvimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nardonella sp004296475*. The type genome for the species is the GenBank assembly RS_GCF_004296475.1. The GC content of the type genome is 17.74 % and the genome length is 0.23 Mbp.

Description of *Candidatus* Nardonella colepetta sp. nov.

Candidatus Nardonella colepetta (NL. fem. n. *colepetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nardonella sp004296515*. The type genome for the species is the GenBank assembly RS_GCF_004296515.1. The GC content of the type genome is 17.4

% and the genome length is 0.23 Mbp.

Description of *Candidatus* Nardonella delucitas sp. nov.

Candidatus Nardonella delucitas (NL. fem. n. *delucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nardonella sp004296535*. The type genome for the species is the GenBank assembly RS_GCF_004296535.1. The GC content of the type genome is 16.16 % and the genome length is 0.22 Mbp.

Description of *Candidatus* Navicana deparitica sp. nov.

Candidatus Navicana deparitica (NL. fem. n. *deparitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-0-20-40-13 sp002774285*. The type genome for the species is the GenBank assembly GCA_002774285.1. The GC content of the type genome is 39.83 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Navicana gen. nov.

Candidatus Navicana (NL. fem. n. *Navicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-0-20-40-13*. The type species for the genus is *Candidatus* Navicana deparitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *0-14-0-20-40-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navicanaceae.

Description of *Candidatus* Navicanaceae fam. nov.

Candidatus Navicanaceae (NL. fem. n. *Navicanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *0-14-0-20-40-13.* The type genus for the taxon is *Candidatus* Navicana .

According to the original version of GTDB R06-RS202, this family belongs to the order *0-14-0-20-40-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Navicanales.

Description of *Candidatus* Navicanales ord. nov.

Candidatus Navicanales (NL. fem. n. *Navicanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *0-14-0-20-40-13*. The type genus for the taxon is *Candidatus* Navicana .

According to the original version of GTDB R06-RS202, this family belongs to the class *WWE3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Veridulae.

Description of *Candidatus* Navicaria duricicula sp. nov.

Candidatus Navicaria duricicula (NL. fem. n. *duricicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZWU01 sp903936775*. The type genome for the species is the GenBank assembly GCA_903932825.1. The GC content of the type genome is 61.56 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Navicaria gen. nov.

Candidatus Navicaria (NL. fem. n. *Navicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZWU01*. The type species for the genus is *Candidatus* Navicaria duricicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *V1-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifulaceae.

Description of *Candidatus* Navicia tenilessa sp. nov.

Candidatus Navicia tenilessa (NL. fem. n. *tenilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-48-16 sp001823155*. The type genome for the species is the GenBank assembly GCA_001825005.1. The GC content of the type genome is 48.4 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2

conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Navicia gen. nov.

Candidatus Navicia (NL. fem. n. *Navicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-48-16*. The type species for the genus is *Candidatus* Navicia tenilessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10102*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxilidaceae.

Description of *Candidatus* Navicida hibisicula sp. nov.

Candidatus Navicida hibisicula (NL. fem. n. *hibisicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC2-34-220 sp001780285*. The type genome for the species is the GenBank assembly GCA_001778325.1. The GC content of the type genome is 34.27 % and the genome length is 1.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Navicida gen. nov.

Candidatus Navicida (NL. fem. n. *Navicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYC2-34-220*. The type species for the genus is *Candidatus* Navicida hibisicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12075*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenociaceae.

Description of *Candidatus* Navicosa conifibula sp. nov.

Candidatus Navicosa conifibula (NL. fem. n. *conifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOYC01 sp903862425*. The type genome for the species is the GenBank assembly GCA_903862425.1. The GC content of the type genome is 66.02 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Navicosa gen. nov.

Candidatus Navicosa (NL. fem. n. *Navicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOYC01*. The type species for the genus is *Candidatus* Navicosa conifibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Navicosa verifetta sp. nov.

Candidatus Navicosa verifetta (NL. fem. n. *verifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOYC01 sp903837135*. The type genome for the species is the GenBank assembly GCA_903882015.1. The GC content of the type genome is 68.75 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Navifana oscilatio sp. nov.

Candidatus Navifana oscilatio (NL. fem. n. *oscilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B64-G9 sp003647095*. The type genome for the species is the GenBank assembly GCA_003647095.1. The GC content of the type genome is 66.4 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Navifana gen. nov.

Candidatus Navifana (NL. fem. n. *Navifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B64-G9*. The type species for the genus is *Candidatus* Navifana oscilatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family

B64-G9. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navifanaceae.

Description of *Candidatus* Navifanaceae fam. nov.

Candidatus Navifanaceae (NL. fem. n. *Navifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B64-G9.* The type genus for the taxon is *Candidatus* Navifana .

According to the original version of GTDB R06-RS202, this family belongs to the order *B64-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Navifanales.

Description of *Candidatus* Navifanales ord. nov.

Candidatus Navifanales (NL. fem. n. *Navifanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B64-G9.* The type genus for the taxon is *Candidatus* Navifana .

According to the original version of GTDB R06-RS202, this family belongs to the class *B64-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Navifanae.

Description of *Candidatus* Navifanae class. nov.

Candidatus Navifanae (NL. fem. n. *c__Navifanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B64-G9.* The type genus for the taxon is *Candidatus* Navifana .

According to GTDB R06-RS202, this class belongs to the phylum *Myxococcota*.

Description of *Candidatus* Navifaria bipinigena sp. nov.

Candidatus Navifaria bipinigena (NL. fem. n. *bipinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUXY01 sp009659955*. The type genome for the species is the GenBank assembly GCA_009659955.1. The GC content of the type genome is 43.83 %

and the genome length is 1.32 Mbp.

Description of *Candidatus* Navifaria gen. nov.

Candidatus Navifaria (NL. fem. n. *Navifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUXY01*. The type species for the genus is *Candidatus* Navifaria bipinigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Navifella intesentia sp. nov.

Candidatus Navifella intesentia (NL. fem. n. *intesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN12 sp004366195*. The type genome for the species is the GenBank assembly GCA_004366195.1. The GC content of the type genome is 73.01 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Navifella gen. nov.

Candidatus Navifella (NL. fem. n. *Navifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN12*. The type species for the genus is *Candidatus* Navifella intesentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navifellaceae.

Description of *Candidatus* Navifellaceae fam. nov.

Candidatus Navifellaceae (NL. fem. n. *Navifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN12.* The type genus for the taxon is *Candidatus* Navifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Bisacosales.

Description of *Candidatus* Navifella viripitio sp. nov.

Candidatus Navifella viripitio (NL. fem. n. *viripitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN12 sp002898915*. The type genome for the species is the GenBank assembly GCA_002898915.1. The GC content of the type genome is 73.27 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Navifia regificula sp. nov.

Candidatus Navifia regificula (NL. fem. n. *regificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1326 sp003157295*. The type genome for the species is the GenBank assembly GCA_003154175.1. The GC content of the type genome is 44.35 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Navifia gen. nov.

Candidatus Navifia (NL. fem. n. *Navifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1326*. The type species for the genus is *Candidatus* Navifia regificula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11712*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Faticariaceae.

Description of *Candidatus* Navifida cotenitrix sp. nov.

Candidatus Navifida cotenitrix (NL. fem. n. *cotenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6919 sp002450905*. The type genome for the species is the GenBank assembly GCA_002450905.1. The GC content of the type genome is 33.13 %

and the genome length is 3.57 Mbp.

Description of *Candidatus* Navifida gen. nov.

Candidatus Navifida (NL. fem. n. *Navifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6919*. The type species for the genus is *Candidatus* Navifida cotenitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6919*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navifidaceae.

Description of *Candidatus* Navifidaceae fam. nov.

Candidatus Navifidaceae (NL. fem. n. *Navifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6919.* The type genus for the taxon is *Candidatus* Navifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6919*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Navifidales.

Description of *Candidatus* Navifidales ord. nov.

Candidatus Navifidales (NL. fem. n. *Navifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6919.* The type genus for the taxon is *Candidatus* Navifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6919*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Navifidae.

Description of *Candidatus* Navifidae class. nov.

Candidatus Navifidae (NL. fem. n. *c__Navifidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6919.* The type genus for the taxon is *Candidatus* Navifida .

According to GTDB R06-RS202, this class belongs to the phylum *Spirochaetota*.

Description of *Candidatus* Navifosa infucimonia sp. nov.

Candidatus Navifosa infucimonia (NL. fem. n. *infucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J046 sp003696425*. The type genome for the species is the GenBank assembly GCA_003696425.1. The GC content of the type genome is 45.15 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Navifosa gen. nov.

Candidatus Navifosa (NL. fem. n. *Navifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J046*. The type species for the genus is *Candidatus* Navifosa infucimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J046*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navifosaceae.

Description of *Candidatus* Navifosaceae fam. nov.

Candidatus Navifosaceae (NL. fem. n. *Navifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J046.* The type genus for the taxon is *Candidatus* Navifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Recuciales.

Description of *Candidatus* Navifula adnubitas sp. nov.

Candidatus Navifula adnubitas (NL. fem. n. *adnubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWJY01 sp007128085*. The type genome for the species is the

GenBank assembly GCA_007128085.1. The GC content of the type genome is 44.65 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Navifula gen. nov.

Candidatus Navifula (NL. fem. n. *Navifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWJY01*. The type species for the genus is *Candidatus* Navifula adnubitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Navifula adnumugo sp. nov.

Candidatus Navifula adnumugo (NL. fem. n. *adnumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWJY01 sp007693915*. The type genome for the species is the GenBank assembly GCA_007693915.1. The GC content of the type genome is 38.33 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Navifula ammodastra sp. nov.

Candidatus Navifula ammodastra (NL. fem. n. *ammodastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWJY01 sp003559985*. The type genome for the species is the GenBank assembly GCA_003559985.1. The GC content of the type genome is 45.59 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Navifula asbesentia sp. nov.

Candidatus Navifula asbesentia (NL. fem. n. *asbesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWJY01 sp007134625*. The type genome for the species is the GenBank assembly GCA_007134625.1. The GC content of the type genome is 39.14 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Navifula cenacitas sp. nov.

Candidatus Navifula cenacitas (NL. fem. n. *cenacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWJY01 sp007695145*. The type genome for the species is the GenBank assembly GCA_007695145.1. The GC content of the type genome is 42.2 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Navifula exoscitudo sp. nov.

Candidatus Navifula exoscitudo (NL. fem. n. *exoscitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWJY01 sp003559865*. The type genome for the species is the GenBank assembly GCA_003559865.1. The GC content of the type genome is 44.48 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Navifula milifitudo sp. nov.

Candidatus Navifula milifitudo (NL. fem. n. *milifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWJY01 sp007121335*. The type genome for the species is the GenBank assembly GCA_003561755.1. The GC content of the type genome is 46.12 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Navifula modificula sp. nov.

Candidatus Navifula modificula (NL. fem. n. *modificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWJY01 sp007695035*. The type genome for the species is the GenBank assembly GCA_007695035.1. The GC content of the type genome is 45.5 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Necoparia volunisca sp. nov.

Candidatus Necoparia volunisca (NL. fem. n. *volunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-42-50 sp001776545*. The type genome for the species is the GenBank assembly GCA_001776395.1. The GC content of the type genome is 41.7 % and the genome length is 0.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Necoparia gen. nov.

Candidatus Necoparia (NL. fem. n. *Necoparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-42-50*. The type species for the genus is *Candidatus* Necoparia volunisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-41-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Necopella obtesisca sp. nov.

Candidatus Necopella obtesisca (NL. fem. n. *obtesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJGX01 sp014191035*. The type genome for the species is the GenBank assembly GCA_014191035.1. The GC content of the type genome is 39.21 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Necopella gen. nov.

Candidatus Necopella (NL. fem. n. *Necopella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJGX01*. The type species for the genus is *Candidatus* Necopella obtesisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BJGX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Necopellaceae.

Description of *Candidatus* Necopellaceae fam. nov.

Candidatus Necopellaceae (NL. fem. n. *Necopellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BJGX01*. The type genus for the taxon is *Candidatus* Necopella .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAILAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bigemosales.

Description of *Candidatus* Necopia hexagitica sp. nov.

Candidatus Necopia hexagitica (NL. fem. n. *hexagitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYJE01 sp903926465*. The type genome for the species is the GenBank assembly GCA_903872475.1. The GC content of the type genome is 58.67 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Necopia gen. nov.

Candidatus Necopia (NL. fem. n. *Necopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYJE01*. The type species for the genus is *Candidatus* Necopia hexagitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Necopida refunago sp. nov.

Candidatus Necopida refunago (NL. fem. n. *refunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC1-40-9 sp000997385*. The type genome for the species is the GenBank assembly GCA_000997385.1. The GC content of the type genome is 39.66 % and the genome length is 1.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Necopida gen. nov.

Candidatus Necopida (NL. fem. n. *Necopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC1-40-9*. The type species for the genus is *Candidatus* Necopida refunago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Necoposa molecitia sp. nov.

Candidatus Necoposa molecitia (NL. fem. n. *molecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA142 sp003224855*. The type genome for the species is the GenBank assembly GCA_003224855.1. The GC content of the type genome is 56.34 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Necoposa gen. nov.

Candidatus Necoposa (NL. fem. n. *Necoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp1-AA142*. The type species for the genus is *Candidatus* Necoposa molecitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Necopula viburitudo sp. nov.

Candidatus Necopula viburitudo (NL. fem. n. *viburitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKZD01 sp903831805*. The type genome for the species is the GenBank assembly GCA_903855575.1. The GC content of the type genome is 43.58 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Necopula gen. nov.

Candidatus Necopula (NL. fem. n. *Necopula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKZD01*. The type species for the genus is *Candidatus* Necopula viburitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Necubana adpenilenta sp. nov.

Candidatus Necubana adpenilenta (NL. fem. n. *adpenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-91 sp013215025*. The type genome for the species is the GenBank assembly GCA_013215025.1. The GC content of the type genome is 46.12 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Necubana gen. nov.

Candidatus Necubana (NL. fem. n. *Necubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-91*. The type species for the genus is *Candidatus* Necubana adpenilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DT-91*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Necubanaceae.

Description of *Candidatus* Necubanaceae fam. nov.

Candidatus Necubanaceae (NL. fem. n. *Necubanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DT-91*. The type genus for the taxon is *Candidatus* Necubana .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Necubana effigessa sp. nov.

Candidatus Necubana effigessa (NL. fem. n. *effigessa* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-91 sp902705865*. The type genome for the species is the GenBank assembly RS_GCF_902705865.1. The GC content of the type genome is 48.05 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Necubana impolilega sp. nov.

Candidatus Necubana impolilega (NL. fem. n. *impolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-91 sp013215055*. The type genome for the species is the GenBank assembly GCA_013215055.1. The GC content of the type genome is 43.37 % and the genome length is 7.19 Mbp.

Description of *Candidatus* Necubana supelifica sp. nov.

Candidatus Necubana supelifica (NL. fem. n. *supelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-91 sp902705835*. The type genome for the species is the GenBank assembly RS_GCF_902705845.1. The GC content of the type genome is 48.08 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Necubaria fusifatio sp. nov.

Candidatus Necubaria fusifatio (NL. fem. n. *fusifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NAT5454 sp002713365*. The type genome for the species is the GenBank assembly GCA_002713365.1. The GC content of the type genome is 38.46 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Necubaria gen. nov.

Candidatus Necubaria (NL. fem. n. *Necubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *NAT5454*. The type species for the genus is *Candidatus* Necubaria fusifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fumifariaceae.

Description of *Candidatus* Necubella figilibula sp. nov.

Candidatus Necubella figilibula (NL. fem. n. *figilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-37-13 sp002773495*. The type genome for the species is the GenBank assembly GCA_002773495.1. The GC content of the type genome is 36.51 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Necubella gen. nov.

Candidatus Necubella (NL. fem. n. *Necubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-37-13*. The type species for the genus is *Candidatus* Necubella figilibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-41-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditosaceae.

Description of *Candidatus* Necubida hecatago sp. nov.

Candidatus Necubida hecatago (NL. fem. n. *hecatago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6796 sp002452815*. The type genome for the species is the GenBank assembly GCA_002452815.1. The GC content of the type genome is 65.37 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Necubida gen. nov.

Candidatus Necubida (NL. fem. n. *Necubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6796*. The type species for the genus is *Candidatus* Necubida hecatago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Necubosa allacitica sp. nov.

Candidatus Necubosa allacitica (NL. fem. n. *allacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11740 sp003222895*. The type genome for the species is the GenBank assembly GCA_003222895.1. The GC content of the type genome is 54.36 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Necubosa gen. nov.

Candidatus Necubosa (NL. fem. n. *Necubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11740*. The type species for the genus is *Candidatus* Necubosa allacitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Necubosa letififorma sp. nov.

Candidatus Necubosa letififorma (NL. fem. n. *letififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11740 sp003487805*. The type genome for the species is the GenBank assembly GCA_003487805.1. The GC content of the type genome is 54.49 % and the genome length is 6.02 Mbp.

Description of *Candidatus* Necubosa menapitas sp. nov.

Candidatus Necubosa menapitas (NL. fem. n. *menapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11740 sp003222855*. The type genome for the species is the

GenBank assembly GCA_003222855.1. The GC content of the type genome is 54.81 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Necubosa nugivitas sp. nov.

Candidatus Necubosa nugivitas (NL. fem. n. *nugivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11740 sp003168335*. The type genome for the species is the GenBank assembly GCA_003168335.1. The GC content of the type genome is 55.87 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Necubula homogessa sp. nov.

Candidatus Necubula homogessa (NL. fem. n. *homogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11501 sp900766735*. The type genome for the species is the GenBank assembly RS_GCF_900766735.1. The GC content of the type genome is 48.43 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Necubula gen. nov.

Candidatus Necubula (NL. fem. n. *Necubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11501*. The type species for the genus is *Candidatus* Necubula homogessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGM11501*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Necubulaceae.

Description of *Candidatus* Necubulaceae fam. nov.

Candidatus Necubulaceae (NL. fem. n. *Necubulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HGM11501.* The type genus for the taxon is *Candidatus* Necubula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UMGS1883*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Defasiales.

Description of *Candidatus* Nefanana cinefiforma sp. nov.

Candidatus Nefanana cinefiforma (NL. fem. n. *cinefiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UKL13-3 sp001602415*. The type genome for the species is the GenBank assembly GCA_001602415.1. The GC content of the type genome is 37.33 % and the genome length is 3.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "UKL13 co-culture; a single cyanobacterial colony from a depth-integrated water sample grown as a non-axenic culture".

Description of *Candidatus* Nefanana gen. nov.

Candidatus Nefanana (NL. fem. n. *Nefanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UKL13-3*. The type species for the genus is *Candidatus* Nefanana cinefiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefananaceae.

Description of *Candidatus* Nefananaceae fam. nov.

Candidatus Nefananaceae (NL. fem. n. *Nefananaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UKL13-3.* The type genus for the taxon is *Candidatus* Nefanana .

According to the original version of GTDB R06-RS202, this family belongs to the order *NS11-12g*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peropanales.

Description of *Candidatus* Nefanaria dilicousia sp. nov.

Candidatus Nefanaria dilicousia (NL. fem. n. *dilicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNS01 sp003564035*. The type genome for the species is the GenBank assembly GCA_003564035.1. The GC content of the type genome is 45.86 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Nefanaria gen. nov.

Candidatus Nefanaria (NL. fem. n. *Nefanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKNS01*. The type species for the genus is *Candidatus* Nefanaria dilicousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1414*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefulaceae.

Description of *Candidatus* Nefanaria repagitica sp. nov.

Candidatus Nefanaria repagitica (NL. fem. n. *repagitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNS01 sp007120425*. The type genome for the species is the GenBank assembly GCA_003568075.1. The GC content of the type genome is 42.64 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Nefania detepatio sp. nov.

Candidatus Nefania detepatio (NL. fem. n. *detepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLBA01 sp007126575*. The type genome for the species is the GenBank assembly GCA_007121925.1. The GC content of the type genome is 68.27 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Nefania gen. nov.

Candidatus Nefania (NL. fem. n. *Nefania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SLBA01*. The type species for the genus is *Candidatus* Nefania detepatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Nefania nucifitoga sp. nov.

Candidatus Nefania nucifitoga (NL. fem. n. *nucifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLBA01 sp007692605*. The type genome for the species is the GenBank assembly GCA_007692605.1. The GC content of the type genome is 67.74 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Nefania resacifica sp. nov.

Candidatus Nefania resacifica (NL. fem. n. *resacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLBA01 sp007130605*. The type genome for the species is the GenBank assembly GCA_003556885.1. The GC content of the type genome is 67.98 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Nefanida nivomatio sp. nov.

Candidatus Nefanida nivomatio (NL. fem. n. *nivomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-38-85 sp001797275*. The type genome for the species is the GenBank assembly GCA_001797275.1. The GC content of the type genome is 37.86 % and the genome length is 2.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Nefanida gen. nov.

Candidatus Nefanida (NL. fem. n. *Nefanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-38-85*. The type species for the genus is *Candidatus* Nefanida nivomatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Nefanula adinvibra sp. nov.

Candidatus Nefanula adinvibra (NL. fem. n. *adinvibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAI01 sp014238825*. The type genome for the species is the GenBank assembly GCA_014238825.1. The GC content of the type genome is 36.79 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Nefanula gen. nov.

Candidatus Nefanula (NL. fem. n. *Nefanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABAAI01*. The type species for the genus is *Candidatus* Nefanula adinvibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABAAI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanulaceae.

Description of *Candidatus* Nefanulaceae fam. nov.

Candidatus Nefanulaceae (NL. fem. n. *Nefanulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABAAI01*. The type genus for the taxon is *Candidatus* Nefanula .

According to GTDB R06-RS202, this family belongs to the order *Leptospirales*.

Description of *Candidatus* Nefarana desorigena sp. nov.

Candidatus Nefarana desorigena (NL. fem. n. *desorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3818 sp002369315*. The type genome for the species is the GenBank assembly GCA_003454955.1. The GC content of the type genome is 51.26 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Nefarana gen. nov.

Candidatus Nefarana (NL. fem. n. *Nefarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3818*. The type species for the genus is *Candidatus* Nefarana desorigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nefarana veneficella sp. nov.

Candidatus Nefarana veneficella (NL. fem. n. *veneficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3818 sp900557155*. The type genome for the species is the GenBank assembly RS_GCF_900757755.1. The GC content of the type genome is 49.03 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Nefararia vatilivita sp. nov.

Candidatus Nefararia vatilivita (NL. fem. n. *vatilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-75 sp003550565*. The type genome for the species is the GenBank assembly GCA_003553635.1. The GC content of the type genome is 42.62 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Nefararia gen. nov.

Candidatus Nefararia (NL. fem. n. *Nefararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1SED10-75*. The type species for the genus is *Candidatus* Nefararia vatilivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWGO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenodiaceae.

Description of *Candidatus* Nefarella adsecicella sp. nov.

Candidatus Nefarella adsecicella (NL. fem. n. *adsecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXCX01 sp003567575*. The type genome for the species is the GenBank assembly GCA_003567575.1. The GC content of the type genome is 56.87 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Nefarella gen. nov.

Candidatus Nefarella (NL. fem. n. *Nefarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXCX01*. The type species for the genus is *Candidatus* Nefarella adsecicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PXCX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefarellaceae.

Description of *Candidatus* Nefarellaceae fam. nov.

Candidatus Nefarellaceae (NL. fem. n. *Nefarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PXCX01*. The type genus for the taxon is *Candidatus* Nefarella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8416_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Loraridales.

Description of *Candidatus* Nefarella lanifitudo sp. nov.

Candidatus Nefarella lanifitudo (NL. fem. n. *lanifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXCX01 sp003565195*. The type genome for the species is the GenBank assembly GCA_003565195.1. The GC content of the type genome is 55.92 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Nefarida depopitia sp. nov.

Candidatus Nefarida depopitia (NL. fem. n. *depopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4820 sp002402325*. The type genome for the species is the GenBank assembly GCA_002402325.1. The GC content of the type genome is 36.79 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Nefarida gen. nov.

Candidatus Nefarida (NL. fem. n. *Nefarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4820*. The type species for the genus is *Candidatus* Nefarida depopitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4820*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefaridaceae.

Description of *Candidatus* Nefaridaceae fam. nov.

Candidatus Nefaridaceae (NL. fem. n. *Nefaridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4820.* The type genus for the taxon is *Candidatus* Nefarida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4820*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nefaridales.

Description of *Candidatus* Nefaridales ord. nov.

Candidatus Nefaridales (NL. fem. n. *Nefaridales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA4820.* The type genus for the taxon is *Candidatus* Nefarida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4820*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Nefaridae.

Description of *Candidatus* Nefaridae class. nov.

Candidatus Nefaridae (NL. fem. n. *c__Nefaridae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4820.* The type genus for the taxon is *Candidatus* Nefarida .

According to GTDB R06-RS202, this class belongs to the phylum *Acidobacteriota*.

Description of *Candidatus* Nefarosa inmolitio sp. nov.

Candidatus Nefarosa inmolitio (NL. fem. n. *inmolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSOH01 sp013216065*. The type genome for the species is the GenBank assembly GCA_013216065.1. The GC content of the type genome is 50.76 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Nefarosa gen. nov.

Candidatus Nefarosa (NL. fem. n. *Nefarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSOH01*. The type species for the genus is *Candidatus* Nefarosa inmolitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABSOH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefarosaceae.

Description of *Candidatus* Nefarosaceae fam. nov.

Candidatus Nefarosaceae (NL. fem. n. *Nefarosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABSOH01.* The type genus for the taxon is *Candidatus* Nefarosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABSOH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nefarosales.

Description of *Candidatus* Nefarosales ord. nov.

Candidatus Nefarosales (NL. fem. n. *Nefarosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABSOH01.* The type genus for the taxon is *Candidatus* Nefarosa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Nefarula genocifica sp. nov.

Candidatus Nefarula genocifica (NL. fem. n. *genocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-43-14 sp001779315*. The type genome for the species is the GenBank assembly GCA_001779135.1. The GC content of the type genome is 42.1 % and the genome length is 1.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Nefarula gen. nov.

Candidatus Nefarula (NL. fem. n. *Nefarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-43-14*. The type species for the genus is *Candidatus* Nefarula genocifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefiaceae.

Description of *Candidatus* Nefarula lametetta sp. nov.

Candidatus Nefarula lametetta (NL. fem. n. *lametetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-43-14 sp000999095*. The type genome for the species is the GenBank assembly GCA_000999095.1. The GC content of the type genome is 43.23 % and the genome length is 1.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Negadavirga gabinentia sp. nov.

Candidatus Negadavirga gabinentia (NL. fem. n. *gabinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Negadavirga sp003565295*. The type genome for the species is the GenBank assembly GCA_003565295.1. The GC content of the type genome is 44.02 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Negadavirga prospisca sp. nov.

Candidatus Negadavirga prospisca (NL. fem. n. *prospisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Negadavirga sp003347495*. The type genome for the species is the GenBank assembly RS_GCF_003347495.1. The GC content of the type genome is 43.2 % and the genome length is 6.35 Mbp.

Description of *Candidatus* Negativibacillus manibugo sp. nov.

Candidatus Negativibacillus manibugo (NL. fem. n. *manibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Negativibacillus sp900547015*. The type genome for the species is the GenBank assembly GCA_900547015.1. The GC content of the type genome is 53.76 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Negativibacillus tegimitudo sp. nov.

Candidatus Negativibacillus tegimitudo (NL. fem. n. *tegimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Negativibacillus sp000435195*. The type genome for the species is the GenBank assembly GCA_000435195.1. The GC content of the type genome is 51.54 %

and the genome length is 2.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Negativibacillus vivifitica sp. nov.

Candidatus Negativibacillus vivifitica (NL. fem. n. *vivifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Negativibacillus sp900547455*. The type genome for the species is the GenBank assembly GCA_900547455.1. The GC content of the type genome is 56.78 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Negativicoccus impinatio sp. nov.

Candidatus Negativicoccus impinatio (NL. fem. n. *impinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Negativicoccus sp900556745*. The type genome for the species is the GenBank assembly GCA_900556745.1. The GC content of the type genome is 53.07 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Negidana ardififorma sp. nov.

Candidatus Negidana ardififorma (NL. fem. n. *ardififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R501 sp902809825*. The type genome for the species is the GenBank assembly GCA_902809825.1. The GC content of the type genome is 70.55 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Negidana gen. nov.

Candidatus Negidana (NL. fem. n. *Negidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *R501*. The type species for the genus is *Candidatus* Negidana ardififorma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *R501*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negidanaceae.

Description of *Candidatus* Negidanaceae fam. nov.

Candidatus Negidanaceae (NL. fem. n. *Negidanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *R501.* The type genus for the taxon is *Candidatus* Negidana .

According to GTDB R06-RS202, this family belongs to the order *Sulfobacillales*.

Description of *Candidatus* Negidaria obnunatio sp. nov.

Candidatus Negidaria obnunatio (NL. fem. n. *obnunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3ABIN01 sp002897715*. The type genome for the species is the GenBank assembly GCA_002897715.1. The GC content of the type genome is 60.46 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Negidaria gen. nov.

Candidatus Negidaria (NL. fem. n. *Negidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3ABIN01*. The type species for the genus is *Candidatus* Negidaria obnunatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3ABIN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negidariaceae.

Description of *Candidatus* Negidariaceae fam. nov.

Candidatus Negidariaceae (NL. fem. n. *Negidariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3ABIN01.* The type genus for the taxon is *Candidatus* Negidaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *BMS3ABIN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Negidariales.

Description of *Candidatus* Negidariales ord. nov.

Candidatus Negidariales (NL. fem. n. *Negidariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3ABIN01*. The type genus for the taxon is *Candidatus* Negidaria .

According to the GTDB R06-RS202, this order belongs to the class *Thermoleophilia*.

Description of *Candidatus* Negidella impiritrix sp. nov.

Candidatus Negidella impiritrix (NL. fem. n. *impiritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J061 sp003695725*. The type genome for the species is the GenBank assembly GCA_003695725.1. The GC content of the type genome is 36.58 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Negidella gen. nov.

Candidatus Negidella (NL. fem. n. *Negidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J061*. The type species for the genus is *Candidatus* Negidella impiritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J061*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negidellaceae.

Description of *Candidatus* Negidellaceae fam. nov.

Candidatus Negidellaceae (NL. fem. n. *Negidellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J061*. The type genus for the taxon is *Candidatus* Negidella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-38-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ducilanales.

Description of *Candidatus* Negidia puruliforma sp. nov.

Candidatus Negidia puruliforma (NL. fem. n. *puruliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4181 sp002380425*. The type genome for the species is the GenBank assembly GCA_002379665.1. The GC content of the type genome is 52.37 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Negidia gen. nov.

Candidatus Negidia (NL. fem. n. *Negidia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4181*. The type species for the genus is *Candidatus* Negidia puruliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4181*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negidiaceae.

Description of *Candidatus* Negidiaceae fam. nov.

Candidatus Negidiaceae (NL. fem. n. *Negidiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4181.* The type genus for the taxon is *Candidatus* Negidia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Negidida arcatatio sp. nov.

Candidatus Negidida arcatatio (NL. fem. n. *arcatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5070 sp002414805*. The type genome for the species is the GenBank assembly GCA_002414805.1. The GC content of the type genome is 61.71 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Negidida gen. nov.

Candidatus Negidida (NL. fem. n. *Negidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5070*. The type species for the genus is *Candidatus* Negidida arcatatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5070*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negididaceae.

Description of *Candidatus* Negididaceae fam. nov.

Candidatus Negididaceae (NL. fem. n. *Negididaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5070.* The type genus for the taxon is *Candidatus* Negidida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5070*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Negididales.

Description of *Candidatus* Negididales ord. nov.

Candidatus Negididales (NL. fem. n. *Negididales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5070.* The type genus for the taxon is *Candidatus* Negidida .

According to the GTDB R06-RS202, this order belongs to the class *Fibrobacteria*.

Description of *Candidatus* Negidida vagabibula sp. nov.

Candidatus Negidida vagabibula (NL. fem. n. *vagabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5070 sp903825275*. The type genome for the species is the GenBank assembly GCA_903825275.1. The GC content of the type genome is 56.98 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Negidosa furibilega sp. nov.

Candidatus Negidosa furibilega (NL. fem. n. *furibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-55-11 sp001787585*. The type genome for the species is the GenBank assembly GCA_001787585.1. The GC content of the type genome is 52.5 % and the genome length is 1.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Negidosa gen. nov.

Candidatus Negidosa (NL. fem. n. *Negidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-55-11*. The type species for the genus is *Candidatus* Negidosa furibilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Negidosa metapastra sp. nov.

Candidatus Negidosa metapastra (NL. fem. n. *metapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-55-11 sp007376635*. The type genome for the species is the GenBank assembly GCA_007376635.1. The GC content of the type genome is 51.31 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Negidosa repuratica sp. nov.

Candidatus Negidosa repuratica (NL. fem. n. *repuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-55-11 sp001788925*. The type genome for the species is the GenBank assembly GCA_001788995.1. The GC content of the type genome is 54.59 % and the genome length is 1.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Negidula cetarastra sp. nov.

Candidatus Negidula cetarastra (NL. fem. n. *cetarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFJX01 sp002784045*. The type genome for the species is the GenBank assembly GCA_002784045.1. The GC content of the type genome is 62.93 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Negidula gen. nov.

Candidatus Negidula (NL. fem. n. *Negidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PFJX01*. The type species for the genus is *Candidatus* Negidula cetarastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Negidula disiditrix sp. nov.

Candidatus Negidula disiditrix (NL. fem. n. *disiditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFJX01 sp009772925*. The type genome for the species is the GenBank assembly GCA_009772925.1. The GC content of the type genome is 65.76 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Negidula inexcastra sp. nov.

Candidatus Negidula inexcastra (NL. fem. n. *inexcastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFJX01 sp002281555*. The type genome for the species is the GenBank assembly GCA_002281555.1. The GC content of the type genome is 60.88 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Negidula obfusifica sp. nov.

Candidatus Negidula obfusifica (NL. fem. n. *obfusifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFJX01 sp903918705*. The type genome for the species is the

GenBank assembly GCA_903918705.1. The GC content of the type genome is 64.61 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Negidula semapugo sp. nov.

Candidatus Negidula semapugo (NL. fem. n. *semapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFJX01 sp903835655*. The type genome for the species is the GenBank assembly GCA_903833785.1. The GC content of the type genome is 62.86 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Negidula seposilega sp. nov.

Candidatus Negidula seposilega (NL. fem. n. *seposilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFJX01 sp903883985*. The type genome for the species is the GenBank assembly GCA_903850875.1. The GC content of the type genome is 61.66 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Negotana veridilega sp. nov.

Candidatus Negotana veridilega (NL. fem. n. *veridilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-40-8-A sp001819435*. The type genome for the species is the GenBank assembly GCA_001819435.1. The GC content of the type genome is 36.99 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Negotana gen. nov.

Candidatus Negotana (NL. fem. n. *Negotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-40-8-A*. The type species for the genus is *Candidatus* Negotana veridilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family

RBG-13-40-8-A. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negotanaceae.

Description of *Candidatus* Negotanaceae fam. nov.

Candidatus Negotanaceae (NL. fem. n. *Negotanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-40-8-A.* The type genus for the taxon is *Candidatus* Negotana .

According to GTDB R06-RS202, this family belongs to the order *Portnoybacterales*.

Description of *Candidatus* Negotaria didacugo sp. nov.

Candidatus Negotaria didacugo (NL. fem. n. *didacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12015 sp003447545*. The type genome for the species is the GenBank assembly GCA_003447545.1. The GC content of the type genome is 59.69 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Negotaria gen. nov.

Candidatus Negotaria (NL. fem. n. *Negotaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12015*. The type species for the genus is *Candidatus* Negotaria didacugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negotariaceae.

Description of *Candidatus* Negotariaceae fam. nov.

Candidatus Negotariaceae (NL. fem. n. *Negotariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12015.* The type genus for the taxon is *Candidatus* Negotaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA12015*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Negotariales.

Description of *Candidatus* Negotariales ord. nov.

Candidatus Negotariales (NL. fem. n. *Negotariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12015.* The type genus for the taxon is *Candidatus* Negotaria .

According to the GTDB R06-RS202, this order belongs to the class *Binatia*.

Description of *Candidatus* Negotella locupousia sp. nov.

Candidatus Negotella locupousia (NL. fem. n. *locupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLHA01 sp007136405*. The type genome for the species is the GenBank assembly GCA_007136405.1. The GC content of the type genome is 62.81 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Negotella gen. nov.

Candidatus Negotella (NL. fem. n. *Negotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLHA01*. The type species for the genus is *Candidatus* Negotella locupousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8231*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatosaceae.

Description of *Candidatus* Negotida bigarimonia sp. nov.

Candidatus Negotida bigarimonia (NL. fem. n. *bigarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1317 sp003154195*. The type genome for the species is the GenBank assembly GCA_003154195.1. The GC content of the type genome is 44.9 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Negotida gen. nov.

Candidatus Negotida (NL. fem. n. *Negotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1317*. The type species for the genus is *Candidatus* Negotida bigarimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-171*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homoliaceae.

Description of *Candidatus* Negotosa depetifica sp. nov.

Candidatus Negotosa depetifica (NL. fem. n. *depetifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2359 sp002212985*. The type genome for the species is the GenBank assembly RS_GCF_002212985.1. The GC content of the type genome is 45.69 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Negotosa gen. nov.

Candidatus Negotosa (NL. fem. n. *Negotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2359*. The type species for the genus is *Candidatus* Negotosa depetifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2359*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negotosaceae.

Description of *Candidatus* Negotosaceae fam. nov.

Candidatus Negotosaceae (NL. fem. n. *Negotosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2359.* The type genus for the taxon is *Candidatus* Negotosa .

According to GTDB R06-RS202, this family belongs to the order *Chitinophagales*.

Description of *Candidatus* Negotosa elastatica sp. nov.

Candidatus Negotosa elastatica (NL. fem. n. *elastatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2359 sp002212725*. The type genome for the species is the GenBank assembly RS_GCF_002212725.1. The GC content of the type genome is 46.02 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Negotosa maxilimonia sp. nov.

Candidatus Negotosa maxilimonia (NL. fem. n. *maxilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2359 sp002345145*. The type genome for the species is the GenBank assembly GCA_002344655.1. The GC content of the type genome is 44.41 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Negotula dehisicella sp. nov.

Candidatus Negotula dehisicella (NL. fem. n. *dehisicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-274 sp000432155*. The type genome for the species is the GenBank assembly GCA_900546505.1. The GC content of the type genome is 33.33 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Negotula gen. nov.

Candidatus Negotula (NL. fem. n. *Negotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-274*. The type species for the genus is *Candidatus* Negotula dehisicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-274*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negotulaceae.

Description of *Candidatus* Negotulaceae fam. nov.

Candidatus Negotulaceae (NL. fem. n. *Negotulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-274.* The type genus for the taxon is *Candidatus* Negotula .

According to GTDB R06-RS202, this family belongs to the order *Lachnospirales*.

Description of *Candidatus* Negotula sonivicula sp. nov.

Candidatus Negotula sonivicula (NL. fem. n. *sonivicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-274 sp900545305*. The type genome for the species is the GenBank assembly RS_GCF_900757215.1. The GC content of the type genome is 33.58 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Nehalana conibitas sp. nov.

Candidatus Nehalana conibitas (NL. fem. n. *conibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLA01 sp003567615*. The type genome for the species is the GenBank assembly GCA_003567615.1. The GC content of the type genome is 67.06 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Nehalana gen. nov.

Candidatus Nehalana (NL. fem. n. *Nehalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWLA01*. The type species for the genus is *Candidatus* Nehalana conibitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Nehalana depelisca sp. nov.

Candidatus Nehalana depelisca (NL. fem. n. *depelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLA01 sp007121555*. The type genome for the species is the GenBank assembly GCA_007121555.1. The GC content of the type genome is 66.97 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Nehalana desepisca sp. nov.

Candidatus Nehalana desepisca (NL. fem. n. *desepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLA01 sp007129525*. The type genome for the species is the GenBank assembly GCA_007120875.1. The GC content of the type genome is 68.18 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Nehalana edulcibra sp. nov.

Candidatus Nehalana edulcibra (NL. fem. n. *edulcibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLA01 sp003559555*. The type genome for the species is the GenBank assembly GCA_003559555.1. The GC content of the type genome is 68.03 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Nehalana nugacitura sp. nov.

Candidatus Nehalana nugacitura (NL. fem. n. *nugacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLA01 sp007121775*. The type genome for the species is the GenBank assembly GCA_007121775.1. The GC content of the type genome is 67.15 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Nehalana sonabilenta sp. nov.

Candidatus Nehalana sonabilenta (NL. fem. n. *sonabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *PWLA01 sp007695195*. The type genome for the species is the GenBank assembly GCA_007695195.1. The GC content of the type genome is 67.71 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Nehalana vilipousia sp. nov.

Candidatus Nehalana vilipousia (NL. fem. n. *vilipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLA01 sp007132965*. The type genome for the species is the GenBank assembly GCA_007132965.1. The GC content of the type genome is 67.93 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Nehalana viragatio sp. nov.

Candidatus Nehalana viragatio (NL. fem. n. *viragatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWLA01 sp003562075*. The type genome for the species is the GenBank assembly GCA_003556625.1. The GC content of the type genome is 64.6 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Nehalaria acrobivita sp. nov.

Candidatus Nehalaria acrobivita (NL. fem. n. *acrobivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9214 sp003454335*. The type genome for the species is the GenBank assembly GCA_003454335.1. The GC content of the type genome is 55.31 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Nehalaria gen. nov.

Candidatus Nehalaria (NL. fem. n. *Nehalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9214*. The type species for the genus is *Candidatus* Nehalaria acrobivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Nehalariaceae.

Description of *Candidatus* Nehalariaceae fam. nov.

Candidatus Nehalariaceae (NL. fem. n. *Nehalariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9214.* The type genus for the taxon is *Candidatus* Nehalaria .

According to GTDB R06-RS202, this family belongs to the order *Thiohalobacterales*.

Description of *Candidatus* Nehalella conipitoga sp. nov.

Candidatus Nehalella conipitoga (NL. fem. n. *conipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp002427465*. The type genome for the species is the GenBank assembly GCA_002427465.1. The GC content of the type genome is 55.54 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Nehalella gen. nov.

Candidatus Nehalella (NL. fem. n. *Nehalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5446*. The type species for the genus is *Candidatus* Nehalella conipitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nehalella depupitudo sp. nov.

Candidatus Nehalella depupitudo (NL. fem. n. *depupitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp900545405*. The type genome for the species is the GenBank assembly GCA_900545405.1. The GC content of the type genome is 62.74 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Nehalella dicimisca sp. nov.

Candidatus Nehalella dicimisca (NL. fem. n. *dicimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp900546485*. The type genome for the species is the GenBank assembly GCA_900546485.1. The GC content of the type genome is 59.82 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Nehalella hexamessa sp. nov.

Candidatus Nehalella hexamessa (NL. fem. n. *hexamessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp900546615*. The type genome for the species is the GenBank assembly GCA_900546615.1. The GC content of the type genome is 60.08 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Nehalella hibisitoga sp. nov.

Candidatus Nehalella hibisitoga (NL. fem. n. *hibisitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp900759385*. The type genome for the species is the GenBank assembly GCA_900759385.1. The GC content of the type genome is 60.96 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Nehalella humecifica sp. nov.

Candidatus Nehalella humecifica (NL. fem. n. *humecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp004553625*. The type genome for the species is the GenBank assembly GCA_900752405.1. The GC content of the type genome is 60.98 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Nehalella inhericula sp. nov.

Candidatus Nehalella inhericula (NL. fem. n. *inhericula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp900752445*. The type genome for the species is the GenBank assembly GCA_900752445.1. The GC content of the type genome is 62.15 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Nehalella masocatio sp. nov.

Candidatus Nehalella masocatio (NL. fem. n. *masocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp012513005*. The type genome for the species is the GenBank assembly GCA_012513005.1. The GC content of the type genome is 44.13 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Nehalella palifitio sp. nov.

Candidatus Nehalella palifitio (NL. fem. n. *palifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp900543085*. The type genome for the species is the GenBank assembly GCA_900753255.1. The GC content of the type genome is 62.04 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Nehalella recumicella sp. nov.

Candidatus Nehalella recumicella (NL. fem. n. *recumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp900544765*. The type genome for the species is the GenBank assembly GCA_900544765.1. The GC content of the type genome is 59.68 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Nehalella semimitrix sp. nov.

Candidatus Nehalella semimitrix (NL. fem. n. *semimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5446 sp900544295*. The type genome for the species is the GenBank assembly GCA_900762465.1. The GC content of the type genome is 62.54 %

and the genome length is 2.32 Mbp.

Description of *Candidatus* Nehalia visibitio sp. nov.

Candidatus Nehalia visibitio (NL. fem. n. *visibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-68-20 sp001770655*. The type genome for the species is the GenBank assembly GCA_001770315.1. The GC content of the type genome is 68.45 % and the genome length is 2.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Nehalia gen. nov.

Candidatus Nehalia (NL. fem. n. *Nehalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-68-20*. The type species for the genus is *Candidatus* Nehalia visibitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Nehalida accumimonia sp. nov.

Candidatus Nehalida accumimonia (NL. fem. n. *accumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-40-12 sp001823315*. The type genome for the species is the GenBank assembly GCA_001823315.1. The GC content of the type genome is 40.06 % and the genome length is 0.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Nehalida gen. nov.

Candidatus Nehalida (NL. fem. n. *Nehalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *2-12-FULL-40-12*. The type species for the genus is *Candidatus* Nehalida accumimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-40-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nehalidaceae.

Description of *Candidatus* Nehalidaceae fam. nov.

Candidatus Nehalidaceae (NL. fem. n. *Nehalidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-40-12.* The type genus for the taxon is *Candidatus* Nehalida .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Nehalosa bipinimonia sp. nov.

Candidatus Nehalosa bipinimonia (NL. fem. n. *bipinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFKP01 sp004553715*. The type genome for the species is the GenBank assembly GCA_004553715.1. The GC content of the type genome is 27.95 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Nehalosa gen. nov.

Candidatus Nehalosa (NL. fem. n. *Nehalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFKP01*. The type species for the genus is *Candidatus* Nehalosa bipinimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Nehalula velivitia sp. nov.

Candidatus Nehalula velivitia (NL. fem. n. *velivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1006 sp002698305*. The type genome for the species is the GenBank assembly GCA_002698305.1. The GC content of the type genome is 37.38 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Nehalula gen. nov.

Candidatus Nehalula (NL. fem. n. *Nehalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1006*. The type species for the genus is *Candidatus* Nehalula velivitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1006*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nehalulaceae.

Description of *Candidatus* Nehalulaceae fam. nov.

Candidatus Nehalulaceae (NL. fem. n. *Nehalulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1006.* The type genus for the taxon is *Candidatus* Nehalula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Neisseria adtesitura sp. nov.

Candidatus Neisseria adtesitura (NL. fem. n. *adtesitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neisseria sp001308015*. The type genome for the species is the GenBank assembly RS_GCF_001308015.1. The GC content of the type genome is 48.32 % and the genome length is 2.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "wound".

Description of *Candidatus* Neisseria apporigena sp. nov.

Candidatus Neisseria apporigena (NL. fem. n. *apporigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neisseria sp001815675*. The type genome for the species is the GenBank assembly RS_GCF_001815675.1. The GC content of the type genome is 51.08 % and the genome length is 2.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sinus".

Description of *Candidatus* Neisseria cerofax sp. nov.

Candidatus Neisseria cerofax (NL. fem. n. *cerofax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neisseria sp011038745*. The type genome for the species is the GenBank assembly RS_GCF_011038745.1. The GC content of the type genome is 49.56 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Neisseria decunifica sp. nov.

Candidatus Neisseria decunifica (NL. fem. n. *decunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neisseria sp000227275*. The type genome for the species is the GenBank assembly GCA_001062585.1. The GC content of the type genome is 51.11 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Neisseria defetatio sp. nov.

Candidatus Neisseria defetatio (NL. fem. n. *defetatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neisseria sp002327085*. The type genome for the species is the GenBank assembly RS_GCF_002327085.1. The GC content of the type genome is 49.22 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Neisseria dilogilenta sp. nov.

Candidatus Neisseria dilogilenta (NL. fem. n. *dilogilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neisseria sp000186165*. The type genome for the species is the GenBank assembly RS_GCF_001064605.1. The GC content of the type genome is 49.84 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Neisseria lucerousia sp. nov.

Candidatus Neisseria lucerousia (NL. fem. n. *lucerousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neisseria sp000090875*. The type genome for the species is the GenBank assembly RS_GCF_000090875.1. The GC content of the type genome is 52.83 % and the genome length is 2.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Neisseria manufessa sp. nov.

Candidatus Neisseria manufessa (NL. fem. n. *manufessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neisseria sp000952795*. The type genome for the species is the GenBank assembly RS_GCF_001814135.1. The GC content of the type genome is 51.21 % and the genome length is 2.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "bronchial washing".

Description of *Candidatus* Neisseria medimatio sp. nov.

Candidatus Neisseria medimatio (NL. fem. n. *medimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neisseria sp001809325*. The type genome for the species is the GenBank assembly RS_GCF_001809325.1. The GC content of the type genome is 50.62 % and the genome length is 2.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "bronchial washing".

Description of *Candidatus* Neisseria peracugo sp. nov.

Candidatus Neisseria peracugo (NL. fem. n. *peracugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Neisseria sp002237445*. The type genome for the species is the GenBank assembly RS_GCF_002237445.1. The GC content of the type genome is 58.52 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Neobacillus abascessa sp. nov.

Candidatus Neobacillus abascessa (NL. fem. n. *abascessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp001510715*. The type genome for the species is the GenBank assembly RS_GCF_001510715.1. The GC content of the type genome is 42.05 % and the genome length is 5.89 Mbp.

Description of *Candidatus* Neobacillus absegastra sp. nov.

Candidatus Neobacillus absegastra (NL. fem. n. *absegastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp001278805*. The type genome for the species is the GenBank assembly RS_GCF_001278805.1. The GC content of the type genome is 42.42 % and the genome length is 5.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Neobacillus acricibra sp. nov.

Candidatus Neobacillus acricibra (NL. fem. n. *acricibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp000426085*. The type genome for the species is the GenBank assembly RS_GCF_000426085.1. The GC content of the type genome is 39.1 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Neobacillus acricousia sp. nov.

Candidatus Neobacillus acricousia (NL. fem. n. *acricousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp001866655*. The type genome for the species is the GenBank assembly RS_GCF_001866655.1. The GC content of the type genome is 38.41 % and the genome length is 5.72 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "mangrove".

Description of *Candidatus* Neobacillus adinviforma sp. nov.

Candidatus Neobacillus adinviforma (NL. fem. n. *adinviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp002567005*. The type genome for the species is the GenBank assembly RS_GCF_002567005.1. The GC content of the type genome is 39.06 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Neobacillus altipiforma sp. nov.

Candidatus Neobacillus altipiforma (NL. fem. n. *altipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp000686805*. The type genome for the species is the GenBank assembly RS_GCF_000686805.1. The GC content of the type genome is 38.6 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Neobacillus ammulimonas sp. nov.

Candidatus Neobacillus ammulimonas (NL. fem. n. *ammulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp000613125*. The type genome for the species is the GenBank assembly RS_GCF_000613125.1. The GC content of the type genome is 42.22 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Neobacillus decunessa sp. nov.

Candidatus Neobacillus decunessa (NL. fem. n. *decunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp002559145*. The type genome for the species is the GenBank assembly RS_GCF_011250595.1. The GC content of the type genome is 38.76 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Neobacillus defalousia sp. nov.

Candidatus Neobacillus defalousia (NL. fem. n. *defalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp001273955*. The type genome for the species is the GenBank assembly RS_GCF_001273955.1. The GC content of the type genome is 45.63 % and the genome length is 4.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Neobacillus denixigena sp. nov.

Candidatus Neobacillus denixigena (NL. fem. n. *denixigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp011393025*. The type genome for the species is the GenBank assembly RS_GCF_011393025.1. The GC content of the type genome is 38.81 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Neobacillus epistimonia sp. nov.

Candidatus Neobacillus epistimonia (NL. fem. n. *epistimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp013248975*. The type genome for the species is the GenBank assembly RS_GCF_013248975.1. The GC content of the type genome is 38.49 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Neobacillus gasifisca sp. nov.

Candidatus Neobacillus gasifisca (NL. fem. n. *gasifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp900103525*. The type genome for the species is the GenBank assembly RS_GCF_900103525.1. The GC content of the type genome is 38.04 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Neobacillus indipousia sp. nov.

Candidatus Neobacillus indipousia (NL. fem. n. *indipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp001048695*. The type genome for the species is the GenBank assembly RS_GCF_001048695.1. The GC content of the type genome is 38.1 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Neobacillus infabago sp. nov.

Candidatus Neobacillus infabago (NL. fem. n. *infabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp005154805*. The type genome for the species is the GenBank assembly RS_GCF_005154805.1. The GC content of the type genome is 40.15 % and the genome length is 5.68 Mbp.

Description of *Candidatus* Neobacillus insoratio sp. nov.

Candidatus Neobacillus insoratio (NL. fem. n. *insoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp001940785*. The type genome for the species is the GenBank assembly RS_GCF_001940785.1. The GC content of the type genome is 38.78 % and the genome length is 5.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Underwater soil".

Description of *Candidatus* Neobacillus insubago sp. nov.

Candidatus Neobacillus insubago (NL. fem. n. *insubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp013396335*. The type genome for the species is the GenBank assembly RS_GCF_013396335.1. The GC content of the type genome is 38.36 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Neobacillus intoritudo sp. nov.

Candidatus Neobacillus intoritudo (NL. fem. n. *intoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp001685025*. The type genome for the species is the

GenBank assembly RS_GCF_001685025.1. The GC content of the type genome is 42.59 % and the genome length is 5.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Neobacillus legifitudo sp. nov.

Candidatus Neobacillus legifitudo (NL. fem. n. *legifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp000482325*. The type genome for the species is the GenBank assembly RS_GCF_000482325.1. The GC content of the type genome is 38.94 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Neobacillus lubenastra sp. nov.

Candidatus Neobacillus lubenastra (NL. fem. n. *lubenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp900177675*. The type genome for the species is the GenBank assembly RS_GCF_012275205.1. The GC content of the type genome is 38.61 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Neobacillus mirififica sp. nov.

Candidatus Neobacillus mirififica (NL. fem. n. *mirififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp014656545*. The type genome for the species is the GenBank assembly GCA_014656545.1. The GC content of the type genome is 39.53 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Neobacillus musulisca sp. nov.

Candidatus Neobacillus musulisca (NL. fem. n. *musulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp007678255*. The type genome for the species is the GenBank assembly RS_GCF_007678255.1. The GC content of the type genome is 38.58 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Neobacillus nosocitio sp. nov.

Candidatus Neobacillus nosocitio (NL. fem. n. *nosocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp009928415*. The type genome for the species is the GenBank assembly RS_GCF_009928415.1. The GC content of the type genome is 39.09 % and the genome length is 5.71 Mbp.

Description of *Candidatus* Neobacillus pericicella sp. nov.

Candidatus Neobacillus pericicella (NL. fem. n. *pericicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp002272245*. The type genome for the species is the GenBank assembly RS_GCF_002272245.1. The GC content of the type genome is 37.98 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Neobacillus pinigiforma sp. nov.

Candidatus Neobacillus pinigiforma (NL. fem. n. *pinigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp004358205*. The type genome for the species is the GenBank assembly RS_GCF_004358205.1. The GC content of the type genome is 38.59 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Neobacillus pomifivita sp. nov.

Candidatus Neobacillus pomifivita (NL. fem. n. *pomifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp004341175*. The type genome for the species is the GenBank assembly RS_GCF_004341175.1. The GC content of the type genome is 37.92 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Neobacillus rarefugo sp. nov.

Candidatus Neobacillus rarefugo (NL. fem. n. *rarefugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp002585305*. The type genome for the species is the GenBank assembly RS_GCF_007828895.1. The GC content of the type genome is 38.74 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Neobacillus rinocitoga sp. nov.

Candidatus Neobacillus rinocitoga (NL. fem. n. *rinocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp011250555*. The type genome for the species is the GenBank assembly RS_GCF_011250555.1. The GC content of the type genome is 39.92 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Neobacillus tubicessa sp. nov.

Candidatus Neobacillus tubicessa (NL. fem. n. *tubicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp000821085*. The type genome for the species is the GenBank assembly RS_GCF_000821085.1. The GC content of the type genome is 44.78 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Neobacillus unetvago sp. nov.

Candidatus Neobacillus unetvago (NL. fem. n. *unetvago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neobacillus sp001510665*. The type genome for the species is the GenBank assembly RS_GCF_001510665.1. The GC content of the type genome is 44.03 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Neobacillus visocilenta sp. nov.

Candidatus Neobacillus visocilenta (NL. fem. n. *visocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Neobacillus sp900115925*. The type genome for the species is the GenBank assembly RS_GCF_900115925.1. The GC content of the type genome is 38.6 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Neochlamydia dimaditica sp. nov.

Candidatus Neochlamydia dimaditica (NL. fem. n. *dimaditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neochlamydia sp000813665*. The type genome for the species is the GenBank assembly RS_GCF_000813665.1. The GC content of the type genome is 38.09 % and the genome length is 2.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Neochlamydia inforitia sp. nov.

Candidatus Neochlamydia inforitia (NL. fem. n. *inforitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neochlamydia sp011087585*. The type genome for the species is the GenBank assembly RS_GCF_011087585.1. The GC content of the type genome is 38.02 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Neochlamydia irrevicula sp. nov.

Candidatus Neochlamydia irrevicula (NL. fem. n. *irrevicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neochlamydia sp001897225*. The type genome for the species is the GenBank assembly GCA_001897225.1. The GC content of the type genome is 38.12 % and the genome length is 2.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Neofamilia inobsitia sp. nov.

Candidatus Neofamilia inobsitia (NL. fem. n. *inobsitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neofamilia sp012728775*. The type genome for the species is the GenBank assembly GCA_012728775.1. The GC content of the type genome is 32.05 %

and the genome length is 1.97 Mbp.

Description of *Candidatus* Neofamilia sanabastra sp. nov.

Candidatus Neofamilia sanabastra (NL. fem. n. *sanabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neofamilia sp012513395*. The type genome for the species is the GenBank assembly GCA_012513395.1. The GC content of the type genome is 33.58 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Neorhizobium adpeletta sp. nov.

Candidatus Neorhizobium adpeletta (NL. fem. n. *adpeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp009617585*. The type genome for the species is the GenBank assembly RS_GCF_009617585.1. The GC content of the type genome is 58.77 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Neorhizobium alluvitio sp. nov.

Candidatus Neorhizobium alluvitio (NL. fem. n. *alluvitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp002376235*. The type genome for the species is the GenBank assembly GCA_002376235.1. The GC content of the type genome is 58.99 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Neorhizobium demuledo sp. nov.

Candidatus Neorhizobium demuledo (NL. fem. n. *demuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp003597675*. The type genome for the species is the GenBank assembly RS_GCF_003597675.1. The GC content of the type genome is 60.3 % and the genome length is 6.35 Mbp.

Description of *Candidatus* Neorhizobium exforilenta sp. nov.

Candidatus Neorhizobium exforilenta (NL. fem. n. *exforilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp004053875*. The type genome for the species is the GenBank assembly RS_GCF_004053875.1. The GC content of the type genome is 60.29 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Neorhizobium exsatitrix sp. nov.

Candidatus Neorhizobium exsatitrix (NL. fem. n. *exsatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp900469345*. The type genome for the species is the GenBank assembly GCA_900469345.1. The GC content of the type genome is 63.13 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Neorhizobium feditimonia sp. nov.

Candidatus Neorhizobium feditimonia (NL. fem. n. *feditimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp002431175*. The type genome for the species is the GenBank assembly RS_GCF_007829835.1. The GC content of the type genome is 60.24 % and the genome length is 7.03 Mbp.

Description of *Candidatus* Neorhizobium giganitudo sp. nov.

Candidatus Neorhizobium giganitudo (NL. fem. n. *giganitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp900111905*. The type genome for the species is the GenBank assembly RS_GCF_900111905.1. The GC content of the type genome is 60.75 % and the genome length is 6.88 Mbp.

Description of *Candidatus* Neorhizobium haricimonas sp. nov.

Candidatus Neorhizobium haricimonas (NL. fem. n. *haricimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp000757525*. The type genome for the species is the GenBank assembly RS_GCF_000757525.1. The GC content of the type genome is 60.75 % and the genome length is 6.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "decaying wood from a thermal pond".

Description of *Candidatus* Neorhizobium inhumentia sp. nov.

Candidatus Neorhizobium inhumentia (NL. fem. n. *inhumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp004343585*. The type genome for the species is the GenBank assembly RS_GCF_004343585.1. The GC content of the type genome is 59.51 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Neorhizobium inlumitia sp. nov.

Candidatus Neorhizobium inlumitia (NL. fem. n. *inlumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp000282095*. The type genome for the species is the GenBank assembly RS_GCF_000282095.2. The GC content of the type genome is 61.41 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Neorhizobium inoccitica sp. nov.

Candidatus Neorhizobium inoccitica (NL. fem. n. *inoccitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp900469955*. The type genome for the species is the GenBank assembly RS_GCF_900469955.1. The GC content of the type genome is 60.02 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Neorhizobium irreditudo sp. nov.

Candidatus Neorhizobium irreditudo (NL. fem. n. *irreditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp900466875*. The type genome for the species is the

GenBank assembly RS_GCF_900466875.1. The GC content of the type genome is 59.82 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Neorhizobium momoribra sp. nov.

Candidatus Neorhizobium momoribra (NL. fem. n. *momoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp902167985*. The type genome for the species is the GenBank assembly RS_GCF_902167985.1. The GC content of the type genome is 61.02 % and the genome length is 6.59 Mbp.

Description of *Candidatus* Neorhizobium musulitio sp. nov.

Candidatus Neorhizobium musulitio (NL. fem. n. *musulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp900471605*. The type genome for the species is the GenBank assembly RS_GCF_900467135.1. The GC content of the type genome is 61.93 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Neorhizobium obtemastra sp. nov.

Candidatus Neorhizobium obtemastra (NL. fem. n. *obtemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp900472675*. The type genome for the species is the GenBank assembly GCA_900472675.1. The GC content of the type genome is 62.33 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Neorhizobium oppanentia sp. nov.

Candidatus Neorhizobium oppanentia (NL. fem. n. *oppanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp001854865*. The type genome for the species is the GenBank assembly RS_GCF_001854865.1. The GC content of the type genome is 61.26 % and the genome length is 5.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil from surrounding area".

Description of *Candidatus* Neorhizobium peribilega sp. nov.

Candidatus Neorhizobium peribilega (NL. fem. n. *peribilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp002500765*. The type genome for the species is the GenBank assembly GCA_002500765.1. The GC content of the type genome is 59.84 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Neorhizobium recucilega sp. nov.

Candidatus Neorhizobium recucilega (NL. fem. n. *recucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp900469445*. The type genome for the species is the GenBank assembly RS_GCF_900469445.1. The GC content of the type genome is 59.33 % and the genome length is 6.29 Mbp.

Description of *Candidatus* Neorhizobium semidivita sp. nov.

Candidatus Neorhizobium semidivita (NL. fem. n. *semidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp900472395*. The type genome for the species is the GenBank assembly RS_GCF_900489895.1. The GC content of the type genome is 58.91 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Neorhizobium subodigena sp. nov.

Candidatus Neorhizobium subodigena (NL. fem. n. *subodigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp001005825*. The type genome for the species is the GenBank assembly RS_GCF_005280575.1. The GC content of the type genome is 61.45 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Neorhizobium turibigena sp. nov.

Candidatus Neorhizobium turibigena (NL. fem. n. *turibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp003491345*. The type genome for the species is the GenBank assembly RS_GCF_003491345.1. The GC content of the type genome is 61.19 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Neorhizobium viginitas sp. nov.

Candidatus Neorhizobium viginitas (NL. fem. n. *viginitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neorhizobium sp003425685*. The type genome for the species is the GenBank assembly RS_GCF_003425685.1. The GC content of the type genome is 61.44 % and the genome length is 6.97 Mbp.

Description of *Candidatus* Neptuniibacter murelicella sp. nov.

Candidatus Neptuniibacter murelicella (NL. fem. n. *murelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Neptuniibacter sp002435145*. The type genome for the species is the GenBank assembly GCA_002435145.1. The GC content of the type genome is 42.98 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Nesterenkonia ambidastra sp. nov.

Candidatus Nesterenkonia ambidastra (NL. fem. n. *ambidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nesterenkonia sp003595215*. The type genome for the species is the GenBank assembly RS_GCF_003595215.1. The GC content of the type genome is 61.82 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Nesterenkonia cnestifica sp. nov.

Candidatus Nesterenkonia cnestifica (NL. fem. n. *cnestifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Nesterenkonia sp001758425*. The type genome for the species is the GenBank assembly RS_GCF_001758425.2. The GC content of the type genome is 69.49 % and the genome length is 3.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "permafrost soil".

Description of *Candidatus* Nesterenkonia inoffifica sp. nov.

Candidatus Nesterenkonia inoffifica (NL. fem. n. *inoffifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nesterenkonia sp000220985*. The type genome for the species is the GenBank assembly RS_GCF_000220985.1. The GC content of the type genome is 71.49 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Nesterenkonia obtesicella sp. nov.

Candidatus Nesterenkonia obtesicella (NL. fem. n. *obtesicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nesterenkonia sp007922635*. The type genome for the species is the GenBank assembly RS_GCF_007922635.1. The GC content of the type genome is 66.41 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Nesterenkonia occalessa sp. nov.

Candidatus Nesterenkonia occalessa (NL. fem. n. *occalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nesterenkonia sp012641515*. The type genome for the species is the GenBank assembly RS_GCF_012641515.1. The GC content of the type genome is 63.07 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Nesterenkonia reduvilenta sp. nov.

Candidatus Nesterenkonia reduvilenta (NL. fem. n. *reduvilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nesterenkonia sp010119385*. The type genome for the species is the GenBank assembly RS_GCF_010119385.1. The GC content of the type genome is 60.8 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Nesterenkonia utraratio sp. nov.

Candidatus Nesterenkonia utraratio (NL. fem. n. *utraratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nesterenkonia sp008711175*. The type genome for the species is the GenBank assembly RS_GCF_008711175.1. The GC content of the type genome is 63.15 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Nevskia adtubibula sp. nov.

Candidatus Nevskia adtubibula (NL. fem. n. *adtubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nevskia sp903970595*. The type genome for the species is the GenBank assembly GCA_903970595.1. The GC content of the type genome is 65.06 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Nevskia agrapastra sp. nov.

Candidatus Nevskia agrapastra (NL. fem. n. *agrapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nevskia sp903885465*. The type genome for the species is the GenBank assembly GCA_903885465.1. The GC content of the type genome is 64.3 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Nevskia cepuritura sp. nov.

Candidatus Nevskia cepuritura (NL. fem. n. *cepuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nevskia sp013823855*. The type genome for the species is the GenBank assembly GCA_013823855.1. The GC content of the type genome is 67.53 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Nevskia medimax sp. nov.

Candidatus Nevskia medimax (NL. fem. n. *medimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nevskia sp903970615*. The type genome for the species is the GenBank assembly GCA_903970615.1. The GC content of the type genome is 60.12 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Nevskia pavimousia sp. nov.

Candidatus Nevskia pavimousia (NL. fem. n. *pavimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nevskia sp903822975*. The type genome for the species is the GenBank assembly GCA_903822975.1. The GC content of the type genome is 62.7 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Niabella cisorastra sp. nov.

Candidatus Niabella cisorastra (NL. fem. n. *cisorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niabella sp001896965*. The type genome for the species is the GenBank assembly GCA_001896965.1. The GC content of the type genome is 41.29 % and the genome length is 3.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Niallia cicatessa sp. nov.

Candidatus Niallia cicatessa (NL. fem. n. *cicatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niallia sp001076885*. The type genome for the species is the GenBank assembly RS_GCF_001076885.1. The GC content of the type genome is 35.32 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Niallia defulitas sp. nov.

Candidatus Niallia defulitas (NL. fem. n. *defulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niallia sp900199695*. The type genome for the species is the GenBank assembly RS_GCF_000401235.1. The GC content of the type genome is 35.1 % and the genome length is 4.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rumen liquor".

Description of *Candidatus* Niallia immedugo sp. nov.

Candidatus Niallia immedugo (NL. fem. n. *immedugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niallia sp009183415*. The type genome for the species is the GenBank assembly RS_GCF_009183415.1. The GC content of the type genome is 34.01 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Niallia pavimisca sp. nov.

Candidatus Niallia pavimisca (NL. fem. n. *pavimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niallia sp011524565*. The type genome for the species is the GenBank assembly GCA_011524565.1. The GC content of the type genome is 38.36 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Niameybacter recociforma sp. nov.

Candidatus Niameybacter recociforma (NL. fem. n. *recociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niameybacter sp900551325*. The type genome for the species is the GenBank assembly GCA_900551325.1. The GC content of the type genome is 33.38 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Niameybacter semibilenta sp. nov.

Candidatus Niameybacter semibilenta (NL. fem. n. *semibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niameybacter sp900549765*. The type genome for the species is the GenBank assembly RS_GCF_900764715.1. The GC content of the type genome is 35.02

% and the genome length is 3.01 Mbp.

Description of *Candidatus* Niastella adhiniforma sp. nov.

Candidatus Niastella adhiniforma (NL. fem. n. *adhiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niastella sp004341975*. The type genome for the species is the GenBank assembly RS_GCF_004341975.1. The GC content of the type genome is 43.75 % and the genome length is 9.76 Mbp.

Description of *Candidatus* Nibribacter adrotentia sp. nov.

Candidatus Nibribacter adrotentia (NL. fem. n. *adrotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nibribacter sp001577755*. The type genome for the species is the GenBank assembly RS_GCF_001577755.1. The GC content of the type genome is 49.21 % and the genome length is 4.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Nibribacter dibucilega sp. nov.

Candidatus Nibribacter dibucilega (NL. fem. n. *dibucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nibribacter sp009913235*. The type genome for the species is the GenBank assembly RS_GCF_009913235.1. The GC content of the type genome is 50.29 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Nicomana cobalitica sp. nov.

Candidatus Nicomana cobalitica (NL. fem. n. *cobalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZWN01 sp903847405*. The type genome for the species is the GenBank assembly GCA_903847405.1. The GC content of the type genome is 69.45 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Nicomana gen. nov.

Candidatus Nicomana (NL. fem. n. *Nicomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZWN01*. The type species for the genus is *Candidatus* Nicomana cobalitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTJE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucelulaceae.

Description of *Candidatus* Nicomana haricessa sp. nov.

Candidatus Nicomana haricessa (NL. fem. n. *haricessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZWN01 sp903936705*. The type genome for the species is the GenBank assembly GCA_903936705.1. The GC content of the type genome is 62.09 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Nicomana masocimonas sp. nov.

Candidatus Nicomana masocimonas (NL. fem. n. *masocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZWN01 sp903857665*. The type genome for the species is the GenBank assembly GCA_903857665.1. The GC content of the type genome is 69.48 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Nicomaria vicatitura sp. nov.

Candidatus Nicomaria vicatitura (NL. fem. n. *vicatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3910 sp002391465*. The type genome for the species is the GenBank assembly GCA_012523335.1. The GC content of the type genome is 52.26 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Nicomaria gen. nov.

Candidatus Nicomaria (NL. fem. n. *Nicomaria* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3910*. The type species for the genus is *Candidatus* Nicomaria vicatitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Nicomella adtesitica sp. nov.

Candidatus Nicomella adtesitica (NL. fem. n. *adtesitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD2-FULL-50-16 sp001783695*. The type genome for the species is the GenBank assembly GCA_001783695.1. The GC content of the type genome is 49.65 % and the genome length is 3.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Nicomella gen. nov.

Candidatus Nicomella (NL. fem. n. *Nicomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD2-FULL-50-16*. The type species for the genus is *Candidatus* Nicomella adtesitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD2-FULL-50-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nicomellaceae.

Description of *Candidatus* Nicomellaceae fam. nov.

Candidatus Nicomellaceae (NL. fem. n. *Nicomellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYD2-FULL-50-16.* The type genus for the taxon is *Candidatus* Nicomella .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYD2-FULL-50-16*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the order *Candidatus* Nicomellales.

Description of *Candidatus* Nicomellales ord. nov.

Candidatus Nicomellales (NL. fem. n. *Nicomellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYD2-FULL-50-16.* The type genus for the taxon is *Candidatus* Nicomella .

According to the original version of GTDB R06-RS202, this family belongs to the class *SAR324*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Necopanae.

Description of *Candidatus* Nicomida epicrifica sp. nov.

Candidatus Nicomida epicrifica (NL. fem. n. *epicrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J006 sp003697085*. The type genome for the species is the GenBank assembly GCA_003697085.1. The GC content of the type genome is 57.58 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Nicomida gen. nov.

Candidatus Nicomida (NL. fem. n. *Nicomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J006*. The type species for the genus is *Candidatus* Nicomida epicrifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J006*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nicomidaceae.

Description of *Candidatus* Nicomidaceae fam. nov.

Candidatus Nicomidaceae (NL. fem. n. *Nicomidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J006.* The type genus for the taxon is *Candidatus* Nicomida .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA8481. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Culilariales.

Description of *Candidatus* Nicomosa subofitia sp. nov.

Candidatus Nicomosa subofitia (NL. fem. n. *subofitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM20899 sp900767005*. The type genome for the species is the GenBank assembly GCA_900767005.1. The GC content of the type genome is 31.51 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Nicomosa gen. nov.

Candidatus Nicomosa (NL. fem. n. *Nicomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM20899*. The type species for the genus is *Candidatus* Nicomosa subofitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nicomula sepositudo sp. nov.

Candidatus Nicomula sepositudo (NL. fem. n. *sepositudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQOK01 sp903873415*. The type genome for the species is the GenBank assembly GCA_903908725.1. The GC content of the type genome is 58.89 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Nicomula gen. nov.

Candidatus Nicomula (NL. fem. n. *Nicomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQOK01*. The type species for the genus is *Candidatus* Nicomula sepositudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIQOK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Nicomulaceae.

Description of *Candidatus* Nicomulaceae fam. nov.

Candidatus Nicomulaceae (NL. fem. n. *Nicomulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIQOK01*. The type genus for the taxon is *Candidatus* Nicomula .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Nicotana ceracicula sp. nov.

Candidatus Nicotana ceracicula (NL. fem. n. *ceracicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1205 sp002309475*. The type genome for the species is the GenBank assembly GCA_902779805.1. The GC content of the type genome is 37.49 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Nicotana gen. nov.

Candidatus Nicotana (NL. fem. n. *Nicotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1205*. The type species for the genus is *Candidatus* Nicotana ceracicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turibosaceae.

Description of *Candidatus* Nicotana monocetta sp. nov.

Candidatus Nicotana monocetta (NL. fem. n. *monocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1205 sp002309615*. The type genome for the species is the GenBank assembly GCA_002309615.1. The GC content of the type genome is 38.63 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Nicotella coninax sp. nov.

Candidatus Nicotella coninax (NL. fem. n. *coninax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-318 sp011047235*. The type genome for the species is the GenBank assembly GCA_011047235.1. The GC content of the type genome is 33.16 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Nicotella gen. nov.

Candidatus Nicotella (NL. fem. n. *Nicotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-318*. The type species for the genus is *Candidatus* Nicotella coninax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-318*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nicotellaceae.

Description of *Candidatus* Nicotellaceae fam. nov.

Candidatus Nicotellaceae (NL. fem. n. *Nicotellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-318.* The type genus for the taxon is *Candidatus* Nicotella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-318*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nicotellales.

Description of *Candidatus* Nicotellales ord. nov.

Candidatus Nicotellales (NL. fem. n. *Nicotellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-318.* The type genus for the taxon is *Candidatus* Nicotella .

According to the original version of GTDB R06-RS202, this family belongs to the class *SpSt-318*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Nicotellae.

Description of *Candidatus* Nicotellae class. nov.

Candidatus Nicotellae (NL. fem. n. *c__Nicotellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-318.* The type genus for the taxon is *Candidatus* Nicotella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *SpSt-318*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Nicotellota.

Description of *Candidatus* Nicotellota phyl. nov.

Candidatus Nicotellota (NL. fem. n. *Nicotellota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-318.* The type genus for the taxon is *Candidatus* Nicotella .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Nicotida bimetitudo sp. nov.

Candidatus Nicotida bimetitudo (NL. fem. n. *bimetitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2277 sp903886255*. The type genome for the species is the GenBank assembly GCA_903900485.1. The GC content of the type genome is 41.29 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Nicotida gen. nov.

Candidatus Nicotida (NL. fem. n. *Nicotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2277*. The type species for the genus is *Candidatus* Nicotida bimetitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MFAQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notabulaceae.

Description of *Candidatus* Nicotida ludififorma sp. nov.

Candidatus Nicotida ludififorma (NL. fem. n. *ludififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2277 sp000998275*. The type genome for the species is the GenBank assembly GCA_003483145.1. The GC content of the type genome is 41.93 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Nicotida regificella sp. nov.

Candidatus Nicotida regificella (NL. fem. n. *regificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2277 sp002347045*. The type genome for the species is the GenBank assembly GCA_002412665.1. The GC content of the type genome is 39.54 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Nicotida suboditas sp. nov.

Candidatus Nicotida suboditas (NL. fem. n. *suboditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2277 sp903884375*. The type genome for the species is the GenBank assembly GCA_903828305.1. The GC content of the type genome is 37.37 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Nicotosa adrumatio sp. nov.

Candidatus Nicotosa adrumatio (NL. fem. n. *adrumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4479 sp002389175*. The type genome for the species is the GenBank assembly GCA_002389175.1. The GC content of the type genome is 51.92 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Nicotosa gen. nov.

Candidatus Nicotosa (NL. fem. n. *Nicotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4479*. The type species for the genus is *Candidatus* Nicotosa adrumatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Casp-alpha2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninidaceae.

Description of *Candidatus* Nicotosa dehisibula sp. nov.

Candidatus Nicotosa dehisibula (NL. fem. n. *dehisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4479 sp002389385*. The type genome for the species is the GenBank assembly GCA_002389715.1. The GC content of the type genome is 49.7 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Nicotula ecfunetta sp. nov.

Candidatus Nicotula ecfunetta (NL. fem. n. *ecfunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWCF01 sp002069855*. The type genome for the species is the GenBank assembly GCA_002069855.1. The GC content of the type genome is 39.22 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Nicotula gen. nov.

Candidatus Nicotula (NL. fem. n. *Nicotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCF01*. The type species for the genus is *Candidatus* Nicotula ecfunetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MWCF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nicotulaceae.

Description of *Candidatus* Nicotulaceae fam. nov.

Candidatus Nicotulaceae (NL. fem. n. *Nicotulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWCF01*. The type genus for the taxon is *Candidatus* Nicotula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8919*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Didaciales.

Description of *Candidatus* Nidifana habacifica sp. nov.

Candidatus Nidifana habacifica (NL. fem. n. *habacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7451 sp002457275*. The type genome for the species is the GenBank assembly GCA_002457275.1. The GC content of the type genome is 55.25 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Nidifana gen. nov.

Candidatus Nidifana (NL. fem. n. *Nidifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7451*. The type species for the genus is *Candidatus* Nidifana habacifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Nidifaria derelicella sp. nov.

Candidatus Nidifaria derelicella (NL. fem. n. *derelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-710 sp000432595*. The type genome for the species is the GenBank assembly GCA_000432595.1. The GC content of the type genome is 27.25 % and the genome length is 1.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Nidifaria gen. nov.

Candidatus Nidifaria (NL. fem. n. *Nidifaria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-710*. The type species for the genus is *Candidatus* Nidifaria derelicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Nidifella ceraribra sp. nov.

Candidatus Nidifella ceraribra (NL. fem. n. *ceraribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HY158 sp009660225*. The type genome for the species is the GenBank assembly RS_GCF_009660225.1. The GC content of the type genome is 71.25 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Nidifella gen. nov.

Candidatus Nidifella (NL. fem. n. *Nidifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HY158*. The type species for the genus is *Candidatus* Nidifella ceraribra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nidifosa armipitas sp. nov.

Candidatus Nidifosa armipitas (NL. fem. n. *armipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCVI-SCAAA005 sp011522845*. The type genome for the species is the GenBank assembly GCA_011522845.1. The GC content of the type genome is 47.06 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Nidifosa gen. nov.

Candidatus Nidifosa (NL. fem. n. *Nidifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JCVI-SCAAA005*. The type species for the genus is *Candidatus* Nidifosa armipitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NAC60-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peripidaceae.

Description of *Candidatus* Nidifosa exhonifica sp. nov.

Candidatus Nidifosa exhonifica (NL. fem. n. *exhonifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCVI-SCAAA005 sp003541985*. The type genome for the species is the GenBank assembly GCA_003541985.1. The GC content of the type genome is 45.75 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Nidifosa hexamousia sp. nov.

Candidatus Nidifosa hexamousia (NL. fem. n. *hexamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCVI-SCAAA005 sp000224765*. The type genome for the species is the GenBank assembly GCA_002690525.1. The GC content of the type genome is 45.01 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Nidifosa inaspentia sp. nov.

Candidatus Nidifosa inaspentia (NL. fem. n. *inaspentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCVI-SCAAA005 sp002683655*. The type genome for the species is the GenBank assembly GCA_002683655.1. The GC content of the type genome is 46.27 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Nidifosa lupanilega sp. nov.

Candidatus Nidifosa lupanilega (NL. fem. n. *lupanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCVI-SCAAA005 sp002450295*. The type genome for the species is the GenBank assembly GCA_008081005.1. The GC content of the type genome is 47.43 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Nidifosa sugilivita sp. nov.

Candidatus Nidifosa sugilivita (NL. fem. n. *sugilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCVI-SCAAA005 sp002730365*. The type genome for the species is the GenBank assembly GCA_002730365.1. The GC content of the type genome is 46.52 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Nidifula defenimonas sp. nov.

Candidatus Nidifula defenimonas (NL. fem. n. *defenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB18 sp001567425*. The type genome for the species is the GenBank assembly GCA_008363365.1. The GC content of the type genome is 61.06 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Nidifula gen. nov.

Candidatus Nidifula (NL. fem. n. *Nidifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB18*. The type species for the genus is *Candidatus* Nidifula defenimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nimirana cerucibra sp. nov.

Candidatus Nimirana cerucibra (NL. fem. n. *cerucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-462 sp900291465*. The type genome for the species is the

GenBank assembly GCA_900549695.1. The GC content of the type genome is 53.93 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Nimirana gen. nov.

Candidatus Nimirana (NL. fem. n. *Nimirana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-462*. The type species for the genus is *Candidatus* Nimirana cerucibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nimirana dibapitica sp. nov.

Candidatus Nimirana dibapitica (NL. fem. n. *dibapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-462 sp003489705*. The type genome for the species is the GenBank assembly GCA_003489705.1. The GC content of the type genome is 52.5 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Nimirana innasitoga sp. nov.

Candidatus Nimirana innasitoga (NL. fem. n. *innasitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-462 sp900765575*. The type genome for the species is the GenBank assembly RS_GCF_900765575.1. The GC content of the type genome is 42.61 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Nimiraria proprilenta sp. nov.

Candidatus Nimiraria proprilenta (NL. fem. n. *proprilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG721 sp004010535*. The type genome for the species is the GenBank assembly RS_GCF_004010535.1. The GC content of the type genome is 62.55 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Nimiraria gen. nov.

Candidatus Nimiraria (NL. fem. n. *Nimiraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG721*. The type species for the genus is *Candidatus* Nimiraria proprilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nimiraria verifessa sp. nov.

Candidatus Nimiraria verifessa (NL. fem. n. *verifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG721 sp900321745*. The type genome for the species is the GenBank assembly GCA_902788025.1. The GC content of the type genome is 64.97 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Nimirella bicapiforma sp. nov.

Candidatus Nimirella bicapiforma (NL. fem. n. *bicapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2963 sp003215215*. The type genome for the species is the GenBank assembly GCA_902564675.1. The GC content of the type genome is 41.95 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Nimirella gen. nov.

Candidatus Nimirella (NL. fem. n. *Nimirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2963*. The type species for the genus is *Candidatus* Nimirella bicapiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2963*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nimirellaceae.

Description of *Candidatus* Nimirellaceae fam. nov.

Candidatus Nimirellaceae (NL. fem. n. *Nimirellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2963.* The type genus for the taxon is *Candidatus* Nimirella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2963*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nimirellales.

Description of *Candidatus* Nimirellales ord. nov.

Candidatus Nimirellales (NL. fem. n. *Nimirellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2963.* The type genus for the taxon is *Candidatus* Nimirella .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Nimirella bovicitio sp. nov.

Candidatus Nimirella bovicitio (NL. fem. n. *bovicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2963 sp002306835*. The type genome for the species is the GenBank assembly GCA_002722235.1. The GC content of the type genome is 37.67 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Nimirella funebessa sp. nov.

Candidatus Nimirella funebessa (NL. fem. n. *funebessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2963 sp002719715*. The type genome for the species is the GenBank assembly GCA_002450435.1. The GC content of the type genome is 42.89 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Nimirella utricimonia sp. nov.

Candidatus Nimirella utricimonia (NL. fem. n. *utricimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2963 sp002725515*. The type genome for the species is the GenBank assembly GCA_002725515.1. The GC content of the type genome is 42.3 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Nimirida antecatio sp. nov.

Candidatus Nimirida antecatio (NL. fem. n. *antecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-42-24 sp003250395*. The type genome for the species is the GenBank assembly GCA_003250395.1. The GC content of the type genome is 41.56 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Nimirida gen. nov.

Candidatus Nimirida (NL. fem. n. *Nimirida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE2-42-24*. The type species for the genus is *Candidatus* Nimirida antecatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TTA-H9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pinigiaceae.

Description of *Candidatus* Nimirida detepatica sp. nov.

Candidatus Nimirida detepatica (NL. fem. n. *detepatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-42-24 sp001768515*. The type genome for the species is the GenBank assembly GCA_003477065.1. The GC content of the type genome is 44.58 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Nimirosa ammigicula sp. nov.

Candidatus Nimirosa ammigicula (NL. fem. n. *ammigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNFN01 sp009937385*. The type genome for the species is the GenBank assembly GCA_009937385.1. The GC content of the type genome is 67.75 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Nimirosa gen. nov.

Candidatus Nimirosa (NL. fem. n. *Nimirosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNFN01*. The type species for the genus is *Candidatus* Nimirosa ammigicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QNFN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nimirosaceae.

Description of *Candidatus* Nimirosaceae fam. nov.

Candidatus Nimirosaceae (NL. fem. n. *Nimirosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNFN01.* The type genus for the taxon is *Candidatus* Nimirosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *QNFN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nimirosales.

Description of *Candidatus* Nimirosales ord. nov.

Candidatus Nimirosales (NL. fem. n. *Nimirosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNFN01.* The type genus for the taxon is *Candidatus* Nimirosa .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Nimirosa egritatica sp. nov.

Candidatus Nimirosa egritatica (NL. fem. n. *egritatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNFN01 sp003645555*. The type genome for the species is the GenBank assembly GCA_003645555.1. The GC content of the type genome is 63.73 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Nimirula citivessa sp. nov.

Candidatus Nimirula citivessa (NL. fem. n. *citivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-66-27 sp002279275*. The type genome for the species is the GenBank assembly GCA_002279275.1. The GC content of the type genome is 65.33 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Nimirula gen. nov.

Candidatus Nimirula (NL. fem. n. *Nimirula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-66-27*. The type species for the genus is *Candidatus* Nimirula citivessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MBNT15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenulaceae.

Description of *Candidatus* Nimirula demulatica sp. nov.

Candidatus Nimirula demulatica (NL. fem. n. *demulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-66-27 sp001873935*. The type genome for the species is the GenBank assembly GCA_001873935.1. The GC content of the type genome is 65.51 % and the genome length is 2.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Nimirula ficuliforma sp. nov.

Candidatus Nimirula ficuliforma (NL. fem. n. *ficuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-66-27 sp007280195*. The type genome for the species is the GenBank assembly GCA_007280195.1. The GC content of the type genome is 65.04 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Nimirula grallicella sp. nov.

Candidatus Nimirula grallicella (NL. fem. n. *grallicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-66-27 sp011391555*. The type genome for the species is the GenBank assembly GCA_011391555.1. The GC content of the type genome is 66.61 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Nimirula homolitudo sp. nov.

Candidatus Nimirula homolitudo (NL. fem. n. *homolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-66-27 sp001797445*. The type genome for the species is the GenBank assembly GCA_001797575.1. The GC content of the type genome is 66.17 % and the genome length is 2.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Nioella adtesifica sp. nov.

Candidatus Nioella adtesifica (NL. fem. n. *adtesifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nioella sp003428585*. The type genome for the species is the GenBank assembly RS_GCF_003428585.1. The GC content of the type genome is 65.8 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Nioella decapitura sp. nov.

Candidatus Nioella decapitura (NL. fem. n. *decapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Nioella sp002783145*. The type genome for the species is the GenBank assembly GCA_002783145.1. The GC content of the type genome is 65.16 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Nioella diluvibra sp. nov.

Candidatus Nioella diluvibra (NL. fem. n. *diluvibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nioella sp002710305*. The type genome for the species is the GenBank assembly GCA_002693265.1. The GC content of the type genome is 65.48 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Nitelana detoriforma sp. nov.

Candidatus Nitelana detoriforma (NL. fem. n. *detoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGVD01 sp903907885*. The type genome for the species is the GenBank assembly GCA_903923975.1. The GC content of the type genome is 34.23 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Nitelana gen. nov.

Candidatus Nitelana (NL. fem. n. *Nitelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGVD01*. The type species for the genus is *Candidatus* Nitelana detoriforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefananaceae.

Description of *Candidatus* Nitelana duponetta sp. nov.

Candidatus Nitelana duponetta (NL. fem. n. *duponetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGVD01 sp010027395*. The type genome for the species is the

GenBank assembly GCA_010027395.1. The GC content of the type genome is 35.04 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Nitelaria visibatio sp. nov.

Candidatus Nitelaria visibatio (NL. fem. n. *visibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077529 sp001464525*. The type genome for the species is the GenBank assembly GCA_001464525.1. The GC content of the type genome is 60.47 % and the genome length is 5.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Nitelaria gen. nov.

Candidatus Nitelaria (NL. fem. n. *Nitelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077529*. The type species for the genus is *Candidatus* Nitelaria visibatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelariaceae.

Description of *Candidatus* Nitelariaceae fam. nov.

Candidatus Nitelariaceae (NL. fem. n. *Nitelariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ga0077529.* The type genus for the taxon is *Candidatus* Nitelaria .

According to GTDB R06-RS202, this family belongs to the order *Pirellulales*.

Description of *Candidatus* Nitelella delapibra sp. nov.

Candidatus Nitelella delapibra (NL. fem. n. *delapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZKI01 sp002070945*. The type genome for the species is the

GenBank assembly GCA_002070945.1. The GC content of the type genome is 57.15 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Nitelella gen. nov.

Candidatus Nitelella (NL. fem. n. *Nitelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZKI01*. The type species for the genus is *Candidatus* Nitelella delapibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semilidaceae.

Description of *Candidatus* Nitelella maxumatica sp. nov.

Candidatus Nitelella maxumatica (NL. fem. n. *maxumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZKI01 sp012799905*. The type genome for the species is the GenBank assembly GCA_012799905.1. The GC content of the type genome is 56.74 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Nitelia defetitica sp. nov.

Candidatus Nitelia defetitica (NL. fem. n. *defetitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch29 sp013540605*. The type genome for the species is the GenBank assembly GCA_013540605.1. The GC content of the type genome is 45.32 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Nitelia gen. nov.

Candidatus Nitelia (NL. fem. n. *Nitelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch29*. The type species for the genus is *Candidatus* Nitelia defetitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch29*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the

family *Candidatus* Niteliaceae.

Description of *Candidatus* Niteliaceae fam. nov.

Candidatus Niteliaceae (NL. fem. n. *Niteliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch29.* The type genus for the taxon is *Candidatus* Nitelia .

According to the original version of GTDB R06-RS202, this family belongs to the order *Ch29*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Niteliales.

Description of *Candidatus* Niteliales ord. nov.

Candidatus Niteliales (NL. fem. n. *Niteliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch29.* The type genus for the taxon is *Candidatus* Nitelia .

According to the original version of GTDB R06-RS202, this family belongs to the class *Ch29*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Niteliae.

Description of *Candidatus* Niteliae class. nov.

Candidatus Niteliae (NL. fem. n. *c__Niteliae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch29.* The type genus for the taxon is *Candidatus* Nitelia .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_A*.

Description of *Candidatus* Nitelida defesicella sp. nov.

Candidatus Nitelida defesicella (NL. fem. n. *defesicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYPU01 sp012519645*. The type genome for the species is the GenBank assembly GCA_012519645.1. The GC content of the type genome is 35.79 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Nitelida gen. nov.

Candidatus Nitelida (NL. fem. n. *Nitelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYPU01*. The type species for the genus is *Candidatus* Nitelida defesicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYPU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelidaceae.

Description of *Candidatus* Nitelidaceae fam. nov.

Candidatus Nitelidaceae (NL. fem. n. *Nitelidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYPU01.* The type genus for the taxon is *Candidatus* Nitelida .

According to GTDB R06-RS202, this family belongs to the order *Peptostreptococcales*.

Description of *Candidatus* Nitelosa inobrugo sp. nov.

Candidatus Nitelosa inobrugo (NL. fem. n. *inobrugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J093 sp003695015*. The type genome for the species is the GenBank assembly GCA_003695015.1. The GC content of the type genome is 67.62 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Nitelosa gen. nov.

Candidatus Nitelosa (NL. fem. n. *Nitelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J093*. The type species for the genus is *Candidatus* Nitelosa inobrugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J093*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelosaceae.

Description of *Candidatus* Nitelosaceae fam. nov.

Candidatus Nitelosaceae (NL. fem. n. *Nitelosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J093.* The type genus for the taxon is *Candidatus* Nitelosa .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Nitelula dececitrix sp. nov.

Candidatus Nitelula dececitrix (NL. fem. n. *dececitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHLJ01 sp004283005*. The type genome for the species is the GenBank assembly GCA_013001285.1. The GC content of the type genome is 36.15 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Nitelula gen. nov.

Candidatus Nitelula (NL. fem. n. *Nitelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHLJ01*. The type species for the genus is *Candidatus* Nitelula dececitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nitelula dececitura sp. nov.

Candidatus Nitelula dececitura (NL. fem. n. *dececitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHLJ01 sp013001965*. The type genome for the species is the GenBank assembly GCA_013001965.1. The GC content of the type genome is 38.68 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Nitelula domigitudo sp. nov.

Candidatus Nitelula domigitudo (NL. fem. n. *domigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHLJ01 sp013003555*. The type genome for the species is the GenBank assembly GCA_013042665.1. The GC content of the type genome is 40.17 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Nitelula inreliforma sp. nov.

Candidatus Nitelula inreliforma (NL. fem. n. *inreliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHLJ01 sp013042825*. The type genome for the species is the GenBank assembly GCA_013042825.1. The GC content of the type genome is 42.7 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Nitelula minuritrix sp. nov.

Candidatus Nitelula minuritrix (NL. fem. n. *minuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHLJ01 sp013042625*. The type genome for the species is the GenBank assembly GCA_013003585.1. The GC content of the type genome is 40.55 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Nitratidesulfovibrio rubigicula sp. nov.

Candidatus Nitratidesulfovibrio rubigicula (NL. fem. n. *rubigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitratidesulfovibrio sp011682075*. The type genome for the species is the GenBank assembly RS_GCF_011682075.1. The GC content of the type genome is 65.79 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Nitratidesulfovibrio turifastra sp. nov.

Candidatus Nitratidesulfovibrio turifastra (NL. fem. n. *turifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitratidesulfovibrio sp000226255*. The type genome for the species is the GenBank assembly GCA_002432265.1. The GC content of the type genome is 67.49

% and the genome length is 3.92 Mbp.

Description of *Candidatus* Nitratireductor acruficella sp. nov.

Candidatus Nitratireductor acruficella (NL. fem. n. *acruficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitratireductor sp003296175*. The type genome for the species is the GenBank assembly RS_GCF_003296175.1. The GC content of the type genome is 61.94 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Nitratireductor fusifitio sp. nov.

Candidatus Nitratireductor fusifitio (NL. fem. n. *fusifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitratireductor sp002697745*. The type genome for the species is the GenBank assembly GCA_002697745.1. The GC content of the type genome is 60.31 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Nitratiruptor conamentia sp. nov.

Candidatus Nitratiruptor conamentia (NL. fem. n. *conamentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitratiruptor sp000010325*. The type genome for the species is the GenBank assembly RS_GCF_000010325.1. The GC content of the type genome is 39.69 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Nitrincola inobritudo sp. nov.

Candidatus Nitrincola inobritudo (NL. fem. n. *inobritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrincola sp007693685*. The type genome for the species is the GenBank assembly GCA_007693685.1. The GC content of the type genome is 44.18 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Nitrincola inordibula sp. nov.

Candidatus Nitrincola inordibula (NL. fem. n. *inordibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrincola sp000764495*. The type genome for the species is the GenBank assembly RS_GCF_000764495.1. The GC content of the type genome is 49.96 % and the genome length is 3.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Altiplano of Northern Chile".

Description of *Candidatus* Nitrincola inpasax sp. nov.

Candidatus Nitrincola inpasax (NL. fem. n. *inpasax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrincola sp007125745*. The type genome for the species is the GenBank assembly GCA_007125745.1. The GC content of the type genome is 45.45 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Nitrincola nutabimonia sp. nov.

Candidatus Nitrincola nutabimonia (NL. fem. n. *nutabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrincola sp008727795*. The type genome for the species is the GenBank assembly RS_GCF_008727795.1. The GC content of the type genome is 50.06 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Nitrobacter culigax sp. nov.

Candidatus Nitrobacter culigax (NL. fem. n. *culigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrobacter sp001896955*. The type genome for the species is the GenBank assembly GCA_001896955.1. The GC content of the type genome is 62.24 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Nitrobacter feculitoga sp. nov.

Candidatus Nitrobacter feculitoga (NL. fem. n. *feculitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrobacter sp000152905*. The type genome for the species is the GenBank assembly RS_GCF_000152905.1. The GC content of the type genome is 60.37 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Nitrobacter oppanitio sp. nov.

Candidatus Nitrobacter oppanitio (NL. fem. n. *oppanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrobacter sp001897285*. The type genome for the species is the GenBank assembly GCA_001897285.1. The GC content of the type genome is 62.06 % and the genome length is 3.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Nitrosomonas acrolousia sp. nov.

Candidatus Nitrosomonas acrolousia (NL. fem. n. *acrolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp008015565*. The type genome for the species is the GenBank assembly GCA_008015565.1. The GC content of the type genome is 44.28 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Nitrosomonas adnilax sp. nov.

Candidatus Nitrosomonas adnilax (NL. fem. n. *adnilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp900112825*. The type genome for the species is the GenBank assembly RS_GCF_900112825.1. The GC content of the type genome is 45.17 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Nitrosomonas ambusastra sp. nov.

Candidatus Nitrosomonas ambusastra (NL. fem. n. *ambusastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp902826115*. The type genome for the species is the GenBank assembly GCA_902826115.1. The GC content of the type genome is 45.07 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Nitrosomonas arundetta sp. nov.

Candidatus Nitrosomonas arundetta (NL. fem. n. *arundetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp900113925*. The type genome for the species is the GenBank assembly RS_GCF_900113925.1. The GC content of the type genome is 44.48 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Nitrosomonas assudibula sp. nov.

Candidatus Nitrosomonas assudibula (NL. fem. n. *assudibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp002435335*. The type genome for the species is the GenBank assembly GCA_002435335.1. The GC content of the type genome is 46.45 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Nitrosomonas bivericula sp. nov.

Candidatus Nitrosomonas bivericula (NL. fem. n. *bivericula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp003011925*. The type genome for the species is the GenBank assembly RS_GCF_003011925.2. The GC content of the type genome is 43.49 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Nitrosomonas direpessa sp. nov.

Candidatus Nitrosomonas direpessa (NL. fem. n. *direpessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp000219585*. The type genome for the species is the GenBank assembly RS_GCF_000219585.1. The GC content of the type genome is 45.44 % and the genome length is 3.78 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Nitrosomonas dirititoga sp. nov.

Candidatus Nitrosomonas dirititoga (NL. fem. n. *dirititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp000175095*. The type genome for the species is the GenBank assembly RS_GCF_000175095.2. The GC content of the type genome is 44.79 % and the genome length is 3.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "laboratory waste water treatment reactor".

Description of *Candidatus* Nitrosomonas docibousia sp. nov.

Candidatus Nitrosomonas docibousia (NL. fem. n. *docibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp900100485*. The type genome for the species is the GenBank assembly RS_GCF_900100485.1. The GC content of the type genome is 46.61 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Nitrosomonas duciletta sp. nov.

Candidatus Nitrosomonas duciletta (NL. fem. n. *duciletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp008015595*. The type genome for the species is the GenBank assembly GCA_008015595.1. The GC content of the type genome is 42.9 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Nitrosomonas excetilenta sp. nov.

Candidatus Nitrosomonas excetilenta (NL. fem. n. *excetilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp900111165*. The type genome for the species is the GenBank assembly RS_GCF_900111165.1. The GC content of the type genome is 47.35 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Nitrosomonas immaticella sp. nov.

Candidatus Nitrosomonas immaticella (NL. fem. n. *immaticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp004345375*. The type genome for the species is the GenBank assembly RS_GCF_004345375.1. The GC content of the type genome is 48.96 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Nitrosomonas indivimonas sp. nov.

Candidatus Nitrosomonas indivimonas (NL. fem. n. *indivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp900696615*. The type genome for the species is the GenBank assembly GCA_900696615.1. The GC content of the type genome is 43.91 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Nitrosomonas inredigena sp. nov.

Candidatus Nitrosomonas inredigena (NL. fem. n. *inredigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp900107265*. The type genome for the species is the GenBank assembly RS_GCF_900107265.1. The GC content of the type genome is 44.46 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Nitrosomonas inremugo sp. nov.

Candidatus Nitrosomonas inremugo (NL. fem. n. *inremugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp005779435*. The type genome for the species is the GenBank assembly GCA_005779435.1. The GC content of the type genome is 50.7 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Nitrosomonas irregatio sp. nov.

Candidatus Nitrosomonas irregatio (NL. fem. n. *irregatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp002083595*. The type genome for the species is the GenBank assembly GCA_002083595.1. The GC content of the type genome is 49.24 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Nitrosomonas loceliforma sp. nov.

Candidatus Nitrosomonas loceliforma (NL. fem. n. *loceliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp002083395*. The type genome for the species is the GenBank assembly GCA_002083395.1. The GC content of the type genome is 48.05 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Nitrosomonas maxumibra sp. nov.

Candidatus Nitrosomonas maxumibra (NL. fem. n. *maxumibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp003268955*. The type genome for the species is the GenBank assembly RS_GCF_003268955.1. The GC content of the type genome is 43.15 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Nitrosomonas miracisca sp. nov.

Candidatus Nitrosomonas miracisca (NL. fem. n. *miracisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp009833095*. The type genome for the species is the GenBank assembly RS_GCF_009833095.1. The GC content of the type genome is 47.82 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Nitrosomonas peropicella sp. nov.

Candidatus Nitrosomonas peropicella (NL. fem. n. *peropicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Nitrosomonas sp902826915*. The type genome for the species is the GenBank assembly GCA_902826915.1. The GC content of the type genome is 44.06 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Nitrosomonas podagitica sp. nov.

Candidatus Nitrosomonas podagitica (NL. fem. n. *podagitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp902826055*. The type genome for the species is the GenBank assembly GCA_902826055.1. The GC content of the type genome is 43.3 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Nitrosomonas sarabago sp. nov.

Candidatus Nitrosomonas sarabago (NL. fem. n. *sarabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp003201565*. The type genome for the species is the GenBank assembly RS_GCF_004340695.1. The GC content of the type genome is 45.57 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Nitrosomonas vanitentia sp. nov.

Candidatus Nitrosomonas vanitentia (NL. fem. n. *vanitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp009833125*. The type genome for the species is the GenBank assembly RS_GCF_009833125.1. The GC content of the type genome is 49.31 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Nitrosomonas vilipitrix sp. nov.

Candidatus Nitrosomonas vilipitrix (NL. fem. n. *vilipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosomonas sp003514765*. The type genome for the species is the GenBank assembly GCA_003514765.1. The GC content of the type genome is 44.74 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Nitrosospira ambusugo sp. nov.

Candidatus Nitrosospira ambusugo (NL. fem. n. *ambusugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp900102495*. The type genome for the species is the GenBank assembly RS_GCF_900102495.1. The GC content of the type genome is 53.65 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Nitrosospira aterrilenta sp. nov.

Candidatus Nitrosospira aterrilenta (NL. fem. n. *aterrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp013697655*. The type genome for the species is the GenBank assembly GCA_013697655.1. The GC content of the type genome is 51.43 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Nitrosospira cemenax sp. nov.

Candidatus Nitrosospira cemenax (NL. fem. n. *cemenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp003046405*. The type genome for the species is the GenBank assembly RS_GCF_003046405.1. The GC content of the type genome is 53.45 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Nitrosospira decatitoga sp. nov.

Candidatus Nitrosospira decatitoga (NL. fem. n. *decatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp001899235*. The type genome for the species is the GenBank assembly GCA_001899235.1. The GC content of the type genome is 55.96 % and the genome length is 3.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Nitrosospira deforitudo sp. nov.

Candidatus Nitrosospira deforitudo (NL. fem. n. *deforitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp900110495*. The type genome for the species is the GenBank assembly RS_GCF_900110495.1. The GC content of the type genome is 53.23 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Nitrosospira enimvivita sp. nov.

Candidatus Nitrosospira enimvivita (NL. fem. n. *enimvivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp003633815*. The type genome for the species is the GenBank assembly RS_GCF_003633815.1. The GC content of the type genome is 54.8 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Nitrosospira epistitoga sp. nov.

Candidatus Nitrosospira epistitoga (NL. fem. n. *epistitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp003050965*. The type genome for the species is the GenBank assembly RS_GCF_003050965.1. The GC content of the type genome is 54.65 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Nitrosospira hirunessa sp. nov.

Candidatus Nitrosospira hirunessa (NL. fem. n. *hirunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp003053905*. The type genome for the species is the GenBank assembly RS_GCF_900215485.1. The GC content of the type genome is 53.26 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Nitrosospira immodifica sp. nov.

Candidatus Nitrosospira immodifica (NL. fem. n. *immodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp900113575*. The type genome for the species is the GenBank assembly RS_GCF_900113575.1. The GC content of the type genome is 54.84 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Nitrosospira obtunitura sp. nov.

Candidatus Nitrosospira obtunitura (NL. fem. n. *obtunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp013821425*. The type genome for the species is the GenBank assembly GCA_013821425.1. The GC content of the type genome is 54.33 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Nitrosospira sifunitrix sp. nov.

Candidatus Nitrosospira sifunitrix (NL. fem. n. *sifunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp900142705*. The type genome for the species is the GenBank assembly RS_GCF_900142705.1. The GC content of the type genome is 52.78 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Nitrosospira stercitica sp. nov.

Candidatus Nitrosospira stercitica (NL. fem. n. *stercitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp000832065*. The type genome for the species is the GenBank assembly RS_GCF_000832065.1. The GC content of the type genome is 53.14 % and the genome length is 3.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Nitrosospira velificella sp. nov.

Candidatus Nitrosospira velificella (NL. fem. n. *velificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrosospira sp900119085*. The type genome for the species is the GenBank assembly RS_GCF_900119085.1. The GC content of the type genome is 63.29

% and the genome length is 2.84 Mbp.

Description of *Candidatus* Nitrospira adalgitoga sp. nov.

Candidatus Nitrospira adalgitoga (NL. fem. n. *adalgitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp009594865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009594865.1. The GC content of the type genome is 58.6 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Nitrospira adnulivita sp. nov.

Candidatus Nitrospira adnulivita (NL. fem. n. *adnulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp902500715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902500715.1. The GC content of the type genome is 58.98 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Nitrospira adtagitoga sp. nov.

Candidatus Nitrospira adtagitoga (NL. fem. n. *adtagitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp900696505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900696505.1. The GC content of the type genome is 58.19 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Nitrospira cerucitudo sp. nov.

Candidatus Nitrospira cerucitudo (NL. fem. n. *cerucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Nitrospira_A sp014055495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014055495.1. The GC content of the type genome is 59.47 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Nitrospira cibarifica sp. nov.

Candidatus Nitrospira cibarifica (NL. fem. n. *cibarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp013696305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013696305.1. The GC content of the type genome is 57.38 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Nitrospira detumatio sp. nov.

Candidatus Nitrospira detumatio (NL. fem. n. *detumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp902500785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902500785.1. The GC content of the type genome is 58.65 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Nitrospira insenedo sp. nov.

Candidatus Nitrospira insenedo (NL. fem. n. *insenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp902500995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902500995.1. The GC content of the type genome is 59.48 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Nitrospira intacitoga sp. nov.

Candidatus Nitrospira intacitoga (NL. fem. n. *intacitoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp009594995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009594995.1. The GC content of the type genome is 58.36 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Nitrospira monumimonas sp. nov.

Candidatus Nitrospira monumimonas (NL. fem. n. *monumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp900170025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900170025.1. The GC content of the type genome is 58.87 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Nitrospira mutabitia sp. nov.

Candidatus Nitrospira mutabitia (NL. fem. n. *mutabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp003456605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011525625.1. The GC content of the type genome is 59.29 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Nitrospira nosocilega sp. nov.

Candidatus Nitrospira nosocilega (NL. fem. n. *nosocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp014055465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014055465.1. The GC

content of the type genome is 58.28 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Nitrospira sitelimonia sp. nov.

Candidatus Nitrospira sitelimonia (NL. fem. n. *sitelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp009594855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009594855.1. The GC content of the type genome is 58.79 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Nitrospira visificula sp. nov.

Candidatus Nitrospira visificula (NL. fem. n. *visificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_A sp001567445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001567445.1. The GC content of the type genome is 60.36 % and the genome length is 3.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Nitrospira inhoribra sp. nov.

Candidatus Nitrospira inhoribra (NL. fem. n. *inhoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_C sp014055525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014055525.1. The GC content of the type genome is 58.34 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Nitrospira irrecugo sp. nov.

Candidatus Nitrospira irrecugo (NL. fem. n. *irrecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_C sp002420105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002420105.1. The GC content of the type genome is 62.41 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Nitrospira retecedo sp. nov.

Candidatus Nitrospira retecedo (NL. fem. n. *retecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_C sp011405515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011405515.1. The GC content of the type genome is 55.98 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Nitrospira abligitudo sp. nov.

Candidatus Nitrospira abligitudo (NL. fem. n. *abligitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_D sp014534095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014534095.1. The GC content of the type genome is 58.99 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Nitrospira astipugo sp. nov.

Candidatus Nitrospira astipugo (NL. fem. n. *astipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_D sp002083555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002083555.1. The GC content of the type genome is 58.02 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Nitrospira conubisca sp. nov.

Candidatus Nitrospira conubisca (NL. fem. n. *conubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_D sp002869855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002869855.2. The GC content of the type genome is 57.84 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Nitrospira nubigugo sp. nov.

Candidatus Nitrospira nubigugo (NL. fem. n. *nubigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_D sp013140455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013140455.1. The GC content of the type genome is 57.59 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Nitrospira ratifitoga sp. nov.

Candidatus Nitrospira ratifitoga (NL. fem. n. *ratifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_D sp002435325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002435405.1. The GC content of the type genome is 57.84 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Nitrospira taraxago sp. nov.

Candidatus Nitrospira taraxago (NL. fem. n. *taraxago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_D sp900299245*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900299245.1. The GC content of the type genome is 59.11 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Nitrospira abrumilega sp. nov.

Candidatus Nitrospira abrumilega (NL. fem. n. *abrumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp005793285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_005793285.1. The GC content of the type genome is 57.13 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Nitrospira adpositrix sp. nov.

Candidatus Nitrospira adpositrix (NL. fem. n. *adpositrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp012030925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012030925.1. The GC content of the type genome is 55.13 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Nitrospira alceditoga sp. nov.

Candidatus Nitrospira alceditoga (NL. fem. n. *alceditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp011331925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011331925.1. The GC content of the type genome is 55.32 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Nitrospira appugitudo sp. nov.

Candidatus Nitrospira appugitudo (NL. fem. n. *appugitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp902500755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902500755.1. The GC content of the type genome is 54.87 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Nitrospira bacifibula sp. nov.

Candidatus Nitrospira bacifibula (NL. fem. n. *bacifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp005116965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_005116965.1. The GC content of the type genome is 55.24 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Nitrospira bicinitica sp. nov.

Candidatus Nitrospira bicinitica (NL. fem. n. *bicinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp002451055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002451055.1. The GC content of the type genome is 57.08 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Nitrospira cemenentia sp. nov.

Candidatus Nitrospira cemenentia (NL. fem. n. *cemenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp002331625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002331625.1. The GC content of the type genome is 55.3 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Nitrospira cepulitio sp. nov.

Candidatus Nitrospira cepulitio (NL. fem. n. *cepulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp902500805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902500805.1. The GC content of the type genome is 55.19 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Nitrospira coninastra sp. nov.

Candidatus Nitrospira coninastra (NL. fem. n. *coninastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp902500705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902500795.1. The GC content of the type genome is 54.72 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Nitrospira dapifedo sp. nov.

Candidatus Nitrospira dapifedo (NL. fem. n. *dapifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp012032965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012032965.1. The GC content of the type genome is 54.69 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Nitrospira desomastra sp. nov.

Candidatus Nitrospira desomastra (NL. fem. n. *desomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp002254365*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002254365.1. The GC content of the type genome is 54.93 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Nitrospira detotitia sp. nov.

Candidatus Nitrospira detotitia (NL. fem. n. *detotitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp002083365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002083365.1. The GC content of the type genome is 56.08 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Nitrospira energousia sp. nov.

Candidatus Nitrospira energousia (NL. fem. n. *energousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp902500745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902500745.1. The GC content of the type genome is 54.98 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Nitrospira immemibra sp. nov.

Candidatus Nitrospira immemibra (NL. fem. n. *immemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp011090425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011090425.1. The GC content of the type genome is 55.92 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Nitrospira inaspisca sp. nov.

Candidatus Nitrospira inaspisca (NL. fem. n. *inaspisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp002083565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002083565.1. The GC content of the type genome is 57.02 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Nitrospira lutulitura sp. nov.

Candidatus Nitrospira lutulitura (NL. fem. n. *lutulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp005116745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_005116745.1. The GC content of the type genome is 54.96 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Nitrospira maligago sp. nov.

Candidatus Nitrospira maligago (NL. fem. n. *maligago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp002869845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002869845.2. The GC content of the type genome is 55.28 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Nitrospira minagitia sp. nov.

Candidatus Nitrospira minagitia (NL. fem. n. *minagitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp005116955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_005116955.1. The GC content of the type genome is 55.15 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Nitrospira munimessa sp. nov.

Candidatus Nitrospira munimessa (NL. fem. n. *munimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp900696515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002483475.1. The GC content of the type genome is 56.3 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Nitrospira myalgilenta sp. nov.

Candidatus Nitrospira myalgilenta (NL. fem. n. *myalgilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp902500825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902500825.1. The GC content of the type genome is 54.96 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Nitrospira progritica sp. nov.

Candidatus Nitrospira progritica (NL. fem. n. *progritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp001464735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001464735.1. The GC content of the type genome is 55.07 % and the genome length is 4.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Nitrospira rorarastra sp. nov.

Candidatus Nitrospira rorarastra (NL. fem. n. *rorarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp002420115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002420045.1. The GC content of the type genome is 55.02 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Nitrospira scammessa sp. nov.

Candidatus Nitrospira scammessa (NL. fem. n. *scammessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp902500775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902500775.1. The GC content of the type genome is 54.5 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Nitrospira subacitrix sp. nov.

Candidatus Nitrospira subacitrix (NL. fem. n. *subacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp005116895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_005116895.1. The GC content of the type genome is 55.18 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Nitrospira subofibra sp. nov.

Candidatus Nitrospira subofibra (NL. fem. n. *subofibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp005239465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_005239465.1. The GC content of the type genome is 56.83 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Nitrospira tetenilenta sp. nov.

Candidatus Nitrospira tetenilenta (NL. fem. n. *tetenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp002331335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002331335.1. The GC content of the type genome is 57.89 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Nitrospira vocamitia sp. nov.

Candidatus Nitrospira vocamitia (NL. fem. n. *vocamitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospira_F sp002083405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002083405.1. The GC content of the type genome is 56.77 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Nitrospirillum expenitia sp. nov.

Candidatus Nitrospirillum expenitia (NL. fem. n. *expenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrospirillum sp000333275*. The type genome for the species is the GenBank assembly RS_GCF_000333275.1. The GC content of the type genome is 67.52 % and the genome length is 7.35 Mbp.

Description of *Candidatus* Nitrotoga cohonitica sp. nov.

Candidatus Nitrotoga cohonitica (NL. fem. n. *cohonitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrotoga sp003402315*. The type genome for the species is the GenBank assembly GCA_003402315.1. The GC content of the type genome is 48.71 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Nitrotoga colopilenta sp. nov.

Candidatus Nitrotoga colopilenta (NL. fem. n. *colopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrotoga sp009885195*. The type genome for the species is the GenBank assembly GCA_009885195.1. The GC content of the type genome is 55.79 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Nitrotoga evangibula sp. nov.

Candidatus Nitrotoga evangibula (NL. fem. n. *evangibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrotoga sp003402345*. The type genome for the species is the GenBank assembly GCA_003402345.1. The GC content of the type genome is 48.6 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Nitrotoga invesousia sp. nov.

Candidatus Nitrotoga invesousia (NL. fem. n. *invesousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrotoga sp013168275*. The type genome for the species is the GenBank assembly RS_GCF_013168275.1. The GC content of the type genome is 48.86 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Nitrotoga murilitudo sp. nov.

Candidatus Nitrotoga murilitudo (NL. fem. n. *murilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrotoga sp003402285*. The type genome for the species is the GenBank assembly GCA_003402285.1. The GC content of the type genome is 47.47 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Nitrotoga repagitura sp. nov.

Candidatus Nitrotoga repagitura (NL. fem. n. *repagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrotoga sp002470125*. The type genome for the species is the GenBank assembly GCA_002470125.1. The GC content of the type genome is 51.26 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Nitrotoga saxopilenta sp. nov.

Candidatus Nitrotoga saxopilenta (NL. fem. n. *saxopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrotoga sp003402375*. The type genome for the species is the GenBank assembly GCA_003402375.1. The GC content of the type genome is 48.8 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Nitrotoga vehicicella sp. nov.

Candidatus Nitrotoga vehicicella (NL. fem. n. *vehicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nitrotoga sp903878125*. The type genome for the species is the GenBank assembly GCA_903878125.1. The GC content of the type genome is 50.02 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Niveibacterium dimacitrix sp. nov.

Candidatus Niveibacterium dimacitrix (NL. fem. n. *dimacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niveibacterium sp009781175*. The type genome for the species is the GenBank assembly GCA_009781175.1. The GC content of the type genome is 59.62 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Niveibacterium halucedo sp. nov.

Candidatus Niveibacterium halucedo (NL. fem. n. *halucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niveibacterium sp013184235*. The type genome for the species is the GenBank assembly RS_GCF_013184235.1. The GC content of the type genome is 64.12

% and the genome length is 4.92 Mbp.

Description of *Candidatus* Niveispirillum coticitia sp. nov.

Candidatus Niveispirillum coticitia (NL. fem. n. *coticitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niveispirillum sp009495745*. The type genome for the species is the GenBank assembly RS_GCF_009495745.1. The GC content of the type genome is 63.41 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Niveispirillum ocissugo sp. nov.

Candidatus Niveispirillum ocissugo (NL. fem. n. *ocissugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niveispirillum sp001296005*. The type genome for the species is the GenBank assembly RS_GCF_001296005.1. The GC content of the type genome is 63.73 % and the genome length is 5.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Niveispirillum socagivita sp. nov.

Candidatus Niveispirillum socagivita (NL. fem. n. *socagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Niveispirillum sp900188385*. The type genome for the species is the GenBank assembly RS_GCF_900188305.1. The GC content of the type genome is 63.55 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Nivomana megalilega sp. nov.

Candidatus Nivomana megalilega (NL. fem. n. *megalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-40-21 sp001873945*. The type genome for the species is the GenBank assembly GCA_001873945.1. The GC content of the type genome is 40.16 % and the genome length is 2.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Nivomana gen. nov.

Candidatus Nivomana (NL. fem. n. *Nivomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-40-21*. The type species for the genus is *Candidatus* Nivomana megalilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-40-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nivomanaceae.

Description of *Candidatus* Nivomanaceae fam. nov.

Candidatus Nivomanaceae (NL. fem. n. *Nivomanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-40-21.* The type genus for the taxon is *Candidatus* Nivomana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-40-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nivomanales.

Description of *Candidatus* Nivomanales ord. nov.

Candidatus Nivomanales (NL. fem. n. *Nivomanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-40-21.* The type genus for the taxon is *Candidatus* Nivomana .

According to the original version of GTDB R06-RS202, this family belongs to the class *CG2-30-40-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Nivomanae.

Description of *Candidatus* Nivomanae class. nov.

Candidatus Nivomanae (NL. fem. n. *c__Nivomanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-40-21.* The type genus for the taxon is *Candidatus* Nivomana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBA9089*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the phylum *Candidatus* Casigariota.

Description of *Candidatus* Nivomaria apharitura sp. nov.

Candidatus Nivomaria apharitura (NL. fem. n. *apharitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp903866605*. The type genome for the species is the GenBank assembly GCA_903866605.1. The GC content of the type genome is 38.76 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Nivomaria gen. nov.

Candidatus Nivomaria (NL. fem. n. *Nivomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1547*. The type species for the genus is *Candidatus* Nivomaria apharitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nivomaria arcitisca sp. nov.

Candidatus Nivomaria arcitisca (NL. fem. n. *arcitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp002429375*. The type genome for the species is the GenBank assembly GCA_002429375.1. The GC content of the type genome is 49.2 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Nivomaria carunicella sp. nov.

Candidatus Nivomaria carunicella (NL. fem. n. *carunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp903952435*. The type genome for the species is the GenBank assembly GCA_903952435.1. The GC content of the type genome is 38.79 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Nivomaria cunabetta sp. nov.

Candidatus Nivomaria cunabetta (NL. fem. n. *cunabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp002839415*. The type genome for the species is the GenBank assembly GCA_002839415.1. The GC content of the type genome is 39.63 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Nivomaria excocibula sp. nov.

Candidatus Nivomaria excocibula (NL. fem. n. *excocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp004322265*. The type genome for the species is the GenBank assembly GCA_004322265.1. The GC content of the type genome is 45.67 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Nivomaria ficedugo sp. nov.

Candidatus Nivomaria ficedugo (NL. fem. n. *ficedugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp903900345*. The type genome for the species is the GenBank assembly GCA_903900345.1. The GC content of the type genome is 41.51 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Nivomaria ininnitura sp. nov.

Candidatus Nivomaria ininnitura (NL. fem. n. *ininnitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp903844835*. The type genome for the species is the GenBank assembly GCA_903844835.1. The GC content of the type genome is 41.71 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Nivomaria inlepitudo sp. nov.

Candidatus Nivomaria inlepitudo (NL. fem. n. *inlepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp002427805*. The type genome for the species is the GenBank assembly GCA_002427805.1. The GC content of the type genome is 45.81 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Nivomaria lanugimonia sp. nov.

Candidatus Nivomaria lanugimonia (NL. fem. n. *lanugimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp903899655*. The type genome for the species is the GenBank assembly GCA_903899655.1. The GC content of the type genome is 40.07 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Nivomaria lorariforma sp. nov.

Candidatus Nivomaria lorariforma (NL. fem. n. *lorariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp014379635*. The type genome for the species is the GenBank assembly GCA_014379635.1. The GC content of the type genome is 46.62 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Nivomaria mutabitrix sp. nov.

Candidatus Nivomaria mutabitrix (NL. fem. n. *mutabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp903861015*. The type genome for the species is the GenBank assembly GCA_903861015.1. The GC content of the type genome is 46.9 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Nivomaria rubefitoga sp. nov.

Candidatus Nivomaria rubefitoga (NL. fem. n. *rubefitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1547 sp903832635*. The type genome for the species is the GenBank assembly GCA_903837715.1. The GC content of the type genome is 40.19 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Nivomaria solifitia sp. nov.

Candidatus Nivomaria solifitia (NL. fem. n. *solifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp013334475*. The type genome for the species is the GenBank assembly GCA_013334475.1. The GC content of the type genome is 43.19 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Nivomaria tirunatio sp. nov.

Candidatus Nivomaria tirunatio (NL. fem. n. *tirunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp001873625*. The type genome for the species is the GenBank assembly GCA_002788895.1. The GC content of the type genome is 40.51 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Nivomaria valefitura sp. nov.

Candidatus Nivomaria valefitura (NL. fem. n. *valefitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp903889015*. The type genome for the species is the GenBank assembly GCA_903889015.1. The GC content of the type genome is 40.13 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Nivomaria xeramilenta sp. nov.

Candidatus Nivomaria xeramilenta (NL. fem. n. *xeramilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1547 sp002413425*. The type genome for the species is the GenBank assembly GCA_002404315.1. The GC content of the type genome is 47.31 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Nivomella detosedo sp. nov.

Candidatus Nivomella detosedo (NL. fem. n. *detosedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1127 sp002311595*. The type genome for the species is the GenBank assembly GCA_009392685.1. The GC content of the type genome is 57.28 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Nivomella gen. nov.

Candidatus Nivomella (NL. fem. n. *Nivomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1127*. The type species for the genus is *Candidatus* Nivomella detosedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nivomellaceae.

Description of *Candidatus* Nivomellaceae fam. nov.

Candidatus Nivomellaceae (NL. fem. n. *Nivomellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1127.* The type genus for the taxon is *Candidatus* Nivomella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nivomellales.

Description of *Candidatus* Nivomellales ord. nov.

Candidatus Nivomellales (NL. fem. n. *Nivomellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1127.* The type genus for the taxon is *Candidatus* Nivomella .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Nivomia adsecax sp. nov.

Candidatus Nivomia adsecax (NL. fem. n. *adsecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AM51-8 sp900546435*. The type genome for the species is the GenBank assembly GCA_900546435.1. The GC content of the type genome is 41.13 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Nivomia gen. nov.

Candidatus Nivomia (NL. fem. n. *Nivomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AM51-8*. The type species for the genus is *Candidatus* Nivomia adsecax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nivomia nefarax sp. nov.

Candidatus Nivomia nefarax (NL. fem. n. *nefarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AM51-8 sp003478275*. The type genome for the species is the GenBank assembly GCA_902364995.1. The GC content of the type genome is 44.95 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Nivomia obfenessa sp. nov.

Candidatus Nivomia obfenessa (NL. fem. n. *obfenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AM51-8 sp900761925*. The type genome for the species is the GenBank assembly GCA_900761925.1. The GC content of the type genome is 52.98 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Nivomida acculicula sp. nov.

Candidatus Nivomida acculicula (NL. fem. n. *acculicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP36 sp013215915*. The type genome for the species is the GenBank assembly GCA_013215915.1. The GC content of the type genome is 26.37 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Nivomida gen. nov.

Candidatus Nivomida (NL. fem. n. *Nivomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NORP36*. The type species for the genus is *Candidatus* Nivomida acculicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nivomida horomitudo sp. nov.

Candidatus Nivomida horomitudo (NL. fem. n. *horomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP36 sp002733685*. The type genome for the species is the GenBank assembly GCA_002733685.1. The GC content of the type genome is 28.64 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Nivomida imbecastra sp. nov.

Candidatus Nivomida imbecastra (NL. fem. n. *imbecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP36 sp002163065*. The type genome for the species is the GenBank assembly GCA_002163065.1. The GC content of the type genome is 30.62 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Nivomida licenilenta sp. nov.

Candidatus Nivomida licenilenta (NL. fem. n. *licenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP36 sp004566295*. The type genome for the species is the

GenBank assembly GCA_013215945.1. The GC content of the type genome is 28.7 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Nivomida ornitousia sp. nov.

Candidatus Nivomida ornitousia (NL. fem. n. *ornitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NORP36 sp013215985*. The type genome for the species is the GenBank assembly GCA_013215985.1. The GC content of the type genome is 26.32 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Nivomosa citipicula sp. nov.

Candidatus Nivomosa citipicula (NL. fem. n. *citipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401425 sp002401425*. The type genome for the species is the GenBank assembly GCA_002401425.1. The GC content of the type genome is 34.72 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Nivomosa gen. nov.

Candidatus Nivomosa (NL. fem. n. *Nivomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2401425*. The type species for the genus is *Candidatus* Nivomosa citipicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2401425*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nivomosaceae.

Description of *Candidatus* Nivomosaceae fam. nov.

Candidatus Nivomosaceae (NL. fem. n. *Nivomosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2401425.* The type genus for the taxon is *Candidatus* Nivomosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2401425*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the order *Candidatus* Nivomosales.

Description of *Candidatus* Nivomosales ord. nov.

Candidatus Nivomosales (NL. fem. n. *Nivomosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2401425.* The type genus for the taxon is *Candidatus* Nivomosa .

According to the GTDB R06-RS202, this order belongs to the class *Gracilibacteria*.

Description of *Candidatus* Nivomula cruppisca sp. nov.

Candidatus Nivomula cruppisca (NL. fem. n. *cruppisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2882 sp003446735*. The type genome for the species is the GenBank assembly GCA_003446735.1. The GC content of the type genome is 44.01 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Nivomula gen. nov.

Candidatus Nivomula (NL. fem. n. *Nivomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2882*. The type species for the genus is *Candidatus* Nivomula cruppisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nivomula desonatio sp. nov.

Candidatus Nivomula desonatio (NL. fem. n. *desonatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2882 sp900317505*. The type genome for the species is the GenBank assembly GCA_900313995.1. The GC content of the type genome is 42.72 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Nivomula hibisimonas sp. nov.

Candidatus Nivomula hibisimonas (NL. fem. n. *hibisimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2882 sp900542015*. The type genome for the species is the GenBank assembly GCA_900542015.1. The GC content of the type genome is 46.42 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Nivomula mirifimonia sp. nov.

Candidatus Nivomula mirifimonia (NL. fem. n. *mirifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2882 sp900549665*. The type genome for the species is the GenBank assembly RS_GCF_900772505.1. The GC content of the type genome is 42.28 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Nivomula rosarilega sp. nov.

Candidatus Nivomula rosarilega (NL. fem. n. *rosarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2882 sp002362385*. The type genome for the species is the GenBank assembly GCA_002362385.1. The GC content of the type genome is 44.7 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Nocardia adlapilega sp. nov.

Candidatus Nocardia adlapilega (NL. fem. n. *adlapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp000482385*. The type genome for the species is the GenBank assembly RS_GCF_000482385.1. The GC content of the type genome is 65.14 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Nocardia annubigena sp. nov.

Candidatus Nocardia annubigena (NL. fem. n. *annubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp000381925*. The type genome for the species is the GenBank assembly RS_GCF_000381925.1. The GC content of the type genome is 69.19 % and the genome length is 9.14 Mbp.

Description of *Candidatus* Nocardia betacigena sp. nov.

Candidatus Nocardia betacigena (NL. fem. n. *betacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp009829295*. The type genome for the species is the GenBank assembly RS_GCF_009829295.1. The GC content of the type genome is 68.04 % and the genome length is 7.39 Mbp.

Description of *Candidatus* Nocardia bigaritrix sp. nov.

Candidatus Nocardia bigaritrix (NL. fem. n. *bigaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp009604425*. The type genome for the species is the GenBank assembly RS_GCF_009604425.1. The GC content of the type genome is 69.4 % and the genome length is 8.62 Mbp.

Description of *Candidatus* Nocardia bisulilenta sp. nov.

Candidatus Nocardia bisulilenta (NL. fem. n. *bisulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp000526215*. The type genome for the species is the GenBank assembly RS_GCF_000526215.1. The GC content of the type genome is 68.9 % and the genome length is 8.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Nocardia casabitudo sp. nov.

Candidatus Nocardia casabitudo (NL. fem. n. *casabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Nocardia sp009760405*. The type genome for the species is the GenBank assembly RS_GCF_009760405.1. The GC content of the type genome is 68.0 % and the genome length is 9.31 Mbp.

Description of *Candidatus* Nocardia curacisca sp. nov.

Candidatus Nocardia curacisca (NL. fem. n. *curacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp009604405*. The type genome for the species is the GenBank assembly RS_GCF_009604405.1. The GC content of the type genome is 67.22 % and the genome length is 8.54 Mbp.

Description of *Candidatus* Nocardia decomitudo sp. nov.

Candidatus Nocardia decomitudo (NL. fem. n. *decomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp009829325*. The type genome for the species is the GenBank assembly RS_GCF_009829325.1. The GC content of the type genome is 68.49 % and the genome length is 7.86 Mbp.

Description of *Candidatus* Nocardia deculigena sp. nov.

Candidatus Nocardia deculigena (NL. fem. n. *deculigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp013315795*. The type genome for the species is the GenBank assembly RS_GCF_013315795.1. The GC content of the type genome is 68.5 % and the genome length is 8.5 Mbp.

Description of *Candidatus* Nocardia deculilega sp. nov.

Candidatus Nocardia deculilega (NL. fem. n. *deculilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp013361595*. The type genome for the species is the GenBank assembly GCA_013361595.1. The GC content of the type genome is 68.29 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Nocardia demagilenta sp. nov.

Candidatus Nocardia demagilenta (NL. fem. n. *demagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp003123685*. The type genome for the species is the GenBank assembly RS_GCF_003123685.1. The GC content of the type genome is 67.36 % and the genome length is 9.37 Mbp.

Description of *Candidatus* Nocardia mirabicula sp. nov.

Candidatus Nocardia mirabicula (NL. fem. n. *mirabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp009649815*. The type genome for the species is the GenBank assembly RS_GCF_009649815.1. The GC content of the type genome is 65.81 % and the genome length is 9.05 Mbp.

Description of *Candidatus* Nocardia molecago sp. nov.

Candidatus Nocardia molecago (NL. fem. n. *molecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp013839555*. The type genome for the species is the GenBank assembly RS_GCF_013839555.1. The GC content of the type genome is 67.83 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Nocardia molecitoga sp. nov.

Candidatus Nocardia molecitoga (NL. fem. n. *molecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp013744875*. The type genome for the species is the GenBank assembly RS_GCF_013744875.1. The GC content of the type genome is 67.8 % and the genome length is 8.34 Mbp.

Description of *Candidatus* Nocardia rubecifica sp. nov.

Candidatus Nocardia rubecifica (NL. fem. n. *rubecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp009708175*. The type genome for the species is the GenBank assembly RS_GCF_009708175.1. The GC content of the type genome is 67.86 % and the genome length is 7.38 Mbp.

Description of *Candidatus* Nocardia serotatica sp. nov.

Candidatus Nocardia serotatica (NL. fem. n. *serotatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardia sp014360565*. The type genome for the species is the GenBank assembly GCA_014360565.1. The GC content of the type genome is 67.48 % and the genome length is 6.39 Mbp.

Description of *Candidatus* Nocardioides abinvilega sp. nov.

Candidatus Nocardioides abinvilega (NL. fem. n. *abinvilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp000364605*. The type genome for the species is the GenBank assembly RS_GCF_000364605.1. The GC content of the type genome is 69.99 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Nocardioides absocitura sp. nov.

Candidatus Nocardioides absocitura (NL. fem. n. *absocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp011300215*. The type genome for the species is the GenBank assembly RS_GCF_011300215.1. The GC content of the type genome is 69.74 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Nocardioides aconticella sp. nov.

Candidatus Nocardioides aconticella (NL. fem. n. *aconticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Nocardioides sp011045035*. The type genome for the species is the GenBank assembly RS_GCF_011045035.1. The GC content of the type genome is 69.75 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Nocardioides adcumicella sp. nov.

Candidatus Nocardioides adcumicella (NL. fem. n. *adcumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp014127485*. The type genome for the species is the GenBank assembly RS_GCF_014127485.1. The GC content of the type genome is 73.02 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Nocardioides adpelitica sp. nov.

Candidatus Nocardioides adpelitica (NL. fem. n. *adpelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp011046535*. The type genome for the species is the GenBank assembly RS_GCF_011046535.1. The GC content of the type genome is 73.3 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Nocardioides adsesitura sp. nov.

Candidatus Nocardioides adsesitura (NL. fem. n. *adsesitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp002698575*. The type genome for the species is the GenBank assembly GCA_002698575.1. The GC content of the type genome is 70.81 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Nocardioides ambidilega sp. nov.

Candidatus Nocardioides ambidilega (NL. fem. n. *ambidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp902805925*. The type genome for the species is the GenBank assembly GCA_902805925.1. The GC content of the type genome is 72.82 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Nocardioides ammuliforma sp. nov.

Candidatus Nocardioides ammuliforma (NL. fem. n. *ammuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp004803405*. The type genome for the species is the GenBank assembly RS_GCF_004803405.1. The GC content of the type genome is 70.45 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Nocardioides anarrisca sp. nov.

Candidatus Nocardioides anarrisca (NL. fem. n. *anarrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp000620645*. The type genome for the species is the GenBank assembly RS_GCF_000620645.1. The GC content of the type genome is 71.71 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Nocardioides ancipitudo sp. nov.

Candidatus Nocardioides ancipitudo (NL. fem. n. *ancipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp009858265*. The type genome for the species is the GenBank assembly RS_GCF_009858265.1. The GC content of the type genome is 69.39 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Nocardioides antirivita sp. nov.

Candidatus Nocardioides antirivita (NL. fem. n. *antirivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp013815725*. The type genome for the species is the GenBank assembly GCA_013815725.1. The GC content of the type genome is 69.67 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Nocardioides bifisatio sp. nov.

Candidatus Nocardioides bifisatio (NL. fem. n. *bifisatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp004919085*. The type genome for the species is the GenBank assembly RS_GCF_004919085.1. The GC content of the type genome is 73.63 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Nocardioides boviciforma sp. nov.

Candidatus Nocardioides boviciforma (NL. fem. n. *boviciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp013177455*. The type genome for the species is the GenBank assembly RS_GCF_013177455.1. The GC content of the type genome is 73.42 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Nocardioides categimonas sp. nov.

Candidatus Nocardioides categimonas (NL. fem. n. *categimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001428565*. The type genome for the species is the GenBank assembly RS_GCF_001428565.1. The GC content of the type genome is 70.27 % and the genome length is 5.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Nocardioides cenotedo sp. nov.

Candidatus Nocardioides cenotedo (NL. fem. n. *cenotedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001425175*. The type genome for the species is the GenBank assembly RS_GCF_001428725.1. The GC content of the type genome is 71.41 % and the genome length is 5.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Nocardioides cetarago sp. nov.

Candidatus Nocardioides cetarago (NL. fem. n. *cetarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp014360585*. The type genome for the species is the GenBank assembly GCA_014360585.1. The GC content of the type genome is 68.9 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Nocardioides colimousia sp. nov.

Candidatus Nocardioides colimousia (NL. fem. n. *colimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001426745*. The type genome for the species is the GenBank assembly RS_GCF_001429525.1. The GC content of the type genome is 69.47 % and the genome length is 5.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Nocardioides colutitio sp. nov.

Candidatus Nocardioides colutitio (NL. fem. n. *colutitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001627335*. The type genome for the species is the GenBank assembly GCA_001627175.1. The GC content of the type genome is 71.68 % and the genome length is 3.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 149 - depth 100m".

Description of *Candidatus* Nocardioides decatilega sp. nov.

Candidatus Nocardioides decatilega (NL. fem. n. *decatilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp009780515*. The type genome for the species is the GenBank assembly GCA_009783825.1. The GC content of the type genome is 71.48 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Nocardioides defalimonas sp. nov.

Candidatus Nocardioides defalimonas (NL. fem. n. *defalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp013155365*. The type genome for the species is the GenBank assembly RS_GCF_013155365.1. The GC content of the type genome is 73.0 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Nocardioides dehinentia sp. nov.

Candidatus Nocardioides dehinentia (NL. fem. n. *dehinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp902506435*. The type genome for the species is the GenBank assembly RS_GCF_902506435.1. The GC content of the type genome is 73.42 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Nocardioides delebigena sp. nov.

Candidatus Nocardioides delebigena (NL. fem. n. *delebigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp013155375*. The type genome for the species is the GenBank assembly RS_GCF_013155375.1. The GC content of the type genome is 72.68 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Nocardioides delucibra sp. nov.

Candidatus Nocardioides delucibra (NL. fem. n. *delucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp008123405*. The type genome for the species is the GenBank assembly GCA_008123405.1. The GC content of the type genome is 70.37 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Nocardioides dimacetta sp. nov.

Candidatus Nocardioides dimacetta (NL. fem. n. *dimacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp009701885*. The type genome for the species is the GenBank assembly GCA_009701885.1. The GC content of the type genome is 72.75 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Nocardioides diponitoga sp. nov.

Candidatus Nocardioides diponitoga (NL. fem. n. *diponitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp004919105*. The type genome for the species is the GenBank assembly RS_GCF_004919105.1. The GC content of the type genome is 72.71 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Nocardioides edissedo sp. nov.

Candidatus Nocardioides edissedo (NL. fem. n. *edissedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001429555*. The type genome for the species is the GenBank assembly GCA_001429555.1. The GC content of the type genome is 68.3 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Nocardioides effarifica sp. nov.

Candidatus Nocardioides effarifica (NL. fem. n. *effarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001425025*. The type genome for the species is the GenBank assembly RS_GCF_001425025.1. The GC content of the type genome is 71.85 % and the genome length is 4.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Nocardioides emancimonia sp. nov.

Candidatus Nocardioides emancimonia (NL. fem. n. *emancimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp002729525*. The type genome for the species is the GenBank assembly GCA_002729525.1. The GC content of the type genome is 71.42 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Nocardioides excamiforma sp. nov.

Candidatus Nocardioides excamiforma (NL. fem. n. *excamiforma* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp009823805*. The type genome for the species is the GenBank assembly RS_GCF_009823805.1. The GC content of the type genome is 72.74 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Nocardioides expasilenta sp. nov.

Candidatus Nocardioides expasilenta (NL. fem. n. *expasilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp003600895*. The type genome for the species is the GenBank assembly RS_GCF_003600895.1. The GC content of the type genome is 69.37 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Nocardioides genocax sp. nov.

Candidatus Nocardioides genocax (NL. fem. n. *genocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp014212315*. The type genome for the species is the GenBank assembly RS_GCF_014212315.1. The GC content of the type genome is 72.31 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Nocardioides genufitio sp. nov.

Candidatus Nocardioides genufitio (NL. fem. n. *genufitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp009702305*. The type genome for the species is the GenBank assembly GCA_009702305.1. The GC content of the type genome is 71.51 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Nocardioides halucago sp. nov.

Candidatus Nocardioides halucago (NL. fem. n. *halucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp900101045*. The type genome for the species is the GenBank assembly RS_GCF_900101045.1. The GC content of the type genome is 69.53 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Nocardioides halucousia sp. nov.

Candidatus Nocardioides halucousia (NL. fem. n. *halucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001428825*. The type genome for the species is the GenBank assembly RS_GCF_001428765.1. The GC content of the type genome is 71.48 % and the genome length is 5.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Nocardioides hecatastra sp. nov.

Candidatus Nocardioides hecatastra (NL. fem. n. *hecatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp008761635*. The type genome for the species is the GenBank assembly RS_GCF_008761635.1. The GC content of the type genome is 71.6 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Nocardioides hexapitrix sp. nov.

Candidatus Nocardioides hexapitrix (NL. fem. n. *hexapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp011420305*. The type genome for the species is the GenBank assembly RS_GCF_011421535.1. The GC content of the type genome is 72.68 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Nocardioides homilastra sp. nov.

Candidatus Nocardioides homilastra (NL. fem. n. *homilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp000192415*. The type genome for the species is the GenBank assembly GCA_000192415.1. The GC content of the type genome is 69.55 %

and the genome length is 5.93 Mbp.

Description of *Candidatus* Nocardioides horomitura sp. nov.

Candidatus Nocardioides horomitura (NL. fem. n. *horomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp000015265*. The type genome for the species is the GenBank assembly RS_GCF_000015265.1. The GC content of the type genome is 71.44 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Nocardioides immodicella sp. nov.

Candidatus Nocardioides immodicella (NL. fem. n. *immodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp008373755*. The type genome for the species is the GenBank assembly RS_GCF_008373755.1. The GC content of the type genome is 69.5 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Nocardioides inconousia sp. nov.

Candidatus Nocardioides inconousia (NL. fem. n. *inconousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001428125*. The type genome for the species is the GenBank assembly RS_GCF_001428125.1. The GC content of the type genome is 72.06 % and the genome length is 3.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Nocardioides inexpicella sp. nov.

Candidatus Nocardioides inexpicella (NL. fem. n. *inexpicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp014108865*. The type genome for the species is the GenBank assembly RS_GCF_014108865.1. The GC content of the type genome is 68.66 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Nocardioides inforatica sp. nov.

Candidatus Nocardioides inforatica (NL. fem. n. *inforatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp009699265*. The type genome for the species is the GenBank assembly GCA_009699265.1. The GC content of the type genome is 71.82 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Nocardioides inhabitia sp. nov.

Candidatus Nocardioides inhabitia (NL. fem. n. *inhabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp006715835*. The type genome for the species is the GenBank assembly RS_GCF_006715835.1. The GC content of the type genome is 69.34 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Nocardioides inlepimonas sp. nov.

Candidatus Nocardioides inlepimonas (NL. fem. n. *inlepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp003660455*. The type genome for the species is the GenBank assembly RS_GCF_003660455.1. The GC content of the type genome is 72.44 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Nocardioides irrevitia sp. nov.

Candidatus Nocardioides irrevitia (NL. fem. n. *irrevitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp003633575*. The type genome for the species is the GenBank assembly RS_GCF_003633575.1. The GC content of the type genome is 72.88 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Nocardioides lacinago sp. nov.

Candidatus Nocardioides lacinago (NL. fem. n. *lacinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001423135*. The type genome for the species is the GenBank assembly RS_GCF_001422955.1. The GC content of the type genome is 73.97 % and the genome length is 4.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Nocardioides lavabitudo sp. nov.

Candidatus Nocardioides lavabitudo (NL. fem. n. *lavabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001429625*. The type genome for the species is the GenBank assembly RS_GCF_001429625.1. The GC content of the type genome is 72.2 % and the genome length is 4.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Nocardioides legifatio sp. nov.

Candidatus Nocardioides legifatio (NL. fem. n. *legifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp000519005*. The type genome for the species is the GenBank assembly RS_GCF_000519005.1. The GC content of the type genome is 72.3 % and the genome length is 4.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Nocardioides manibitica sp. nov.

Candidatus Nocardioides manibitica (NL. fem. n. *manibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp004522095*. The type genome for the species is the GenBank assembly RS_GCF_004522095.1. The GC content of the type genome is 72.62 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Nocardioides megalentia sp. nov.

Candidatus Nocardioides megalentia (NL. fem. n. *megalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp013155335*. The type genome for the species is the GenBank assembly RS_GCF_013155335.1. The GC content of the type genome is 71.86 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Nocardioides melilago sp. nov.

Candidatus Nocardioides melilago (NL. fem. n. *melilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp006715725*. The type genome for the species is the GenBank assembly RS_GCF_006715725.1. The GC content of the type genome is 72.07 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Nocardioides monopitas sp. nov.

Candidatus Nocardioides monopitas (NL. fem. n. *monopitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp003710085*. The type genome for the species is the GenBank assembly RS_GCF_003710085.1. The GC content of the type genome is 73.24 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Nocardioides necubitia sp. nov.

Candidatus Nocardioides necubitia (NL. fem. n. *necubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp012272695*. The type genome for the species is the GenBank assembly RS_GCF_012272695.1. The GC content of the type genome is 69.03 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Nocardioides nubifentia sp. nov.

Candidatus Nocardioides nubifentia (NL. fem. n. *nubifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp000620705*. The type genome for the species is the GenBank assembly RS_GCF_000620705.1. The GC content of the type genome is 71.62

% and the genome length is 4.68 Mbp.

Description of *Candidatus* Nocardioides ontolimonia sp. nov.

Candidatus Nocardioides ontolimonia (NL. fem. n. *ontolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp004137345*. The type genome for the species is the GenBank assembly RS_GCF_004137345.1. The GC content of the type genome is 70.65 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Nocardioides opuscibra sp. nov.

Candidatus Nocardioides opuscibra (NL. fem. n. *opuscibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp004522105*. The type genome for the species is the GenBank assembly RS_GCF_004522105.1. The GC content of the type genome is 72.84 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Nocardioides penuressa sp. nov.

Candidatus Nocardioides penuressa (NL. fem. n. *penuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp014180715*. The type genome for the species is the GenBank assembly RS_GCF_014180715.1. The GC content of the type genome is 71.07 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Nocardioides refunessa sp. nov.

Candidatus Nocardioides refunessa (NL. fem. n. *refunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp009557055*. The type genome for the species is the GenBank assembly RS_GCF_009601105.1. The GC content of the type genome is 72.58 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Nocardioides regifentia sp. nov.

Candidatus Nocardioides regifentia (NL. fem. n. *regifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp014265965*. The type genome for the species is the GenBank assembly RS_GCF_014265965.1. The GC content of the type genome is 72.62 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Nocardioides regigivita sp. nov.

Candidatus Nocardioides regigivita (NL. fem. n. *regigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp006007965*. The type genome for the species is the GenBank assembly RS_GCF_005217835.1. The GC content of the type genome is 70.42 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Nocardioides repepessa sp. nov.

Candidatus Nocardioides repepessa (NL. fem. n. *repepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp008373765*. The type genome for the species is the GenBank assembly RS_GCF_008373765.1. The GC content of the type genome is 71.01 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Nocardioides repuditudo sp. nov.

Candidatus Nocardioides repuditudo (NL. fem. n. *repuditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp006715515*. The type genome for the species is the GenBank assembly RS_GCF_006715515.1. The GC content of the type genome is 69.47 % and the genome length is 5.95 Mbp.

Description of *Candidatus* Nocardioides ruriciforma sp. nov.

Candidatus Nocardioides ruriciforma (NL. fem. n. *ruriciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp006494815*. The type genome for the species is the GenBank assembly RS_GCF_006494815.1. The GC content of the type genome is 71.69 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Nocardioides sifunitudo sp. nov.

Candidatus Nocardioides sifunitudo (NL. fem. n. *sifunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp902805885*. The type genome for the species is the GenBank assembly GCA_902805885.1. The GC content of the type genome is 72.73 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Nocardioides subucitudo sp. nov.

Candidatus Nocardioides subucitudo (NL. fem. n. *subucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp013624415*. The type genome for the species is the GenBank assembly RS_GCF_013624435.1. The GC content of the type genome is 72.14 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Nocardioides tabifessa sp. nov.

Candidatus Nocardioides tabifessa (NL. fem. n. *tabifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp002117935*. The type genome for the species is the GenBank assembly RS_GCF_002117935.1. The GC content of the type genome is 71.01 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Nocardioides tabifimonas sp. nov.

Candidatus Nocardioides tabifimonas (NL. fem. n. *tabifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp004014875*. The type genome for the species is the GenBank assembly RS_GCF_004014875.1. The GC content of the type genome is 68.94

% and the genome length is 3.32 Mbp.

Description of *Candidatus* Nocardioides tabifitia sp. nov.

Candidatus Nocardioides tabifitia (NL. fem. n. *tabifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp003053885*. The type genome for the species is the GenBank assembly RS_GCF_003053885.1. The GC content of the type genome is 70.44 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Nocardioides taraxitoga sp. nov.

Candidatus Nocardioides taraxitoga (NL. fem. n. *taraxitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp011250565*. The type genome for the species is the GenBank assembly RS_GCF_011250565.1. The GC content of the type genome is 73.03 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Nocardioides tolutago sp. nov.

Candidatus Nocardioides tolutago (NL. fem. n. *tolutago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp002865585*. The type genome for the species is the GenBank assembly RS_GCF_002865585.1. The GC content of the type genome is 71.24 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Nocardioides viburivita sp. nov.

Candidatus Nocardioides viburivita (NL. fem. n. *viburivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp001427795*. The type genome for the species is the GenBank assembly RS_GCF_001427545.1. The GC content of the type genome is 69.35 % and the genome length is 5.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Nocardioides volucitoga sp. nov.

Candidatus Nocardioides volucitoga (NL. fem. n. *volucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp013778305*. The type genome for the species is the GenBank assembly RS_GCF_013778305.1. The GC content of the type genome is 72.21 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Nocardioides volunitrix sp. nov.

Candidatus Nocardioides volunitrix (NL. fem. n. *volunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardioides sp003054165*. The type genome for the species is the GenBank assembly RS_GCF_003054165.1. The GC content of the type genome is 71.67 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Nocardiopsis anancitas sp. nov.

Candidatus Nocardiopsis anancitas (NL. fem. n. *anancitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardiopsis sp000515115*. The type genome for the species is the GenBank assembly RS_GCF_000515115.1. The GC content of the type genome is 71.07 % and the genome length is 4.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Nocardiopsis armidilenta sp. nov.

Candidatus Nocardiopsis armidilenta (NL. fem. n. *armidilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardiopsis sp003386285*. The type genome for the species is the GenBank assembly RS_GCF_003386285.1. The GC content of the type genome is 71.73 % and the genome length is 5.8 Mbp.

Description of *Candidatus* Nocardiopsis assudibra sp. nov.

Candidatus Nocardiopsis assudibra (NL. fem. n. *assudibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardiopsis sp001279585*. The type genome for the species is the GenBank assembly RS_GCF_001279585.1. The GC content of the type genome is 72.03 % and the genome length is 6.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "olive tree plantation soil".

Description of *Candidatus* Nocardiopsis decupicula sp. nov.

Candidatus Nocardiopsis decupicula (NL. fem. n. *decupicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardiopsis sp900143625*. The type genome for the species is the GenBank assembly RS_GCF_900143625.1. The GC content of the type genome is 68.81 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Nocardiopsis excetitica sp. nov.

Candidatus Nocardiopsis excetitica (NL. fem. n. *excetitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardiopsis sp001942255*. The type genome for the species is the GenBank assembly RS_GCF_001942255.1. The GC content of the type genome is 71.12 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Nocardiopsis pulegugo sp. nov.

Candidatus Nocardiopsis pulegugo (NL. fem. n. *pulegugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardiopsis sp009830945*. The type genome for the species is the GenBank assembly RS_GCF_009830935.1. The GC content of the type genome is 72.28 % and the genome length is 6.23 Mbp.

Description of *Candidatus* Nocardiopsis rudicicula sp. nov.

Candidatus Nocardiopsis rudicicula (NL. fem. n. *rudicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardiopsis sp001905145*. The type genome for the species is the GenBank assembly RS_GCF_001905145.1. The GC content of the type genome is 71.87 % and the genome length is 6.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Nocardiopsis timefago sp. nov.

Candidatus Nocardiopsis timefago (NL. fem. n. *timefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nocardiopsis sp003634495*. The type genome for the species is the GenBank assembly RS_GCF_003634495.1. The GC content of the type genome is 71.74 % and the genome length is 7.45 Mbp.

Description of *Candidatus* Nocenana ecfacentia sp. nov.

Candidatus Nocenana ecfacentia (NL. fem. n. *ecfacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADBQJ01 sp902796785*. The type genome for the species is the GenBank assembly RS_GCF_902796785.1. The GC content of the type genome is 68.69 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Nocenana gen. nov.

Candidatus Nocenana (NL. fem. n. *Nocenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADBQJ01*. The type species for the genus is *Candidatus* Nocenana ecfacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADBQJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocenanaceae.

Description of *Candidatus* Nocenanaceae fam. nov.

Candidatus Nocenanaceae (NL. fem. n. *Nocenanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CADBQJ01*. The type genus for the taxon is *Candidatus* Nocenana .

According to GTDB R06-RS202, this family belongs to the order *Fibrobacterales*.

Description of *Candidatus* Nocenaria inmacax sp. nov.

Candidatus Nocenaria inmacax (NL. fem. n. *inmacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADEO01 sp011049115*. The type genome for the species is the GenBank assembly GCA_011049115.1. The GC content of the type genome is 54.35 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Nocenaria gen. nov.

Candidatus Nocenaria (NL. fem. n. *Nocenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADEO01*. The type species for the genus is *Candidatus* Nocenaria inmacax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADEO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocenariaceae.

Description of *Candidatus* Nocenariaceae fam. nov.

Candidatus Nocenariaceae (NL. fem. n. *Nocenariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADEO01*. The type genus for the taxon is *Candidatus* Nocenaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DQWO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacellales.

Description of *Candidatus* Nocenaria tomogigena sp. nov.

Candidatus Nocenaria tomogigena (NL. fem. n. *tomogigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAADEO01 sp013153415*. The type genome for the species is the GenBank assembly GCA_013153415.1. The GC content of the type genome is 57.72 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Nocenella detesitudo sp. nov.

Candidatus Nocenella detesitudo (NL. fem. n. *detesitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *9FT-COMBO-53-11 sp001772805*. The type genome for the species is the GenBank assembly GCA_001772805.1. The GC content of the type genome is 51.93 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 19ft depth".

Description of *Candidatus* Nocenella gen. nov.

Candidatus Nocenella (NL. fem. n. *Nocenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *9FT-COMBO-53-11*. The type species for the genus is *Candidatus* Nocenella detesitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *9FT-COMBO-53-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocenellaceae.

Description of *Candidatus* Nocenellaceae fam. nov.

Candidatus Nocenellaceae (NL. fem. n. *Nocenellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *9FT-COMBO-53-11.* The type genus for the taxon is *Candidatus* Nocenella .

According to the original version of GTDB R06-RS202, this family belongs to the order *9FT-COMBO-53-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nocenellales.

Description of *Candidatus* Nocenellales ord. nov.

Candidatus Nocenellales (NL. fem. n. *Nocenellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *9FT-COMBO-53-11*. The type genus for the taxon is *Candidatus* Nocenella .

According to the original version of GTDB R06-RS202, this family belongs to the class *WWE3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Veridulae.

Description of *Candidatus* Nocenella velivetta sp. nov.

Candidatus Nocenella velivetta (NL. fem. n. *velivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *9FT-COMBO-53-11 sp011057755*. The type genome for the species is the GenBank assembly GCA_011057755.1. The GC content of the type genome is 52.78 % and the genome length is 0.51 Mbp.

Description of *Candidatus* Nocenia alembivita sp. nov.

Candidatus Nocenia alembivita (NL. fem. n. *alembivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GMQP-bins7 sp013812465*. The type genome for the species is the GenBank assembly GCA_013812465.1. The GC content of the type genome is 67.67 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Nocenia gen. nov.

Candidatus Nocenia (NL. fem. n. *Nocenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GMQP-bins7*. The type species for the genus is *Candidatus* Nocenia alembivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nocenia bipatilenta sp. nov.

Candidatus Nocenia bipatilenta (NL. fem. n. *bipatilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GMQP-bins7 sp013817555*. The type genome for the species is the GenBank assembly GCA_013817555.1. The GC content of the type genome is 67.25 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Nocenia cibicugo sp. nov.

Candidatus Nocenia cibicugo (NL. fem. n. *cibicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GMQP-bins7 sp005888365*. The type genome for the species is the GenBank assembly GCA_005888365.1. The GC content of the type genome is 68.49 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Nocenia defenitrix sp. nov.

Candidatus Nocenia defenitrix (NL. fem. n. *defenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GMQP-bins7 sp013698195*. The type genome for the species is the GenBank assembly GCA_013698195.1. The GC content of the type genome is 67.74 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Nocenia eclecousia sp. nov.

Candidatus Nocenia eclecousia (NL. fem. n. *eclecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GMQP-bins7 sp004366385*. The type genome for the species is the GenBank assembly GCA_004366385.1. The GC content of the type genome is 72.02 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Nocenia immacitica sp. nov.

Candidatus Nocenia immacitica (NL. fem. n. *immacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GMQP-bins7 sp013811645*. The type genome for the species is the GenBank assembly GCA_013811645.1. The GC content of the type genome is 67.92 %

and the genome length is 1.41 Mbp.

Description of *Candidatus* Nocenia relapugo sp. nov.

Candidatus Nocenia relapugo (NL. fem. n. *relapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GMQP-bins7 sp013697465*. The type genome for the species is the GenBank assembly GCA_013697465.1. The GC content of the type genome is 68.29 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Nocenida accenugo sp. nov.

Candidatus Nocenida accenugo (NL. fem. n. *accenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp009919365*. The type genome for the species is the GenBank assembly GCA_009919365.1. The GC content of the type genome is 62.83 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Nocenida gen. nov.

Candidatus Nocenida (NL. fem. n. *Nocenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10416*. The type species for the genus is *Candidatus* Nocenida accenugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocenidaceae.

Description of *Candidatus* Nocenidaceae fam. nov.

Candidatus Nocenidaceae (NL. fem. n. *Nocenidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10416.* The type genus for the taxon is *Candidatus* Nocenida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hecatiales.

Description of *Candidatus* Nocenida acroticula sp. nov.

Candidatus Nocenida acroticula (NL. fem. n. *acroticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp003670455*. The type genome for the species is the GenBank assembly GCA_003670455.1. The GC content of the type genome is 63.47 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Nocenida addubago sp. nov.

Candidatus Nocenida addubago (NL. fem. n. *addubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp003476885*. The type genome for the species is the GenBank assembly GCA_003476885.1. The GC content of the type genome is 62.59 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Nocenida adrenilenta sp. nov.

Candidatus Nocenida adrenilenta (NL. fem. n. *adrenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp009925905*. The type genome for the species is the GenBank assembly GCA_009925905.1. The GC content of the type genome is 61.83 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Nocenida alsidibra sp. nov.

Candidatus Nocenida alsidibra (NL. fem. n. *alsidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp009919005*. The type genome for the species is the GenBank assembly GCA_009919005.1. The GC content of the type genome is 61.71 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Nocenida exorcitrix sp. nov.

Candidatus Nocenida exorcitrix (NL. fem. n. *exorcitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp009692905*. The type genome for the species is the GenBank assembly GCA_009692905.1. The GC content of the type genome is 63.88 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Nocenida humecitio sp. nov.

Candidatus Nocenida humecitio (NL. fem. n. *humecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp003670745*. The type genome for the species is the GenBank assembly GCA_003670745.1. The GC content of the type genome is 66.68 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Nocenida inmenifica sp. nov.

Candidatus Nocenida inmenifica (NL. fem. n. *inmenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp903820655*. The type genome for the species is the GenBank assembly GCA_903820655.1. The GC content of the type genome is 63.4 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Nocenida invetitura sp. nov.

Candidatus Nocenida invetitura (NL. fem. n. *invetitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp903938075*. The type genome for the species is the GenBank assembly GCA_903938075.1. The GC content of the type genome is 63.07 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Nocenida lavacisca sp. nov.

Candidatus Nocenida lavacisca (NL. fem. n. *lavacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA10416 sp903944295*. The type genome for the species is the GenBank assembly GCA_903944295.1. The GC content of the type genome is 62.61 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Nocenida penicitura sp. nov.

Candidatus Nocenida penicitura (NL. fem. n. *penicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp903937225*. The type genome for the species is the GenBank assembly GCA_903937225.1. The GC content of the type genome is 62.54 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Nocenida reforentia sp. nov.

Candidatus Nocenida reforentia (NL. fem. n. *reforentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp903864185*. The type genome for the species is the GenBank assembly GCA_903917495.1. The GC content of the type genome is 62.96 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Nocenida resacessa sp. nov.

Candidatus Nocenida resacessa (NL. fem. n. *resacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp903847005*. The type genome for the species is the GenBank assembly GCA_903847005.1. The GC content of the type genome is 66.16 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Nocenida tegumitrix sp. nov.

Candidatus Nocenida tegumitrix (NL. fem. n. *tegumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp003670475*. The type genome for the species is the GenBank assembly GCA_003670475.1. The GC content of the type genome is 63.03 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Nocenida vitifitio sp. nov.

Candidatus Nocenida vitifitio (NL. fem. n. *vitifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10416 sp903851225*. The type genome for the species is the GenBank assembly GCA_903851225.1. The GC content of the type genome is 63.27 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Nocenosa catabastra sp. nov.

Candidatus Nocenosa catabastra (NL. fem. n. *catabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-472 sp003251795*. The type genome for the species is the GenBank assembly GCA_003251795.1. The GC content of the type genome is 58.18 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Nocenosa gen. nov.

Candidatus Nocenosa (NL. fem. n. *Nocenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-472*. The type species for the genus is *Candidatus* Nocenosa catabastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SPGG2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pepenanaceae.

Description of *Candidatus* Nocenula aglasedo sp. nov.

Candidatus Nocenula aglasedo (NL. fem. n. *aglasedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMII01 sp900299055*. The type genome for the species is the GenBank assembly GCA_900299055.1. The GC content of the type genome is 52.62 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Nocenula gen. nov.

Candidatus Nocenula (NL. fem. n. *Nocenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OMII01*. The type species for the genus is *Candidatus* Nocenula aglasedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recuciaceae.

Description of *Candidatus* Nocenula argumivita sp. nov.

Candidatus Nocenula argumivita (NL. fem. n. *argumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMII01 sp900299035*. The type genome for the species is the GenBank assembly GCA_900299035.1. The GC content of the type genome is 60.07 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Nocenula pacifitica sp. nov.

Candidatus Nocenula pacifitica (NL. fem. n. *pacifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMII01 sp903920005*. The type genome for the species is the GenBank assembly GCA_903920005.1. The GC content of the type genome is 52.84 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Nocenula viragousia sp. nov.

Candidatus Nocenula viragousia (NL. fem. n. *viragousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMII01 sp903904735*. The type genome for the species is the GenBank assembly GCA_903904735.1. The GC content of the type genome is 53.94 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Nocumana depecimonia sp. nov.

Candidatus Nocumana depecimonia (NL. fem. n. *depecimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8131 sp002293265*. The type genome for the species is the GenBank assembly GCA_002293265.1. The GC content of the type genome is 45.64 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Nocumana gen. nov.

Candidatus Nocumana (NL. fem. n. *Nocumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8131*. The type species for the genus is *Candidatus* Nocumana depecimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumanaceae.

Description of *Candidatus* Nocumanaceae fam. nov.

Candidatus Nocumanaceae (NL. fem. n. *Nocumanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8131*. The type genus for the taxon is *Candidatus* Nocumana .

According to GTDB R06-RS202, this family belongs to the order *Coriobacteriales*.

Description of *Candidatus* Nocumana practessa sp. nov.

Candidatus Nocumana practessa (NL. fem. n. *practessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8131 sp003509825*. The type genome for the species is the GenBank assembly GCA_003509825.1. The GC content of the type genome is 56.06 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Nocumaria giganedo sp. nov.

Candidatus Nocumaria giganedo (NL. fem. n. *giganedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-014075295 sp014075295*. The type genome for the species is the GenBank assembly GCA_014075295.1. The GC content of the type genome is 49.89 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Nocumaria gen. nov.

Candidatus Nocumaria (NL. fem. n. *Nocumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-014075295*. The type species for the genus is *Candidatus* Nocumaria giganedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-014075295*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumariaceae.

Description of *Candidatus* Nocumariaceae fam. nov.

Candidatus Nocumariaceae (NL. fem. n. *Nocumariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-014075295.* The type genus for the taxon is *Candidatus* Nocumaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *RKRQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Perexulales.

Description of *Candidatus* Nocumida feficitica sp. nov.

Candidatus Nocumida feficitica (NL. fem. n. *feficitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYQO01 sp903928345*. The type genome for the species is the GenBank assembly GCA_903928345.1. The GC content of the type genome is 65.45 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Nocumida gen. nov.

Candidatus Nocumida (NL. fem. n. *Nocumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYQO01*. The type species for the genus is *Candidatus* Nocumida feficitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYQO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nocumidaceae.

Description of *Candidatus* Nocumidaceae fam. nov.

Candidatus Nocumidaceae (NL. fem. n. *Nocumidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYQO01.* The type genus for the taxon is *Candidatus* Nocumida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIYQO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nocumidales.

Description of *Candidatus* Nocumidales ord. nov.

Candidatus Nocumidales (NL. fem. n. *Nocumidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYQO01.* The type genus for the taxon is *Candidatus* Nocumida .

According to the original version of GTDB R06-RS202, this family belongs to the class *CAIYQO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Nocumidae.

Description of *Candidatus* Nocumidae class. nov.

Candidatus Nocumidae (NL. fem. n. *c__Nocumidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYQO01.* The type genus for the taxon is *Candidatus* Nocumida .

According to GTDB R06-RS202, this class belongs to the phylum *Armatimonadota*.

Description of *Candidatus* Nocumula vivifetta sp. nov.

Candidatus Nocumula vivifetta (NL. fem. n. *vivifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAI01 sp009780275*. The type genome for the species is the GenBank assembly GCA_009780275.1. The GC content of the type genome is 48.87 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Nocumula gen. nov.

Candidatus Nocumula (NL. fem. n. *Nocumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAI01*. The type species for the genus is *Candidatus* Nocumula vivifetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nodosilinea arvecitura sp. nov.

Candidatus Nodosilinea arvecitura (NL. fem. n. *arvecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodosilinea sp003022385*. The type genome for the species is the GenBank assembly RS_GCF_003022385.1. The GC content of the type genome is 57.32 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Nodosilinea cicarimonia sp. nov.

Candidatus Nodosilinea cicarimonia (NL. fem. n. *cicarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodosilinea sp003564835*. The type genome for the species is the GenBank assembly RS_GCF_012911975.1. The GC content of the type genome is 55.05 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Nodosilinea dicibitas sp. nov.

Candidatus Nodosilinea dicibitas (NL. fem. n. *dicibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Nodosilinea sp012031045*. The type genome for the species is the GenBank assembly GCA_012031045.1. The GC content of the type genome is 54.61 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Nodosilinea hexapatio sp. nov.

Candidatus Nodosilinea hexapatio (NL. fem. n. *hexapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodosilinea sp007694115*. The type genome for the species is the GenBank assembly GCA_007694115.1. The GC content of the type genome is 59.01 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Nodosilinea optumitudo sp. nov.

Candidatus Nodosilinea optumitudo (NL. fem. n. *optumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodosilinea sp000763385*. The type genome for the species is the GenBank assembly RS_GCF_000763385.1. The GC content of the type genome is 59.44 % and the genome length is 6.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Spirulina culture pond".

Description of *Candidatus* Nodosilinea papavastra sp. nov.

Candidatus Nodosilinea papavastra (NL. fem. n. *papavastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodosilinea sp003249105*. The type genome for the species is the GenBank assembly GCA_003249105.1. The GC content of the type genome is 57.41 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Nodosilinea pavicax sp. nov.

Candidatus Nodosilinea pavicax (NL. fem. n. *pavicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodosilinea sp003017855*. The type genome for the species is the GenBank assembly RS_GCF_003017855.1. The GC content of the type genome is 56.72 % and the genome length is 6.86 Mbp.

Description of *Candidatus* Nodosilinea verecitoga sp. nov.

Candidatus Nodosilinea verecitoga (NL. fem. n. *verecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodosilinea sp007135385*. The type genome for the species is the GenBank assembly GCA_007692715.1. The GC content of the type genome is 55.39 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Nodularia cerifitudo sp. nov.

Candidatus Nodularia cerifitudo (NL. fem. n. *cerifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodularia sp002218065*. The type genome for the species is the GenBank assembly RS_GCF_002218065.1. The GC content of the type genome is 41.23 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Nodularia dibapimonia sp. nov.

Candidatus Nodularia dibapimonia (NL. fem. n. *dibapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodularia sp007692755*. The type genome for the species is the GenBank assembly GCA_007692755.1. The GC content of the type genome is 41.19 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Nodularia dilacibula sp. nov.

Candidatus Nodularia dilacibula (NL. fem. n. *dilacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodularia sp903911355*. The type genome for the species is the GenBank assembly GCA_903889945.1. The GC content of the type genome is 42.17 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Nodularia domigitrix sp. nov.

Candidatus Nodularia domigitrix (NL. fem. n. *domigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nodularia sp003556955*. The type genome for the species is the GenBank assembly GCA_003556955.1. The GC content of the type genome is 40.87 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Noninana dimaciforma sp. nov.

Candidatus Noninana dimaciforma (NL. fem. n. *dimaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGN01 sp014584315*. The type genome for the species is the GenBank assembly GCA_014584315.1. The GC content of the type genome is 70.23 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Noninana gen. nov.

Candidatus Noninana (NL. fem. n. *Noninana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAADGN01*. The type species for the genus is *Candidatus* Noninana dimaciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Noninana feditatica sp. nov.

Candidatus Noninana feditatica (NL. fem. n. *feditatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGN01 sp900696545*. The type genome for the species is the GenBank assembly GCA_900696545.1. The GC content of the type genome is 68.78 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Noninaria canacitio sp. nov.

Candidatus Noninaria canacitio (NL. fem. n. *canacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C00003106 sp001751015*. The type genome for the species is the GenBank assembly GCA_001750905.1. The GC content of the type genome is 48.91 % and the genome length is 2.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sample #5133; Elevator 3A push core 47; collected at Hydrate Ridge North during Jason II dive J2-593 from an area of active seepage marked by bubble ebullition and surface expression of white microbial mat".

Description of *Candidatus* Noninaria gen. nov.

Candidatus Noninaria (NL. fem. n. *Noninaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C00003106*. The type species for the genus is *Candidatus* Noninaria canacitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *C00003106*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninariaceae.

Description of *Candidatus* Noninariaceae fam. nov.

Candidatus Noninariaceae (NL. fem. n. *Noninariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *C00003106.* The type genus for the taxon is *Candidatus* Noninaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *C00003060*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colubidales.

Description of *Candidatus* Noninella arcebedo sp. nov.

Candidatus Noninella arcebedo (NL. fem. n. *arcebedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1444 sp002329525*. The type genome for the species is the GenBank assembly GCA_002329525.1. The GC content of the type genome is 56.16 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Noninella gen. nov.

Candidatus Noninella (NL. fem. n. *Noninella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1444*. The type species for the genus is *Candidatus* Noninella arcebedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1444*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninellaceae.

Description of *Candidatus* Noninellaceae fam. nov.

Candidatus Noninellaceae (NL. fem. n. *Noninellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1444.* The type genus for the taxon is *Candidatus* Noninella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1444*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Noninellales.

Description of *Candidatus* Noninellales ord. nov.

Candidatus Noninellales (NL. fem. n. *Noninellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1444.* The type genus for the taxon is *Candidatus* Noninella .

According to the GTDB R06-RS202, this order belongs to the class *Negativicutes*.

Description of *Candidatus* Noninella favilax sp. nov.

Candidatus Noninella favilax (NL. fem. n. *favilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1444 sp012798135*. The type genome for the species is the GenBank assembly GCA_012798135.1. The GC content of the type genome is 54.22 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Noninia argitiforma sp. nov.

Candidatus Noninia argitiforma (NL. fem. n. *argitiforma* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-37 sp003599755*. The type genome for the species is the GenBank assembly GCA_003599755.1. The GC content of the type genome is 59.06 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Noninia gen. nov.

Candidatus Noninia (NL. fem. n. *Noninia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-37*. The type species for the genus is *Candidatus* Noninia argitiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-37*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noniniaceae.

Description of *Candidatus* Noniniaceae fam. nov.

Candidatus Noniniaceae (NL. fem. n. *Noniniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-37.* The type genus for the taxon is *Candidatus* Noninia .

According to GTDB R06-RS202, this family belongs to the order *Sungbacterales*.

Description of *Candidatus* Noninida adessitica sp. nov.

Candidatus Noninida adessitica (NL. fem. n. *adessitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-alpha2 sp001510075*. The type genome for the species is the GenBank assembly GCA_001510075.1. The GC content of the type genome is 58.17 % and the genome length is 1.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Capian Sea".

Description of *Candidatus* Noninida gen. nov.

Candidatus Noninida (NL. fem. n. *Noninida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Casp-alpha2*. The type species for the genus is *Candidatus* Noninida adessitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Casp-alpha2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninidaceae.

Description of *Candidatus* Noninidaceae fam. nov.

Candidatus Noninidaceae (NL. fem. n. *Noninidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Casp-alpha2.* The type genus for the taxon is *Candidatus* Noninida .

According to GTDB R06-RS202, this family belongs to the order *Rhodospirillales*.

Description of *Candidatus* Noninida atlanax sp. nov.

Candidatus Noninida atlanax (NL. fem. n. *atlanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-alpha2 sp002938075*. The type genome for the species is the GenBank assembly GCA_002938075.1. The GC content of the type genome is 62.11 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Noninida catalago sp. nov.

Candidatus Noninida catalago (NL. fem. n. *catalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-alpha2 sp013204265*. The type genome for the species is the GenBank assembly GCA_013204265.1. The GC content of the type genome is 57.81 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Noninida cucuritrix sp. nov.

Candidatus Noninida cucuritrix (NL. fem. n. *cucuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-alpha2 sp002938315*. The type genome for the species is the GenBank assembly GCA_002938315.1. The GC content of the type genome is 57.29 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Noninida inlecigena sp. nov.

Candidatus Noninida inlecigena (NL. fem. n. *inlecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-alpha2 sp013203955*. The type genome for the species is the GenBank assembly GCA_013203955.1. The GC content of the type genome is 57.73 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Noninida monumentia sp. nov.

Candidatus Noninida monumentia (NL. fem. n. *monumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-alpha2 sp002686255*. The type genome for the species is the GenBank assembly GCA_002420445.1. The GC content of the type genome is 62.58 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Noninida ranunax sp. nov.

Candidatus Noninida ranunax (NL. fem. n. *ranunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-alpha2 sp014382345*. The type genome for the species is the GenBank assembly GCA_014382345.1. The GC content of the type genome is 59.77 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Noninosa exhiligena sp. nov.

Candidatus Noninosa exhiligena (NL. fem. n. *exhiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1227 sp002314645*. The type genome for the species is the GenBank assembly GCA_002314645.1. The GC content of the type genome is 38.99 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Noninosa gen. nov.

Candidatus Noninosa (NL. fem. n. *Noninosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1227*. The type species for the genus is *Candidatus* Noninosa exhiligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Noninosa holovitas sp. nov.

Candidatus Noninosa holovitas (NL. fem. n. *holovitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1227 sp002309175*. The type genome for the species is the GenBank assembly GCA_002309175.1. The GC content of the type genome is 50.88 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Noninosa minagessa sp. nov.

Candidatus Noninosa minagessa (NL. fem. n. *minagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1227 sp002314555*. The type genome for the species is the GenBank assembly GCA_002314555.1. The GC content of the type genome is 40.88 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Noninosa ratifisca sp. nov.

Candidatus Noninosa ratifisca (NL. fem. n. *ratifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1227 sp012520505*. The type genome for the species is the GenBank assembly GCA_012520505.1. The GC content of the type genome is 36.0 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Noninosa semapivita sp. nov.

Candidatus Noninosa semapivita (NL. fem. n. *semapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1227 sp900545655*. The type genome for the species is the GenBank assembly RS_GCF_900763975.1. The GC content of the type genome is 43.98 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Noninula dicibedo sp. nov.

Candidatus Noninula dicibedo (NL. fem. n. *dicibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED2 sp002168225*. The type genome for the species is the GenBank assembly GCA_003521505.1. The GC content of the type genome is 58.5 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Noninula gen. nov.

Candidatus Noninula (NL. fem. n. *Noninula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED2*. The type species for the genus is *Candidatus* Noninula dicibedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninulaceae.

Description of *Candidatus* Noninulaceae fam. nov.

Candidatus Noninulaceae (NL. fem. n. *Noninulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED2.* The type genus for the taxon is *Candidatus* Noninula .

According to GTDB R06-RS202, this family belongs to the order *Micavibrionales_C*.

Description of *Candidatus* Nonlabens agnomitudo sp. nov.

Candidatus Nonlabens agnomitudo (NL. fem. n. *agnomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonlabens sp012974865*. The type genome for the species is the GenBank assembly RS_GCF_012974865.1. The GC content of the type genome is 36.68 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Nonlabens cimitimonia sp. nov.

Candidatus Nonlabens cimitimonia (NL. fem. n. *cimitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonlabens sp003966335*. The type genome for the species is the GenBank assembly RS_GCF_003966335.1. The GC content of the type genome is 40.7 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Nonlabens exhilastra sp. nov.

Candidatus Nonlabens exhilastra (NL. fem. n. *exhilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonlabens sp001413925*. The type genome for the species is the GenBank assembly RS_GCF_001413925.1. The GC content of the type genome is 40.94 % and the genome length is 3.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sediment".

Description of *Candidatus* Nonlabens inoccibra sp. nov.

Candidatus Nonlabens inoccibra (NL. fem. n. *inoccibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonlabens sp002831625*. The type genome for the species is the GenBank assembly RS_GCF_002831625.1. The GC content of the type genome is 37.13 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Nonlabens insenibra sp. nov.

Candidatus Nonlabens insenibra (NL. fem. n. *insenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonlabens sp900101765*. The type genome for the species is the

GenBank assembly RS_GCF_900101765.1. The GC content of the type genome is 39.47 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Nonlabens smegmax sp. nov.

Candidatus Nonlabens smegmax (NL. fem. n. *smegmax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonlabens sp000153385*. The type genome for the species is the GenBank assembly RS_GCF_000153385.1. The GC content of the type genome is 34.95 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Nonomuraea alsisedo sp. nov.

Candidatus Nonomuraea alsisedo (NL. fem. n. *alsisedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonomuraea sp005893125*. The type genome for the species is the GenBank assembly RS_GCF_005893125.1. The GC content of the type genome is 69.56 % and the genome length is 14.33 Mbp.

Description of *Candidatus* Nonomuraea butubitrix sp. nov.

Candidatus Nonomuraea butubitrix (NL. fem. n. *butubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonomuraea sp013363975*. The type genome for the species is the GenBank assembly RS_GCF_013363975.1. The GC content of the type genome is 72.31 % and the genome length is 9.76 Mbp.

Description of *Candidatus* Nonomuraea cibaratica sp. nov.

Candidatus Nonomuraea cibaratica (NL. fem. n. *cibaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonomuraea sp003236395*. The type genome for the species is the GenBank assembly RS_GCF_003236395.1. The GC content of the type genome is 71.31 % and the genome length is 9.87 Mbp.

Description of *Candidatus* Nonomuraea colipilenta sp. nov.

Candidatus Nonomuraea colipilenta (NL. fem. n. *colipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonomuraea sp008017515*. The type genome for the species is the GenBank assembly RS_GCF_008017515.1. The GC content of the type genome is 71.4 % and the genome length is 9.42 Mbp.

Description of *Candidatus* Nonomuraea delebibula sp. nov.

Candidatus Nonomuraea delebibula (NL. fem. n. *delebibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonomuraea sp008065375*. The type genome for the species is the GenBank assembly RS_GCF_008065375.1. The GC content of the type genome is 70.32 % and the genome length is 12.43 Mbp.

Description of *Candidatus* Nonomuraea denixugo sp. nov.

Candidatus Nonomuraea denixugo (NL. fem. n. *denixugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonomuraea sp013362835*. The type genome for the species is the GenBank assembly GCA_013362835.1. The GC content of the type genome is 71.13 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Nonomuraea depetitas sp. nov.

Candidatus Nonomuraea depetitas (NL. fem. n. *depetitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonomuraea sp013283785*. The type genome for the species is the GenBank assembly RS_GCF_013283785.1. The GC content of the type genome is 70.98 % and the genome length is 11.67 Mbp.

Description of *Candidatus* Nonomuraea metapifica sp. nov.

Candidatus Nonomuraea metapifica (NL. fem. n. *metapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonomuraea sp008086045*. The type genome for the species is the GenBank assembly RS_GCF_008086045.1. The GC content of the type genome is 71.34 % and the genome length is 13.15 Mbp.

Description of *Candidatus* Nonomuraea vanidetta sp. nov.

Candidatus Nonomuraea vanidetta (NL. fem. n. *vanidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nonomuraea sp001083785*. The type genome for the species is the GenBank assembly RS_GCF_001083785.1. The GC content of the type genome is 71.68 % and the genome length is 9.99 Mbp.

Description of *Candidatus* Nordella manomimonia sp. nov.

Candidatus Nordella manomimonia (NL. fem. n. *manomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nordella sp005884715*. The type genome for the species is the GenBank assembly GCA_005884715.1. The GC content of the type genome is 60.49 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Nordella recogivita sp. nov.

Candidatus Nordella recogivita (NL. fem. n. *recogivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nordella sp011046735*. The type genome for the species is the GenBank assembly RS_GCF_011046735.1. The GC content of the type genome is 61.99 % and the genome length is 7.18 Mbp.

Description of *Candidatus* Nordella umbilatio sp. nov.

Candidatus Nordella umbilatio (NL. fem. n. *umbilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nordella sp003576695*. The type genome for the species is the GenBank assembly RS_GCF_003576695.1. The GC content of the type genome is 62.98

% and the genome length is 5.78 Mbp.

Description of *Candidatus* Nordella verifitoga sp. nov.

Candidatus Nordella verifitoga (NL. fem. n. *verifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nordella sp003574785*. The type genome for the species is the GenBank assembly RS_GCF_003574785.1. The GC content of the type genome is 62.75 % and the genome length is 7.39 Mbp.

Description of *Candidatus* Nordella xenopetta sp. nov.

Candidatus Nordella xenopetta (NL. fem. n. *xenopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nordella sp005502925*. The type genome for the species is the GenBank assembly RS_GCF_005502345.1. The GC content of the type genome is 62.78 % and the genome length is 7.11 Mbp.

Description of *Candidatus* Nosocana aminnilenta sp. nov.

Candidatus Nosocana aminnilenta (NL. fem. n. *aminnilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5416 sp002409525*. The type genome for the species is the GenBank assembly GCA_002409525.1. The GC content of the type genome is 42.74 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Nosocana gen. nov.

Candidatus Nosocana (NL. fem. n. *Nosocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5416*. The type species for the genus is *Candidatus* Nosocana aminnilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nosocana semilitrix sp. nov.

Candidatus Nosocana semilitrix (NL. fem. n. *semilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5416 sp900539175*. The type genome for the species is the GenBank assembly RS_GCF_900753015.1. The GC content of the type genome is 43.55 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Nosocaria inexpitudo sp. nov.

Candidatus Nosocaria inexpitudo (NL. fem. n. *inexpitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-37-8 sp000992085*. The type genome for the species is the GenBank assembly GCA_000992085.1. The GC content of the type genome is 36.55 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Nosocaria gen. nov.

Candidatus Nosocaria (NL. fem. n. *Nosocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-37-8*. The type species for the genus is *Candidatus* Nosocaria inexpitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-37-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocariaceae.

Description of *Candidatus* Nosocariaceae fam. nov.

Candidatus Nosocariaceae (NL. fem. n. *Nosocariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-37-8.* The type genus for the taxon is *Candidatus* Nosocaria .

According to GTDB R06-RS202, this family belongs to the order *Magasanikbacterales*.

Description of *Candidatus* Nosocella nugigax sp. nov.

Candidatus Nosocella nugigax (NL. fem. n. *nugigax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVUX01 sp903909215*. The type genome for the species is the GenBank assembly GCA_903820065.1. The GC content of the type genome is 52.6 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Nosocella gen. nov.

Candidatus Nosocella (NL. fem. n. *Nosocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVUX01*. The type species for the genus is *Candidatus* Nosocella nugigax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nosocia loripicella sp. nov.

Candidatus Nosocia loripicella (NL. fem. n. *loripicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDE01 sp012512925*. The type genome for the species is the GenBank assembly GCA_012512925.1. The GC content of the type genome is 57.56 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Nosocia gen. nov.

Candidatus Nosocia (NL. fem. n. *Nosocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYDE01*. The type species for the genus is *Candidatus* Nosocia loripicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYDE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosociaceae.

Description of *Candidatus* Nosociaceae fam. nov.

Candidatus Nosociaceae (NL. fem. n. *Nosociaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYDE01*. The type genus for the taxon is *Candidatus* Nosocia .

According to GTDB R06-RS202, this family belongs to the order *Desulfuromonadales*.

Description of *Candidatus* Nosocia obverugo sp. nov.

Candidatus Nosocia obverugo (NL. fem. n. *obverugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDE01 sp012729375*. The type genome for the species is the GenBank assembly GCA_012729375.1. The GC content of the type genome is 58.99 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Nosocida nosocitica sp. nov.

Candidatus Nosocida nosocitica (NL. fem. n. *nosocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVPW01 sp903907895*. The type genome for the species is the GenBank assembly GCA_903907895.1. The GC content of the type genome is 66.76 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Nosocida gen. nov.

Candidatus Nosocida (NL. fem. n. *Nosocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVPW01*. The type species for the genus is *Candidatus* Nosocida nosocitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIVPW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocidaceae.

Description of *Candidatus* Nosocidaceae fam. nov.

Candidatus Nosocidaceae (NL. fem. n. *Nosocidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CAIVPW01*. The type genus for the taxon is *Candidatus* Nosocida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIVPW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nosocidales.

Description of *Candidatus* Nosocidales ord. nov.

Candidatus Nosocidales (NL. fem. n. *Nosocidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIVPW01*. The type genus for the taxon is *Candidatus* Nosocida .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Nosocosa rosarago sp. nov.

Candidatus Nosocosa rosarago (NL. fem. n. *rosarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-174 sp003551905*. The type genome for the species is the GenBank assembly GCA_003551905.1. The GC content of the type genome is 44.53 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Nosocosa gen. nov.

Candidatus Nosocosa (NL. fem. n. *Nosocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1SED10-174*. The type species for the genus is *Candidatus* Nosocosa rosarago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B1SED10-174*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocosaceae.

Description of *Candidatus* Nosocosaceae fam. nov.

Candidatus Nosocosaceae (NL. fem. n. *Nosocosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B1SED10-174*. The type genus for the taxon is *Candidatus* Nosocosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *B1SED10-174*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nosocosales.

Description of *Candidatus* Nosocosales ord. nov.

Candidatus Nosocosales (NL. fem. n. *Nosocosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B1SED10-174.* The type genus for the taxon is *Candidatus* Nosocosa .

According to the GTDB R06-RS202, this order belongs to the class *Halanaerobiia*.

Description of *Candidatus* Nosocula verifibula sp. nov.

Candidatus Nosocula verifibula (NL. fem. n. *verifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7388 sp002470695*. The type genome for the species is the GenBank assembly GCA_003529685.1. The GC content of the type genome is 51.92 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Nosocula gen. nov.

Candidatus Nosocula (NL. fem. n. *Nosocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7388*. The type species for the genus is *Candidatus* Nosocula verifibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TK06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaculaceae.

Description of *Candidatus* Nostoc adlubentia sp. nov.

Candidatus Nostoc adlubentia (NL. fem. n. *adlubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp002949795*. The type genome for the species is the GenBank

assembly RS_GCF_002949795.1. The GC content of the type genome is 41.61 % and the genome length is 7.34 Mbp.

Description of *Candidatus* Nostoc adrecatica sp. nov.

Candidatus Nostoc adrecatica (NL. fem. n. *adrecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp003326205*. The type genome for the species is the GenBank assembly GCA_003326205.1. The GC content of the type genome is 41.02 % and the genome length is 8.46 Mbp.

Description of *Candidatus* Nostoc cicatago sp. nov.

Candidatus Nostoc cicatago (NL. fem. n. *cicatago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp013393905*. The type genome for the species is the GenBank assembly RS_GCF_013393905.1. The GC content of the type genome is 41.5 % and the genome length is 9.88 Mbp.

Description of *Candidatus* Nostoc clancago sp. nov.

Candidatus Nostoc clancago (NL. fem. n. *clancago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp013343235*. The type genome for the species is the GenBank assembly RS_GCF_013343235.1. The GC content of the type genome is 41.29 % and the genome length is 7.89 Mbp.

Description of *Candidatus* Nostoc cohoricella sp. nov.

Candidatus Nostoc cohoricella (NL. fem. n. *cohoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp002246015*. The type genome for the species is the GenBank assembly RS_GCF_002246015.1. The GC content of the type genome is 41.72 % and the genome length is 8.33 Mbp.

Description of *Candidatus* Nostoc depupimonas sp. nov.

Candidatus Nostoc depupimonas (NL. fem. n. *depupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp014222285*. The type genome for the species is the GenBank assembly RS_GCF_014222285.1. The GC content of the type genome is 41.38 % and the genome length is 8.5 Mbp.

Description of *Candidatus* Nostoc emortimonia sp. nov.

Candidatus Nostoc emortimonia (NL. fem. n. *emortimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp005869855*. The type genome for the species is the GenBank assembly RS_GCF_005869855.1. The GC content of the type genome is 40.61 % and the genome length is 7.62 Mbp.

Description of *Candidatus* Nostoc lucifago sp. nov.

Candidatus Nostoc lucifago (NL. fem. n. *lucifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp003326245*. The type genome for the species is the GenBank assembly RS_GCF_003326245.1. The GC content of the type genome is 41.39 % and the genome length is 8.54 Mbp.

Description of *Candidatus* Nostoc milipessa sp. nov.

Candidatus Nostoc milipessa (NL. fem. n. *milipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp001712795*. The type genome for the species is the GenBank assembly RS_GCF_001712795.1. The GC content of the type genome is 41.69 % and the genome length is 9.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Symbiotic tissue of Blasia pusilla L.".

Description of *Candidatus* Nostoc monimiforma sp. nov.

Candidatus Nostoc monimiforma (NL. fem. n. *monimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp010091925*. The type genome for the species is the GenBank assembly RS_GCF_010091925.1. The GC content of the type genome is 41.87 % and the genome length is 7.43 Mbp.

Description of *Candidatus* Nostoc pericedo sp. nov.

Candidatus Nostoc pericedo (NL. fem. n. *pericedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc sp002949735*. The type genome for the species is the GenBank assembly RS_GCF_002245975.1. The GC content of the type genome is 41.4 % and the genome length is 8.33 Mbp.

Description of *Candidatus* Nostoc famelatica sp. nov.

Candidatus Nostoc famelatica (NL. fem. n. *famelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc_B sp001698435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001698435.1. The GC content of the type genome is 40.58 % and the genome length is 6.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "co-culture originated from a tropical freshwater lake".

Description of *Candidatus* Nostoc musulibra sp. nov.

Candidatus Nostoc musulibra (NL. fem. n. *musulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Nostoc_C sp002368335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002368335.1. The GC content of the type genome is 41.15 % and the genome length is 8.59 Mbp.

Description of *Candidatus* Notabana bifisitudo sp. nov.

Candidatus Notabana bifisitudo (NL. fem. n. *bifisitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMRF01 sp013202715*. The type genome for the species is the GenBank assembly GCA_013202715.1. The GC content of the type genome is 38.77 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Notabana gen. nov.

Candidatus Notabana (NL. fem. n. *Notabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMRF01*. The type species for the genus is *Candidatus* Notabana bifisitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11705*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenanaceae.

Description of *Candidatus* Notabaria lucubimonas sp. nov.

Candidatus Notabaria lucubimonas (NL. fem. n. *lucubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002715585 sp002715585*. The type genome for the species is the GenBank assembly GCA_002715585.2. The GC content of the type genome is 29.73 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Notabaria gen. nov.

Candidatus Notabaria (NL. fem. n. *Notabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002715585*. The type species for the genus is *Candidatus* Notabaria lucubimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1144*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conifellaceae.

Description of *Candidatus* Notabaria myalgitas sp. nov.

Candidatus Notabaria myalgitas (NL. fem. n. *myalgitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002715585 sp902609885*. The type genome for the species is the GenBank assembly GCA_902609885.1. The GC content of the type genome is 29.6 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Notabaria resuritudo sp. nov.

Candidatus Notabaria resuritudo (NL. fem. n. *resuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002715585 sp002697665*. The type genome for the species is the GenBank assembly GCA_902577805.1. The GC content of the type genome is 29.66 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Notabella conibilenta sp. nov.

Candidatus Notabella conibilenta (NL. fem. n. *conibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU053 sp012520115*. The type genome for the species is the GenBank assembly GCA_012520115.1. The GC content of the type genome is 47.95 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Notabella gen. nov.

Candidatus Notabella (NL. fem. n. *Notabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU053*. The type species for the genus is *Candidatus* Notabella conibilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Notabella nefanousia sp. nov.

Candidatus Notabella nefanousia (NL. fem. n. *nefanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU053 sp009779455*. The type genome for the species is the GenBank assembly GCA_009779455.1. The GC content of the type genome is 48.26 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Notabella subucessa sp. nov.

Candidatus Notabella subucessa (NL. fem. n. *subucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU053 sp001512765*. The type genome for the species is the GenBank assembly GCA_002385725.1. The GC content of the type genome is 47.49 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Notabia casigiforma sp. nov.

Candidatus Notabia casigiforma (NL. fem. n. *casigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILVY01 sp903837785*. The type genome for the species is the GenBank assembly GCA_903837785.1. The GC content of the type genome is 62.74 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Notabia gen. nov.

Candidatus Notabia (NL. fem. n. *Notabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILVY01*. The type species for the genus is *Candidatus* Notabia casigiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIZGN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bacifosaceae.

Description of *Candidatus* Notabida abnocicella sp. nov.

Candidatus Notabida abnocicella (NL. fem. n. *abnocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp900556635*. The type genome for the species is the GenBank assembly GCA_900556635.1. The GC content of the type genome is 55.62 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Notabida gen. nov.

Candidatus Notabida (NL. fem. n. *Notabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-170*. The type species for the genus is *Candidatus* Notabida abnocicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Notabida bisacitrix sp. nov.

Candidatus Notabida bisacitrix (NL. fem. n. *bisacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp900545925*. The type genome for the species is the GenBank assembly GCA_900545925.1. The GC content of the type genome is 55.78 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Notabida blactitudo sp. nov.

Candidatus Notabida blactitudo (NL. fem. n. *blactitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp004555655*. The type genome for the species is the GenBank assembly GCA_004555655.1. The GC content of the type genome is 59.52 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Notabida derecicella sp. nov.

Candidatus Notabida derecicella (NL. fem. n. *derecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp900548625*. The type genome for the species is the GenBank assembly GCA_900548625.1. The GC content of the type genome is 59.06 %

and the genome length is 2.25 Mbp.

Description of *Candidatus* Notabida giganitura sp. nov.

Candidatus Notabida giganitura (NL. fem. n. *giganitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp000432135*. The type genome for the species is the GenBank assembly GCA_000432135.1. The GC content of the type genome is 58.4 % and the genome length is 2.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Notabida haricifica sp. nov.

Candidatus Notabida haricifica (NL. fem. n. *haricifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp002437575*. The type genome for the species is the GenBank assembly GCA_002437575.1. The GC content of the type genome is 57.8 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Notabida metucedo sp. nov.

Candidatus Notabida metucedo (NL. fem. n. *metucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp900553545*. The type genome for the species is the GenBank assembly GCA_900553545.1. The GC content of the type genome is 60.56 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Notabida modifibra sp. nov.

Candidatus Notabida modifibra (NL. fem. n. *modifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp000436735*. The type genome for the species is the GenBank assembly GCA_000436735.1. The GC content of the type genome is 58.69 % and the genome length is 2.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Notabida papavitas sp. nov.

Candidatus Notabida papavitas (NL. fem. n. *papavitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp002404795*. The type genome for the species is the GenBank assembly GCA_004554295.1. The GC content of the type genome is 61.97 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Notabida rosacousia sp. nov.

Candidatus Notabida rosacousia (NL. fem. n. *rosacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp900549635*. The type genome for the species is the GenBank assembly GCA_900753425.1. The GC content of the type genome is 57.2 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Notabida rubecitura sp. nov.

Candidatus Notabida rubecitura (NL. fem. n. *rubecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp002298695*. The type genome for the species is the GenBank assembly GCA_002298695.1. The GC content of the type genome is 59.48 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Notabida semifigena sp. nov.

Candidatus Notabida semifigena (NL. fem. n. *semifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp900751035*. The type genome for the species is the GenBank assembly GCA_900751035.1. The GC content of the type genome is 58.19 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Notabida semilimonas sp. nov.

Candidatus Notabida semilimonas (NL. fem. n. *semilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp003516765*. The type genome for the species is the GenBank assembly GCA_900759595.1. The GC content of the type genome is 57.54 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Notabida unetvastra sp. nov.

Candidatus Notabida unetvastra (NL. fem. n. *unetvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-170 sp900555665*. The type genome for the species is the GenBank assembly GCA_900555665.1. The GC content of the type genome is 59.9 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Notabosa dimadilega sp. nov.

Candidatus Notabosa dimadilega (NL. fem. n. *dimadilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NP-7 sp005883865*. The type genome for the species is the GenBank assembly GCA_005883865.1. The GC content of the type genome is 68.42 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Notabosa gen. nov.

Candidatus Notabosa (NL. fem. n. *Notabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NP-7*. The type species for the genus is *Candidatus* Notabosa dimadilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NP-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notabosaceae.

Description of *Candidatus* Notabosaceae fam. nov.

Candidatus Notabosaceae (NL. fem. n. *Notabosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NP-7*. The type genus for the taxon is *Candidatus* Notabosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CSP1-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Minagiales.

Description of *Candidatus* Notabula miracax sp. nov.

Candidatus Notabula miracax (NL. fem. n. *miracax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFAQ01 sp001776275*. The type genome for the species is the GenBank assembly GCA_001776275.1. The GC content of the type genome is 39.94 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Notabula gen. nov.

Candidatus Notabula (NL. fem. n. *Notabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFAQ01*. The type species for the genus is *Candidatus* Notabula miracax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MFAQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notabulaceae.

Description of *Candidatus* Notabulaceae fam. nov.

Candidatus Notabulaceae (NL. fem. n. *Notabulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MFAQ01*. The type genus for the taxon is *Candidatus* Notabula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Notacana capucitudo sp. nov.

Candidatus Notacana capucitudo (NL. fem. n. *capucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-2-70-7 sp003222205*. The type genome for the species is the GenBank assembly GCA_001919115.1. The GC content of the type genome is 70.07 % and the genome length is 1.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; 4 days after first rain event (27mm)".

Description of *Candidatus* Notacana gen. nov.

Candidatus Notacana (NL. fem. n. *Notacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40CM-2-70-7*. The type species for the genus is *Candidatus* Notacana capucitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Notacaria lubenicella sp. nov.

Candidatus Notacaria lubenicella (NL. fem. n. *lubenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLKC01 sp007134775*. The type genome for the species is the GenBank assembly GCA_007134775.1. The GC content of the type genome is 66.82 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Notacaria gen. nov.

Candidatus Notacaria (NL. fem. n. *Notacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLKC01*. The type species for the genus is *Candidatus* Notacaria lubenicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Notacella fumifax sp. nov.

Candidatus Notacella fumifax (NL. fem. n. *fumifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-44-7 sp000999595*. The type genome for the species is the GenBank assembly GCA_000999595.1. The GC content of the type genome is 43.48 % and the genome length is 1.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Notacella gen. nov.

Candidatus Notacella (NL. fem. n. *Notacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-44-7*. The type species for the genus is *Candidatus* Notacella fumifax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notacellaceae.

Description of *Candidatus* Notacellaceae fam. nov.

Candidatus Notacellaceae (NL. fem. n. *Notacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-44-7.* The type genus for the taxon is *Candidatus* Notacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-44-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Notacellales.

Description of *Candidatus* Notacellales ord. nov.

Candidatus Notacellales (NL. fem. n. *Notacellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-44-7.* The type genus for the taxon is *Candidatus* Notacella .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Notacia funebivita sp. nov.

Candidatus Notacia funebivita (NL. fem. n. *funebivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGS01 sp011053475*. The type genome for the species is the GenBank assembly GCA_011053475.1. The GC content of the type genome is 44.95 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Notacia gen. nov.

Candidatus Notacia (NL. fem. n. *Notacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTGS01*. The type species for the genus is *Candidatus* Notacia funebivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTGS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notaciaceae.

Description of *Candidatus* Notaciaceae fam. nov.

Candidatus Notaciaceae (NL. fem. n. *Notaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTGS01.* The type genus for the taxon is *Candidatus* Notacia .

According to GTDB R06-RS202, this family belongs to the order *Aminicenantales*.

Description of *Candidatus* Notacia obsuritica sp. nov.

Candidatus Notacia obsuritica (NL. fem. n. *obsuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGS01 sp011389315*. The type genome for the species is the GenBank assembly GCA_011389315.1. The GC content of the type genome is 48.22 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Notacia veridugo sp. nov.

Candidatus Notacia veridugo (NL. fem. n. *veridugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGS01 sp011333465*. The type genome for the species is the GenBank assembly GCA_011333465.1. The GC content of the type genome is 45.89 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Notacida afranitudo sp. nov.

Candidatus Notacida afranitudo (NL. fem. n. *afranitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMC01 sp012840075*. The type genome for the species is the GenBank assembly GCA_012840075.1. The GC content of the type genome is 34.62 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Notacida gen. nov.

Candidatus Notacida (NL. fem. n. *Notacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMC01*. The type species for the genus is *Candidatus* Notacida afranitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notacidaceae.

Description of *Candidatus* Notacidaceae fam. nov.

Candidatus Notacidaceae (NL. fem. n. *Notacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMC01.* The type genus for the taxon is *Candidatus* Notacida .

According to GTDB R06-RS202, this family belongs to the order *Acetivibrionales*.

Description of *Candidatus* Notacosa hemidilenta sp. nov.

Candidatus Notacosa hemidilenta (NL. fem. n. *hemidilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-1484045 sp001484045*. The type genome for the species is the GenBank assembly RS_GCF_001484045.1. The GC content of the type genome is 28.49 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Notacosa gen. nov.

Candidatus Notacosa (NL. fem. n. *Notacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-1484045*. The type species for the genus is *Candidatus* Notacosa hemidilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCF-1484045*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notacosaceae.

Description of *Candidatus* Notacosaceae fam. nov.

Candidatus Notacosaceae (NL. fem. n. *Notacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCF-1484045.* The type genus for the taxon is *Candidatus* Notacosa .

According to GTDB R06-RS202, this family belongs to the order *Mycoplasmatales*.

Description of *Candidatus* Noviherbaspirillum armiditudo sp. nov.

Candidatus Noviherbaspirillum armiditudo (NL. fem. n. *armiditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Noviherbaspirillum sp010974945*. The type genome for the species is the GenBank assembly RS_GCF_010974945.1. The GC content of the type genome is 63.28 % and the genome length is 6.12 Mbp.

Description of *Candidatus* Noviherbaspirillum armipisca sp. nov.

Candidatus Noviherbaspirillum armipisca (NL. fem. n. *armipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Noviherbaspirillum sp008929045*. The type genome for the species is the GenBank assembly RS_GCF_008929045.1. The GC content of the type genome is 60.01 % and the genome length is 6.8 Mbp.

Description of *Candidatus* Noviherbaspirillum attemigena sp. nov.

Candidatus Noviherbaspirillum attemigena (NL. fem. n. *attemigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Noviherbaspirillum sp003591035*. The type genome for the species is the GenBank assembly RS_GCF_003591035.1. The GC content of the type genome is 57.54 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Noviherbaspirillum feficicula sp. nov.

Candidatus Noviherbaspirillum feficicula (NL. fem. n. *feficicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Noviherbaspirillum sp003590875*. The type genome for the species is the GenBank assembly RS_GCF_003590875.1. The GC content of the type genome is 59.94 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Noviherbaspirillum inhorivita sp. nov.

Candidatus Noviherbaspirillum inhorivita (NL. fem. n. *inhorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Noviherbaspirillum sp004570315*. The type genome for the species is the GenBank assembly RS_GCF_004570315.1. The GC content of the type genome is 63.81 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Noviherbaspirillum luxurisca sp. nov.

Candidatus Noviherbaspirillum luxurisca (NL. fem. n. *luxurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Noviherbaspirillum sp001428545*. The type genome for the species is the GenBank assembly RS_GCF_001428545.1. The GC content of the type genome is

56.8 % and the genome length is 6.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Noviherbaspirillum robigifica sp. nov.

Candidatus Noviherbaspirillum robigifica (NL. fem. n. *robigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Noviherbaspirillum sp004804275*. The type genome for the species is the GenBank assembly RS_GCF_004804275.1. The GC content of the type genome is 59.18 % and the genome length is 5.8 Mbp.

Description of *Candidatus* Noviherbaspirillum tenebisca sp. nov.

Candidatus Noviherbaspirillum tenebisca (NL. fem. n. *tenebisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Noviherbaspirillum sp007874125*. The type genome for the species is the GenBank assembly RS_GCF_007874125.1. The GC content of the type genome is 61.89 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Novilana pulegiforma sp. nov.

Candidatus Novilana pulegiforma (NL. fem. n. *pulegiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABSP01 sp011390345*. The type genome for the species is the GenBank assembly GCA_011390345.1. The GC content of the type genome is 55.71 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Novilana gen. nov.

Candidatus Novilana (NL. fem. n. *Novilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABSP01*. The type species for the genus is *Candidatus* Novilana pulegiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Novilaria delacicula sp. nov.

Candidatus Novilaria delacicula (NL. fem. n. *delacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2226 sp001777915*. The type genome for the species is the GenBank assembly GCA_001781595.1. The GC content of the type genome is 53.99 % and the genome length is 2.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point B".

Description of *Candidatus* Novilaria gen. nov.

Candidatus Novilaria (NL. fem. n. *Novilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2226*. The type species for the genus is *Candidatus* Novilaria delacicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EtOH8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cepuranaceae.

Description of *Candidatus* Novilella echogedo sp. nov.

Candidatus Novilella echogedo (NL. fem. n. *echogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7675 sp002483085*. The type genome for the species is the GenBank assembly GCA_002483085.1. The GC content of the type genome is 51.27 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Novilella gen. nov.

Candidatus Novilella (NL. fem. n. *Novilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7675*. The type species for the genus is *Candidatus* Novilella echogedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7675*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Novilellaceae.

Description of *Candidatus* Novilellaceae fam. nov.

Candidatus Novilellaceae (NL. fem. n. *Novilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7675.* The type genus for the taxon is *Candidatus* Novilella .

According to GTDB R06-RS202, this family belongs to the order *Kapabacteriales*.

Description of *Candidatus* Novilida abascitoga sp. nov.

Candidatus Novilida abascitoga (NL. fem. n. *abascitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp009702205*. The type genome for the species is the GenBank assembly GCA_009702205.1. The GC content of the type genome is 44.17 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Novilida gen. nov.

Candidatus Novilida (NL. fem. n. *Novilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AAA044-D11*. The type species for the genus is *Candidatus* Novilida abascitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Novilida alcibicula sp. nov.

Candidatus Novilida alcibicula (NL. fem. n. *alcibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp009701575*. The type genome for the species is the GenBank assembly GCA_009701575.1. The GC content of the type genome is 44.64 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Novilida appecilega sp. nov.

Candidatus Novilida appecilega (NL. fem. n. *appecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp903875815*. The type genome for the species is the GenBank assembly GCA_903875815.1. The GC content of the type genome is 51.32 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Novilida artopigena sp. nov.

Candidatus Novilida artopigena (NL. fem. n. *artopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp000485495*. The type genome for the species is the GenBank assembly GCA_000485495.1. The GC content of the type genome is 44.21 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Novilida cacalimonia sp. nov.

Candidatus Novilida cacalimonia (NL. fem. n. *cacalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp009698045*. The type genome for the species is the GenBank assembly GCA_009698785.1. The GC content of the type genome is 48.45 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Novilida curacicula sp. nov.

Candidatus Novilida curacicula (NL. fem. n. *curacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp903938735*. The type genome for the species is the GenBank assembly GCA_903904925.1. The GC content of the type genome is 52.69 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Novilida deparivita sp. nov.

Candidatus Novilida deparivita (NL. fem. n. *deparivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp002367715*. The type genome for the species is the GenBank assembly GCA_013204505.1. The GC content of the type genome is 45.49 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Novilida depopitrix sp. nov.

Candidatus Novilida depopitrix (NL. fem. n. *depopitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp903836945*. The type genome for the species is the GenBank assembly GCA_903824055.1. The GC content of the type genome is 46.28 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Novilida deveciforma sp. nov.

Candidatus Novilida deveciforma (NL. fem. n. *deveciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp903898855*. The type genome for the species is the GenBank assembly GCA_903898855.1. The GC content of the type genome is 49.66 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Novilida dilibitica sp. nov.

Candidatus Novilida dilibitica (NL. fem. n. *dilibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp903919375*. The type genome for the species is the GenBank assembly GCA_903842615.1. The GC content of the type genome is 50.97 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Novilida dilogitoga sp. nov.

Candidatus Novilida dilogitoga (NL. fem. n. *dilogitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp009701525*. The type genome for the species is the GenBank assembly GCA_009701525.1. The GC content of the type genome is 44.38 %

and the genome length is 0.97 Mbp.

Description of *Candidatus* Novilida exforimonia sp. nov.

Candidatus Novilida exforimonia (NL. fem. n. *exforimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp002340925*. The type genome for the species is the GenBank assembly GCA_002340925.1. The GC content of the type genome is 44.99 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Novilida fetutimonia sp. nov.

Candidatus Novilida fetutimonia (NL. fem. n. *fetutimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp009726125*. The type genome for the species is the GenBank assembly GCA_009697845.1. The GC content of the type genome is 44.69 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Novilida humecastra sp. nov.

Candidatus Novilida humecastra (NL. fem. n. *humecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp903871555*. The type genome for the species is the GenBank assembly GCA_903825515.1. The GC content of the type genome is 44.56 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Novilida immodibula sp. nov.

Candidatus Novilida immodibula (NL. fem. n. *immodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp903822245*. The type genome for the species is the GenBank assembly GCA_903822245.1. The GC content of the type genome is 44.92 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Novilida lutulessa sp. nov.

Candidatus Novilida lutulessa (NL. fem. n. *lutulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp903838035*. The type genome for the species is the GenBank assembly GCA_903860895.1. The GC content of the type genome is 49.32 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Novilida maligilega sp. nov.

Candidatus Novilida maligilega (NL. fem. n. *maligilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp007280395*. The type genome for the species is the GenBank assembly GCA_007280395.1. The GC content of the type genome is 44.92 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Novilida subucitrix sp. nov.

Candidatus Novilida subucitrix (NL. fem. n. *subucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp009705075*. The type genome for the species is the GenBank assembly GCA_009703905.1. The GC content of the type genome is 44.95 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Novilida tigurago sp. nov.

Candidatus Novilida tigurago (NL. fem. n. *tigurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA044-D11 sp903842675*. The type genome for the species is the GenBank assembly GCA_903873865.1. The GC content of the type genome is 46.49 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Novilosa agrapifica sp. nov.

Candidatus Novilosa agrapifica (NL. fem. n. *agrapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BICA1-8 sp000802045*. The type genome for the species is the GenBank assembly GCA_000802045.1. The GC content of the type genome is 37.19 % and the genome length is 3.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock".

Description of *Candidatus* Novilosa gen. nov.

Candidatus Novilosa (NL. fem. n. *Novilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BICA1-8*. The type species for the genus is *Candidatus* Novilosa agrapifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BICA1-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Novilosaceae.

Description of *Candidatus* Novilosaceae fam. nov.

Candidatus Novilosaceae (NL. fem. n. *Novilosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BICA1-8.* The type genus for the taxon is *Candidatus* Novilosa .

According to GTDB R06-RS202, this family belongs to the order *Peptococcales*.

Description of *Candidatus* Novilosa uxorcifica sp. nov.

Candidatus Novilosa uxorcifica (NL. fem. n. *uxorcifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BICA1-8 sp000961765*. The type genome for the species is the GenBank assembly GCA_000961765.1. The GC content of the type genome is 37.04 % and the genome length is 4.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Novilula manubousia sp. nov.

Candidatus Novilula manubousia (NL. fem. n. *manubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXHT01 sp005773095*. The type genome for the species is the GenBank assembly GCA_005773095.1. The GC content of the type genome is 60.14 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Novilula gen. nov.

Candidatus Novilula (NL. fem. n. *Novilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXHT01*. The type species for the genus is *Candidatus* Novilula manubousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-1355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopulaceae.

Description of *Candidatus* Novosphingobium adbelibra sp. nov.

Candidatus Novosphingobium adbelibra (NL. fem. n. *adbelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002280675*. The type genome for the species is the GenBank assembly GCA_002280675.1. The GC content of the type genome is 59.61 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Novosphingobium admodifica sp. nov.

Candidatus Novosphingobium admodifica (NL. fem. n. *admodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp009746585*. The type genome for the species is the GenBank assembly RS_GCF_009746585.1. The GC content of the type genome is 63.98 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Novosphingobium adtubitura sp. nov.

Candidatus Novosphingobium adtubitura (NL. fem. n. *adtubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp009909235*. The type genome for the species is the GenBank assembly RS_GCF_009909235.1. The GC content of the type genome is 64.84 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Novosphingobium ambusessa sp. nov.

Candidatus Novosphingobium ambusessa (NL. fem. n. *ambusessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp006874585*. The type genome for the species is the GenBank assembly RS_GCF_006874585.1. The GC content of the type genome is 65.33 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Novosphingobium antimicella sp. nov.

Candidatus Novosphingobium antimicella (NL. fem. n. *antimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp001519065*. The type genome for the species is the GenBank assembly RS_GCF_001519065.1. The GC content of the type genome is 64.58 % and the genome length is 4.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater".

Description of *Candidatus* Novosphingobium appagitrix sp. nov.

Candidatus Novosphingobium appagitrix (NL. fem. n. *appagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002256775*. The type genome for the species is the GenBank assembly GCA_002256775.1. The GC content of the type genome is 61.67 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Novosphingobium apposessa sp. nov.

Candidatus Novosphingobium apposessa (NL. fem. n. *apposessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp009885425*. The type genome for the species is

the GenBank assembly GCA_009885425.1. The GC content of the type genome is 62.89 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Novosphingobium apsegitica sp. nov.

Candidatus Novosphingobium apsegitica (NL. fem. n. *apsegitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp003208305*. The type genome for the species is the GenBank assembly RS_GCF_003208305.1. The GC content of the type genome is 64.71 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Novosphingobium arcifatio sp. nov.

Candidatus Novosphingobium arcifatio (NL. fem. n. *arcifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903970225*. The type genome for the species is the GenBank assembly GCA_903970225.1. The GC content of the type genome is 65.41 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Novosphingobium bifisitia sp. nov.

Candidatus Novosphingobium bifisitia (NL. fem. n. *bifisitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp001421325*. The type genome for the species is the GenBank assembly RS_GCF_001421325.1. The GC content of the type genome is 64.14 % and the genome length is 3.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Novosphingobium bonitessa sp. nov.

Candidatus Novosphingobium bonitessa (NL. fem. n. *bonitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp001898925*. The type genome for the species is the GenBank assembly RS_GCF_012275515.1. The GC content of the type genome is 63.15 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Novosphingobium caselilenta sp. nov.

Candidatus Novosphingobium caselilenta (NL. fem. n. *caselilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903893935*. The type genome for the species is the GenBank assembly GCA_903893935.1. The GC content of the type genome is 65.04 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Novosphingobium celamastra sp. nov.

Candidatus Novosphingobium celamastra (NL. fem. n. *celamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp013149295*. The type genome for the species is the GenBank assembly RS_GCF_013149295.1. The GC content of the type genome is 62.9 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Novosphingobium cenacitia sp. nov.

Candidatus Novosphingobium cenacitia (NL. fem. n. *cenacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903834285*. The type genome for the species is the GenBank assembly GCA_903834285.1. The GC content of the type genome is 65.08 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Novosphingobium cerifitura sp. nov.

Candidatus Novosphingobium cerifitura (NL. fem. n. *cerifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp009856825*. The type genome for the species is the GenBank assembly RS_GCF_009856825.1. The GC content of the type genome is 65.07 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Novosphingobium cisalilega sp. nov.

Candidatus Novosphingobium cisalilega (NL. fem. n. *cisalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp000281975*. The type genome for the species is the GenBank assembly RS_GCF_000281975.1. The GC content of the type genome is 65.91 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Novosphingobium citiventia sp. nov.

Candidatus Novosphingobium citiventia (NL. fem. n. *citiventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp013791705*. The type genome for the species is the GenBank assembly GCA_013791705.1. The GC content of the type genome is 65.79 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Novosphingobium conamatio sp. nov.

Candidatus Novosphingobium conamatio (NL. fem. n. *conamatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp009926135*. The type genome for the species is the GenBank assembly GCA_009926135.1. The GC content of the type genome is 62.77 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Novosphingobium cucurigena sp. nov.

Candidatus Novosphingobium cucurigena (NL. fem. n. *cucurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp004341845*. The type genome for the species is the GenBank assembly RS_GCF_004341845.1. The GC content of the type genome is 64.35 % and the genome length is 5.8 Mbp.

Description of *Candidatus* Novosphingobium decapigena sp. nov.

Candidatus Novosphingobium decapigena (NL. fem. n. *decapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Novosphingobium sp002916655*. The type genome for the species is the GenBank assembly RS_GCF_002916655.1. The GC content of the type genome is 64.07 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Novosphingobium defalibula sp. nov.

Candidatus Novosphingobium defalibula (NL. fem. n. *defalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002336765*. The type genome for the species is the GenBank assembly GCA_002336765.1. The GC content of the type genome is 64.48 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Novosphingobium eccilitica sp. nov.

Candidatus Novosphingobium eccilitica (NL. fem. n. *eccilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp001725355*. The type genome for the species is the GenBank assembly GCA_001725355.1. The GC content of the type genome is 65.95 % and the genome length is 4.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate bioreactor".

Description of *Candidatus* Novosphingobium ensigedo sp. nov.

Candidatus Novosphingobium ensigedo (NL. fem. n. *ensigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp003208375*. The type genome for the species is the GenBank assembly RS_GCF_003208375.1. The GC content of the type genome is 65.08 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Novosphingobium exhededo sp. nov.

Candidatus Novosphingobium exhededo (NL. fem. n. *exhededo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp902506425*. The type genome for the species is the GenBank assembly RS_GCF_902506425.1. The GC content of the type genome is 64.99 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Novosphingobium expisimonas sp. nov.

Candidatus Novosphingobium expisimonas (NL. fem. n. *expisimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903858875*. The type genome for the species is the GenBank assembly GCA_903858875.1. The GC content of the type genome is 62.67 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Novosphingobium giganax sp. nov.

Candidatus Novosphingobium giganax (NL. fem. n. *giganax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903848655*. The type genome for the species is the GenBank assembly GCA_903848655.1. The GC content of the type genome is 63.61 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Novosphingobium haricibra sp. nov.

Candidatus Novosphingobium haricibra (NL. fem. n. *haricibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp008107685*. The type genome for the species is the GenBank assembly RS_GCF_008107685.1. The GC content of the type genome is 64.45 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Novosphingobium homilisca sp. nov.

Candidatus Novosphingobium homilisca (NL. fem. n. *homilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp003454795*. The type genome for the species is the GenBank assembly RS_GCF_012641315.1. The GC content of the type genome is 63.62 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Novosphingobium impilago sp. nov.

Candidatus Novosphingobium impilago (NL. fem. n. *impilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903911985*. The type genome for the species is the GenBank assembly GCA_903911985.1. The GC content of the type genome is 64.89 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Novosphingobium insinitia sp. nov.

Candidatus Novosphingobium insinitia (NL. fem. n. *insinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903828025*. The type genome for the species is the GenBank assembly GCA_903828025.1. The GC content of the type genome is 65.7 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Novosphingobium labecifica sp. nov.

Candidatus Novosphingobium labecifica (NL. fem. n. *labecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp001519055*. The type genome for the species is the GenBank assembly RS_GCF_001519055.1. The GC content of the type genome is 63.94 % and the genome length is 4.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater".

Description of *Candidatus* Novosphingobium luceligena sp. nov.

Candidatus Novosphingobium luceligena (NL. fem. n. *luceligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp902706195*. The type genome for the species is the GenBank assembly RS_GCF_902706195.1. The GC content of the type genome is 64.25 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Novosphingobium mahemiforma sp. nov.

Candidatus Novosphingobium mahemiforma (NL. fem. n. *mahemiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002336885*. The type genome for the species is the GenBank assembly GCA_002336885.1. The GC content of the type genome is 65.96 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Novosphingobium maxilatica sp. nov.

Candidatus Novosphingobium maxilatica (NL. fem. n. *maxilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002454125*. The type genome for the species is the GenBank assembly GCA_002454125.1. The GC content of the type genome is 65.57 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Novosphingobium murelisca sp. nov.

Candidatus Novosphingobium murelisca (NL. fem. n. *murelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp000253255*. The type genome for the species is the GenBank assembly RS_GCF_000253255.1. The GC content of the type genome is 63.26 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Novosphingobium nosocago sp. nov.

Candidatus Novosphingobium nosocago (NL. fem. n. *nosocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp005145025*. The type genome for the species is the GenBank assembly RS_GCF_005145025.1. The GC content of the type genome is 65.89 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Novosphingobium nutamilega sp. nov.

Candidatus Novosphingobium nutamilega (NL. fem. n. *nutamilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp004342985*. The type genome for the species is the GenBank assembly RS_GCF_004368805.1. The GC content of the type genome is 65.51 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Novosphingobium oblivimonia sp. nov.

Candidatus Novosphingobium oblivimonia (NL. fem. n. *oblivimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp900176395*. The type genome for the species is the GenBank assembly RS_GCF_900176395.1. The GC content of the type genome is 62.66 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Novosphingobium obtorimonia sp. nov.

Candidatus Novosphingobium obtorimonia (NL. fem. n. *obtorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp012927405*. The type genome for the species is the GenBank assembly RS_GCF_012927405.1. The GC content of the type genome is 65.01 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Novosphingobium ocissivita sp. nov.

Candidatus Novosphingobium ocissivita (NL. fem. n. *ocissivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp013141325*. The type genome for the species is the GenBank assembly GCA_013141325.1. The GC content of the type genome is 65.7 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Novosphingobium octipifica sp. nov.

Candidatus Novosphingobium octipifica (NL. fem. n. *octipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp001295795*. The type genome for the species is the GenBank assembly RS_GCF_001295795.1. The GC content of the type genome is 59.38 % and the genome length is 4.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Novosphingobium omnipilenta sp. nov.

Candidatus Novosphingobium omnipilenta (NL. fem. n. *omnipilenta* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp012641335*. The type genome for the species is the GenBank assembly RS_GCF_012641335.1. The GC content of the type genome is 61.84 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Novosphingobium penurugo sp. nov.

Candidatus Novosphingobium penurugo (NL. fem. n. *penurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903923465*. The type genome for the species is the GenBank assembly GCA_903923465.1. The GC content of the type genome is 66.86 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Novosphingobium pepenetta sp. nov.

Candidatus Novosphingobium pepenetta (NL. fem. n. *pepenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp000876675*. The type genome for the species is the GenBank assembly RS_GCF_000876675.2. The GC content of the type genome is 63.68 % and the genome length is 6.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "podzolic fallow soil sampled from the ARRIAM experimental field".

Description of *Candidatus* Novosphingobium pomifilenta sp. nov.

Candidatus Novosphingobium pomifilenta (NL. fem. n. *pomifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp004364785*. The type genome for the species is the GenBank assembly RS_GCF_004364785.1. The GC content of the type genome is 65.01 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Novosphingobium pulegatio sp. nov.

Candidatus Novosphingobium pulegatio (NL. fem. n. *pulegatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp004211435*. The type genome for the species is the GenBank assembly GCA_004211435.1. The GC content of the type genome is 66.4 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Novosphingobium recocicella sp. nov.

Candidatus Novosphingobium recocicella (NL. fem. n. *recocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp009707465*. The type genome for the species is the GenBank assembly RS_GCF_009707465.1. The GC content of the type genome is 65.65 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Novosphingobium recumimonas sp. nov.

Candidatus Novosphingobium recumimonas (NL. fem. n. *recumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002198665*. The type genome for the species is the GenBank assembly RS_GCF_002198665.1. The GC content of the type genome is 63.7 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Novosphingobium resacitura sp. nov.

Candidatus Novosphingobium resacitura (NL. fem. n. *resacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp013822005*. The type genome for the species is the GenBank assembly GCA_013822005.1. The GC content of the type genome is 64.92 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Novosphingobium resuricula sp. nov.

Candidatus Novosphingobium resuricula (NL. fem. n. *resuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002855555*. The type genome for the species is the GenBank assembly RS_GCF_002855555.1. The GC content of the type genome is

64.98 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Novosphingobium rudecilega sp. nov.

Candidatus Novosphingobium rudecilega (NL. fem. n. *rudecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903832325*. The type genome for the species is the GenBank assembly GCA_903861275.1. The GC content of the type genome is 64.95 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Novosphingobium rudicitura sp. nov.

Candidatus Novosphingobium rudicitura (NL. fem. n. *rudicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp900113255*. The type genome for the species is the GenBank assembly RS_GCF_900113255.1. The GC content of the type genome is 65.41 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Novosphingobium satacitas sp. nov.

Candidatus Novosphingobium satacitas (NL. fem. n. *satacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp900117425*. The type genome for the species is the GenBank assembly RS_GCF_001296055.1. The GC content of the type genome is 65.55 % and the genome length is 4.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Novosphingobium secunigena sp. nov.

Candidatus Novosphingobium secunigena (NL. fem. n. *secunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp001298105*. The type genome for the species is the GenBank assembly RS_GCF_013410485.1. The GC content of the type genome is 64.8 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Novosphingobium smegmilenta sp. nov.

Candidatus Novosphingobium smegmilenta (NL. fem. n. *smegmilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp000813185*. The type genome for the species is the GenBank assembly RS_GCF_000813185.1. The GC content of the type genome is 65.38 % and the genome length is 5.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sunken wood".

Description of *Candidatus* Novosphingobium socagousia sp. nov.

Candidatus Novosphingobium socagousia (NL. fem. n. *socagousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002440635*. The type genome for the species is the GenBank assembly GCA_002440635.1. The GC content of the type genome is 63.79 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Novosphingobium sonivago sp. nov.

Candidatus Novosphingobium sonivago (NL. fem. n. *sonivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002556635*. The type genome for the species is the GenBank assembly RS_GCF_002556635.1. The GC content of the type genome is 65.83 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Novosphingobium terebicula sp. nov.

Candidatus Novosphingobium terebicula (NL. fem. n. *terebicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp903868655*. The type genome for the species is the GenBank assembly GCA_903868655.1. The GC content of the type genome is 60.82 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Novosphingobium vacilessa sp. nov.

Candidatus Novosphingobium vacilessa (NL. fem. n. *vacilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp002256985*. The type genome for the species is the GenBank assembly GCA_002256795.1. The GC content of the type genome is 62.4 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Novosphingobium vaniditrix sp. nov.

Candidatus Novosphingobium vaniditrix (NL. fem. n. *vaniditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp003171715*. The type genome for the species is the GenBank assembly RS_GCF_003171715.1. The GC content of the type genome is 64.25 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Novosphingobium viginitrix sp. nov.

Candidatus Novosphingobium viginitrix (NL. fem. n. *viginitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp000272475*. The type genome for the species is the GenBank assembly RS_GCF_000272475.1. The GC content of the type genome is 62.71 % and the genome length is 4.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "grapevine crown gall tumor".

Description of *Candidatus* Novosphingobium vinulatica sp. nov.

Candidatus Novosphingobium vinulatica (NL. fem. n. *vinulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingobium sp014200275*. The type genome for the species is the GenBank assembly RS_GCF_012932465.1. The GC content of the type genome is 65.73 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Novosphingopyxis dehinatica sp. nov.

Candidatus Novosphingopyxis dehinatica (NL. fem. n. *dehinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Novosphingopyxis sp002683755*. The type genome for the species is

the GenBank assembly RS_GCF_014334095.1. The GC content of the type genome is 62.81 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Nubecana lucifitia sp. nov.

Candidatus Nubecana lucifitia (NL. fem. n. *lucifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11894 sp012799165*. The type genome for the species is the GenBank assembly GCA_012799165.1. The GC content of the type genome is 49.97 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Nubecana gen. nov.

Candidatus Nubecana (NL. fem. n. *Nubecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11894*. The type species for the genus is *Candidatus* Nubecana lucifitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nubecana recogisca sp. nov.

Candidatus Nubecana recogisca (NL. fem. n. *recogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11894 sp902773665*. The type genome for the species is the GenBank assembly GCA_902790765.1. The GC content of the type genome is 56.46 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Nubecaria excanitica sp. nov.

Candidatus Nubecaria excanitica (NL. fem. n. *excanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKR01 sp009781495*. The type genome for the species is the GenBank assembly GCA_009781495.1. The GC content of the type genome is 54.69 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Nubecaria gen. nov.

Candidatus Nubecaria (NL. fem. n. *Nubecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKR01*. The type species for the genus is *Candidatus* Nubecaria excanitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nubecaria rubigitas sp. nov.

Candidatus Nubecaria rubigitas (NL. fem. n. *rubigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKR01 sp009786315*. The type genome for the species is the GenBank assembly GCA_009786315.1. The GC content of the type genome is 54.31 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Nubecaria xeropibula sp. nov.

Candidatus Nubecaria xeropibula (NL. fem. n. *xeropibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKR01 sp009782175*. The type genome for the species is the GenBank assembly GCA_009782175.1. The GC content of the type genome is 53.01 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Nubecella halucitia sp. nov.

Candidatus Nubecella halucitia (NL. fem. n. *halucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12489 sp003477305*. The type genome for the species is the GenBank assembly GCA_003477305.1. The GC content of the type genome is 57.63 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Nubecella gen. nov.

Candidatus Nubecella (NL. fem. n. *Nubecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12489*. The type species for the genus is *Candidatus* Nubecella halucitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5603*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divululaceae.

Description of *Candidatus* Nubecella maledatica sp. nov.

Candidatus Nubecella maledatica (NL. fem. n. *maledatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12489 sp903844055*. The type genome for the species is the GenBank assembly GCA_903837855.1. The GC content of the type genome is 60.41 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Nubecia desuretta sp. nov.

Candidatus Nubecia desuretta (NL. fem. n. *desuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10146 sp001001925*. The type genome for the species is the GenBank assembly GCA_001001925.1. The GC content of the type genome is 44.96 % and the genome length is 0.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Nubecia gen. nov.

Candidatus Nubecia (NL. fem. n. *Nubecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10146*. The type species for the genus is *Candidatus* Nubecia desuretta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10146*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubeciaceae.

Description of *Candidatus* Nubeciaceae fam. nov.

Candidatus Nubeciaceae (NL. fem. n. *Nubeciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10146.* The type genus for the taxon is *Candidatus* Nubecia .

According to GTDB R06-RS202, this family belongs to the order *Magasanikbacterales*.

Description of *Candidatus* Nubecida cenacastra sp. nov.

Candidatus Nubecida cenacastra (NL. fem. n. *cenacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2696645 sp002696645*. The type genome for the species is the GenBank assembly GCA_002706145.1. The GC content of the type genome is 55.17 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Nubecida gen. nov.

Candidatus Nubecida (NL. fem. n. *Nubecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2696645*. The type species for the genus is *Candidatus* Nubecida cenacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2696645*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubecidaceae.

Description of *Candidatus* Nubecidaceae fam. nov.

Candidatus Nubecidaceae (NL. fem. n. *Nubecidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2696645.* The type genus for the taxon is *Candidatus* Nubecida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8366*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decenellales.

Description of *Candidatus* Nubecida nivomivita sp. nov.

Candidatus Nubecida nivomivita (NL. fem. n. *nivomivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2696645 sp012926505*. The type genome for the species is the GenBank assembly RS_GCF_012926505.1. The GC content of the type genome is 61.08 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Nubecida vilipibra sp. nov.

Candidatus Nubecida vilipibra (NL. fem. n. *vilipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2696645 sp002709955*. The type genome for the species is the GenBank assembly GCA_002337615.1. The GC content of the type genome is 55.97 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Nubecosa arbavicella sp. nov.

Candidatus Nubecosa arbavicella (NL. fem. n. *arbavicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10119 sp900299405*. The type genome for the species is the GenBank assembly GCA_900299405.1. The GC content of the type genome is 46.6 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Nubecosa gen. nov.

Candidatus Nubecosa (NL. fem. n. *Nubecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10119*. The type species for the genus is *Candidatus* Nubecosa arbavicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Nubecosa benivitrix sp. nov.

Candidatus Nubecosa benivitrix (NL. fem. n. *benivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10119 sp001002135*. The type genome for the species is the GenBank assembly GCA_003524865.1. The GC content of the type genome is 46.49 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Nubecosa denorivita sp. nov.

Candidatus Nubecosa denorivita (NL. fem. n. *denorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10119 sp001787405*. The type genome for the species is the GenBank assembly GCA_001787395.1. The GC content of the type genome is 38.77 % and the genome length is 0.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Nubifaria lenunago sp. nov.

Candidatus Nubifaria lenunago (NL. fem. n. *lenunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED109 sp002720535*. The type genome for the species is the GenBank assembly RS_GCF_902635775.1. The GC content of the type genome is 29.89 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Nubifaria gen. nov.

Candidatus Nubifaria (NL. fem. n. *Nubifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED109*. The type species for the genus is *Candidatus* Nubifaria lenunago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifariaceae.

Description of *Candidatus* Nubifariaceae fam. nov.

Candidatus Nubifariaceae (NL. fem. n. *Nubifariaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED109.* The type genus for the taxon is *Candidatus* Nubifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *TMED109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nubifariales.

Description of *Candidatus* Nubifariales ord. nov.

Candidatus Nubifariales (NL. fem. n. *Nubifariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED109.* The type genus for the taxon is *Candidatus* Nubifaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Nubifaria lubenatio sp. nov.

Candidatus Nubifaria lubenatio (NL. fem. n. *lubenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED109 sp002937655*. The type genome for the species is the GenBank assembly GCA_002937655.1. The GC content of the type genome is 29.26 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Nubifaria sifuniforma sp. nov.

Candidatus Nubifaria sifuniforma (NL. fem. n. *sifuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED109 sp002171375*. The type genome for the species is the GenBank assembly GCA_002705225.1. The GC content of the type genome is 29.4 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Nubifella hexamiforma sp. nov.

Candidatus Nubifella hexamiforma (NL. fem. n. *hexamiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NICIL-2 sp011055195*. The type genome for the species is the GenBank assembly GCA_011055195.1. The GC content of the type genome is 56.31 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Nubifella gen. nov.

Candidatus Nubifella (NL. fem. n. *Nubifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NICIL-2*. The type species for the genus is *Candidatus* Nubifella hexamiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NICIL-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifellaceae.

Description of *Candidatus* Nubifellaceae fam. nov.

Candidatus Nubifellaceae (NL. fem. n. *Nubifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NICIL-2.* The type genus for the taxon is *Candidatus* Nubifella .

According to GTDB R06-RS202, this family belongs to the order *Kapabacteriales*.

Description of *Candidatus* Nubifella imbecago sp. nov.

Candidatus Nubifella imbecago (NL. fem. n. *imbecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NICIL-2 sp003695605*. The type genome for the species is the GenBank assembly GCA_003695605.1. The GC content of the type genome is 56.86 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Nubifella mirifitudo sp. nov.

Candidatus Nubifella mirifitudo (NL. fem. n. *mirifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *NICIL-2 sp002898675*. The type genome for the species is the GenBank assembly GCA_011051275.1. The GC content of the type genome is 57.14 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Nubifia viginigena sp. nov.

Candidatus Nubifia viginigena (NL. fem. n. *viginigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMUS01 sp903844665*. The type genome for the species is the GenBank assembly GCA_903842095.1. The GC content of the type genome is 58.95 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Nubifia gen. nov.

Candidatus Nubifia (NL. fem. n. *Nubifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMUS01*. The type species for the genus is *Candidatus* Nubifia viginigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nubifida licenousia sp. nov.

Candidatus Nubifida licenousia (NL. fem. n. *licenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11524 sp900769075*. The type genome for the species is the GenBank assembly RS_GCF_900769075.1. The GC content of the type genome is 60.62 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Nubifida gen. nov.

Candidatus Nubifida (NL. fem. n. *Nubifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11524*. The type species for the genus is *Candidatus* Nubifida licenousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Subabosaceae.

Description of *Candidatus* Nubifida pimenigena sp. nov.

Candidatus Nubifida pimenigena (NL. fem. n. *pimenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11524 sp000437595*. The type genome for the species is the GenBank assembly GCA_000437595.1. The GC content of the type genome is 58.14 % and the genome length is 2.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Nubifosa desoriforma sp. nov.

Candidatus Nubifosa desoriforma (NL. fem. n. *desoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2162 sp002335405*. The type genome for the species is the GenBank assembly GCA_002327645.1. The GC content of the type genome is 48.44 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Nubifosa gen. nov.

Candidatus Nubifosa (NL. fem. n. *Nubifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2162*. The type species for the genus is *Candidatus* Nubifosa desoriforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2162*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifosaceae.

Description of *Candidatus* Nubifosaceae fam. nov.

Candidatus Nubifosaceae (NL. fem. n. *Nubifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2162.* The type genus for the taxon is *Candidatus* Nubifosa .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Nubifula delebatio sp. nov.

Candidatus Nubifula delebatio (NL. fem. n. *delebatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4465 sp002470835*. The type genome for the species is the GenBank assembly GCA_002470835.1. The GC content of the type genome is 38.67 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Nubifula gen. nov.

Candidatus Nubifula (NL. fem. n. *Nubifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4465*. The type species for the genus is *Candidatus* Nubifula delebatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nubifula didaciforma sp. nov.

Candidatus Nubifula didaciforma (NL. fem. n. *didaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4465 sp002292365*. The type genome for the species is the GenBank assembly GCA_002292365.1. The GC content of the type genome is 37.87 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Nubifula facunibra sp. nov.

Candidatus Nubifula facunibra (NL. fem. n. *facunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4465 sp013204595*. The type genome for the species is the GenBank assembly GCA_013204595.1. The GC content of the type genome is 38.8 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Nubifula sitelilega sp. nov.

Candidatus Nubifula sitelilega (NL. fem. n. *sitelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4465 sp002691385*. The type genome for the species is the GenBank assembly GCA_002691385.1. The GC content of the type genome is 36.24 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Nubifula televessa sp. nov.

Candidatus Nubifula televessa (NL. fem. n. *televessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4465 sp902605755*. The type genome for the species is the GenBank assembly GCA_902605755.1. The GC content of the type genome is 34.9 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Nubigana laxititrix sp. nov.

Candidatus Nubigana laxititrix (NL. fem. n. *laxititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HLUCCA01 sp001314545*. The type genome for the species is the GenBank assembly GCA_001314545.1. The GC content of the type genome is 51.72 % and the genome length is 3.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-A from microbial mat sample; contains cyanobacterium Phormidesmis priestleyi ANA and associated heterotrophs".

Description of *Candidatus* Nubigana gen. nov.

Candidatus Nubigana (NL. fem. n. *Nubigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HLUCCA01*. The type species for the genus is *Candidatus* Nubigana laxititrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HLUCCA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubiganaceae.

Description of *Candidatus* Nubiganaceae fam. nov.

Candidatus Nubiganaceae (NL. fem. n. *Nubiganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HLUCCA01.* The type genus for the taxon is *Candidatus* Nubigana .

According to GTDB R06-RS202, this family belongs to the order *Balneolales*.

Description of *Candidatus* Nubigaria intabax sp. nov.

Candidatus Nubigaria intabax (NL. fem. n. *intabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCKK01 sp004124475*. The type genome for the species is the GenBank assembly RS_GCF_004124475.1. The GC content of the type genome is 40.77 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Nubigaria gen. nov.

Candidatus Nubigaria (NL. fem. n. *Nubigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCKK01*. The type species for the genus is *Candidatus* Nubigaria intabax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCKK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigariaceae.

Description of *Candidatus* Nubigariaceae fam. nov.

Candidatus Nubigariaceae (NL. fem. n. *Nubigariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCKK01.* The type genus for the taxon is *Candidatus* Nubigaria .

According to GTDB R06-RS202, this family belongs to the order *Marinisomatales*.

Description of *Candidatus* Nubigella cetarisca sp. nov.

Candidatus Nubigella cetarisca (NL. fem. n. *cetarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED8 sp002690705*. The type genome for the species is the GenBank assembly GCA_002690705.1. The GC content of the type genome is 45.99 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Nubigella gen. nov.

Candidatus Nubigella (NL. fem. n. *Nubigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED8*. The type species for the genus is *Candidatus* Nubigella cetarisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Casp-alpha2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninidaceae.

Description of *Candidatus* Nubigella laculatica sp. nov.

Candidatus Nubigella laculatica (NL. fem. n. *laculatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED8 sp002721825*. The type genome for the species is the GenBank assembly GCA_002721825.1. The GC content of the type genome is 43.33 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Nubigia cicaritura sp. nov.

Candidatus Nubigia cicaritura (NL. fem. n. *cicaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R-RK-3 sp002198715*. The type genome for the species is the GenBank assembly RS_GCF_002198685.1. The GC content of the type genome is 64.98 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Nubigia gen. nov.

Candidatus Nubigia (NL. fem. n. *Nubigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *R-RK-3*. The type species for the genus is *Candidatus* Nubigia cicaritura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nubigula fetutitica sp. nov.

Candidatus Nubigula fetutitica (NL. fem. n. *fetutitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-49-10 sp001771275*. The type genome for the species is the GenBank assembly GCA_001772265.1. The GC content of the type genome is 48.73 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Nubigula gen. nov.

Candidatus Nubigula (NL. fem. n. *Nubigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-49-10*. The type species for the genus is *Candidatus* Nubigula fetutitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10110*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pacifosaceae.

Description of *Candidatus* Nucifana anapliforma sp. nov.

Candidatus Nucifana anapliforma (NL. fem. n. *anapliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2918 sp902783615*. The type genome for the species is the GenBank assembly GCA_902783615.1. The GC content of the type genome is 47.6 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Nucifana gen. nov.

Candidatus Nucifana (NL. fem. n. *Nucifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2918*. The type species for the genus is *Candidatus* Nucifana anapliforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nucifana butubitica sp. nov.

Candidatus Nucifana butubitica (NL. fem. n. *butubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2918 sp902779085*. The type genome for the species is the GenBank assembly GCA_902779085.1. The GC content of the type genome is 43.48 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Nucifana fetulimonia sp. nov.

Candidatus Nucifana fetulimonia (NL. fem. n. *fetulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2918 sp002349865*. The type genome for the species is the GenBank assembly GCA_002349865.1. The GC content of the type genome is 43.65 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Nucifana fumifitura sp. nov.

Candidatus Nucifana fumifitura (NL. fem. n. *fumifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2918 sp900313715*. The type genome for the species is the GenBank assembly GCA_900313715.1. The GC content of the type genome is 44.15 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Nucifaria ablacigena sp. nov.

Candidatus Nucifaria ablacigena (NL. fem. n. *ablacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10566 sp012837565*. The type genome for the species is the

GenBank assembly GCA_012837565.1. The GC content of the type genome is 33.97 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Nucifaria gen. nov.

Candidatus Nucifaria (NL. fem. n. *Nucifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10566*. The type species for the genus is *Candidatus* Nucifaria ablacigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucosaceae.

Description of *Candidatus* Nucifaria futatousia sp. nov.

Candidatus Nucifaria futatousia (NL. fem. n. *futatousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10566 sp002399025*. The type genome for the species is the GenBank assembly GCA_002408835.1. The GC content of the type genome is 32.49 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Nucifaria nefaretta sp. nov.

Candidatus Nucifaria nefaretta (NL. fem. n. *nefaretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10566 sp002407855*. The type genome for the species is the GenBank assembly GCA_002424235.1. The GC content of the type genome is 32.82 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Nucifaria nicotitica sp. nov.

Candidatus Nucifaria nicotitica (NL. fem. n. *nicotitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10566 sp002399565*. The type genome for the species is the GenBank assembly GCA_009929725.1. The GC content of the type genome is 31.59 %

and the genome length is 2.41 Mbp.

Description of *Candidatus* Nucifaria peracax sp. nov.

Candidatus Nucifaria peracax (NL. fem. n. *peracax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10566 sp002423895*. The type genome for the species is the GenBank assembly GCA_002423895.1. The GC content of the type genome is 30.75 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Nucifella adambugo sp. nov.

Candidatus Nucifella adambugo (NL. fem. n. *adambugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3007 sp013298845*. The type genome for the species is the GenBank assembly GCA_013298845.1. The GC content of the type genome is 48.18 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Nucifella gen. nov.

Candidatus Nucifella (NL. fem. n. *Nucifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M3007*. The type species for the genus is *Candidatus* Nucifella adambugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nucifella defaligena sp. nov.

Candidatus Nucifella defaligena (NL. fem. n. *defaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3007 sp903905445*. The type genome for the species is the GenBank assembly GCA_903905445.1. The GC content of the type genome is 46.26 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Nucifella documimonia sp. nov.

Candidatus Nucifella documimonia (NL. fem. n. *documimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3007 sp903933805*. The type genome for the species is the GenBank assembly GCA_903933805.1. The GC content of the type genome is 47.88 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Nucifella favilifica sp. nov.

Candidatus Nucifella favilifica (NL. fem. n. *favilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3007 sp011331955*. The type genome for the species is the GenBank assembly GCA_011331955.1. The GC content of the type genome is 51.27 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Nucifella gerunago sp. nov.

Candidatus Nucifella gerunago (NL. fem. n. *gerunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3007 sp011368025*. The type genome for the species is the GenBank assembly GCA_011368025.1. The GC content of the type genome is 54.93 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Nucifella luticilega sp. nov.

Candidatus Nucifella luticilega (NL. fem. n. *luticilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3007 sp903836265*. The type genome for the species is the GenBank assembly GCA_903932335.1. The GC content of the type genome is 51.07 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Nucifella monacitudo sp. nov.

Candidatus Nucifella monacitudo (NL. fem. n. *monacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3007 sp006226345*. The type genome for the species is the GenBank assembly GCA_006226345.1. The GC content of the type genome is 52.35 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Nucifella semidisca sp. nov.

Candidatus Nucifella semidisca (NL. fem. n. *semidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3007 sp903925535*. The type genome for the species is the GenBank assembly GCA_903925535.1. The GC content of the type genome is 51.09 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Nucifella triclax sp. nov.

Candidatus Nucifella triclax (NL. fem. n. *triclax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M3007 sp014379065*. The type genome for the species is the GenBank assembly GCA_014379065.1. The GC content of the type genome is 48.78 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Nucifia deculivita sp. nov.

Candidatus Nucifia deculivita (NL. fem. n. *deculivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-77 sp011053895*. The type genome for the species is the GenBank assembly GCA_011047785.1. The GC content of the type genome is 64.57 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Nucifia gen. nov.

Candidatus Nucifia (NL. fem. n. *Nucifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-77*. The type species for the genus is *Candidatus* Nucifia deculivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUEL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dececiaceae.

Description of *Candidatus* Nucifia ficulitica sp. nov.

Candidatus Nucifia ficulitica (NL. fem. n. *ficulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-77 sp011362935*. The type genome for the species is the GenBank assembly GCA_011362935.1. The GC content of the type genome is 64.69 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Nucifia incoritura sp. nov.

Candidatus Nucifia incoritura (NL. fem. n. *incoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-77 sp014360895*. The type genome for the species is the GenBank assembly GCA_014360895.1. The GC content of the type genome is 64.64 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Nucifida insemifica sp. nov.

Candidatus Nucifida insemifica (NL. fem. n. *insemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3382 sp002358965*. The type genome for the species is the GenBank assembly GCA_002358965.1. The GC content of the type genome is 51.42 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Nucifida gen. nov.

Candidatus Nucifida (NL. fem. n. *Nucifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3382*. The type species for the genus is *Candidatus* Nucifida insemifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA932. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Nucifida recumifica sp. nov.

Candidatus Nucifida recumifica (NL. fem. n. *recumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3382 sp002159555*. The type genome for the species is the GenBank assembly RS_GCF_002159555.1. The GC content of the type genome is 49.06 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Nucifosa nefanitudo sp. nov.

Candidatus Nucifosa nefanitudo (NL. fem. n. *nefanitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1543 sp002779605*. The type genome for the species is the GenBank assembly GCA_002779605.1. The GC content of the type genome is 58.76 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Nucifosa gen. nov.

Candidatus Nucifosa (NL. fem. n. *Nucifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1543*. The type species for the genus is *Candidatus* Nucifosa nefanitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nucifosa tegimax sp. nov.

Candidatus Nucifosa tegimax (NL. fem. n. *tegimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1543 sp001871195*. The type genome for the species is the GenBank assembly GCA_002774215.1. The GC content of the type genome is 55.36 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Nucifula volubimonas sp. nov.

Candidatus Nucifula volubimonas (NL. fem. n. *volubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-45-9 sp001793855*. The type genome for the species is the GenBank assembly GCA_001793855.1. The GC content of the type genome is 44.75 % and the genome length is 0.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Nucifula gen. nov.

Candidatus Nucifula (NL. fem. n. *Nucifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-45-9*. The type species for the genus is *Candidatus* Nucifula volubimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-45-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nucifulaceae.

Description of *Candidatus* Nucifulaceae fam. nov.

Candidatus Nucifulaceae (NL. fem. n. *Nucifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWB1-45-9.* The type genus for the taxon is *Candidatus* Nucifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Nugacana benevousia sp. nov.

Candidatus Nugacana benevousia (NL. fem. n. *benevousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSPP01 sp011046605*. The type genome for the species is the GenBank assembly GCA_011046605.1. The GC content of the type genome is 54.25 %

and the genome length is 2.52 Mbp.

Description of *Candidatus* Nugacana gen. nov.

Candidatus Nugacana (NL. fem. n. *Nugacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSPP01*. The type species for the genus is *Candidatus* Nugacana benevousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSPP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugacanaceae.

Description of *Candidatus* Nugacanaceae fam. nov.

Candidatus Nugacanaceae (NL. fem. n. *Nugacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSPP01*. The type genus for the taxon is *Candidatus* Nugacana .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSPP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nugacanales.

Description of *Candidatus* Nugacanales ord. nov.

Candidatus Nugacanales (NL. fem. n. *Nugacanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSPP01*. The type genus for the taxon is *Candidatus* Nugacana .

According to the original version of GTDB R06-RS202, this family belongs to the class *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Loripellae.

Description of *Candidatus* Nugacaria conarifica sp. nov.

Candidatus Nugacaria conarifica (NL. fem. n. *conarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-84 sp003553485*. The type genome for the species is the

GenBank assembly GCA_003553485.1. The GC content of the type genome is 39.98 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Nugacaria gen. nov.

Candidatus Nugacaria (NL. fem. n. *Nugacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1SED10-84*. The type species for the genus is *Candidatus* Nugacaria conarifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nugacaria lenocatica sp. nov.

Candidatus Nugacaria lenocatica (NL. fem. n. *lenocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-84 sp003554225*. The type genome for the species is the GenBank assembly GCA_003554225.1. The GC content of the type genome is 46.32 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Nugacaria musulatica sp. nov.

Candidatus Nugacaria musulatica (NL. fem. n. *musulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-84 sp007134885*. The type genome for the species is the GenBank assembly GCA_007134885.1. The GC content of the type genome is 44.64 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Nugacaria proscousia sp. nov.

Candidatus Nugacaria proscousia (NL. fem. n. *proscousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-84 sp003554685*. The type genome for the species is the GenBank assembly GCA_003554685.1. The GC content of the type genome is 44.61 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Nugacella delucilenta sp. nov.

Candidatus Nugacella delucilenta (NL. fem. n. *delucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHMH01 sp003258795*. The type genome for the species is the GenBank assembly RS_GCF_900768495.1. The GC content of the type genome is 32.17 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Nugacella gen. nov.

Candidatus Nugacella (NL. fem. n. *Nugacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHMH01*. The type species for the genus is *Candidatus* Nugacella delucilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nugacia cilicimonas sp. nov.

Candidatus Nugacia cilicimonas (NL. fem. n. *cilicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GUT77 sp001462255*. The type genome for the species is the GenBank assembly GCA_001462255.1. The GC content of the type genome is 52.45 % and the genome length is 2.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "termite gut".

Description of *Candidatus* Nugacia gen. nov.

Candidatus Nugacia (NL. fem. n. *Nugacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GUT77*. The type species for the genus is *Candidatus* Nugacia cilicimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nugacia futaticula sp. nov.

Candidatus Nugacia futaticula (NL. fem. n. *futaticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GUT77 sp009786415*. The type genome for the species is the GenBank assembly GCA_009786415.1. The GC content of the type genome is 54.88 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Nugacia lanugitoga sp. nov.

Candidatus Nugacia lanugitoga (NL. fem. n. *lanugitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GUT77 sp009786575*. The type genome for the species is the GenBank assembly GCA_009786575.1. The GC content of the type genome is 55.53 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Nugacosa inredetta sp. nov.

Candidatus Nugacosa inredetta (NL. fem. n. *inredetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCUZ01 sp013698395*. The type genome for the species is the GenBank assembly GCA_013698395.1. The GC content of the type genome is 69.86 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Nugacosa gen. nov.

Candidatus Nugacosa (NL. fem. n. *Nugacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCUZ01*. The type species for the genus is *Candidatus* Nugacosa inredetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACCUZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugacosaceae.

Description of *Candidatus* Nugacosaceae fam. nov.

Candidatus Nugacosaceae (NL. fem. n. *Nugacosaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCUZ01*. The type genus for the taxon is *Candidatus* Nugacosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACCUZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nugacosales.

Description of *Candidatus* Nugacosales ord. nov.

Candidatus Nugacosales (NL. fem. n. *Nugacosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCUZ01*. The type genus for the taxon is *Candidatus* Nugacosa .

According to the GTDB R06-RS202, this order belongs to the class *Actinomycetia*.

Description of *Candidatus* Nugacula almititica sp. nov.

Candidatus Nugacula almititica (NL. fem. n. *almititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12068 sp000992325*. The type genome for the species is the GenBank assembly GCA_000992325.1. The GC content of the type genome is 37.33 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Nugacula gen. nov.

Candidatus Nugacula (NL. fem. n. *Nugacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12068*. The type species for the genus is *Candidatus* Nugacula almititica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Camilariaceae.

Description of *Candidatus* Nugacula anarrousia sp. nov.

Candidatus Nugacula anarrousia (NL. fem. n. *anarrousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12068 sp013336225*. The type genome for the species is the GenBank assembly GCA_013336225.1. The GC content of the type genome is 39.31 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Nugacula cerucugo sp. nov.

Candidatus Nugacula cerucugo (NL. fem. n. *cerucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12068 sp000991645*. The type genome for the species is the GenBank assembly GCA_000991645.1. The GC content of the type genome is 36.06 % and the genome length is 1.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Nugacula culibitas sp. nov.

Candidatus Nugacula culibitas (NL. fem. n. *culibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12068 sp000991245*. The type genome for the species is the GenBank assembly GCA_000991525.1. The GC content of the type genome is 36.42 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Nugacula vicatilenta sp. nov.

Candidatus Nugacula vicatilenta (NL. fem. n. *vicatilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12068 sp003507445*. The type genome for the species is the GenBank assembly GCA_003507445.1. The GC content of the type genome is 36.97 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Nugigana divoratio sp. nov.

Candidatus Nugigana divoratio (NL. fem. n. *divoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-50-23 sp001774555*. The type genome for the species is the GenBank assembly GCA_001774555.1. The GC content of the type genome is 49.85 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Nugigana gen. nov.

Candidatus Nugigana (NL. fem. n. *Nugigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-50-23*. The type species for the genus is *Candidatus* Nugigana divoratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MFAQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Notabulaceae.

Description of *Candidatus* Nugigaria viragimonia sp. nov.

Candidatus Nugigaria viragimonia (NL. fem. n. *viragimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B7-G16 sp003644405*. The type genome for the species is the GenBank assembly GCA_003644405.1. The GC content of the type genome is 34.9 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Nugigaria gen. nov.

Candidatus Nugigaria (NL. fem. n. *Nugigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B7-G16*. The type species for the genus is *Candidatus* Nugigaria viragimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-171*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homoliaceae.

Description of *Candidatus* Nugigella mimogilega sp. nov.

Candidatus Nugigella mimogilega (NL. fem. n. *mimogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHZ01 sp012744235*. The type genome for the species is the GenBank assembly GCA_012744235.1. The GC content of the type genome is 43.96 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Nugigella gen. nov.

Candidatus Nugigella (NL. fem. n. *Nugigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHZ01*. The type species for the genus is *Candidatus* Nugigella mimogilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYHZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugigellaceae.

Description of *Candidatus* Nugigellaceae fam. nov.

Candidatus Nugigellaceae (NL. fem. n. *Nugigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYHZ01.* The type genus for the taxon is *Candidatus* Nugigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYHZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nugigellales.

Description of *Candidatus* Nugigellales ord. nov.

Candidatus Nugigellales (NL. fem. n. *Nugigellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYHZ01.* The type genus for the taxon is *Candidatus* Nugigella .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Nugigia salubastra sp. nov.

Candidatus Nugigia salubastra (NL. fem. n. *salubastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWCT01 sp002070185*. The type genome for the species is the GenBank assembly GCA_002070185.1. The GC content of the type genome is 48.83 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Nugigia gen. nov.

Candidatus Nugigia (NL. fem. n. *Nugigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCT01*. The type species for the genus is *Candidatus* Nugigia salubastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MWCT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugigiaceae.

Description of *Candidatus* Nugigiaceae fam. nov.

Candidatus Nugigiaceae (NL. fem. n. *Nugigiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWCT01.* The type genus for the taxon is *Candidatus* Nugigia .

According to the original version of GTDB R06-RS202, this family belongs to the order *MWCT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nugigiales.

Description of *Candidatus* Nugigiales ord. nov.

Candidatus Nugigiales (NL. fem. n. *Nugigiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWCT01.* The type genus for the taxon is *Candidatus* Nugigia .

According to the GTDB R06-RS202, this order belongs to the class *Sumerlaeia*.

Description of *Candidatus* Nugigida bonitimonia sp. nov.

Candidatus Nugigida bonitimonia (NL. fem. n. *bonitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6955 sp002716405*. The type genome for the species is the GenBank assembly GCA_002716405.1. The GC content of the type genome is 38.32 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Nugigida gen. nov.

Candidatus Nugigida (NL. fem. n. *Nugigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6955*. The type species for the genus is *Candidatus* Nugigida bonitimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Nugigida desucicella sp. nov.

Candidatus Nugigida desucicella (NL. fem. n. *desucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6955 sp002707835*. The type genome for the species is the GenBank assembly GCA_002707835.1. The GC content of the type genome is 38.58 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Nugigosa monopax sp. nov.

Candidatus Nugigosa monopax (NL. fem. n. *monopax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABMKH01 sp902386935*. The type genome for the species is the GenBank assembly GCA_900169515.1. The GC content of the type genome is 33.19 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Nugigosa gen. nov.

Candidatus Nugigosa (NL. fem. n. *Nugigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABMKH01*. The type species for the genus is *Candidatus* Nugigosa monopax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nugigula dupunitoga sp. nov.

Candidatus Nugigula dupunitoga (NL. fem. n. *dupunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-60-25 sp001791275*. The type genome for the species is the GenBank assembly GCA_001791145.1. The GC content of the type genome is 59.85 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Nugigula gen. nov.

Candidatus Nugigula (NL. fem. n. *Nugigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-60-25*. The type species for the genus is *Candidatus* Nugigula dupunitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-60-25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugigulaceae.

Description of *Candidatus* Nugigulaceae fam. nov.

Candidatus Nugigulaceae (NL. fem. n. *Nugigulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-60-25.* The type genus for the taxon is *Candidatus* Nugigula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Nugigula effulibula sp. nov.

Candidatus Nugigula effulibula (NL. fem. n. *effulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-60-25 sp003576745*. The type genome for the species is the GenBank assembly GCA_003576745.1. The GC content of the type genome is 54.64 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Nugivana vanidigena sp. nov.

Candidatus Nugivana vanidigena (NL. fem. n. *vanidigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9934 sp003453595*. The type genome for the species is the GenBank assembly GCA_001791655.1. The GC content of the type genome is 40.77 % and the genome length is 0.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Nugivana gen. nov.

Candidatus Nugivana (NL. fem. n. *Nugivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9934*. The type species for the genus is *Candidatus* Nugivana vanidigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9934*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivanaceae.

Description of *Candidatus* Nugivanaceae fam. nov.

Candidatus Nugivanaceae (NL. fem. n. *Nugivanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9934.* The type genus for the taxon is *Candidatus* Nugivana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Nugivaria negotilenta sp. nov.

Candidatus Nugivaria negotilenta (NL. fem. n. *negotilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA826 sp002718095*. The type genome for the species is the GenBank assembly GCA_002707945.1. The GC content of the type genome is 34.78 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Nugivaria gen. nov.

Candidatus Nugivaria (NL. fem. n. *Nugivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA826*. The type species for the genus is *Candidatus* Nugivaria negotilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivariaceae.

Description of *Candidatus* Nugivariaceae fam. nov.

Candidatus Nugivariaceae (NL. fem. n. *Nugivariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA826.* The type genus for the taxon is *Candidatus* Nugivaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defulidales.

Description of *Candidatus* Nugivella citivimonas sp. nov.

Candidatus Nugivella citivimonas (NL. fem. n. *citivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1558 sp002785295*. The type genome for the species is the GenBank assembly GCA_002322975.1. The GC content of the type genome is 36.67 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Nugivella gen. nov.

Candidatus Nugivella (NL. fem. n. *Nugivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1558*. The type species for the genus is *Candidatus* Nugivella citivimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1558*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivellaceae.

Description of *Candidatus* Nugivellaceae fam. nov.

Candidatus Nugivellaceae (NL. fem. n. *Nugivellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1558.* The type genus for the taxon is *Candidatus* Nugivella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1558*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nugivellales.

Description of *Candidatus* Nugivellales ord. nov.

Candidatus Nugivellales (NL. fem. n. *Nugivellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1558.* The type genus for the taxon is *Candidatus* Nugivella .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Nugivia adlicitura sp. nov.

Candidatus Nugivia adlicitura (NL. fem. n. *adlicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WMHbin7 sp902725215*. The type genome for the species is the GenBank assembly RS_GCF_902725215.1. The GC content of the type genome is 59.52

% and the genome length is 3.57 Mbp.

Description of *Candidatus* Nugivia gen. nov.

Candidatus Nugivia (NL. fem. n. *Nugivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WMHbin7*. The type species for the genus is *Candidatus* Nugivia adlicitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WMHbin7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugiviaceae.

Description of *Candidatus* Nugiviaceae fam. nov.

Candidatus Nugiviaceae (NL. fem. n. *Nugiviaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WMHbin7.* The type genus for the taxon is *Candidatus* Nugivia .

According to GTDB R06-RS202, this family belongs to the order *Rhodospirillales*.

Description of *Candidatus* Nugivia octobousia sp. nov.

Candidatus Nugivia octobousia (NL. fem. n. *octobousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WMHbin7 sp002753155*. The type genome for the species is the GenBank assembly GCA_002753155.1. The GC content of the type genome is 59.84 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Nugivida vinulisca sp. nov.

Candidatus Nugivida vinulisca (NL. fem. n. *vinulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU014 sp900016865*. The type genome for the species is the GenBank assembly GCA_002386085.1. The GC content of the type genome is 53.56 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Nugivida gen. nov.

Candidatus Nugivida (NL. fem. n. *Nugivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU014*. The type species for the genus is *Candidatus* Nugivida vinulisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU014*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugividaceae.

Description of *Candidatus* Nugividaceae fam. nov.

Candidatus Nugividaceae (NL. fem. n. *Nugividaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU014.* The type genus for the taxon is *Candidatus* Nugivida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU014*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nugividales.

Description of *Candidatus* Nugividales ord. nov.

Candidatus Nugividales (NL. fem. n. *Nugividales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU014.* The type genus for the taxon is *Candidatus* Nugivida .

According to the original version of GTDB R06-RS202, this family belongs to the class *SHA-98*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Taxilidae.

Description of *Candidatus* Nugivosa adcubago sp. nov.

Candidatus Nugivosa adcubago (NL. fem. n. *adcubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp013215825*. The type genome for the species is the GenBank assembly GCA_013215825.1. The GC content of the type genome is 39.96 %

and the genome length is 2.35 Mbp.

Description of *Candidatus* Nugivosa gen. nov.

Candidatus Nugivosa (NL. fem. n. *Nugivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002733105*. The type species for the genus is *Candidatus* Nugivosa adcubago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nugivosa antiritudo sp. nov.

Candidatus Nugivosa antiritudo (NL. fem. n. *antiritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp002733715*. The type genome for the species is the GenBank assembly GCA_002733715.1. The GC content of the type genome is 40.23 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Nugivosa capabisca sp. nov.

Candidatus Nugivosa capabisca (NL. fem. n. *capabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp003645385*. The type genome for the species is the GenBank assembly GCA_003645385.1. The GC content of the type genome is 40.2 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Nugivosa denecibra sp. nov.

Candidatus Nugivosa denecibra (NL. fem. n. *denecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp011053005*. The type genome for the species is the GenBank assembly GCA_011053005.1. The GC content of the type genome is 40.11 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Nugivosa dicibifica sp. nov.

Candidatus Nugivosa dicibifica (NL. fem. n. *dicibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp003645305*. The type genome for the species is the GenBank assembly GCA_003645305.1. The GC content of the type genome is 41.83 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Nugivosa expopatica sp. nov.

Candidatus Nugivosa expopatica (NL. fem. n. *expopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp002733335*. The type genome for the species is the GenBank assembly GCA_002733335.1. The GC content of the type genome is 40.17 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Nugivosa faviledo sp. nov.

Candidatus Nugivosa faviledo (NL. fem. n. *faviledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp002733105*. The type genome for the species is the GenBank assembly GCA_002733105.1. The GC content of the type genome is 40.04 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Nugivosa lavabitio sp. nov.

Candidatus Nugivosa lavabitio (NL. fem. n. *lavabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp013215775*. The type genome for the species is the GenBank assembly GCA_013215775.1. The GC content of the type genome is 40.52 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Nugivosa megaletta sp. nov.

Candidatus Nugivosa megaletta (NL. fem. n. *megaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp002402245*. The type genome for the species is the GenBank assembly GCA_002402245.1. The GC content of the type genome is 39.91 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Nugivosa ridibibula sp. nov.

Candidatus Nugivosa ridibibula (NL. fem. n. *ridibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp013139345*. The type genome for the species is the GenBank assembly GCA_013139345.1. The GC content of the type genome is 40.13 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Nugivosa susicitoga sp. nov.

Candidatus Nugivosa susicitoga (NL. fem. n. *susicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733105 sp002733505*. The type genome for the species is the GenBank assembly GCA_002733505.1. The GC content of the type genome is 41.07 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Nugivula rubicitrix sp. nov.

Candidatus Nugivula rubicitrix (NL. fem. n. *rubicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABVY01 sp011777135*. The type genome for the species is the GenBank assembly GCA_011777135.1. The GC content of the type genome is 46.89 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Nugivula gen. nov.

Candidatus Nugivula (NL. fem. n. *Nugivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABVY01*. The type species for the genus is *Candidatus* Nugivula rubicitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAABVY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivulaceae.

Description of *Candidatus* Nugivulaceae fam. nov.

Candidatus Nugivulaceae (NL. fem. n. *Nugivulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAABVY01*. The type genus for the taxon is *Candidatus* Nugivula .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIYYT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Perexidales.

Description of *Candidatus* Nugivula vitifax sp. nov.

Candidatus Nugivula vitifax (NL. fem. n. *vitifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABVY01 sp011056555*. The type genome for the species is the GenBank assembly GCA_011056555.1. The GC content of the type genome is 48.62 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Nutabana ensigibula sp. nov.

Candidatus Nutabana ensigibula (NL. fem. n. *ensigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1370 sp009774615*. The type genome for the species is the GenBank assembly GCA_009774615.1. The GC content of the type genome is 44.8 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Nutabana gen. nov.

Candidatus Nutabana (NL. fem. n. *Nutabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1370*. The type species for the genus is *Candidatus* Nutabana ensigibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nutabana mirabiforma sp. nov.

Candidatus Nutabana mirabiforma (NL. fem. n. *mirabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1370 sp900551135*. The type genome for the species is the GenBank assembly GCA_900551135.1. The GC content of the type genome is 44.69 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Nutabana sanabatio sp. nov.

Candidatus Nutabana sanabatio (NL. fem. n. *sanabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1370 sp900542035*. The type genome for the species is the GenBank assembly GCA_900542035.1. The GC content of the type genome is 44.92 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Nutabaria utrolitas sp. nov.

Candidatus Nutabaria utrolitas (NL. fem. n. *utrolitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W111 sp011191985*. The type genome for the species is the GenBank assembly GCA_011191985.1. The GC content of the type genome is 53.47 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Nutabaria gen. nov.

Candidatus Nutabaria (NL. fem. n. *Nutabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W111*. The type species for the genus is *Candidatus* Nutabaria utrolitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *W111*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nutabariaceae.

Description of *Candidatus* Nutabariaceae fam. nov.

Candidatus Nutabariaceae (NL. fem. n. *Nutabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *W111*. The type genus for the taxon is *Candidatus* Nutabaria .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Nutabella cobalimonia sp. nov.

Candidatus Nutabella cobalimonia (NL. fem. n. *cobalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABZFP01 sp014237395*. The type genome for the species is the GenBank assembly GCA_014237395.1. The GC content of the type genome is 56.0 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Nutabella gen. nov.

Candidatus Nutabella (NL. fem. n. *Nutabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABZFP01*. The type species for the genus is *Candidatus* Nutabella cobalimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5852*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Forabidaceae.

Description of *Candidatus* Nutabia bicubousia sp. nov.

Candidatus Nutabia bicubousia (NL. fem. n. *bicubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-41-12 sp002787075*. The type genome for the species is the GenBank assembly GCA_001872435.1. The GC content of the type genome is 40.97 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Nutabia gen. nov.

Candidatus Nutabia (NL. fem. n. *Nutabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-41-12*. The type species for the genus is *Candidatus* Nutabia bicubousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2169*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacosaceae.

Description of *Candidatus* Nutabida appacousia sp. nov.

Candidatus Nutabida appacousia (NL. fem. n. *appacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp903847325*. The type genome for the species is the GenBank assembly GCA_903847325.1. The GC content of the type genome is 51.04 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Nutabida gen. nov.

Candidatus Nutabida (NL. fem. n. *Nutabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NBD-18*. The type species for the genus is *Candidatus* Nutabida appacousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nutabida ascalastra sp. nov.

Candidatus Nutabida ascalastra (NL. fem. n. *ascalastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp013205565*. The type genome for the species is the GenBank assembly GCA_013205565.1. The GC content of the type genome is 53.03 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Nutabida debucugo sp. nov.

Candidatus Nutabida debucugo (NL. fem. n. *debucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp903821335*. The type genome for the species is the GenBank assembly GCA_903903435.1. The GC content of the type genome is 58.25 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Nutabida doxolitica sp. nov.

Candidatus Nutabida doxolitica (NL. fem. n. *doxolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp003507735*. The type genome for the species is the GenBank assembly RS_GCF_010499255.1. The GC content of the type genome is 50.86 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Nutabida ensigimonas sp. nov.

Candidatus Nutabida ensigimonas (NL. fem. n. *ensigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp903903735*. The type genome for the species is the GenBank assembly GCA_903903735.1. The GC content of the type genome is 53.14 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Nutabida insufilenta sp. nov.

Candidatus Nutabida insufilenta (NL. fem. n. *insufilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp903929925*. The type genome for the species is the GenBank assembly GCA_903929925.1. The GC content of the type genome is 53.09 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Nutabida lupanousia sp. nov.

Candidatus Nutabida lupanousia (NL. fem. n. *lupanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp903932425*. The type genome for the species is the GenBank assembly GCA_903932425.1. The GC content of the type genome is 52.67 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Nutabida lutuliforma sp. nov.

Candidatus Nutabida lutuliforma (NL. fem. n. *lutuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp003003055*. The type genome for the species is the GenBank assembly GCA_903884595.1. The GC content of the type genome is 51.04 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Nutabida maxumitio sp. nov.

Candidatus Nutabida maxumitio (NL. fem. n. *maxumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp002292845*. The type genome for the species is the GenBank assembly GCA_002292845.1. The GC content of the type genome is 52.27 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Nutabida peridicula sp. nov.

Candidatus Nutabida peridicula (NL. fem. n. *peridicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp903865015*. The type genome for the species is the GenBank assembly GCA_903865015.1. The GC content of the type genome is 50.83 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Nutabida periditoga sp. nov.

Candidatus Nutabida periditoga (NL. fem. n. *periditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp903958565*. The type genome for the species is the GenBank assembly GCA_903953995.1. The GC content of the type genome is 53.11 %

and the genome length is 3.25 Mbp.

Description of *Candidatus* Nutabida ranunentia sp. nov.

Candidatus Nutabida ranunentia (NL. fem. n. *ranunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp903894155*. The type genome for the species is the GenBank assembly GCA_903911485.1. The GC content of the type genome is 62.07 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Nutabida saxopicella sp. nov.

Candidatus Nutabida saxopicella (NL. fem. n. *saxopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp903924715*. The type genome for the species is the GenBank assembly GCA_903924715.1. The GC content of the type genome is 51.79 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Nutabida vehemisca sp. nov.

Candidatus Nutabida vehemisca (NL. fem. n. *vehemisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBD-18 sp002737415*. The type genome for the species is the GenBank assembly GCA_002737415.1. The GC content of the type genome is 53.08 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Nutabosa nicomimonas sp. nov.

Candidatus Nutabosa nicomimonas (NL. fem. n. *nicomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWMF01 sp903913785*. The type genome for the species is the GenBank assembly GCA_903913785.1. The GC content of the type genome is 43.57 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Nutabosa gen. nov.

Candidatus Nutabosa (NL. fem. n. *Nutabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWMF01*. The type species for the genus is *Candidatus* Nutabosa nicomimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6821*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Retecariaceae.

Description of *Candidatus* Nutabosa roraritas sp. nov.

Candidatus Nutabosa roraritas (NL. fem. n. *roraritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWMF01 sp008932965*. The type genome for the species is the GenBank assembly GCA_008932965.1. The GC content of the type genome is 42.77 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Nutabula nutabicella sp. nov.

Candidatus Nutabula nutabicella (NL. fem. n. *nutabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002779425 sp002779425*. The type genome for the species is the GenBank assembly GCA_002790255.1. The GC content of the type genome is 32.87 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Nutabula gen. nov.

Candidatus Nutabula (NL. fem. n. *Nutabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002779425*. The type species for the genus is *Candidatus* Nutabula nutabicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-41-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Baditosaceae.

Description of *Candidatus* Nutamana adhinugo sp. nov.

Candidatus Nutamana adhinugo (NL. fem. n. *adhinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1361 sp002070905*. The type genome for the species is the GenBank assembly GCA_002070905.1. The GC content of the type genome is 37.06 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Nutamana gen. nov.

Candidatus Nutamana (NL. fem. n. *Nutamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1361*. The type species for the genus is *Candidatus* Nutamana adhinugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Nutamana defunisca sp. nov.

Candidatus Nutamana defunisca (NL. fem. n. *defunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1361 sp002306335*. The type genome for the species is the GenBank assembly GCA_002071265.1. The GC content of the type genome is 35.23 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Nutamana lucerivita sp. nov.

Candidatus Nutamana lucerivita (NL. fem. n. *lucerivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1361 sp002069815*. The type genome for the species is the GenBank assembly GCA_002069815.1. The GC content of the type genome is 37.02 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Nutamaria manibitoga sp. nov.

Candidatus Nutamaria manibitoga (NL. fem. n. *manibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11703 sp001822075*. The type genome for the species is the GenBank assembly GCA_001822155.1. The GC content of the type genome is 36.77 % and the genome length is 0.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Nutamaria gen. nov.

Candidatus Nutamaria (NL. fem. n. *Nutamaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11703*. The type species for the genus is *Candidatus* Nutamaria manibitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Nutamia bicinilenta sp. nov.

Candidatus Nutamia bicinilenta (NL. fem. n. *bicinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB20 sp001567355*. The type genome for the species is the GenBank assembly GCA_001567355.1. The GC content of the type genome is 49.56 % and the genome length is 1.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Nutamia gen. nov.

Candidatus Nutamia (NL. fem. n. *Nutamia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB20*. The type species for the genus is *Candidatus* Nutamia bicinilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Nutamiaceae.

Description of *Candidatus* Nutamiaceae fam. nov.

Candidatus Nutamiaceae (NL. fem. n. *Nutamiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OLB20.* The type genus for the taxon is *Candidatus* Nutamia .

According to the original version of GTDB R06-RS202, this family belongs to the order *B142*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lapilulales.

Description of *Candidatus* Nutamosa blactifica sp. nov.

Candidatus Nutamosa blactifica (NL. fem. n. *blactifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINEC01 sp903881665*. The type genome for the species is the GenBank assembly GCA_903881665.1. The GC content of the type genome is 36.98 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Nutamosa gen. nov.

Candidatus Nutamosa (NL. fem. n. *Nutamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINEC01*. The type species for the genus is *Candidatus* Nutamosa blactifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehiciaceae.

Description of *Candidatus* Nutamosa chernifica sp. nov.

Candidatus Nutamosa chernifica (NL. fem. n. *chernifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINEC01 sp903847585*. The type genome for the species is the

GenBank assembly GCA_903847585.1. The GC content of the type genome is 35.69 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Nutamosa detorisca sp. nov.

Candidatus Nutamosa detorisca (NL. fem. n. *detorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINEC01 sp903922455*. The type genome for the species is the GenBank assembly GCA_903892015.1. The GC content of the type genome is 37.81 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Nutamula semigatica sp. nov.

Candidatus Nutamula semigatica (NL. fem. n. *semigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9722 sp900315015*. The type genome for the species is the GenBank assembly GCA_003520225.1. The GC content of the type genome is 38.49 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Nutamula gen. nov.

Candidatus Nutamula (NL. fem. n. *Nutamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9722*. The type species for the genus is *Candidatus* Nutamula semigatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obambella forinigena sp. nov.

Candidatus Obambella forinigena (NL. fem. n. *forinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXZI01 sp012719955*. The type genome for the species is the GenBank assembly GCA_012719955.1. The GC content of the type genome is 63.52 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Obambella gen. nov.

Candidatus Obambella (NL. fem. n. *Obambella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXZI01*. The type species for the genus is *Candidatus* Obambella forinigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWPN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifidaceae.

Description of *Candidatus* Obambia lubenedo sp. nov.

Candidatus Obambia lubenedo (NL. fem. n. *lubenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDCW01 sp013287905*. The type genome for the species is the GenBank assembly GCA_013287905.1. The GC content of the type genome is 42.08 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Obambia gen. nov.

Candidatus Obambia (NL. fem. n. *Obambia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDCW01*. The type species for the genus is *Candidatus* Obambia lubenedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obambida tabitimonas sp. nov.

Candidatus Obambida tabitimonas (NL. fem. n. *tabitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1762 sp002314755*. The type genome for the species is the GenBank assembly GCA_002314755.1. The GC content of the type genome is 50.93 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Obambida gen. nov.

Candidatus Obambida (NL. fem. n. *Obambida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1762*. The type species for the genus is *Candidatus* Obambida tabitimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obambosa benepitudo sp. nov.

Candidatus Obambosa benepitudo (NL. fem. n. *benepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM522 sp002869665*. The type genome for the species is the GenBank assembly GCA_002869665.1. The GC content of the type genome is 56.23 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Obambosa gen. nov.

Candidatus Obambosa (NL. fem. n. *Obambosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM522*. The type species for the genus is *Candidatus* Obambosa benepitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obfenaria obtenessa sp. nov.

Candidatus Obfenaria obtenessa (NL. fem. n. *obtenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WSYB01 sp009773645*. The type genome for the species is the GenBank assembly GCA_009773645.1. The GC content of the type genome is 55.33 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Obfenaria gen. nov.

Candidatus Obfenaria (NL. fem. n. *Obfenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WSYB01*. The type species for the genus is *Candidatus* Obfenaria obtenessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obfenella cenacitura sp. nov.

Candidatus Obfenella cenacitura (NL. fem. n. *cenacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHNF01 sp004295085*. The type genome for the species is the GenBank assembly GCA_004295085.1. The GC content of the type genome is 70.96 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Obfenella gen. nov.

Candidatus Obfenella (NL. fem. n. *Obfenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHNF01*. The type species for the genus is *Candidatus* Obfenella cenacitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacellaceae.

Description of *Candidatus* Obfenia bisacitia sp. nov.

Candidatus Obfenia bisacitia (NL. fem. n. *bisacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMKK01 sp014380115*. The type genome for the species is the GenBank assembly GCA_014380115.1. The GC content of the type genome is 65.96 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Obfenia gen. nov.

Candidatus Obfenia (NL. fem. n. *Obfenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMKK01*. The type species for the genus is *Candidatus* Obfenia bisacitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obfenosa tenebitas sp. nov.

Candidatus Obfenosa tenebitas (NL. fem. n. *tenebitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDGM01 sp013286045*. The type genome for the species is the GenBank assembly GCA_013286045.1. The GC content of the type genome is 57.03 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Obfenosa gen. nov.

Candidatus Obfenosa (NL. fem. n. *Obfenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDGM01*. The type species for the genus is *Candidatus* Obfenosa tenebitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nitelariaceae.

Description of *Candidatus* Obfenula tenemax sp. nov.

Candidatus Obfenula tenemax (NL. fem. n. *tenemax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J095 sp003695455*. The type genome for the species is the GenBank assembly GCA_003695455.1. The GC content of the type genome is 56.54 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Obfenula gen. nov.

Candidatus Obfenula (NL. fem. n. *Obfenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *J095*. The type species for the genus is *Candidatus* Obfenula tenemax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J111*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifariaceae.

Description of *Candidatus* Obfirana disidicula sp. nov.

Candidatus Obfirana disidicula (NL. fem. n. *disidicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZFC01 sp012511955*. The type genome for the species is the GenBank assembly GCA_012511955.1. The GC content of the type genome is 40.98 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Obfirana gen. nov.

Candidatus Obfirana (NL. fem. n. *Obfirana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZFC01*. The type species for the genus is *Candidatus* Obfirana disidicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obfirella cibaritio sp. nov.

Candidatus Obfirella cibaritio (NL. fem. n. *cibaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1422 sp012515135*. The type genome for the species is the GenBank assembly GCA_012515135.1. The GC content of the type genome is 43.03 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Obfirella gen. nov.

Candidatus Obfirella (NL. fem. n. *Obfirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1422*. The type species for the genus is *Candidatus* Obfirella cibaritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obfirella velivatio sp. nov.

Candidatus Obfirella velivatio (NL. fem. n. *velivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1422 sp002304835*. The type genome for the species is the GenBank assembly GCA_002304835.1. The GC content of the type genome is 42.51 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Obfirida ludifilenta sp. nov.

Candidatus Obfirida ludifilenta (NL. fem. n. *ludifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6189 sp002422745*. The type genome for the species is the GenBank assembly GCA_002422745.1. The GC content of the type genome is 58.25 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Obfirida gen. nov.

Candidatus Obfirida (NL. fem. n. *Obfirida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6189*. The type species for the genus is *Candidatus* Obfirida ludifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conipariaceae.

Description of *Candidatus* Obfirosa camililenta sp. nov.

Candidatus Obfirosa camililenta (NL. fem. n. *camililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ESFC-1 sp000380225*. The type genome for the species is the GenBank assembly RS_GCF_000380225.1. The GC content of the type genome is 46.51

% and the genome length is 5.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "shipworm (Teredinidae) gill".

Description of *Candidatus* Obfirosa gen. nov.

Candidatus Obfirosa (NL. fem. n. *Obfirosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ESFC-1*. The type species for the genus is *Candidatus* Obfirosa camililenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obfirula tubicago sp. nov.

Candidatus Obfirula tubicago (NL. fem. n. *tubicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTT01 sp012031335*. The type genome for the species is the GenBank assembly GCA_012031335.1. The GC content of the type genome is 38.74 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Obfirula gen. nov.

Candidatus Obfirula (NL. fem. n. *Obfirula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUTT01*. The type species for the genus is *Candidatus* Obfirula tubicago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4181*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negidiaceae.

Description of *Candidatus* Obfusana utricilenta sp. nov.

Candidatus Obfusana utricilenta (NL. fem. n. *utricilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2784 sp002352285*. The type genome for the species is the GenBank assembly GCA_002352285.1. The GC content of the type genome is 62.4 %

and the genome length is 2.63 Mbp.

Description of *Candidatus* Obfusana gen. nov.

Candidatus Obfusana (NL. fem. n. *Obfusana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2784*. The type species for the genus is *Candidatus* Obfusana utricilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obfusaria asporitas sp. nov.

Candidatus Obfusaria asporitas (NL. fem. n. *asporitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JN-1 sp003600355*. The type genome for the species is the GenBank assembly RS_GCF_003600355.1. The GC content of the type genome is 30.98 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Obfusaria gen. nov.

Candidatus Obfusaria (NL. fem. n. *Obfusaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JN-1*. The type species for the genus is *Candidatus* Obfusaria asporitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obfusaria bipiniforma sp. nov.

Candidatus Obfusaria bipiniforma (NL. fem. n. *bipiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JN-1 sp003718715*. The type genome for the species is the GenBank assembly RS_GCF_003718715.1. The GC content of the type genome is 30.68 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Obfusella embamibula sp. nov.

Candidatus Obfusella embamibula (NL. fem. n. *embamibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J25 sp004343725*. The type genome for the species is the GenBank assembly RS_GCF_004343725.1. The GC content of the type genome is 49.56 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Obfusella gen. nov.

Candidatus Obfusella (NL. fem. n. *Obfusella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J25*. The type species for the genus is *Candidatus* Obfusella embamibula .

According to GTDB R06-RS202, this genus belongs to the family _B.

Description of *Candidatus* Obfusida adhosastra sp. nov.

Candidatus Obfusida adhosastra (NL. fem. n. *adhosastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-41-10 sp001805465*. The type genome for the species is the GenBank assembly GCA_001805465.1. The GC content of the type genome is 39.71 % and the genome length is 1.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Obfusida gen. nov.

Candidatus Obfusida (NL. fem. n. *Obfusida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-41-10*. The type species for the genus is *Candidatus* Obfusida adhosastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Obfusosa domigilenta sp. nov.

Candidatus Obfusosa domigilenta (NL. fem. n. *domigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2707145 sp002707145*. The type genome for the species is the GenBank assembly GCA_002707145.1. The GC content of the type genome is 33.98 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Obfusosa gen. nov.

Candidatus Obfusosa (NL. fem. n. *Obfusosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2707145*. The type species for the genus is *Candidatus* Obfusosa domigilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7430*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desaciaceae.

Description of *Candidatus* Oblanana fumifatica sp. nov.

Candidatus Oblanana fumifatica (NL. fem. n. *fumifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-0-20-45-22 sp002774355*. The type genome for the species is the GenBank assembly GCA_002774355.1. The GC content of the type genome is 44.57 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Oblanana gen. nov.

Candidatus Oblanana (NL. fem. n. *Oblanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-0-20-45-22*. The type species for the genus is *Candidatus* Oblanana fumifatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semunellaceae.

Description of *Candidatus* Oblanaria desucitura sp. nov.

Candidatus Oblanaria desucitura (NL. fem. n. *desucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXAH01 sp003565945*. The type genome for the species is the GenBank assembly GCA_003565945.1. The GC content of the type genome is 39.49 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Oblanaria gen. nov.

Candidatus Oblanaria (NL. fem. n. *Oblanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXAH01*. The type species for the genus is *Candidatus* Oblanaria desucitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-171*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homoliaceae.

Description of *Candidatus* Oblanida irredastra sp. nov.

Candidatus Oblanida irredastra (NL. fem. n. *irredastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6166 sp002435795*. The type genome for the species is the GenBank assembly GCA_002435795.1. The GC content of the type genome is 41.7 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Oblanida gen. nov.

Candidatus Oblanida (NL. fem. n. *Oblanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6166*. The type species for the genus is *Candidatus* Oblanida irredastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblanula dupunilenta sp. nov.

Candidatus Oblanula dupunilenta (NL. fem. n. *dupunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8783 sp003516955*. The type genome for the species is the GenBank assembly GCA_003516955.1. The GC content of the type genome is 68.2 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Oblanula gen. nov.

Candidatus Oblanula (NL. fem. n. *Oblanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8783*. The type species for the genus is *Candidatus* Oblanula dupunilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblivana demogitica sp. nov.

Candidatus Oblivana demogitica (NL. fem. n. *demogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J038 sp003696565*. The type genome for the species is the GenBank assembly GCA_003696565.1. The GC content of the type genome is 45.76 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Oblivana gen. nov.

Candidatus Oblivana (NL. fem. n. *Oblivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J038*. The type species for the genus is *Candidatus* Oblivana demogitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Oblivana sacopilenta sp. nov.

Candidatus Oblivana sacopilenta (NL. fem. n. *sacopilenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J038 sp007693385*. The type genome for the species is the GenBank assembly GCA_007693385.1. The GC content of the type genome is 58.52 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Oblivaria remulilenta sp. nov.

Candidatus Oblivaria remulilenta (NL. fem. n. *remulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJK01 sp009782285*. The type genome for the species is the GenBank assembly GCA_009782285.1. The GC content of the type genome is 51.36 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Oblivaria gen. nov.

Candidatus Oblivaria (NL. fem. n. *Oblivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRJK01*. The type species for the genus is *Candidatus* Oblivaria remulilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblivaria sonabitio sp. nov.

Candidatus Oblivaria sonabitio (NL. fem. n. *sonabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJK01 sp009778415*. The type genome for the species is the GenBank assembly GCA_009778415.1. The GC content of the type genome is 51.84 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Oblivella adhorifica sp. nov.

Candidatus Oblivella adhorifica (NL. fem. n. *adhorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-360 sp003165465*. The type genome for the species is the GenBank assembly GCA_003165465.1. The GC content of the type genome is 58.0 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Oblivella gen. nov.

Candidatus Oblivella (NL. fem. n. *Oblivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-360*. The type species for the genus is *Candidatus* Oblivella adhorifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Oblivella catapessa sp. nov.

Candidatus Oblivella catapessa (NL. fem. n. *catapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-360 sp003161495*. The type genome for the species is the GenBank assembly GCA_003161495.1. The GC content of the type genome is 56.85 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Oblivosa fetuligena sp. nov.

Candidatus Oblivosa fetuligena (NL. fem. n. *fetuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGU01 sp011525915*. The type genome for the species is the GenBank assembly GCA_011525915.1. The GC content of the type genome is 54.07 % and the genome length is 7.46 Mbp.

Description of *Candidatus* Oblivosa gen. nov.

Candidatus Oblivosa (NL. fem. n. *Oblivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAADGU01*. The type species for the genus is *Candidatus* Oblivosa

fetuligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblivosa momoritas sp. nov.

Candidatus Oblivosa momoritas (NL. fem. n. *momoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGU01 sp013112725*. The type genome for the species is the GenBank assembly GCA_013112725.1. The GC content of the type genome is 56.13 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Oblivosa nubigicella sp. nov.

Candidatus Oblivosa nubigicella (NL. fem. n. *nubigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGU01 sp900696625*. The type genome for the species is the GenBank assembly GCA_900696625.1. The GC content of the type genome is 56.31 % and the genome length is 6.95 Mbp.

Description of *Candidatus* Oblivosa oblucigena sp. nov.

Candidatus Oblivosa oblucigena (NL. fem. n. *oblucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGU01 sp014584575*. The type genome for the species is the GenBank assembly GCA_014584575.1. The GC content of the type genome is 56.41 % and the genome length is 7.24 Mbp.

Description of *Candidatus* Oblivula tegimilega sp. nov.

Candidatus Oblivula tegimilega (NL. fem. n. *tegimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-38 sp005883255*. The type genome for the species is the GenBank assembly GCA_005883255.1. The GC content of the type genome is 73.64 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Oblivula gen. nov.

Candidatus Oblivula (NL. fem. n. *Oblivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-38*. The type species for the genus is *Candidatus* Oblivula tegimilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblocana impolousia sp. nov.

Candidatus Oblocana impolousia (NL. fem. n. *impolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14087 sp902784055*. The type genome for the species is the GenBank assembly GCA_902784055.1. The GC content of the type genome is 34.11 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Oblocana gen. nov.

Candidatus Oblocana (NL. fem. n. *Oblocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14087*. The type species for the genus is *Candidatus* Oblocana impolousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RUG11792*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desepulaceae.

Description of *Candidatus* Oblocana invesessa sp. nov.

Candidatus Oblocana invesessa (NL. fem. n. *invesessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14087 sp902796345*. The type genome for the species is the GenBank assembly GCA_902796345.1. The GC content of the type genome is 33.37 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Oblocana siticitura sp. nov.

Candidatus Oblocana siticitura (NL. fem. n. *siticitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14087 sp902795615*. The type genome for the species is the GenBank assembly GCA_902795615.1. The GC content of the type genome is 33.74 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Oblocaria herinisca sp. nov.

Candidatus Oblocaria herinisca (NL. fem. n. *herinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWEV01 sp002071245*. The type genome for the species is the GenBank assembly GCA_002071245.1. The GC content of the type genome is 40.67 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Oblocaria gen. nov.

Candidatus Oblocaria (NL. fem. n. *Oblocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWEV01*. The type species for the genus is *Candidatus* Oblocaria herinisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblocella atricibra sp. nov.

Candidatus Oblocella atricibra (NL. fem. n. *atricibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SABI01 sp009929055*. The type genome for the species is the GenBank assembly GCA_009929055.1. The GC content of the type genome is 37.14 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Oblocella gen. nov.

Candidatus Oblocella (NL. fem. n. *Oblocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SABI01*. The type species for the genus is *Candidatus* Oblocella atricibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblocia musuletta sp. nov.

Candidatus Oblocia musuletta (NL. fem. n. *musuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACPJA01 sp902634075*. The type genome for the species is the GenBank assembly GCA_902634075.1. The GC content of the type genome is 37.57 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Oblocia gen. nov.

Candidatus Oblocia (NL. fem. n. *Oblocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACPJA01*. The type species for the genus is *Candidatus* Oblocia musuletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11654*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refaciaceae.

Description of *Candidatus* Oblocida adcesitio sp. nov.

Candidatus Oblocida adcesitio (NL. fem. n. *adcesitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAD01 sp009780375*. The type genome for the species is the GenBank assembly GCA_009780375.1. The GC content of the type genome is 38.07 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Oblocida gen. nov.

Candidatus Oblocida (NL. fem. n. *Oblocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *WRAD01*. The type species for the genus is *Candidatus* Oblocida adcesitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Oblocida addivitura sp. nov.

Candidatus Oblocida addivitura (NL. fem. n. *addivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAD01 sp009784375*. The type genome for the species is the GenBank assembly GCA_009784375.1. The GC content of the type genome is 38.89 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Oblocida adtumibula sp. nov.

Candidatus Oblocida adtumibula (NL. fem. n. *adtumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAD01 sp009784665*. The type genome for the species is the GenBank assembly GCA_009784665.1. The GC content of the type genome is 43.98 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Oblocida cululugo sp. nov.

Candidatus Oblocida cululugo (NL. fem. n. *cululugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAD01 sp009784555*. The type genome for the species is the GenBank assembly GCA_009784555.1. The GC content of the type genome is 48.8 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Oblocida emortibra sp. nov.

Candidatus Oblocida emortibra (NL. fem. n. *emortibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *WRAD01 sp009780065*. The type genome for the species is the GenBank assembly GCA_009780065.1. The GC content of the type genome is 40.36 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Oblonana alsulousia sp. nov.

Candidatus Oblonana alsulousia (NL. fem. n. *alsulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVSN01 sp903908595*. The type genome for the species is the GenBank assembly GCA_903908595.1. The GC content of the type genome is 51.46 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Oblonana gen. nov.

Candidatus Oblonana (NL. fem. n. *Oblonana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVSN01*. The type species for the genus is *Candidatus* Oblonana alsulousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visifosaceae.

Description of *Candidatus* Oblonaria adtolitudo sp. nov.

Candidatus Oblonaria adtolitudo (NL. fem. n. *adtolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKRR01 sp007118345*. The type genome for the species is the GenBank assembly GCA_007118345.1. The GC content of the type genome is 70.01 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Oblonaria gen. nov.

Candidatus Oblonaria (NL. fem. n. *Oblonaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKRR01*. The type species for the genus is *Candidatus* Oblonaria adtolitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblonia resaliforma sp. nov.

Candidatus Oblonia resaliforma (NL. fem. n. *resaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITMJ01 sp903893545*. The type genome for the species is the GenBank assembly GCA_903893545.1. The GC content of the type genome is 46.74 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Oblonia gen. nov.

Candidatus Oblonia (NL. fem. n. *Oblonia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITMJ01*. The type species for the genus is *Candidatus* Oblonia resaliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Oblonula cerimiforma sp. nov.

Candidatus Oblonula cerimiforma (NL. fem. n. *cerimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1387 sp900551295*. The type genome for the species is the GenBank assembly GCA_900551295.1. The GC content of the type genome is 45.52 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Oblonula gen. nov.

Candidatus Oblonula (NL. fem. n. *Oblonula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1387*. The type species for the genus is *Candidatus* Oblonula cerimiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family

CAG-382. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Oblucana dinupitudo sp. nov.

Candidatus Oblucana dinupitudo (NL. fem. n. *dinupitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13868 sp902767365*. The type genome for the species is the GenBank assembly GCA_902767365.1. The GC content of the type genome is 25.36 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Oblucana gen. nov.

Candidatus Oblucana (NL. fem. n. *Oblucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13868*. The type species for the genus is *Candidatus* Oblucana dinupitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Oblucana intacicella sp. nov.

Candidatus Oblucana intacicella (NL. fem. n. *intacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13868 sp902793375*. The type genome for the species is the GenBank assembly GCA_902793375.1. The GC content of the type genome is 25.86 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Oblucaria angipisca sp. nov.

Candidatus Oblucaria angipisca (NL. fem. n. *angipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACLZJ01 sp014253075*. The type genome for the species is the

GenBank assembly RS_GCF_014253075.1. The GC content of the type genome is 56.42 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Oblucaria gen. nov.

Candidatus Oblucaria (NL. fem. n. *Oblucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACLZJ01*. The type species for the genus is *Candidatus* Oblucaria angipisca .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Oblucella defunugo sp. nov.

Candidatus Oblucella defunugo (NL. fem. n. *defunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2724675 sp002724675*. The type genome for the species is the GenBank assembly GCA_002724675.1. The GC content of the type genome is 62.56 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Oblucella gen. nov.

Candidatus Oblucella (NL. fem. n. *Oblucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2724675*. The type species for the genus is *Candidatus* Oblucella defunugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9615*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifiaceae.

Description of *Candidatus* Oblucia ignobax sp. nov.

Candidatus Oblucia ignobax (NL. fem. n. *ignobax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OHK22 sp013538855*. The type genome for the species is the GenBank assembly GCA_013538855.1. The GC content of the type genome is 62.59 %

and the genome length is 6.34 Mbp.

Description of *Candidatus* Oblucia gen. nov.

Candidatus Oblucia (NL. fem. n. *Oblucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OHK22*. The type species for the genus is *Candidatus* Oblucia ignobax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblucida inbecago sp. nov.

Candidatus Oblucida inbecago (NL. fem. n. *inbecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHUA01 sp009377445*. The type genome for the species is the GenBank assembly GCA_009377445.1. The GC content of the type genome is 65.93 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Oblucida gen. nov.

Candidatus Oblucida (NL. fem. n. *Oblucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHUA01*. The type species for the genus is *Candidatus* Oblucida inbecago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8366*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decenellaceae.

Description of *Candidatus* Oblucosa locupitia sp. nov.

Candidatus Oblucosa locupitia (NL. fem. n. *locupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWDO01 sp002070605*. The type genome for the species is the GenBank assembly GCA_002070605.1. The GC content of the type genome is 37.02 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Oblucosa gen. nov.

Candidatus Oblucosa (NL. fem. n. *Oblucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWDO01*. The type species for the genus is *Candidatus* Oblucosa locupitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWE2-31-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemanaceae.

Description of *Candidatus* Oblucula annicivita sp. nov.

Candidatus Oblucula annicivita (NL. fem. n. *annicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HLUCCA08 sp003129565*. The type genome for the species is the GenBank assembly RS_GCF_003129565.1. The GC content of the type genome is 63.26 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Oblucula gen. nov.

Candidatus Oblucula (NL. fem. n. *Oblucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HLUCCA08*. The type species for the genus is *Candidatus* Oblucula annicivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oblucula cituvitio sp. nov.

Candidatus Oblucula cituvitio (NL. fem. n. *cituvitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HLUCCA08 sp001314655*. The type genome for the species is the GenBank assembly GCA_001314655.1. The GC content of the type genome is 67.62 % and the genome length is 3.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-A from microbial mat sample; contains cyanobacterium Phormidesmis priestleyi ANA and

associated heterotrophs".

Description of *Candidatus* Oblucula fatifivita sp. nov.

Candidatus Oblucula fatifivita (NL. fem. n. *fatifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HLUCCA08 sp009908505*. The type genome for the species is the GenBank assembly GCA_009908505.1. The GC content of the type genome is 65.05 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Oblucula rubicitas sp. nov.

Candidatus Oblucula rubicitas (NL. fem. n. *rubicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HLUCCA08 sp002094885*. The type genome for the species is the GenBank assembly RS_GCF_002094885.1. The GC content of the type genome is 67.56 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Obmurana defacicula sp. nov.

Candidatus Obmurana defacicula (NL. fem. n. *defacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUS01 sp012520055*. The type genome for the species is the GenBank assembly GCA_012520055.1. The GC content of the type genome is 28.5 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Obmurana gen. nov.

Candidatus Obmurana (NL. fem. n. *Obmurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUUS01*. The type species for the genus is *Candidatus* Obmurana defacicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Obmurana oppanetta sp. nov.

Candidatus Obmurana oppanetta (NL. fem. n. *oppanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUS01 sp012841465*. The type genome for the species is the GenBank assembly GCA_012841465.1. The GC content of the type genome is 27.31 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Obmurella arcitago sp. nov.

Candidatus Obmurella arcitago (NL. fem. n. *arcitago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-7108 sp001858025*. The type genome for the species is the GenBank assembly RS_GCF_001858025.1. The GC content of the type genome is 39.19 % and the genome length is 5.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "saltwater lake".

Description of *Candidatus* Obmurella gen. nov.

Candidatus Obmurella (NL. fem. n. *Obmurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-7108*. The type species for the genus is *Candidatus* Obmurella arcitago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obmurella doxolicella sp. nov.

Candidatus Obmurella doxolicella (NL. fem. n. *doxolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-7108 sp000332135*. The type genome for the species is the GenBank assembly RS_GCF_000332135.1. The GC content of the type genome is 38.78 % and the genome length is 5.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "intertidal zone".

Description of *Candidatus* Obmurida decuciforma sp. nov.

Candidatus Obmurida decuciforma (NL. fem. n. *decuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDL01 sp013817045*. The type genome for the species is the GenBank assembly GCA_013817045.1. The GC content of the type genome is 64.3 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Obmurida gen. nov.

Candidatus Obmurida (NL. fem. n. *Obmurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDDL01*. The type species for the genus is *Candidatus* Obmurida decuciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHSQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recumanaceae.

Description of *Candidatus* Obmurida excaritura sp. nov.

Candidatus Obmurida excaritura (NL. fem. n. *excaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDL01 sp013694625*. The type genome for the species is the GenBank assembly GCA_013694625.1. The GC content of the type genome is 63.87 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Obmurosa adfabibula sp. nov.

Candidatus Obmurosa adfabibula (NL. fem. n. *adfabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXGI01 sp012267505*. The type genome for the species is the GenBank assembly GCA_012267505.1. The GC content of the type genome is 68.39 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Obmurosa gen. nov.

Candidatus Obmurosa (NL. fem. n. *Obmurosa* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXGI01*. The type species for the genus is *Candidatus* Obmurosa adfabibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Obmurula panififica sp. nov.

Candidatus Obmurula panififica (NL. fem. n. *panififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *L3-3HA sp008710095*. The type genome for the species is the GenBank assembly RS_GCF_008710095.1. The GC content of the type genome is 57.1 % and the genome length is 5.89 Mbp.

Description of *Candidatus* Obmurula gen. nov.

Candidatus Obmurula (NL. fem. n. *Obmurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *L3-3HA*. The type species for the genus is *Candidatus* Obmurula panififica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obmutana benivicula sp. nov.

Candidatus Obmutana benivicula (NL. fem. n. *benivicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1926 sp002337215*. The type genome for the species is the GenBank assembly GCA_002337215.1. The GC content of the type genome is 66.45 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Obmutana gen. nov.

Candidatus Obmutana (NL. fem. n. *Obmutana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1926*. The type species for the genus is *Candidatus* Obmutana benivicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Obmutana tricliforma sp. nov.

Candidatus Obmutana tricliforma (NL. fem. n. *tricliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1926 sp002480345*. The type genome for the species is the GenBank assembly GCA_002480345.1. The GC content of the type genome is 67.85 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Obmutaria fecunivita sp. nov.

Candidatus Obmutaria fecunivita (NL. fem. n. *fecunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6128 sp002423325*. The type genome for the species is the GenBank assembly GCA_002423325.1. The GC content of the type genome is 65.15 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Obmutaria gen. nov.

Candidatus Obmutaria (NL. fem. n. *Obmutaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6128*. The type species for the genus is *Candidatus* Obmutaria fecunivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1429*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depacidaceae.

Description of *Candidatus* Obmutella adpanisca sp. nov.

Candidatus Obmutella adpanisca (NL. fem. n. *adpanisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWVH01 sp003563465*. The type genome for the species is the GenBank assembly GCA_003563465.1. The GC content of the type genome is 61.37 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Obmutella gen. nov.

Candidatus Obmutella (NL. fem. n. *Obmutella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWVH01*. The type species for the genus is *Candidatus* Obmutella adpanisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLCP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depasariaceae.

Description of *Candidatus* Obmutia atricimonas sp. nov.

Candidatus Obmutia atricimonas (NL. fem. n. *atricimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUUA01 sp012841765*. The type genome for the species is the GenBank assembly GCA_012841765.1. The GC content of the type genome is 27.64 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Obmutia gen. nov.

Candidatus Obmutia (NL. fem. n. *Obmutia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUUA01*. The type species for the genus is *Candidatus* Obmutia atricimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Obmutida encoledo sp. nov.

Candidatus Obmutida encoledo (NL. fem. n. *encoledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFRO01 sp013141125*. The type genome for the species is the GenBank assembly GCA_013141125.1. The GC content of the type genome is 48.52 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Obmutida gen. nov.

Candidatus Obmutida (NL. fem. n. *Obmutida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFRO01*. The type species for the genus is *Candidatus* Obmutida encoledo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obmutula epogditio sp. nov.

Candidatus Obmutula epogditio (NL. fem. n. *epogditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-33 sp013215105*. The type genome for the species is the GenBank assembly GCA_013215105.1. The GC content of the type genome is 31.63 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Obmutula gen. nov.

Candidatus Obmutula (NL. fem. n. *Obmutula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-33*. The type species for the genus is *Candidatus* Obmutula epogditio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnoxana offunetta sp. nov.

Candidatus Obnoxana offunetta (NL. fem. n. *offunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHL01 sp013298365*. The type genome for the species is the GenBank assembly GCA_013298365.1. The GC content of the type genome is 36.82 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Obnoxana gen. nov.

Candidatus Obnoxana (NL. fem. n. *Obnoxana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHL01*. The type species for the genus is *Candidatus* Obnoxana offunetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J057*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desepiaceae.

Description of *Candidatus* Obnoxaria dedigugo sp. nov.

Candidatus Obnoxaria dedigugo (NL. fem. n. *dedigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1309 sp002307185*. The type genome for the species is the GenBank assembly GCA_002307185.1. The GC content of the type genome is 42.62 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Obnoxaria gen. nov.

Candidatus Obnoxaria (NL. fem. n. *Obnoxaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1309*. The type species for the genus is *Candidatus* Obnoxaria dedigugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnoxaria innecibra sp. nov.

Candidatus Obnoxaria innecibra (NL. fem. n. *innecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1309 sp001897035*. The type genome for the species is the GenBank assembly GCA_001897035.1. The GC content of the type genome is 45.0 % and the genome length is 3.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Obnoxida hexamicella sp. nov.

Candidatus Obnoxida hexamicella (NL. fem. n. *hexamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWCR01 sp011333995*. The type genome for the species is the GenBank assembly GCA_011333995.1. The GC content of the type genome is 33.13 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Obnoxida gen. nov.

Candidatus Obnoxida (NL. fem. n. *Obnoxida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWCR01*. The type species for the genus is *Candidatus* Obnoxida hexamicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-56-20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagosaceae.

Description of *Candidatus* Obnoxida intenivita sp. nov.

Candidatus Obnoxida intenivita (NL. fem. n. *intenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWCR01 sp903911245*. The type genome for the species is the GenBank assembly GCA_903911245.1. The GC content of the type genome is 42.38 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Obnoxosa solivitica sp. nov.

Candidatus Obnoxosa solivitica (NL. fem. n. *solivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6921 sp002450895*. The type genome for the species is the GenBank assembly GCA_002450895.1. The GC content of the type genome is 56.63 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Obnoxosa gen. nov.

Candidatus Obnoxosa (NL. fem. n. *Obnoxosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6921*. The type species for the genus is *Candidatus* Obnoxosa solivitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nicotariaceae.

Description of *Candidatus* Obnoxula admutago sp. nov.

Candidatus Obnoxula admutago (NL. fem. n. *admutago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5578 sp902795975*. The type genome for the species is the GenBank assembly GCA_902795975.1. The GC content of the type genome is 24.0 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Obnoxula gen. nov.

Candidatus Obnoxula (NL. fem. n. *Obnoxula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5578*. The type species for the genus is *Candidatus* Obnoxula admutago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Obnoxula xenodicella sp. nov.

Candidatus Obnoxula xenodicella (NL. fem. n. *xenodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5578 sp002425325*. The type genome for the species is the GenBank assembly GCA_002425325.1. The GC content of the type genome is 24.45 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Obnunana acrufilega sp. nov.

Candidatus Obnunana acrufilega (NL. fem. n. *acrufilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAZXM01 sp012959865*. The type genome for the species is the GenBank assembly GCA_012959865.1. The GC content of the type genome is 61.13 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Obnunana gen. nov.

Candidatus Obnunana (NL. fem. n. *Obnunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAZXM01*. The type species for the genus is *Candidatus* Obnunana acrufilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4427*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapiaceae.

Description of *Candidatus* Obnunana assefitica sp. nov.

Candidatus Obnunana assefitica (NL. fem. n. *assefitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAZXM01 sp012959665*. The type genome for the species is the GenBank assembly GCA_012959665.1. The GC content of the type genome is 62.12 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Obnunana deparitoga sp. nov.

Candidatus Obnunana deparitoga (NL. fem. n. *deparitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAZXM01 sp014240165*. The type genome for the species is the GenBank assembly GCA_014240165.1. The GC content of the type genome is 63.21 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Obnunaria abrumetta sp. nov.

Candidatus Obnunaria abrumetta (NL. fem. n. *abrumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KA00274 sp001552885*. The type genome for the species is the GenBank assembly RS_GCF_001552885.1. The GC content of the type genome is 39.07 % and the genome length is 1.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Obnunaria gen. nov.

Candidatus Obnunaria (NL. fem. n. *Obnunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KA00274*. The type species for the genus is *Candidatus* Obnunaria abrumetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnunaria semodilenta sp. nov.

Candidatus Obnunaria semodilenta (NL. fem. n. *semodilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KA00274 sp902373515*. The type genome for the species is the GenBank assembly GCA_902373515.1. The GC content of the type genome is 42.0 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Obnunella admoditas sp. nov.

Candidatus Obnunella admoditas (NL. fem. n. *admoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAAGGB01 sp900769285*. The type genome for the species is the

GenBank assembly RS_GCF_900769285.1. The GC content of the type genome is 65.71 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Obnunella gen. nov.

Candidatus Obnunella (NL. fem. n. *Obnunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAAGGB01*. The type species for the genus is *Candidatus* Obnunella admoditas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semilidaceae.

Description of *Candidatus* Obnunia cocolastra sp. nov.

Candidatus Obnunia cocolastra (NL. fem. n. *cocolastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6145 sp002423205*. The type genome for the species is the GenBank assembly GCA_002423205.1. The GC content of the type genome is 56.6 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Obnunia gen. nov.

Candidatus Obnunia (NL. fem. n. *Obnunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6145*. The type species for the genus is *Candidatus* Obnunia cocolastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnunia smegmatica sp. nov.

Candidatus Obnunia smegmatica (NL. fem. n. *smegmatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6145 sp009926935*. The type genome for the species is the GenBank assembly GCA_009926935.1. The GC content of the type genome is 52.89 %

and the genome length is 2.04 Mbp.

Description of *Candidatus* Obnunosa echidibula sp. nov.

Candidatus Obnunosa echidibula (NL. fem. n. *echidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-430 sp009885515*. The type genome for the species is the GenBank assembly GCA_009885515.1. The GC content of the type genome is 58.36 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Obnunosa gen. nov.

Candidatus Obnunosa (NL. fem. n. *Obnunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-430*. The type species for the genus is *Candidatus* Obnunosa echidibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnunosa excucitas sp. nov.

Candidatus Obnunosa excucitas (NL. fem. n. *excucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-430 sp013140995*. The type genome for the species is the GenBank assembly GCA_013140995.1. The GC content of the type genome is 62.5 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Obnunosa exheritudo sp. nov.

Candidatus Obnunosa exheritudo (NL. fem. n. *exheritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-430 sp003246795*. The type genome for the species is the GenBank assembly GCA_003246795.1. The GC content of the type genome is 64.43 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Obnunosa relenitica sp. nov.

Candidatus Obnunosa relenitica (NL. fem. n. *relenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-430 sp902826695*. The type genome for the species is the GenBank assembly GCA_902826695.1. The GC content of the type genome is 62.73 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Obnunula dinupilega sp. nov.

Candidatus Obnunula dinupilega (NL. fem. n. *dinupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFU01 sp009778675*. The type genome for the species is the GenBank assembly GCA_009778675.1. The GC content of the type genome is 43.04 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Obnunula gen. nov.

Candidatus Obnunula (NL. fem. n. *Obnunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFU01*. The type species for the genus is *Candidatus* Obnunula dinupilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnupana volucessa sp. nov.

Candidatus Obnupana volucessa (NL. fem. n. *volucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSUX01 sp011328915*. The type genome for the species is the GenBank assembly GCA_011328915.1. The GC content of the type genome is 60.62 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Obnupana gen. nov.

Candidatus Obnupana (NL. fem. n. *Obnupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSUX01*. The type species for the genus is *Candidatus* Obnupana volucessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnuparia antimitrix sp. nov.

Candidatus Obnuparia antimitrix (NL. fem. n. *antimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-80 sp002010725*. The type genome for the species is the GenBank assembly GCA_002010725.1. The GC content of the type genome is 44.6 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Obnuparia gen. nov.

Candidatus Obnuparia (NL. fem. n. *Obnuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-80*. The type species for the genus is *Candidatus* Obnuparia antimitrix .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Obnuparia cobalibra sp. nov.

Candidatus Obnuparia cobalibra (NL. fem. n. *cobalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-80 sp011042725*. The type genome for the species is the GenBank assembly GCA_011042725.1. The GC content of the type genome is 42.76 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Obnuparia expurisca sp. nov.

Candidatus Obnuparia expurisca (NL. fem. n. *expurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-80 sp003648765*. The type genome for the species is the

GenBank assembly GCA_003648765.1. The GC content of the type genome is 43.45 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Obnupia egregiforma sp. nov.

Candidatus Obnupia egregiforma (NL. fem. n. *egregiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKE01 sp009885695*. The type genome for the species is the GenBank assembly GCA_009885695.1. The GC content of the type genome is 57.84 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Obnupia gen. nov.

Candidatus Obnupia (NL. fem. n. *Obnupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKE01*. The type species for the genus is *Candidatus* Obnupia egregiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnupida loripimonia sp. nov.

Candidatus Obnupida loripimonia (NL. fem. n. *loripimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFJ01 sp009778865*. The type genome for the species is the GenBank assembly GCA_009778865.1. The GC content of the type genome is 40.18 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Obnupida gen. nov.

Candidatus Obnupida (NL. fem. n. *Obnupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFJ01*. The type species for the genus is *Candidatus* Obnupida loripimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnuposa exhedicella sp. nov.

Candidatus Obnuposa exhedicella (NL. fem. n. *exhedicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11783 sp902772615*. The type genome for the species is the GenBank assembly GCA_902772615.1. The GC content of the type genome is 52.45 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Obnuposa gen. nov.

Candidatus Obnuposa (NL. fem. n. *Obnuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11783*. The type species for the genus is *Candidatus* Obnuposa exhedicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obnupula desacitrix sp. nov.

Candidatus Obnupula desacitrix (NL. fem. n. *desacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKGK01 sp007117465*. The type genome for the species is the GenBank assembly GCA_007117465.1. The GC content of the type genome is 36.51 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Obnupula gen. nov.

Candidatus Obnupula (NL. fem. n. *Obnupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKGK01*. The type species for the genus is *Candidatus* Obnupula desacitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SK-Y3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifanaceae.

Description of *Candidatus* Obrigana ignomifica sp. nov.

Candidatus Obrigana ignomifica (NL. fem. n. *ignomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401725 sp002401725*. The type genome for the species is the GenBank assembly GCA_002401725.1. The GC content of the type genome is 36.54 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Obrigana gen. nov.

Candidatus Obrigana (NL. fem. n. *Obrigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2401725*. The type species for the genus is *Candidatus* Obrigana ignomifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obrigella murileda sp. nov.

Candidatus Obrigella murileda (NL. fem. n. *murileda* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10939 sp002408385*. The type genome for the species is the GenBank assembly GCA_002408385.1. The GC content of the type genome is 69.52 % and the genome length is 7.65 Mbp.

Description of *Candidatus* Obrigella gen. nov.

Candidatus Obrigella (NL. fem. n. *Obrigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10939*. The type species for the genus is *Candidatus* Obrigella murileda .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5297*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homogidaceae.

Description of *Candidatus* Obrigia apperitura sp. nov.

Candidatus Obrigia apperitura (NL. fem. n. *apperitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKZY01 sp903832025*. The type genome for the species is the GenBank assembly GCA_903832025.1. The GC content of the type genome is 61.81 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Obrigia gen. nov.

Candidatus Obrigia (NL. fem. n. *Obrigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKZY01*. The type species for the genus is *Candidatus* Obrigia apperitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Obrigida anxifatio sp. nov.

Candidatus Obrigida anxifatio (NL. fem. n. *anxifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYG01 sp013696595*. The type genome for the species is the GenBank assembly GCA_013696595.1. The GC content of the type genome is 68.57 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Obrigida gen. nov.

Candidatus Obrigida (NL. fem. n. *Obrigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCYG01*. The type species for the genus is *Candidatus* Obrigida anxifatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obrigosa andabousia sp. nov.

Candidatus Obrigosa andabousia (NL. fem. n. *andabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1178 sp003167475*. The type genome for the species is the GenBank assembly GCA_003167475.1. The GC content of the type genome is 48.27 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Obrigosa gen. nov.

Candidatus Obrigosa (NL. fem. n. *Obrigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1178*. The type species for the genus is *Candidatus* Obrigosa andabousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1178*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Obrigosaceae.

Description of *Candidatus* Obrigosaceae fam. nov.

Candidatus Obrigosaceae (NL. fem. n. *Obrigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1178.* The type genus for the taxon is *Candidatus* Obrigosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *PGYV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decinulales.

Description of *Candidatus* Obrigula rosaribra sp. nov.

Candidatus Obrigula rosaribra (NL. fem. n. *rosaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXCK01 sp003566635*. The type genome for the species is the GenBank assembly GCA_003566635.1. The GC content of the type genome is 39.49 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Obrigula gen. nov.

Candidatus Obrigula (NL. fem. n. *Obrigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXCK01*. The type species for the genus is *Candidatus* Obrigula rosaribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PXAI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapicellaceae.

Description of *Candidatus* Obsatana effacilega sp. nov.

Candidatus Obsatana effacilega (NL. fem. n. *effacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-34-10 sp002773945*. The type genome for the species is the GenBank assembly GCA_002773945.1. The GC content of the type genome is 33.53 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Obsatana gen. nov.

Candidatus Obsatana (NL. fem. n. *Obsatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-34-10*. The type species for the genus is *Candidatus* Obsatana effacilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bucolulaceae.

Description of *Candidatus* Obsatella adfirousia sp. nov.

Candidatus Obsatella adfirousia (NL. fem. n. *adfirousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXRA01 sp903921725*. The type genome for the species is the GenBank assembly GCA_903921725.1. The GC content of the type genome is 64.82 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Obsatella gen. nov.

Candidatus Obsatella (NL. fem. n. *Obsatella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXRA01*. The type species for the genus is *Candidatus* Obsatella adfirousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITYL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Podagosaceae.

Description of *Candidatus* Obsatia retecousia sp. nov.

Candidatus Obsatia retecousia (NL. fem. n. *retecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11857 sp902773225*. The type genome for the species is the GenBank assembly GCA_902773225.1. The GC content of the type genome is 47.34 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Obsatia gen. nov.

Candidatus Obsatia (NL. fem. n. *Obsatia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11857*. The type species for the genus is *Candidatus* Obsatia retecousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsatida almititia sp. nov.

Candidatus Obsatida almititia (NL. fem. n. *almititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S-15 sp009909615*. The type genome for the species is the GenBank assembly RS_GCF_009909615.1. The GC content of the type genome is 35.59 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Obsatida gen. nov.

Candidatus Obsatida (NL. fem. n. *Obsatida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *S-15*. The type species for the genus is *Candidatus* Obsatida almititia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsecana tiguratio sp. nov.

Candidatus Obsecana tiguratio (NL. fem. n. *tiguratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAURS01 sp012032135*. The type genome for the species is the GenBank assembly GCA_012032135.1. The GC content of the type genome is 47.98 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Obsecana gen. nov.

Candidatus Obsecana (NL. fem. n. *Obsecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAURS01*. The type species for the genus is *Candidatus* Obsecana tiguratio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsecaria adlacisca sp. nov.

Candidatus Obsecaria adlacisca (NL. fem. n. *adlacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHZF01 sp009692425*. The type genome for the species is the GenBank assembly GCA_009692425.1. The GC content of the type genome is 69.08 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Obsecaria gen. nov.

Candidatus Obsecaria (NL. fem. n. *Obsecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHZF01*. The type species for the genus is *Candidatus* Obsecaria adlacisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubigariaceae.

Description of *Candidatus* Obsecia sanabitudo sp. nov.

Candidatus Obsecia sanabitudo (NL. fem. n. *sanabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYYZ01 sp012515115*. The type genome for the species is the GenBank assembly GCA_012515115.1. The GC content of the type genome is 65.76 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Obsecia gen. nov.

Candidatus Obsecia (NL. fem. n. *Obsecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYYZ01*. The type species for the genus is *Candidatus* Obsecia sanabitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilulaceae.

Description of *Candidatus* Obsecida diminitia sp. nov.

Candidatus Obsecida diminitia (NL. fem. n. *diminitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINXC01 sp903854655*. The type genome for the species is the GenBank assembly GCA_903854655.1. The GC content of the type genome is 62.45 % and the genome length is 7.31 Mbp.

Description of *Candidatus* Obsecida gen. nov.

Candidatus Obsecida (NL. fem. n. *Obsecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINXC01*. The type species for the genus is *Candidatus* Obsecida

diminitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsigana ineffiforma sp. nov.

Candidatus Obsigana ineffiforma (NL. fem. n. *ineffiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNNP01 sp013824325*. The type genome for the species is the GenBank assembly GCA_013824325.1. The GC content of the type genome is 41.36 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Obsigana gen. nov.

Candidatus Obsigana (NL. fem. n. *Obsigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNNP01*. The type species for the genus is *Candidatus* Obsigana ineffiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramosaceae.

Description of *Candidatus* Obsigaria conametta sp. nov.

Candidatus Obsigaria conametta (NL. fem. n. *conametta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2705055 sp002705055*. The type genome for the species is the GenBank assembly GCA_002705055.1. The GC content of the type genome is 66.94 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Obsigaria gen. nov.

Candidatus Obsigaria (NL. fem. n. *Obsigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2705055*. The type species for the genus is *Candidatus* Obsigaria conametta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Didacellaceae.

Description of *Candidatus* Obsigella herinax sp. nov.

Candidatus Obsigella herinax (NL. fem. n. *herinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBVG01 sp903958995*. The type genome for the species is the GenBank assembly GCA_903958995.1. The GC content of the type genome is 34.94 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Obsigella gen. nov.

Candidatus Obsigella (NL. fem. n. *Obsigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBVG01*. The type species for the genus is *Candidatus* Obsigella herinax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIKLP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecellaceae.

Description of *Candidatus* Obsigia alectilega sp. nov.

Candidatus Obsigia alectilega (NL. fem. n. *alectilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYYF01 sp012515535*. The type genome for the species is the GenBank assembly GCA_012515535.1. The GC content of the type genome is 73.57 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Obsigia gen. nov.

Candidatus Obsigia (NL. fem. n. *Obsigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYYF01*. The type species for the genus is *Candidatus* Obsigia

alectilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsigida adremetta sp. nov.

Candidatus Obsigida adremetta (NL. fem. n. *adremetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2684655 sp002684655*. The type genome for the species is the GenBank assembly GCA_002684655.1. The GC content of the type genome is 66.16 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Obsigida gen. nov.

Candidatus Obsigida (NL. fem. n. *Obsigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2684655*. The type species for the genus is *Candidatus* Obsigida adremetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifulaceae.

Description of *Candidatus* Obsigida aseptatica sp. nov.

Candidatus Obsigida aseptatica (NL. fem. n. *aseptatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2684655 sp011051855*. The type genome for the species is the GenBank assembly GCA_011051855.1. The GC content of the type genome is 68.88 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Obsigosa dicibitrix sp. nov.

Candidatus Obsigosa dicibitrix (NL. fem. n. *dicibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-52 sp005885015*. The type genome for the species is the GenBank

assembly GCA_005885015.1. The GC content of the type genome is 69.2 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Obsigosa gen. nov.

Candidatus Obsigosa (NL. fem. n. *Obsigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-52*. The type species for the genus is *Candidatus* Obsigosa dicibitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacosaceae.

Description of *Candidatus* Obsigula adnicousia sp. nov.

Candidatus Obsigula adnicousia (NL. fem. n. *adnicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEEN01 sp011390055*. The type genome for the species is the GenBank assembly GCA_011390055.1. The GC content of the type genome is 68.69 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Obsigula gen. nov.

Candidatus Obsigula (NL. fem. n. *Obsigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEEN01*. The type species for the genus is *Candidatus* Obsigula adnicousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsigula lutulilenta sp. nov.

Candidatus Obsigula lutulilenta (NL. fem. n. *lutulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEEN01 sp902826345*. The type genome for the species is the GenBank assembly GCA_902826345.1. The GC content of the type genome is 68.01 %

and the genome length is 4.45 Mbp.

Description of *Candidatus* Obsigula ratifitica sp. nov.

Candidatus Obsigula ratifitica (NL. fem. n. *ratifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEEN01 sp902825995*. The type genome for the species is the GenBank assembly GCA_902825995.1. The GC content of the type genome is 66.9 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Obsolana intacilenta sp. nov.

Candidatus Obsolana intacilenta (NL. fem. n. *intacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-45-15 sp002787235*. The type genome for the species is the GenBank assembly GCA_002787235.1. The GC content of the type genome is 45.39 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Obsolana gen. nov.

Candidatus Obsolana (NL. fem. n. *Obsolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-45-15*. The type species for the genus is *Candidatus* Obsolana intacilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsolaria utraritio sp. nov.

Candidatus Obsolaria utraritio (NL. fem. n. *utraritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTPS01 sp011353845*. The type genome for the species is the GenBank assembly GCA_011353845.1. The GC content of the type genome is 66.24 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Obsolaria gen. nov.

Candidatus Obsolaria (NL. fem. n. *Obsolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTPS01*. The type species for the genus is *Candidatus* Obsolaria utraritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSQY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Murelulaceae.

Description of *Candidatus* Obsolella adessastra sp. nov.

Candidatus Obsolella adessastra (NL. fem. n. *adessastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFIJ01 sp013298675*. The type genome for the species is the GenBank assembly GCA_013298675.1. The GC content of the type genome is 56.91 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Obsolella gen. nov.

Candidatus Obsolella (NL. fem. n. *Obsolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFIJ01*. The type species for the genus is *Candidatus* Obsolella adessastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsolia octipessa sp. nov.

Candidatus Obsolia octipessa (NL. fem. n. *octipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPU01 sp013203665*. The type genome for the species is the GenBank assembly GCA_013203665.1. The GC content of the type genome is 34.54 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Obsolia gen. nov.

Candidatus Obsolia (NL. fem. n. *Obsolia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPU01*. The type species for the genus is *Candidatus* Obsolia octipessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefellaceae.

Description of *Candidatus* Obsolida nehalatio sp. nov.

Candidatus Obsolida nehalatio (NL. fem. n. *nehalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMQJ01 sp013203315*. The type genome for the species is the GenBank assembly GCA_013203315.1. The GC content of the type genome is 42.94 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Obsolida gen. nov.

Candidatus Obsolida (NL. fem. n. *Obsolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMQJ01*. The type species for the genus is *Candidatus* Obsolida nehalatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-46-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sitelellaceae.

Description of *Candidatus* Obsolosa bicipatio sp. nov.

Candidatus Obsolosa bicipatio (NL. fem. n. *bicipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8801 sp003505795*. The type genome for the species is the GenBank assembly GCA_003505795.1. The GC content of the type genome is 69.1 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Obsolosa gen. nov.

Candidatus Obsolosa (NL. fem. n. *Obsolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8801*. The type species for the genus is *Candidatus* Obsolosa bicipatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsolula epicrilega sp. nov.

Candidatus Obsolula epicrilega (NL. fem. n. *epicrilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AGPOR5 sp003635305*. The type genome for the species is the GenBank assembly GCA_003635305.1. The GC content of the type genome is 53.89 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Obsolula gen. nov.

Candidatus Obsolula (NL. fem. n. *Obsolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AGPOR5*. The type species for the genus is *Candidatus* Obsolula epicrilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WGA-3G*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funebosaceae.

Description of *Candidatus* Obsoraria laculitudo sp. nov.

Candidatus Obsoraria laculitudo (NL. fem. n. *laculitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-100 sp002049785*. The type genome for the species is the GenBank assembly GCA_002049785.1. The GC content of the type genome is 43.14 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Obsoraria gen. nov.

Candidatus Obsoraria (NL. fem. n. *Obsoraria* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-100*. The type species for the genus is *Candidatus* Obsoraria laculitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-42*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Labeciaceae.

Description of *Candidatus* Obsoria exhorentia sp. nov.

Candidatus Obsoria exhorentia (NL. fem. n. *exhorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ChocPot-Mid sp003731675*. The type genome for the species is the GenBank assembly GCA_003731675.1. The GC content of the type genome is 33.79 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Obsoria gen. nov.

Candidatus Obsoria (NL. fem. n. *Obsoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ChocPot-Mid*. The type species for the genus is *Candidatus* Obsoria exhorentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Obsorida detosatica sp. nov.

Candidatus Obsorida detosatica (NL. fem. n. *detosatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Y40 sp013343715*. The type genome for the species is the GenBank assembly RS_GCF_013343715.1. The GC content of the type genome is 40.63 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Obsorida gen. nov.

Candidatus Obsorida (NL. fem. n. *Obsorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Y40*. The type species for the genus is *Candidatus* Obsorida detosatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-18226*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Robigidaceae.

Description of *Candidatus* Obsorosa adfiratica sp. nov.

Candidatus Obsorosa adfiratica (NL. fem. n. *adfiratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002715885 sp014239655*. The type genome for the species is the GenBank assembly GCA_014239655.1. The GC content of the type genome is 30.48 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Obsorosa gen. nov.

Candidatus Obsorosa (NL. fem. n. *Obsorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002715885*. The type species for the genus is *Candidatus* Obsorosa adfiratica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Obsorosa adhorilenta sp. nov.

Candidatus Obsorosa adhorilenta (NL. fem. n. *adhorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002715885 sp902579065*. The type genome for the species is the GenBank assembly GCA_902579065.1. The GC content of the type genome is 29.58 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Obsorosa argimilega sp. nov.

Candidatus Obsorosa argimilega (NL. fem. n. *argimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002715885 sp002689735*. The type genome for the species is the GenBank assembly GCA_002689735.1. The GC content of the type genome is 30.53 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Obsorosa inrecitrix sp. nov.

Candidatus Obsorosa inrecitrix (NL. fem. n. *inrecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002715885 sp002715885*. The type genome for the species is the GenBank assembly GCA_002715885.1. The GC content of the type genome is 30.32 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Obsorula adnulastra sp. nov.

Candidatus Obsorula adnulastra (NL. fem. n. *adnulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RECO01 sp007694015*. The type genome for the species is the GenBank assembly GCA_007694015.1. The GC content of the type genome is 68.46 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Obsorula gen. nov.

Candidatus Obsorula (NL. fem. n. *Obsorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RECO01*. The type species for the genus is *Candidatus* Obsorula adnulastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsuria ulcisatio sp. nov.

Candidatus Obsuria ulcisatio (NL. fem. n. *ulcisatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An114 sp002161055*. The type genome for the species is the GenBank assembly RS_GCF_002161055.1. The GC content of the type genome is 31.21 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Obsuria gen. nov.

Candidatus Obsuria (NL. fem. n. *Obsuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *An114*. The type species for the genus is *Candidatus* Obsuria ulcisatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsurosa aminnitas sp. nov.

Candidatus Obsurosa aminnitas (NL. fem. n. *aminnitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002729875 sp002688175*. The type genome for the species is the GenBank assembly GCA_002688175.1. The GC content of the type genome is 53.12 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Obsurosa gen. nov.

Candidatus Obsurosa (NL. fem. n. *Obsurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002729875*. The type species for the genus is *Candidatus* Obsurosa aminnitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2729495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulidaceae.

Description of *Candidatus* Obsurosa nefarousia sp. nov.

Candidatus Obsurosa nefarousia (NL. fem. n. *nefarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-002729875 sp002729875*. The type genome for the species is the GenBank assembly GCA_002729875.1. The GC content of the type genome is 53.05 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Obsurula anatredo sp. nov.

Candidatus Obsurula anatredo (NL. fem. n. *anatredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXMD01 sp903853735*. The type genome for the species is the GenBank assembly GCA_903853735.1. The GC content of the type genome is 50.63 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Obsurula gen. nov.

Candidatus Obsurula (NL. fem. n. *Obsurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXMD01*. The type species for the genus is *Candidatus* Obsurula anatredo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obsurula levifilega sp. nov.

Candidatus Obsurula levifilega (NL. fem. n. *levifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXMD01 sp903920415*. The type genome for the species is the GenBank assembly GCA_903920415.1. The GC content of the type genome is 49.12 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Obtecana inveciforma sp. nov.

Candidatus Obtecana inveciforma (NL. fem. n. *inveciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNJM01 sp013821865*. The type genome for the species is the GenBank assembly GCA_013821865.1. The GC content of the type genome is 65.58 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Obtecana gen. nov.

Candidatus Obtecana (NL. fem. n. *Obtecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNJM01*. The type species for the genus is *Candidatus* Obtecana inveciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtecella cituvitrix sp. nov.

Candidatus Obtecella cituvitrix (NL. fem. n. *cituvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDEO01 sp013287015*. The type genome for the species is the GenBank assembly GCA_013287015.1. The GC content of the type genome is 43.27 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Obtecella gen. nov.

Candidatus Obtecella (NL. fem. n. *Obtecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDEO01*. The type species for the genus is *Candidatus* Obtecella cituvitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtecida acustibula sp. nov.

Candidatus Obtecida acustibula (NL. fem. n. *acustibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6918 sp002450925*. The type genome for the species is the GenBank assembly GCA_002450925.1. The GC content of the type genome is 54.78 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Obtecida gen. nov.

Candidatus Obtecida (NL. fem. n. *Obtecida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6918*. The type species for the genus is *Candidatus* Obtecida acustibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtecida amatredo sp. nov.

Candidatus Obtecida amatredo (NL. fem. n. *amatredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6918 sp002421825*. The type genome for the species is the GenBank assembly GCA_002421825.1. The GC content of the type genome is 63.28 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Obtecida fumacetta sp. nov.

Candidatus Obtecida fumacetta (NL. fem. n. *fumacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6918 sp002327405*. The type genome for the species is the GenBank assembly GCA_002327405.1. The GC content of the type genome is 62.74 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Obtecida genocitica sp. nov.

Candidatus Obtecida genocitica (NL. fem. n. *genocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6918 sp008923285*. The type genome for the species is the GenBank assembly RS_GCF_008923285.1. The GC content of the type genome is 63.13 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Obtecula antomago sp. nov.

Candidatus Obtecula antomago (NL. fem. n. *antomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACZQQ01 sp902783355*. The type genome for the species is the GenBank assembly GCA_902783355.1. The GC content of the type genome is 65.41 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Obtecula gen. nov.

Candidatus Obtecula (NL. fem. n. *Obtecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACZQQ01*. The type species for the genus is *Candidatus* Obtecula antomago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semilidaceae.

Description of *Candidatus* Obtemaria exsufilenta sp. nov.

Candidatus Obtemaria exsufilenta (NL. fem. n. *exsufilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R196 sp004764705*. The type genome for the species is the GenBank assembly RS_GCF_004764705.1. The GC content of the type genome is 57.72 % and the genome length is 9.45 Mbp.

Description of *Candidatus* Obtemaria gen. nov.

Candidatus Obtemaria (NL. fem. n. *Obtemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *R196*. The type species for the genus is *Candidatus* Obtemaria exsufilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtemella affamicula sp. nov.

Candidatus Obtemella affamicula (NL. fem. n. *affamicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA7657 sp002483465*. The type genome for the species is the GenBank assembly GCA_002483465.1. The GC content of the type genome is 53.96 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Obtemella gen. nov.

Candidatus Obtemella (NL. fem. n. *Obtemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7657*. The type species for the genus is *Candidatus* Obtemella affamicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtemella tametitoga sp. nov.

Candidatus Obtemella tametitoga (NL. fem. n. *tametitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7657 sp900696495*. The type genome for the species is the GenBank assembly GCA_900696495.1. The GC content of the type genome is 55.61 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Obtemia abrepitoga sp. nov.

Candidatus Obtemia abrepitoga (NL. fem. n. *abrepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTA01 sp004322275*. The type genome for the species is the GenBank assembly GCA_004322275.1. The GC content of the type genome is 58.66 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Obtemia gen. nov.

Candidatus Obtemia (NL. fem. n. *Obtemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTA01*. The type species for the genus is *Candidatus* Obtemia abrepitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM512*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Vagabosaceae.

Description of *Candidatus* Obtemia conibibula sp. nov.

Candidatus Obtemia conibibula (NL. fem. n. *conibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTA01 sp009724975*. The type genome for the species is the GenBank assembly GCA_009724975.1. The GC content of the type genome is 58.63 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Obtemida salubisca sp. nov.

Candidatus Obtemida salubisca (NL. fem. n. *salubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZXR01 sp014240065*. The type genome for the species is the GenBank assembly GCA_014240065.1. The GC content of the type genome is 65.94 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Obtemida gen. nov.

Candidatus Obtemida (NL. fem. n. *Obtemida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZXR01*. The type species for the genus is *Candidatus* Obtemida salubisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtemosa anactetta sp. nov.

Candidatus Obtemosa anactetta (NL. fem. n. *anactetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDAF01 sp013695575*. The type genome for the species is the GenBank assembly GCA_013695575.1. The GC content of the type genome is 69.68 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Obtemosa gen. nov.

Candidatus Obtemosa (NL. fem. n. *Obtemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDAF01*. The type species for the genus is *Candidatus* Obtemosa anactetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P2-11E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotosaceae.

Description of *Candidatus* Obtenaria arcipax sp. nov.

Candidatus Obtenaria arcipax (NL. fem. n. *arcipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMVS01 sp004357435*. The type genome for the species is the GenBank assembly GCA_004357435.1. The GC content of the type genome is 51.88 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Obtenaria gen. nov.

Candidatus Obtenaria (NL. fem. n. *Obtenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMVS01*. The type species for the genus is *Candidatus* Obtenaria arcipax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtenella dimacitoga sp. nov.

Candidatus Obtenella dimacitoga (NL. fem. n. *dimacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2266 sp011057845*. The type genome for the species is the GenBank assembly GCA_011057845.1. The GC content of the type genome is 62.29 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Obtenella gen. nov.

Candidatus Obtenella (NL. fem. n. *Obtenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2266*. The type species for the genus is *Candidatus* Obtenella dimacitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabidaceae.

Description of *Candidatus* Obtenella pinifivita sp. nov.

Candidatus Obtenella pinifivita (NL. fem. n. *pinifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2266 sp002347125*. The type genome for the species is the GenBank assembly GCA_002347125.1. The GC content of the type genome is 62.28 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Obtenosa dilecentia sp. nov.

Candidatus Obtenosa dilecentia (NL. fem. n. *dilecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-45-18 sp001779915*. The type genome for the species is the GenBank assembly GCA_001779915.1. The GC content of the type genome is 44.51 % and the genome length is 0.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Obtenosa gen. nov.

Candidatus Obtenosa (NL. fem. n. *Obtenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-45-18*. The type species for the genus is *Candidatus* Obtenosa dilecentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-02-FULL-48-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicariaceae.

Description of *Candidatus* Obtenula viginitio sp. nov.

Candidatus Obtenula viginitio (NL. fem. n. *viginitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJANL01 sp903941105*. The type genome for the species is the GenBank assembly GCA_903941105.1. The GC content of the type genome is 66.43 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Obtenula gen. nov.

Candidatus Obtenula (NL. fem. n. *Obtenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJANL01*. The type species for the genus is *Candidatus* Obtenula viginitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtesana adsucimonia sp. nov.

Candidatus Obtesana adsucimonia (NL. fem. n. *adsucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch132 sp013178185*. The type genome for the species is the GenBank assembly GCA_013178185.1. The GC content of the type genome is 51.67 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Obtesana gen. nov.

Candidatus Obtesana (NL. fem. n. *Obtesana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch132*. The type species for the genus is *Candidatus* Obtesana adsucimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtesaria catecimonas sp. nov.

Candidatus Obtesaria catecimonas (NL. fem. n. *catecimonas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPQV01 sp003818595*. The type genome for the species is the GenBank assembly GCA_003818595.1. The GC content of the type genome is 48.02 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Obtesaria gen. nov.

Candidatus Obtesaria (NL. fem. n. *Obtesaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPQV01*. The type species for the genus is *Candidatus* Obtesaria catecimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Zgenome-0027*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refinellaceae.

Description of *Candidatus* Obtesia adtagitio sp. nov.

Candidatus Obtesia adtagitio (NL. fem. n. *adtagitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXE01 sp013297545*. The type genome for the species is the GenBank assembly GCA_013297545.1. The GC content of the type genome is 65.69 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Obtesia gen. nov.

Candidatus Obtesia (NL. fem. n. *Obtesia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDXE01*. The type species for the genus is *Candidatus* Obtesia adtagitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtesia furibifica sp. nov.

Candidatus Obtesia furibifica (NL. fem. n. *furibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXE01 sp004292755*. The type genome for the species is the GenBank assembly GCA_004292755.1. The GC content of the type genome is 63.85 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Obtesida omnivicella sp. nov.

Candidatus Obtesida omnivicella (NL. fem. n. *omnivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYZK01 sp012514895*. The type genome for the species is the GenBank assembly GCA_012514895.1. The GC content of the type genome is 69.79 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Obtesida gen. nov.

Candidatus Obtesida (NL. fem. n. *Obtesida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZK01*. The type species for the genus is *Candidatus* Obtesida omnivicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-1343*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colapellaceae.

Description of *Candidatus* Obtesosa tenebilenta sp. nov.

Candidatus Obtesosa tenebilenta (NL. fem. n. *tenebilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7485 sp002478485*. The type genome for the species is the GenBank assembly GCA_002478485.1. The GC content of the type genome is 48.1 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Obtesosa gen. nov.

Candidatus Obtesosa (NL. fem. n. *Obtesosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7485*. The type species for the genus is *Candidatus* Obtesosa tenebilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtorana admuribra sp. nov.

Candidatus Obtorana admuribra (NL. fem. n. *admuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1764 sp002315535*. The type genome for the species is the GenBank assembly GCA_002315535.1. The GC content of the type genome is 42.85 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Obtorana gen. nov.

Candidatus Obtorana (NL. fem. n. *Obtorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1764*. The type species for the genus is *Candidatus* Obtorana admuribra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtorella acrobitoga sp. nov.

Candidatus Obtorella acrobitoga (NL. fem. n. *acrobitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCRE01 sp013813775*. The type genome for the species is the GenBank assembly GCA_013813775.1. The GC content of the type genome is 62.87 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Obtorella gen. nov.

Candidatus Obtorella (NL. fem. n. *Obtorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCRE01*. The type species for the genus is *Candidatus* Obtorella acrobitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtoria necopiforma sp. nov.

Candidatus Obtoria necopiforma (NL. fem. n. *necopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-350 sp003152195*. The type genome for the species is the GenBank assembly GCA_003152195.1. The GC content of the type genome is 58.46 % and the genome length is 6.8 Mbp.

Description of *Candidatus* Obtoria gen. nov.

Candidatus Obtoria (NL. fem. n. *Obtoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-350*. The type species for the genus is *Candidatus* Obtoria necopiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtorida cacomitoga sp. nov.

Candidatus Obtorida cacomitoga (NL. fem. n. *cacomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM705 sp002869165*. The type genome for the species is the GenBank assembly GCA_002869165.1. The GC content of the type genome is 33.52 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Obtorida gen. nov.

Candidatus Obtorida (NL. fem. n. *Obtorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM705*. The type species for the genus is *Candidatus* Obtorida cacomitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12075*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenociaceae.

Description of *Candidatus* Obtorosa aplesitoga sp. nov.

Candidatus Obtorosa aplesitoga (NL. fem. n. *aplesitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7102 sp002492415*. The type genome for the species is the GenBank assembly GCA_002492415.1. The GC content of the type genome is 59.72 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Obtorosa gen. nov.

Candidatus Obtorosa (NL. fem. n. *Obtorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7102*. The type species for the genus is *Candidatus* Obtorosa aplesitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1750*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabulaceae.

Description of *Candidatus* Obtorosa cacomiforma sp. nov.

Candidatus Obtorosa cacomiforma (NL. fem. n. *cacomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7102 sp002315655*. The type genome for the species is the GenBank assembly GCA_002315655.1. The GC content of the type genome is 54.93 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Obtorosa funebastra sp. nov.

Candidatus Obtorosa funebastra (NL. fem. n. *funebastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7102 sp900760085*. The type genome for the species is the GenBank assembly RS_GCF_900760085.1. The GC content of the type genome is 66.24 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Obtorula inreditica sp. nov.

Candidatus Obtorula inreditica (NL. fem. n. *inreditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-45 sp003599275*. The type genome for the species is the GenBank assembly GCA_003599275.1. The GC content of the type genome is 47.56 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Obtorula gen. nov.

Candidatus Obtorula (NL. fem. n. *Obtorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-45*. The type species for the genus is *Candidatus* Obtorula inreditica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodosaceae.

Description of *Candidatus* Obtunaria lanifatio sp. nov.

Candidatus Obtunaria lanifatio (NL. fem. n. *lanifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDII01 sp013003805*. The type genome for the species is the GenBank assembly GCA_013003805.1. The GC content of the type genome is 63.81 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Obtunaria gen. nov.

Candidatus Obtunaria (NL. fem. n. *Obtunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDII01*. The type species for the genus is *Candidatus* Obtunaria lanifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Obtunella vigenousia sp. nov.

Candidatus Obtunella vigenousia (NL. fem. n. *vigenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEEH01 sp902826305*. The type genome for the species is the GenBank assembly GCA_902826305.1. The GC content of the type genome is 68.58 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Obtunella gen. nov.

Candidatus Obtunella (NL. fem. n. *Obtunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEEH01*. The type species for the genus is *Candidatus* Obtunella vigenousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtunia inlapilenta sp. nov.

Candidatus Obtunia inlapilenta (NL. fem. n. *inlapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-42-7 sp001803645*. The type genome for the species is the GenBank assembly GCA_001803645.1. The GC content of the type genome is 42.06 % and the genome length is 2.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Obtunia gen. nov.

Candidatus Obtunia (NL. fem. n. *Obtunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-42-7*. The type species for the genus is *Candidatus* Obtunia inlapilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6898*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fecunellaceae.

Description of *Candidatus* Obtunida isoscilenta sp. nov.

Candidatus Obtunida isoscilenta (NL. fem. n. *isoscilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAT2750 sp002708345*. The type genome for the species is the GenBank assembly GCA_002708345.1. The GC content of the type genome is 58.19 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Obtunida gen. nov.

Candidatus Obtunida (NL. fem. n. *Obtunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SAT2750*. The type species for the genus is *Candidatus* Obtunida isoscilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obtunosa semapax sp. nov.

Candidatus Obtunosa semapax (NL. fem. n. *semapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJD01 sp011338025*. The type genome for the species is the GenBank assembly GCA_011338025.1. The GC content of the type genome is 50.5 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Obtunosa gen. nov.

Candidatus Obtunosa (NL. fem. n. *Obtunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJD01*. The type species for the genus is *Candidatus* Obtunosa semapax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicellaceae.

Description of *Candidatus* Obtunula obvolitoga sp. nov.

Candidatus Obtunula obvolitoga (NL. fem. n. *obvolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-all-40-8 sp002770795*. The type genome for the species is the GenBank assembly GCA_002770795.1. The GC content of the type genome is 39.72 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Obtunula gen. nov.

Candidatus Obtunula (NL. fem. n. *Obtunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-all-40-8*. The type species for the genus is *Candidatus* Obtunula obvolitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002770795*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conoposaceae.

Description of *Candidatus* Obvalana arvecimonas sp. nov.

Candidatus Obvalana arvecimonas (NL. fem. n. *arvecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9848 sp902797395*. The type genome for the species is the GenBank assembly GCA_902797395.1. The GC content of the type genome is 46.02 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Obvalana gen. nov.

Candidatus Obvalana (NL. fem. n. *Obvalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9848*. The type species for the genus is *Candidatus* Obvalana arvecimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obvalana insinitoga sp. nov.

Candidatus Obvalana insinitoga (NL. fem. n. *insinitoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9848 sp003454065*. The type genome for the species is the GenBank assembly GCA_003454065.1. The GC content of the type genome is 48.0 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Obvalaria excetastra sp. nov.

Candidatus Obvalaria excetastra (NL. fem. n. *excetastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-19 sp002837195*. The type genome for the species is the GenBank assembly RS_GCF_002837195.1. The GC content of the type genome is 52.75 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Obvalaria gen. nov.

Candidatus Obvalaria (NL. fem. n. *Obvalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-19*. The type species for the genus is *Candidatus* Obvalaria excetastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obvalaria musulimonas sp. nov.

Candidatus Obvalaria musulimonas (NL. fem. n. *musulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-19 sp001922585*. The type genome for the species is the GenBank assembly RS_GCF_001922585.1. The GC content of the type genome is 59.86 % and the genome length is 3.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rice paddies".

Description of *Candidatus* Obvalia refunetta sp. nov.

Candidatus Obvalia refunetta (NL. fem. n. *refunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUCF01 sp012959965*. The type genome for the species is the GenBank assembly GCA_012959965.1. The GC content of the type genome is 43.12 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Obvalia gen. nov.

Candidatus Obvalia (NL. fem. n. *Obvalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUCF01*. The type species for the genus is *Candidatus* Obvalia refunetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obvalula denoribra sp. nov.

Candidatus Obvalula denoribra (NL. fem. n. *denoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKB01 sp013287215*. The type genome for the species is the GenBank assembly GCA_013287215.1. The GC content of the type genome is 49.91 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Obvalula gen. nov.

Candidatus Obvalula (NL. fem. n. *Obvalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFKB01*. The type species for the genus is *Candidatus* Obvalula denoribra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obvalula nugigiforma sp. nov.

Candidatus Obvalula nugigiforma (NL. fem. n. *nugigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFKB01 sp009885755*. The type genome for the species is the

GenBank assembly GCA_009885755.1. The GC content of the type genome is 49.26 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Obverana absegicella sp. nov.

Candidatus Obverana absegicella (NL. fem. n. *absegicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTHQ01 sp011370785*. The type genome for the species is the GenBank assembly GCA_011370785.1. The GC content of the type genome is 38.59 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Obverana gen. nov.

Candidatus Obverana (NL. fem. n. *Obverana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTHQ01*. The type species for the genus is *Candidatus* Obverana absegicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obveraria adpelicula sp. nov.

Candidatus Obveraria adpelicula (NL. fem. n. *adpelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *992a sp001940245*. The type genome for the species is the GenBank assembly RS_GCF_001940245.1. The GC content of the type genome is 40.07 % and the genome length is 2.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces".

Description of *Candidatus* Obveraria gen. nov.

Candidatus Obveraria (NL. fem. n. *Obveraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *992a*. The type species for the genus is *Candidatus* Obveraria adpelicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obverella arremousia sp. nov.

Candidatus Obverella arremousia (NL. fem. n. *arremousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REDG01 sp007693605*. The type genome for the species is the GenBank assembly GCA_007693605.1. The GC content of the type genome is 49.45 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Obverella gen. nov.

Candidatus Obverella (NL. fem. n. *Obverella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REDG01*. The type species for the genus is *Candidatus* Obverella arremousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2394*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeroposaceae.

Description of *Candidatus* Obverula advorilega sp. nov.

Candidatus Obverula advorilega (NL. fem. n. *advorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTNP01 sp011389075*. The type genome for the species is the GenBank assembly GCA_011389075.1. The GC content of the type genome is 54.06 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Obverula gen. nov.

Candidatus Obverula (NL. fem. n. *Obverula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTNP01*. The type species for the genus is *Candidatus* Obverula advorilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obvolana pinifilenta sp. nov.

Candidatus Obvolana pinifilenta (NL. fem. n. *pinifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CU05-9 sp007556525*. The type genome for the species is the GenBank assembly RS_GCF_007556525.1. The GC content of the type genome is 55.34 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Obvolana gen. nov.

Candidatus Obvolana (NL. fem. n. *Obvolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CU05-9*. The type species for the genus is *Candidatus* Obvolana pinifilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obvolella arcipedo sp. nov.

Candidatus Obvolella arcipedo (NL. fem. n. *arcipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PTKV01 sp002937895*. The type genome for the species is the GenBank assembly GCA_002937895.1. The GC content of the type genome is 27.0 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Obvolella gen. nov.

Candidatus Obvolella (NL. fem. n. *Obvolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PTKV01*. The type species for the genus is *Candidatus* Obvolella arcipedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002718135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defululaceae.

Description of *Candidatus* Obvolia pedifigena sp. nov.

Candidatus Obvolia pedifigena (NL. fem. n. *pedifigena* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDAS01 sp013695295*. The type genome for the species is the GenBank assembly GCA_013695295.1. The GC content of the type genome is 71.19 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Obvolia gen. nov.

Candidatus Obvolia (NL. fem. n. *Obvolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDAS01*. The type species for the genus is *Candidatus* Obvolia pedifigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obvolida odontitoga sp. nov.

Candidatus Obvolida odontitoga (NL. fem. n. *odontitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7957 sp003511825*. The type genome for the species is the GenBank assembly GCA_003511825.1. The GC content of the type genome is 55.91 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Obvolida gen. nov.

Candidatus Obvolida (NL. fem. n. *Obvolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7957*. The type species for the genus is *Candidatus* Obvolida odontitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Obvolosa inlusicella sp. nov.

Candidatus Obvolosa inlusicella (NL. fem. n. *inlusicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2219 sp009783195*. The type genome for the species is the GenBank assembly GCA_009783195.1. The GC content of the type genome is 54.54 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Obvolosa gen. nov.

Candidatus Obvolosa (NL. fem. n. *Obvolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2219*. The type species for the genus is *Candidatus* Obvolosa inlusicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MBNT15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenulaceae.

Description of *Candidatus* Obvolosa palifibra sp. nov.

Candidatus Obvolosa palifibra (NL. fem. n. *palifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2219 sp002327765*. The type genome for the species is the GenBank assembly GCA_002327765.1. The GC content of the type genome is 66.88 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Obvolula dibapibula sp. nov.

Candidatus Obvolula dibapibula (NL. fem. n. *dibapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W693 sp011170385*. The type genome for the species is the GenBank assembly GCA_011170385.1. The GC content of the type genome is 51.0 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Obvolula gen. nov.

Candidatus Obvolula (NL. fem. n. *Obvolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *W693*. The type species for the genus is *Candidatus* Obvolula dibapibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5627*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilosaceae.

Description of *Candidatus* Occalana tabificella sp. nov.

Candidatus Occalana tabificella (NL. fem. n. *tabificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-49 sp005883905*. The type genome for the species is the GenBank assembly GCA_005883905.1. The GC content of the type genome is 71.46 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Occalana gen. nov.

Candidatus Occalana (NL. fem. n. *Occalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-49*. The type species for the genus is *Candidatus* Occalana tabificella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Occalaria colubisca sp. nov.

Candidatus Occalaria colubisca (NL. fem. n. *colubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFW01 sp009787435*. The type genome for the species is the GenBank assembly GCA_009787435.1. The GC content of the type genome is 33.13 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Occalaria gen. nov.

Candidatus Occalaria (NL. fem. n. *Occalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFW01*. The type species for the genus is *Candidatus* Occalaria

colubisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5962*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lenoculaceae.

Description of *Candidatus* Occalella ciloticella sp. nov.

Candidatus Occalella ciloticella (NL. fem. n. *ciloticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1347 sp007747215*. The type genome for the species is the GenBank assembly RS_GCF_007747215.1. The GC content of the type genome is 71.33 % and the genome length is 7.8 Mbp.

Description of *Candidatus* Occalella gen. nov.

Candidatus Occalella (NL. fem. n. *Occalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1347*. The type species for the genus is *Candidatus* Occalella ciloticella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Occalella repecitio sp. nov.

Candidatus Occalella repecitio (NL. fem. n. *repecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1347 sp003136315*. The type genome for the species is the GenBank assembly GCA_003136315.1. The GC content of the type genome is 61.32 % and the genome length is 11.59 Mbp.

Description of *Candidatus* Occalia inmutitura sp. nov.

Candidatus Occalia inmutitura (NL. fem. n. *inmutitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MT45 sp900100325*. The type genome for the species is the GenBank

assembly RS_GCF_900100325.1. The GC content of the type genome is 67.3 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Occalia gen. nov.

Candidatus Occalia (NL. fem. n. *Occalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MT45*. The type species for the genus is *Candidatus* Occalia inmutitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Occalia sacopisca sp. nov.

Candidatus Occalia sacopisca (NL. fem. n. *sacopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MT45 sp900230215*. The type genome for the species is the GenBank assembly RS_GCF_900230215.1. The GC content of the type genome is 66.94 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Occalida munifugo sp. nov.

Candidatus Occalida munifugo (NL. fem. n. *munifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-46-14-A sp001780895*. The type genome for the species is the GenBank assembly GCA_001780895.1. The GC content of the type genome is 45.81 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Occalida gen. nov.

Candidatus Occalida (NL. fem. n. *Occalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-46-14-A*. The type species for the genus is *Candidatus* Occalida munifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA927*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Casigellaceae.

Description of *Candidatus* Occalula fumacilenta sp. nov.

Candidatus Occalula fumacilenta (NL. fem. n. *fumacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVSB01 sp013697275*. The type genome for the species is the GenBank assembly GCA_013697275.1. The GC content of the type genome is 69.87 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Occalula gen. nov.

Candidatus Occalula (NL. fem. n. *Occalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACVSB01*. The type species for the genus is *Candidatus* Occalula fumacilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Occalula visocigena sp. nov.

Candidatus Occalula visocigena (NL. fem. n. *visocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACVSB01 sp014534155*. The type genome for the species is the GenBank assembly GCA_014534155.1. The GC content of the type genome is 72.59 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Occenaria bifisitas sp. nov.

Candidatus Occenaria bifisitas (NL. fem. n. *bifisitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708715 sp002691285*. The type genome for the species is the GenBank assembly GCA_002691285.1. The GC content of the type genome is 32.76 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Occenaria gen. nov.

Candidatus Occenaria (NL. fem. n. *Occenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002708715*. The type species for the genus is *Candidatus* Occenaria bifisitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1611*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilariaceae.

Description of *Candidatus* Occenaria ininnisca sp. nov.

Candidatus Occenaria ininnisca (NL. fem. n. *ininnisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708715 sp002694025*. The type genome for the species is the GenBank assembly GCA_002694025.1. The GC content of the type genome is 32.29 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Occenaria peracilega sp. nov.

Candidatus Occenaria peracilega (NL. fem. n. *peracilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708715 sp002708715*. The type genome for the species is the GenBank assembly GCA_002708715.1. The GC content of the type genome is 31.69 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Occenaria subadastra sp. nov.

Candidatus Occenaria subadastra (NL. fem. n. *subadastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002708715 sp902602795*. The type genome for the species is the GenBank assembly GCA_902602795.1. The GC content of the type genome is 32.65 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Occenida arbavicula sp. nov.

Candidatus Occenida arbavicula (NL. fem. n. *arbavicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-61-12 sp001873705*. The type genome for the species is the GenBank assembly GCA_001873705.1. The GC content of the type genome is 60.77 % and the genome length is 3.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Occenida gen. nov.

Candidatus Occenida (NL. fem. n. *Occenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-61-12*. The type species for the genus is *Candidatus* Occenida arbavicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-9756*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deculellaceae.

Description of *Candidatus* Occenosa demadugo sp. nov.

Candidatus Occenosa demadugo (NL. fem. n. *demadugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-120-MAGs238 sp005776545*. The type genome for the species is the GenBank assembly GCA_005776545.1. The GC content of the type genome is 54.88 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Occenosa gen. nov.

Candidatus Occenosa (NL. fem. n. *Occenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-120-MAGs238*. The type species for the genus is *Candidatus* Occenosa demadugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Occenula imbecivita sp. nov.

Candidatus Occenula imbecivita (NL. fem. n. *imbecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACPJY01 sp902634405*. The type genome for the species is the GenBank assembly GCA_902634405.1. The GC content of the type genome is 39.29 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Occenula gen. nov.

Candidatus Occenula (NL. fem. n. *Occenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACPJY01*. The type species for the genus is *Candidatus* Occenula imbecivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Occucana venabiforma sp. nov.

Candidatus Occucana venabiforma (NL. fem. n. *venabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJA01 sp009782435*. The type genome for the species is the GenBank assembly GCA_009782435.1. The GC content of the type genome is 51.62 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Occucana gen. nov.

Candidatus Occucana (NL. fem. n. *Occucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRJA01*. The type species for the genus is *Candidatus* Occucana venabiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Occucaria butubitio sp. nov.

Candidatus Occucaria butubitio (NL. fem. n. *butubitio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ML8-F1 sp002029975*. The type genome for the species is the GenBank assembly GCA_002029975.1. The GC content of the type genome is 50.39 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Occucaria gen. nov.

Candidatus Occucaria (NL. fem. n. *Occucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ML8-F1*. The type species for the genus is *Candidatus* Occucaria butubitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Occucella conamiforma sp. nov.

Candidatus Occucella conamiforma (NL. fem. n. *conamiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-12 sp005877615*. The type genome for the species is the GenBank assembly GCA_005877615.1. The GC content of the type genome is 63.06 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Occucella gen. nov.

Candidatus Occucella (NL. fem. n. *Occucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NS-12*. The type species for the genus is *Candidatus* Occucella conamiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NS-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadavulaceae.

Description of *Candidatus* Occucella dilogousia sp. nov.

Candidatus Occucella dilogousia (NL. fem. n. *dilogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-12 sp005877855*. The type genome for the species is the GenBank assembly GCA_005877855.1. The GC content of the type genome is 62.05 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Occucella ignomilega sp. nov.

Candidatus Occucella ignomilega (NL. fem. n. *ignomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-12 sp005877505*. The type genome for the species is the GenBank assembly GCA_005877505.1. The GC content of the type genome is 62.5 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Occucella veriditia sp. nov.

Candidatus Occucella veriditia (NL. fem. n. *veriditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-12 sp005877565*. The type genome for the species is the GenBank assembly GCA_005877565.1. The GC content of the type genome is 62.11 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Occucida apharatica sp. nov.

Candidatus Occucida apharatica (NL. fem. n. *apharatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPVD01 sp903868375*. The type genome for the species is the GenBank assembly GCA_903868375.1. The GC content of the type genome is 47.66 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Occucida gen. nov.

Candidatus Occucida (NL. fem. n. *Occucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPVD01*. The type species for the genus is *Candidatus* Occucida

apharatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-20-49-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ranunanaceae.

Description of *Candidatus* Occucosa altipitoga sp. nov.

Candidatus Occucosa altipitoga (NL. fem. n. *altipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKMO01 sp007121025*. The type genome for the species is the GenBank assembly GCA_007121025.1. The GC content of the type genome is 56.1 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Occucosa gen. nov.

Candidatus Occucosa (NL. fem. n. *Occucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKMO01*. The type species for the genus is *Candidatus* Occucosa altipitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Patibariaceae.

Description of *Candidatus* Occumana meriditoga sp. nov.

Candidatus Occumana meriditoga (NL. fem. n. *meriditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UWMA-0041 sp012965625*. The type genome for the species is the GenBank assembly GCA_012965625.1. The GC content of the type genome is 38.13 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Occumana gen. nov.

Candidatus Occumana (NL. fem. n. *Occumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UWMA-0041*. The type species for the genus is *Candidatus* Occumana meriditoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NORP154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinariaceae.

Description of *Candidatus* Occumaria appugessa sp. nov.

Candidatus Occumaria appugessa (NL. fem. n. *appugessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEFD01 sp902826515*. The type genome for the species is the GenBank assembly GCA_902826515.1. The GC content of the type genome is 70.19 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Occumaria gen. nov.

Candidatus Occumaria (NL. fem. n. *Occumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEFD01*. The type species for the genus is *Candidatus* Occumaria appugessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Occumaria semapatio sp. nov.

Candidatus Occumaria semapatio (NL. fem. n. *semapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEFD01 sp902826065*. The type genome for the species is the GenBank assembly GCA_902826065.1. The GC content of the type genome is 70.77 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Occumella caselitrix sp. nov.

Candidatus Occumella caselitrix (NL. fem. n. *caselitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQCE01 sp903870185*. The type genome for the species is the GenBank assembly GCA_903870185.1. The GC content of the type genome is 40.62 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Occumella gen. nov.

Candidatus Occumella (NL. fem. n. *Occumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQCE01*. The type species for the genus is *Candidatus* Occumella caselitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Occumia homiletta sp. nov.

Candidatus Occumia homiletta (NL. fem. n. *homiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMO01 sp009841045*. The type genome for the species is the GenBank assembly GCA_009841045.1. The GC content of the type genome is 60.49 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Occumia gen. nov.

Candidatus Occumia (NL. fem. n. *Occumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXMO01*. The type species for the genus is *Candidatus* Occumia homiletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6926*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paropulaceae.

Description of *Candidatus* Occumia subadivita sp. nov.

Candidatus Occumia subadivita (NL. fem. n. *subadivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMO01 sp012271225*. The type genome for the species is the GenBank assembly GCA_012271225.1. The GC content of the type genome is 64.63 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Occumida accogatica sp. nov.

Candidatus Occumida accogatica (NL. fem. n. *accogatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDDA01 sp013287845*. The type genome for the species is the GenBank assembly GCA_013287845.1. The GC content of the type genome is 35.93 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Occumida gen. nov.

Candidatus Occumida (NL. fem. n. *Occumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDA01*. The type species for the genus is *Candidatus* Occumida accogatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Occumosa abluvedo sp. nov.

Candidatus Occumosa abluvedo (NL. fem. n. *abluvedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDEG01 sp013816505*. The type genome for the species is the GenBank assembly GCA_013816505.1. The GC content of the type genome is 58.44 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Occumosa gen. nov.

Candidatus Occumosa (NL. fem. n. *Occumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDEG01*. The type species for the genus is *Candidatus* Occumosa

abluvedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Occumula obsolitia sp. nov.

Candidatus Occumula obsolitia (NL. fem. n. *obsolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13409 sp902788795*. The type genome for the species is the GenBank assembly GCA_902788795.1. The GC content of the type genome is 52.58 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Occumula gen. nov.

Candidatus Occumula (NL. fem. n. *Occumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13409*. The type species for the genus is *Candidatus* Occumula obsolitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oceanicaulis duponicula sp. nov.

Candidatus Oceanicaulis duponicula (NL. fem. n. *duponicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanicaulis sp003046365*. The type genome for the species is the GenBank assembly RS_GCF_004364605.1. The GC content of the type genome is 61.71 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Oceanicaulis episcitia sp. nov.

Candidatus Oceanicaulis episcitia (NL. fem. n. *episcitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanicaulis sp001657295*. The type genome for the species is the GenBank assembly GCA_001657295.1. The GC content of the type genome is 65.4 % and the genome length is 3.22 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "enrichment culture inoculated with black band disease microbial mat".

Description of *Candidatus* Oceanicaulis viragessa sp. nov.

Candidatus Oceanicaulis viragessa (NL. fem. n. *viragessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanicaulis sp007571185*. The type genome for the species is the GenBank assembly GCA_007571025.1. The GC content of the type genome is 57.92 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Oceanicaulis visibax sp. nov.

Candidatus Oceanicaulis visibax (NL. fem. n. *visibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanicaulis sp008630495*. The type genome for the species is the GenBank assembly RS_GCF_008630495.1. The GC content of the type genome is 66.8 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Oceanicaulis visocatica sp. nov.

Candidatus Oceanicaulis visocatica (NL. fem. n. *visocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanicaulis sp000152745*. The type genome for the species is the GenBank assembly GCA_002683955.1. The GC content of the type genome is 63.21 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Oceanicoccus adsifax sp. nov.

Candidatus Oceanicoccus adsifax (NL. fem. n. *adsifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanicoccus sp000169075*. The type genome for the species is the GenBank assembly RS_GCF_000169075.1. The GC content of the type genome is 47.16 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Oceanicoccus triscatica sp. nov.

Candidatus Oceanicoccus triscatica (NL. fem. n. *triscatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanicoccus sp900120175*. The type genome for the species is the GenBank assembly RS_GCF_900120175.1. The GC content of the type genome is 45.9 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Oceanicola adporimonia sp. nov.

Candidatus Oceanicola adporimonia (NL. fem. n. *adporimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanicola sp008710275*. The type genome for the species is the GenBank assembly RS_GCF_008710275.1. The GC content of the type genome is 67.71 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Oceanicola tranvastra sp. nov.

Candidatus Oceanicola tranvastra (NL. fem. n. *tranvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanicola sp006363825*. The type genome for the species is the GenBank assembly RS_GCF_006363825.1. The GC content of the type genome is 65.98 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Oceaniglobus adlacitas sp. nov.

Candidatus Oceaniglobus adlacitas (NL. fem. n. *adlacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceaniglobus sp009992615*. The type genome for the species is the GenBank assembly GCA_009992615.1. The GC content of the type genome is 62.19 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Oceaniglobus omninivita sp. nov.

Candidatus Oceaniglobus omninivita (NL. fem. n. *omninivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceaniglobus sp008085915*. The type genome for the species is the GenBank assembly RS_GCF_008085915.1. The GC content of the type genome is 60.64 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Oceanimonas insibitia sp. nov.

Candidatus Oceanimonas insibitia (NL. fem. n. *insibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanimonas sp000243075*. The type genome for the species is the GenBank assembly RS_GCF_000243075.1. The GC content of the type genome is 61.08 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Oceanisphaera desupiforma sp. nov.

Candidatus Oceanisphaera desupiforma (NL. fem. n. *desupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanisphaera sp012518835*. The type genome for the species is the GenBank assembly GCA_012518835.1. The GC content of the type genome is 47.79 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Oceanispirochaeta desurivita sp. nov.

Candidatus Oceanispirochaeta desurivita (NL. fem. n. *desurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanispirochaeta sp003249275*. The type genome for the species is the GenBank assembly GCA_003249275.1. The GC content of the type genome is 50.75 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Oceanispirochaeta lanugiforma sp. nov.

Candidatus Oceanispirochaeta lanugiforma (NL. fem. n. *lanugiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanispirochaeta sp002408085*. The type genome for the species is the GenBank assembly GCA_002408085.1. The GC content of the type genome is 50.51

% and the genome length is 4.55 Mbp.

Description of *Candidatus* Oceanispirochaeta saxopiforma sp. nov.

Candidatus Oceanispirochaeta saxopiforma (NL. fem. n. *saxopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanispirochaeta sp008329965*. The type genome for the species is the GenBank assembly RS_GCF_008329965.1. The GC content of the type genome is 43.24 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Oceanispirochaeta taxilitas sp. nov.

Candidatus Oceanispirochaeta taxilitas (NL. fem. n. *taxilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanispirochaeta sp002084805*. The type genome for the species is the GenBank assembly GCA_002084805.1. The GC content of the type genome is 43.07 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Oceanispirochaeta verecatica sp. nov.

Candidatus Oceanispirochaeta verecatica (NL. fem. n. *verecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanispirochaeta sp003346715*. The type genome for the species is the GenBank assembly RS_GCF_013166715.1. The GC content of the type genome is 42.89 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Oceanitalea refacastra sp. nov.

Candidatus Oceanitalea refacastra (NL. fem. n. *refacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanitalea sp006349365*. The type genome for the species is the GenBank assembly RS_GCF_006349365.1. The GC content of the type genome is 73.27 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Oceanobacillus inarditia sp. nov.

Candidatus Oceanobacillus inarditia (NL. fem. n. *inarditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanobacillus sp001659985*. The type genome for the species is the GenBank assembly RS_GCF_001659985.1. The GC content of the type genome is 35.75 % and the genome length is 3.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Oceanobacillus lanifitura sp. nov.

Candidatus Oceanobacillus lanifitura (NL. fem. n. *lanifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanobacillus sp003352005*. The type genome for the species is the GenBank assembly RS_GCF_003352005.1. The GC content of the type genome is 37.09 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Oceanobacillus nefaratica sp. nov.

Candidatus Oceanobacillus nefaratica (NL. fem. n. *nefaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanobacillus sp009389585*. The type genome for the species is the GenBank assembly RS_GCF_009389585.1. The GC content of the type genome is 38.56 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Oceanobacillus scammastra sp. nov.

Candidatus Oceanobacillus scammastra (NL. fem. n. *scammastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanobacillus sp009733865*. The type genome for the species is the GenBank assembly RS_GCF_009733865.1. The GC content of the type genome is 37.53 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Oceanobacter famelilenta sp. nov.

Candidatus Oceanobacter famelilenta (NL. fem. n. *famelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanobacter sp002723385*. The type genome for the species is the GenBank assembly GCA_002723385.1. The GC content of the type genome is 53.2 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Oceanospirillum arremisca sp. nov.

Candidatus Oceanospirillum arremisca (NL. fem. n. *arremisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oceanospirillum sp014164585*. The type genome for the species is the GenBank assembly RS_GCF_014164585.1. The GC content of the type genome is 47.18 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Ochrobactrum bicodatio sp. nov.

Candidatus Ochrobactrum bicodatio (NL. fem. n. *bicodatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ochrobactrum sp900470195*. The type genome for the species is the GenBank assembly RS_GCF_900472385.1. The GC content of the type genome is 57.38 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Ochrobactrum inhumicella sp. nov.

Candidatus Ochrobactrum inhumicella (NL. fem. n. *inhumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ochrobactrum sp900473915*. The type genome for the species is the GenBank assembly RS_GCF_900473915.1. The GC content of the type genome is 57.65 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Ochrobactrum loraredo sp. nov.

Candidatus Ochrobactrum loraredo (NL. fem. n. *loraredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ochrobactrum sp006345815*. The type genome for the species is the GenBank assembly RS_GCF_006345815.1. The GC content of the type genome is 55.16

% and the genome length is 4.6 Mbp.

Description of *Candidatus* Ochrobactrum luceriforma sp. nov.

Candidatus Ochrobactrum luceriforma (NL. fem. n. *luceriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ochrobactrum sp003176975*. The type genome for the species is the GenBank assembly RS_GCF_902825325.1. The GC content of the type genome is 55.85 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Ochrobactrum videligena sp. nov.

Candidatus Ochrobactrum videligena (NL. fem. n. *videligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ochrobactrum sp002975205*. The type genome for the species is the GenBank assembly RS_GCF_002975205.1. The GC content of the type genome is 55.88 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Ochrobactrum actutugo sp. nov.

Candidatus Ochrobactrum actutugo (NL. fem. n. *actutugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ochrobactrum_A sp004368705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004368705.1. The GC content of the type genome is 52.65 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Ochrobactrum innulilega sp. nov.

Candidatus Ochrobactrum innulilega (NL. fem. n. *innulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ochrobactrum_A sp014397025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014397025.1. The GC

content of the type genome is 52.13 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Ochrobactrum anastilenta sp. nov.

Candidatus Ochrobactrum anastilenta (NL. fem. n. *anastilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ochrobactrum_B sp014138095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014138095.1. The GC content of the type genome is 56.49 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Ochrobactrum peradibra sp. nov.

Candidatus Ochrobactrum peradibra (NL. fem. n. *peradibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ochrobactrum_B sp900465685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014138065.1. The GC content of the type genome is 56.64 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Ocissella encolilega sp. nov.

Candidatus Ocissella encolilega (NL. fem. n. *encolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2723085 sp002723085*. The type genome for the species is the GenBank assembly GCA_002723085.1. The GC content of the type genome is 30.04 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Ocissella gen. nov.

Candidatus Ocissella (NL. fem. n. *Ocissella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2723085*. The type species for the genus is *Candidatus* Ocissella encolilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favonellaceae.

Description of *Candidatus* Ocissia inmutousia sp. nov.

Candidatus Ocissia inmutousia (NL. fem. n. *inmutousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICD01 sp009694865*. The type genome for the species is the GenBank assembly GCA_009694865.1. The GC content of the type genome is 46.51 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Ocissia gen. nov.

Candidatus Ocissia (NL. fem. n. *Ocissia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICD01*. The type species for the genus is *Candidatus* Ocissia inmutousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-37-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocariaceae.

Description of *Candidatus* Ocissosa arrugiforma sp. nov.

Candidatus Ocissosa arrugiforma (NL. fem. n. *arrugiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYQN01 sp012519285*. The type genome for the species is the GenBank assembly GCA_012519285.1. The GC content of the type genome is 51.78 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Ocissosa gen. nov.

Candidatus Ocissosa (NL. fem. n. *Ocissosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYQN01*. The type species for the genus is *Candidatus* Ocissosa

arrugiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGM11417*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibicariaceae.

Description of *Candidatus* Octacana algebetta sp. nov.

Candidatus Octacana algebetta (NL. fem. n. *algebetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFHU01 sp013297645*. The type genome for the species is the GenBank assembly GCA_013297645.1. The GC content of the type genome is 67.99 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Octacana gen. nov.

Candidatus Octacana (NL. fem. n. *Octacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFHU01*. The type species for the genus is *Candidatus* Octacana algebetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octacella cicilitas sp. nov.

Candidatus Octacella cicilitas (NL. fem. n. *cicilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LCBW01 sp000997465*. The type genome for the species is the GenBank assembly GCA_000997465.1. The GC content of the type genome is 40.81 % and the genome length is 0.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Octacella gen. nov.

Candidatus Octacella (NL. fem. n. *Octacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LCBW01*. The type species for the genus is *Candidatus* Octacella

cicilitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HR35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanosaceae.

Description of *Candidatus* Octacia decupibula sp. nov.

Candidatus Octacia decupibula (NL. fem. n. *decupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J084 sp003695555*. The type genome for the species is the GenBank assembly GCA_003695555.1. The GC content of the type genome is 64.5 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Octacia gen. nov.

Candidatus Octacia (NL. fem. n. *Octacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J084*. The type species for the genus is *Candidatus* Octacia decupibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octacida decamitas sp. nov.

Candidatus Octacida decamitas (NL. fem. n. *decamitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-55-8 sp001769835*. The type genome for the species is the GenBank assembly GCA_001769835.1. The GC content of the type genome is 55.17 % and the genome length is 3.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 2 / B; 5m depth; 0.1 filter".

Description of *Candidatus* Octacida gen. nov.

Candidatus Octacida (NL. fem. n. *Octacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-55-8*. The type species for the genus is *Candidatus* Octacida

decamitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Octacosa arbavitudo sp. nov.

Candidatus Octacosa arbavitudo (NL. fem. n. *arbavitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-0-20-63-9 sp002796105*. The type genome for the species is the GenBank assembly GCA_002796105.1. The GC content of the type genome is 63.48 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Octacosa gen. nov.

Candidatus Octacosa (NL. fem. n. *Octacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-0-20-63-9*. The type species for the genus is *Candidatus* Octacosa arbavitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9649*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depetariaceae.

Description of *Candidatus* Octacula curabisca sp. nov.

Candidatus Octacula curabisca (NL. fem. n. *curabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12018 sp003447595*. The type genome for the species is the GenBank assembly GCA_003447595.1. The GC content of the type genome is 40.99 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Octacula gen. nov.

Candidatus Octacula (NL. fem. n. *Octacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA12018*. The type species for the genus is *Candidatus* Octacula curabisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octadecabacter irregibra sp. nov.

Candidatus Octadecabacter irregibra (NL. fem. n. *irregibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Octadecabacter sp003533975*. The type genome for the species is the GenBank assembly GCA_003533975.1. The GC content of the type genome is 55.23 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Octinana antefitura sp. nov.

Candidatus Octinana antefitura (NL. fem. n. *antefitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVQ01 sp009694195*. The type genome for the species is the GenBank assembly GCA_009694195.1. The GC content of the type genome is 65.67 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Octinana gen. nov.

Candidatus Octinana (NL. fem. n. *Octinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVQ01*. The type species for the genus is *Candidatus* Octinana antefitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-67-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susiculaceae.

Description of *Candidatus* Octinaria ancepisca sp. nov.

Candidatus Octinaria ancepisca (NL. fem. n. *ancepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DTIX01 sp011334465*. The type genome for the species is the GenBank assembly GCA_011334465.1. The GC content of the type genome is 63.16 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Octinaria gen. nov.

Candidatus Octinaria (NL. fem. n. *Octinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTIX01*. The type species for the genus is *Candidatus* Octinaria ancepisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octinella antirentia sp. nov.

Candidatus Octinella antirentia (NL. fem. n. *antirentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6183 sp004293295*. The type genome for the species is the GenBank assembly GCA_004293295.1. The GC content of the type genome is 38.45 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Octinella gen. nov.

Candidatus Octinella (NL. fem. n. *Octinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6183*. The type species for the genus is *Candidatus* Octinella antirentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefananaceae.

Description of *Candidatus* Octinella omnimitica sp. nov.

Candidatus Octinella omnimitica (NL. fem. n. *omnimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6183 sp002422865*. The type genome for the species is the

GenBank assembly GCA_002422865.1. The GC content of the type genome is 36.78 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Octinia dececatica sp. nov.

Candidatus Octinia dececatica (NL. fem. n. *dececatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSBK01 sp011046085*. The type genome for the species is the GenBank assembly GCA_011046085.1. The GC content of the type genome is 40.97 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Octinia gen. nov.

Candidatus Octinia (NL. fem. n. *Octinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSBK01*. The type species for the genus is *Candidatus* Octinia dececatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3085*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redacanaceae.

Description of *Candidatus* Octinida adambitudo sp. nov.

Candidatus Octinida adambitudo (NL. fem. n. *adambitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYRS01 sp012518645*. The type genome for the species is the GenBank assembly GCA_012518645.1. The GC content of the type genome is 47.51 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Octinida gen. nov.

Candidatus Octinida (NL. fem. n. *Octinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYRS01*. The type species for the genus is *Candidatus* Octinida adambitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

DTU010. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Octinula subinessa sp. nov.

Candidatus Octinula subinessa (NL. fem. n. *subinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-315 sp011046845*. The type genome for the species is the GenBank assembly GCA_011046845.1. The GC content of the type genome is 68.93 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Octinula gen. nov.

Candidatus Octinula (NL. fem. n. *Octinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-315*. The type species for the genus is *Candidatus* Octinula subinessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *13-1-40CM-64-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refululaceae.

Description of *Candidatus* Octipana immatibra sp. nov.

Candidatus Octipana immatibra (NL. fem. n. *immatibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINDO01 sp903847385*. The type genome for the species is the GenBank assembly GCA_903847385.1. The GC content of the type genome is 72.05 % and the genome length is 9.48 Mbp.

Description of *Candidatus* Octipana gen. nov.

Candidatus Octipana (NL. fem. n. *Octipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINDO01*. The type species for the genus is *Candidatus* Octipana immatibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Democellaceae.

Description of *Candidatus* Octiparia domipastra sp. nov.

Candidatus Octiparia domipastra (NL. fem. n. *domipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6114 sp002423435*. The type genome for the species is the GenBank assembly GCA_002423435.1. The GC content of the type genome is 52.99 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Octiparia gen. nov.

Candidatus Octiparia (NL. fem. n. *Octiparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6114*. The type species for the genus is *Candidatus* Octiparia domipastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octipella cibicilega sp. nov.

Candidatus Octipella cibicilega (NL. fem. n. *cibicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1202 sp900549565*. The type genome for the species is the GenBank assembly GCA_900549565.1. The GC content of the type genome is 65.31 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Octipella gen. nov.

Candidatus Octipella (NL. fem. n. *Octipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1202*. The type species for the genus is *Candidatus* Octipella cibicilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octipia inperivita sp. nov.

Candidatus Octipia inperivita (NL. fem. n. *inperivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VAXT01 sp013696805*. The type genome for the species is the GenBank assembly GCA_013696805.1. The GC content of the type genome is 67.8 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Octipia gen. nov.

Candidatus Octipia (NL. fem. n. *Octipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VAXT01*. The type species for the genus is *Candidatus* Octipia inperivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octipia inrepibra sp. nov.

Candidatus Octipia inrepibra (NL. fem. n. *inrepibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VAXT01 sp005883245*. The type genome for the species is the GenBank assembly GCA_005883245.1. The GC content of the type genome is 68.98 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Octipula effigiforma sp. nov.

Candidatus Octipula effigiforma (NL. fem. n. *effigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RSA11 sp002919115*. The type genome for the species is the GenBank assembly GCA_002919115.1. The GC content of the type genome is 71.9 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Octipula gen. nov.

Candidatus Octipula (NL. fem. n. *Octipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RSA11*. The type species for the genus is *Candidatus* Octipula effigiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *70-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Octobana ignositrix sp. nov.

Candidatus Octobana ignositrix (NL. fem. n. *ignositrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCR01 sp013359125*. The type genome for the species is the GenBank assembly GCA_013359125.1. The GC content of the type genome is 58.56 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Octobana gen. nov.

Candidatus Octobana (NL. fem. n. *Octobana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCR01*. The type species for the genus is *Candidatus* Octobana ignositrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-DC*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenebiaceae.

Description of *Candidatus* Octobella anamnetta sp. nov.

Candidatus Octobella anamnetta (NL. fem. n. *anamnetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5158 sp013286085*. The type genome for the species is the GenBank assembly GCA_013286085.1. The GC content of the type genome is 40.6 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Octobella gen. nov.

Candidatus Octobella (NL. fem. n. *Octobella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5158*. The type species for the genus is *Candidatus* Octobella anamnetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Octobella defesilega sp. nov.

Candidatus Octobella defesilega (NL. fem. n. *defesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5158 sp013288815*. The type genome for the species is the GenBank assembly GCA_013288815.1. The GC content of the type genome is 38.13 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Octobella irrefilenta sp. nov.

Candidatus Octobella irrefilenta (NL. fem. n. *irrefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5158 sp903970525*. The type genome for the species is the GenBank assembly GCA_903970525.1. The GC content of the type genome is 39.77 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Octobella levifedo sp. nov.

Candidatus Octobella levifedo (NL. fem. n. *levifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5158 sp002413665*. The type genome for the species is the GenBank assembly GCA_002413665.1. The GC content of the type genome is 36.89 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Octobula cnestilega sp. nov.

Candidatus Octobula cnestilega (NL. fem. n. *cnestilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILLX01 sp903835185*. The type genome for the species is the GenBank assembly GCA_903835185.1. The GC content of the type genome is 50.08 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Octobula gen. nov.

Candidatus Octobula (NL. fem. n. *Octobula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILLX01*. The type species for the genus is *Candidatus* Octobula cnestilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBAT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetutidaceae.

Description of *Candidatus* Octodana reforax sp. nov.

Candidatus Octodana reforax (NL. fem. n. *reforax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KA00134 sp001574395*. The type genome for the species is the GenBank assembly RS_GCF_001574395.1. The GC content of the type genome is 35.1 % and the genome length is 1.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Octodana gen. nov.

Candidatus Octodana (NL. fem. n. *Octodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KA00134*. The type species for the genus is *Candidatus* Octodana reforax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octodaria linigifica sp. nov.

Candidatus Octodaria linigifica (NL. fem. n. *linigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBVW01 sp903959175*. The type genome for the species is the GenBank assembly GCA_903959175.1. The GC content of the type genome is 72.3 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Octodaria gen. nov.

Candidatus Octodaria (NL. fem. n. *Octodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBVW01*. The type species for the genus is *Candidatus* Octodaria linigifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SXON01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capucellaceae.

Description of *Candidatus* Octodella inperimonas sp. nov.

Candidatus Octodella inperimonas (NL. fem. n. *inperimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLQ01 sp012799255*. The type genome for the species is the GenBank assembly GCA_012799255.1. The GC content of the type genome is 45.49 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Octodella gen. nov.

Candidatus Octodella (NL. fem. n. *Octodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZLQ01*. The type species for the genus is *Candidatus* Octodella inperimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Octodida exorbax sp. nov.

Candidatus Octodida exorbax (NL. fem. n. *exorbax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJ6 sp014584595*. The type genome for the species is the GenBank assembly GCA_014584595.1. The GC content of the type genome is 40.53 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Octodida gen. nov.

Candidatus Octodida (NL. fem. n. *Octodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJ6*. The type species for the genus is *Candidatus* Octodida exorbax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2359*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negotosaceae.

Description of *Candidatus* Octodosa obmuricula sp. nov.

Candidatus Octodosa obmuricula (NL. fem. n. *obmuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Alg239-R122 sp900537065*. The type genome for the species is the GenBank assembly RS_GCF_900537065.1. The GC content of the type genome is 54.03 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Octodosa gen. nov.

Candidatus Octodosa (NL. fem. n. *Octodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Alg239-R122*. The type species for the genus is *Candidatus* Octodosa obmuricula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octodula lapilicella sp. nov.

Candidatus Octodula lapilicella (NL. fem. n. *lapilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFHP01 sp009391535*. The type genome for the species is the GenBank assembly GCA_009391535.1. The GC content of the type genome is 41.08 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Octodula gen. nov.

Candidatus Octodula (NL. fem. n. *Octodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFHP01*. The type species for the genus is *Candidatus* Octodula lapilicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2985*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Terebanaceae.

Description of *Candidatus* Octopana procritura sp. nov.

Candidatus Octopana procritura (NL. fem. n. *procritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin26 sp004376075*. The type genome for the species is the GenBank assembly GCA_004376075.1. The GC content of the type genome is 54.62 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Octopana gen. nov.

Candidatus Octopana (NL. fem. n. *Octopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin26*. The type species for the genus is *Candidatus* Octopana procritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogellaceae.

Description of *Candidatus* Octopia bicapimonas sp. nov.

Candidatus Octopia bicapimonas (NL. fem. n. *bicapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAXR01 sp003053505*. The type genome for the species is the GenBank assembly RS_GCF_003053505.1. The GC content of the type genome is 56.86 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Octopia gen. nov.

Candidatus Octopia (NL. fem. n. *Octopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAXR01*. The type species for the genus is *Candidatus* Octopia bicapimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octopia resacivita sp. nov.

Candidatus Octopia resacivita (NL. fem. n. *resacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAXR01 sp012797715*. The type genome for the species is the GenBank assembly GCA_012797715.1. The GC content of the type genome is 58.81 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Octopida allibetta sp. nov.

Candidatus Octopida allibetta (NL. fem. n. *allibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7396 sp002470645*. The type genome for the species is the GenBank assembly GCA_002470645.1. The GC content of the type genome is 26.5 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Octopida gen. nov.

Candidatus Octopida (NL. fem. n. *Octopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7396*. The type species for the genus is *Candidatus* Octopida

allibetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6164*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifellaceae.

Description of *Candidatus* Octoposa idciritica sp. nov.

Candidatus Octoposa idciritica (NL. fem. n. *idciritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11551 sp902770245*. The type genome for the species is the GenBank assembly GCA_902770245.1. The GC content of the type genome is 49.27 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Octoposa gen. nov.

Candidatus Octoposa (NL. fem. n. *Octoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11551*. The type species for the genus is *Candidatus* Octoposa idciritica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octopula inforilenta sp. nov.

Candidatus Octopula inforilenta (NL. fem. n. *inforilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSL01 sp012518315*. The type genome for the species is the GenBank assembly GCA_012518315.1. The GC content of the type genome is 49.72 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Octopula gen. nov.

Candidatus Octopula (NL. fem. n. *Octopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSL01*. The type species for the genus is *Candidatus* Octopula inforilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holovosaceae.

Description of *Candidatus* Octupella adambimonas sp. nov.

Candidatus Octupella adambimonas (NL. fem. n. *adambimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-all-47-17 sp002786495*. The type genome for the species is the GenBank assembly GCA_002786495.1. The GC content of the type genome is 47.47 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Octupella gen. nov.

Candidatus Octupella (NL. fem. n. *Octupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-all-47-17*. The type species for the genus is *Candidatus* Octupella adambimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-60-25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugigulaceae.

Description of *Candidatus* Octupia octopicella sp. nov.

Candidatus Octupia octopicella (NL. fem. n. *octopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AKCV01 sp000272025*. The type genome for the species is the GenBank assembly RS_GCF_000272025.2. The GC content of the type genome is 63.72 % and the genome length is 3.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "textile wastewater".

Description of *Candidatus* Octupia gen. nov.

Candidatus Octupia (NL. fem. n. *Octupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *AKCV01*. The type species for the genus is *Candidatus* Octupia octopicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octuposa argimicella sp. nov.

Candidatus Octuposa argimicella (NL. fem. n. *argimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Im94 sp009749525*. The type genome for the species is the GenBank assembly RS_GCF_009749525.1. The GC content of the type genome is 63.6 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Octuposa gen. nov.

Candidatus Octuposa (NL. fem. n. *Octuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Im94*. The type species for the genus is *Candidatus* Octuposa argimicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octupula demadibra sp. nov.

Candidatus Octupula demadibra (NL. fem. n. *demadibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCUO01 sp902805915*. The type genome for the species is the GenBank assembly GCA_902805915.1. The GC content of the type genome is 66.92 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Octupula gen. nov.

Candidatus Octupula (NL. fem. n. *Octupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCUO01*. The type species for the genus is *Candidatus* Octupula demadibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octusaria inobledo sp. nov.

Candidatus Octusaria inobledo (NL. fem. n. *inobledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14903 sp902803795*. The type genome for the species is the GenBank assembly GCA_902803795.1. The GC content of the type genome is 24.53 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Octusaria gen. nov.

Candidatus Octusaria (NL. fem. n. *Octusaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14903*. The type species for the genus is *Candidatus* Octusaria inobledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Octusella expurilenta sp. nov.

Candidatus Octusella expurilenta (NL. fem. n. *expurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVYY01 sp012517575*. The type genome for the species is the GenBank assembly GCA_012517575.1. The GC content of the type genome is 37.48 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Octusella gen. nov.

Candidatus Octusella (NL. fem. n. *Octusella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MVYY01*. The type species for the genus is *Candidatus* Octusella expurilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Octusella inmenibra sp. nov.

Candidatus Octusella inmenibra (NL. fem. n. *inmenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MVYY01 sp002068215*. The type genome for the species is the GenBank assembly GCA_002068215.1. The GC content of the type genome is 37.54 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Octusida istinitudo sp. nov.

Candidatus Octusida istinitudo (NL. fem. n. *istinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1320 sp003142795*. The type genome for the species is the GenBank assembly GCA_003142795.1. The GC content of the type genome is 46.64 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Octusida gen. nov.

Candidatus Octusida (NL. fem. n. *Octusida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1320*. The type species for the genus is *Candidatus* Octusida istinitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-45-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxanulaceae.

Description of *Candidatus* Octusosa decenatica sp. nov.

Candidatus Octusosa decenatica (NL. fem. n. *decenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTJD01 sp011524975*. The type genome for the species is the GenBank assembly GCA_011524975.1. The GC content of the type genome is 60.37 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Octusosa gen. nov.

Candidatus Octusosa (NL. fem. n. *Octusosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTJD01*. The type species for the genus is *Candidatus* Octusosa decenatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulellaceae.

Description of *Candidatus* Octusula defosimonas sp. nov.

Candidatus Octusula defosimonas (NL. fem. n. *defosimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-48 sp005885025*. The type genome for the species is the GenBank assembly GCA_005885025.1. The GC content of the type genome is 67.62 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Octusula gen. nov.

Candidatus Octusula (NL. fem. n. *Octusula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-48*. The type species for the genus is *Candidatus* Octusula defosimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisacosaceae.

Description of *Candidatus* Odollana adfunitica sp. nov.

Candidatus Odollana adfunitica (NL. fem. n. *adfunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12957 sp900760695*. The type genome for the species is the GenBank assembly RS_GCF_900760695.1. The GC content of the type genome is 43.19 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Odollana gen. nov.

Candidatus Odollana (NL. fem. n. *Odollana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12957*. The type species for the genus is *Candidatus* Odollana adfunitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QAKW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Milipariaceae.

Description of *Candidatus* Odollaria exadvitoga sp. nov.

Candidatus Odollaria exadvitoga (NL. fem. n. *exadvitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JNUCC-1 sp009741735*. The type genome for the species is the GenBank assembly RS_GCF_009741735.1. The GC content of the type genome is 43.26 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Odollaria gen. nov.

Candidatus Odollaria (NL. fem. n. *Odollaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JNUCC-1*. The type species for the genus is *Candidatus* Odollaria exadvitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Odollella colepatio sp. nov.

Candidatus Odollella colepatio (NL. fem. n. *colepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDBB01 sp013288845*. The type genome for the species is the GenBank assembly GCA_013288845.1. The GC content of the type genome is 39.85 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Odollella gen. nov.

Candidatus Odollella (NL. fem. n. *Odollella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDBB01*. The type species for the genus is *Candidatus* Odollella colepatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Odollia abpatastra sp. nov.

Candidatus Odollia abpatastra (NL. fem. n. *abpatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721615 sp002721615*. The type genome for the species is the GenBank assembly GCA_002721615.1. The GC content of the type genome is 30.33 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Odollia gen. nov.

Candidatus Odollia (NL. fem. n. *Odollia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2721615*. The type species for the genus is *Candidatus* Odollia abpatastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED-70*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipinanaceae.

Description of *Candidatus* Odollia demulitrix sp. nov.

Candidatus Odollia demulitrix (NL. fem. n. *demulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721615 sp002708085*. The type genome for the species is the GenBank assembly GCA_002708085.1. The GC content of the type genome is 29.88 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Odollosa gen. nov.

Candidatus Odollosa (NL. fem. n. *Odollosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSD5*. The type species for the genus is *Candidatus* Odollosa profundum_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Odontaria luticimonia sp. nov.

Candidatus Odontaria luticimonia (NL. fem. n. *luticimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHXR01 sp009693235*. The type genome for the species is the GenBank assembly GCA_009693235.1. The GC content of the type genome is 59.68 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Odontaria gen. nov.

Candidatus Odontaria (NL. fem. n. *Odontaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHXR01*. The type species for the genus is *Candidatus* Odontaria luticimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Odontida maligimonas sp. nov.

Candidatus Odontida maligimonas (NL. fem. n. *maligimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1446 sp002329245*. The type genome for the species is the GenBank assembly GCA_002329245.1. The GC content of the type genome is 54.82 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Odontida gen. nov.

Candidatus Odontida (NL. fem. n. *Odontida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1446*. The type species for the genus is *Candidatus* Odontida maligimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Odontosa idciressa sp. nov.

Candidatus Odontosa idciressa (NL. fem. n. *idciressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RCC1774 sp003231495*. The type genome for the species is the GenBank assembly RS_GCF_003231495.1. The GC content of the type genome is 50.23 % and the genome length is 5.93 Mbp.

Description of *Candidatus* Odontosa gen. nov.

Candidatus Odontosa (NL. fem. n. *Odontosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RCC1774*. The type species for the genus is *Candidatus* Odontosa idciressa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Odontula inmutugo sp. nov.

Candidatus Odontula inmutugo (NL. fem. n. *inmutugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B73-G16 sp003646585*. The type genome for the species is the GenBank assembly GCA_003646585.1. The GC content of the type genome is 54.88 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Odontula gen. nov.

Candidatus Odontula (NL. fem. n. *Odontula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B73-G16*. The type species for the genus is *Candidatus* Odontula

inmutugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B13-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panifiaceae.

Description of *Candidatus* Odoribacter aruspimonas sp. nov.

Candidatus Odoribacter aruspimonas (NL. fem. n. *aruspimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Odoribacter sp900548135*. The type genome for the species is the GenBank assembly GCA_900548135.1. The GC content of the type genome is 40.63 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Odoribacter crusmiforma sp. nov.

Candidatus Odoribacter crusmiforma (NL. fem. n. *crusmiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Odoribacter sp900762515*. The type genome for the species is the GenBank assembly GCA_900762515.1. The GC content of the type genome is 39.81 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Odoribacter dicibigena sp. nov.

Candidatus Odoribacter dicibigena (NL. fem. n. *dicibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Odoribacter sp002293375*. The type genome for the species is the GenBank assembly GCA_002293375.1. The GC content of the type genome is 50.73 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Odoribacter maledigena sp. nov.

Candidatus Odoribacter maledigena (NL. fem. n. *maledigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Odoribacter sp900544025*. The type genome for the species is the

GenBank assembly GCA_900544025.1. The GC content of the type genome is 44.43 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Odoribacter murelitudo sp. nov.

Candidatus Odoribacter murelitudo (NL. fem. n. *murelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Odoribacter sp900541415*. The type genome for the species is the GenBank assembly GCA_900541415.1. The GC content of the type genome is 44.65 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Odoribacter semigitrix sp. nov.

Candidatus Odoribacter semigitrix (NL. fem. n. *semigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Odoribacter sp009935865*. The type genome for the species is the GenBank assembly GCA_013316155.1. The GC content of the type genome is 44.36 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Oecophyllibacter daducastra sp. nov.

Candidatus Oecophyllibacter daducastra (NL. fem. n. *daducastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oecophyllibacter sp004843345*. The type genome for the species is the GenBank assembly RS_GCF_004843345.1. The GC content of the type genome is 42.6 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Oecophyllibacter insementia sp. nov.

Candidatus Oecophyllibacter insementia (NL. fem. n. *insementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oecophyllibacter sp006542395*. The type genome for the species is the GenBank assembly RS_GCF_006542395.2. The GC content of the type genome is 60.35 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Oecophyllibacter melilicella sp. nov.

Candidatus Oecophyllibacter melilicella (NL. fem. n. *melilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oecophyllibacter sp004843165*. The type genome for the species is the GenBank assembly RS_GCF_004843165.1. The GC content of the type genome is 43.02 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Oenococcus admulatio sp. nov.

Candidatus Oenococcus admulatio (NL. fem. n. *admulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oenococcus sp004010835*. The type genome for the species is the GenBank assembly RS_GCF_004010835.2. The GC content of the type genome is 36.88 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Oerskovia effulousia sp. nov.

Candidatus Oerskovia effulousia (NL. fem. n. *effulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oerskovia sp005937995*. The type genome for the species is the GenBank assembly RS_GCF_005937995.2. The GC content of the type genome is 72.21 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Offirana inpuditrix sp. nov.

Candidatus Offirana inpuditrix (NL. fem. n. *inpuditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Cloacimonetes-1 sp002841975*. The type genome for the species is the GenBank assembly GCA_002841975.1. The GC content of the type genome is 44.88 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Offirana gen. nov.

Candidatus Offirana (NL. fem. n. *Offirana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Cloacimonetes-1*. The type species for the genus is *Candidatus* Offirana inpuditrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offirella holisitica sp. nov.

Candidatus Offirella holisitica (NL. fem. n. *holisitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLJ01 sp012799365*. The type genome for the species is the GenBank assembly GCA_012799365.1. The GC content of the type genome is 49.12 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Offirella gen. nov.

Candidatus Offirella (NL. fem. n. *Offirella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZLJ01*. The type species for the genus is *Candidatus* Offirella holisitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offirosa assubago sp. nov.

Candidatus Offirosa assubago (NL. fem. n. *assubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10427 sp003500135*. The type genome for the species is the GenBank assembly GCA_003500135.1. The GC content of the type genome is 41.04 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Offirosa gen. nov.

Candidatus Offirosa (NL. fem. n. *Offirosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10427*. The type species for the genus is *Candidatus* Offirosa assubago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offularia intamago sp. nov.

Candidatus Offularia intamago (NL. fem. n. *intamago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA949 sp002293245*. The type genome for the species is the GenBank assembly GCA_002293245.1. The GC content of the type genome is 50.22 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Offularia gen. nov.

Candidatus Offularia (NL. fem. n. *Offularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA949*. The type species for the genus is *Candidatus* Offularia intamago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offulella ectenibula sp. nov.

Candidatus Offulella ectenibula (NL. fem. n. *ectenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-28 sp003599395*. The type genome for the species is the GenBank assembly GCA_003599395.1. The GC content of the type genome is 34.28 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Offulella gen. nov.

Candidatus Offulella (NL. fem. n. *Offulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-28*. The type species for the genus is *Candidatus* Offulella ectenibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offulella nugivetta sp. nov.

Candidatus Offulella nugivetta (NL. fem. n. *nugivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-28 sp011049495*. The type genome for the species is the GenBank assembly GCA_011049495.1. The GC content of the type genome is 34.65 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Offulia crabrentia sp. nov.

Candidatus Offulia crabrentia (NL. fem. n. *crabrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNG01 sp009784845*. The type genome for the species is the GenBank assembly GCA_009784845.1. The GC content of the type genome is 48.95 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Offulia gen. nov.

Candidatus Offulia (NL. fem. n. *Offulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRNG01*. The type species for the genus is *Candidatus* Offulia crabrentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1222*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resacidaceae.

Description of *Candidatus* Offulia depasugo sp. nov.

Candidatus Offulia depasugo (NL. fem. n. *depasugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNG01 sp009776735*. The type genome for the species is the GenBank assembly GCA_009776735.1. The GC content of the type genome is 44.34 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Offulia exturibula sp. nov.

Candidatus Offulia exturibula (NL. fem. n. *exturibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNG01 sp009786345*. The type genome for the species is the GenBank assembly GCA_009786345.1. The GC content of the type genome is 44.68 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Offulia recogicula sp. nov.

Candidatus Offulia recogicula (NL. fem. n. *recogicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNG01 sp009779655*. The type genome for the species is the GenBank assembly GCA_009779655.1. The GC content of the type genome is 47.17 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Offulia sonabifica sp. nov.

Candidatus Offulia sonabifica (NL. fem. n. *sonabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRNG01 sp009783135*. The type genome for the species is the GenBank assembly GCA_009783135.1. The GC content of the type genome is 48.1 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Offulida cetarivita sp. nov.

Candidatus Offulida cetarivita (NL. fem. n. *cetarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LW23 sp003054695*. The type genome for the species is the GenBank assembly RS_GCF_003054695.1. The GC content of the type genome is 61.72 % and the genome length is 6.61 Mbp.

Description of *Candidatus* Offulida gen. nov.

Candidatus Offulida (NL. fem. n. *Offulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LW23*. The type species for the genus is *Candidatus* Offulida cetarivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1321*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolulaceae.

Description of *Candidatus* Offunana caravousia sp. nov.

Candidatus Offunana caravousia (NL. fem. n. *caravousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2726245 sp014381825*. The type genome for the species is the GenBank assembly GCA_014381825.1. The GC content of the type genome is 55.58 % and the genome length is 9.69 Mbp.

Description of *Candidatus* Offunana gen. nov.

Candidatus Offunana (NL. fem. n. *Offunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2726245*. The type species for the genus is *Candidatus* Offunana caravousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offunana videlicella sp. nov.

Candidatus Offunana videlicella (NL. fem. n. *videlicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2726245 sp002726245*. The type genome for the species is the GenBank assembly GCA_002726245.1. The GC content of the type genome is 57.15 % and the genome length is 7.61 Mbp.

Description of *Candidatus* Offunaria cadavugo sp. nov.

Candidatus Offunaria cadavugo (NL. fem. n. *cadavugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA10349 sp003485905*. The type genome for the species is the GenBank assembly GCA_003485905.1. The GC content of the type genome is 45.76 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Offunaria gen. nov.

Candidatus Offunaria (NL. fem. n. *Offunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10349*. The type species for the genus is *Candidatus* Offunaria cadavugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offunella obmuratio sp. nov.

Candidatus Offunella obmuratio (NL. fem. n. *obmuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCVN01 sp013698165*. The type genome for the species is the GenBank assembly GCA_013698165.1. The GC content of the type genome is 39.76 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Offunella gen. nov.

Candidatus Offunella (NL. fem. n. *Offunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCVN01*. The type species for the genus is *Candidatus* Offunella obmuratio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offunida dilemago sp. nov.

Candidatus Offunida dilemago (NL. fem. n. *dilemago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEB-22 sp003105195*. The type genome for the species is the GenBank assembly GCA_003105195.1. The GC content of the type genome is 69.83 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Offunida gen. nov.

Candidatus Offunida (NL. fem. n. *Offunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEB-22*. The type species for the genus is *Candidatus* Offunida dilemago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offunula democibula sp. nov.

Candidatus Offunula democibula (NL. fem. n. *democibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EhC02 sp002282555*. The type genome for the species is the GenBank assembly GCA_002282555.1. The GC content of the type genome is 62.19 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Offunula gen. nov.

Candidatus Offunula (NL. fem. n. *Offunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *EhC02*. The type species for the genus is *Candidatus* Offunula democibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Offunula mirabatica sp. nov.

Candidatus Offunula mirabatica (NL. fem. n. *mirabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EhC02 sp001650895*. The type genome for the species is the GenBank assembly RS_GCF_001650895.1. The GC content of the type genome is 63.47 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Ohtaekwangia detumicula sp. nov.

Candidatus Ohtaekwangia detumicula (NL. fem. n. *detumicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ohtaekwangia sp902168185*. The type genome for the species is the GenBank assembly GCA_902168185.1. The GC content of the type genome is 42.07 % and the genome length is 7.77 Mbp.

Description of *Candidatus* Ohtaekwangia incesimonia sp. nov.

Candidatus Ohtaekwangia incesimonia (NL. fem. n. *incesimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ohtaekwangia sp902168205*. The type genome for the species is the GenBank assembly GCA_902168205.1. The GC content of the type genome is 43.8 % and the genome length is 7.3 Mbp.

Description of *Candidatus* Ohtaekwangia semipitas sp. nov.

Candidatus Ohtaekwangia semipitas (NL. fem. n. *semipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ohtaekwangia sp002432545*. The type genome for the species is the GenBank assembly GCA_002432545.1. The GC content of the type genome is 43.47 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Okeania infatifica sp. nov.

Candidatus Okeania infatifica (NL. fem. n. *infatifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Okeania sp014132355*. The type genome for the species is the GenBank assembly GCA_014132355.1. The GC content of the type genome is 36.81 % and the genome length is 10.98 Mbp.

Description of *Candidatus* Okeania loraritudo sp. nov.

Candidatus Okeania loraritudo (NL. fem. n. *loraritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Okeania sp010672585*. The type genome for the species is the GenBank assembly GCA_010672585.1. The GC content of the type genome is 36.59 % and the genome length is 9.48 Mbp.

Description of *Candidatus* Okeania peridigena sp. nov.

Candidatus Okeania peridigena (NL. fem. n. *peridigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Okeania sp010672525*. The type genome for the species is the GenBank assembly GCA_010672525.1. The GC content of the type genome is 36.55 % and the genome length is 10.01 Mbp.

Description of *Candidatus* Okeania relenilega sp. nov.

Candidatus Okeania relenilega (NL. fem. n. *relenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Okeania sp010672455*. The type genome for the species is the GenBank assembly GCA_010672455.1. The GC content of the type genome is 36.56 % and the genome length is 10.88 Mbp.

Description of *Candidatus* Okeania simininforma sp. nov.

Candidatus Okeania simininforma (NL. fem. n. *simininforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Okeania sp010692555*. The type genome for the species is the GenBank assembly GCA_010692555.1. The GC content of the type genome is 36.84 % and the genome length is 11.06 Mbp.

Description of *Candidatus* Okibacterium vigenugo sp. nov.

Candidatus Okibacterium vigenugo (NL. fem. n. *vigenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Okibacterium sp001984125*. The type genome for the species is the GenBank assembly RS_GCF_001984125.1. The GC content of the type genome is 67.66 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Olegusella baropigena sp. nov.

Candidatus Olegusella baropigena (NL. fem. n. *baropigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olegusella sp900314685*. The type genome for the species is the GenBank assembly GCA_002349685.1. The GC content of the type genome is 64.54 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Olegusella bipenousia sp. nov.

Candidatus Olegusella bipenousia (NL. fem. n. *bipenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olegusella sp900315165*. The type genome for the species is the GenBank assembly GCA_002350025.1. The GC content of the type genome is 63.64 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Olegusella citocigena sp. nov.

Candidatus Olegusella citocigena (NL. fem. n. *citocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olegusella sp002407925*. The type genome for the species is the GenBank assembly GCA_002400225.1. The GC content of the type genome is 54.57 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Olegusella obtemicula sp. nov.

Candidatus Olegusella obtemicula (NL. fem. n. *obtemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olegusella sp000466405*. The type genome for the species is the GenBank assembly RS_GCF_000466405.1. The GC content of the type genome is 49.16 % and the genome length is 1.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity- mouth".

Description of *Candidatus* Oleiagrimonas turificula sp. nov.

Candidatus Oleiagrimonas turificula (NL. fem. n. *turificula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oleiagrimonas sp011759385*. The type genome for the species is the GenBank assembly RS_GCF_011759385.1. The GC content of the type genome is 64.27 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Oleibacter cenacibula sp. nov.

Candidatus Oleibacter cenacibula (NL. fem. n. *cenacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oleibacter sp002724925*. The type genome for the species is the GenBank assembly GCA_002338435.1. The GC content of the type genome is 51.57 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Oleibacter cisoritrix sp. nov.

Candidatus Oleibacter cisoritrix (NL. fem. n. *cisoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oleibacter sp002733645*. The type genome for the species is the GenBank assembly GCA_002733645.1. The GC content of the type genome is 47.58 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Oleibacter exculigena sp. nov.

Candidatus Oleibacter exculigena (NL. fem. n. *exculigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oleibacter sp006212115*. The type genome for the species is the GenBank assembly GCA_006212115.1. The GC content of the type genome is 51.52 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Oleibacter labecitica sp. nov.

Candidatus Oleibacter labecitica (NL. fem. n. *labecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oleibacter sp002298335*. The type genome for the species is the GenBank assembly GCA_002320395.1. The GC content of the type genome is 55.35 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Oleibacter pacifastra sp. nov.

Candidatus Oleibacter pacifastra (NL. fem. n. *pacifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oleibacter sp002331105*. The type genome for the species is the GenBank assembly GCA_002324035.1. The GC content of the type genome is 51.7 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Oleispira funebitudo sp. nov.

Candidatus Oleispira funebitudo (NL. fem. n. *funebitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oleispira sp002632185*. The type genome for the species is the GenBank assembly GCA_002632185.1. The GC content of the type genome is 42.59 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Oleispira rutabifica sp. nov.

Candidatus Oleispira rutabifica (NL. fem. n. *rutabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oleispira sp002708475*. The type genome for the species is the GenBank assembly GCA_003527285.1. The GC content of the type genome is 40.98 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Oligella cocibitas sp. nov.

Candidatus Oligella cocibitas (NL. fem. n. *cocibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oligella sp012511555*. The type genome for the species is the GenBank assembly GCA_012511555.1. The GC content of the type genome is 43.67 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Oligella peribibula sp. nov.

Candidatus Oligella peribibula (NL. fem. n. *peribibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oligella sp012511095*. The type genome for the species is the GenBank assembly GCA_012511095.1. The GC content of the type genome is 42.87 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Oligella taxilibula sp. nov.

Candidatus Oligella taxilibula (NL. fem. n. *taxilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oligella sp012518515*. The type genome for the species is the GenBank assembly GCA_012518515.1. The GC content of the type genome is 43.66 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Oligoflexus agnometta sp. nov.

Candidatus Oligoflexus agnometta (NL. fem. n. *agnometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oligoflexus sp014378195*. The type genome for the species is the GenBank assembly GCA_014378195.1. The GC content of the type genome is 49.47 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Oligoflexus exhoribula sp. nov.

Candidatus Oligoflexus exhoribula (NL. fem. n. *exhoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oligoflexus sp014377445*. The type genome for the species is the GenBank assembly GCA_014377445.1. The GC content of the type genome is 50.38 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Olleya camilitoga sp. nov.

Candidatus Olleya camilitoga (NL. fem. n. *camilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olleya sp002323495*. The type genome for the species is the GenBank assembly RS_GCF_007827365.1. The GC content of the type genome is 32.0 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Olleya rorifetta sp. nov.

Candidatus Olleya rorifetta (NL. fem. n. *rorifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olleya sp000518525*. The type genome for the species is the GenBank assembly RS_GCF_000518505.1. The GC content of the type genome is 31.07 % and the genome length is 3.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Olleya spastitoga sp. nov.

Candidatus Olleya spastitoga (NL. fem. n. *spastitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olleya sp004843725*. The type genome for the species is the GenBank assembly RS_GCF_004843725.1. The GC content of the type genome is 32.67 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Olleya tresvicella sp. nov.

Candidatus Olleya tresvicella (NL. fem. n. *tresvicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olleya sp002831645*. The type genome for the species is the GenBank assembly RS_GCF_002831645.1. The GC content of the type genome is 32.76 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Olsenella assifibra sp. nov.

Candidatus Olsenella assifibra (NL. fem. n. *assifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella sp001189515*. The type genome for the species is the GenBank assembly RS_GCF_001189515.2. The GC content of the type genome is 62.08 % and the genome length is 3.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "curette".

Description of *Candidatus* Olsenella cacalatica sp. nov.

Candidatus Olsenella cacalatica (NL. fem. n. *cacalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella sp900316105*. The type genome for the species is the GenBank assembly GCA_002350085.1. The GC content of the type genome is 61.38 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Olsenella colopago sp. nov.

Candidatus Olsenella colopago (NL. fem. n. *colopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella sp003862195*. The type genome for the species is the GenBank assembly GCA_903789455.1. The GC content of the type genome is 65.58 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Olsenella desepessa sp. nov.

Candidatus Olsenella desepessa (NL. fem. n. *desepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella sp001457795*. The type genome for the species is the GenBank assembly RS_GCF_001457795.1. The GC content of the type genome is 66.24 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Olsenella gemebessa sp. nov.

Candidatus Olsenella gemebessa (NL. fem. n. *gemebessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella sp900538935*. The type genome for the species is the GenBank assembly GCA_900538935.1. The GC content of the type genome is 65.95 %

and the genome length is 2.11 Mbp.

Description of *Candidatus* Olsenella penuriforma sp. nov.

Candidatus Olsenella penuriforma (NL. fem. n. *penuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella sp900313175*. The type genome for the species is the GenBank assembly GCA_900313175.1. The GC content of the type genome is 67.25 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Olsenella renavivita sp. nov.

Candidatus Olsenella renavivita (NL. fem. n. *renavivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella sp902787335*. The type genome for the species is the GenBank assembly GCA_902763695.1. The GC content of the type genome is 67.55 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Olsenella tirocitio sp. nov.

Candidatus Olsenella tirocitio (NL. fem. n. *tirocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella sp900555995*. The type genome for the species is the GenBank assembly RS_GCF_009695875.1. The GC content of the type genome is 64.87 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Olsenella adsecitica sp. nov.

Candidatus Olsenella adsecitica (NL. fem. n. *adsecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_B sp900768455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900768455.1. The GC content of the type genome is 62.94 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Olsenella catecisca sp. nov.

Candidatus Olsenella catecisca (NL. fem. n. *catecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_B sp900119625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902786115.1. The GC content of the type genome is 62.35 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Olsenella citivago sp. nov.

Candidatus Olsenella citivago (NL. fem. n. *citivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_B sp000752675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003469355.1. The GC content of the type genome is 62.46 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Olsenella fraglifica sp. nov.

Candidatus Olsenella fraglifica (NL. fem. n. *fraglifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_B sp004557505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004557505.1. The GC content of the type genome is 65.02 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Olsenella lacinetta sp. nov.

Candidatus Olsenella lacinetta (NL. fem. n. *lacinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_B sp900548775*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902764095.1. The GC content of the type genome is 64.02 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Olsenella repepedo sp. nov.

Candidatus Olsenella repepedo (NL. fem. n. *repepedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_B sp900111695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900111695.1. The GC content of the type genome is 62.61 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Olsenella subadugo sp. nov.

Candidatus Olsenella subadugo (NL. fem. n. *subadugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_B sp900770865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900770865.1. The GC content of the type genome is 63.32 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Olsenella utriniforma sp. nov.

Candidatus Olsenella utriniforma (NL. fem. n. *utriniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_B sp900605015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900605015.1. The GC content of the type genome is 62.28 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Olsenella vinuletta sp. nov.

Candidatus Olsenella vinuletta (NL. fem. n. *vinuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_B sp902773995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902774565.1. The GC content of the type genome is 62.87 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Olsenella adsesentia sp. nov.

Candidatus Olsenella adsesentia (NL. fem. n. *adsesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_D sp002331575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002331575.1. The GC content of the type genome is 63.88 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Olsenella catabimonia sp. nov.

Candidatus Olsenella catabimonia (NL. fem. n. *catabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp900540955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900762855.1. The GC content of the type genome is 65.41 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Olsenella defositio sp. nov.

Candidatus Olsenella defositio (NL. fem. n. *defositio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp002159535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002159535.1. The GC content of the type genome is 68.09 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Olsenella denupatica sp. nov.

Candidatus Olsenella denupatica (NL. fem. n. *denupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp003150175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900544015.1. The GC content of the type genome is 65.93 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Olsenella expisisca sp. nov.

Candidatus Olsenella expisisca (NL. fem. n. *expisisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp002407785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002407785.1. The GC content of the type genome is 64.08 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Olsenella impugimonas sp. nov.

Candidatus Olsenella impugimonas (NL. fem. n. *impugimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp012027725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012027725.1. The GC content of the type genome is 67.59 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Olsenella inlibitia sp. nov.

Candidatus Olsenella inlibitia (NL. fem. n. *inlibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp002159735*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002159735.1. The GC content of the type genome is 67.55 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Olsenella intesilenta sp. nov.

Candidatus Olsenella intesilenta (NL. fem. n. *intesilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp002305805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002305805.1. The GC content of the type genome is 66.38 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Olsenella maledivita sp. nov.

Candidatus Olsenella maledivita (NL. fem. n. *maledivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp002440065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002440065.1. The GC content of the type genome is 65.16 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Olsenella redacibula sp. nov.

Candidatus Olsenella redacibula (NL. fem. n. *redacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp002159495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002159495.1. The GC content of the type genome is 67.86 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Olsenella satacilega sp. nov.

Candidatus Olsenella satacilega (NL. fem. n. *satacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp003609875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900548445.1. The GC content of the type genome is 65.73 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Olsenella tenilousia sp. nov.

Candidatus Olsenella tenilousia (NL. fem. n. *tenilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp002159625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002159625.1. The GC content of the type genome is 66.98 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Olsenella vatilousia sp. nov.

Candidatus Olsenella vatilousia (NL. fem. n. *vatilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Olsenella_E sp002160255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900553575.1. The GC content of the type genome is 69.04 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Omnifana offunibula sp. nov.

Candidatus Omnifana offunibula (NL. fem. n. *offunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBT01 sp012730015*. The type genome for the species is the GenBank assembly GCA_012730015.1. The GC content of the type genome is 43.55 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Omnifana gen. nov.

Candidatus Omnifana (NL. fem. n. *Omnifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBT01*. The type species for the genus is *Candidatus* Omnifana offunibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnifida offunibra sp. nov.

Candidatus Omnifida offunibra (NL. fem. n. *offunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OEQK01 sp900240405*. The type genome for the species is the GenBank assembly RS_GCF_900240405.1. The GC content of the type genome is 36.99 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Omnifida gen. nov.

Candidatus Omnifida (NL. fem. n. *Omnifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OEQK01*. The type species for the genus is *Candidatus* Omnifida offunibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnifula funebitoga sp. nov.

Candidatus Omnifula funebitoga (NL. fem. n. *funebitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSOM01 sp011047005*. The type genome for the species is the GenBank assembly GCA_011047005.1. The GC content of the type genome is 69.82 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Omnifula gen. nov.

Candidatus Omnifula (NL. fem. n. *Omnifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSOM01*. The type species for the genus is *Candidatus* Omnifula funebitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBBX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senipanaceae.

Description of *Candidatus* Omnigana odontentia sp. nov.

Candidatus Omnigana odontentia (NL. fem. n. *odontentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BCD5 sp013112825*. The type genome for the species is the GenBank assembly GCA_013112825.1. The GC content of the type genome is 36.34 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Omnigana gen. nov.

Candidatus Omnigana (NL. fem. n. *Omnigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BCD5*. The type species for the genus is *Candidatus* Omnigana odontentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnigana sicubibula sp. nov.

Candidatus Omnigana sicubibula (NL. fem. n. *sicubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BCD5 sp013359255*. The type genome for the species is the GenBank assembly GCA_013359255.1. The GC content of the type genome is 35.79 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Omnigaria denomousia sp. nov.

Candidatus Omnigaria denomousia (NL. fem. n. *denomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Alpha-05 sp900079695*. The type genome for the species is the GenBank assembly GCA_900079695.1. The GC content of the type genome is 68.47 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Omnigaria gen. nov.

Candidatus Omnigaria (NL. fem. n. *Omnigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Alpha-05*. The type species for the genus is *Candidatus* Omnigaria denomousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnigaria ignobitica sp. nov.

Candidatus Omnigaria ignobitica (NL. fem. n. *ignobitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Alpha-05 sp002307145*. The type genome for the species is the GenBank assembly GCA_002307145.1. The GC content of the type genome is 66.4 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Omnigaria recoratio sp. nov.

Candidatus Omnigaria recoratio (NL. fem. n. *recoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Alpha-05 sp003250275*. The type genome for the species is the GenBank assembly GCA_003250275.1. The GC content of the type genome is 68.62 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Omnigaria susicedo sp. nov.

Candidatus Omnigaria susicedo (NL. fem. n. *susicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Alpha-05 sp003246625*. The type genome for the species is the

GenBank assembly GCA_003246625.1. The GC content of the type genome is 67.08 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Omnigaria videlitia sp. nov.

Candidatus Omnigaria videlitia (NL. fem. n. *videlitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Alpha-05 sp001603335*. The type genome for the species is the GenBank assembly GCA_001603335.1. The GC content of the type genome is 66.92 % and the genome length is 2.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Omnigia calipiforma sp. nov.

Candidatus Omnigia calipiforma (NL. fem. n. *calipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXOZ01 sp903921295*. The type genome for the species is the GenBank assembly GCA_903921295.1. The GC content of the type genome is 67.32 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Omnigia gen. nov.

Candidatus Omnigia (NL. fem. n. *Omnigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXOZ01*. The type species for the genus is *Candidatus* Omnigia calipiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnigosa volucitica sp. nov.

Candidatus Omnigosa volucitica (NL. fem. n. *volucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-49-17 sp001795695*. The type genome for the species is the GenBank assembly GCA_001795695.1. The GC content of the type genome is 49.16

% and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Omnigosa gen. nov.

Candidatus Omnigosa (NL. fem. n. *Omnigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-49-17*. The type species for the genus is *Candidatus* Omnigosa volucitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Omnigula haricitura sp. nov.

Candidatus Omnigula haricitura (NL. fem. n. *haricitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B29-G16 sp003644895*. The type genome for the species is the GenBank assembly GCA_003644895.1. The GC content of the type genome is 39.2 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Omnigula gen. nov.

Candidatus Omnigula (NL. fem. n. *Omnigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B29-G16*. The type species for the genus is *Candidatus* Omnigula haricitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1063*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homicosaceae.

Description of *Candidatus* Omnimana adfunatica sp. nov.

Candidatus Omnimana adfunatica (NL. fem. n. *adfunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-43-11 sp002778635*. The type genome for the species is the GenBank assembly GCA_002778635.1. The GC content of the type genome is 42.57 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Omnimana gen. nov.

Candidatus Omnimana (NL. fem. n. *Omnimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-43-11*. The type species for the genus is *Candidatus* Omnimana adfunatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-47-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defacellaceae.

Description of *Candidatus* Omnimella infisibula sp. nov.

Candidatus Omnimella infisibula (NL. fem. n. *infisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QY30 sp002440945*. The type genome for the species is the GenBank assembly GCA_002440945.1. The GC content of the type genome is 65.1 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Omnimella gen. nov.

Candidatus Omnimella (NL. fem. n. *Omnimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QY30*. The type species for the genus is *Candidatus* Omnimella infisibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnimella irregugo sp. nov.

Candidatus Omnimella irregugo (NL. fem. n. *irregugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *QY30 sp002356635*. The type genome for the species is the GenBank assembly RS_GCF_002356635.1. The GC content of the type genome is 65.73 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Omnimia turicitoga sp. nov.

Candidatus Omnimia turicitoga (NL. fem. n. *turicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-486 sp003251635*. The type genome for the species is the GenBank assembly GCA_003251635.1. The GC content of the type genome is 38.39 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Omnimia gen. nov.

Candidatus Omnimia (NL. fem. n. *Omnimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-486*. The type species for the genus is *Candidatus* Omnimia turicitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Camilariaceae.

Description of *Candidatus* Omnimosa armifilega sp. nov.

Candidatus Omnimosa armifilega (NL. fem. n. *armifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVYX01 sp011772755*. The type genome for the species is the GenBank assembly GCA_011772755.1. The GC content of the type genome is 64.71 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Omnimosa gen. nov.

Candidatus Omnimosa (NL. fem. n. *Omnimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVYX01*. The type species for the genus is *Candidatus* Omnimosa armifilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Omninaria domabentia sp. nov.

Candidatus Omninaria domabentia (NL. fem. n. *domabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-41-10 sp002773695*. The type genome for the species is the GenBank assembly GCA_002773695.1. The GC content of the type genome is 41.47 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Omninaria gen. nov.

Candidatus Omninaria (NL. fem. n. *Omninaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-41-10*. The type species for the genus is *Candidatus* Omninaria domabentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-50-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilidaceae.

Description of *Candidatus* Omninella crastago sp. nov.

Candidatus Omninella crastago (NL. fem. n. *crastago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMLN01 sp014379585*. The type genome for the species is the GenBank assembly GCA_014379585.1. The GC content of the type genome is 51.09 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Omninella gen. nov.

Candidatus Omninella (NL. fem. n. *Omninella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMLN01*. The type species for the genus is *Candidatus* Omninella

crastago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omninia tegumedo sp. nov.

Candidatus Omninia tegumedo (NL. fem. n. *tegumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-38-26 sp001782075*. The type genome for the species is the GenBank assembly GCA_001782075.1. The GC content of the type genome is 38.01 % and the genome length is 1.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Omninia gen. nov.

Candidatus Omninia (NL. fem. n. *Omninia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-38-26*. The type species for the genus is *Candidatus* Omninia tegumedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Omninida arrabessa sp. nov.

Candidatus Omninida arrabessa (NL. fem. n. *arrabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11371 sp003486305*. The type genome for the species is the GenBank assembly GCA_003486305.1. The GC content of the type genome is 45.25 % and the genome length is 8.48 Mbp.

Description of *Candidatus* Omninida gen. nov.

Candidatus Omninida (NL. fem. n. *Omninida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA11371*. The type species for the genus is *Candidatus* Omninida arrabessa .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Omninosa ephemicula sp. nov.

Candidatus Omninosa ephemicula (NL. fem. n. *ephemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFVC01 sp009922595*. The type genome for the species is the GenBank assembly GCA_009922595.1. The GC content of the type genome is 50.48 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Omninosa gen. nov.

Candidatus Omninosa (NL. fem. n. *Omninosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFVC01*. The type species for the genus is *Candidatus* Omninosa ephemicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omninula oblucentia sp. nov.

Candidatus Omninula oblucentia (NL. fem. n. *oblucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG2 sp003222065*. The type genome for the species is the GenBank assembly GCA_003222065.1. The GC content of the type genome is 64.24 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Omninula gen. nov.

Candidatus Omninula (NL. fem. n. *Omninula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG2*. The type species for the genus is *Candidatus* Omninula oblucentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnipana didacastra sp. nov.

Candidatus Omnipana didacastra (NL. fem. n. *didacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPV01 sp013202595*. The type genome for the species is the GenBank assembly GCA_013202595.1. The GC content of the type genome is 65.44 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Omnipana gen. nov.

Candidatus Omnipana (NL. fem. n. *Omnipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPV01*. The type species for the genus is *Candidatus* Omnipana didacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11373*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigaranaceae.

Description of *Candidatus* Omniparia aplesibula sp. nov.

Candidatus Omniparia aplesibula (NL. fem. n. *aplesibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNIU01 sp014382715*. The type genome for the species is the GenBank assembly GCA_014382715.1. The GC content of the type genome is 48.27 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Omniparia gen. nov.

Candidatus Omniparia (NL. fem. n. *Omniparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNIU01*. The type species for the genus is *Candidatus* Omniparia aplesibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omniparia atropilenta sp. nov.

Candidatus Omniparia atropilenta (NL. fem. n. *atropilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNIU01 sp011051075*. The type genome for the species is the GenBank assembly GCA_011051075.1. The GC content of the type genome is 54.51 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Omniparia paralibra sp. nov.

Candidatus Omniparia paralibra (NL. fem. n. *paralibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNIU01 sp014382905*. The type genome for the species is the GenBank assembly GCA_014382905.1. The GC content of the type genome is 50.12 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Omnipella devecentia sp. nov.

Candidatus Omnipella devecentia (NL. fem. n. *devecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401635 sp002401635*. The type genome for the species is the GenBank assembly GCA_002401635.1. The GC content of the type genome is 43.09 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Omnipella gen. nov.

Candidatus Omnipella (NL. fem. n. *Omnipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2401635*. The type species for the genus is *Candidatus* Omnipella devecentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnipida dilemitica sp. nov.

Candidatus Omnipida dilemitica (NL. fem. n. *dilemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTH01 sp012518435*. The type genome for the species is the GenBank assembly GCA_012518435.1. The GC content of the type genome is 51.59 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Omnipida gen. nov.

Candidatus Omnipida (NL. fem. n. *Omnipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYTH01*. The type species for the genus is *Candidatus* Omnipida dilemitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defarosaceae.

Description of *Candidatus* Omnipida inmodisca sp. nov.

Candidatus Omnipida inmodisca (NL. fem. n. *inmodisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTH01 sp012523785*. The type genome for the species is the GenBank assembly GCA_012523785.1. The GC content of the type genome is 49.74 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Omniposa acrociforma sp. nov.

Candidatus Omniposa acrociforma (NL. fem. n. *acrociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1033 sp003152165*. The type genome for the species is the GenBank assembly GCA_003152165.1. The GC content of the type genome is 68.29 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Omniposa gen. nov.

Candidatus Omniposa (NL. fem. n. *Omniposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1033*. The type species for the genus is *Candidatus* Omniposa acrociforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Omniposa illapifica sp. nov.

Candidatus Omniposa illapifica (NL. fem. n. *illapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1033 sp003169655*. The type genome for the species is the GenBank assembly GCA_003169655.1. The GC content of the type genome is 69.25 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Omnivana demigago sp. nov.

Candidatus Omnivana demigago (NL. fem. n. *demigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWET01 sp903911805*. The type genome for the species is the GenBank assembly GCA_903911805.1. The GC content of the type genome is 30.28 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Omnivana gen. nov.

Candidatus Omnivana (NL. fem. n. *Omnivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWET01*. The type species for the genus is *Candidatus* Omnivana demigago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Omnivaria remulitoga sp. nov.

Candidatus Omnivaria remulitoga (NL. fem. n. *remulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINVI01 sp903854075*. The type genome for the species is the GenBank assembly GCA_903854075.1. The GC content of the type genome is 46.65 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Omnivaria gen. nov.

Candidatus Omnivaria (NL. fem. n. *Omnivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINVI01*. The type species for the genus is *Candidatus* Omnivaria remulitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2013-40CM-41-45*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vocifellaceae.

Description of *Candidatus* Omnivella celumentia sp. nov.

Candidatus Omnivella celumentia (NL. fem. n. *celumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1297 sp003142915*. The type genome for the species is the GenBank assembly GCA_003142915.1. The GC content of the type genome is 35.75 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Omnivella gen. nov.

Candidatus Omnivella (NL. fem. n. *Omnivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1297*. The type species for the genus is *Candidatus* Omnivella celumentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnivia colubousia sp. nov.

Candidatus Omnivia colubousia (NL. fem. n. *colubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGS01 sp009781075*. The type genome for the species is the GenBank assembly GCA_009781075.1. The GC content of the type genome is 35.18 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Omnivia gen. nov.

Candidatus Omnivia (NL. fem. n. *Omnivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGS01*. The type species for the genus is *Candidatus* Omnivia colubousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnivia effunessa sp. nov.

Candidatus Omnivia effunessa (NL. fem. n. *effunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGS01 sp009787075*. The type genome for the species is the GenBank assembly GCA_009787075.1. The GC content of the type genome is 36.87 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Omnivida obfusitoga sp. nov.

Candidatus Omnivida obfusitoga (NL. fem. n. *obfusitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SSC3 sp013693815*. The type genome for the species is the GenBank assembly GCA_013693815.1. The GC content of the type genome is 65.04 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Omnivida gen. nov.

Candidatus Omnivida (NL. fem. n. *Omnivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SSC3*. The type species for the genus is *Candidatus* Omnivida obfusitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnivosa revecitoga sp. nov.

Candidatus Omnivosa revecitoga (NL. fem. n. *revecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-582 sp003251015*. The type genome for the species is the GenBank assembly GCA_003251015.1. The GC content of the type genome is 37.78 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Omnivosa gen. nov.

Candidatus Omnivosa (NL. fem. n. *Omnivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-582*. The type species for the genus is *Candidatus* Omnivosa revecitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Omnivula nubifivita sp. nov.

Candidatus Omnivula nubifivita (NL. fem. n. *nubifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VUNI01 sp009695765*. The type genome for the species is the GenBank assembly RS_GCF_009695765.1. The GC content of the type genome is 41.69 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Omnivula gen. nov.

Candidatus Omnivula (NL. fem. n. *Omnivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VUNI01*. The type species for the genus is *Candidatus* Omnivula nubifivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Onocraria devecifica sp. nov.

Candidatus Onocraria devecifica (NL. fem. n. *devecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5124 sp000503875*. The type genome for the species is the GenBank assembly GCA_000503875.1. The GC content of the type genome is 31.06 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Onocraria gen. nov.

Candidatus Onocraria (NL. fem. n. *Onocraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5124*. The type species for the genus is *Candidatus* Onocraria devecifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *X112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifariaceae.

Description of *Candidatus* Onocraria incivitia sp. nov.

Candidatus Onocraria incivitia (NL. fem. n. *incivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5124 sp002414185*. The type genome for the species is the GenBank assembly GCA_002414185.1. The GC content of the type genome is 31.3 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Onocrella ciminicula sp. nov.

Candidatus Onocrella ciminicula (NL. fem. n. *ciminicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QIAB01 sp003225455*. The type genome for the species is the GenBank assembly GCA_003225455.1. The GC content of the type genome is 55.75 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Onocrella gen. nov.

Candidatus Onocrella (NL. fem. n. *Onocrella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QIAB01*. The type species for the genus is *Candidatus* Onocrella ciminicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Onocria admigimonia sp. nov.

Candidatus Onocria admigimonia (NL. fem. n. *admigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11416 sp900768525*. The type genome for the species is the GenBank assembly RS_GCF_900768525.1. The GC content of the type genome is 45.31 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Onocria gen. nov.

Candidatus Onocria (NL. fem. n. *Onocria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11416*. The type species for the genus is *Candidatus* Onocria admigimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Onocria vigenentia sp. nov.

Candidatus Onocria vigenentia (NL. fem. n. *vigenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11416 sp900766495*. The type genome for the species is the GenBank assembly RS_GCF_900766495.1. The GC content of the type genome is 45.37 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Onocrida sacomicella sp. nov.

Candidatus Onocrida sacomicella (NL. fem. n. *sacomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-39-34 sp002787355*. The type genome for the species is the GenBank assembly GCA_002787355.1. The GC content of the type genome is 38.78 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Onocrida gen. nov.

Candidatus Onocrida (NL. fem. n. *Onocrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-39-34*. The type species for the genus is *Candidatus* Onocrida sacomicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Onocrosa conaressa sp. nov.

Candidatus Onocrosa conaressa (NL. fem. n. *conaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMLU01 sp903842365*. The type genome for the species is the GenBank assembly GCA_903842365.1. The GC content of the type genome is 41.62 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Onocrosa gen. nov.

Candidatus Onocrosa (NL. fem. n. *Onocrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMLU01*. The type species for the genus is *Candidatus* Onocrosa conaressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6065*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lutulidaceae.

Description of *Candidatus* Onocrula pavicedo sp. nov.

Candidatus Onocrula pavicedo (NL. fem. n. *pavicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWTC01 sp003563005*. The type genome for the species is the GenBank assembly GCA_003563005.1. The GC content of the type genome is 65.46 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Onocrula gen. nov.

Candidatus Onocrula (NL. fem. n. *Onocrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWTC01*. The type species for the genus is *Candidatus* Onocrula pavicedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ontolana andabitudo sp. nov.

Candidatus Ontolana andabitudo (NL. fem. n. *andabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDH01 sp012729405*. The type genome for the species is the GenBank assembly GCA_012729405.1. The GC content of the type genome is 40.29 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Ontolana gen. nov.

Candidatus Ontolana (NL. fem. n. *Ontolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYDH01*. The type species for the genus is *Candidatus* Ontolana andabitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Ontolaria dilecago sp. nov.

Candidatus Ontolaria dilecago (NL. fem. n. *dilecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXQM01 sp012974295*. The type genome for the species is the GenBank assembly GCA_012974295.1. The GC content of the type genome is 49.85 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Ontolaria gen. nov.

Candidatus Ontolaria (NL. fem. n. *Ontolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXQM01*. The type species for the genus is *Candidatus* Ontolaria dilecago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogellaceae.

Description of *Candidatus* Ontolella bicipiforma sp. nov.

Candidatus Ontolella bicipiforma (NL. fem. n. *bicipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6490 sp002435365*. The type genome for the species is the GenBank assembly GCA_002435365.1. The GC content of the type genome is 40.22 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Ontolella gen. nov.

Candidatus Ontolella (NL. fem. n. *Ontolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6490*. The type species for the genus is *Candidatus* Ontolella bicipiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ontolia vivifitoga sp. nov.

Candidatus Ontolia vivifitoga (NL. fem. n. *vivifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-34-12 sp001784555*. The type genome for the species is the GenBank assembly GCA_001784555.1. The GC content of the type genome is 34.0 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Ontolia gen. nov.

Candidatus Ontolia (NL. fem. n. *Ontolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-34-12*. The type species for the genus is *Candidatus* Ontolia vivifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-35-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colopariaceae.

Description of *Candidatus* Ontolida curabitia sp. nov.

Candidatus Ontolida curabitia (NL. fem. n. *curabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-189 sp003223325*. The type genome for the species is the GenBank assembly GCA_003223325.1. The GC content of the type genome is 57.44 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Ontolida gen. nov.

Candidatus Ontolida (NL. fem. n. *Ontolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-189*. The type species for the genus is *Candidatus* Ontolida curabitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Ontolida ensifilega sp. nov.

Candidatus Ontolida ensifilega (NL. fem. n. *ensifilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-189 sp003223315*. The type genome for the species is the GenBank assembly GCA_003223315.1. The GC content of the type genome is 58.63 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Ontolida resulimonia sp. nov.

Candidatus Ontolida resulimonia (NL. fem. n. *resulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-189 sp003224175*. The type genome for the species is the GenBank assembly GCA_003224175.1. The GC content of the type genome is 57.79 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Ontolida rubicitio sp. nov.

Candidatus Ontolida rubicitio (NL. fem. n. *rubicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-189 sp003140295*. The type genome for the species is the GenBank assembly GCA_003140295.1. The GC content of the type genome is 58.98 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Ontolosa roraritia sp. nov.

Candidatus Ontolosa roraritia (NL. fem. n. *roraritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQWB01 sp009785555*. The type genome for the species is the GenBank assembly GCA_009785555.1. The GC content of the type genome is 46.29 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Ontolosa gen. nov.

Candidatus Ontolosa (NL. fem. n. *Ontolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *WQWB01*. The type species for the genus is *Candidatus* Ontolosa roraritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRAX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibulaceae.

Description of *Candidatus* Ontolula apoplilega sp. nov.

Candidatus Ontolula apoplilega (NL. fem. n. *apoplilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED11-181 sp003563895*. The type genome for the species is the GenBank assembly GCA_003563895.1. The GC content of the type genome is 55.42 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Ontolula gen. nov.

Candidatus Ontolula (NL. fem. n. *Ontolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED11-181*. The type species for the genus is *Candidatus* Ontolula apoplilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubiaceae.

Description of *Candidatus* Opercana cerifibra sp. nov.

Candidatus Opercana cerifibra (NL. fem. n. *cerifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W11650 sp003858485*. The type genome for the species is the GenBank assembly RS_GCF_003858485.1. The GC content of the type genome is 39.3 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Opercana gen. nov.

Candidatus Opercana (NL. fem. n. *Opercana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W11650*. The type species for the genus is *Candidatus* Opercana cerifibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Opercana elastitas sp. nov.

Candidatus Opercana elastitas (NL. fem. n. *elastitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W11650 sp002999035*. The type genome for the species is the GenBank assembly RS_GCF_002999035.1. The GC content of the type genome is 45.33 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Opercaria alcalatio sp. nov.

Candidatus Opercaria alcalatio (NL. fem. n. *alcalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYOJ01 sp007280875*. The type genome for the species is the GenBank assembly GCA_007280875.1. The GC content of the type genome is 49.53 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Opercaria gen. nov.

Candidatus Opercaria (NL. fem. n. *Opercaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QYOJ01*. The type species for the genus is *Candidatus* Opercaria alcalatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedepariaceae.

Description of *Candidatus* Opercaria apposilega sp. nov.

Candidatus Opercaria apposilega (NL. fem. n. *apposilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYOJ01 sp014382125*. The type genome for the species is the GenBank assembly GCA_014382125.1. The GC content of the type genome is 44.55 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Opercella inremigena sp. nov.

Candidatus Opercella inremigena (NL. fem. n. *inremigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCRL01 sp004298065*. The type genome for the species is the GenBank assembly GCA_004298065.1. The GC content of the type genome is 63.69 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Opercella gen. nov.

Candidatus Opercella (NL. fem. n. *Opercella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCRL01*. The type species for the genus is *Candidatus* Opercella inremigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Opercia resupousia sp. nov.

Candidatus Opercia resupousia (NL. fem. n. *resupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-65-34 sp001785115*. The type genome for the species is the GenBank assembly GCA_001785115.1. The GC content of the type genome is 64.86 % and the genome length is 2.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Opercia gen. nov.

Candidatus Opercia (NL. fem. n. *Opercia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-65-34*. The type species for the genus is *Candidatus* Opercia

resupousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Opercida filifastra sp. nov.

Candidatus Opercida filifastra (NL. fem. n. *filifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-53-21 sp902826595*. The type genome for the species is the GenBank assembly GCA_902826595.1. The GC content of the type genome is 54.22 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Opercida gen. nov.

Candidatus Opercida (NL. fem. n. *Opercida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-53-21*. The type species for the genus is *Candidatus* Opercida filifastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2774*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siligiaceae.

Description of *Candidatus* Opercida vicatimonia sp. nov.

Candidatus Opercida vicatimonia (NL. fem. n. *vicatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-53-21 sp001775255*. The type genome for the species is the GenBank assembly GCA_001775255.1. The GC content of the type genome is 52.76 % and the genome length is 2.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Opitutus vavasax sp. nov.

Candidatus Opitutus vavasax (NL. fem. n. *vavasax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Opitutus sp903877135*. The type genome for the species is the GenBank assembly GCA_903877135.1. The GC content of the type genome is 63.5 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Oppanana edissitas sp. nov.

Candidatus Oppanana edissitas (NL. fem. n. *edissitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1774 sp002314635*. The type genome for the species is the GenBank assembly GCA_002314635.1. The GC content of the type genome is 57.0 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Oppanana gen. nov.

Candidatus Oppanana (NL. fem. n. *Oppanana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1774*. The type species for the genus is *Candidatus* Oppanana edissitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oppanaria nimirimonas sp. nov.

Candidatus Oppanaria nimirimonas (NL. fem. n. *nimirimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYHV01 sp012744355*. The type genome for the species is the GenBank assembly GCA_012744355.1. The GC content of the type genome is 34.91 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Oppanaria gen. nov.

Candidatus Oppanaria (NL. fem. n. *Oppanaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYHV01*. The type species for the genus is *Candidatus* Oppanaria nimirimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oppanella inlumigena sp. nov.

Candidatus Oppanella inlumigena (NL. fem. n. *inlumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDIW01 sp013001485*. The type genome for the species is the GenBank assembly GCA_013001485.1. The GC content of the type genome is 64.58 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Oppanella gen. nov.

Candidatus Oppanella (NL. fem. n. *Oppanella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDIW01*. The type species for the genus is *Candidatus* Oppanella inlumigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicellaceae.

Description of *Candidatus* Oppanella innupitia sp. nov.

Candidatus Oppanella innupitia (NL. fem. n. *innupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDIW01 sp013003515*. The type genome for the species is the GenBank assembly GCA_013003515.1. The GC content of the type genome is 65.65 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Oppania odolledo sp. nov.

Candidatus Oppania odolledo (NL. fem. n. *odolledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1393 sp002305255*. The type genome for the species is the GenBank assembly GCA_002305255.1. The GC content of the type genome is 61.17 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Oppania gen. nov.

Candidatus Oppania (NL. fem. n. *Oppania* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1393*. The type species for the genus is *Candidatus* Oppania odolledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemanaceae.

Description of *Candidatus* Oppanida ignosentia sp. nov.

Candidatus Oppanida ignosentia (NL. fem. n. *ignosentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM10818 sp900772445*. The type genome for the species is the GenBank assembly RS_GCF_900772445.1. The GC content of the type genome is 25.86 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Oppanida gen. nov.

Candidatus Oppanida (NL. fem. n. *Oppanida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM10818*. The type species for the genus is *Candidatus* Oppanida ignosentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Oppanosa octodibra sp. nov.

Candidatus Oppanosa octodibra (NL. fem. n. *octodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKY01 sp009777895*. The type genome for the species is the GenBank assembly GCA_009777895.1. The GC content of the type genome is 50.0 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Oppanosa gen. nov.

Candidatus Oppanosa (NL. fem. n. *Oppanosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKY01*. The type species for the genus is *Candidatus* Oppanosa octodibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oppanula adsibentia sp. nov.

Candidatus Oppanula adsibentia (NL. fem. n. *adsibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMIO01 sp014381105*. The type genome for the species is the GenBank assembly GCA_014381105.1. The GC content of the type genome is 36.04 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Oppanula gen. nov.

Candidatus Oppanula (NL. fem. n. *Oppanula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMIO01*. The type species for the genus is *Candidatus* Oppanula adsibentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Opporaria alluvitia sp. nov.

Candidatus Opporaria alluvitia (NL. fem. n. *alluvitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILTG01 sp903837125*. The type genome for the species is the GenBank assembly GCA_903837125.1. The GC content of the type genome is 35.21 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Opporaria gen. nov.

Candidatus Opporaria (NL. fem. n. *Opporaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILTG01*. The type species for the genus is *Candidatus* Opporaria alluvitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Opporella nefanitia sp. nov.

Candidatus Opporella nefanitia (NL. fem. n. *nefanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7523 sp002479415*. The type genome for the species is the GenBank assembly GCA_002479415.1. The GC content of the type genome is 43.83 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Opporella gen. nov.

Candidatus Opporella (NL. fem. n. *Opporella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7523*. The type species for the genus is *Candidatus* Opporella nefanitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Opporida revulitica sp. nov.

Candidatus Opporida revulitica (NL. fem. n. *revulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDLZ01 sp013001705*. The type genome for the species is the GenBank assembly GCA_013001705.1. The GC content of the type genome is 49.51 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Opporida gen. nov.

Candidatus Opporida (NL. fem. n. *Opporida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDLZ01*. The type species for the genus is *Candidatus* Opporida revulitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDKJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidellaceae.

Description of *Candidatus* Opporosa malogitas sp. nov.

Candidatus Opporosa malogitas (NL. fem. n. *malogitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABZZR01 sp902530215*. The type genome for the species is the GenBank assembly GCA_902530215.1. The GC content of the type genome is 29.46 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Opporosa gen. nov.

Candidatus Opporosa (NL. fem. n. *Opporosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABZZR01*. The type species for the genus is *Candidatus* Opporosa malogitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Opporula adgesentia sp. nov.

Candidatus Opporula adgesentia (NL. fem. n. *adgesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2705995 sp002705995*. The type genome for the species is the GenBank assembly GCA_002705995.1. The GC content of the type genome is 38.45 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Opporula gen. nov.

Candidatus Opporula (NL. fem. n. *Opporula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2705995*. The type species for the genus is *Candidatus* Opporula adgesentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oppugana homagessa sp. nov.

Candidatus Oppugana homagessa (NL. fem. n. *homagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITIQ01 sp013361525*. The type genome for the species is the GenBank assembly GCA_013361525.1. The GC content of the type genome is 66.21 % and the genome length is 11.91 Mbp.

Description of *Candidatus* Oppugana gen. nov.

Candidatus Oppugana (NL. fem. n. *Oppugana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITIQ01*. The type species for the genus is *Candidatus* Oppugana homagessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oppugana ignicousia sp. nov.

Candidatus Oppugana ignicousia (NL. fem. n. *ignicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITIQ01 sp903892415*. The type genome for the species is the GenBank assembly GCA_903892415.1. The GC content of the type genome is 63.35 % and the genome length is 10.85 Mbp.

Description of *Candidatus* Oppugella diminastra sp. nov.

Candidatus Oppugella diminastra (NL. fem. n. *diminastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *QYPU01 sp007280145*. The type genome for the species is the GenBank assembly GCA_007280145.1. The GC content of the type genome is 47.38 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Oppugella gen. nov.

Candidatus Oppugella (NL. fem. n. *Oppugella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QYPU01*. The type species for the genus is *Candidatus* Oppugella diminastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5620*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semaposaceae.

Description of *Candidatus* Oppugia amatrilega sp. nov.

Candidatus Oppugia amatrilega (NL. fem. n. *amatrilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6235 sp002441525*. The type genome for the species is the GenBank assembly GCA_002441525.1. The GC content of the type genome is 38.44 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Oppugia gen. nov.

Candidatus Oppugia (NL. fem. n. *Oppugia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6235*. The type species for the genus is *Candidatus* Oppugia amatrilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5453*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifosaceae.

Description of *Candidatus* Oppugia ambecastra sp. nov.

Candidatus Oppugia ambecastra (NL. fem. n. *ambecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6235 sp002423145*. The type genome for the species is the GenBank assembly GCA_002423145.1. The GC content of the type genome is 37.09 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Oppugida irredatica sp. nov.

Candidatus Oppugida irredatica (NL. fem. n. *irredatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWQG01 sp003556835*. The type genome for the species is the GenBank assembly GCA_003556835.1. The GC content of the type genome is 58.82 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Oppugida gen. nov.

Candidatus Oppugida (NL. fem. n. *Oppugida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWQG01*. The type species for the genus is *Candidatus* Oppugida irredatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oppugosa adcomitrix sp. nov.

Candidatus Oppugosa adcomitrix (NL. fem. n. *adcomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RHOV01 sp003946655*. The type genome for the species is the GenBank assembly RS_GCF_003946655.1. The GC content of the type genome is 49.01 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Oppugosa gen. nov.

Candidatus Oppugosa (NL. fem. n. *Oppugosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RHOV01*. The type species for the genus is *Candidatus* Oppugosa adcomitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oppugosa aplesago sp. nov.

Candidatus Oppugosa aplesago (NL. fem. n. *aplesago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RHOV01 sp003946675*. The type genome for the species is the GenBank assembly RS_GCF_003946675.1. The GC content of the type genome is 40.81 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Oppugosa imbecicella sp. nov.

Candidatus Oppugosa imbecicella (NL. fem. n. *imbecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RHOV01 sp003946645*. The type genome for the species is the GenBank assembly RS_GCF_003946645.1. The GC content of the type genome is 41.74 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Optabana indupitica sp. nov.

Candidatus Optabana indupitica (NL. fem. n. *indupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4001 sp902805855*. The type genome for the species is the GenBank assembly GCA_902805855.1. The GC content of the type genome is 69.97 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Optabana gen. nov.

Candidatus Optabana (NL. fem. n. *Optabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4001*. The type species for the genus is *Candidatus* Optabana indupitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Optabana macilitia sp. nov.

Candidatus Optabana macilitia (NL. fem. n. *macilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4001 sp002384855*. The type genome for the species is the GenBank assembly GCA_002384855.1. The GC content of the type genome is 71.15 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Optabaria practatica sp. nov.

Candidatus Optabaria practatica (NL. fem. n. *practatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RACS-047 sp013316045*. The type genome for the species is the GenBank assembly GCA_013316045.1. The GC content of the type genome is 46.89 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Optabaria gen. nov.

Candidatus Optabaria (NL. fem. n. *Optabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RACS-047*. The type species for the genus is *Candidatus* Optabaria practatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Optabia viliticula sp. nov.

Candidatus Optabia viliticula (NL. fem. n. *viliticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYN01 sp009692785*. The type genome for the species is the GenBank assembly GCA_009692785.1. The GC content of the type genome is 69.3 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Optabia gen. nov.

Candidatus Optabia (NL. fem. n. *Optabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYN01*. The type species for the genus is *Candidatus* Optabia viliticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P2-11E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotosaceae.

Description of *Candidatus* Optabida enuntilenta sp. nov.

Candidatus Optabida enuntilenta (NL. fem. n. *enuntilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZLM01 sp012799315*. The type genome for the species is the GenBank assembly GCA_012799315.1. The GC content of the type genome is 40.63 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Optabida gen. nov.

Candidatus Optabida (NL. fem. n. *Optabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZLM01*. The type species for the genus is *Candidatus* Optabida enuntilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Optumella viginitia sp. nov.

Candidatus Optumella viginitia (NL. fem. n. *viginitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5005 sp002398405*. The type genome for the species is the GenBank assembly GCA_002398405.1. The GC content of the type genome is 66.38 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Optumella gen. nov.

Candidatus Optumella (NL. fem. n. *Optumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA5005*. The type species for the genus is *Candidatus* Optumella viginitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Optumosa assubitas sp. nov.

Candidatus Optumosa assubitas (NL. fem. n. *assubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZJU01 sp012800195*. The type genome for the species is the GenBank assembly GCA_012800195.1. The GC content of the type genome is 36.41 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Optumosa gen. nov.

Candidatus Optumosa (NL. fem. n. *Optumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZJU01*. The type species for the genus is *Candidatus* Optumosa assubitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BICA1-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Novilosaceae.

Description of *Candidatus* Optumula chancisca sp. nov.

Candidatus Optumula chancisca (NL. fem. n. *chancisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGM01 sp900696535*. The type genome for the species is the GenBank assembly GCA_900696535.1. The GC content of the type genome is 69.04 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Optumula gen. nov.

Candidatus Optumula (NL. fem. n. *Optumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAADGM01*. The type species for the genus is *Candidatus* Optumula

chancisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1342*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibariaceae.

Description of *Candidatus* Opuscella bicoditoga sp. nov.

Candidatus Opuscella bicoditoga (NL. fem. n. *bicoditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JG1575 sp002838815*. The type genome for the species is the GenBank assembly RS_GCF_002838815.1. The GC content of the type genome is 52.33 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Opuscella gen. nov.

Candidatus Opuscella (NL. fem. n. *Opuscella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JG1575*. The type species for the genus is *Candidatus* Opuscella bicoditoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Opuscella sitelugo sp. nov.

Candidatus Opuscella sitelugo (NL. fem. n. *sitelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JG1575 sp012511315*. The type genome for the species is the GenBank assembly GCA_012511315.1. The GC content of the type genome is 39.54 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Opuscia gen. nov.

Candidatus Opuscia (NL. fem. n. *Opuscia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6211*. The type species for the genus is *Candidatus* Opuscia butzleri_A .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Opuscia refacitrix sp. nov.

Candidatus Opuscia refacitrix (NL. fem. n. *refacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6211 sp002421845*. The type genome for the species is the GenBank assembly GCA_002421845.1. The GC content of the type genome is 32.33 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Opuscida bacififica sp. nov.

Candidatus Opuscida bacififica (NL. fem. n. *bacififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3376 sp002359055*. The type genome for the species is the GenBank assembly GCA_002359055.1. The GC content of the type genome is 34.06 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Opuscida gen. nov.

Candidatus Opuscida (NL. fem. n. *Opuscida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3376*. The type species for the genus is *Candidatus* Opuscida bacififica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Opuscosa inpudessa sp. nov.

Candidatus Opuscosa inpudessa (NL. fem. n. *inpudessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTJ01 sp012031475*. The type genome for the species is the GenBank assembly GCA_012031475.1. The GC content of the type genome is 53.16 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Opuscosa gen. nov.

Candidatus Opuscosa (NL. fem. n. *Opuscosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUTJ01*. The type species for the genus is *Candidatus* Opuscosa inpudessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oratrana inhabitica sp. nov.

Candidatus Oratrana inhabitica (NL. fem. n. *inhabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCC01 sp013359315*. The type genome for the species is the GenBank assembly GCA_013359315.1. The GC content of the type genome is 34.67 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Oratrana gen. nov.

Candidatus Oratrana (NL. fem. n. *Oratrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCC01*. The type species for the genus is *Candidatus* Oratrana inhabitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oratraria retunitia sp. nov.

Candidatus Oratraria retunitia (NL. fem. n. *retunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXWV01 sp013334845*. The type genome for the species is the GenBank assembly GCA_013334845.1. The GC content of the type genome is 41.6 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Oratraria gen. nov.

Candidatus Oratraria (NL. fem. n. *Oratraria* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXWV01*. The type species for the genus is *Candidatus* Oratraria retunitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Oratrella doxolitudo sp. nov.

Candidatus Oratrella doxolitudo (NL. fem. n. *doxolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXJQ01 sp005779345*. The type genome for the species is the GenBank assembly GCA_005779345.1. The GC content of the type genome is 70.16 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Oratrella gen. nov.

Candidatus Oratrella (NL. fem. n. *Oratrella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXJQ01*. The type species for the genus is *Candidatus* Oratrella doxolitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-610*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpellaceae.

Description of *Candidatus* Oratria offiritia sp. nov.

Candidatus Oratria offiritia (NL. fem. n. *offiritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-67-20 sp001805695*. The type genome for the species is the GenBank assembly GCA_001805695.1. The GC content of the type genome is 66.7 % and the genome length is 0.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Oratria gen. nov.

Candidatus Oratria (NL. fem. n. *Oratria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-67-20*. The type species for the genus is *Candidatus* Oratria offiritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9649*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depetariaceae.

Description of *Candidatus* Oratrida exsanatica sp. nov.

Candidatus Oratrida exsanatica (NL. fem. n. *exsanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAU-1491 sp011777505*. The type genome for the species is the GenBank assembly RS_GCF_011777505.1. The GC content of the type genome is 32.72 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Oratrida gen. nov.

Candidatus Oratrida (NL. fem. n. *Oratrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAU-1491*. The type species for the genus is *Candidatus* Oratrida exsanatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oratrida sarabentia sp. nov.

Candidatus Oratrida sarabentia (NL. fem. n. *sarabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAU-1491 sp005047595*. The type genome for the species is the GenBank assembly RS_GCF_005047595.1. The GC content of the type genome is 32.4 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Oratrosa optumousia sp. nov.

Candidatus Oratrosa optumousia (NL. fem. n. *optumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUQU01 sp012837645*. The type genome for the species is the GenBank assembly GCA_012837645.1. The GC content of the type genome is 31.27 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Oratrosa gen. nov.

Candidatus Oratrosa (NL. fem. n. *Oratrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUQU01*. The type species for the genus is *Candidatus* Oratrosa optumousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5453*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifosaceae.

Description of *Candidatus* Oratrosa viginiforma sp. nov.

Candidatus Oratrosa viginiforma (NL. fem. n. *viginiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUQU01 sp012800005*. The type genome for the species is the GenBank assembly GCA_012800005.1. The GC content of the type genome is 29.25 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Orgetana inpasitica sp. nov.

Candidatus Orgetana inpasitica (NL. fem. n. *inpasitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSL01 sp009380095*. The type genome for the species is the GenBank assembly GCA_009380095.1. The GC content of the type genome is 72.27 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Orgetana gen. nov.

Candidatus Orgetana (NL. fem. n. *Orgetana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSL01*. The type species for the genus is *Candidatus* Orgetana inpasitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Orgetaria cacomatio sp. nov.

Candidatus Orgetaria cacomatio (NL. fem. n. *cacomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B6-G9 sp003650365*. The type genome for the species is the GenBank assembly GCA_003650365.1. The GC content of the type genome is 39.12 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Orgetaria gen. nov.

Candidatus Orgetaria (NL. fem. n. *Orgetaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B6-G9*. The type species for the genus is *Candidatus* Orgetaria cacomatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Orgetella morigugo sp. nov.

Candidatus Orgetella morigugo (NL. fem. n. *morigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZA01 sp013696185*. The type genome for the species is the GenBank assembly GCA_013696185.1. The GC content of the type genome is 72.1 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Orgetella gen. nov.

Candidatus Orgetella (NL. fem. n. *Orgetella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZA01*. The type species for the genus is *Candidatus* Orgetella morigugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Orgetosa artilibula sp. nov.

Candidatus Orgetosa artilibula (NL. fem. n. *artilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEFY01 sp902826705*. The type genome for the species is the GenBank assembly GCA_902826705.1. The GC content of the type genome is 71.27 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Orgetosa gen. nov.

Candidatus Orgetosa (NL. fem. n. *Orgetosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEFY01*. The type species for the genus is *Candidatus* Orgetosa artilibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabidaceae.

Description of *Candidatus* Orgetula inexpiforma sp. nov.

Candidatus Orgetula inexpiforma (NL. fem. n. *inexpiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDYV01 sp902810695*. The type genome for the species is the GenBank assembly RS_GCF_902810695.1. The GC content of the type genome is 61.48 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Orgetula gen. nov.

Candidatus Orgetula (NL. fem. n. *Orgetula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDYV01*. The type species for the genus is *Candidatus* Orgetula inexpiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oribacterium adrenilega sp. nov.

Candidatus Oribacterium adrenilega (NL. fem. n. *adrenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp013394775*. The type genome for the species is the GenBank assembly RS_GCF_013394775.1. The GC content of the type genome is 54.65 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Oribacterium advorilenta sp. nov.

Candidatus Oribacterium advorilenta (NL. fem. n. *advorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp900772695*. The type genome for the species is the GenBank assembly GCA_900772695.1. The GC content of the type genome is 54.35 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Oribacterium cerebifica sp. nov.

Candidatus Oribacterium cerebifica (NL. fem. n. *cerebifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp900315665*. The type genome for the species is the GenBank assembly GCA_902794815.1. The GC content of the type genome is 48.17 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Oribacterium didacivita sp. nov.

Candidatus Oribacterium didacivita (NL. fem. n. *didacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp002431355*. The type genome for the species is the

GenBank assembly GCA_002431355.1. The GC content of the type genome is 52.64 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Oribacterium gemebimonas sp. nov.

Candidatus Oribacterium gemebimonas (NL. fem. n. *gemebimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp002449915*. The type genome for the species is the GenBank assembly GCA_902796485.1. The GC content of the type genome is 47.41 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Oribacterium giganugo sp. nov.

Candidatus Oribacterium giganugo (NL. fem. n. *giganugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp900113415*. The type genome for the species is the GenBank assembly RS_GCF_900113415.1. The GC content of the type genome is 41.47 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Oribacterium inrefivita sp. nov.

Candidatus Oribacterium inrefivita (NL. fem. n. *inrefivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp002396005*. The type genome for the species is the GenBank assembly GCA_002396005.1. The GC content of the type genome is 42.48 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Oribacterium maligatio sp. nov.

Candidatus Oribacterium maligatio (NL. fem. n. *maligatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp900107835*. The type genome for the species is the GenBank assembly RS_GCF_900107835.1. The GC content of the type genome is 42.22 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Oribacterium manupitio sp. nov.

Candidatus Oribacterium manupitio (NL. fem. n. *manupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp000513555*. The type genome for the species is the GenBank assembly RS_GCF_000513555.1. The GC content of the type genome is 43.44 % and the genome length is 3.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rumen contents of cattle consuming a high forage diet (Rhodes grass; Chloris gayana) in the semi-arid tropics".

Description of *Candidatus* Oribacterium monogousia sp. nov.

Candidatus Oribacterium monogousia (NL. fem. n. *monogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp002007235*. The type genome for the species is the GenBank assembly RS_GCF_002007235.1. The GC content of the type genome is 42.79 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Oribacterium munifigena sp. nov.

Candidatus Oribacterium munifigena (NL. fem. n. *munifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp000160135*. The type genome for the species is the GenBank assembly RS_GCF_000160135.1. The GC content of the type genome is 54.68 % and the genome length is 2.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Oribacterium pacifugo sp. nov.

Candidatus Oribacterium pacifugo (NL. fem. n. *pacifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp900770445*. The type genome for the species is the GenBank assembly GCA_900770445.1. The GC content of the type genome is 54.36 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Oribacterium pocilitas sp. nov.

Candidatus Oribacterium pocilitas (NL. fem. n. *pocilitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp000424445*. The type genome for the species is the GenBank assembly RS_GCF_000424445.1. The GC content of the type genome is 43.02 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Oribacterium ratifivita sp. nov.

Candidatus Oribacterium ratifivita (NL. fem. n. *ratifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp900318695*. The type genome for the species is the GenBank assembly GCA_902797645.1. The GC content of the type genome is 45.31 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Oribacterium repuditrix sp. nov.

Candidatus Oribacterium repuditrix (NL. fem. n. *repuditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp004554245*. The type genome for the species is the GenBank assembly GCA_900768305.1. The GC content of the type genome is 54.41 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Oribacterium semapago sp. nov.

Candidatus Oribacterium semapago (NL. fem. n. *semapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp000702885*. The type genome for the species is the GenBank assembly RS_GCF_000702885.1. The GC content of the type genome is 42.46 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Oribacterium sicarimonia sp. nov.

Candidatus Oribacterium sicarimonia (NL. fem. n. *sicarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oribacterium sp002371295*. The type genome for the species is the GenBank assembly GCA_002371295.1. The GC content of the type genome is 44.14 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Oricola adleciforma sp. nov.

Candidatus Oricola adleciforma (NL. fem. n. *adleciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oricola sp002698425*. The type genome for the species is the GenBank assembly GCA_002698425.1. The GC content of the type genome is 63.26 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Oricola infabicula sp. nov.

Candidatus Oricola infabicula (NL. fem. n. *infabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oricola sp002706335*. The type genome for the species is the GenBank assembly GCA_002706335.1. The GC content of the type genome is 61.83 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Oricola obtemibra sp. nov.

Candidatus Oricola obtemibra (NL. fem. n. *obtemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oricola sp013358405*. The type genome for the species is the GenBank assembly RS_GCF_013358405.1. The GC content of the type genome is 63.54 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Ornitella adnumentia sp. nov.

Candidatus Ornitella adnumentia (NL. fem. n. *adnumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACADW01 sp013388445*. The type genome for the species is the GenBank assembly GCA_013388445.1. The GC content of the type genome is 61.31 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Ornitella gen. nov.

Candidatus Ornitella (NL. fem. n. *Ornitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACADW01*. The type species for the genus is *Candidatus* Ornitella adnumentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6911*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decomulaceae.

Description of *Candidatus* Ornithinibacillus coninitia sp. nov.

Candidatus Ornithinibacillus coninitia (NL. fem. n. *coninitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ornithinibacillus sp009728145*. The type genome for the species is the GenBank assembly RS_GCF_009728145.1. The GC content of the type genome is 35.87 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Ornithinibacillus depocicula sp. nov.

Candidatus Ornithinibacillus depocicula (NL. fem. n. *depocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ornithinibacillus sp003454625*. The type genome for the species is the GenBank assembly GCA_003454625.1. The GC content of the type genome is 36.22 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Ornithinibacillus derunentia sp. nov.

Candidatus Ornithinibacillus derunentia (NL. fem. n. *derunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ornithinibacillus sp000577245*. The type genome for the species is the GenBank assembly RS_GCF_000577245.1. The GC content of the type genome is 36.0 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Ornithinibacillus serotitio sp. nov.

Candidatus Ornithinibacillus serotitio (NL. fem. n. *serotitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ornithinibacillus sp014287465*. The type genome for the species is the GenBank assembly RS_GCF_014287465.1. The GC content of the type genome is 37.08 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Ornithinicoccus fetifax sp. nov.

Candidatus Ornithinicoccus fetifax (NL. fem. n. *fetifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ornithinicoccus sp007197575*. The type genome for the species is the GenBank assembly RS_GCF_007197575.1. The GC content of the type genome is 69.21 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Ornithinicoccus insufitas sp. nov.

Candidatus Ornithinicoccus insufitas (NL. fem. n. *insufitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ornithinicoccus sp012515595*. The type genome for the species is the GenBank assembly GCA_012515595.1. The GC content of the type genome is 71.63 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Ornithinimicrobium conibibra sp. nov.

Candidatus Ornithinimicrobium conibibra (NL. fem. n. *conibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ornithinimicrobium sp001942405*. The type genome for the species is the GenBank assembly RS_GCF_001942405.1. The GC content of the type genome is 73.02 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Ornithinimicrobium defesugo sp. nov.

Candidatus Ornithinimicrobium defesugo (NL. fem. n. *defesugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ornithinimicrobium sp003577095*. The type genome for the species is the GenBank assembly GCA_003577095.1. The GC content of the type genome is 73.54 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Ornithinimicrobium luticibula sp. nov.

Candidatus Ornithinimicrobium luticibula (NL. fem. n. *luticibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ornithinimicrobium sp003351765*. The type genome for the species is the GenBank assembly RS_GCF_003351765.1. The GC content of the type genome is 72.45 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Ornitia ignigibula sp. nov.

Candidatus Ornitia ignigibula (NL. fem. n. *ignigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFHR01 sp004555545*. The type genome for the species is the GenBank assembly GCA_004555545.1. The GC content of the type genome is 33.28 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Ornitia gen. nov.

Candidatus Ornitia (NL. fem. n. *Ornitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFHR01*. The type species for the genus is *Candidatus* Ornitia ignigibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ornitida astapastra sp. nov.

Candidatus Ornitida astapastra (NL. fem. n. *astapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BW-2 sp008375315*. The type genome for the species is the GenBank

assembly RS_GCF_008375315.1. The GC content of the type genome is 52.6 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Ornitida gen. nov.

Candidatus Ornitida (NL. fem. n. *Ornitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BW-2*. The type species for the genus is *Candidatus* Ornitida astapastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ornitosa adverimonas sp. nov.

Candidatus Ornitosa adverimonas (NL. fem. n. *adverimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747695 sp002747695*. The type genome for the species is the GenBank assembly GCA_002747695.1. The GC content of the type genome is 37.82 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Ornitosa gen. nov.

Candidatus Ornitosa (NL. fem. n. *Ornitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2747695*. The type species for the genus is *Candidatus* Ornitosa adverimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ornitosa tabififorma sp. nov.

Candidatus Ornitosa tabififorma (NL. fem. n. *tabififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2747695 sp011391075*. The type genome for the species is the GenBank assembly GCA_011391075.1. The GC content of the type genome is 34.91 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Oscilana invoritia sp. nov.

Candidatus Oscilana invoritia (NL. fem. n. *invoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1775 sp002314595*. The type genome for the species is the GenBank assembly GCA_002314595.1. The GC content of the type genome is 35.15 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Oscilana gen. nov.

Candidatus Oscilana (NL. fem. n. *Oscilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1775*. The type species for the genus is *Candidatus* Oscilana invoritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Firm-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resulosaceae.

Description of *Candidatus* Oscilella rurigimonas sp. nov.

Candidatus Oscilella rurigimonas (NL. fem. n. *rurigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YD12-FULL-57-12 sp001799275*. The type genome for the species is the GenBank assembly GCA_001799275.1. The GC content of the type genome is 56.76 % and the genome length is 3.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point D".

Description of *Candidatus* Oscilella gen. nov.

Candidatus Oscilella (NL. fem. n. *Oscilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YD12-FULL-57-12*. The type species for the genus is *Candidatus* Oscilella rurigimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM004*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Corocariaceae.

Description of *Candidatus* Oscilia desacicula sp. nov.

Candidatus Oscilia desacicula (NL. fem. n. *desacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MYP5 sp012911815*. The type genome for the species is the GenBank assembly RS_GCF_012911815.1. The GC content of the type genome is 46.07 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Oscilia gen. nov.

Candidatus Oscilia (NL. fem. n. *Oscilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MYP5*. The type species for the genus is *Candidatus* Oscilia desacicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oscilida inrevicula sp. nov.

Candidatus Oscilida inrevicula (NL. fem. n. *inrevicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1143 sp903911905*. The type genome for the species is the GenBank assembly GCA_903911905.1. The GC content of the type genome is 69.08 % and the genome length is 7.57 Mbp.

Description of *Candidatus* Oscilida gen. nov.

Candidatus Oscilida (NL. fem. n. *Oscilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1143*. The type species for the genus is *Candidatus* Oscilida inrevicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Oscilida obmurousia sp. nov.

Candidatus Oscilida obmurousia (NL. fem. n. *obmurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1143 sp003153055*. The type genome for the species is the GenBank assembly GCA_003153055.1. The GC content of the type genome is 67.66 % and the genome length is 9.28 Mbp.

Description of *Candidatus* Oscillatoria exsupibula sp. nov.

Candidatus Oscillatoria exsupibula (NL. fem. n. *exsupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oscillatoria sp011390515*. The type genome for the species is the GenBank assembly GCA_011390515.1. The GC content of the type genome is 47.98 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Oscillibacter apoplitura sp. nov.

Candidatus Oscillibacter apoplitura (NL. fem. n. *apoplitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oscillibacter sp003245395*. The type genome for the species is the GenBank assembly GCA_003245395.1. The GC content of the type genome is 56.01 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Oscillibacter denigimonas sp. nov.

Candidatus Oscillibacter denigimonas (NL. fem. n. *denigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oscillibacter sp002455655*. The type genome for the species is the GenBank assembly GCA_002455655.1. The GC content of the type genome is 56.85 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Oscillochloris cituvitas sp. nov.

Candidatus Oscillochloris cituvitas (NL. fem. n. *cituvitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Oscillochloris sp004138175*. The type genome for the species is the GenBank assembly RS_GCF_004138175.2. The GC content of the type genome is 65.21 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Oscillochloris delucatica sp. nov.

Candidatus Oscillochloris delucatica (NL. fem. n. *delucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oscillochloris sp903877945*. The type genome for the species is the GenBank assembly GCA_903883065.1. The GC content of the type genome is 62.12 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Oscillochloris noviletta sp. nov.

Candidatus Oscillochloris noviletta (NL. fem. n. *noviletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oscillochloris sp903887465*. The type genome for the species is the GenBank assembly GCA_903901705.1. The GC content of the type genome is 64.76 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Oscillochloris pinigitura sp. nov.

Candidatus Oscillochloris pinigitura (NL. fem. n. *pinigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oscillochloris sp903920315*. The type genome for the species is the GenBank assembly GCA_903920315.1. The GC content of the type genome is 60.73 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Oscilosa venucifica sp. nov.

Candidatus Oscilosa venucifica (NL. fem. n. *venucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-165 sp005879785*. The type genome for the species is the GenBank assembly GCA_005879785.1. The GC content of the type genome is 68.62 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Oscilosa gen. nov.

Candidatus Oscilosa (NL. fem. n. *Oscilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-165*. The type species for the genus is *Candidatus* Oscilosa venucifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibiaceae.

Description of *Candidatus* Oscilula smegmisca sp. nov.

Candidatus Oscilula smegmisca (NL. fem. n. *smegmisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZNS01 sp012798185*. The type genome for the species is the GenBank assembly GCA_012798185.1. The GC content of the type genome is 44.33 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Oscilula gen. nov.

Candidatus Oscilula (NL. fem. n. *Oscilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZNS01*. The type species for the genus is *Candidatus* Oscilula smegmisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Ossararia adnulatica sp. nov.

Candidatus Ossararia adnulatica (NL. fem. n. *adnulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746155 sp002746155*. The type genome for the species is the GenBank assembly GCA_002746155.1. The GC content of the type genome is 39.39 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Ossararia gen. nov.

Candidatus Ossararia (NL. fem. n. *Ossararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746155*. The type species for the genus is *Candidatus* Ossararia adnulatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002770795*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conoposaceae.

Description of *Candidatus* Ossarida accapousia sp. nov.

Candidatus Ossarida accapousia (NL. fem. n. *accapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTL01 sp012521625*. The type genome for the species is the GenBank assembly GCA_012521625.1. The GC content of the type genome is 38.28 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Ossarida gen. nov.

Candidatus Ossarida (NL. fem. n. *Ossarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYTL01*. The type species for the genus is *Candidatus* Ossarida accapousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ossarida foricisca sp. nov.

Candidatus Ossarida foricisca (NL. fem. n. *foricisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTL01 sp012518035*. The type genome for the species is the GenBank assembly GCA_012518035.1. The GC content of the type genome is 38.53 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Ossarida secunibra sp. nov.

Candidatus Ossarida secunibra (NL. fem. n. *secunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTL01 sp012735585*. The type genome for the species is the GenBank assembly GCA_012735585.1. The GC content of the type genome is 33.11 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Ossarosa licenitica sp. nov.

Candidatus Ossarosa licenitica (NL. fem. n. *licenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12650 sp900761725*. The type genome for the species is the GenBank assembly RS_GCF_900761725.1. The GC content of the type genome is 44.54 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Ossarosa gen. nov.

Candidatus Ossarosa (NL. fem. n. *Ossarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12650*. The type species for the genus is *Candidatus* Ossarosa licenitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Ossarula inbecatica sp. nov.

Candidatus Ossarula inbecatica (NL. fem. n. *inbecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-2-50-31-20 sp002786785*. The type genome for the species is the GenBank assembly GCA_002786785.1. The GC content of the type genome is 30.78 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Ossarula gen. nov.

Candidatus Ossarula (NL. fem. n. *Ossarula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-2-50-31-20*. The type species for the genus is *Candidatus* Ossarula inbecatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ossicana ossicitura sp. nov.

Candidatus Ossicana ossicitura (NL. fem. n. *ossicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AM-1111 sp900299295*. The type genome for the species is the GenBank assembly GCA_900299295.1. The GC content of the type genome is 38.28 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Ossicana gen. nov.

Candidatus Ossicana (NL. fem. n. *Ossicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AM-1111*. The type species for the genus is *Candidatus* Ossicana ossicitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-17BO*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demogariaceae.

Description of *Candidatus* Ossicella adcubatica sp. nov.

Candidatus Ossicella adcubatica (NL. fem. n. *adcubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNJL01 sp014239365*. The type genome for the species is the GenBank assembly GCA_014239365.1. The GC content of the type genome is 56.79 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Ossicella gen. nov.

Candidatus Ossicella (NL. fem. n. *Ossicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNJL01*. The type species for the genus is *Candidatus* Ossicella adcubatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1100*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turilanaceae.

Description of *Candidatus* Ossicella semimedo sp. nov.

Candidatus Ossicella semimedo (NL. fem. n. *semimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNJL01 sp014382585*. The type genome for the species is the GenBank assembly GCA_014382585.1. The GC content of the type genome is 56.63 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Ossicia diponetta sp. nov.

Candidatus Ossicia diponetta (NL. fem. n. *diponetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *U0105 sp003820355*. The type genome for the species is the GenBank assembly RS_GCF_003820355.1. The GC content of the type genome is 45.28 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Ossicia gen. nov.

Candidatus Ossicia (NL. fem. n. *Ossicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *U0105*. The type species for the genus is *Candidatus* Ossicia diponetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ossicida nimiritica sp. nov.

Candidatus Ossicida nimiritica (NL. fem. n. *nimiritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *V1-115 sp003402735*. The type genome for the species is the GenBank assembly GCA_003402735.1. The GC content of the type genome is 61.77 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Ossicida gen. nov.

Candidatus Ossicida (NL. fem. n. *Ossicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *V1-115*. The type species for the genus is *Candidatus* Ossicida nimiritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DEV007*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragosaceae.

Description of *Candidatus* Ossicosa subacibula sp. nov.

Candidatus Ossicosa subacibula (NL. fem. n. *subacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMJS01 sp014380515*. The type genome for the species is the GenBank assembly GCA_014380515.1. The GC content of the type genome is 53.15 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Ossicosa gen. nov.

Candidatus Ossicosa (NL. fem. n. *Ossicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMJS01*. The type species for the genus is *Candidatus* Ossicosa subacibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ossifana insemicella sp. nov.

Candidatus Ossifana insemicella (NL. fem. n. *insemicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *WRHW01 sp009783055*. The type genome for the species is the GenBank assembly GCA_009783055.1. The GC content of the type genome is 44.95 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Ossifana gen. nov.

Candidatus Ossifana (NL. fem. n. *Ossifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRHW01*. The type species for the genus is *Candidatus* Ossifana insemicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ossifaria derecigena sp. nov.

Candidatus Ossifaria derecigena (NL. fem. n. *derecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMQW01 sp014376785*. The type genome for the species is the GenBank assembly GCA_014376785.1. The GC content of the type genome is 51.59 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Ossifaria gen. nov.

Candidatus Ossifaria (NL. fem. n. *Ossifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMQW01*. The type species for the genus is *Candidatus* Ossifaria derecigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Ossifida alectimonas sp. nov.

Candidatus Ossifida alectimonas (NL. fem. n. *alectimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CCMM004 sp004005435*. The type genome for the species is the

GenBank assembly RS_GCF_004005435.1. The GC content of the type genome is 69.43 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Ossifida gen. nov.

Candidatus Ossifida (NL. fem. n. *Ossifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CCMM004*. The type species for the genus is *Candidatus* Ossifida alectimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ossifula virecentia sp. nov.

Candidatus Ossifula virecentia (NL. fem. n. *virecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNNH01 sp013824165*. The type genome for the species is the GenBank assembly GCA_013824165.1. The GC content of the type genome is 66.41 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Ossifula gen. nov.

Candidatus Ossifula (NL. fem. n. *Ossifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNNH01*. The type species for the genus is *Candidatus* Ossifula virecentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ossucana fragmitas sp. nov.

Candidatus Ossucana fragmitas (NL. fem. n. *fragmitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QZLE01 sp004796365*. The type genome for the species is the GenBank assembly GCA_004796365.1. The GC content of the type genome is 41.13 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Ossucana gen. nov.

Candidatus Ossucana (NL. fem. n. *Ossucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QZLE01*. The type species for the genus is *Candidatus* Ossucana fragmitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QZLD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemiaceae.

Description of *Candidatus* Ossucella affanitudo sp. nov.

Candidatus Ossucella affanitudo (NL. fem. n. *affanitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA866 sp900543295*. The type genome for the species is the GenBank assembly GCA_900543295.1. The GC content of the type genome is 50.1 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Ossucella gen. nov.

Candidatus Ossucella (NL. fem. n. *Ossucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA866*. The type species for the genus is *Candidatus* Ossucella affanitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ossucella arancisca sp. nov.

Candidatus Ossucella arancisca (NL. fem. n. *arancisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA866 sp002295325*. The type genome for the species is the GenBank assembly GCA_002295325.1. The GC content of the type genome is 36.51 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Ossucia colipitoga sp. nov.

Candidatus Ossucia colipitoga (NL. fem. n. *colipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDAV01 sp013695255*. The type genome for the species is the GenBank assembly GCA_013695255.1. The GC content of the type genome is 71.92 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Ossucia gen. nov.

Candidatus Ossucia (NL. fem. n. *Ossucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDAV01*. The type species for the genus is *Candidatus* Ossucia colipitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Ossucida acrolitrix sp. nov.

Candidatus Ossucida acrolitrix (NL. fem. n. *acrolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-73-3 sp001304155*. The type genome for the species is the GenBank assembly GCA_001304155.1. The GC content of the type genome is 45.22 % and the genome length is 1.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Ossucida gen. nov.

Candidatus Ossucida (NL. fem. n. *Ossucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-73-3*. The type species for the genus is *Candidatus* Ossucida acrolitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depecosaceae.

Description of *Candidatus* Ottowia adlenigena sp. nov.

Candidatus Ottowia adlenigena (NL. fem. n. *adlenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ottowia sp001897615*. The type genome for the species is the GenBank assembly GCA_001897615.1. The GC content of the type genome is 68.66 % and the genome length is 3.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Ottowia baropilega sp. nov.

Candidatus Ottowia baropilega (NL. fem. n. *baropilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ottowia sp001262075*. The type genome for the species is the GenBank assembly RS_GCF_900240305.1. The GC content of the type genome is 63.52 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Ottowia femelivita sp. nov.

Candidatus Ottowia femelivita (NL. fem. n. *femelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ottowia sp003859965*. The type genome for the species is the GenBank assembly RS_GCF_003859965.1. The GC content of the type genome is 67.02 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Ottowia fetifisca sp. nov.

Candidatus Ottowia fetifisca (NL. fem. n. *fetifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ottowia sp008017535*. The type genome for the species is the GenBank assembly RS_GCF_008017535.1. The GC content of the type genome is 66.22 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Ottowia pericilega sp. nov.

Candidatus Ottowia pericilega (NL. fem. n. *pericilega* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ottowia sp009778355*. The type genome for the species is the GenBank assembly GCA_009778355.1. The GC content of the type genome is 65.47 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Ottowia subinatica sp. nov.

Candidatus Ottowia subinatica (NL. fem. n. *subinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ottowia sp900320815*. The type genome for the species is the GenBank assembly GCA_902773235.1. The GC content of the type genome is 61.6 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Ottowia supelilega sp. nov.

Candidatus Ottowia supelilega (NL. fem. n. *supelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ottowia sp004299095*. The type genome for the species is the GenBank assembly GCA_004299095.1. The GC content of the type genome is 65.04 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Owenweeksia regigigena sp. nov.

Candidatus Owenweeksia regigigena (NL. fem. n. *regigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Owenweeksia sp002695025*. The type genome for the species is the GenBank assembly GCA_002715525.1. The GC content of the type genome is 45.94 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Oxalobacter bugiletta sp. nov.

Candidatus Oxalobacter bugiletta (NL. fem. n. *bugiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oxalobacter sp009783065*. The type genome for the species is the GenBank assembly GCA_009783065.1. The GC content of the type genome is 48.15 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Oxalobacter cicatimonia sp. nov.

Candidatus Oxalobacter cicatimonia (NL. fem. n. *cicatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oxalobacter sp900760095*. The type genome for the species is the GenBank assembly GCA_900760095.1. The GC content of the type genome is 50.45 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Oxalobacter subabicella sp. nov.

Candidatus Oxalobacter subabicella (NL. fem. n. *subabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Oxalobacter sp012512465*. The type genome for the species is the GenBank assembly GCA_012512465.1. The GC content of the type genome is 52.36 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Ozemobacter reduvicella sp. nov.

Candidatus Ozemobacter reduvicella (NL. fem. n. *reduvicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ozemobacter sp012517355*. The type genome for the species is the GenBank assembly GCA_012517355.1. The GC content of the type genome is 67.77 % and the genome length is 7.11 Mbp.

Description of *Candidatus* PRUG endivitas sp. nov.

Candidatus PRUG endivitas (NL. fem. n. *endivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *PRUG sp002075085*. The type genome for the species is the GenBank assembly RS_GCF_002075085.1. The GC content of the type genome is 24.19 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Pabilana boniticula sp. nov.

Candidatus Pabilana boniticula (NL. fem. n. *boniticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1590 sp900759105*. The type genome for the species is the GenBank assembly RS_GCF_900759105.1. The GC content of the type genome is 44.78 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Pabilana gen. nov.

Candidatus Pabilana (NL. fem. n. *Pabilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1590*. The type species for the genus is *Candidatus* Pabilana boniticula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pabilana decupedo sp. nov.

Candidatus Pabilana decupedo (NL. fem. n. *decupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1590 sp900553245*. The type genome for the species is the GenBank assembly RS_GCF_900755305.1. The GC content of the type genome is 46.1 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Pabilana fatililega sp. nov.

Candidatus Pabilana fatililega (NL. fem. n. *fatililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1590 sp900552455*. The type genome for the species is the GenBank assembly RS_GCF_900759535.1. The GC content of the type genome is 54.82 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Pabilaria frigditas sp. nov.

Candidatus Pabilaria frigditas (NL. fem. n. *frigditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLL01 sp011371545*. The type genome for the species is the GenBank assembly GCA_011371545.1. The GC content of the type genome is 45.53 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Pabilaria gen. nov.

Candidatus Pabilaria (NL. fem. n. *Pabilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLL01*. The type species for the genus is *Candidatus* Pabilaria frigditas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTLL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pabilariaceae.

Description of *Candidatus* Pabilariaceae fam. nov.

Candidatus Pabilariaceae (NL. fem. n. *Pabilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLL01*. The type genus for the taxon is *Candidatus* Pabilaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTLL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pabilariales.

Description of *Candidatus* Pabilariales ord. nov.

Candidatus Pabilariales (NL. fem. n. *Pabilariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLL01*. The type genus for the taxon is *Candidatus* Pabilaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6098*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Vehemidae.

Description of *Candidatus* Pabilella perabicella sp. nov.

Candidatus Pabilella perabicella (NL. fem. n. *perabicella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-7407 sp000317045*. The type genome for the species is the GenBank assembly RS_GCF_000317045.1. The GC content of the type genome is 58.46 % and the genome length is 4.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Pabilella gen. nov.

Candidatus Pabilella (NL. fem. n. *Pabilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-7407*. The type species for the genus is *Candidatus* Pabilella perabicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PCC-7407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pabilellaceae.

Description of *Candidatus* Pabilellaceae fam. nov.

Candidatus Pabilellaceae (NL. fem. n. *Pabilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PCC-7407.* The type genus for the taxon is *Candidatus* Pabilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *PCC-7407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pabilellales.

Description of *Candidatus* Pabilellales ord. nov.

Candidatus Pabilellales (NL. fem. n. *Pabilellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PCC-7407.* The type genus for the taxon is *Candidatus* Pabilella .

According to the GTDB R06-RS202, this order belongs to the class *Cyanobacteriia*.

Description of *Candidatus* Pabilia risibitrix sp. nov.

Candidatus Pabilia risibitrix (NL. fem. n. *risibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-51-34 sp001820785*. The type genome for the species is the GenBank assembly GCA_001820715.1. The GC content of the type genome is 51.17 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Pabilia gen. nov.

Candidatus Pabilia (NL. fem. n. *Pabilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-51-34*. The type species for the genus is *Candidatus* Pabilia risibitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-42-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conamulaceae.

Description of *Candidatus* Pabilida adrotessa sp. nov.

Candidatus Pabilida adrotessa (NL. fem. n. *adrotessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BD2-11 sp012267435*. The type genome for the species is the GenBank assembly GCA_012267435.1. The GC content of the type genome is 68.96 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Pabilida gen. nov.

Candidatus Pabilida (NL. fem. n. *Pabilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BD2-11*. The type species for the genus is *Candidatus* Pabilida adrotessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Pabilida camilisca sp. nov.

Candidatus Pabilida camilisca (NL. fem. n. *camilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BD2-11 sp002238605*. The type genome for the species is the GenBank assembly GCA_002238605.1. The GC content of the type genome is 67.96 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Pabilida depetugo sp. nov.

Candidatus Pabilida depetugo (NL. fem. n. *depetugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BD2-11 sp009840525*. The type genome for the species is the GenBank assembly GCA_009840525.1. The GC content of the type genome is 68.05 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Pabilida ruricitas sp. nov.

Candidatus Pabilida ruricitas (NL. fem. n. *ruricitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BD2-11 sp009843625*. The type genome for the species is the GenBank assembly GCA_009843625.1. The GC content of the type genome is 67.95 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Pabilosa adsucitura sp. nov.

Candidatus Pabilosa adsucitura (NL. fem. n. *adsucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1258 sp007280825*. The type genome for the species is the GenBank assembly GCA_007280825.1. The GC content of the type genome is 34.85 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Pabilosa gen. nov.

Candidatus Pabilosa (NL. fem. n. *Pabilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1258*. The type species for the genus is *Candidatus* Pabilosa adsucitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pabilosa siligugo sp. nov.

Candidatus Pabilosa siligugo (NL. fem. n. *siligugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1258 sp012026935*. The type genome for the species is the GenBank assembly GCA_012026935.1. The GC content of the type genome is 35.04 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Pabilosa televetta sp. nov.

Candidatus Pabilosa televetta (NL. fem. n. *televetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1258 sp003155655*. The type genome for the species is the GenBank assembly GCA_003162015.1. The GC content of the type genome is 34.78 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Pabilosa utrolifica sp. nov.

Candidatus Pabilosa utrolifica (NL. fem. n. *utrolifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1258 sp002839795*. The type genome for the species is the GenBank assembly GCA_002839795.1. The GC content of the type genome is 39.57 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Pabilula colopatica sp. nov.

Candidatus Pabilula colopatica (NL. fem. n. *colopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UMGS1441 sp900543365*. The type genome for the species is the GenBank assembly RS_GCF_900754295.1. The GC content of the type genome is 31.74 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Pabilula gen. nov.

Candidatus Pabilula (NL. fem. n. *Pabilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1441*. The type species for the genus is *Candidatus* Pabilula colopatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-274*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negotulaceae.

Description of *Candidatus* Pabilula navifitudo sp. nov.

Candidatus Pabilula navifitudo (NL. fem. n. *navifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1441 sp900551755*. The type genome for the species is the GenBank assembly GCA_900551755.1. The GC content of the type genome is 32.48 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Paceibacter monumousia sp. nov.

Candidatus Paceibacter monumousia (NL. fem. n. *monumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paceibacter sp001872265*. The type genome for the species is the GenBank assembly GCA_002792815.1. The GC content of the type genome is 39.43 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Pacifana adpinitura sp. nov.

Candidatus Pacifana adpinitura (NL. fem. n. *adpinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-45-11b sp001817115*. The type genome for the species is the

GenBank assembly GCA_001817115.1. The GC content of the type genome is 45.39 % and the genome length is 0.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Pacifana gen. nov.

Candidatus Pacifana (NL. fem. n. *Pacifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-45-11b*. The type species for the genus is *Candidatus* Pacifana adpinitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolidaceae.

Description of *Candidatus* Pacifana vigenessa sp. nov.

Candidatus Pacifana vigenessa (NL. fem. n. *vigenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-45-11b sp001817055*. The type genome for the species is the GenBank assembly GCA_001817095.1. The GC content of the type genome is 45.16 % and the genome length is 0.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Pacifaria oppaniforma sp. nov.

Candidatus Pacifaria oppaniforma (NL. fem. n. *oppaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCPX01 sp004298615*. The type genome for the species is the GenBank assembly GCA_004298615.1. The GC content of the type genome is 43.14 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pacifaria gen. nov.

Candidatus Pacifaria (NL. fem. n. *Pacifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCPX01*. The type species for the genus is *Candidatus* Pacifaria oppaniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCPX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pacifariaceae.

Description of *Candidatus* Pacifariaceae fam. nov.

Candidatus Pacifariaceae (NL. fem. n. *Pacifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCPX01*. The type genus for the taxon is *Candidatus* Pacifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCPX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pacifariales.

Description of *Candidatus* Pacifariales ord. nov.

Candidatus Pacifariales (NL. fem. n. *Pacifariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCPX01*. The type genus for the taxon is *Candidatus* Pacifaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Pacifella homiliforma sp. nov.

Candidatus Pacifella homiliforma (NL. fem. n. *homiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM303 sp002869085*. The type genome for the species is the GenBank assembly GCA_002869085.1. The GC content of the type genome is 61.3 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Pacifella gen. nov.

Candidatus Pacifella (NL. fem. n. *Pacifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM303*. The type species for the genus is *Candidatus* Pacifella homiliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM303*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pacifellaceae.

Description of *Candidatus* Pacifellaceae fam. nov.

Candidatus Pacifellaceae (NL. fem. n. *Pacifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM303.* The type genus for the taxon is *Candidatus* Pacifella .

According to GTDB R06-RS202, this family belongs to the order *Rhizobiales*.

Description of *Candidatus* Pacificimonas celamilenta sp. nov.

Candidatus Pacificimonas celamilenta (NL. fem. n. *celamilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pacificimonas sp002375465*. The type genome for the species is the GenBank assembly GCA_002375465.1. The GC content of the type genome is 61.45 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Pacifida cululilega sp. nov.

Candidatus Pacifida cululilega (NL. fem. n. *cululilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJY01 sp011337985*. The type genome for the species is the GenBank assembly GCA_011337985.1. The GC content of the type genome is 50.89 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Pacifida gen. nov.

Candidatus Pacifida (NL. fem. n. *Pacifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DTJY01*. The type species for the genus is *Candidatus* Pacifida culululiega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTJY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pacifidaceae.

Description of *Candidatus* Pacifidaceae fam. nov.

Candidatus Pacifidaceae (NL. fem. n. *Pacifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTJY01*. The type genus for the taxon is *Candidatus* Pacifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTJY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pacifidales.

Description of *Candidatus* Pacifidales ord. nov.

Candidatus Pacifidales (NL. fem. n. *Pacifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTJY01*. The type genus for the taxon is *Candidatus* Pacifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA5829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Susicellae.

Description of *Candidatus* Pacifosa depubitica sp. nov.

Candidatus Pacifosa depubitica (NL. fem. n. *depubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10110 sp003524745*. The type genome for the species is the GenBank assembly GCA_003475955.1. The GC content of the type genome is 44.47 % and the genome length is 0.46 Mbp.

Description of *Candidatus* Pacifosa gen. nov.

Candidatus Pacifosa (NL. fem. n. *Pacifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10110*. The type species for the genus is *Candidatus* Pacifosa depubitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10110*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pacifosaceae.

Description of *Candidatus* Pacifosaceae fam. nov.

Candidatus Pacifosaceae (NL. fem. n. *Pacifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10110.* The type genus for the taxon is *Candidatus* Pacifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *Kazan-3B-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decitellales.

Description of *Candidatus* Pacifula reforitudo sp. nov.

Candidatus Pacifula reforitudo (NL. fem. n. *reforitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-43-22 sp001795615*. The type genome for the species is the GenBank assembly GCA_001794105.1. The GC content of the type genome is 41.66 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Pacifula gen. nov.

Candidatus Pacifula (NL. fem. n. *Pacifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-43-22*. The type species for the genus is *Candidatus* Pacifula reforitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Pacifula turicastra sp. nov.

Candidatus Pacifula turicastra (NL. fem. n. *turicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-43-22 sp001794435*. The type genome for the species is the GenBank assembly GCA_001795625.1. The GC content of the type genome is 43.04 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Paenalcaligenes figilatio sp. nov.

Candidatus Paenalcaligenes figilatio (NL. fem. n. *figilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenalcaligenes sp004791645*. The type genome for the species is the GenBank assembly RS_GCF_004791645.1. The GC content of the type genome is 50.08 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Paenalcaligenes macilago sp. nov.

Candidatus Paenalcaligenes macilago (NL. fem. n. *macilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenalcaligenes sp012839585*. The type genome for the species is the GenBank assembly GCA_012839585.1. The GC content of the type genome is 49.08 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Paenalcaligenes siligimonas sp. nov.

Candidatus Paenalcaligenes siligimonas (NL. fem. n. *siligimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenalcaligenes sp012518715*. The type genome for the species is the GenBank assembly GCA_012518715.1. The GC content of the type genome is 48.28 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Paenarthrobacter allobilega sp. nov.

Candidatus Paenarthrobacter allobilega (NL. fem. n. *allobilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp000526335*. The type genome for the species is the GenBank assembly RS_GCF_000526335.1. The GC content of the type genome is 61.94 % and the genome length is 5.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Paenarthrobacter benepitas sp. nov.

Candidatus Paenarthrobacter benepitas (NL. fem. n. *benepitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp000281065*. The type genome for the species is the GenBank assembly RS_GCF_000281065.1. The GC content of the type genome is 62.0 % and the genome length is 4.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "tobacco waste".

Description of *Candidatus* Paenarthrobacter cilicibula sp. nov.

Candidatus Paenarthrobacter cilicibula (NL. fem. n. *cilicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp900106835*. The type genome for the species is the GenBank assembly RS_GCF_900108925.1. The GC content of the type genome is 62.62 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Paenarthrobacter conigiforma sp. nov.

Candidatus Paenarthrobacter conigiforma (NL. fem. n. *conigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp013179505*. The type genome for the species is the GenBank assembly RS_GCF_013179505.1. The GC content of the type genome is 62.46 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Paenarthrobacter cululitio sp. nov.

Candidatus Paenarthrobacter cululitio (NL. fem. n. *cululitio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp001512285*. The type genome for the species is the GenBank assembly RS_GCF_001512285.1. The GC content of the type genome is 62.16 % and the genome length is 4.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rhizosperic soil".

Description of *Candidatus* Paenarthrobacter medimilega sp. nov.

Candidatus Paenarthrobacter medimilega (NL. fem. n. *medimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp002224285*. The type genome for the species is the GenBank assembly RS_GCF_002224285.1. The GC content of the type genome is 62.65 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Paenarthrobacter munimentia sp. nov.

Candidatus Paenarthrobacter munimentia (NL. fem. n. *munimentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp002979775*. The type genome for the species is the GenBank assembly RS_GCF_002979575.1. The GC content of the type genome is 62.09 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Paenarthrobacter nugaciforma sp. nov.

Candidatus Paenarthrobacter nugaciforma (NL. fem. n. *nugaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp902706295*. The type genome for the species is the GenBank assembly RS_GCF_902706295.1. The GC content of the type genome is 62.68 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Paenarthrobacter panopifica sp. nov.

Candidatus Paenarthrobacter panopifica (NL. fem. n. *panopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp902506065*. The type genome for the species is the GenBank assembly RS_GCF_902506065.1. The GC content of the type genome is 62.03 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Paenarthrobacter redunetta sp. nov.

Candidatus Paenarthrobacter redunetta (NL. fem. n. *redunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenarthrobacter sp006964045*. The type genome for the species is the GenBank assembly RS_GCF_011605365.1. The GC content of the type genome is 61.94 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Paenibacillus adobrifica sp. nov.

Candidatus Paenibacillus adobrifica (NL. fem. n. *adobrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp013359945*. The type genome for the species is the GenBank assembly RS_GCF_013359945.1. The GC content of the type genome is 48.09 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Paenibacillus advicentia sp. nov.

Candidatus Paenibacillus advicentia (NL. fem. n. *advicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp009870785*. The type genome for the species is the GenBank assembly RS_GCF_009870785.1. The GC content of the type genome is 41.48 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Paenibacillus arnacitio sp. nov.

Candidatus Paenibacillus arnacitio (NL. fem. n. *arnacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp001517085*. The type genome for the species is the GenBank assembly RS_GCF_001517085.1. The GC content of the type genome is 51.25

% and the genome length is 7.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "polluted soil".

Description of *Candidatus* Paenibacillus baropibra sp. nov.

Candidatus Paenibacillus baropibra (NL. fem. n. *baropibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp001955925*. The type genome for the species is the GenBank assembly RS_GCF_000517865.1. The GC content of the type genome is 51.84 % and the genome length is 7.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pasteurized milk".

Description of *Candidatus* Paenibacillus bicipibula sp. nov.

Candidatus Paenibacillus bicipibula (NL. fem. n. *bicipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp003854965*. The type genome for the species is the GenBank assembly RS_GCF_013393385.1. The GC content of the type genome is 51.64 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Paenibacillus buxanitura sp. nov.

Candidatus Paenibacillus buxanitura (NL. fem. n. *buxanitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000499205*. The type genome for the species is the GenBank assembly RS_GCF_000499205.1. The GC content of the type genome is 45.88 % and the genome length is 7.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Landfill leachate".

Description of *Candidatus* Paenibacillus capabatio sp. nov.

Candidatus Paenibacillus capabatio (NL. fem. n. *capabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000758585*. The type genome for the species is the GenBank assembly RS_GCF_001954425.1. The GC content of the type genome is 43.55 % and the genome length is 6.72 Mbp.

Description of *Candidatus* Paenibacillus casabessa sp. nov.

Candidatus Paenibacillus casabessa (NL. fem. n. *casabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp001315105*. The type genome for the species is the GenBank assembly RS_GCF_001315105.1. The GC content of the type genome is 48.6 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Paenibacillus cementica sp. nov.

Candidatus Paenibacillus cementica (NL. fem. n. *cementica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp900109515*. The type genome for the species is the GenBank assembly RS_GCF_900101205.1. The GC content of the type genome is 45.68 % and the genome length is 7.24 Mbp.

Description of *Candidatus* Paenibacillus cerucago sp. nov.

Candidatus Paenibacillus cerucago (NL. fem. n. *cerucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000758625*. The type genome for the species is the GenBank assembly RS_GCF_000758625.1. The GC content of the type genome is 51.9 % and the genome length is 7.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Pasteurized 2% fat milk".

Description of *Candidatus* Paenibacillus codifilega sp. nov.

Candidatus Paenibacillus codifilega (NL. fem. n. *codifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp900110055*. The type genome for the species is the GenBank assembly RS_GCF_003182535.1. The GC content of the type genome is 46.26 % and the genome length is 7.09 Mbp.

Description of *Candidatus* Paenibacillus conipitudo sp. nov.

Candidatus Paenibacillus conipitudo (NL. fem. n. *conipitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp009870825*. The type genome for the species is the GenBank assembly RS_GCF_009870825.1. The GC content of the type genome is 51.99 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Paenibacillus culigugo sp. nov.

Candidatus Paenibacillus culigugo (NL. fem. n. *culigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp002573715*. The type genome for the species is the GenBank assembly RS_GCF_001955975.1. The GC content of the type genome is 48.51 % and the genome length is 7.66 Mbp.

Description of *Candidatus* Paenibacillus daducedo sp. nov.

Candidatus Paenibacillus daducedo (NL. fem. n. *daducedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp002968835*. The type genome for the species is the GenBank assembly RS_GCF_002968835.1. The GC content of the type genome is 46.01 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Paenibacillus denecisca sp. nov.

Candidatus Paenibacillus denecisca (NL. fem. n. *denecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp001955915*. The type genome for the species is the GenBank assembly RS_GCF_000517965.1. The GC content of the type genome is 52.48 % and the genome length is 7.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pasteurized milk".

Description of *Candidatus* Paenibacillus detepastra sp. nov.

Candidatus Paenibacillus detepastra (NL. fem. n. *detepastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp001955855*. The type genome for the species is the GenBank assembly RS_GCF_001955855.1. The GC content of the type genome is 46.07 % and the genome length is 6.92 Mbp.

Description of *Candidatus* Paenibacillus dilogicula sp. nov.

Candidatus Paenibacillus dilogicula (NL. fem. n. *dilogicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp002264395*. The type genome for the species is the GenBank assembly RS_GCF_002264385.1. The GC content of the type genome is 43.57 % and the genome length is 6.95 Mbp.

Description of *Candidatus* Paenibacillus dimadastra sp. nov.

Candidatus Paenibacillus dimadastra (NL. fem. n. *dimadastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp009664975*. The type genome for the species is the GenBank assembly RS_GCF_009664975.1. The GC content of the type genome is 46.04 % and the genome length is 7.08 Mbp.

Description of *Candidatus* Paenibacillus diponitia sp. nov.

Candidatus Paenibacillus diponitia (NL. fem. n. *diponitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp001860525*. The type genome for the species is the GenBank assembly RS_GCF_001860525.1. The GC content of the type genome is 49.21 % and the genome length is 7.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rock".

Description of *Candidatus* Paenibacillus doxolisca sp. nov.

Candidatus Paenibacillus doxolisca (NL. fem. n. *doxolisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000732325*. The type genome for the species is the

GenBank assembly RS_GCF_000732325.1. The GC content of the type genome is 45.72 % and the genome length is 5.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Paenibacillus excogibula sp. nov.

Candidatus Paenibacillus excogibula (NL. fem. n. *excogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000987955*. The type genome for the species is the GenBank assembly RS_GCF_000987955.1. The GC content of the type genome is 50.33 % and the genome length is 6.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Alang ship breaking yard".

Description of *Candidatus* Paenibacillus exsisilega sp. nov.

Candidatus Paenibacillus exsisilega (NL. fem. n. *exsisilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000374185*. The type genome for the species is the GenBank assembly RS_GCF_000374185.1. The GC content of the type genome is 50.65 % and the genome length is 6.84 Mbp.

Description of *Candidatus* Paenibacillus hexamifica sp. nov.

Candidatus Paenibacillus hexamifica (NL. fem. n. *hexamifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp900289175*. The type genome for the species is the GenBank assembly RS_GCF_900289175.1. The GC content of the type genome is 44.68 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Paenibacillus immodibra sp. nov.

Candidatus Paenibacillus immodibra (NL. fem. n. *immodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp002257645*. The type genome for the species is the GenBank assembly RS_GCF_002257645.1. The GC content of the type genome is 52.28 % and the genome length is 7.87 Mbp.

Description of *Candidatus* Paenibacillus inrepitas sp. nov.

Candidatus Paenibacillus inrepitas (NL. fem. n. *inrepitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp005577435*. The type genome for the species is the GenBank assembly RS_GCF_005577435.1. The GC content of the type genome is 51.19 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Paenibacillus letifitura sp. nov.

Candidatus Paenibacillus letifitura (NL. fem. n. *letifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000758545*. The type genome for the species is the GenBank assembly RS_GCF_000758545.1. The GC content of the type genome is 43.69 % and the genome length is 6.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pasteurized 2% milk".

Description of *Candidatus* Paenibacillus maxilisca sp. nov.

Candidatus Paenibacillus maxilisca (NL. fem. n. *maxilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp001682855*. The type genome for the species is the GenBank assembly RS_GCF_001682855.1. The GC content of the type genome is 47.72 % and the genome length is 6.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paenibacillus obnoxitio sp. nov.

Candidatus Paenibacillus obnoxitio (NL. fem. n. *obnoxitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp002438345*. The type genome for the species is the GenBank assembly GCA_002438345.1. The GC content of the type genome is 43.48 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Paenibacillus offunicella sp. nov.

Candidatus Paenibacillus offunicella (NL. fem. n. *offunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp003268635*. The type genome for the species is the GenBank assembly RS_GCF_003268635.1. The GC content of the type genome is 44.77 % and the genome length is 6.67 Mbp.

Description of *Candidatus* Paenibacillus panopibra sp. nov.

Candidatus Paenibacillus panopibra (NL. fem. n. *panopibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000758525*. The type genome for the species is the GenBank assembly RS_GCF_000758525.1. The GC content of the type genome is 49.14 % and the genome length is 7.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Pasteurized 2% milk".

Description of *Candidatus* Paenibacillus paracedo sp. nov.

Candidatus Paenibacillus paracedo (NL. fem. n. *paracedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000316035*. The type genome for the species is the GenBank assembly RS_GCF_000316035.1. The GC content of the type genome is 46.03 % and the genome length is 6.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "subarctic grassland soil".

Description of *Candidatus* Paenibacillus peropetta sp. nov.

Candidatus Paenibacillus peropetta (NL. fem. n. *peropetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp001426865*. The type genome for the species is the GenBank assembly RS_GCF_007680105.1. The GC content of the type genome is 44.95 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Paenibacillus regifatio sp. nov.

Candidatus Paenibacillus regifatio (NL. fem. n. *regifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000949425*. The type genome for the species is the GenBank assembly RS_GCF_000949425.1. The GC content of the type genome is 41.33 % and the genome length is 5.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paenibacillus repagilenta sp. nov.

Candidatus Paenibacillus repagilenta (NL. fem. n. *repagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000758565*. The type genome for the species is the GenBank assembly RS_GCF_013141775.1. The GC content of the type genome is 51.07 % and the genome length is 8.46 Mbp.

Description of *Candidatus* Paenibacillus rubecastra sp. nov.

Candidatus Paenibacillus rubecastra (NL. fem. n. *rubecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000787385*. The type genome for the species is the GenBank assembly RS_GCF_000787385.1. The GC content of the type genome is 53.48 % and the genome length is 5.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "commercial bioreactor (Baku Baku) treating food wastes".

Description of *Candidatus* Paenibacillus scellitura sp. nov.

Candidatus Paenibacillus scellitura (NL. fem. n. *scellitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp900116105*. The type genome for the species is the GenBank assembly RS_GCF_900116105.1. The GC content of the type genome is 44.94 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Paenibacillus semigitoga sp. nov.

Candidatus Paenibacillus semigitoga (NL. fem. n. *semigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp000758605*. The type genome for the species is the GenBank assembly RS_GCF_000758605.1. The GC content of the type genome is 51.08 % and the genome length is 7.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pasteurized 2% fat milk".

Description of *Candidatus* Paenibacillus solivitio sp. nov.

Candidatus Paenibacillus solivitio (NL. fem. n. *solivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp004916975*. The type genome for the species is the GenBank assembly RS_GCF_004916975.1. The GC content of the type genome is 47.41 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Paenibacillus tegumousia sp. nov.

Candidatus Paenibacillus tegumousia (NL. fem. n. *tegumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp012912005*. The type genome for the species is the GenBank assembly RS_GCF_012912005.1. The GC content of the type genome is 46.01 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Paenibacillus timefitrix sp. nov.

Candidatus Paenibacillus timefitrix (NL. fem. n. *timefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp001955535*. The type genome for the species is the GenBank assembly RS_GCF_900106725.1. The GC content of the type genome is 45.46 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Paenibacillus totiditica sp. nov.

Candidatus Paenibacillus totiditica (NL. fem. n. *totiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp900101225*. The type genome for the species is the

GenBank assembly RS_GCF_900101225.1. The GC content of the type genome is 45.57 % and the genome length is 7.38 Mbp.

Description of *Candidatus* Paenibacillus velifax sp. nov.

Candidatus Paenibacillus velifax (NL. fem. n. *velifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp900111565*. The type genome for the species is the GenBank assembly RS_GCF_900111565.1. The GC content of the type genome is 54.93 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Paenibacillus xenoditoga sp. nov.

Candidatus Paenibacillus xenoditoga (NL. fem. n. *xenoditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus sp009807035*. The type genome for the species is the GenBank assembly RS_GCF_009807035.1. The GC content of the type genome is 48.54 % and the genome length is 6.63 Mbp.

Description of *Candidatus* Paenibacillus cenacentia sp. nov.

Candidatus Paenibacillus cenacentia (NL. fem. n. *cenacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_A sp002439285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002439285.1. The GC content of the type genome is 49.55 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Paenibacillus dapifimonia sp. nov.

Candidatus Paenibacillus dapifimonia (NL. fem. n. *dapifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_A sp003060825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_003060825.1. The GC content of the type genome is 48.68 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Paenibacillus denunibula sp. nov.

Candidatus Paenibacillus denunibula (NL. fem. n. *denunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_A sp003994465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003994465.1. The GC content of the type genome is 48.09 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Paenibacillus excomitura sp. nov.

Candidatus Paenibacillus excomitura (NL. fem. n. *excomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_A sp900766135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900766135.1. The GC content of the type genome is 54.29 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Paenibacillus monopedo sp. nov.

Candidatus Paenibacillus monopedo (NL. fem. n. *monopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_A sp900069005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013393165.1. The GC content of the type genome is 47.87 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Paenibacillus obsurax sp. nov.

Candidatus Paenibacillus obsurax (NL. fem. n. *obsurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_A sp000159955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000159955.1. The GC content of the type genome is 52.03 % and the genome length is 5.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Paenibacillus bicubitia sp. nov.

Candidatus Paenibacillus bicubitia (NL. fem. n. *bicubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_B sp900539405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013266915.1. The GC content of the type genome is 54.96 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Paenibacillus cilotitoga sp. nov.

Candidatus Paenibacillus cilotitoga (NL. fem. n. *cilotitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_B sp001894745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900102125.1. The GC content of the type genome is 46.61 % and the genome length is 6.46 Mbp.

Description of *Candidatus* Paenibacillus tiguricella sp. nov.

Candidatus Paenibacillus tiguricella (NL. fem. n. *tiguricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_B sp007786455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007786455.1. The GC content of the type genome is 43.08 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Paenibacillus tirocatio sp. nov.

Candidatus Paenibacillus tirocatio (NL. fem. n. *tirocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_B sp000283315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000283315.1. The GC content of the type genome is 48.66 % and the genome length is 6.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paenibacillus accogitica sp. nov.

Candidatus Paenibacillus accogitica (NL. fem. n. *accogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp001956095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001956095.1. The GC content of the type genome is 45.48 % and the genome length is 7.23 Mbp.

Description of *Candidatus* Paenibacillus addivitica sp. nov.

Candidatus Paenibacillus addivitica (NL. fem. n. *addivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp000023585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000023585.1. The GC content of the type genome is 50.28 % and the genome length is 7.18 Mbp.

Description of *Candidatus* Paenibacillus adobrago sp. nov.

Candidatus Paenibacillus adobrago (NL. fem. n. *adobrago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Paenibacillus_C sp001428245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001428245.1. The GC content of the type genome is 47.14 % and the genome length is 6.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paenibacillus advinousia sp. nov.

Candidatus Paenibacillus advinousia (NL. fem. n. *advinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp012935325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012935325.2. The GC content of the type genome is 47.35 % and the genome length is 8.01 Mbp.

Description of *Candidatus* Paenibacillus agripivita sp. nov.

Candidatus Paenibacillus agripivita (NL. fem. n. *agripivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp011947265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011947265.1. The GC content of the type genome is 51.34 % and the genome length is 7.01 Mbp.

Description of *Candidatus* Paenibacillus arrabivita sp. nov.

Candidatus Paenibacillus arrabivita (NL. fem. n. *arrabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp001280845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001280845.1. The GC content of the type genome is 44.29 % and the genome length is 7.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Fujian Academy of Agricultural Sciences".

Description of *Candidatus* Paenibacillus biveratio sp. nov.

Candidatus Paenibacillus biveratio (NL. fem. n. *biveratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp001956295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001956295.1. The GC content of the type genome is 44.28 % and the genome length is 7.85 Mbp.

Description of *Candidatus* Paenibacillus bovicago sp. nov.

Candidatus Paenibacillus bovicago (NL. fem. n. *bovicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp003217535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003217535.1. The GC content of the type genome is 47.68 % and the genome length is 6.74 Mbp.

Description of *Candidatus* Paenibacillus calipatica sp. nov.

Candidatus Paenibacillus calipatica (NL. fem. n. *calipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp002741035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001422685.1. The GC content of the type genome is 48.2 % and the genome length is 7.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Paenibacillus casabax sp. nov.

Candidatus Paenibacillus casabax (NL. fem. n. *casabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Paenibacillus_C sp001682865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001273905.1. The GC content of the type genome is 48.11 % and the genome length is 7.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paenibacillus cerebitrix sp. nov.

Candidatus Paenibacillus cerebitrix (NL. fem. n. *cerebitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp003591485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003591485.1. The GC content of the type genome is 50.65 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Paenibacillus impavatio sp. nov.

Candidatus Paenibacillus impavatio (NL. fem. n. *impavatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp005222705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005222705.1. The GC content of the type genome is 52.08 % and the genome length is 6.86 Mbp.

Description of *Candidatus* Paenibacillus rubigiforma sp. nov.

Candidatus Paenibacillus rubigiforma (NL. fem. n. *rubigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp004345425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004345425.1. The GC content of the type genome is 51.33 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Paenibacillus rurigilega sp. nov.

Candidatus Paenibacillus rurigilega (NL. fem. n. *rurigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_C sp009737085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009737085.1. The GC content of the type genome is 49.9 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Paenibacillus diminago sp. nov.

Candidatus Paenibacillus diminago (NL. fem. n. *diminago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_D sp004134985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004134985.1. The GC content of the type genome is 48.35 % and the genome length is 7.71 Mbp.

Description of *Candidatus* Paenibacillus inaccago sp. nov.

Candidatus Paenibacillus inaccago (NL. fem. n. *inaccago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_D sp003851045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003851045.1. The GC content of the type genome is 57.88 % and the genome length is 8.23 Mbp.

Description of *Candidatus* Paenibacillus adcucitica sp. nov.

Candidatus Paenibacillus adcucitica (NL. fem. n. *adcucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp009882985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_009882985.1. The GC content of the type genome is 46.14 % and the genome length is 8.18 Mbp.

Description of *Candidatus* Paenibacillus adveretta sp. nov.

Candidatus Paenibacillus adveretta (NL. fem. n. *adveretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp013141725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013141725.1. The GC content of the type genome is 47.2 % and the genome length is 7.75 Mbp.

Description of *Candidatus* Paenibacillus attoretta sp. nov.

Candidatus Paenibacillus attoretta (NL. fem. n. *attoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp013141695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013141695.1. The GC content of the type genome is 45.06 % and the genome length is 9.2 Mbp.

Description of *Candidatus* Paenibacillus bonifisca sp. nov.

Candidatus Paenibacillus bonifisca (NL. fem. n. *bonifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp014534655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014534655.1. The GC content of the type genome is 47.07 % and the genome length is 7.23 Mbp.

Description of *Candidatus* Paenibacillus codifitura sp. nov.

Candidatus Paenibacillus codifitura (NL. fem. n. *codifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp000620565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000620565.1. The GC content of the type genome is 45.11 % and the genome length is 7.37 Mbp.

Description of *Candidatus* Paenibacillus curotilega sp. nov.

Candidatus Paenibacillus curotilega (NL. fem. n. *curotilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp001428105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001428105.1. The GC content of the type genome is 45.07 % and the genome length is 8.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paenibacillus denixitrix sp. nov.

Candidatus Paenibacillus denixitrix (NL. fem. n. *denixitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp007829615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007829615.1. The GC content of the type genome is 46.02 % and the genome length is 8.74 Mbp.

Description of *Candidatus* Paenibacillus didacousia sp. nov.

Candidatus Paenibacillus didacousia (NL. fem. n. *didacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp008017805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008017805.1. The GC content of the type genome is 44.37 % and the genome length is 7.57 Mbp.

Description of *Candidatus* Paenibacillus indepilega sp. nov.

Candidatus Paenibacillus indepilega (NL. fem. n. *indepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp010820665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010820665.1. The GC content of the type genome is 44.16 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Paenibacillus insicugo sp. nov.

Candidatus Paenibacillus insicugo (NL. fem. n. *insicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp900103825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900103825.1. The GC content of the type genome is 44.44 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Paenibacillus malivatica sp. nov.

Candidatus Paenibacillus malivatica (NL. fem. n. *malivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp001428045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001428045.1. The GC content of the type genome is 44.98 % and the genome length is 8.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paenibacillus milipifica sp. nov.

Candidatus Paenibacillus milipifica (NL. fem. n. *milipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Paenibacillus_E sp013141785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013141715.1. The GC content of the type genome is 44.63 % and the genome length is 8.81 Mbp.

Description of *Candidatus* Paenibacillus practitudo sp. nov.

Candidatus Paenibacillus practitudo (NL. fem. n. *practitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp001429545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001429545.1. The GC content of the type genome is 44.48 % and the genome length is 7.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paenibacillus roraritica sp. nov.

Candidatus Paenibacillus roraritica (NL. fem. n. *roraritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_E sp001426375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001426375.1. The GC content of the type genome is 44.66 % and the genome length is 8.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Paenibacillus abascitio sp. nov.

Candidatus Paenibacillus abascitio (NL. fem. n. *abascitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_F sp900107975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900107975.1. The GC content of the type genome is 53.75 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Paenibacillus adreciforma sp. nov.

Candidatus Paenibacillus adreciforma (NL. fem. n. *adreciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_F sp009757775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009757775.1. The GC content of the type genome is 49.75 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Paenibacillus derunago sp. nov.

Candidatus Paenibacillus derunago (NL. fem. n. *derunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_F sp000411255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000411255.1. The GC content of the type genome is 52.92 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Paenibacillus irrecax sp. nov.

Candidatus Paenibacillus irrecax (NL. fem. n. *irrecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_F sp001541095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001541095.1. The GC content of the type genome is 49.49 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Paenibacillus adsenetta sp. nov.

Candidatus Paenibacillus adsenetta (NL. fem. n. *adsenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_G sp007786445*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007786445.1. The GC content of the type genome is 50.72 % and the genome length is 7.56 Mbp.

Description of *Candidatus* Paenibacillus decacilega sp. nov.

Candidatus Paenibacillus decacilega (NL. fem. n. *decacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_G sp900101595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900101595.1. The GC content of the type genome is 54.84 % and the genome length is 7.27 Mbp.

Description of *Candidatus* Paenibacillus delecilenta sp. nov.

Candidatus Paenibacillus delecilenta (NL. fem. n. *delecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_G sp009846885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009846885.1. The GC content of the type genome is 53.11 % and the genome length is 6.71 Mbp.

Description of *Candidatus* Paenibacillus taxilousia sp. nov.

Candidatus Paenibacillus taxilousia (NL. fem. n. *taxilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_G sp001399685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001399685.1. The GC content of the type genome is 53.56 % and the genome length is 7.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rhizosphere sample".

Description of *Candidatus* Paenibacillus relecigena sp. nov.

Candidatus Paenibacillus relecigena (NL. fem. n. *relecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_L sp007679495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008764455.1. The GC content of the type genome is 49.77 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Paenibacillus adnepugo sp. nov.

Candidatus Paenibacillus adnepugo (NL. fem. n. *adnepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_O sp900105225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900105225.1. The GC content of the type genome is 50.78 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Paenibacillus cocoletta sp. nov.

Candidatus Paenibacillus cocoletta (NL. fem. n. *cocoletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_O sp002243345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900156355.1. The GC content of the type genome is 59.25 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Paenibacillus holovitio sp. nov.

Candidatus Paenibacillus holovitio (NL. fem. n. *holovitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_O sp012676905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_012676905.1. The GC content of the type genome is 63.74 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Paenibacillus apsimitoga sp. nov.

Candidatus Paenibacillus apsimitoga (NL. fem. n. *apsimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_S sp000686845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000686845.1. The GC content of the type genome is 46.04 % and the genome length is 7.49 Mbp.

Description of *Candidatus* Paenibacillus bacifivita sp. nov.

Candidatus Paenibacillus bacifivita (NL. fem. n. *bacifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_S sp013141765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013141765.1. The GC content of the type genome is 44.26 % and the genome length is 7.87 Mbp.

Description of *Candidatus* Paenibacillus dilicastra sp. nov.

Candidatus Paenibacillus dilicastra (NL. fem. n. *dilicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_S sp001956045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001956045.1. The GC content of the type genome is 45.48 % and the genome length is 9.47 Mbp.

Description of *Candidatus* Paenibacillus necubitica sp. nov.

Candidatus Paenibacillus necubitica (NL. fem. n. *necubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_S sp011440305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011440305.1. The GC content of the type genome is 45.12 % and the genome length is 8.38 Mbp.

Description of *Candidatus* Paenibacillus obmutilega sp. nov.

Candidatus Paenibacillus obmutilega (NL. fem. n. *obmutilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_S sp002042965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002042965.1. The GC content of the type genome is 49.29 % and the genome length is 7.94 Mbp.

Description of *Candidatus* Paenibacillus obsolitica sp. nov.

Candidatus Paenibacillus obsolitica (NL. fem. n. *obsolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_S sp900114475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900114475.1. The GC content of the type genome is 44.39 % and the genome length is 7.62 Mbp.

Description of *Candidatus* Paenibacillus denigetta sp. nov.

Candidatus Paenibacillus denigetta (NL. fem. n. *denigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_T sp009789195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009789195.1. The GC content of the type genome is 50.42 % and the genome length is 5.71 Mbp.

Description of *Candidatus* Paenibacillus acrolitica sp. nov.

Candidatus Paenibacillus acrolitica (NL. fem. n. *acrolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_Z sp900113915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900113915.1. The GC content of the type genome is 60.43 % and the genome length is 7.37 Mbp.

Description of *Candidatus* Paenibacillus acustitio sp. nov.

Candidatus Paenibacillus acustitio (NL. fem. n. *acustitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_Z sp004342525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004342525.1. The GC content of the type genome is 51.73 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Paenibacillus argititio sp. nov.

Candidatus Paenibacillus argititio (NL. fem. n. *argititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_Z sp010119935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010119935.1. The GC content of the type genome is 58.1 % and the genome length is 6.74 Mbp.

Description of *Candidatus* Paenibacillus artopetta sp. nov.

Candidatus Paenibacillus artopetta (NL. fem. n. *artopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_Z sp900116125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_900116125.1. The GC content of the type genome is 50.56 % and the genome length is 7.2 Mbp.

Description of *Candidatus* Paenibacillus bucoledo sp. nov.

Candidatus Paenibacillus bucoledo (NL. fem. n. *bucoledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_Z sp900106745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900106745.1. The GC content of the type genome is 50.1 % and the genome length is 6.99 Mbp.

Description of *Candidatus* Paenibacillus dececago sp. nov.

Candidatus Paenibacillus dececago (NL. fem. n. *dececago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_Z sp010365285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010365285.1. The GC content of the type genome is 54.57 % and the genome length is 7.52 Mbp.

Description of *Candidatus* Paenibacillus fusifax sp. nov.

Candidatus Paenibacillus fusifax (NL. fem. n. *fusifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_Z sp900110075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900110075.1. The GC content of the type genome is 50.37 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Paenibacillus mutabilega sp. nov.

Candidatus Paenibacillus mutabilega (NL. fem. n. *mutabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenibacillus_Z sp009909185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009909185.1. The GC content of the type genome is 58.16 % and the genome length is 7.33 Mbp.

Description of *Candidatus* Paeniglutamicibacter adambitas sp. nov.

Candidatus Paeniglutamicibacter adambitas (NL. fem. n. *adambitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paeniglutamicibacter sp002975435*. The type genome for the species is the GenBank assembly RS_GCF_002975435.1. The GC content of the type genome is 56.34 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Paeniglutamicibacter expecedo sp. nov.

Candidatus Paeniglutamicibacter expecedo (NL. fem. n. *expecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paeniglutamicibacter sp001863355*. The type genome for the species is the GenBank assembly RS_GCF_001863355.1. The GC content of the type genome is 65.81 % and the genome length is 4.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "exercise bar".

Description of *Candidatus* Paeniglutamicibacter exsoressa sp. nov.

Candidatus Paeniglutamicibacter exsoressa (NL. fem. n. *exsoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paeniglutamicibacter sp003287975*. The type genome for the species is the GenBank assembly RS_GCF_003287975.1. The GC content of the type genome is 65.73 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Paeniglutamicibacter volunimonia sp. nov.

Candidatus Paeniglutamicibacter volunimonia (NL. fem. n. *volunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Paeniglutamicibacter sp002224445*. The type genome for the species is the GenBank assembly RS_GCF_012271785.1. The GC content of the type genome is 60.59 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Paenisporosarcina inmolimonia sp. nov.

Candidatus Paenisporosarcina inmolimonia (NL. fem. n. *inmolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenisporosarcina sp000286315*. The type genome for the species is the GenBank assembly RS_GCF_000286315.1. The GC content of the type genome is 36.6 % and the genome length is 4.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment-laden stratified basal ice from Taylor Glacier".

Description of *Candidatus* Paenisporosarcina munifitura sp. nov.

Candidatus Paenisporosarcina munifitura (NL. fem. n. *munifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenisporosarcina sp000411295*. The type genome for the species is the GenBank assembly RS_GCF_000411295.1. The GC content of the type genome is 39.25 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Paenisporosarcina nicomimonia sp. nov.

Candidatus Paenisporosarcina nicomimonia (NL. fem. n. *nicomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenisporosarcina sp003058165*. The type genome for the species is the GenBank assembly RS_GCF_003058165.1. The GC content of the type genome is 37.49 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Paenisporosarcina utricastra sp. nov.

Candidatus Paenisporosarcina utricastra (NL. fem. n. *utricastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paenisporosarcina sp000484595*. The type genome for the species is the GenBank assembly RS_GCF_000484595.1. The GC content of the type genome is

37.55 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Palifana amnenigena sp. nov.

Candidatus Palifana amnenigena (NL. fem. n. *amnenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1118 sp003159055*. The type genome for the species is the GenBank assembly GCA_003159055.1. The GC content of the type genome is 63.73 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Palifana gen. nov.

Candidatus Palifana (NL. fem. n. *Palifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1118*. The type species for the genus is *Candidatus* Palifana amnenigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Acrotanaceae.

Description of *Candidatus* Palifana forinicula sp. nov.

Candidatus Palifana forinicula (NL. fem. n. *forinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1118 sp003136095*. The type genome for the species is the GenBank assembly GCA_003155595.1. The GC content of the type genome is 66.15 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Palifaria defaribula sp. nov.

Candidatus Palifaria defaribula (NL. fem. n. *defaribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPBJ01 sp903863255*. The type genome for the species is the GenBank assembly GCA_903909395.1. The GC content of the type genome is 41.33 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Palifaria gen. nov.

Candidatus Palifaria (NL. fem. n. *Palifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPBJ01*. The type species for the genus is *Candidatus* Palifaria defaribula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Palifella appugago sp. nov.

Candidatus Palifella appugago (NL. fem. n. *appugago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6164 sp002422305*. The type genome for the species is the GenBank assembly GCA_002422305.1. The GC content of the type genome is 21.37 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Palifella gen. nov.

Candidatus Palifella (NL. fem. n. *Palifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6164*. The type species for the genus is *Candidatus* Palifella appugago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6164*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifellaceae.

Description of *Candidatus* Palifellaceae fam. nov.

Candidatus Palifellaceae (NL. fem. n. *Palifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6164.* The type genus for the taxon is *Candidatus* Palifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *BD1-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fusifellales.

Description of *Candidatus* Palifia rinocago sp. nov.

Candidatus Palifia rinocago (NL. fem. n. *rinocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXSI01 sp005792285*. The type genome for the species is the GenBank assembly GCA_009693685.1. The GC content of the type genome is 31.34 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Palifia gen. nov.

Candidatus Palifia (NL. fem. n. *Palifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXSI01*. The type species for the genus is *Candidatus* Palifia rinocago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8401*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rurigellaceae.

Description of *Candidatus* Palifida detepessa sp. nov.

Candidatus Palifida detepessa (NL. fem. n. *detepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRNS01 sp903880015*. The type genome for the species is the GenBank assembly GCA_903870265.1. The GC content of the type genome is 49.38 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Palifida gen. nov.

Candidatus Palifida (NL. fem. n. *Palifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRNS01*. The type species for the genus is *Candidatus* Palifida detepessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIRNS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifidaceae.

Description of *Candidatus* Palifidaceae fam. nov.

Candidatus Palifidaceae (NL. fem. n. *Palifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIRNS01*. The type genus for the taxon is *Candidatus* Palifida .

According to GTDB R06-RS202, this family belongs to the order *Endomicrobiales*.

Description of *Candidatus* Palifosa siminatio sp. nov.

Candidatus Palifosa siminatio (NL. fem. n. *siminatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-54-10 sp001820725*. The type genome for the species is the GenBank assembly GCA_001822455.1. The GC content of the type genome is 53.7 % and the genome length is 0.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Palifosa gen. nov.

Candidatus Palifosa (NL. fem. n. *Palifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-54-10*. The type species for the genus is *Candidatus* Palifosa siminatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-52-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vanitellaceae.

Description of *Candidatus* Palifula minuritas sp. nov.

Candidatus Palifula minuritas (NL. fem. n. *minuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKSH01 sp007570945*. The type genome for the species is the GenBank assembly GCA_007570945.1. The GC content of the type genome is 64.89 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Palifula gen. nov.

Candidatus Palifula (NL. fem. n. *Palifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RKSH01*. The type species for the genus is *Candidatus* Palifula minuritas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RKSH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Palifulaceae.

Description of *Candidatus* Palifulaceae fam. nov.

Candidatus Palifulaceae (NL. fem. n. *Palifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RKSH01.* The type genus for the taxon is *Candidatus* Palifula .

According to GTDB R06-RS202, this family belongs to the order *Arenicellales*.

Description of *Candidatus* Palleronia diminilenta sp. nov.

Candidatus Palleronia diminilenta (NL. fem. n. *diminilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Palleronia sp900609015*. The type genome for the species is the GenBank assembly RS_GCF_900609015.1. The GC content of the type genome is 63.24 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Palleronia robigibula sp. nov.

Candidatus Palleronia robigibula (NL. fem. n. *robigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Palleronia sp004358695*. The type genome for the species is the GenBank assembly RS_GCF_004358695.1. The GC content of the type genome is 68.25 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Paludibacter aplesitas sp. nov.

Candidatus Paludibacter aplesitas (NL. fem. n. *aplesitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp903899865*. The type genome for the species is the GenBank assembly GCA_903899865.1. The GC content of the type genome is 38.46 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Paludibacter aprucibra sp. nov.

Candidatus Paludibacter aprucibra (NL. fem. n. *aprucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp903927945*. The type genome for the species is the GenBank assembly GCA_903927945.1. The GC content of the type genome is 39.71 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Paludibacter argumitio sp. nov.

Candidatus Paludibacter argumitio (NL. fem. n. *argumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp001873635*. The type genome for the species is the GenBank assembly GCA_001873635.1. The GC content of the type genome is 38.3 % and the genome length is 2.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Paludibacter celumifica sp. nov.

Candidatus Paludibacter celumifica (NL. fem. n. *celumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp002070265*. The type genome for the species is the GenBank assembly GCA_002070265.1. The GC content of the type genome is 38.9 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Paludibacter defacigena sp. nov.

Candidatus Paludibacter defacigena (NL. fem. n. *defacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp903873355*. The type genome for the species is the GenBank assembly GCA_903873355.1. The GC content of the type genome is 37.92 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Paludibacter deparimonia sp. nov.

Candidatus Paludibacter deparimonia (NL. fem. n. *deparimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp903901975*. The type genome for the species is the GenBank assembly GCA_903873285.1. The GC content of the type genome is 37.41 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Paludibacter depubimonas sp. nov.

Candidatus Paludibacter depubimonas (NL. fem. n. *depubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp009929375*. The type genome for the species is the GenBank assembly GCA_009929375.1. The GC content of the type genome is 40.53 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Paludibacter eclipentia sp. nov.

Candidatus Paludibacter eclipentia (NL. fem. n. *eclipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp001898935*. The type genome for the species is the GenBank assembly GCA_001898935.1. The GC content of the type genome is 47.13 % and the genome length is 4.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Paludibacter lanigimonia sp. nov.

Candidatus Paludibacter lanigimonia (NL. fem. n. *lanigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp002427885*. The type genome for the species is the GenBank assembly GCA_002427885.1. The GC content of the type genome is 37.31 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Paludibacter milipibra sp. nov.

Candidatus Paludibacter milipibra (NL. fem. n. *milipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp903929065*. The type genome for the species is the GenBank assembly GCA_903929065.1. The GC content of the type genome is 37.65 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Paludibacter murelitoga sp. nov.

Candidatus Paludibacter murelitoga (NL. fem. n. *murelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp013426815*. The type genome for the species is the GenBank assembly GCA_013426815.1. The GC content of the type genome is 35.49 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Paludibacter nefanedo sp. nov.

Candidatus Paludibacter nefanedo (NL. fem. n. *nefanedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp003250325*. The type genome for the species is the GenBank assembly GCA_003250325.1. The GC content of the type genome is 37.05 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Paludibacter nutamisca sp. nov.

Candidatus Paludibacter nutamisca (NL. fem. n. *nutamisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp903912795*. The type genome for the species is the GenBank assembly GCA_903912795.1. The GC content of the type genome is 36.95 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Paludibacter ratifatio sp. nov.

Candidatus Paludibacter ratifatio (NL. fem. n. *ratifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp002427615*. The type genome for the species is the GenBank assembly GCA_002383435.1. The GC content of the type genome is 38.64 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Paludibacter sacomilega sp. nov.

Candidatus Paludibacter sacomilega (NL. fem. n. *sacomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp010365115*. The type genome for the species is the GenBank assembly GCA_010365115.1. The GC content of the type genome is 35.24 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Paludibacter satacilenta sp. nov.

Candidatus Paludibacter satacilenta (NL. fem. n. *satacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp903830915*. The type genome for the species is the GenBank assembly GCA_903830915.1. The GC content of the type genome is 37.66 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Paludibacter sicaratica sp. nov.

Candidatus Paludibacter sicaratica (NL. fem. n. *sicaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp012519425*. The type genome for the species is the GenBank assembly GCA_012519425.1. The GC content of the type genome is 40.15 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Paludibacter vitabitoga sp. nov.

Candidatus Paludibacter vitabitoga (NL. fem. n. *vitabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludibacter sp903911085*. The type genome for the species is the GenBank assembly GCA_903961455.1. The GC content of the type genome is 34.92 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Paludisphaera homagimonas sp. nov.

Candidatus Paludisphaera homagimonas (NL. fem. n. *homagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludisphaera sp001898385*. The type genome for the species is the GenBank assembly GCA_001898385.1. The GC content of the type genome is 70.51 % and the genome length is 7.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Paludisphaera modifago sp. nov.

Candidatus Paludisphaera modifago (NL. fem. n. *modifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludisphaera sp011065895*. The type genome for the species is the GenBank assembly RS_GCF_011065895.1. The GC content of the type genome is 66.36 % and the genome length is 8.05 Mbp.

Description of *Candidatus* Paludisphaera obmutax sp. nov.

Candidatus Paludisphaera obmutax (NL. fem. n. *obmutax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludisphaera sp001610895*. The type genome for the species is the GenBank assembly RS_GCF_001610895.1. The GC content of the type genome is 69.28 % and the genome length is 6.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sugar beet rhizosphere".

Description of *Candidatus* Paludisphaera patibago sp. nov.

Candidatus Paludisphaera patibago (NL. fem. n. *patibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paludisphaera sp011064595*. The type genome for the species is the GenBank assembly RS_GCF_011064595.1. The GC content of the type genome is 70.37 % and the genome length is 7.97 Mbp.

Description of *Candidatus* Panacibacter cinipago sp. nov.

Candidatus Panacibacter cinipago (NL. fem. n. *cinipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Panacibacter sp002390845*. The type genome for the species is the GenBank assembly GCA_002390845.1. The GC content of the type genome is 39.17 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Panacibacter diluditas sp. nov.

Candidatus Panacibacter diluditas (NL. fem. n. *diluditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Panacibacter sp002478885*. The type genome for the species is the GenBank assembly GCA_002478885.1. The GC content of the type genome is 43.68 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Panacibacter xenodentia sp. nov.

Candidatus Panacibacter xenodentia (NL. fem. n. *xenodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Panacibacter sp013106755*. The type genome for the species is the GenBank assembly RS_GCF_013106755.1. The GC content of the type genome is 38.88 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Pandoraea cotenastra sp. nov.

Candidatus Pandoraea cotenastra (NL. fem. n. *cotenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pandoraea sp004297875*. The type genome for the species is the GenBank assembly GCA_004297875.1. The GC content of the type genome is 63.11 %

and the genome length is 4.42 Mbp.

Description of *Candidatus* Pandoraea denecentia sp. nov.

Candidatus Pandoraea denecentia (NL. fem. n. *denecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pandoraea sp002179965*. The type genome for the species is the GenBank assembly RS_GCF_002179865.1. The GC content of the type genome is 63.12 % and the genome length is 6.23 Mbp.

Description of *Candidatus* Panifana cineficula sp. nov.

Candidatus Panifana cineficula (NL. fem. n. *cineficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-42-12 sp001778055*. The type genome for the species is the GenBank assembly GCA_001778015.1. The GC content of the type genome is 44.19 % and the genome length is 0.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Panifana gen. nov.

Candidatus Panifana (NL. fem. n. *Panifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-42-12*. The type species for the genus is *Candidatus* Panifana cineficula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-42-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panifanaceae.

Description of *Candidatus* Panifanaceae fam. nov.

Candidatus Panifanaceae (NL. fem. n. *Panifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-42-12.* The type genus for the taxon is *Candidatus* Panifana .

According to the original version of GTDB R06-RS202, this family belongs to the order

BM507. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Panifana diminibra sp. nov.

Candidatus Panifana diminibra (NL. fem. n. *diminibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-42-12 sp000997945*. The type genome for the species is the GenBank assembly GCA_000997945.1. The GC content of the type genome is 41.73 % and the genome length is 1.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Panifaria cicatugo sp. nov.

Candidatus Panifaria cicatugo (NL. fem. n. *cicatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9926 sp002697205*. The type genome for the species is the GenBank assembly GCA_002697205.1. The GC content of the type genome is 49.45 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Panifaria gen. nov.

Candidatus Panifaria (NL. fem. n. *Panifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9926*. The type species for the genus is *Candidatus* Panifaria cicatugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Panifaria favonibula sp. nov.

Candidatus Panifaria favonibula (NL. fem. n. *favonibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA9926 sp002728935*. The type genome for the species is the GenBank assembly GCA_002728935.1. The GC content of the type genome is 52.76 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Panifaria hexapicella sp. nov.

Candidatus Panifaria hexapicella (NL. fem. n. *hexapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9926 sp003451575*. The type genome for the species is the GenBank assembly GCA_003451575.1. The GC content of the type genome is 53.24 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Panifaria inmacisca sp. nov.

Candidatus Panifaria inmacisca (NL. fem. n. *inmacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9926 sp012960535*. The type genome for the species is the GenBank assembly GCA_012960535.1. The GC content of the type genome is 49.43 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Panifaria paropitas sp. nov.

Candidatus Panifaria paropitas (NL. fem. n. *paropitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9926 sp002689445*. The type genome for the species is the GenBank assembly GCA_002689445.1. The GC content of the type genome is 51.54 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Panifella armicatica sp. nov.

Candidatus Panifella armicatica (NL. fem. n. *armicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAW01 sp014238535*. The type genome for the species is the GenBank assembly GCA_014238535.1. The GC content of the type genome is 46.99 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Panifella gen. nov.

Candidatus Panifella (NL. fem. n. *Panifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABAAW01*. The type species for the genus is *Candidatus* Panifella armicatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABAAW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panifellaceae.

Description of *Candidatus* Panifellaceae fam. nov.

Candidatus Panifellaceae (NL. fem. n. *Panifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABAAW01.* The type genus for the taxon is *Candidatus* Panifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABSOH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nefarosales.

Description of *Candidatus* Panifella bacifitica sp. nov.

Candidatus Panifella bacifitica (NL. fem. n. *bacifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAW01 sp014239005*. The type genome for the species is the GenBank assembly GCA_014239005.1. The GC content of the type genome is 56.44 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Panifella depetatica sp. nov.

Candidatus Panifella depetatica (NL. fem. n. *depetatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAW01 sp014238625*. The type genome for the species is the GenBank assembly GCA_014238625.1. The GC content of the type genome is 47.03 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Panifella epitricula sp. nov.

Candidatus Panifella epitricula (NL. fem. n. *epitricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAW01 sp014238935*. The type genome for the species is the GenBank assembly GCA_014238935.1. The GC content of the type genome is 58.28 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Panifella ineffitura sp. nov.

Candidatus Panifella ineffitura (NL. fem. n. *ineffitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAW01 sp014238315*. The type genome for the species is the GenBank assembly GCA_014238315.1. The GC content of the type genome is 50.07 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Panifella obmuressa sp. nov.

Candidatus Panifella obmuressa (NL. fem. n. *obmuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAW01 sp014237925*. The type genome for the species is the GenBank assembly GCA_014237925.1. The GC content of the type genome is 56.25 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Panifia inhonugo sp. nov.

Candidatus Panifia inhonugo (NL. fem. n. *inhonugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B13-G15 sp003646705*. The type genome for the species is the GenBank assembly GCA_003646705.1. The GC content of the type genome is 61.89 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Panifia gen. nov.

Candidatus Panifia (NL. fem. n. *Panifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B13-G15*. The type species for the genus is *Candidatus* Panifia inhonugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B13-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panifiaceae.

Description of *Candidatus* Panifiaceae fam. nov.

Candidatus Panifiaceae (NL. fem. n. *Panifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B13-G15.* The type genus for the taxon is *Candidatus* Panifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *B13-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Panifiales.

Description of *Candidatus* Panifiales ord. nov.

Candidatus Panifiales (NL. fem. n. *Panifiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B13-G15.* The type genus for the taxon is *Candidatus* Panifia .

According to the original version of GTDB R06-RS202, this family belongs to the class *BSN033*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Debucellae.

Description of *Candidatus* Panifida curabimonas sp. nov.

Candidatus Panifida curabimonas (NL. fem. n. *curabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1384 sp002305395*. The type genome for the species is the GenBank assembly GCA_002305395.1. The GC content of the type genome is 44.02 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Panifida gen. nov.

Candidatus Panifida (NL. fem. n. *Panifida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1384*. The type species for the genus is *Candidatus* Panifida curabimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panifidaceae.

Description of *Candidatus* Panifidaceae fam. nov.

Candidatus Panifidaceae (NL. fem. n. *Panifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1384.* The type genus for the taxon is *Candidatus* Panifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Panifidales.

Description of *Candidatus* Panifidales ord. nov.

Candidatus Panifidales (NL. fem. n. *Panifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1384.* The type genus for the taxon is *Candidatus* Panifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Panifidae.

Description of *Candidatus* Panifidae class. nov.

Candidatus Panifidae (NL. fem. n. *c__Panifidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1384.* The type genus for the taxon is *Candidatus* Panifida .

According to GTDB R06-RS202, this class belongs to the phylum *Patescibacteria*.

Description of *Candidatus* Panifosa penicicula sp. nov.

Candidatus Panifosa penicicula (NL. fem. n. *penicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUXW01 sp009659925*. The type genome for the species is the GenBank assembly GCA_009659925.1. The GC content of the type genome is 56.1 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Panifosa gen. nov.

Candidatus Panifosa (NL. fem. n. *Panifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUXW01*. The type species for the genus is *Candidatus* Panifosa penicicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Panifosa siligessa sp. nov.

Candidatus Panifosa siligessa (NL. fem. n. *siligessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUXW01 sp013153715*. The type genome for the species is the GenBank assembly GCA_009659965.1. The GC content of the type genome is 53.98 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Panifula binocimonas sp. nov.

Candidatus Panifula binocimonas (NL. fem. n. *binocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-45-22 sp001796285*. The type genome for the species is the GenBank assembly GCA_001794895.1. The GC content of the type genome is 44.72 % and the genome length is 1.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Panifula gen. nov.

Candidatus Panifula (NL. fem. n. *Panifula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-45-22*. The type species for the genus is *Candidatus* Panifula binocimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Pannonibacter refunentia sp. nov.

Candidatus Pannonibacter refunentia (NL. fem. n. *refunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pannonibacter sp009915765*. The type genome for the species is the GenBank assembly RS_GCF_009915685.1. The GC content of the type genome is 67.23 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Panopana nivomitura sp. nov.

Candidatus Panopana nivomitura (NL. fem. n. *nivomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11699 sp003482855*. The type genome for the species is the GenBank assembly GCA_003482855.1. The GC content of the type genome is 39.2 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Panopana gen. nov.

Candidatus Panopana (NL. fem. n. *Panopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11699*. The type species for the genus is *Candidatus* Panopana nivomitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Panoparia vinolimonia sp. nov.

Candidatus Panoparia vinolimonia (NL. fem. n. *vinolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002688135 sp002688135*. The type genome for the species is the GenBank assembly GCA_002688135.1. The GC content of the type genome is 41.56 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Panoparia gen. nov.

Candidatus Panoparia (NL. fem. n. *Panoparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002688135*. The type species for the genus is *Candidatus* Panoparia vinolimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002688135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panopariaceae.

Description of *Candidatus* Panopariaceae fam. nov.

Candidatus Panopariaceae (NL. fem. n. *Panopariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002688135.* The type genus for the taxon is *Candidatus* Panoparia .

According to GTDB R06-RS202, this family belongs to the order *Magasanikbacterales*.

Description of *Candidatus* Panopella catagastra sp. nov.

Candidatus Panopella catagastra (NL. fem. n. *catagastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2337 sp002344825*. The type genome for the species is the GenBank assembly GCA_003535755.1. The GC content of the type genome is 46.78 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Panopella gen. nov.

Candidatus Panopella (NL. fem. n. *Panopella* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2337*. The type species for the genus is *Candidatus* Panopella catagastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2337*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panopellaceae.

Description of *Candidatus* Panopellaceae fam. nov.

Candidatus Panopellaceae (NL. fem. n. *Panopellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2337.* The type genus for the taxon is *Candidatus* Panopella .

According to GTDB R06-RS202, this family belongs to the order *Omnitrophales*.

Description of *Candidatus* Panoposa curotitio sp. nov.

Candidatus Panoposa curotitio (NL. fem. n. *curotitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11575 sp900754775*. The type genome for the species is the GenBank assembly RS_GCF_900754775.1. The GC content of the type genome is 64.19 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Panoposa gen. nov.

Candidatus Panoposa (NL. fem. n. *Panoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11575*. The type species for the genus is *Candidatus* Panoposa curotitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Panoposa nicomitrix sp. nov.

Candidatus Panoposa nicomitrix (NL. fem. n. *nicomitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11575 sp002068815*. The type genome for the species is the GenBank assembly GCA_012513775.1. The GC content of the type genome is 64.81 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Panoposa resuritia sp. nov.

Candidatus Panoposa resuritia (NL. fem. n. *resuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11575 sp012514855*. The type genome for the species is the GenBank assembly GCA_012514855.1. The GC content of the type genome is 64.49 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Pantoea advicitoga sp. nov.

Candidatus Pantoea advicitoga (NL. fem. n. *advicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp011752625*. The type genome for the species is the GenBank assembly RS_GCF_011752625.1. The GC content of the type genome is 52.91 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Pantoea armidisca sp. nov.

Candidatus Pantoea armidisca (NL. fem. n. *armidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp009829915*. The type genome for the species is the GenBank assembly RS_GCF_009829915.1. The GC content of the type genome is 40.64 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Pantoea cerifatica sp. nov.

Candidatus Pantoea cerifatica (NL. fem. n. *cerifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp002920175*. The type genome for the species is the GenBank assembly GCA_900538725.1. The GC content of the type genome is 58.83 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Pantoea deforentia sp. nov.

Candidatus Pantoea deforentia (NL. fem. n. *deforentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp900215435*. The type genome for the species is the GenBank assembly RS_GCF_002749715.1. The GC content of the type genome is 53.53 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Pantoea diluvedo sp. nov.

Candidatus Pantoea diluvedo (NL. fem. n. *diluvedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp003813865*. The type genome for the species is the GenBank assembly RS_GCF_003813865.1. The GC content of the type genome is 56.96 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Pantoea dimaditio sp. nov.

Candidatus Pantoea dimaditio (NL. fem. n. *dimaditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp003236715*. The type genome for the species is the GenBank assembly RS_GCF_003236715.1. The GC content of the type genome is 57.2 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Pantoea dimidisca sp. nov.

Candidatus Pantoea dimidisca (NL. fem. n. *dimidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp000295955*. The type genome for the species is the GenBank assembly RS_GCF_011752615.1. The GC content of the type genome is 52.83 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Pantoea domigibula sp. nov.

Candidatus Pantoea domigibula (NL. fem. n. *domigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp003512445*. The type genome for the species is the GenBank assembly RS_GCF_009905795.1. The GC content of the type genome is 55.26 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Pantoea expopitoga sp. nov.

Candidatus Pantoea expopitoga (NL. fem. n. *expopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp009830035*. The type genome for the species is the GenBank assembly RS_GCF_009830035.1. The GC content of the type genome is 55.21 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Pantoea faticiforma sp. nov.

Candidatus Pantoea faticiforma (NL. fem. n. *faticiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp000468095*. The type genome for the species is the GenBank assembly GCA_009728735.1. The GC content of the type genome is 54.1 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Pantoea ficulicella sp. nov.

Candidatus Pantoea ficulicella (NL. fem. n. *ficulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp002419935*. The type genome for the species is the GenBank assembly GCA_002419935.1. The GC content of the type genome is 54.96 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Pantoea inabsentia sp. nov.

Candidatus Pantoea inabsentia (NL. fem. n. *inabsentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp001485295*. The type genome for the species is the GenBank assembly GCA_001485295.1. The GC content of the type genome is 55.91 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Pantoea inobritio sp. nov.

Candidatus Pantoea inobritio (NL. fem. n. *inobritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp002434205*. The type genome for the species is the GenBank assembly GCA_002434205.1. The GC content of the type genome is 56.14 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Pantoea istinitoga sp. nov.

Candidatus Pantoea istinitoga (NL. fem. n. *istinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp000175935*. The type genome for the species is the GenBank assembly RS_GCF_000175935.2. The GC content of the type genome is 54.33 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Pantoea lucerimonia sp. nov.

Candidatus Pantoea lucerimonia (NL. fem. n. *lucerimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp002359495*. The type genome for the species is the GenBank assembly GCA_002359495.1. The GC content of the type genome is 57.0 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Pantoea remeditas sp. nov.

Candidatus Pantoea remeditas (NL. fem. n. *remeditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pantoea sp008632075*. The type genome for the species is the GenBank assembly RS_GCF_008631595.1. The GC content of the type genome is 54.93 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Pantoea repepicula sp. nov.

Candidatus Pantoea repepicula (NL. fem. n. *repepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp001187905*. The type genome for the species is the GenBank assembly RS_GCF_000282675.1. The GC content of the type genome is 54.35 % and the genome length is 5.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pantoea solivisca sp. nov.

Candidatus Pantoea solivisca (NL. fem. n. *solivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pantoea sp900115075*. The type genome for the species is the GenBank assembly RS_GCF_900115075.1. The GC content of the type genome is 55.18 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Papavana ablepessa sp. nov.

Candidatus Papavana ablepessa (NL. fem. n. *ablepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1248 sp902784545*. The type genome for the species is the GenBank assembly GCA_902784545.1. The GC content of the type genome is 51.4 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Papavana gen. nov.

Candidatus Papavana (NL. fem. n. *Papavana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1248*. The type species for the genus is *Candidatus* Papavana ablepessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family

CAG-272. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Papavana cilicicula sp. nov.

Candidatus Papavana cilicicula (NL. fem. n. *cilicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1248 sp902797235*. The type genome for the species is the GenBank assembly GCA_902783045.1. The GC content of the type genome is 50.73 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Papavana conamugo sp. nov.

Candidatus Papavana conamugo (NL. fem. n. *conamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1248 sp902762505*. The type genome for the species is the GenBank assembly GCA_902781685.1. The GC content of the type genome is 53.97 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Papavana forabitio sp. nov.

Candidatus Papavana forabitio (NL. fem. n. *forabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1248 sp902778145*. The type genome for the species is the GenBank assembly GCA_902778145.1. The GC content of the type genome is 53.96 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Papavana futatitudo sp. nov.

Candidatus Papavana futatitudo (NL. fem. n. *futatitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1248 sp002308615*. The type genome for the species is the GenBank assembly GCA_002308615.1. The GC content of the type genome is 49.4 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Papavana innulatio sp. nov.

Candidatus Papavana innulatio (NL. fem. n. *innulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1248 sp902773455*. The type genome for the species is the GenBank assembly GCA_902773455.1. The GC content of the type genome is 51.18 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Papavana nehalimonia sp. nov.

Candidatus Papavana nehalimonia (NL. fem. n. *nehalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1248 sp902782785*. The type genome for the species is the GenBank assembly GCA_902782785.1. The GC content of the type genome is 50.25 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Papavaria cibicitio sp. nov.

Candidatus Papavaria cibicitio (NL. fem. n. *cibicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA964 sp903910215*. The type genome for the species is the GenBank assembly GCA_903910215.1. The GC content of the type genome is 59.95 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Papavaria gen. nov.

Candidatus Papavaria (NL. fem. n. *Papavaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA964*. The type species for the genus is *Candidatus* Papavaria cibicitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Papavaria endivessa sp. nov.

Candidatus Papavaria endivessa (NL. fem. n. *endivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA964 sp010029775*. The type genome for the species is the GenBank assembly GCA_010029775.1. The GC content of the type genome is 63.35 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Papavaria fetulitoga sp. nov.

Candidatus Papavaria fetulitoga (NL. fem. n. *fetulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA964 sp903885195*. The type genome for the species is the GenBank assembly GCA_903927455.1. The GC content of the type genome is 64.14 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Papavaria genocimonia sp. nov.

Candidatus Papavaria genocimonia (NL. fem. n. *genocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA964 sp009692285*. The type genome for the species is the GenBank assembly GCA_009692285.1. The GC content of the type genome is 46.5 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Papavaria ignigitoga sp. nov.

Candidatus Papavaria ignigitoga (NL. fem. n. *ignigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA964 sp010027845*. The type genome for the species is the GenBank assembly GCA_010027845.1. The GC content of the type genome is 62.19 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Papavaria immurilega sp. nov.

Candidatus Papavaria immurilega (NL. fem. n. *immurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA964 sp009926865*. The type genome for the species is the GenBank assembly GCA_009926865.1. The GC content of the type genome is 56.76 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Papavaria noninimonia sp. nov.

Candidatus Papavaria noninimonia (NL. fem. n. *noninimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA964 sp010031985*. The type genome for the species is the GenBank assembly GCA_009918215.1. The GC content of the type genome is 63.13 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Papavaria sicubicella sp. nov.

Candidatus Papavaria sicubicella (NL. fem. n. *sicubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA964 sp002292945*. The type genome for the species is the GenBank assembly GCA_002292945.1. The GC content of the type genome is 67.0 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Papavaria tirunifica sp. nov.

Candidatus Papavaria tirunifica (NL. fem. n. *tirunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA964 sp009923475*. The type genome for the species is the GenBank assembly GCA_009923475.1. The GC content of the type genome is 70.79 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Papavaria vinolivita sp. nov.

Candidatus Papavaria vinolivita (NL. fem. n. *vinolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA964 sp903938365*. The type genome for the species is the GenBank assembly GCA_903940975.1. The GC content of the type genome is 68.65 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Papavella ammatitas sp. nov.

Candidatus Papavella ammatitas (NL. fem. n. *ammatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4720 sp002404375*. The type genome for the species is the GenBank assembly GCA_002404375.1. The GC content of the type genome is 61.13 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Papavella gen. nov.

Candidatus Papavella (NL. fem. n. *Papavella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4720*. The type species for the genus is *Candidatus* Papavella ammatitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Papavella apsuritudo sp. nov.

Candidatus Papavella apsuritudo (NL. fem. n. *apsuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4720 sp013816855*. The type genome for the species is the GenBank assembly GCA_013816855.1. The GC content of the type genome is 60.53 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Papavella defasastra sp. nov.

Candidatus Papavella defasastra (NL. fem. n. *defasastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4720 sp003221805*. The type genome for the species is the GenBank assembly GCA_003221805.1. The GC content of the type genome is 60.93 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Papavella detepilega sp. nov.

Candidatus Papavella detepilega (NL. fem. n. *detepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4720 sp003134685*. The type genome for the species is the GenBank assembly GCA_003170215.1. The GC content of the type genome is 61.66 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Papavella diluditio sp. nov.

Candidatus Papavella diluditio (NL. fem. n. *diluditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4720 sp003223425*. The type genome for the species is the GenBank assembly GCA_003220835.1. The GC content of the type genome is 60.02 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Papavella expugimonas sp. nov.

Candidatus Papavella expugimonas (NL. fem. n. *expugimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4720 sp902812375*. The type genome for the species is the GenBank assembly RS_GCF_902812375.1. The GC content of the type genome is 59.92 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Papavella futatibra sp. nov.

Candidatus Papavella futatibra (NL. fem. n. *futatibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4720 sp003131365*. The type genome for the species is the GenBank assembly GCA_002427925.1. The GC content of the type genome is 61.95 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Papavella monacitura sp. nov.

Candidatus Papavella monacitura (NL. fem. n. *monacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA4720 sp013816695*. The type genome for the species is the GenBank assembly GCA_013816695.1. The GC content of the type genome is 57.81 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Papavella penecago sp. nov.

Candidatus Papavella penecago (NL. fem. n. *penecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4720 sp013813715*. The type genome for the species is the GenBank assembly GCA_013813715.1. The GC content of the type genome is 62.59 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Papavella reforimonia sp. nov.

Candidatus Papavella reforimonia (NL. fem. n. *reforimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4720 sp013813605*. The type genome for the species is the GenBank assembly GCA_013813605.1. The GC content of the type genome is 63.66 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Papavia cadavitudo sp. nov.

Candidatus Papavia cadavitudo (NL. fem. n. *cadavitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1221 sp002350725*. The type genome for the species is the GenBank assembly GCA_002350725.1. The GC content of the type genome is 33.44 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Papavia gen. nov.

Candidatus Papavia (NL. fem. n. *Papavia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1221*. The type species for the genus is *Candidatus* Papavia cadavitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Papavia delapastra sp. nov.

Candidatus Papavia delapastra (NL. fem. n. *delapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1221 sp002309425*. The type genome for the species is the GenBank assembly GCA_002309425.1. The GC content of the type genome is 35.82 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Papavia enuclicella sp. nov.

Candidatus Papavia enuclicella (NL. fem. n. *enuclicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1221 sp902761735*. The type genome for the species is the GenBank assembly GCA_902761735.1. The GC content of the type genome is 33.65 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Papavia ludifitia sp. nov.

Candidatus Papavia ludifitia (NL. fem. n. *ludifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1221 sp902760645*. The type genome for the species is the GenBank assembly GCA_902783425.1. The GC content of the type genome is 34.13 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Papavia tomacax sp. nov.

Candidatus Papavia tomacax (NL. fem. n. *tomacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1221 sp902777385*. The type genome for the species is the GenBank assembly GCA_902777385.1. The GC content of the type genome is 33.66 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Papavia uxorcibula sp. nov.

Candidatus Papavia uxorcibula (NL. fem. n. *uxorcibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1221 sp900770525*. The type genome for the species is the GenBank assembly RS_GCF_900770525.1. The GC content of the type genome is 33.79 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Papavia vocamiforma sp. nov.

Candidatus Papavia vocamiforma (NL. fem. n. *vocamiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1221 sp900320675*. The type genome for the species is the GenBank assembly GCA_002352745.1. The GC content of the type genome is 34.49 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Papavida tabifilenta sp. nov.

Candidatus Papavida tabifilenta (NL. fem. n. *tabifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3079 sp002366635*. The type genome for the species is the GenBank assembly GCA_002366635.1. The GC content of the type genome is 51.17 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Papavida gen. nov.

Candidatus Papavida (NL. fem. n. *Papavida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3079*. The type species for the genus is *Candidatus* Papavida tabifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Homulosaceae.

Description of *Candidatus* Papavosa desomibula sp. nov.

Candidatus Papavosa desomibula (NL. fem. n. *desomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKKC01 sp007121695*. The type genome for the species is the GenBank assembly GCA_007124155.1. The GC content of the type genome is 57.42 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Papavosa gen. nov.

Candidatus Papavosa (NL. fem. n. *Papavosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKKC01*. The type species for the genus is *Candidatus* Papavosa desomibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKKC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papavosaceae.

Description of *Candidatus* Papavosaceae fam. nov.

Candidatus Papavosaceae (NL. fem. n. *Papavosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKKC01.* The type genus for the taxon is *Candidatus* Papavosa .

According to GTDB R06-RS202, this family belongs to the order *Spirochaetales_C*.

Description of *Candidatus* Papavosa favonivita sp. nov.

Candidatus Papavosa favonivita (NL. fem. n. *favonivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKKC01 sp007128315*. The type genome for the species is the GenBank assembly GCA_003566595.1. The GC content of the type genome is 56.61 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Papavosa inmoliforma sp. nov.

Candidatus Papavosa inmoliforma (NL. fem. n. *inmoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SKKC01 sp007694005*. The type genome for the species is the GenBank assembly GCA_007694005.1. The GC content of the type genome is 57.26 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Papavula bonitax sp. nov.

Candidatus Papavula bonitax (NL. fem. n. *bonitax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGR01 sp013152225*. The type genome for the species is the GenBank assembly GCA_013152225.1. The GC content of the type genome is 44.18 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Papavula gen. nov.

Candidatus Papavula (NL. fem. n. *Papavula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGR01*. The type species for the genus is *Candidatus* Papavula bonitax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADGR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papavulaceae.

Description of *Candidatus* Papavulaceae fam. nov.

Candidatus Papavulaceae (NL. fem. n. *Papavulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADGR01*. The type genus for the taxon is *Candidatus* Papavula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Renavosales.

Description of *Candidatus* Papavula ignifibula sp. nov.

Candidatus Papavula ignifibula (NL. fem. n. *ignifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JAADGR01 sp011682565*. The type genome for the species is the GenBank assembly GCA_011682565.1. The GC content of the type genome is 44.39 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Papilana adoscilenta sp. nov.

Candidatus Papilana adoscilenta (NL. fem. n. *adoscilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1859 sp002338345*. The type genome for the species is the GenBank assembly GCA_002338345.1. The GC content of the type genome is 49.18 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Papilana gen. nov.

Candidatus Papilana (NL. fem. n. *Papilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1859*. The type species for the genus is *Candidatus* Papilana adoscilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Papilana avuncifica sp. nov.

Candidatus Papilana avuncifica (NL. fem. n. *avuncifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1859 sp003532555*. The type genome for the species is the GenBank assembly GCA_003532555.1. The GC content of the type genome is 45.24 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Papilana tumefilenta sp. nov.

Candidatus Papilana tumefilenta (NL. fem. n. *tumefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1859 sp002691095*. The type genome for the species is the GenBank assembly GCA_002691095.1. The GC content of the type genome is 53.09 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Papilaria novilitoga sp. nov.

Candidatus Papilaria novilitoga (NL. fem. n. *novilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-410-N11 sp003265895*. The type genome for the species is the GenBank assembly RS_GCF_902566565.1. The GC content of the type genome is 31.07 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Papilaria gen. nov.

Candidatus Papilaria (NL. fem. n. *Papilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-410-N11*. The type species for the genus is *Candidatus* Papilaria novilitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AG-410-N11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papilariaceae.

Description of *Candidatus* Papilariaceae fam. nov.

Candidatus Papilariaceae (NL. fem. n. *Papilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AG-410-N11*. The type genus for the taxon is *Candidatus* Papilaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2716485*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resurulales.

Description of *Candidatus* Papilella noninibula sp. nov.

Candidatus Papilella noninibula (NL. fem. n. *noninibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12411 sp003511165*. The type genome for the species is the GenBank assembly GCA_000989975.1. The GC content of the type genome is 32.3 % and the genome length is 1.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Papilella gen. nov.

Candidatus Papilella (NL. fem. n. *Papilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12411*. The type species for the genus is *Candidatus* Papilella noninibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12411*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papilellaceae.

Description of *Candidatus* Papilellaceae fam. nov.

Candidatus Papilellaceae (NL. fem. n. *Papilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12411.* The type genus for the taxon is *Candidatus* Papilella .

According to GTDB R06-RS202, this family belongs to the order *Babeliales*.

Description of *Candidatus* Papilia maxilibula sp. nov.

Candidatus Papilia maxilibula (NL. fem. n. *maxilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1565 sp002790095*. The type genome for the species is the GenBank assembly GCA_002790095.1. The GC content of the type genome is 62.58 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Papilia gen. nov.

Candidatus Papilia (NL. fem. n. *Papilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1565*. The type species for the genus is *Candidatus* Papilia maxilibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papiliaceae.

Description of *Candidatus* Papiliaceae fam. nov.

Candidatus Papiliaceae (NL. fem. n. *Papiliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1565.* The type genus for the taxon is *Candidatus* Papilia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Papiliales.

Description of *Candidatus* Papiliales ord. nov.

Candidatus Papiliales (NL. fem. n. *Papiliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1565.* The type genus for the taxon is *Candidatus* Papilia .

According to the GTDB R06-RS202, this order belongs to the class *Elusimicrobia*.

Description of *Candidatus* Papilia selecigena sp. nov.

Candidatus Papilia selecigena (NL. fem. n. *selecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1565 sp002401485*. The type genome for the species is the GenBank assembly GCA_002401485.1. The GC content of the type genome is 54.93 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Papilida invoriforma sp. nov.

Candidatus Papilida invoriforma (NL. fem. n. *invoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin98 sp002238905*. The type genome for the species is the GenBank assembly GCA_002238905.1. The GC content of the type genome is 40.65 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Papilida gen. nov.

Candidatus Papilida (NL. fem. n. *Papilida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin98*. The type species for the genus is *Candidatus* Papilida invoriforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin98*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papilidaceae.

Description of *Candidatus* Papilidaceae fam. nov.

Candidatus Papilidaceae (NL. fem. n. *Papilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin98.* The type genus for the taxon is *Candidatus* Papilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *Bin98*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Papilidales.

Description of *Candidatus* Papilidales ord. nov.

Candidatus Papilidales (NL. fem. n. *Papilidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin98.* The type genus for the taxon is *Candidatus* Papilida .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Papilula miracitrix sp. nov.

Candidatus Papilula miracitrix (NL. fem. n. *miracitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8558 sp002712065*. The type genome for the species is the GenBank assembly GCA_002731625.1. The GC content of the type genome is 36.44 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Papilula gen. nov.

Candidatus Papilula (NL. fem. n. *Papilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8558*. The type species for the genus is *Candidatus* Papilula miracitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8558*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papilulaceae.

Description of *Candidatus* Papilulaceae fam. nov.

Candidatus Papilulaceae (NL. fem. n. *Papilulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8558.* The type genus for the taxon is *Candidatus* Papilula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8558*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Papilulales.

Description of *Candidatus* Papilulales ord. nov.

Candidatus Papilulales (NL. fem. n. *Papilulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8558.* The type genus for the taxon is *Candidatus* Papilula .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Parabacteroides adessicella sp. nov.

Candidatus Parabacteroides adessicella (NL. fem. n. *adessicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp900548175*. The type genome for the species is the GenBank assembly GCA_900548175.1. The GC content of the type genome is 42.72 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Parabacteroides arundifica sp. nov.

Candidatus Parabacteroides arundifica (NL. fem. n. *arundifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp900760525*. The type genome for the species is the GenBank assembly GCA_900760525.1. The GC content of the type genome is 46.43 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Parabacteroides cimititoga sp. nov.

Candidatus Parabacteroides cimititoga (NL. fem. n. *cimititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp900770835*. The type genome for the species is the GenBank assembly GCA_900770835.1. The GC content of the type genome is 48.36 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Parabacteroides defunitura sp. nov.

Candidatus Parabacteroides defunitura (NL. fem. n. *defunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp900552465*. The type genome for the species is the GenBank assembly GCA_900552465.1. The GC content of the type genome is 46.84 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Parabacteroides denupilega sp. nov.

Candidatus Parabacteroides denupilega (NL. fem. n. *denupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp900552415*. The type genome for the species is the GenBank assembly GCA_900552415.1. The GC content of the type genome is 50.55 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Parabacteroides depocago sp. nov.

Candidatus Parabacteroides depocago (NL. fem. n. *depocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp003480915*. The type genome for the species is the GenBank assembly RS_GCF_902399985.1. The GC content of the type genome is 43.87

% and the genome length is 6.09 Mbp.

Description of *Candidatus* Parabacteroides desupitura sp. nov.

Candidatus Parabacteroides desupitura (NL. fem. n. *desupitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp004562445*. The type genome for the species is the GenBank assembly GCA_004562445.1. The GC content of the type genome is 50.55 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Parabacteroides dilibicula sp. nov.

Candidatus Parabacteroides dilibicula (NL. fem. n. *dilibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp900540715*. The type genome for the species is the GenBank assembly GCA_900755135.1. The GC content of the type genome is 43.36 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Parabacteroides facunedo sp. nov.

Candidatus Parabacteroides facunedo (NL. fem. n. *facunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp011038785*. The type genome for the species is the GenBank assembly RS_GCF_011038785.1. The GC content of the type genome is 48.28 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Parabacteroides funamicella sp. nov.

Candidatus Parabacteroides funamicella (NL. fem. n. *funamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp000436495*. The type genome for the species is the GenBank assembly GCA_900547605.1. The GC content of the type genome is 42.97 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Parabacteroides irrecessa sp. nov.

Candidatus Parabacteroides irrecessa (NL. fem. n. *irrecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp002159645*. The type genome for the species is the GenBank assembly RS_GCF_002159645.1. The GC content of the type genome is 46.67 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Parabacteroides palifago sp. nov.

Candidatus Parabacteroides palifago (NL. fem. n. *palifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp003473295*. The type genome for the species is the GenBank assembly RS_GCF_902364495.1. The GC content of the type genome is 41.55 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Parabacteroides semilago sp. nov.

Candidatus Parabacteroides semilago (NL. fem. n. *semilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp900549585*. The type genome for the species is the GenBank assembly GCA_900768235.1. The GC content of the type genome is 43.28 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Parabacteroides solacitura sp. nov.

Candidatus Parabacteroides solacitura (NL. fem. n. *solacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp900541965*. The type genome for the species is the GenBank assembly GCA_900754325.1. The GC content of the type genome is 41.94 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Parabacteroides solifimonas sp. nov.

Candidatus Parabacteroides solifimonas (NL. fem. n. *solifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp014287585*. The type genome for the species is the GenBank assembly GCA_900766065.1. The GC content of the type genome is 48.28 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Parabacteroides vagabugo sp. nov.

Candidatus Parabacteroides vagabugo (NL. fem. n. *vagabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parabacteroides sp900547435*. The type genome for the species is the GenBank assembly GCA_900547435.1. The GC content of the type genome is 44.5 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Paraburkholderia adlenitrix sp. nov.

Candidatus Paraburkholderia adlenitrix (NL. fem. n. *adlenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp001319865*. The type genome for the species is the GenBank assembly GCA_001319865.1. The GC content of the type genome is 62.64 % and the genome length is 9.36 Mbp.

Description of *Candidatus* Paraburkholderia adlocimonas sp. nov.

Candidatus Paraburkholderia adlocimonas (NL. fem. n. *adlocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp900996235*. The type genome for the species is the GenBank assembly RS_GCF_900996235.1. The GC content of the type genome is 62.36 % and the genome length is 8.01 Mbp.

Description of *Candidatus* Paraburkholderia adnulax sp. nov.

Candidatus Paraburkholderia adnulax (NL. fem. n. *adnulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp004339745*. The type genome for the species is the GenBank assembly RS_GCF_004339745.1. The GC content of the type genome is

62.09 % and the genome length is 9.97 Mbp.

Description of *Candidatus* Paraburkholderia adtenentia sp. nov.

Candidatus Paraburkholderia adtenentia (NL. fem. n. *adtenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp004197395*. The type genome for the species is the GenBank assembly RS_GCF_004197395.1. The GC content of the type genome is 63.07 % and the genome length is 9.83 Mbp.

Description of *Candidatus* Paraburkholderia aggesetta sp. nov.

Candidatus Paraburkholderia aggesetta (NL. fem. n. *aggesetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp000472445*. The type genome for the species is the GenBank assembly RS_GCF_000472445.1. The GC content of the type genome is 63.07 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Paraburkholderia agratousia sp. nov.

Candidatus Paraburkholderia agratousia (NL. fem. n. *agratousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp013177695*. The type genome for the species is the GenBank assembly RS_GCF_013177695.1. The GC content of the type genome is 61.33 % and the genome length is 9.67 Mbp.

Description of *Candidatus* Paraburkholderia allacousia sp. nov.

Candidatus Paraburkholderia allacousia (NL. fem. n. *allacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp000472545*. The type genome for the species is the GenBank assembly RS_GCF_000472545.1. The GC content of the type genome is 63.11 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Paraburkholderia altipibula sp. nov.

Candidatus Paraburkholderia altipibula (NL. fem. n. *altipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp004361815*. The type genome for the species is the GenBank assembly RS_GCF_004361815.1. The GC content of the type genome is 61.82 % and the genome length is 9.2 Mbp.

Description of *Candidatus* Paraburkholderia apharastra sp. nov.

Candidatus Paraburkholderia apharastra (NL. fem. n. *apharastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp001634365*. The type genome for the species is the GenBank assembly RS_GCF_001634365.1. The GC content of the type genome is 60.86 % and the genome length is 8.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paraburkholderia appicifica sp. nov.

Candidatus Paraburkholderia appicifica (NL. fem. n. *appicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp011753055*. The type genome for the species is the GenBank assembly RS_GCF_011753055.1. The GC content of the type genome is 63.0 % and the genome length is 8.12 Mbp.

Description of *Candidatus* Paraburkholderia arillilenta sp. nov.

Candidatus Paraburkholderia arillilenta (NL. fem. n. *arillilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp900996245*. The type genome for the species is the GenBank assembly RS_GCF_900996245.1. The GC content of the type genome is 62.86 % and the genome length is 7.68 Mbp.

Description of *Candidatus* Paraburkholderia benepitura sp. nov.

Candidatus Paraburkholderia benepitura (NL. fem. n. *benepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp012275575*. The type genome for the species is the GenBank assembly RS_GCF_012275575.1. The GC content of the type genome is 63.03 % and the genome length is 7.24 Mbp.

Description of *Candidatus* Paraburkholderia bigemibula sp. nov.

Candidatus Paraburkholderia bigemibula (NL. fem. n. *bigemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp000092885*. The type genome for the species is the GenBank assembly RS_GCF_000372985.1. The GC content of the type genome is 63.05 % and the genome length is 8.61 Mbp.

Description of *Candidatus* Paraburkholderia bucelugo sp. nov.

Candidatus Paraburkholderia bucelugo (NL. fem. n. *bucelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp005503145*. The type genome for the species is the GenBank assembly RS_GCF_005503145.1. The GC content of the type genome is 62.39 % and the genome length is 9.16 Mbp.

Description of *Candidatus* Paraburkholderia caselisca sp. nov.

Candidatus Paraburkholderia caselisca (NL. fem. n. *caselisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp000178415*. The type genome for the species is the GenBank assembly RS_GCF_000178415.2. The GC content of the type genome is 62.44 % and the genome length is 8.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paraburkholderia cocibessa sp. nov.

Candidatus Paraburkholderia cocibessa (NL. fem. n. *cocibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp004359985*. The type genome for the species is

the GenBank assembly RS_GCF_004359985.1. The GC content of the type genome is 63.37 % and the genome length is 6.97 Mbp.

Description of *Candidatus* Paraburkholderia culibicula sp. nov.

Candidatus Paraburkholderia culibicula (NL. fem. n. *culibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp900996225*. The type genome for the species is the GenBank assembly RS_GCF_900996225.1. The GC content of the type genome is 62.21 % and the genome length is 7.54 Mbp.

Description of *Candidatus* Paraburkholderia culigatica sp. nov.

Candidatus Paraburkholderia culigatica (NL. fem. n. *culigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp009789655*. The type genome for the species is the GenBank assembly RS_GCF_009789655.1. The GC content of the type genome is 64.33 % and the genome length is 7.8 Mbp.

Description of *Candidatus* Paraburkholderia culiletta sp. nov.

Candidatus Paraburkholderia culiletta (NL. fem. n. *culiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp013426915*. The type genome for the species is the GenBank assembly RS_GCF_013426915.1. The GC content of the type genome is 61.71 % and the genome length is 11.25 Mbp.

Description of *Candidatus* Paraburkholderia delecitas sp. nov.

Candidatus Paraburkholderia delecitas (NL. fem. n. *delecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp003002025*. The type genome for the species is the GenBank assembly RS_GCF_003634175.1. The GC content of the type genome is 62.09 % and the genome length is 8.65 Mbp.

Description of *Candidatus* Paraburkholderia dilibax sp. nov.

Candidatus Paraburkholderia dilibax (NL. fem. n. *dilibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp000745015*. The type genome for the species is the GenBank assembly RS_GCF_013409255.1. The GC content of the type genome is 62.68 % and the genome length is 8.28 Mbp.

Description of *Candidatus* Paraburkholderia enuntibula sp. nov.

Candidatus Paraburkholderia enuntibula (NL. fem. n. *enuntibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp014397785*. The type genome for the species is the GenBank assembly RS_GCF_014397785.1. The GC content of the type genome is 62.74 % and the genome length is 9.36 Mbp.

Description of *Candidatus* Paraburkholderia exhedatio sp. nov.

Candidatus Paraburkholderia exhedatio (NL. fem. n. *exhedatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp003121405*. The type genome for the species is the GenBank assembly RS_GCF_003121405.1. The GC content of the type genome is 61.49 % and the genome length is 9.71 Mbp.

Description of *Candidatus* Paraburkholderia exheritio sp. nov.

Candidatus Paraburkholderia exheritio (NL. fem. n. *exheritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp003837865*. The type genome for the species is the GenBank assembly RS_GCF_003837865.1. The GC content of the type genome is 62.99 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Paraburkholderia fusifetta sp. nov.

Candidatus Paraburkholderia fusifetta (NL. fem. n. *fusifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp003429005*. The type genome for the species is the GenBank assembly RS_GCF_003429005.1. The GC content of the type genome is 62.28 % and the genome length is 7.25 Mbp.

Description of *Candidatus* Paraburkholderia futatastra sp. nov.

Candidatus Paraburkholderia futatastra (NL. fem. n. *futatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp000148685*. The type genome for the species is the GenBank assembly RS_GCF_004790965.1. The GC content of the type genome is 63.03 % and the genome length is 7.58 Mbp.

Description of *Candidatus* Paraburkholderia ignosimonia sp. nov.

Candidatus Paraburkholderia ignosimonia (NL. fem. n. *ignosimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp013177735*. The type genome for the species is the GenBank assembly RS_GCF_013177735.1. The GC content of the type genome is 60.95 % and the genome length is 11.08 Mbp.

Description of *Candidatus* Paraburkholderia illepax sp. nov.

Candidatus Paraburkholderia illepax (NL. fem. n. *illepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp002870125*. The type genome for the species is the GenBank assembly RS_GCF_002870125.1. The GC content of the type genome is 66.8 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Paraburkholderia inbecitica sp. nov.

Candidatus Paraburkholderia inbecitica (NL. fem. n. *inbecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp000173575*. The type genome for the species is the GenBank assembly GCA_000173575.1. The GC content of the type genome is 62.87

% and the genome length is 7.89 Mbp.

Description of *Candidatus* Paraburkholderia incomifica sp. nov.

Candidatus Paraburkholderia incomifica (NL. fem. n. *incomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp003253405*. The type genome for the species is the GenBank assembly RS_GCF_003253405.1. The GC content of the type genome is 65.3 % and the genome length is 7.68 Mbp.

Description of *Candidatus* Paraburkholderia incomitica sp. nov.

Candidatus Paraburkholderia incomitica (NL. fem. n. *incomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp009362735*. The type genome for the species is the GenBank assembly RS_GCF_009362735.1. The GC content of the type genome is 62.25 % and the genome length is 10.05 Mbp.

Description of *Candidatus* Paraburkholderia irrevastra sp. nov.

Candidatus Paraburkholderia irrevastra (NL. fem. n. *irrevastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp001922345*. The type genome for the species is the GenBank assembly RS_GCF_001922345.1. The GC content of the type genome is 63.3 % and the genome length is 7.5 Mbp.

Description of *Candidatus* Paraburkholderia lacinigena sp. nov.

Candidatus Paraburkholderia lacinigena (NL. fem. n. *lacinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp003610295*. The type genome for the species is the GenBank assembly RS_GCF_003610295.1. The GC content of the type genome is 61.37 % and the genome length is 9.12 Mbp.

Description of *Candidatus* Paraburkholderia lanugitura sp. nov.

Candidatus Paraburkholderia lanugitura (NL. fem. n. *lanugitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp008369935*. The type genome for the species is the GenBank assembly RS_GCF_008369935.1. The GC content of the type genome is 62.2 % and the genome length is 10.91 Mbp.

Description of *Candidatus* Paraburkholderia molecedo sp. nov.

Candidatus Paraburkholderia molecedo (NL. fem. n. *molecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp900142905*. The type genome for the species is the GenBank assembly RS_GCF_004363325.1. The GC content of the type genome is 61.34 % and the genome length is 10.97 Mbp.

Description of *Candidatus* Paraburkholderia munifitoga sp. nov.

Candidatus Paraburkholderia munifitoga (NL. fem. n. *munifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp002973525*. The type genome for the species is the GenBank assembly RS_GCF_002973525.1. The GC content of the type genome is 62.83 % and the genome length is 8.44 Mbp.

Description of *Candidatus* Paraburkholderia redunedo sp. nov.

Candidatus Paraburkholderia redunedo (NL. fem. n. *redunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp013366925*. The type genome for the species is the GenBank assembly RS_GCF_013367595.1. The GC content of the type genome is 63.01 % and the genome length is 8.96 Mbp.

Description of *Candidatus* Paraburkholderia refocilega sp. nov.

Candidatus Paraburkholderia refocilega (NL. fem. n. *refocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp012927345*. The type genome for the species is the GenBank assembly RS_GCF_012927345.1. The GC content of the type genome is 61.34 % and the genome length is 9.67 Mbp.

Description of *Candidatus* Paraburkholderia revulastra sp. nov.

Candidatus Paraburkholderia revulastra (NL. fem. n. *revulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp900104795*. The type genome for the species is the GenBank assembly GCA_903907005.1. The GC content of the type genome is 62.39 % and the genome length is 8.48 Mbp.

Description of *Candidatus* Paraburkholderia semifatio sp. nov.

Candidatus Paraburkholderia semifatio (NL. fem. n. *semifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp900230185*. The type genome for the species is the GenBank assembly RS_GCF_900230185.1. The GC content of the type genome is 61.21 % and the genome length is 10.76 Mbp.

Description of *Candidatus* Paraburkholderia seposedo sp. nov.

Candidatus Paraburkholderia seposedo (NL. fem. n. *seposedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp001931485*. The type genome for the species is the GenBank assembly RS_GCF_001931485.1. The GC content of the type genome is 64.39 % and the genome length is 7.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Paraburkholderia sicubivita sp. nov.

Candidatus Paraburkholderia sicubivita (NL. fem. n. *sicubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp012927125*. The type genome for the species is

the GenBank assembly RS_GCF_012927125.1. The GC content of the type genome is 63.72 % and the genome length is 7.44 Mbp.

Description of *Candidatus* Paraburkholderia socagentia sp. nov.

Candidatus Paraburkholderia socagentia (NL. fem. n. *socagentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp004353915*. The type genome for the species is the GenBank assembly RS_GCF_004353915.1. The GC content of the type genome is 64.37 % and the genome length is 9.17 Mbp.

Description of *Candidatus* Paraburkholderia subofitica sp. nov.

Candidatus Paraburkholderia subofitica (NL. fem. n. *subofitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp004298475*. The type genome for the species is the GenBank assembly GCA_004322125.1. The GC content of the type genome is 63.58 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Paraburkholderia telefigena sp. nov.

Candidatus Paraburkholderia telefigena (NL. fem. n. *telefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp013426895*. The type genome for the species is the GenBank assembly RS_GCF_013426895.1. The GC content of the type genome is 62.4 % and the genome length is 9.47 Mbp.

Description of *Candidatus* Paraburkholderia turicousia sp. nov.

Candidatus Paraburkholderia turicousia (NL. fem. n. *turicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp011752995*. The type genome for the species is the GenBank assembly RS_GCF_011752995.1. The GC content of the type genome is 63.74 % and the genome length is 7.23 Mbp.

Description of *Candidatus* Paraburkholderia vilipessa sp. nov.

Candidatus Paraburkholderia vilipessa (NL. fem. n. *vilipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraburkholderia sp009789675*. The type genome for the species is the GenBank assembly RS_GCF_009789675.1. The GC content of the type genome is 65.39 % and the genome length is 7.95 Mbp.

Description of *Candidatus* Paracaedimonas nugacatica sp. nov.

Candidatus Paracaedimonas nugacatica (NL. fem. n. *nugacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracaedimonas sp001898725*. The type genome for the species is the GenBank assembly GCA_001898725.1. The GC content of the type genome is 36.64 % and the genome length is 1.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Paracaedimonas pociliforma sp. nov.

Candidatus Paracaedimonas pociliforma (NL. fem. n. *pociliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracaedimonas sp001898705*. The type genome for the species is the GenBank assembly GCA_001898705.1. The GC content of the type genome is 38.12 % and the genome length is 1.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Paracana epogdugo sp. nov.

Candidatus Paracana epogdugo (NL. fem. n. *epogdugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABSR01 sp011390245*. The type genome for the species is the GenBank assembly GCA_011390245.1. The GC content of the type genome is 34.96 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Paracana gen. nov.

Candidatus Paracana (NL. fem. n. *Paracana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABSR01*. The type species for the genus is *Candidatus* Paracana epogdugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAABSR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paracanaceae.

Description of *Candidatus* Paracanaceae fam. nov.

Candidatus Paracanaceae (NL. fem. n. *Paracanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAABSR01*. The type genus for the taxon is *Candidatus* Paracana .

According to GTDB R06-RS202, this family belongs to the order *Campylobacterales*.

Description of *Candidatus* Parachlamydia mirifastra sp. nov.

Candidatus Parachlamydia mirifastra (NL. fem. n. *mirifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parachlamydia sp002786175*. The type genome for the species is the GenBank assembly GCA_002786175.1. The GC content of the type genome is 41.53 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Paracia inoffastra sp. nov.

Candidatus Paracia inoffastra (NL. fem. n. *inoffastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4575 sp002386945*. The type genome for the species is the GenBank assembly GCA_002386945.1. The GC content of the type genome is 46.17 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Paracia gen. nov.

Candidatus Paracia (NL. fem. n. *Paracia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA4575*. The type species for the genus is *Candidatus* Paracia inoffastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paraciaceae.

Description of *Candidatus* Paraciaceae fam. nov.

Candidatus Paraciaceae (NL. fem. n. *Paraciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4575.* The type genus for the taxon is *Candidatus* Paracia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Paraciales.

Description of *Candidatus* Paraciales ord. nov.

Candidatus Paraciales (NL. fem. n. *Paraciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4575.* The type genus for the taxon is *Candidatus* Paracia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Paracida gasifentia sp. nov.

Candidatus Paracida gasifentia (NL. fem. n. *gasifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-506 sp003168215*. The type genome for the species is the GenBank assembly GCA_003161165.1. The GC content of the type genome is 69.58 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Paracida gen. nov.

Candidatus Paracida (NL. fem. n. *Paracida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Palsa-506*. The type species for the genus is *Candidatus* Paracida gasifentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Paracoccus adgesilenta sp. nov.

Candidatus Paracoccus adgesilenta (NL. fem. n. *adgesilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp000787695*. The type genome for the species is the GenBank assembly RS_GCF_000787695.1. The GC content of the type genome is 66.06 % and the genome length is 4.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sediment".

Description of *Candidatus* Paracoccus adpugitrix sp. nov.

Candidatus Paracoccus adpugitrix (NL. fem. n. *adpugitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp003324675*. The type genome for the species is the GenBank assembly RS_GCF_003324675.1. The GC content of the type genome is 66.85 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Paracoccus adsucitrix sp. nov.

Candidatus Paracoccus adsucitrix (NL. fem. n. *adsucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp002732665*. The type genome for the species is the GenBank assembly GCA_002732665.1. The GC content of the type genome is 63.42 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Paracoccus annubax sp. nov.

Candidatus Paracoccus annubax (NL. fem. n. *annubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp001447385*. The type genome for the species is the

GenBank assembly RS_GCF_001447385.1. The GC content of the type genome is 66.7 % and the genome length is 5.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Industrial Effluent".

Description of *Candidatus* Paracoccus ascisicella sp. nov.

Candidatus Paracoccus ascisicella (NL. fem. n. *ascisicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp013868135*. The type genome for the species is the GenBank assembly RS_GCF_013868135.1. The GC content of the type genome is 65.38 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Paracoccus baropastra sp. nov.

Candidatus Paracoccus baropastra (NL. fem. n. *baropastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp014164625*. The type genome for the species is the GenBank assembly RS_GCF_014164635.1. The GC content of the type genome is 67.2 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Paracoccus brabrilenta sp. nov.

Candidatus Paracoccus brabrilenta (NL. fem. n. *brabrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp003590715*. The type genome for the species is the GenBank assembly RS_GCF_003590715.1. The GC content of the type genome is 59.11 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Paracoccus dimaditudo sp. nov.

Candidatus Paracoccus dimaditudo (NL. fem. n. *dimaditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp007096355*. The type genome for the species is the GenBank assembly RS_GCF_007096355.1. The GC content of the type genome is 63.89 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Paracoccus ducilifica sp. nov.

Candidatus Paracoccus ducilifica (NL. fem. n. *ducilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp009711265*. The type genome for the species is the GenBank assembly RS_GCF_009711265.1. The GC content of the type genome is 64.75 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Paracoccus impigigena sp. nov.

Candidatus Paracoccus impigigena (NL. fem. n. *impigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp011308835*. The type genome for the species is the GenBank assembly RS_GCF_011308835.1. The GC content of the type genome is 63.94 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Paracoccus inbecitudo sp. nov.

Candidatus Paracoccus inbecitudo (NL. fem. n. *inbecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp007993065*. The type genome for the species is the GenBank assembly RS_GCF_007993065.1. The GC content of the type genome is 62.54 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Paracoccus inoccilenta sp. nov.

Candidatus Paracoccus inoccilenta (NL. fem. n. *inoccilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp003591515*. The type genome for the species is the GenBank assembly RS_GCF_003591515.1. The GC content of the type genome is 60.31 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Paracoccus lubenitica sp. nov.

Candidatus Paracoccus lubenitica (NL. fem. n. *lubenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp000518925*. The type genome for the species is the GenBank assembly RS_GCF_000513975.1. The GC content of the type genome is 68.07 % and the genome length is 4.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Paracoccus nefaritas sp. nov.

Candidatus Paracoccus nefaritas (NL. fem. n. *nefaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp009708075*. The type genome for the species is the GenBank assembly RS_GCF_009708075.1. The GC content of the type genome is 67.12 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Paracoccus ornitiforma sp. nov.

Candidatus Paracoccus ornitiforma (NL. fem. n. *ornitiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp014490725*. The type genome for the species is the GenBank assembly RS_GCF_014490725.1. The GC content of the type genome is 60.07 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Paracoccus procredo sp. nov.

Candidatus Paracoccus procredo (NL. fem. n. *procredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp002359815*. The type genome for the species is the GenBank assembly GCA_002359815.1. The GC content of the type genome is 63.5 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Paracoccus reforimonas sp. nov.

Candidatus Paracoccus reforimonas (NL. fem. n. *reforimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp002294185*. The type genome for the species is the GenBank assembly GCA_002693405.1. The GC content of the type genome is 65.79 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Paracoccus rosarivita sp. nov.

Candidatus Paracoccus rosarivita (NL. fem. n. *rosarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp009674885*. The type genome for the species is the GenBank assembly RS_GCF_009674885.1. The GC content of the type genome is 69.54 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Paracoccus semoditrix sp. nov.

Candidatus Paracoccus semoditrix (NL. fem. n. *semoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp004335005*. The type genome for the species is the GenBank assembly RS_GCF_004335005.1. The GC content of the type genome is 65.31 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Paracoccus senaciforma sp. nov.

Candidatus Paracoccus senaciforma (NL. fem. n. *senaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp009696685*. The type genome for the species is the GenBank assembly RS_GCF_009696665.1. The GC content of the type genome is 65.79 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Paracoccus vitabimonas sp. nov.

Candidatus Paracoccus vitabimonas (NL. fem. n. *vitabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracoccus sp002847305*. The type genome for the species is the GenBank assembly RS_GCF_002847305.1. The GC content of the type genome is 62.15

% and the genome length is 3.95 Mbp.

Description of *Candidatus* Paracosa homunimonas sp. nov.

Candidatus Paracosa homunimonas (NL. fem. n. *homunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J135 sp003694225*. The type genome for the species is the GenBank assembly GCA_003694225.1. The GC content of the type genome is 43.93 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Paracosa gen. nov.

Candidatus Paracosa (NL. fem. n. *Paracosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J135*. The type species for the genus is *Candidatus* Paracosa homunimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paracosaceae.

Description of *Candidatus* Paracosaceae fam. nov.

Candidatus Paracosaceae (NL. fem. n. *Paracosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J135.* The type genus for the taxon is *Candidatus* Paracosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Recuciales.

Description of *Candidatus* Paracraurococcus adfabicella sp. nov.

Candidatus Paracraurococcus adfabicella (NL. fem. n. *adfabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracraurococcus sp004343615*. The type genome for the species is the GenBank assembly RS_GCF_004343615.1. The GC content of the type genome is

72.0 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Paracraurococcus ambacitura sp. nov.

Candidatus Paracraurococcus ambacitura (NL. fem. n. *ambacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paracraurococcus sp013112485*. The type genome for the species is the GenBank assembly RS_GCF_013112485.1. The GC content of the type genome is 71.28 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Parafilimonas agrapivita sp. nov.

Candidatus Parafilimonas agrapivita (NL. fem. n. *agrapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parafilimonas sp903642275*. The type genome for the species is the GenBank assembly RS_GCF_903642275.1. The GC content of the type genome is 35.67 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Parafilimonas expenilega sp. nov.

Candidatus Parafilimonas expenilega (NL. fem. n. *expenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parafilimonas sp013288785*. The type genome for the species is the GenBank assembly GCA_013288785.1. The GC content of the type genome is 35.95 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Parafilimonas genocisca sp. nov.

Candidatus Parafilimonas genocisca (NL. fem. n. *genocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parafilimonas sp013289015*. The type genome for the species is the GenBank assembly GCA_013289015.1. The GC content of the type genome is 37.56 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Parafilimonas invesigena sp. nov.

Candidatus Parafilimonas invesigena (NL. fem. n. *invesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parafilimonas sp013285855*. The type genome for the species is the GenBank assembly GCA_013285855.1. The GC content of the type genome is 35.99 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Parafilimonas mimogitio sp. nov.

Candidatus Parafilimonas mimogitio (NL. fem. n. *mimogitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parafilimonas sp013286425*. The type genome for the species is the GenBank assembly GCA_013286425.1. The GC content of the type genome is 37.47 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Paraflavitalea metabitia sp. nov.

Candidatus Paraflavitalea metabitia (NL. fem. n. *metabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraflavitalea sp011759375*. The type genome for the species is the GenBank assembly RS_GCF_011759375.1. The GC content of the type genome is 47.36 % and the genome length is 8.73 Mbp.

Description of *Candidatus* Paraglaciecola accucimonia sp. nov.

Candidatus Paraglaciecola accucimonia (NL. fem. n. *accucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraglaciecola sp009796765*. The type genome for the species is the GenBank assembly RS_GCF_009796765.1. The GC content of the type genome is 38.64 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Paraglaciecola assicedo sp. nov.

Candidatus Paraglaciecola assicedo (NL. fem. n. *assicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraglaciecola sp011378905*. The type genome for the species is the GenBank assembly RS_GCF_011378905.1. The GC content of the type genome is 42.63 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Paraglaciecola capudisca sp. nov.

Candidatus Paraglaciecola capudisca (NL. fem. n. *capudisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraglaciecola sp009796745*. The type genome for the species is the GenBank assembly RS_GCF_009796745.1. The GC content of the type genome is 42.64 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Paraglaciecola exsufedo sp. nov.

Candidatus Paraglaciecola exsufedo (NL. fem. n. *exsufedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraglaciecola sp002835935*. The type genome for the species is the GenBank assembly RS_GCF_002835935.1. The GC content of the type genome is 41.23 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Paraglaciecola gasometta sp. nov.

Candidatus Paraglaciecola gasometta (NL. fem. n. *gasometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraglaciecola sp009993955*. The type genome for the species is the GenBank assembly GCA_009993955.1. The GC content of the type genome is 45.76 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Paraglaciecola progribra sp. nov.

Candidatus Paraglaciecola progribra (NL. fem. n. *progribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraglaciecola sp004360155*. The type genome for the species is the GenBank assembly RS_GCF_004360155.1. The GC content of the type genome is 39.36

% and the genome length is 4.64 Mbp.

Description of *Candidatus* Parahaliea homunastra sp. nov.

Candidatus Parahaliea homunastra (NL. fem. n. *homunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parahaliea sp014077625*. The type genome for the species is the GenBank assembly RS_GCF_014077625.1. The GC content of the type genome is 52.61 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Paralcaligenes sugilitica sp. nov.

Candidatus Paralcaligenes sugilitica (NL. fem. n. *sugilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paralcaligenes sp004297945*. The type genome for the species is the GenBank assembly GCA_004322105.1. The GC content of the type genome is 56.8 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Paraliobacillus documivita sp. nov.

Candidatus Paraliobacillus documivita (NL. fem. n. *documivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraliobacillus sp014083865*. The type genome for the species is the GenBank assembly RS_GCF_014083865.1. The GC content of the type genome is 35.28 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Paraliobacillus inbelitrix sp. nov.

Candidatus Paraliobacillus inbelitrix (NL. fem. n. *inbelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraliobacillus sp001368815*. The type genome for the species is the GenBank assembly RS_GCF_001368815.1. The GC content of the type genome is 34.79 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Paraliobacillus ludimatica sp. nov.

Candidatus Paraliobacillus ludimatica (NL. fem. n. *ludimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraliobacillus_A sp003268595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003426095.1. The GC content of the type genome is 34.92 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Paralula tibicitio sp. nov.

Candidatus Paralula tibicitio (NL. fem. n. *tibicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-45-34b sp001822675*. The type genome for the species is the GenBank assembly GCA_001822675.1. The GC content of the type genome is 44.89 % and the genome length is 0.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Paralula gen. nov.

Candidatus Paralula (NL. fem. n. *Paralula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-45-34b*. The type species for the genus is *Candidatus* Paralula tibicitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Paramesorhizobium rosacibra sp. nov.

Candidatus Paramesorhizobium rosacibra (NL. fem. n. *rosacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramesorhizobium sp014191375*. The type genome for the species is the GenBank assembly RS_GCF_014191375.1. The GC content of the type genome is

62.06 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Paramuribaculum abrelicula sp. nov.

Candidatus Paramuribaculum abrelicula (NL. fem. n. *abrelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp009775605*. The type genome for the species is the GenBank assembly GCA_009775605.1. The GC content of the type genome is 53.3 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Paramuribaculum affulastra sp. nov.

Candidatus Paramuribaculum affulastra (NL. fem. n. *affulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp900553585*. The type genome for the species is the GenBank assembly GCA_900553585.1. The GC content of the type genome is 48.55 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Paramuribaculum aprucifica sp. nov.

Candidatus Paramuribaculum aprucifica (NL. fem. n. *aprucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp900759915*. The type genome for the species is the GenBank assembly RS_GCF_900759915.1. The GC content of the type genome is 55.64 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Paramuribaculum arcebentia sp. nov.

Candidatus Paramuribaculum arcebentia (NL. fem. n. *arcebentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp900551515*. The type genome for the species is the GenBank assembly GCA_900551515.1. The GC content of the type genome is 55.79 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Paramuribaculum baropugo sp. nov.

Candidatus Paramuribaculum baropugo (NL. fem. n. *baropugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp900759835*. The type genome for the species is the GenBank assembly RS_GCF_900759835.1. The GC content of the type genome is 50.15 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Paramuribaculum binocifica sp. nov.

Candidatus Paramuribaculum binocifica (NL. fem. n. *binocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp000431155*. The type genome for the species is the GenBank assembly GCA_900542815.1. The GC content of the type genome is 47.96 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Paramuribaculum bucelicula sp. nov.

Candidatus Paramuribaculum bucelicula (NL. fem. n. *bucelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp001701115*. The type genome for the species is the GenBank assembly GCA_002477235.1. The GC content of the type genome is 47.1 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Paramuribaculum dehonimonas sp. nov.

Candidatus Paramuribaculum dehonimonas (NL. fem. n. *dehonimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp900760855*. The type genome for the species is the GenBank assembly RS_GCF_900760855.1. The GC content of the type genome is 45.69 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Paramuribaculum favilatica sp. nov.

Candidatus Paramuribaculum favilatica (NL. fem. n. *favilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp900752995*. The type genome for the species is the GenBank assembly RS_GCF_900752995.1. The GC content of the type genome is 51.65 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Paramuribaculum mavorimonia sp. nov.

Candidatus Paramuribaculum mavorimonia (NL. fem. n. *mavorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp001689535*. The type genome for the species is the GenBank assembly GCA_002493385.1. The GC content of the type genome is 54.07 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Paramuribaculum ruricisca sp. nov.

Candidatus Paramuribaculum ruricisca (NL. fem. n. *ruricisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp001689565*. The type genome for the species is the GenBank assembly GCA_001689565.1. The GC content of the type genome is 48.96 % and the genome length is 2.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Feces".

Description of *Candidatus* Paramuribaculum saxopitudo sp. nov.

Candidatus Paramuribaculum saxopitudo (NL. fem. n. *saxopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paramuribaculum sp900546365*. The type genome for the species is the GenBank assembly GCA_900546365.1. The GC content of the type genome is 52.42 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Paraoceanicella eccisitura sp. nov.

Candidatus Paraoceanicella eccisitura (NL. fem. n. *eccisitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraoceanicella sp003448965*. The type genome for the species is the

GenBank assembly RS_GCF_003448965.1. The GC content of the type genome is 70.84 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Parapontixanthobacter adsenago sp. nov.

Candidatus Parapontixanthobacter adsenago (NL. fem. n. *adsenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parapontixanthobacter sp013370205*. The type genome for the species is the GenBank assembly RS_GCF_013370205.1. The GC content of the type genome is 62.06 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Paraprevotella anastetta sp. nov.

Candidatus Paraprevotella anastetta (NL. fem. n. *anastetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraprevotella sp900546665*. The type genome for the species is the GenBank assembly GCA_900546665.1. The GC content of the type genome is 43.62 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Paraprevotella forinitura sp. nov.

Candidatus Paraprevotella forinitura (NL. fem. n. *forinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraprevotella sp003477995*. The type genome for the species is the GenBank assembly GCA_900553235.1. The GC content of the type genome is 48.51 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Paraprevotella utrinugo sp. nov.

Candidatus Paraprevotella utrinugo (NL. fem. n. *utrinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraprevotella sp900548345*. The type genome for the species is the GenBank assembly GCA_900548345.1. The GC content of the type genome is 49.28 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Paraprevotella volubousia sp. nov.

Candidatus Paraprevotella volubousia (NL. fem. n. *volubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paraprevotella sp900760455*. The type genome for the species is the GenBank assembly GCA_900760455.1. The GC content of the type genome is 50.11 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Parapusillimonas diludessa sp. nov.

Candidatus Parapusillimonas diludessa (NL. fem. n. *diludessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parapusillimonas sp013416435*. The type genome for the species is the GenBank assembly RS_GCF_013416435.1. The GC content of the type genome is 61.43 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Pararcticibacter cruppitas sp. nov.

Candidatus Pararcticibacter cruppitas (NL. fem. n. *cruppitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararcticibacter sp002454425*. The type genome for the species is the GenBank assembly GCA_002454425.1. The GC content of the type genome is 43.93 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Pararheinheimera bonitibra sp. nov.

Candidatus Pararheinheimera bonitibra (NL. fem. n. *bonitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararheinheimera sp000217935*. The type genome for the species is the GenBank assembly RS_GCF_000217935.1. The GC content of the type genome is 46.23 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Pararheinheimera desucitica sp. nov.

Candidatus Pararheinheimera desucitica (NL. fem. n. *desucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararheinheimera sp004005375*. The type genome for the species is the GenBank assembly RS_GCF_004005375.1. The GC content of the type genome is 46.2 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Pararheinheimera infunitas sp. nov.

Candidatus Pararheinheimera infunitas (NL. fem. n. *infunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararheinheimera sp001669775*. The type genome for the species is the GenBank assembly RS_GCF_001669775.1. The GC content of the type genome is 49.29 % and the genome length is 5.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "iron sludge".

Description of *Candidatus* Pararheinheimera lorarousia sp. nov.

Candidatus Pararheinheimera lorarousia (NL. fem. n. *lorarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararheinheimera sp003543135*. The type genome for the species is the GenBank assembly GCA_003543135.1. The GC content of the type genome is 49.34 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Pararheinheimera octupitoga sp. nov.

Candidatus Pararheinheimera octupitoga (NL. fem. n. *octupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararheinheimera sp003990335*. The type genome for the species is the GenBank assembly RS_GCF_003990335.1. The GC content of the type genome is 46.68 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Pararheinheimera procratica sp. nov.

Candidatus Pararheinheimera procratica (NL. fem. n. *procratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararheinheimera sp008015325*. The type genome for the species is

the GenBank assembly GCA_008015325.1. The GC content of the type genome is 52.55 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Pararheinheimera subucitura sp. nov.

Candidatus Pararheinheimera subucitura (NL. fem. n. *subucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararheinheimera sp003482455*. The type genome for the species is the GenBank assembly GCA_003482455.1. The GC content of the type genome is 50.9 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Pararhizobium adlacitoga sp. nov.

Candidatus Pararhizobium adlacitoga (NL. fem. n. *adlacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp900472785*. The type genome for the species is the GenBank assembly GCA_900472785.1. The GC content of the type genome is 60.38 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Pararhizobium adsibitica sp. nov.

Candidatus Pararhizobium adsibitica (NL. fem. n. *adsibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp900467185*. The type genome for the species is the GenBank assembly RS_GCF_900467185.1. The GC content of the type genome is 64.04 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Pararhizobium catobitas sp. nov.

Candidatus Pararhizobium catobitas (NL. fem. n. *catobitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp900473795*. The type genome for the species is the GenBank assembly RS_GCF_900473625.1. The GC content of the type genome is 60.77 % and the genome length is 6.35 Mbp.

Description of *Candidatus* Pararhizobium codifatica sp. nov.

Candidatus Pararhizobium codifatica (NL. fem. n. *codifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp001426665*. The type genome for the species is the GenBank assembly RS_GCF_900473755.1. The GC content of the type genome is 59.38 % and the genome length is 6.3 Mbp.

Description of *Candidatus* Pararhizobium dehonibula sp. nov.

Candidatus Pararhizobium dehonibula (NL. fem. n. *dehonibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp001424985*. The type genome for the species is the GenBank assembly RS_GCF_001428925.1. The GC content of the type genome is 61.78 % and the genome length is 5.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pararhizobium denicitas sp. nov.

Candidatus Pararhizobium denicitas (NL. fem. n. *denicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp001424045*. The type genome for the species is the GenBank assembly RS_GCF_001424045.1. The GC content of the type genome is 63.58 % and the genome length is 5.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pararhizobium divolatio sp. nov.

Candidatus Pararhizobium divolatio (NL. fem. n. *divolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp900474095*. The type genome for the species is the GenBank assembly RS_GCF_900473525.1. The GC content of the type genome is 60.13 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Pararhizobium expalitudo sp. nov.

Candidatus Pararhizobium expalitudo (NL. fem. n. *expalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp900067135*. The type genome for the species is the GenBank assembly RS_GCF_900067135.1. The GC content of the type genome is 62.52 % and the genome length is 5.43 Mbp.

Description of *Candidatus* Pararhizobium homunifica sp. nov.

Candidatus Pararhizobium homunifica (NL. fem. n. *homunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp001426685*. The type genome for the species is the GenBank assembly RS_GCF_001426685.1. The GC content of the type genome is 60.0 % and the genome length is 6.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pararhizobium homunitia sp. nov.

Candidatus Pararhizobium homunitia (NL. fem. n. *homunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp900472175*. The type genome for the species is the GenBank assembly RS_GCF_900472175.1. The GC content of the type genome is 59.86 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Pararhizobium inperastra sp. nov.

Candidatus Pararhizobium inperastra (NL. fem. n. *inperastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp000744565*. The type genome for the species is the GenBank assembly RS_GCF_000744565.1. The GC content of the type genome is 60.28 % and the genome length is 6.86 Mbp.

Description of *Candidatus* Pararhizobium mahematio sp. nov.

Candidatus Pararhizobium mahematio (NL. fem. n. *mahematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp900468065*. The type genome for the species is the GenBank assembly RS_GCF_900468065.1. The GC content of the type genome is 59.28 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Pararhizobium malogibra sp. nov.

Candidatus Pararhizobium malogibra (NL. fem. n. *malogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp001424065*. The type genome for the species is the GenBank assembly RS_GCF_001424325.1. The GC content of the type genome is 63.36 % and the genome length is 4.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pararhizobium monopilenta sp. nov.

Candidatus Pararhizobium monopilenta (NL. fem. n. *monopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp000745255*. The type genome for the species is the GenBank assembly RS_GCF_000745255.1. The GC content of the type genome is 60.06 % and the genome length is 6.45 Mbp.

Description of *Candidatus* Pararhizobium obfiritrix sp. nov.

Candidatus Pararhizobium obfiritrix (NL. fem. n. *obfiritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp900473045*. The type genome for the species is the GenBank assembly RS_GCF_900473045.1. The GC content of the type genome is 59.37 % and the genome length is 6.78 Mbp.

Description of *Candidatus* Pararhizobium petulitio sp. nov.

Candidatus Pararhizobium petulitio (NL. fem. n. *petulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp003217095*. The type genome for the species is the GenBank assembly RS_GCF_003217135.1. The GC content of the type genome is 62.78

% and the genome length is 5.53 Mbp.

Description of *Candidatus* Pararhizobium refacitoga sp. nov.

Candidatus Pararhizobium refacitoga (NL. fem. n. *refacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp001425605*. The type genome for the species is the GenBank assembly RS_GCF_900473645.1. The GC content of the type genome is 60.11 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Pararhizobium rorarisca sp. nov.

Candidatus Pararhizobium rorarisca (NL. fem. n. *rorarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp001426565*. The type genome for the species is the GenBank assembly RS_GCF_001426565.1. The GC content of the type genome is 61.46 % and the genome length is 5.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pararhizobium rosaritoga sp. nov.

Candidatus Pararhizobium rosaritoga (NL. fem. n. *rosaritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp000745575*. The type genome for the species is the GenBank assembly RS_GCF_900473685.1. The GC content of the type genome is 59.97 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Pararhizobium solivedo sp. nov.

Candidatus Pararhizobium solivedo (NL. fem. n. *solivedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhizobium sp900111275*. The type genome for the species is the GenBank assembly RS_GCF_900111275.1. The GC content of the type genome is 62.0 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Pararhodobacter allibivita sp. nov.

Candidatus Pararhodobacter allibivita (NL. fem. n. *allibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhodobacter sp003076755*. The type genome for the species is the GenBank assembly RS_GCF_003076755.1. The GC content of the type genome is 62.93 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Pararhodobacter apharimonas sp. nov.

Candidatus Pararhodobacter apharimonas (NL. fem. n. *apharimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhodobacter sp001691415*. The type genome for the species is the GenBank assembly RS_GCF_001691415.1. The GC content of the type genome is 65.95 % and the genome length is 5.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mangrove soil".

Description of *Candidatus* Pararhodobacter bicalitura sp. nov.

Candidatus Pararhodobacter bicalitura (NL. fem. n. *bicalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhodobacter sp007120685*. The type genome for the species is the GenBank assembly GCA_007120685.1. The GC content of the type genome is 67.87 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Pararhodobacter cululicella sp. nov.

Candidatus Pararhodobacter cululicella (NL. fem. n. *cululicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhodobacter sp003122215*. The type genome for the species is the GenBank assembly RS_GCF_003122215.1. The GC content of the type genome is 66.75 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Pararhodobacter edissicella sp. nov.

Candidatus Pararhodobacter edissicella (NL. fem. n. *edissicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhodobacter sp001314715*. The type genome for the species is the GenBank assembly GCA_001314715.1. The GC content of the type genome is 65.15 % and the genome length is 3.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-A from microbial mat sample; contains cyanobacterium Phormidesmis priestleyi ANA and associated heterotrophs".

Description of *Candidatus* Pararhodobacter hemidivita sp. nov.

Candidatus Pararhodobacter hemidivita (NL. fem. n. *hemidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhodobacter sp007134405*. The type genome for the species is the GenBank assembly GCA_007134405.1. The GC content of the type genome is 66.95 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Pararhodobacter rubicessa sp. nov.

Candidatus Pararhodobacter rubicessa (NL. fem. n. *rubicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhodobacter sp007131945*. The type genome for the species is the GenBank assembly GCA_003556445.1. The GC content of the type genome is 69.82 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Pararhodobacter venucetta sp. nov.

Candidatus Pararhodobacter venucetta (NL. fem. n. *venucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pararhodobacter sp007117005*. The type genome for the species is the GenBank assembly GCA_007117005.1. The GC content of the type genome is 67.44 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Parasedimentitalea arunditrix sp. nov.

Candidatus Parasedimentitalea arunditrix (NL. fem. n. *arunditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasedimentitalea sp009753675*. The type genome for the species is the GenBank assembly RS_GCF_009753675.1. The GC content of the type genome is 54.21 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Parasedimentitalea depocousia sp. nov.

Candidatus Parasedimentitalea depocousia (NL. fem. n. *depocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasedimentitalea sp005771405*. The type genome for the species is the GenBank assembly RS_GCF_005771405.1. The GC content of the type genome is 54.27 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Parasedimentitalea feditibula sp. nov.

Candidatus Parasedimentitalea feditibula (NL. fem. n. *feditibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasedimentitalea sp013214575*. The type genome for the species is the GenBank assembly GCA_013214575.1. The GC content of the type genome is 57.59 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Parasedimentitalea galacigena sp. nov.

Candidatus Parasedimentitalea galacigena (NL. fem. n. *galacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasedimentitalea sp002401945*. The type genome for the species is the GenBank assembly GCA_002401945.1. The GC content of the type genome is 57.49 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Parasedimentitalea leviditica sp. nov.

Candidatus Parasedimentitalea leviditica (NL. fem. n. *leviditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasedimentitalea sp011813015*. The type genome for the species is the GenBank assembly RS_GCF_011813015.1. The GC content of the type genome is 54.96 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Parasedimentitalea pomifisca sp. nov.

Candidatus Parasedimentitalea pomifisca (NL. fem. n. *pomifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasedimentitalea sp002162795*. The type genome for the species is the GenBank assembly GCA_002162795.1. The GC content of the type genome is 56.52 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Parashewanella redunitudo sp. nov.

Candidatus Parashewanella redunitudo (NL. fem. n. *redunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parashewanella sp004168585*. The type genome for the species is the GenBank assembly RS_GCF_004168585.1. The GC content of the type genome is 39.6 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Parasphingopyxis acropisca sp. nov.

Candidatus Parasphingopyxis acropisca (NL. fem. n. *acropisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingopyxis sp014237875*. The type genome for the species is the GenBank assembly RS_GCF_014237875.1. The GC content of the type genome is 63.72 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Parasphingopyxis eclecatio sp. nov.

Candidatus Parasphingopyxis eclecatio (NL. fem. n. *eclecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingopyxis sp014380205*. The type genome for the species is the GenBank assembly GCA_014380205.1. The GC content of the type genome is 67.86 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Parasphingopyxis insusicella sp. nov.

Candidatus Parasphingopyxis insusicella (NL. fem. n. *insusicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingopyxis sp013001755*. The type genome for the species is the GenBank assembly GCA_013001755.1. The GC content of the type genome is 62.05 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Parasphingopyxis levidatio sp. nov.

Candidatus Parasphingopyxis levidatio (NL. fem. n. *levidatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingopyxis sp013378055*. The type genome for the species is the GenBank assembly RS_GCF_013378055.1. The GC content of the type genome is 58.55 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Parasphingorhabdus bipatessa sp. nov.

Candidatus Parasphingorhabdus bipatessa (NL. fem. n. *bipatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp013204445*. The type genome for the species is the GenBank assembly GCA_013204445.1. The GC content of the type genome is 55.42 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Parasphingorhabdus cerimimonas sp. nov.

Candidatus Parasphingorhabdus cerimimonas (NL. fem. n. *cerimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp012516475*. The type genome for the species is the GenBank assembly RS_GCF_012516475.1. The GC content of the type genome is 53.03 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Parasphingorhabdus coturago sp. nov.

Candidatus Parasphingorhabdus coturago (NL. fem. n. *coturago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Parasphingorhabdus sp002776575*. The type genome for the species is the GenBank assembly RS_GCF_002776575.1. The GC content of the type genome is 57.91 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Parasphingorhabdus desorugo sp. nov.

Candidatus Parasphingorhabdus desorugo (NL. fem. n. *desorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp001586275*. The type genome for the species is the GenBank assembly RS_GCF_001586275.1. The GC content of the type genome is 56.72 % and the genome length is 3.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment".

Description of *Candidatus* Parasphingorhabdus grallatica sp. nov.

Candidatus Parasphingorhabdus grallatica (NL. fem. n. *grallatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp900258045*. The type genome for the species is the GenBank assembly RS_GCF_900258045.1. The GC content of the type genome is 53.14 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Parasphingorhabdus inambitia sp. nov.

Candidatus Parasphingorhabdus inambitia (NL. fem. n. *inambitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp900149705*. The type genome for the species is the GenBank assembly GCA_900149705.1. The GC content of the type genome is 52.79 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Parasphingorhabdus ineffatica sp. nov.

Candidatus Parasphingorhabdus ineffatica (NL. fem. n. *ineffatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp002733865*. The type genome for the species is the GenBank assembly GCA_002733865.1. The GC content of the type genome is 56.26 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Parasphingorhabdus inmutatica sp. nov.

Candidatus Parasphingorhabdus inmutatica (NL. fem. n. *inmutatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp002354635*. The type genome for the species is the GenBank assembly GCA_002354635.1. The GC content of the type genome is 57.84 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Parasphingorhabdus intenitura sp. nov.

Candidatus Parasphingorhabdus intenitura (NL. fem. n. *intenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp001650955*. The type genome for the species is the GenBank assembly RS_GCF_001650955.1. The GC content of the type genome is 53.7 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Parasphingorhabdus malifibula sp. nov.

Candidatus Parasphingorhabdus malifibula (NL. fem. n. *malifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp002218195*. The type genome for the species is the GenBank assembly RS_GCF_002218195.1. The GC content of the type genome is 57.97 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Parasphingorhabdus taxilitio sp. nov.

Candidatus Parasphingorhabdus taxilitio (NL. fem. n. *taxilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp902506555*. The type genome for the species is the GenBank assembly RS_GCF_902506555.1. The GC content of the type genome is 57.93 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Parasphingorhabdus xenopago sp. nov.

Candidatus Parasphingorhabdus xenopago (NL. fem. n. *xenopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasphingorhabdus sp002783865*. The type genome for the species is the GenBank assembly GCA_009992585.1. The GC content of the type genome is 57.53 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Parasutterella alcalitura sp. nov.

Candidatus Parasutterella alcalitura (NL. fem. n. *alcalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasutterella sp900766055*. The type genome for the species is the GenBank assembly GCA_900766055.1. The GC content of the type genome is 48.71 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Parasutterella canacitia sp. nov.

Candidatus Parasutterella canacitia (NL. fem. n. *canacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasutterella sp900552195*. The type genome for the species is the GenBank assembly GCA_002493705.1. The GC content of the type genome is 48.39 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Parasutterella obsatastra sp. nov.

Candidatus Parasutterella obsatastra (NL. fem. n. *obsatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasutterella sp900554375*. The type genome for the species is the GenBank assembly GCA_900554375.1. The GC content of the type genome is 48.21 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Parasutterella recumatica sp. nov.

Candidatus Parasutterella recumatica (NL. fem. n. *recumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Parasutterella sp009767915*. The type genome for the species is the GenBank assembly GCA_900752915.1. The GC content of the type genome is 50.09 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Parasutterella viragugo sp. nov.

Candidatus Parasutterella viragugo (NL. fem. n. *viragugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parasutterella sp000980495*. The type genome for the species is the GenBank assembly GCA_900538295.1. The GC content of the type genome is 49.3 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Parerythrobacter brabrugo sp. nov.

Candidatus Parerythrobacter brabrugo (NL. fem. n. *brabrugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parerythrobacter sp004114695*. The type genome for the species is the GenBank assembly RS_GCF_004114695.1. The GC content of the type genome is 64.41 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Parocana adnaratica sp. nov.

Candidatus Parocana adnaratica (NL. fem. n. *adnaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp002449555*. The type genome for the species is the GenBank assembly GCA_002449555.1. The GC content of the type genome is 62.79 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Parocana gen. nov.

Candidatus Parocana (NL. fem. n. *Parocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1367*. The type species for the genus is *Candidatus* Parocana adnaratica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Parocana armipibra sp. nov.

Candidatus Parocana armipibra (NL. fem. n. *armipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp902790135*. The type genome for the species is the GenBank assembly GCA_902790135.1. The GC content of the type genome is 62.16 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Parocana cilicentia sp. nov.

Candidatus Parocana cilicentia (NL. fem. n. *cilicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp902779675*. The type genome for the species is the GenBank assembly GCA_902775935.1. The GC content of the type genome is 63.93 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Parocana defanitudo sp. nov.

Candidatus Parocana defanitudo (NL. fem. n. *defanitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp902788705*. The type genome for the species is the GenBank assembly GCA_902764955.1. The GC content of the type genome is 64.31 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Parocana dehisilega sp. nov.

Candidatus Parocana dehisilega (NL. fem. n. *dehisilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp900314645*. The type genome for the species is the GenBank assembly GCA_902758085.1. The GC content of the type genome is 61.28 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Parocana inmobitrix sp. nov.

Candidatus Parocana inmobitrix (NL. fem. n. *inmobitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp902797175*. The type genome for the species is the GenBank assembly GCA_902797175.1. The GC content of the type genome is 62.85 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Parocana lanifessa sp. nov.

Candidatus Parocana lanifessa (NL. fem. n. *lanifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp902778135*. The type genome for the species is the GenBank assembly GCA_902775125.1. The GC content of the type genome is 64.41 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Parocana maxumitrix sp. nov.

Candidatus Parocana maxumitrix (NL. fem. n. *maxumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp902777325*. The type genome for the species is the GenBank assembly GCA_902777325.1. The GC content of the type genome is 63.6 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Parocana nefanessa sp. nov.

Candidatus Parocana nefanessa (NL. fem. n. *nefanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp902766835*. The type genome for the species is the GenBank assembly GCA_902766835.1. The GC content of the type genome is 62.58 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Parocana ossicitica sp. nov.

Candidatus Parocana ossicitica (NL. fem. n. *ossicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1367 sp902772435*. The type genome for the species is the GenBank assembly GCA_902772435.1. The GC content of the type genome is 64.53 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Parocana semapilega sp. nov.

Candidatus Parocana semapilega (NL. fem. n. *semapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp002305995*. The type genome for the species is the GenBank assembly GCA_002305995.1. The GC content of the type genome is 65.55 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Parocana seposifica sp. nov.

Candidatus Parocana seposifica (NL. fem. n. *seposifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1367 sp902801175*. The type genome for the species is the GenBank assembly GCA_902790815.1. The GC content of the type genome is 60.42 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Parocaria adaggentia sp. nov.

Candidatus Parocaria adaggentia (NL. fem. n. *adaggentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB11 sp903881265*. The type genome for the species is the GenBank assembly GCA_903881265.1. The GC content of the type genome is 40.04 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Parocaria gen. nov.

Candidatus Parocaria (NL. fem. n. *Parocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB11*. The type species for the genus is *Candidatus* Parocaria adaggentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Parocaria adpacisca sp. nov.

Candidatus Parocaria adpacisca (NL. fem. n. *adpacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB11 sp013414745*. The type genome for the species is the GenBank assembly GCA_013414745.1. The GC content of the type genome is 42.15 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Parocaria socagitura sp. nov.

Candidatus Parocaria socagitura (NL. fem. n. *socagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB11 sp903875055*. The type genome for the species is the GenBank assembly GCA_903835295.1. The GC content of the type genome is 41.2 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Parocaria urbiciforma sp. nov.

Candidatus Parocaria urbiciforma (NL. fem. n. *urbiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB11 sp001567165*. The type genome for the species is the GenBank assembly GCA_001567165.1. The GC content of the type genome is 33.11 % and the genome length is 2.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Parocella arbavibula sp. nov.

Candidatus Parocella arbavibula (NL. fem. n. *arbavibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3830 sp902771535*. The type genome for the species is the GenBank assembly GCA_902771535.1. The GC content of the type genome is 39.78 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Parocella gen. nov.

Candidatus Parocella (NL. fem. n. *Parocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3830*. The type species for the genus is *Candidatus* Parocella arbavibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3830*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Parocellaceae.

Description of *Candidatus* Parocellaceae fam. nov.

Candidatus Parocellaceae (NL. fem. n. *Parocellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3830.* The type genus for the taxon is *Candidatus* Parocella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3830*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Parocellales.

Description of *Candidatus* Parocellales ord. nov.

Candidatus Parocellales (NL. fem. n. *Parocellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3830.* The type genus for the taxon is *Candidatus* Parocella .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Parocella inrevastra sp. nov.

Candidatus Parocella inrevastra (NL. fem. n. *inrevastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3830 sp902790255*. The type genome for the species is the GenBank assembly GCA_902790255.1. The GC content of the type genome is 38.29 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Parocella navicessa sp. nov.

Candidatus Parocella navicessa (NL. fem. n. *navicessa* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3830 sp002393025*. The type genome for the species is the GenBank assembly GCA_002393025.1. The GC content of the type genome is 38.44 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Parocella tomogedo sp. nov.

Candidatus Parocella tomogedo (NL. fem. n. *tomogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3830 sp902761495*. The type genome for the species is the GenBank assembly GCA_902761495.1. The GC content of the type genome is 39.33 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Parocia cemenastra sp. nov.

Candidatus Parocia cemenastra (NL. fem. n. *cemenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACPJE01 sp902634045*. The type genome for the species is the GenBank assembly GCA_902634045.1. The GC content of the type genome is 31.97 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Parocia gen. nov.

Candidatus Parocia (NL. fem. n. *Parocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACPJE01*. The type species for the genus is *Candidatus* Parocia cemenastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AG-422-B15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirifosaceae.

Description of *Candidatus* Parocia sonivigena sp. nov.

Candidatus Parocia sonivigena (NL. fem. n. *sonivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACPJE01 sp902510025*. The type genome for the species is the GenBank assembly GCA_902510025.1. The GC content of the type genome is 32.63 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Parocida delecentia sp. nov.

Candidatus Parocida delecentia (NL. fem. n. *delecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACLRR01 sp902609415*. The type genome for the species is the GenBank assembly GCA_902609415.1. The GC content of the type genome is 36.07 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Parocida gen. nov.

Candidatus Parocida (NL. fem. n. *Parocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACLRR01*. The type species for the genus is *Candidatus* Parocida delecentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACLRR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Parocidaceae.

Description of *Candidatus* Parocidaceae fam. nov.

Candidatus Parocidaceae (NL. fem. n. *Parocidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACLRR01.* The type genus for the taxon is *Candidatus* Parocida .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-12-FULL-49-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Categanales.

Description of *Candidatus* Parocosa actaressa sp. nov.

Candidatus Parocosa actaressa (NL. fem. n. *actaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISZI01 sp903889905*. The type genome for the species is the GenBank assembly GCA_903889905.1. The GC content of the type genome is 49.94 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Parocosa gen. nov.

Candidatus Parocosa (NL. fem. n. *Parocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISZI01*. The type species for the genus is *Candidatus* Parocosa actaressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAISZI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Parocosaceae.

Description of *Candidatus* Parocosaceae fam. nov.

Candidatus Parocosaceae (NL. fem. n. *Parocosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAISZI01*. The type genus for the taxon is *Candidatus* Parocosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-54-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tametanales.

Description of *Candidatus* Parocula pepenitrix sp. nov.

Candidatus Parocula pepenitrix (NL. fem. n. *pepenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LDYB01 sp001442985*. The type genome for the species is the GenBank assembly GCA_001536245.1. The GC content of the type genome is 60.47 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Parocula gen. nov.

Candidatus Parocula (NL. fem. n. *Parocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LDYB01*. The type species for the genus is *Candidatus* Parocula pepenitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-DC*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenebiaceae.

Description of *Candidatus* Parolsenella favilitica sp. nov.

Candidatus Parolsenella favilitica (NL. fem. n. *favilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parolsenella sp900544655*. The type genome for the species is the GenBank assembly GCA_900544655.1. The GC content of the type genome is 62.31 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Parolsenella feficousia sp. nov.

Candidatus Parolsenella feficousia (NL. fem. n. *feficousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parolsenella sp900552935*. The type genome for the species is the GenBank assembly GCA_900552935.1. The GC content of the type genome is 63.4 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Parolsenella modifigena sp. nov.

Candidatus Parolsenella modifigena (NL. fem. n. *modifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parolsenella sp900543875*. The type genome for the species is the GenBank assembly GCA_902405985.1. The GC content of the type genome is 65.78 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Parolsenella renavago sp. nov.

Candidatus Parolsenella renavago (NL. fem. n. *renavago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parolsenella sp900549525*. The type genome for the species is the GenBank assembly GCA_900549525.1. The GC content of the type genome is 66.7 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Paropana pedifugo sp. nov.

Candidatus Paropana pedifugo (NL. fem. n. *pedifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MW101C3 sp002252635*. The type genome for the species is the GenBank assembly RS_GCF_002252635.1. The GC content of the type genome is 66.13 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Paropana gen. nov.

Candidatus Paropana (NL. fem. n. *Paropana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MW101C3*. The type species for the genus is *Candidatus* Paropana pedifugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Paroparia bulapitura sp. nov.

Candidatus Paroparia bulapitura (NL. fem. n. *bulapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KMS-5 sp011008935*. The type genome for the species is the GenBank assembly RS_GCF_011008935.1. The GC content of the type genome is 65.47 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Paroparia gen. nov.

Candidatus Paroparia (NL. fem. n. *Paroparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KMS-5*. The type species for the genus is *Candidatus* Paroparia bulapitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Paropella mirifitura sp. nov.

Candidatus Paropella mirifitura (NL. fem. n. *mirifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-39-64 sp002784365*. The type genome for the species is the GenBank assembly GCA_002784365.1. The GC content of the type genome is 39.26 % and the genome length is 0.37 Mbp.

Description of *Candidatus* Paropella gen. nov.

Candidatus Paropella (NL. fem. n. *Paropella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-39-64*. The type species for the genus is *Candidatus* Paropella mirifitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9933*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capilanaceae.

Description of *Candidatus* Paropida acistiforma sp. nov.

Candidatus Paropida acistiforma (NL. fem. n. *acistiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP5GCR1 sp014323925*. The type genome for the species is the GenBank assembly GCA_014323925.1. The GC content of the type genome is 44.28 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Paropida gen. nov.

Candidatus Paropida (NL. fem. n. *Paropida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SP5GCR1*. The type species for the genus is *Candidatus* Paropida acistiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SP5GCR1. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paropidaceae.

Description of *Candidatus* Paropidaceae fam. nov.

Candidatus Paropidaceae (NL. fem. n. *Paropidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SP5GCR1*. The type genus for the taxon is *Candidatus* Paropida .

According to GTDB R06-RS202, this family belongs to the order *Porisulfidales*.

Description of *Candidatus* Paroposa allapitoga sp. nov.

Candidatus Paroposa allapitoga (NL. fem. n. *allapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3951 sp012842685*. The type genome for the species is the GenBank assembly GCA_012842685.1. The GC content of the type genome is 59.18 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Paroposa gen. nov.

Candidatus Paroposa (NL. fem. n. *Paroposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3951*. The type species for the genus is *Candidatus* Paroposa allapitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicatosaceae.

Description of *Candidatus* Paroposa cituvibra sp. nov.

Candidatus Paroposa cituvibra (NL. fem. n. *cituvibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3951 sp012842425*. The type genome for the species is the GenBank assembly GCA_012842425.1. The GC content of the type genome is 58.26 %

and the genome length is 1.68 Mbp.

Description of *Candidatus* Paroposa desuritio sp. nov.

Candidatus Paroposa desuritio (NL. fem. n. *desuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3951 sp002385465*. The type genome for the species is the GenBank assembly GCA_012510715.1. The GC content of the type genome is 57.28 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Paroposa inrevibula sp. nov.

Candidatus Paroposa inrevibula (NL. fem. n. *inrevibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3951 sp012841375*. The type genome for the species is the GenBank assembly GCA_012841375.1. The GC content of the type genome is 58.17 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Paropula ecfunago sp. nov.

Candidatus Paropula ecfunago (NL. fem. n. *ecfunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6926 sp002450835*. The type genome for the species is the GenBank assembly GCA_002450835.1. The GC content of the type genome is 40.8 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Paropula gen. nov.

Candidatus Paropula (NL. fem. n. *Paropula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6926*. The type species for the genus is *Candidatus* Paropula ecfunago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6926*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paropulaceae.

Description of *Candidatus* Paropulaceae fam. nov.

Candidatus Paropulaceae (NL. fem. n. *Paropulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6926.* The type genus for the taxon is *Candidatus* Paropula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6926*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Paropulales.

Description of *Candidatus* Paropulales ord. nov.

Candidatus Paropulales (NL. fem. n. *Paropulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6926.* The type genus for the taxon is *Candidatus* Paropula .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Parvibaculum assefousia sp. nov.

Candidatus Parvibaculum assefousia (NL. fem. n. *assefousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvibaculum sp002841195*. The type genome for the species is the GenBank assembly GCA_002841195.1. The GC content of the type genome is 63.83 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Parvibaculum cerimetta sp. nov.

Candidatus Parvibaculum cerimetta (NL. fem. n. *cerimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvibaculum sp002694985*. The type genome for the species is the GenBank assembly GCA_002694985.1. The GC content of the type genome is 61.18 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Parvibaculum impilastra sp. nov.

Candidatus Parvibaculum impilastra (NL. fem. n. *impilastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvibaculum sp002684405*. The type genome for the species is the GenBank assembly GCA_002684405.1. The GC content of the type genome is 61.97 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Parvibaculum latibivita sp. nov.

Candidatus Parvibaculum latibivita (NL. fem. n. *latibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvibaculum sp002480495*. The type genome for the species is the GenBank assembly GCA_002480495.1. The GC content of the type genome is 62.53 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Parvibaculum metucax sp. nov.

Candidatus Parvibaculum metucax (NL. fem. n. *metucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvibaculum sp014359855*. The type genome for the species is the GenBank assembly GCA_014359855.1. The GC content of the type genome is 63.19 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Parvibaculum munificula sp. nov.

Candidatus Parvibaculum munificula (NL. fem. n. *munificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvibaculum sp013823365*. The type genome for the species is the GenBank assembly GCA_013823365.1. The GC content of the type genome is 63.59 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Parvibaculum notabicella sp. nov.

Candidatus Parvibaculum notabicella (NL. fem. n. *notabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvibaculum sp903889655*. The type genome for the species is the GenBank assembly GCA_903876515.1. The GC content of the type genome is 62.76 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Parvibaculum verififica sp. nov.

Candidatus Parvibaculum verififica (NL. fem. n. *verififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvibaculum sp002842875*. The type genome for the species is the GenBank assembly GCA_002842875.1. The GC content of the type genome is 63.36 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Parvimonas conabitura sp. nov.

Candidatus Parvimonas conabitura (NL. fem. n. *conabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvimonas sp001552895*. The type genome for the species is the GenBank assembly RS_GCF_001552895.1. The GC content of the type genome is 26.17 % and the genome length is 1.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Parvimonas energitio sp. nov.

Candidatus Parvimonas energitio (NL. fem. n. *energitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvimonas sp001553085*. The type genome for the species is the GenBank assembly RS_GCF_001553085.1. The GC content of the type genome is 28.74 % and the genome length is 1.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Parvimonas procritio sp. nov.

Candidatus Parvimonas procritio (NL. fem. n. *procritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvimonas sp000223315*. The type genome for the species is the

GenBank assembly RS_GCF_000223315.1. The GC content of the type genome is 28.17 % and the genome length is 1.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Parvimonas xenopatica sp. nov.

Candidatus Parvimonas xenopatica (NL. fem. n. *xenopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvimonas sp000214475*. The type genome for the species is the GenBank assembly RS_GCF_000214475.1. The GC content of the type genome is 28.19 % and the genome length is 1.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Parvularcula adlenivita sp. nov.

Candidatus Parvularcula adlenivita (NL. fem. n. *adlenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvularcula sp013215175*. The type genome for the species is the GenBank assembly GCA_013215175.1. The GC content of the type genome is 59.45 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Parvularcula exsuribula sp. nov.

Candidatus Parvularcula exsuribula (NL. fem. n. *exsuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvularcula sp013085255*. The type genome for the species is the GenBank assembly RS_GCF_013085255.1. The GC content of the type genome is 62.49 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Parvularcula inmutibra sp. nov.

Candidatus Parvularcula inmutibra (NL. fem. n. *inmutibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Parvularcula sp003399445*. The type genome for the species is the GenBank assembly RS_GCF_003399445.1. The GC content of the type genome is 59.34 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Patibana accorugo sp. nov.

Candidatus Patibana accorugo (NL. fem. n. *accorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOJS01 sp004376435*. The type genome for the species is the GenBank assembly GCA_004376435.1. The GC content of the type genome is 52.54 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Patibana gen. nov.

Candidatus Patibana (NL. fem. n. *Patibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SOJS01*. The type species for the genus is *Candidatus* Patibana accorugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SOJS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Patibanaceae.

Description of *Candidatus* Patibanaceae fam. nov.

Candidatus Patibanaceae (NL. fem. n. *Patibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SOJS01.* The type genus for the taxon is *Candidatus* Patibana .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Patibaria adpenivita sp. nov.

Candidatus Patibaria adpenivita (NL. fem. n. *adpenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5767 sp002418765*. The type genome for the species is the GenBank assembly GCA_002418765.1. The GC content of the type genome is 43.74 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Patibaria gen. nov.

Candidatus Patibaria (NL. fem. n. *Patibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5767*. The type species for the genus is *Candidatus* Patibaria adpenivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Patibariaceae.

Description of *Candidatus* Patibariaceae fam. nov.

Candidatus Patibariaceae (NL. fem. n. *Patibariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5767.* The type genus for the taxon is *Candidatus* Patibaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *TC1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vitifariales.

Description of *Candidatus* Patibella diluvigena sp. nov.

Candidatus Patibella diluvigena (NL. fem. n. *diluvigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B68-G9 sp012962735*. The type genome for the species is the GenBank assembly GCA_012962735.1. The GC content of the type genome is 59.3 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Patibella gen. nov.

Candidatus Patibella (NL. fem. n. *Patibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B68-G9*. The type species for the genus is *Candidatus* Patibella diluvigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B68-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Patibellaceae.

Description of *Candidatus* Patibellaceae fam. nov.

Candidatus Patibellaceae (NL. fem. n. *Patibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B68-G9.* The type genus for the taxon is *Candidatus* Patibella .

According to the original version of GTDB R06-RS202, this family belongs to the order *B68-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Patibellales.

Description of *Candidatus* Patibellales ord. nov.

Candidatus Patibellales (NL. fem. n. *Patibellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B68-G9.* The type genus for the taxon is *Candidatus* Patibella .

According to the GTDB R06-RS202, this order belongs to the class *Latescibacteria_A*.

Description of *Candidatus* Patibella inheratio sp. nov.

Candidatus Patibella inheratio (NL. fem. n. *inheratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B68-G9 sp012961755*. The type genome for the species is the GenBank assembly GCA_012961755.1. The GC content of the type genome is 59.32 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Patibella metabago sp. nov.

Candidatus Patibella metabago (NL. fem. n. *metabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B68-G9 sp003645885*. The type genome for the species is the GenBank assembly GCA_003644685.1. The GC content of the type genome is 59.18 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Patibia vicecedo sp. nov.

Candidatus Patibia vicecedo (NL. fem. n. *vicecedo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTHP01 sp011334725*. The type genome for the species is the GenBank assembly GCA_011334725.1. The GC content of the type genome is 35.1 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Patibia gen. nov.

Candidatus Patibia (NL. fem. n. *Patibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTHP01*. The type species for the genus is *Candidatus* Patibia vicecedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTHP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Patibiaceae.

Description of *Candidatus* Patibiaceae fam. nov.

Candidatus Patibiaceae (NL. fem. n. *Patibiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTHP01.* The type genus for the taxon is *Candidatus* Patibia .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTHP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Patibiales.

Description of *Candidatus* Patibiales ord. nov.

Candidatus Patibiales (NL. fem. n. *Patibiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTHP01.* The type genus for the taxon is *Candidatus* Patibia .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Patibida cenobitia sp. nov.

Candidatus Patibida cenobitia (NL. fem. n. *cenobitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYEA01 sp012689325*. The type genome for the species is the GenBank assembly GCA_012689325.1. The GC content of the type genome is 66.76 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Patibida gen. nov.

Candidatus Patibida (NL. fem. n. *Patibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYEA01*. The type species for the genus is *Candidatus* Patibida cenobitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYEA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Patibidaceae.

Description of *Candidatus* Patibidaceae fam. nov.

Candidatus Patibidaceae (NL. fem. n. *Patibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYEA01.* The type genus for the taxon is *Candidatus* Patibida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYEA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Patibidales.

Description of *Candidatus* Patibidales ord. nov.

Candidatus Patibidales (NL. fem. n. *Patibidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYEA01.* The type genus for the taxon is *Candidatus* Patibida .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Patibosa venucitas sp. nov.

Candidatus Patibosa venucitas (NL. fem. n. *venucitas* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2798 sp002351955*. The type genome for the species is the GenBank assembly GCA_002344705.1. The GC content of the type genome is 42.13 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Patibosa gen. nov.

Candidatus Patibosa (NL. fem. n. *Patibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2798*. The type species for the genus is *Candidatus* Patibosa venucitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2798*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Patibosaceae.

Description of *Candidatus* Patibosaceae fam. nov.

Candidatus Patibosaceae (NL. fem. n. *Patibosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2798.* The type genus for the taxon is *Candidatus* Patibosa .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Patulibacter obmutitrix sp. nov.

Candidatus Patulibacter obmutitrix (NL. fem. n. *obmutitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Patulibacter sp009699505*. The type genome for the species is the GenBank assembly GCA_009699505.1. The GC content of the type genome is 73.74 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Paucibacter adtacessa sp. nov.

Candidatus Paucibacter adtacessa (NL. fem. n. *adtacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paucibacter_A sp003852425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003852425.1. The GC content of the type genome is 63.66 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Paucibacter cerevivita sp. nov.

Candidatus Paucibacter cerevivita (NL. fem. n. *cerevivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paucibacter_A sp903820745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903893475.1. The GC content of the type genome is 61.0 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Paucibacter crastifica sp. nov.

Candidatus Paucibacter crastifica (NL. fem. n. *crastifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paucibacter_A sp005503085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005503085.1. The GC content of the type genome is 67.66 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Paucibacter impacisca sp. nov.

Candidatus Paucibacter impacisca (NL. fem. n. *impacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paucibacter_A sp001477625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001477625.1. The GC content of the type genome is 63.19 % and the genome length is 5.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as

"Daechung reservoir".

Description of *Candidatus* Paucibacter subaditia sp. nov.

Candidatus Paucibacter subaditia (NL. fem. n. *subaditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paucibacter_A sp002255955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002255955.1. The GC content of the type genome is 66.52 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Paucilactobacillus bacifatica sp. nov.

Candidatus Paucilactobacillus bacifatica (NL. fem. n. *bacifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paucilactobacillus sp005405145*. The type genome for the species is the GenBank assembly RS_GCF_005405145.1. The GC content of the type genome is 38.03 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Paucimonas conigetta sp. nov.

Candidatus Paucimonas conigetta (NL. fem. n. *conigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paucimonas sp003590835*. The type genome for the species is the GenBank assembly RS_GCF_003590835.1. The GC content of the type genome is 59.37 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Paucimonas democedo sp. nov.

Candidatus Paucimonas democedo (NL. fem. n. *democedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paucimonas sp004114795*. The type genome for the species is the GenBank assembly RS_GCF_004114795.1. The GC content of the type genome is 59.61 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Paucimonas insicatica sp. nov.

Candidatus Paucimonas insicatica (NL. fem. n. *insicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Paucimonas sp003537575*. The type genome for the species is the GenBank assembly GCA_003537575.1. The GC content of the type genome is 59.86 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Pauljensenia adsesitoga sp. nov.

Candidatus Pauljensenia adsesitoga (NL. fem. n. *adsesitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp900554605*. The type genome for the species is the GenBank assembly GCA_900554605.1. The GC content of the type genome is 56.33 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Pauljensenia anancitia sp. nov.

Candidatus Pauljensenia anancitia (NL. fem. n. *anancitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp001064145*. The type genome for the species is the GenBank assembly RS_GCF_001064145.1. The GC content of the type genome is 65.41 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Pauljensenia anaplivita sp. nov.

Candidatus Pauljensenia anaplivita (NL. fem. n. *anaplivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp902373435*. The type genome for the species is the GenBank assembly GCA_902373435.1. The GC content of the type genome is 65.43 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Pauljensenia celumitura sp. nov.

Candidatus Pauljensenia celumitura (NL. fem. n. *celumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp001072465*. The type genome for the species is the GenBank assembly RS_GCF_000565035.1. The GC content of the type genome is 65.74 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Pauljensenia cuferousia sp. nov.

Candidatus Pauljensenia cuferousia (NL. fem. n. *cuferousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp000466265*. The type genome for the species is the GenBank assembly RS_GCF_000283035.1. The GC content of the type genome is 66.51 % and the genome length is 2.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Pauljensenia depocitoga sp. nov.

Candidatus Pauljensenia depocitoga (NL. fem. n. *depocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp000758755*. The type genome for the species is the GenBank assembly GCA_900542745.1. The GC content of the type genome is 57.16 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Pauljensenia diponitio sp. nov.

Candidatus Pauljensenia diponitio (NL. fem. n. *diponitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp000308055*. The type genome for the species is the GenBank assembly RS_GCF_000308055.1. The GC content of the type genome is 56.03 % and the genome length is 1.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "host stool sample".

Description of *Candidatus* Pauljensenia fatifetta sp. nov.

Candidatus Pauljensenia fatifetta (NL. fem. n. *fatifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp001838165*. The type genome for the species is the GenBank assembly GCA_900540565.1. The GC content of the type genome is 65.73 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Pauljensenia infenitio sp. nov.

Candidatus Pauljensenia infenitio (NL. fem. n. *infenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp902373545*. The type genome for the species is the GenBank assembly GCA_902373545.1. The GC content of the type genome is 66.14 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Pauljensenia lavabedo sp. nov.

Candidatus Pauljensenia lavabedo (NL. fem. n. *lavabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp011038875*. The type genome for the species is the GenBank assembly RS_GCF_011038875.1. The GC content of the type genome is 57.99 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Pauljensenia negidilenta sp. nov.

Candidatus Pauljensenia negidilenta (NL. fem. n. *negidilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp900541895*. The type genome for the species is the GenBank assembly RS_GCF_900755735.1. The GC content of the type genome is 55.77 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Pauljensenia panifivita sp. nov.

Candidatus Pauljensenia panifivita (NL. fem. n. *panifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp000185285*. The type genome for the species is the GenBank assembly RS_GCF_000185285.1. The GC content of the type genome is 66.34

% and the genome length is 2.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity".

Description of *Candidatus* Pauljensenia pepenimonas sp. nov.

Candidatus Pauljensenia pepenimonas (NL. fem. n. *pepenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp000411415*. The type genome for the species is the GenBank assembly RS_GCF_000411415.1. The GC content of the type genome is 65.08 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Pauljensenia revulibula sp. nov.

Candidatus Pauljensenia revulibula (NL. fem. n. *revulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp903645355*. The type genome for the species is the GenBank assembly RS_GCF_903645355.1. The GC content of the type genome is 60.93 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Pauljensenia satacitudo sp. nov.

Candidatus Pauljensenia satacitudo (NL. fem. n. *satacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp900556405*. The type genome for the species is the GenBank assembly GCA_900556405.1. The GC content of the type genome is 65.51 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Pauljensenia taraxatica sp. nov.

Candidatus Pauljensenia taraxatica (NL. fem. n. *taraxatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pauljensenia sp000278725*. The type genome for the species is the GenBank assembly RS_GCF_000278725.1. The GC content of the type genome is 64.65 % and the genome length is 2.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Pavicana atricedo sp. nov.

Candidatus Pavicana atricedo (NL. fem. n. *atricedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11029 sp002411145*. The type genome for the species is the GenBank assembly GCA_002411145.1. The GC content of the type genome is 50.65 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Pavicana gen. nov.

Candidatus Pavicana (NL. fem. n. *Pavicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11029*. The type species for the genus is *Candidatus* Pavicana atricedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pavicanaceae.

Description of *Candidatus* Pavicanaceae fam. nov.

Candidatus Pavicanaceae (NL. fem. n. *Pavicanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11029.* The type genus for the taxon is *Candidatus* Pavicana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pavicanales.

Description of *Candidatus* Pavicanales ord. nov.

Candidatus Pavicanales (NL. fem. n. *Pavicanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11029.* The type genus for the taxon is *Candidatus* Pavicana .

According to the GTDB R06-RS202, this order belongs to the class *Negativicutes*.

Description of *Candidatus* Pavicaria absoredo sp. nov.

Candidatus Pavicaria absoredo (NL. fem. n. *absoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin75 sp012270585*. The type genome for the species is the GenBank assembly GCA_012270585.1. The GC content of the type genome is 55.8 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Pavicaria gen. nov.

Candidatus Pavicaria (NL. fem. n. *Pavicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin75*. The type species for the genus is *Candidatus* Pavicaria absoredo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8639*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locelidaceae.

Description of *Candidatus* Pavicaria annecatica sp. nov.

Candidatus Pavicaria annecatica (NL. fem. n. *annecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin75 sp002238765*. The type genome for the species is the GenBank assembly GCA_002238765.1. The GC content of the type genome is 56.24 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Pavicaria exhilifica sp. nov.

Candidatus Pavicaria exhilifica (NL. fem. n. *exhilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin75 sp011523385*. The type genome for the species is the GenBank assembly GCA_011523385.1. The GC content of the type genome is 56.7 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Pavicaria inmenatica sp. nov.

Candidatus Pavicaria inmenatica (NL. fem. n. *inmenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin75 sp007570995*. The type genome for the species is the GenBank assembly GCA_007570995.1. The GC content of the type genome is 57.34 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Pavicaria patibetta sp. nov.

Candidatus Pavicaria patibetta (NL. fem. n. *patibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin75 sp009840285*. The type genome for the species is the GenBank assembly GCA_009842145.1. The GC content of the type genome is 57.19 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Pavicaria salubedo sp. nov.

Candidatus Pavicaria salubedo (NL. fem. n. *salubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin75 sp009842645*. The type genome for the species is the GenBank assembly GCA_009836145.1. The GC content of the type genome is 56.15 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Pavicella depetibula sp. nov.

Candidatus Pavicella depetibula (NL. fem. n. *depetibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718595 sp012959595*. The type genome for the species is the GenBank assembly GCA_012959595.1. The GC content of the type genome is 45.83 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Pavicella gen. nov.

Candidatus Pavicella (NL. fem. n. *Pavicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2718595*. The type species for the genus is *Candidatus* Pavicella

depetibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Pavicella sepositia sp. nov.

Candidatus Pavicella sepositia (NL. fem. n. *sepositia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718595 sp002718595*. The type genome for the species is the GenBank assembly GCA_002450355.1. The GC content of the type genome is 45.21 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Pavicia utillousia sp. nov.

Candidatus Pavicia utillousia (NL. fem. n. *utillousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCSY01 sp902805555*. The type genome for the species is the GenBank assembly GCA_902805555.1. The GC content of the type genome is 73.26 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Pavicia gen. nov.

Candidatus Pavicia (NL. fem. n. *Pavicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCSY01*. The type species for the genus is *Candidatus* Pavicia utillousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADCSY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paviciaceae.

Description of *Candidatus* Paviciaceae fam. nov.

Candidatus Paviciaceae (NL. fem. n. *Paviciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CADCSY01*. The type genus for the taxon is *Candidatus* Pavicia .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Pavicosa capilicula sp. nov.

Candidatus Pavicosa capilicula (NL. fem. n. *capilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHTN01 sp009377715*. The type genome for the species is the GenBank assembly GCA_009377715.1. The GC content of the type genome is 56.96 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Pavicosa gen. nov.

Candidatus Pavicosa (NL. fem. n. *Pavicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHTN01*. The type species for the genus is *Candidatus* Pavicosa capilicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHTN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pavicosaceae.

Description of *Candidatus* Pavicosaceae fam. nov.

Candidatus Pavicosaceae (NL. fem. n. *Pavicosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WHTN01*. The type genus for the taxon is *Candidatus* Pavicosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-28-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Hecatosales.

Description of *Candidatus* Pavimana detoticella sp. nov.

Candidatus Pavimana detoticella (NL. fem. n. *detoticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *LSR1 sp002782005*. The type genome for the species is the GenBank assembly GCA_001871525.1. The GC content of the type genome is 61.71 % and the genome length is 2.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Pavimana gen. nov.

Candidatus Pavimana (NL. fem. n. *Pavimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LSR1*. The type species for the genus is *Candidatus* Pavimana detoticella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pavimana dicabatica sp. nov.

Candidatus Pavimana dicabatica (NL. fem. n. *dicabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LSR1 sp013335435*. The type genome for the species is the GenBank assembly GCA_013335435.1. The GC content of the type genome is 65.86 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Pavimana inobsitio sp. nov.

Candidatus Pavimana inobsitio (NL. fem. n. *inobsitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LSR1 sp004337445*. The type genome for the species is the GenBank assembly RS_GCF_004337445.1. The GC content of the type genome is 67.53 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Pavimaria abrepessa sp. nov.

Candidatus Pavimaria abrepessa (NL. fem. n. *abrepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp003331265*. The type genome for the species is

the GenBank assembly GCA_003331265.1. The GC content of the type genome is 29.56 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Pavimaria gen. nov.

Candidatus Pavimaria (NL. fem. n. *Pavimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MAG-121220-bin8*. The type species for the genus is *Candidatus* Pavimaria abrepessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pavimaria affunivita sp. nov.

Candidatus Pavimaria affunivita (NL. fem. n. *affunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp014239275*. The type genome for the species is the GenBank assembly GCA_014239275.1. The GC content of the type genome is 29.01 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Pavimaria benivitura sp. nov.

Candidatus Pavimaria benivitura (NL. fem. n. *benivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp902511755*. The type genome for the species is the GenBank assembly GCA_902512795.1. The GC content of the type genome is 29.07 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pavimaria cisalibula sp. nov.

Candidatus Pavimaria cisalibula (NL. fem. n. *cisalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp902559035*. The type genome for the species is the GenBank assembly GCA_902558295.1. The GC content of the type genome is 29.7 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Pavimaria cosigigena sp. nov.

Candidatus Pavimaria cosigigena (NL. fem. n. *cosigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp012959395*. The type genome for the species is the GenBank assembly GCA_012959395.1. The GC content of the type genome is 29.01 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Pavimaria decatitrix sp. nov.

Candidatus Pavimaria decatitrix (NL. fem. n. *decatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp902635895*. The type genome for the species is the GenBank assembly GCA_902635895.1. The GC content of the type genome is 29.86 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Pavimaria depelitica sp. nov.

Candidatus Pavimaria depelitica (NL. fem. n. *depelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp002702895*. The type genome for the species is the GenBank assembly GCA_002702895.1. The GC content of the type genome is 28.43 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Pavimaria exculicula sp. nov.

Candidatus Pavimaria exculicula (NL. fem. n. *exculicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp902510655*. The type genome for the species is the GenBank assembly GCA_902510655.1. The GC content of the type genome is 29.54 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pavimaria fuligitas sp. nov.

Candidatus Pavimaria fuligitas (NL. fem. n. *fuligitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp002700465*. The type genome for the species is the GenBank assembly GCA_004214265.1. The GC content of the type genome is 29.06 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Pavimaria munimitia sp. nov.

Candidatus Pavimaria munimitia (NL. fem. n. *munimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp902523635*. The type genome for the species is the GenBank assembly GCA_902523635.1. The GC content of the type genome is 31.35 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pavimaria rorulilega sp. nov.

Candidatus Pavimaria rorulilega (NL. fem. n. *rorulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp004214185*. The type genome for the species is the GenBank assembly GCA_902635355.1. The GC content of the type genome is 29.8 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pavimaria sicaricula sp. nov.

Candidatus Pavimaria sicaricula (NL. fem. n. *sicaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MAG-121220-bin8 sp002705485*. The type genome for the species is the GenBank assembly GCA_902555095.1. The GC content of the type genome is 31.3 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pavimella delapessa sp. nov.

Candidatus Pavimella delapessa (NL. fem. n. *delapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA10649 sp903940375*. The type genome for the species is the GenBank assembly GCA_903952055.1. The GC content of the type genome is 67.06 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Pavimella gen. nov.

Candidatus Pavimella (NL. fem. n. *Pavimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10649*. The type species for the genus is *Candidatus* Pavimella delapessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Pavimella dinupedo sp. nov.

Candidatus Pavimella dinupedo (NL. fem. n. *dinupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10649 sp903934925*. The type genome for the species is the GenBank assembly GCA_903934925.1. The GC content of the type genome is 67.41 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Pavimella inturatica sp. nov.

Candidatus Pavimella inturatica (NL. fem. n. *inturatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10649 sp003456155*. The type genome for the species is the GenBank assembly GCA_003456155.1. The GC content of the type genome is 67.85 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Pavimella vinulitica sp. nov.

Candidatus Pavimella vinulitica (NL. fem. n. *vinulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10649 sp903908025*. The type genome for the species is the

GenBank assembly GCA_903908025.1. The GC content of the type genome is 66.79 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Pavimia doxolax sp. nov.

Candidatus Pavimia doxolax (NL. fem. n. *doxolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-43-31 sp002788675*. The type genome for the species is the GenBank assembly GCA_002788675.1. The GC content of the type genome is 39.84 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pavimia gen. nov.

Candidatus Pavimia (NL. fem. n. *Pavimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-43-31*. The type species for the genus is *Candidatus* Pavimia doxolax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Pavimida lapicifica sp. nov.

Candidatus Pavimida lapicifica (NL. fem. n. *lapicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ATM1 sp003577165*. The type genome for the species is the GenBank assembly GCA_013112795.1. The GC content of the type genome is 60.65 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Pavimida gen. nov.

Candidatus Pavimida (NL. fem. n. *Pavimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ATM1*. The type species for the genus is *Candidatus* Pavimida lapicifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

ATM1. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pavimidaceae.

Description of *Candidatus* Pavimidaceae fam. nov.

Candidatus Pavimidaceae (NL. fem. n. *Pavimidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ATM1*. The type genus for the taxon is *Candidatus* Pavimida .

According to GTDB R06-RS202, this family belongs to the order *Fimbriimonadales*.

Description of *Candidatus* Pavimosa docibibula sp. nov.

Candidatus Pavimosa docibibula (NL. fem. n. *docibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-53-15 sp001772335*. The type genome for the species is the GenBank assembly GCA_001772335.1. The GC content of the type genome is 54.03 % and the genome length is 1.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Pavimosa gen. nov.

Candidatus Pavimosa (NL. fem. n. *Pavimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-53-15*. The type species for the genus is *Candidatus* Pavimosa docibibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYB2-FULL-48-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomogiaceae.

Description of *Candidatus* Pavimula esculifica sp. nov.

Candidatus Pavimula esculifica (NL. fem. n. *esculifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *PHET01 sp002841275*. The type genome for the species is the GenBank assembly GCA_002841275.1. The GC content of the type genome is 62.76 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Pavimula gen. nov.

Candidatus Pavimula (NL. fem. n. *Pavimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHET01*. The type species for the genus is *Candidatus* Pavimula esculifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHET01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pavimulaceae.

Description of *Candidatus* Pavimulaceae fam. nov.

Candidatus Pavimulaceae (NL. fem. n. *Pavimulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PHET01.* The type genus for the taxon is *Candidatus* Pavimula .

According to the original version of GTDB R06-RS202, this family belongs to the order *OPB41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodanales.

Description of *Candidatus* Pectobacterium abinvimonia sp. nov.

Candidatus Pectobacterium abinvimonia (NL. fem. n. *abinvimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pectobacterium sp013449375*. The type genome for the species is the GenBank assembly RS_GCF_013449375.1. The GC content of the type genome is 51.56 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Pecunana aplesilega sp. nov.

Candidatus Pecunana aplesilega (NL. fem. n. *aplesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *VFJJ01 sp009886115*. The type genome for the species is the GenBank assembly GCA_009886115.1. The GC content of the type genome is 69.46 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Pecunana gen. nov.

Candidatus Pecunana (NL. fem. n. *Pecunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFJJ01*. The type species for the genus is *Candidatus* Pecunana aplesilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VFJJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pecunanaceae.

Description of *Candidatus* Pecunanaceae fam. nov.

Candidatus Pecunanaceae (NL. fem. n. *Pecunanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VFJJ01.* The type genus for the taxon is *Candidatus* Pecunana .

According to the original version of GTDB R06-RS202, this family belongs to the order *IMCC26256*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rosarellales.

Description of *Candidatus* Pecunaria caselicula sp. nov.

Candidatus Pecunaria caselicula (NL. fem. n. *caselicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZOP01 sp012797735*. The type genome for the species is the GenBank assembly GCA_012797735.1. The GC content of the type genome is 72.85 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Pecunaria gen. nov.

Candidatus Pecunaria (NL. fem. n. *Pecunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZOP01*. The type species for the genus is *Candidatus* Pecunaria

caselicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZOP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pecunariaceae.

Description of *Candidatus* Pecunariaceae fam. nov.

Candidatus Pecunariaceae (NL. fem. n. *Pecunariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZOP01.* The type genus for the taxon is *Candidatus* Pecunaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRWM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vicatellales.

Description of *Candidatus* Pecunaria ducilatio sp. nov.

Candidatus Pecunaria ducilatio (NL. fem. n. *ducilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZOP01 sp011367485*. The type genome for the species is the GenBank assembly GCA_011367485.1. The GC content of the type genome is 72.94 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Pecunella astipentia sp. nov.

Candidatus Pecunella astipentia (NL. fem. n. *astipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9570 sp003512175*. The type genome for the species is the GenBank assembly GCA_003512175.1. The GC content of the type genome is 46.43 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Pecunella gen. nov.

Candidatus Pecunella (NL. fem. n. *Pecunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9570*. The type species for the genus is *Candidatus* Pecunella

astipentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9570*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pecunellaceae.

Description of *Candidatus* Pecunellaceae fam. nov.

Candidatus Pecunellaceae (NL. fem. n. *Pecunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9570.* The type genus for the taxon is *Candidatus* Pecunella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9570*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pecunellales.

Description of *Candidatus* Pecunellales ord. nov.

Candidatus Pecunellales (NL. fem. n. *Pecunellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9570.* The type genus for the taxon is *Candidatus* Pecunella .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Pecunida colimifica sp. nov.

Candidatus Pecunida colimifica (NL. fem. n. *colimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-42-10 sp002784945*. The type genome for the species is the GenBank assembly GCA_002784945.1. The GC content of the type genome is 41.88 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Pecunida gen. nov.

Candidatus Pecunida (NL. fem. n. *Pecunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UM-FILTER-42-10*. The type species for the genus is *Candidatus* Pecunida colimifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-42-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pecunidaceae.

Description of *Candidatus* Pecunidaceae fam. nov.

Candidatus Pecunidaceae (NL. fem. n. *Pecunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-42-10.* The type genus for the taxon is *Candidatus* Pecunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UM-FILTER-42-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pecunidales.

Description of *Candidatus* Pecunidales ord. nov.

Candidatus Pecunidales (NL. fem. n. *Pecunidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-42-10.* The type genus for the taxon is *Candidatus* Pecunida .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Pecunida homagifica sp. nov.

Candidatus Pecunida homagifica (NL. fem. n. *homagifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-42-10 sp002774635*. The type genome for the species is the GenBank assembly GCA_002774635.1. The GC content of the type genome is 39.67 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Pecunosa abantetta sp. nov.

Candidatus Pecunosa abantetta (NL. fem. n. *abantetta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-841 sp902791785*. The type genome for the species is the GenBank assembly GCA_902791785.1. The GC content of the type genome is 42.31 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Pecunosa gen. nov.

Candidatus Pecunosa (NL. fem. n. *Pecunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-841*. The type species for the genus is *Candidatus* Pecunosa abantetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Pecunosa inpurivita sp. nov.

Candidatus Pecunosa inpurivita (NL. fem. n. *inpurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-841 sp002405565*. The type genome for the species is the GenBank assembly GCA_002405565.1. The GC content of the type genome is 49.22 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Pecunosa papavibra sp. nov.

Candidatus Pecunosa papavibra (NL. fem. n. *papavibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-841 sp002479075*. The type genome for the species is the GenBank assembly GCA_002479075.1. The GC content of the type genome is 48.35 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Pecunosa peridibra sp. nov.

Candidatus Pecunosa peridibra (NL. fem. n. *peridibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-841 sp000437375*. The type genome for the species is the GenBank assembly GCA_900544055.1. The GC content of the type genome is 45.18 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Pecunosa pudibitas sp. nov.

Candidatus Pecunosa pudibitas (NL. fem. n. *pudibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-841 sp900544285*. The type genome for the species is the GenBank assembly RS_GCF_900767755.1. The GC content of the type genome is 48.46 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Pecunula inaspugo sp. nov.

Candidatus Pecunula inaspugo (NL. fem. n. *inaspugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXPC01 sp009839685*. The type genome for the species is the GenBank assembly GCA_009839685.1. The GC content of the type genome is 55.89 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pecunula gen. nov.

Candidatus Pecunula (NL. fem. n. *Pecunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXPC01*. The type species for the genus is *Candidatus* Pecunula inaspugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VXPC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pecunulaceae.

Description of *Candidatus* Pecunulaceae fam. nov.

Candidatus Pecunulaceae (NL. fem. n. *Pecunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXPC01*. The type genus for the taxon is *Candidatus* Pecunula .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Pedepana depasedo sp. nov.

Candidatus Pedepana depasedo (NL. fem. n. *depasedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002790695 sp002780915*. The type genome for the species is the GenBank assembly GCA_002782325.1. The GC content of the type genome is 34.46 % and the genome length is 0.43 Mbp.

Description of *Candidatus* Pedepana gen. nov.

Candidatus Pedepana (NL. fem. n. *Pedepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002790695*. The type species for the genus is *Candidatus* Pedepana depasedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5633*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carecosaceae.

Description of *Candidatus* Pedeparia ecfacatio sp. nov.

Candidatus Pedeparia ecfacatio (NL. fem. n. *ecfacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-979 sp903929315*. The type genome for the species is the GenBank assembly GCA_903929315.1. The GC content of the type genome is 40.63 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Pedeparia gen. nov.

Candidatus Pedeparia (NL. fem. n. *Pedeparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-979*. The type species for the genus is *Candidatus* Pedeparia

ecfacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedepariaceae.

Description of *Candidatus* Pedepariaceae fam. nov.

Candidatus Pedepariaceae (NL. fem. n. *Pedepariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FEN-979.* The type genus for the taxon is *Candidatus* Pedeparia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Pedeparia foricentia sp. nov.

Candidatus Pedeparia foricentia (NL. fem. n. *foricentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-979 sp903915465*. The type genome for the species is the GenBank assembly GCA_903915465.1. The GC content of the type genome is 41.19 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Pedeparia minuriforma sp. nov.

Candidatus Pedeparia minuriforma (NL. fem. n. *minuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-979 sp003142515*. The type genome for the species is the GenBank assembly GCA_003142515.1. The GC content of the type genome is 43.8 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Pedepella ambecisca sp. nov.

Candidatus Pedepella ambecisca (NL. fem. n. *ambecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3077 sp003228875*. The type genome for the species is the GenBank assembly GCA_003228875.1. The GC content of the type genome is 51.14 %

and the genome length is 2.61 Mbp.

Description of *Candidatus* Pedepella gen. nov.

Candidatus Pedepella (NL. fem. n. *Pedepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3077*. The type species for the genus is *Candidatus* Pedepella ambecisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pedepella dehonastra sp. nov.

Candidatus Pedepella dehonastra (NL. fem. n. *dehonastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3077 sp002367255*. The type genome for the species is the GenBank assembly GCA_002367255.1. The GC content of the type genome is 53.69 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Pedepella epistessa sp. nov.

Candidatus Pedepella epistessa (NL. fem. n. *epistessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3077 sp002162875*. The type genome for the species is the GenBank assembly GCA_002162875.1. The GC content of the type genome is 51.77 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Pedepella fetifilega sp. nov.

Candidatus Pedepella fetifilega (NL. fem. n. *fetifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3077 sp013139635*. The type genome for the species is the GenBank assembly GCA_013139635.1. The GC content of the type genome is 55.02 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Pedepella inabribra sp. nov.

Candidatus Pedepella inabribra (NL. fem. n. *inabribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3077 sp002366685*. The type genome for the species is the GenBank assembly GCA_002366685.1. The GC content of the type genome is 54.52 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Pedepella maledatio sp. nov.

Candidatus Pedepella maledatio (NL. fem. n. *maledatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3077 sp002366645*. The type genome for the species is the GenBank assembly GCA_002366645.1. The GC content of the type genome is 53.82 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Pedepella tenebax sp. nov.

Candidatus Pedepella tenebax (NL. fem. n. *tenebax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3077 sp002746395*. The type genome for the species is the GenBank assembly GCA_002746395.1. The GC content of the type genome is 53.68 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Pedepia bicinibra sp. nov.

Candidatus Pedepia bicinibra (NL. fem. n. *bicinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J016 sp003696105*. The type genome for the species is the GenBank assembly GCA_003696105.1. The GC content of the type genome is 72.23 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Pedepia gen. nov.

Candidatus Pedepia (NL. fem. n. *Pedepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J016*. The type species for the genus is *Candidatus* Pedepia bicinibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J016*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedepiaceae.

Description of *Candidatus* Pedepiaceae fam. nov.

Candidatus Pedepiaceae (NL. fem. n. *Pedepiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J016.* The type genus for the taxon is *Candidatus* Pedepia .

According to GTDB R06-RS202, this family belongs to the order *Haliangiales*.

Description of *Candidatus* Pedepida pudibitura sp. nov.

Candidatus Pedepida pudibitura (NL. fem. n. *pudibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPUE01 sp903885635*. The type genome for the species is the GenBank assembly GCA_903903885.1. The GC content of the type genome is 35.36 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Pedepida gen. nov.

Candidatus Pedepida (NL. fem. n. *Pedepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPUE01*. The type species for the genus is *Candidatus* Pedepida pudibitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pedepida vitifitia sp. nov.

Candidatus Pedepida vitifitia (NL. fem. n. *vitifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPUE01 sp903868125*. The type genome for the species is the

GenBank assembly GCA_903880175.1. The GC content of the type genome is 34.84 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Pedeposa cimititrix sp. nov.

Candidatus Pedeposa cimititrix (NL. fem. n. *cimititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs027 sp005793215*. The type genome for the species is the GenBank assembly GCA_005773205.1. The GC content of the type genome is 59.42 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Pedeposa gen. nov.

Candidatus Pedeposa (NL. fem. n. *Pedeposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-60-MAGs027*. The type species for the genus is *Candidatus* Pedeposa cimititrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pedeposa derelitas sp. nov.

Candidatus Pedeposa derelitas (NL. fem. n. *derelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs027 sp005800965*. The type genome for the species is the GenBank assembly GCA_005800965.1. The GC content of the type genome is 58.5 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Pedeposa edulcilega sp. nov.

Candidatus Pedeposa edulcilega (NL. fem. n. *edulcilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs027 sp009926705*. The type genome for the species is the GenBank assembly GCA_009926705.1. The GC content of the type genome is 62.73 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Pedeposa periditica sp. nov.

Candidatus Pedeposa periditica (NL. fem. n. *periditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs027 sp009927665*. The type genome for the species is the GenBank assembly GCA_009927665.1. The GC content of the type genome is 60.81 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Pedeposa taraxastra sp. nov.

Candidatus Pedeposa taraxastra (NL. fem. n. *taraxastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs027 sp010025655*. The type genome for the species is the GenBank assembly GCA_010025735.1. The GC content of the type genome is 61.0 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Pedeposa tumeficula sp. nov.

Candidatus Pedeposa tumeficula (NL. fem. n. *tumeficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs027 sp005793785*. The type genome for the species is the GenBank assembly GCA_005808605.1. The GC content of the type genome is 61.99 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Pedepula cacalifica sp. nov.

Candidatus Pedepula cacalifica (NL. fem. n. *cacalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-224 sp003229375*. The type genome for the species is the GenBank assembly GCA_003229375.1. The GC content of the type genome is 41.27 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Pedepula gen. nov.

Candidatus Pedepula (NL. fem. n. *Pedepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-224*. The type species for the genus is *Candidatus* Pedepula cacalifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-224*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedepulaceae.

Description of *Candidatus* Pedepulaceae fam. nov.

Candidatus Pedepulaceae (NL. fem. n. *Pedepulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-224.* The type genus for the taxon is *Candidatus* Pedepula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9942*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vivifidales.

Description of *Candidatus* Pedifana detunousia sp. nov.

Candidatus Pedifana detunousia (NL. fem. n. *detunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAADGY01 sp900696665*. The type genome for the species is the GenBank assembly GCA_900696665.1. The GC content of the type genome is 59.11 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Pedifana gen. nov.

Candidatus Pedifana (NL. fem. n. *Pedifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAADGY01*. The type species for the genus is *Candidatus* Pedifana detunousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pedifaria alcedentia sp. nov.

Candidatus Pedifaria alcedentia (NL. fem. n. *alcedentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1668 sp002716385*. The type genome for the species is the GenBank assembly GCA_002716385.1. The GC content of the type genome is 57.68 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Pedifaria gen. nov.

Candidatus Pedifaria (NL. fem. n. *Pedifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1668*. The type species for the genus is *Candidatus* Pedifaria alcedentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Pedifaria bicipitrix sp. nov.

Candidatus Pedifaria bicipitrix (NL. fem. n. *bicipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1668 sp002364555*. The type genome for the species is the GenBank assembly GCA_002364555.1. The GC content of the type genome is 57.41 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Pedifaria susicatio sp. nov.

Candidatus Pedifaria susicatio (NL. fem. n. *susicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1668 sp002717655*. The type genome for the species is the GenBank assembly GCA_002717655.1. The GC content of the type genome is 55.25 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Pedifaria turilicella sp. nov.

Candidatus Pedifaria turilicella (NL. fem. n. *turilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1668 sp002702575*. The type genome for the species is the GenBank assembly GCA_002702575.1. The GC content of the type genome is 57.84 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Pedifella coteniforma sp. nov.

Candidatus Pedifella coteniforma (NL. fem. n. *coteniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQYN01 sp009781225*. The type genome for the species is the GenBank assembly GCA_009781225.1. The GC content of the type genome is 65.76 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Pedifella gen. nov.

Candidatus Pedifella (NL. fem. n. *Pedifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQYN01*. The type species for the genus is *Candidatus* Pedifella coteniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pedifia detesitura sp. nov.

Candidatus Pedifia detesitura (NL. fem. n. *detesitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA729 sp014238985*. The type genome for the species is the GenBank assembly GCA_014238985.1. The GC content of the type genome is 43.73 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pedifia gen. nov.

Candidatus Pedifia (NL. fem. n. *Pedifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA729*. The type species for the genus is *Candidatus* Pedifia detesitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA729*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedifiaceae.

Description of *Candidatus* Pedifiaceae fam. nov.

Candidatus Pedifiaceae (NL. fem. n. *Pedifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA729.* The type genus for the taxon is *Candidatus* Pedifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7916*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venuniales.

Description of *Candidatus* Pedifia revulifica sp. nov.

Candidatus Pedifia revulifica (NL. fem. n. *revulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA729 sp002722995*. The type genome for the species is the GenBank assembly GCA_002297985.1. The GC content of the type genome is 40.89 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pedifida decupax sp. nov.

Candidatus Pedifida decupax (NL. fem. n. *decupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CPC320 sp002336405*. The type genome for the species is the GenBank assembly GCA_002336405.1. The GC content of the type genome is 53.38 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Pedifida gen. nov.

Candidatus Pedifida (NL. fem. n. *Pedifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CPC320*. The type species for the genus is *Candidatus* Pedifida decupax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pedifida demogessa sp. nov.

Candidatus Pedifida demogessa (NL. fem. n. *demogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CPC320 sp002684375*. The type genome for the species is the GenBank assembly GCA_002684375.1. The GC content of the type genome is 52.73 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Pedifosa bimetibra sp. nov.

Candidatus Pedifosa bimetibra (NL. fem. n. *bimetibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1382 sp003167365*. The type genome for the species is the GenBank assembly GCA_003136875.1. The GC content of the type genome is 55.21 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Pedifosa gen. nov.

Candidatus Pedifosa (NL. fem. n. *Pedifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1382*. The type species for the genus is *Candidatus* Pedifosa bimetibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Pedifula nubecax sp. nov.

Candidatus Pedifula nubecax (NL. fem. n. *nubecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG293 sp900317575*. The type genome for the species is the GenBank assembly GCA_902759655.1. The GC content of the type genome is 28.28 %

and the genome length is 1.43 Mbp.

Description of *Candidatus* Pedifula gen. nov.

Candidatus Pedifula (NL. fem. n. *Pedifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG293*. The type species for the genus is *Candidatus* Pedifula nubecax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caliposaceae.

Description of *Candidatus* Pedobacter abnorifica sp. nov.

Candidatus Pedobacter abnorifica (NL. fem. n. *abnorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp000708265*. The type genome for the species is the GenBank assembly RS_GCF_000708265.2. The GC content of the type genome is 37.13 % and the genome length is 5.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater creek".

Description of *Candidatus* Pedobacter abrumibula sp. nov.

Candidatus Pedobacter abrumibula (NL. fem. n. *abrumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp014306625*. The type genome for the species is the GenBank assembly RS_GCF_014306625.1. The GC content of the type genome is 36.3 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Pedobacter accumigena sp. nov.

Candidatus Pedobacter accumigena (NL. fem. n. *accumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp014172405*. The type genome for the species is the GenBank assembly RS_GCF_014172405.1. The GC content of the type genome is 39.83

% and the genome length is 5.59 Mbp.

Description of *Candidatus* Pedobacter acrufigena sp. nov.

Candidatus Pedobacter acrufigena (NL. fem. n. *acrufigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp014472395*. The type genome for the species is the GenBank assembly RS_GCF_014472395.1. The GC content of the type genome is 40.56 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Pedobacter adrecifica sp. nov.

Candidatus Pedobacter adrecifica (NL. fem. n. *adrecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp002151545*. The type genome for the species is the GenBank assembly RS_GCF_002151545.1. The GC content of the type genome is 39.18 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Pedobacter advecitica sp. nov.

Candidatus Pedobacter advecitica (NL. fem. n. *advecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp003054145*. The type genome for the species is the GenBank assembly RS_GCF_003054145.1. The GC content of the type genome is 38.5 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Pedobacter aggenibula sp. nov.

Candidatus Pedobacter aggenibula (NL. fem. n. *aggenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp002320935*. The type genome for the species is the GenBank assembly GCA_002320935.1. The GC content of the type genome is 43.4 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Pedobacter alluvimonia sp. nov.

Candidatus Pedobacter alluvimonia (NL. fem. n. *alluvimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp001423945*. The type genome for the species is the GenBank assembly RS_GCF_001423945.1. The GC content of the type genome is 39.26 % and the genome length is 4.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pedobacter alsulibula sp. nov.

Candidatus Pedobacter alsulibula (NL. fem. n. *alsulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp000523515*. The type genome for the species is the GenBank assembly RS_GCF_000523515.1. The GC content of the type genome is 38.9 % and the genome length is 6.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "coastal dune".

Description of *Candidatus* Pedobacter aminnatio sp. nov.

Candidatus Pedobacter aminnatio (NL. fem. n. *aminnatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp003339865*. The type genome for the species is the GenBank assembly RS_GCF_003339865.1. The GC content of the type genome is 37.53 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Pedobacter antepitoga sp. nov.

Candidatus Pedobacter antepitoga (NL. fem. n. *antepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004342125*. The type genome for the species is the GenBank assembly RS_GCF_004342125.1. The GC content of the type genome is 38.54 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Pedobacter appositudo sp. nov.

Candidatus Pedobacter appositudo (NL. fem. n. *appositudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp005116445*. The type genome for the species is the GenBank assembly RS_GCF_005116445.1. The GC content of the type genome is 40.13 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Pedobacter arbavitica sp. nov.

Candidatus Pedobacter arbavitica (NL. fem. n. *arbavitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp003061025*. The type genome for the species is the GenBank assembly RS_GCF_003061025.1. The GC content of the type genome is 40.5 % and the genome length is 6.91 Mbp.

Description of *Candidatus* Pedobacter arnogitudo sp. nov.

Candidatus Pedobacter arnogitudo (NL. fem. n. *arnogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp014302835*. The type genome for the species is the GenBank assembly GCA_014302835.1. The GC content of the type genome is 38.18 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Pedobacter arrecimonia sp. nov.

Candidatus Pedobacter arrecimonia (NL. fem. n. *arrecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp001412215*. The type genome for the species is the GenBank assembly RS_GCF_001412215.1. The GC content of the type genome is 37.18 % and the genome length is 4.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leech mucosal secretions".

Description of *Candidatus* Pedobacter asporax sp. nov.

Candidatus Pedobacter asporax (NL. fem. n. *asporax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004331695*. The type genome for the species is the GenBank assembly RS_GCF_004331695.1. The GC content of the type genome is 41.84 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Pedobacter atropessa sp. nov.

Candidatus Pedobacter atropessa (NL. fem. n. *atropessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp002336465*. The type genome for the species is the GenBank assembly GCA_002336465.1. The GC content of the type genome is 36.64 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Pedobacter benivimonas sp. nov.

Candidatus Pedobacter benivimonas (NL. fem. n. *benivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004331685*. The type genome for the species is the GenBank assembly RS_GCF_004331685.1. The GC content of the type genome is 39.37 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Pedobacter bigemivita sp. nov.

Candidatus Pedobacter bigemivita (NL. fem. n. *bigemivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp900564155*. The type genome for the species is the GenBank assembly RS_GCF_900564155.1. The GC content of the type genome is 41.14 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Pedobacter cilibilega sp. nov.

Candidatus Pedobacter cilibilega (NL. fem. n. *cilibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp001421515*. The type genome for the species is the GenBank assembly RS_GCF_001421515.1. The GC content of the type genome is 38.17 % and the genome length is 5.68 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pedobacter colepitura sp. nov.

Candidatus Pedobacter colepitura (NL. fem. n. *colepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004331735*. The type genome for the species is the GenBank assembly RS_GCF_004331735.1. The GC content of the type genome is 38.22 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Pedobacter cululatio sp. nov.

Candidatus Pedobacter cululatio (NL. fem. n. *cululatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004295885*. The type genome for the species is the GenBank assembly GCA_004295885.1. The GC content of the type genome is 36.39 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Pedobacter curabitoga sp. nov.

Candidatus Pedobacter curabitoga (NL. fem. n. *curabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp011759615*. The type genome for the species is the GenBank assembly RS_GCF_011759615.1. The GC content of the type genome is 38.55 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Pedobacter debucimonas sp. nov.

Candidatus Pedobacter debucimonas (NL. fem. n. *debucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004331645*. The type genome for the species is the GenBank assembly RS_GCF_004331645.1. The GC content of the type genome is 35.92 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Pedobacter demogivita sp. nov.

Candidatus Pedobacter demogivita (NL. fem. n. *demogivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp002333205*. The type genome for the species is the GenBank assembly GCA_002333205.1. The GC content of the type genome is 43.86 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Pedobacter detotitura sp. nov.

Candidatus Pedobacter detotitura (NL. fem. n. *detotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp005116505*. The type genome for the species is the GenBank assembly RS_GCF_005116505.1. The GC content of the type genome is 34.91 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Pedobacter dicanivita sp. nov.

Candidatus Pedobacter dicanivita (NL. fem. n. *dicanivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp000170795*. The type genome for the species is the GenBank assembly RS_GCF_000170795.1. The GC content of the type genome is 44.92 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Pedobacter exceribra sp. nov.

Candidatus Pedobacter exceribra (NL. fem. n. *exceribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp002197755*. The type genome for the species is the GenBank assembly RS_GCF_002197755.1. The GC content of the type genome is 39.07 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Pedobacter expisitica sp. nov.

Candidatus Pedobacter expisitica (NL. fem. n. *expisitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp001424305*. The type genome for the species is the GenBank assembly RS_GCF_001424305.1. The GC content of the type genome is 38.38 % and the genome length is 4.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pedobacter exsomimonas sp. nov.

Candidatus Pedobacter exsomimonas (NL. fem. n. *exsomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp005938645*. The type genome for the species is the GenBank assembly RS_GCF_005938645.2. The GC content of the type genome is 38.99 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Pedobacter feditugo sp. nov.

Candidatus Pedobacter feditugo (NL. fem. n. *feditugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp002432345*. The type genome for the species is the GenBank assembly GCA_002432345.1. The GC content of the type genome is 39.79 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Pedobacter fetifibula sp. nov.

Candidatus Pedobacter fetifibula (NL. fem. n. *fetifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004211595*. The type genome for the species is the GenBank assembly GCA_004211595.1. The GC content of the type genome is 35.11 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Pedobacter frigdastra sp. nov.

Candidatus Pedobacter frigdastra (NL. fem. n. *frigdastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp003387415*. The type genome for the species is the

GenBank assembly RS_GCF_003387415.1. The GC content of the type genome is 38.57 % and the genome length is 6.35 Mbp.

Description of *Candidatus* Pedobacter haricugo sp. nov.

Candidatus Pedobacter haricugo (NL. fem. n. *haricugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp003688475*. The type genome for the species is the GenBank assembly RS_GCF_003688475.1. The GC content of the type genome is 39.42 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Pedobacter hibisifica sp. nov.

Candidatus Pedobacter hibisifica (NL. fem. n. *hibisifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp900100435*. The type genome for the species is the GenBank assembly RS_GCF_900100435.1. The GC content of the type genome is 39.4 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Pedobacter ignipetta sp. nov.

Candidatus Pedobacter ignipetta (NL. fem. n. *ignipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp009765875*. The type genome for the species is the GenBank assembly RS_GCF_009765875.1. The GC content of the type genome is 40.12 % and the genome length is 6.39 Mbp.

Description of *Candidatus* Pedobacter inabrivita sp. nov.

Candidatus Pedobacter inabrivita (NL. fem. n. *inabrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp003054115*. The type genome for the species is the GenBank assembly RS_GCF_003054115.1. The GC content of the type genome is 37.71 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Pedobacter infatimonia sp. nov.

Candidatus Pedobacter infatimonia (NL. fem. n. *infatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004364225*. The type genome for the species is the GenBank assembly RS_GCF_004364225.1. The GC content of the type genome is 40.71 % and the genome length is 7.22 Mbp.

Description of *Candidatus* Pedobacter intabilenta sp. nov.

Candidatus Pedobacter intabilenta (NL. fem. n. *intabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp014377665*. The type genome for the species is the GenBank assembly GCA_014377665.1. The GC content of the type genome is 39.55 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Pedobacter munimitas sp. nov.

Candidatus Pedobacter munimitas (NL. fem. n. *munimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp014172375*. The type genome for the species is the GenBank assembly RS_GCF_014172375.1. The GC content of the type genome is 35.08 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Pedobacter offiritio sp. nov.

Candidatus Pedobacter offiritio (NL. fem. n. *offiritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp001422545*. The type genome for the species is the GenBank assembly RS_GCF_001422545.1. The GC content of the type genome is 37.78 % and the genome length is 4.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pedobacter penuratica sp. nov.

Candidatus Pedobacter penuratica (NL. fem. n. *penuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004331675*. The type genome for the species is the GenBank assembly RS_GCF_004331675.1. The GC content of the type genome is 37.47 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Pedobacter pinacousia sp. nov.

Candidatus Pedobacter pinacousia (NL. fem. n. *pinacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp014377775*. The type genome for the species is the GenBank assembly GCA_014377775.1. The GC content of the type genome is 36.14 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Pedobacter podagedo sp. nov.

Candidatus Pedobacter podagedo (NL. fem. n. *podagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp003852525*. The type genome for the species is the GenBank assembly RS_GCF_003852525.1. The GC content of the type genome is 42.43 % and the genome length is 8.14 Mbp.

Description of *Candidatus* Pedobacter propressa sp. nov.

Candidatus Pedobacter propressa (NL. fem. n. *propressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp002399615*. The type genome for the species is the GenBank assembly GCA_002399615.1. The GC content of the type genome is 37.65 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Pedobacter pulegitas sp. nov.

Candidatus Pedobacter pulegitas (NL. fem. n. *pulegitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004138205*. The type genome for the species is the GenBank assembly RS_GCF_004138205.1. The GC content of the type genome is 47.64

% and the genome length is 4.47 Mbp.

Description of *Candidatus* Pedobacter revulisca sp. nov.

Candidatus Pedobacter revulisca (NL. fem. n. *revulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp001412655*. The type genome for the species is the GenBank assembly RS_GCF_001412655.1. The GC content of the type genome is 40.54 % and the genome length is 6.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil".

Description of *Candidatus* Pedobacter rubigivita sp. nov.

Candidatus Pedobacter rubigivita (NL. fem. n. *rubigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp004210715*. The type genome for the species is the GenBank assembly GCA_004210715.1. The GC content of the type genome is 37.09 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Pedobacter senipitio sp. nov.

Candidatus Pedobacter senipitio (NL. fem. n. *senipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp013266735*. The type genome for the species is the GenBank assembly RS_GCF_013266735.1. The GC content of the type genome is 37.85 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Pedobacter sifunessa sp. nov.

Candidatus Pedobacter sifunessa (NL. fem. n. *sifunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp014205835*. The type genome for the species is the GenBank assembly RS_GCF_014205835.1. The GC content of the type genome is 38.41 % and the genome length is 6.07 Mbp.

Description of *Candidatus* Pedobacter tegumago sp. nov.

Candidatus Pedobacter tegumago (NL. fem. n. *tegumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp903166585*. The type genome for the species is the GenBank assembly RS_GCF_903166585.1. The GC content of the type genome is 40.33 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Pedobacter tresvatio sp. nov.

Candidatus Pedobacter tresvatio (NL. fem. n. *tresvatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp005116475*. The type genome for the species is the GenBank assembly RS_GCF_005116475.1. The GC content of the type genome is 34.81 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Pedobacter turibilenta sp. nov.

Candidatus Pedobacter turibilenta (NL. fem. n. *turibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp003852395*. The type genome for the species is the GenBank assembly RS_GCF_011303555.1. The GC content of the type genome is 39.8 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Pedobacter voragigena sp. nov.

Candidatus Pedobacter voragigena (NL. fem. n. *voragigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedobacter sp001027745*. The type genome for the species is the GenBank assembly RS_GCF_001027745.1. The GC content of the type genome is 40.5 % and the genome length is 5.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater Creek".

Description of *Candidatus* Pedococcus absurastra sp. nov.

Candidatus Pedococcus absurastra (NL. fem. n. *absurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedococcus sp009707485*. The type genome for the species is the GenBank assembly RS_GCF_009707485.1. The GC content of the type genome is 70.56 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Pedococcus appecitio sp. nov.

Candidatus Pedococcus appecitio (NL. fem. n. *appecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedococcus sp001428025*. The type genome for the species is the GenBank assembly RS_GCF_001428025.1. The GC content of the type genome is 71.92 % and the genome length is 3.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Pedococcus benepatio sp. nov.

Candidatus Pedococcus benepatio (NL. fem. n. *benepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedococcus sp001426245*. The type genome for the species is the GenBank assembly RS_GCF_001427915.1. The GC content of the type genome is 71.36 % and the genome length is 4.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pedococcus cituvifica sp. nov.

Candidatus Pedococcus cituvifica (NL. fem. n. *cituvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pedococcus sp013041615*. The type genome for the species is the GenBank assembly RS_GCF_013041615.1. The GC content of the type genome is 70.5 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Pedococcus fedititura sp. nov.

Candidatus Pedococcus fedititura (NL. fem. n. *fedititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pedococcus sp001429605*. The type genome for the species is the GenBank assembly RS_GCF_001429605.1. The GC content of the type genome is 70.71 % and the genome length is 4.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Pelagerythrobacter arrecedo sp. nov.

Candidatus Pelagerythrobacter arrecedo (NL. fem. n. *arrecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagerythrobacter sp003581645*. The type genome for the species is the GenBank assembly RS_GCF_003581645.1. The GC content of the type genome is 65.4 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Pelagerythrobacter calipousia sp. nov.

Candidatus Pelagerythrobacter calipousia (NL. fem. n. *calipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagerythrobacter sp004135625*. The type genome for the species is the GenBank assembly RS_GCF_004135625.1. The GC content of the type genome is 66.34 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Pelagibacter abagmax sp. nov.

Candidatus Pelagibacter abagmax (NL. fem. n. *abagmax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902598015*. The type genome for the species is the GenBank assembly GCA_902598015.1. The GC content of the type genome is 29.21 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter abambimonas sp. nov.

Candidatus Pelagibacter abambimonas (NL. fem. n. *abambimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902629695*. The type genome for the species is the GenBank assembly GCA_902629695.1. The GC content of the type genome is 28.92 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter abhinago sp. nov.

Candidatus Pelagibacter abhinago (NL. fem. n. *abhinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902559075*. The type genome for the species is the GenBank assembly GCA_902559075.1. The GC content of the type genome is 29.29 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter abmatentia sp. nov.

Candidatus Pelagibacter abmatentia (NL. fem. n. *abmatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902612605*. The type genome for the species is the GenBank assembly GCA_902612605.1. The GC content of the type genome is 28.98 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Pelagibacter abmatitura sp. nov.

Candidatus Pelagibacter abmatitura (NL. fem. n. *abmatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902583455*. The type genome for the species is the GenBank assembly GCA_902583455.1. The GC content of the type genome is 28.94 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter abnocitica sp. nov.

Candidatus Pelagibacter abnocitica (NL. fem. n. *abnocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902573385*. The type genome for the species is the GenBank assembly GCA_902573385.1. The GC content of the type genome is 28.31 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Pelagibacter abnoretta sp. nov.

Candidatus Pelagibacter abnoretta (NL. fem. n. *abnoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524045*. The type genome for the species is the GenBank assembly GCA_902524045.1. The GC content of the type genome is 29.41 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter abnoritudo sp. nov.

Candidatus Pelagibacter abnoritudo (NL. fem. n. *abnoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592375*. The type genome for the species is the GenBank assembly GCA_902592375.1. The GC content of the type genome is 29.43 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Pelagibacter abrelitas sp. nov.

Candidatus Pelagibacter abrelitas (NL. fem. n. *abrelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524865*. The type genome for the species is the GenBank assembly GCA_902524865.1. The GC content of the type genome is 29.51 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Pelagibacter abrumax sp. nov.

Candidatus Pelagibacter abrumax (NL. fem. n. *abrumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902523895*. The type genome for the species is the GenBank assembly GCA_902523895.1. The GC content of the type genome is 29.42 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter absegessa sp. nov.

Candidatus Pelagibacter absegessa (NL. fem. n. *absegessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902514805*. The type genome for the species is the GenBank assembly GCA_902514805.1. The GC content of the type genome is 29.83 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter absegetta sp. nov.

Candidatus Pelagibacter absegetta (NL. fem. n. *absegetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902576815*. The type genome for the species is the GenBank assembly GCA_902576815.1. The GC content of the type genome is 29.05 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter accapiforma sp. nov.

Candidatus Pelagibacter accapiforma (NL. fem. n. *accapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902565325*. The type genome for the species is the GenBank assembly GCA_902565325.1. The GC content of the type genome is 29.65 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter accogisca sp. nov.

Candidatus Pelagibacter accogisca (NL. fem. n. *accogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594405*. The type genome for the species is the GenBank assembly GCA_902594405.1. The GC content of the type genome is 29.2 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Pelagibacter accoressa sp. nov.

Candidatus Pelagibacter accoressa (NL. fem. n. *accoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902536575*. The type genome for the species is the GenBank assembly GCA_902536575.1. The GC content of the type genome is 29.6 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter accoritudo sp. nov.

Candidatus Pelagibacter accoritudo (NL. fem. n. *accoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902553845*. The type genome for the species is the GenBank assembly GCA_902553845.1. The GC content of the type genome is 28.5 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Pelagibacter accucatica sp. nov.

Candidatus Pelagibacter accucatica (NL. fem. n. *accucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902599665*. The type genome for the species is the GenBank assembly GCA_902599665.1. The GC content of the type genome is 29.52 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pelagibacter acculilenta sp. nov.

Candidatus Pelagibacter acculilenta (NL. fem. n. *acculilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902598425*. The type genome for the species is the GenBank assembly GCA_902598425.1. The GC content of the type genome is 29.01 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter accumatio sp. nov.

Candidatus Pelagibacter accumatio (NL. fem. n. *accumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902608305*. The type genome for the species is the GenBank assembly GCA_902608305.1. The GC content of the type genome is 28.73 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter acertatica sp. nov.

Candidatus Pelagibacter acertatica (NL. fem. n. *acertatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902635975*. The type genome for the species is the GenBank assembly GCA_902635975.1. The GC content of the type genome is 30.18 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Pelagibacter acrimitudo sp. nov.

Candidatus Pelagibacter acrimitudo (NL. fem. n. *acrimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592715*. The type genome for the species is the GenBank assembly GCA_902592715.1. The GC content of the type genome is 29.6 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter acrocitia sp. nov.

Candidatus Pelagibacter acrocitia (NL. fem. n. *acrocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595725*. The type genome for the species is the GenBank assembly GCA_902595725.1. The GC content of the type genome is 28.19 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter actarago sp. nov.

Candidatus Pelagibacter actarago (NL. fem. n. *actarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653585*. The type genome for the species is the GenBank assembly GCA_014653585.1. The GC content of the type genome is 29.39 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter actutatica sp. nov.

Candidatus Pelagibacter actutatica (NL. fem. n. *actutatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902592275*. The type genome for the species is the GenBank assembly GCA_902592275.1. The GC content of the type genome is 29.43 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter actutetta sp. nov.

Candidatus Pelagibacter actutetta (NL. fem. n. *actutetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902582105*. The type genome for the species is the GenBank assembly GCA_902582105.1. The GC content of the type genome is 28.83 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter actutigena sp. nov.

Candidatus Pelagibacter actutigena (NL. fem. n. *actutigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902526085*. The type genome for the species is the GenBank assembly GCA_902526085.1. The GC content of the type genome is 29.69 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter adcumastra sp. nov.

Candidatus Pelagibacter adcumastra (NL. fem. n. *adcumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902627045*. The type genome for the species is the GenBank assembly GCA_902627045.1. The GC content of the type genome is 29.56 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter addubentia sp. nov.

Candidatus Pelagibacter addubentia (NL. fem. n. *addubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902617715*. The type genome for the species is the GenBank assembly GCA_902617715.1. The GC content of the type genome is 28.71 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter adfiriforma sp. nov.

Candidatus Pelagibacter adfiriforma (NL. fem. n. *adfiriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902601785*. The type genome for the species is the GenBank assembly GCA_902601785.1. The GC content of the type genome is 29.61 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter adgubax sp. nov.

Candidatus Pelagibacter adgubax (NL. fem. n. *adgubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902629215*. The type genome for the species is the GenBank assembly GCA_902629215.1. The GC content of the type genome is 28.42 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter adgubitia sp. nov.

Candidatus Pelagibacter adgubitia (NL. fem. n. *adgubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902522225*. The type genome for the species is the GenBank assembly GCA_902522225.1. The GC content of the type genome is 28.44 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter adinvitas sp. nov.

Candidatus Pelagibacter adinvitas (NL. fem. n. *adinvitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902629955*. The type genome for the species is the GenBank assembly GCA_902629955.1. The GC content of the type genome is 29.36 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter adinvitura sp. nov.

Candidatus Pelagibacter adinvitura (NL. fem. n. *adinvitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588635*. The type genome for the species is the GenBank assembly GCA_902588635.1. The GC content of the type genome is 29.24 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter adlacousia sp. nov.

Candidatus Pelagibacter adlacousia (NL. fem. n. *adlacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596675*. The type genome for the species is the GenBank assembly GCA_902596675.1. The GC content of the type genome is 29.62 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter adlapimonas sp. nov.

Candidatus Pelagibacter adlapimonas (NL. fem. n. *adlapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902631255*. The type genome for the species is the GenBank assembly GCA_902631255.1. The GC content of the type genome is 30.13 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter adlocedo sp. nov.

Candidatus Pelagibacter adlocedo (NL. fem. n. *adlocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902607945*. The type genome for the species is the GenBank assembly GCA_902607945.1. The GC content of the type genome is 28.69 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter adlocitrix sp. nov.

Candidatus Pelagibacter adlocitrix (NL. fem. n. *adlocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902573235*. The type genome for the species is the GenBank assembly GCA_902573235.1. The GC content of the type genome is 28.74 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter adnilifica sp. nov.

Candidatus Pelagibacter adnilifica (NL. fem. n. *adnilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902635665*. The type genome for the species is the GenBank assembly GCA_902635665.1. The GC content of the type genome is 29.24 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter adorditoga sp. nov.

Candidatus Pelagibacter adorditoga (NL. fem. n. *adorditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902581605*. The type genome for the species is the GenBank assembly GCA_902581605.1. The GC content of the type genome is 29.42 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter adoscitia sp. nov.

Candidatus Pelagibacter adoscitia (NL. fem. n. *adoscitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902533955*. The type genome for the species is the GenBank assembly GCA_902533955.1. The GC content of the type genome is 28.45 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Pelagibacter adpanitas sp. nov.

Candidatus Pelagibacter adpanitas (NL. fem. n. *adpanitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902617805*. The type genome for the species is the GenBank assembly GCA_902617805.1. The GC content of the type genome is 29.29 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter adpelitas sp. nov.

Candidatus Pelagibacter adpelitas (NL. fem. n. *adpelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902538745*. The type genome for the species is the GenBank assembly GCA_902538745.1. The GC content of the type genome is 29.72 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Pelagibacter adpinilenta sp. nov.

Candidatus Pelagibacter adpinilenta (NL. fem. n. *adpinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902559565*. The type genome for the species is the GenBank assembly GCA_902559565.1. The GC content of the type genome is 28.82 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter adpugitura sp. nov.

Candidatus Pelagibacter adpugitura (NL. fem. n. *adpugitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902615045*. The type genome for the species is the GenBank assembly GCA_902615045.1. The GC content of the type genome is 29.39 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter adremicella sp. nov.

Candidatus Pelagibacter adremicella (NL. fem. n. *adremicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524115*. The type genome for the species is the GenBank assembly GCA_902524115.1. The GC content of the type genome is 29.77 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter adremitoga sp. nov.

Candidatus Pelagibacter adremitoga (NL. fem. n. *adremitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902552705*. The type genome for the species is the GenBank assembly GCA_902552705.1. The GC content of the type genome is 27.93 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter adsecilenta sp. nov.

Candidatus Pelagibacter adsecilenta (NL. fem. n. *adsecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902601315*. The type genome for the species is the GenBank assembly GCA_902601315.1. The GC content of the type genome is 29.46 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pelagibacter adsifimonas sp. nov.

Candidatus Pelagibacter adsifimonas (NL. fem. n. *adsifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902624185*. The type genome for the species is the GenBank assembly GCA_902624185.1. The GC content of the type genome is 28.83 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter adsudicula sp. nov.

Candidatus Pelagibacter adsudicula (NL. fem. n. *adsudicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902617895*. The type genome for the species is the GenBank assembly GCA_902617895.1. The GC content of the type genome is 29.41 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Pelagibacter adsusitas sp. nov.

Candidatus Pelagibacter adsusitas (NL. fem. n. *adsusitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902629535*. The type genome for the species is the GenBank assembly GCA_902629535.1. The GC content of the type genome is 29.86 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter adsusitura sp. nov.

Candidatus Pelagibacter adsusitura (NL. fem. n. *adsusitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902517455*. The type genome for the species is the GenBank assembly GCA_902517455.1. The GC content of the type genome is 29.44 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Pelagibacter adtagivita sp. nov.

Candidatus Pelagibacter adtagivita (NL. fem. n. *adtagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902558835*. The type genome for the species is the GenBank assembly GCA_902558835.1. The GC content of the type genome is 29.13 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter adtenugo sp. nov.

Candidatus Pelagibacter adtenugo (NL. fem. n. *adtenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902598485*. The type genome for the species is the GenBank assembly GCA_902598485.1. The GC content of the type genome is 29.19 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter adtubimonia sp. nov.

Candidatus Pelagibacter adtubimonia (NL. fem. n. *adtubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902527215*. The type genome for the species is the GenBank assembly GCA_902527215.1. The GC content of the type genome is 29.45 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Pelagibacter adtumitoga sp. nov.

Candidatus Pelagibacter adtumitoga (NL. fem. n. *adtumitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902528505*. The type genome for the species is the GenBank assembly GCA_902528505.1. The GC content of the type genome is 29.67 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Pelagibacter advecatica sp. nov.

Candidatus Pelagibacter advecatica (NL. fem. n. *advecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653935*. The type genome for the species is the GenBank assembly GCA_014653935.1. The GC content of the type genome is 29.13 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Pelagibacter advoritas sp. nov.

Candidatus Pelagibacter advoritas (NL. fem. n. *advoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902635335*. The type genome for the species is the GenBank assembly GCA_902635335.1. The GC content of the type genome is 29.26 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter afranitura sp. nov.

Candidatus Pelagibacter afranitura (NL. fem. n. *afranitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902521615*. The type genome for the species is the GenBank assembly GCA_902521615.1. The GC content of the type genome is 29.42 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter aggenatica sp. nov.

Candidatus Pelagibacter aggenatica (NL. fem. n. *aggenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596355*. The type genome for the species is the GenBank assembly GCA_902596355.1. The GC content of the type genome is 29.42 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter aglasitica sp. nov.

Candidatus Pelagibacter aglasitica (NL. fem. n. *aglasitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902630945*. The type genome for the species is the GenBank assembly GCA_902630945.1. The GC content of the type genome is 29.03 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter agrapessa sp. nov.

Candidatus Pelagibacter agrapessa (NL. fem. n. *agrapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902559935*. The type genome for the species is the GenBank assembly GCA_902559935.1. The GC content of the type genome is 29.75 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter agratago sp. nov.

Candidatus Pelagibacter agratago (NL. fem. n. *agratago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902628525*. The type genome for the species is the GenBank assembly GCA_902628525.1. The GC content of the type genome is 29.25 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter albogilenta sp. nov.

Candidatus Pelagibacter albogilenta (NL. fem. n. *albogilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902609065*. The type genome for the species is the GenBank assembly GCA_902609065.1. The GC content of the type genome is 29.18 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter alcibilega sp. nov.

Candidatus Pelagibacter alcibilega (NL. fem. n. *alcibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524635*. The type genome for the species is the GenBank assembly GCA_902524635.1. The GC content of the type genome is 29.59 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter algifugo sp. nov.

Candidatus Pelagibacter algifugo (NL. fem. n. *algifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592545*. The type genome for the species is the GenBank assembly GCA_902592545.1. The GC content of the type genome is 29.17 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter alismousia sp. nov.

Candidatus Pelagibacter alismousia (NL. fem. n. *alismousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902632665*. The type genome for the species is the GenBank assembly GCA_902632665.1. The GC content of the type genome is 29.71 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter alsisitrix sp. nov.

Candidatus Pelagibacter alsisitrix (NL. fem. n. *alsisitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902540545*. The type genome for the species is the GenBank assembly GCA_902540545.1. The GC content of the type genome is 29.33 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter altififica sp. nov.

Candidatus Pelagibacter altififica (NL. fem. n. *altififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595745*. The type genome for the species is the GenBank assembly GCA_902595745.1. The GC content of the type genome is 29.88 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter altivugo sp. nov.

Candidatus Pelagibacter altivugo (NL. fem. n. *altivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902511185*. The type genome for the species is the GenBank assembly GCA_902511185.1. The GC content of the type genome is 29.24 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter ambaditia sp. nov.

Candidatus Pelagibacter ambaditia (NL. fem. n. *ambaditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902523125*. The type genome for the species is the GenBank assembly GCA_902523125.1. The GC content of the type genome is 29.64 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter ambidisca sp. nov.

Candidatus Pelagibacter ambidisca (NL. fem. n. *ambidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902566785*. The type genome for the species is the GenBank assembly GCA_902566785.1. The GC content of the type genome is 28.84 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter amercilenta sp. nov.

Candidatus Pelagibacter amercilenta (NL. fem. n. *amercilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902624075*. The type genome for the species is the GenBank assembly GCA_902624075.1. The GC content of the type genome is 28.33 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter ammatitrix sp. nov.

Candidatus Pelagibacter ammatitrix (NL. fem. n. *ammatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588855*. The type genome for the species is the GenBank assembly GCA_902588855.1. The GC content of the type genome is 29.54 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter ammigatica sp. nov.

Candidatus Pelagibacter ammigatica (NL. fem. n. *ammigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902542235*. The type genome for the species is the GenBank assembly GCA_902542235.1. The GC content of the type genome is 29.36 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter ammixatica sp. nov.

Candidatus Pelagibacter ammixatica (NL. fem. n. *ammixatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902610655*. The type genome for the species is the GenBank assembly GCA_902610655.1. The GC content of the type genome is 29.1 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter ammulessa sp. nov.

Candidatus Pelagibacter ammulessa (NL. fem. n. *ammulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902546375*. The type genome for the species is the GenBank assembly GCA_902546375.1. The GC content of the type genome is 29.43 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter anaclicella sp. nov.

Candidatus Pelagibacter anaclicella (NL. fem. n. *anaclicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902628965*. The type genome for the species is the GenBank assembly GCA_902628965.1. The GC content of the type genome is 29.07 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pelagibacter aneclifica sp. nov.

Candidatus Pelagibacter aneclifica (NL. fem. n. *aneclifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902554795*. The type genome for the species is the GenBank assembly GCA_902554795.1. The GC content of the type genome is 29.38 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter aneclivita sp. nov.

Candidatus Pelagibacter aneclivita (NL. fem. n. *aneclivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902593285*. The type genome for the species is the GenBank assembly GCA_902593285.1. The GC content of the type genome is 29.33 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter annificella sp. nov.

Candidatus Pelagibacter annificella (NL. fem. n. *annificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902622955*. The type genome for the species is the GenBank assembly GCA_902622955.1. The GC content of the type genome is 29.64 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter annucisca sp. nov.

Candidatus Pelagibacter annucisca (NL. fem. n. *annucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902514695*. The type genome for the species is the GenBank assembly GCA_902514695.1. The GC content of the type genome is 28.69 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Pelagibacter antacax sp. nov.

Candidatus Pelagibacter antacax (NL. fem. n. *antacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902513955*. The type genome for the species is the GenBank assembly GCA_902513955.1. The GC content of the type genome is 28.95 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter antefitio sp. nov.

Candidatus Pelagibacter antefitio (NL. fem. n. *antefitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902603665*. The type genome for the species is the GenBank assembly GCA_902603665.1. The GC content of the type genome is 29.83 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter antirimonas sp. nov.

Candidatus Pelagibacter antirimonas (NL. fem. n. *antirimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902593405*. The type genome for the species is the GenBank assembly GCA_902593405.1. The GC content of the type genome is 29.43 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter antomivita sp. nov.

Candidatus Pelagibacter antomivita (NL. fem. n. *antomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571235*. The type genome for the species is the GenBank assembly GCA_902571235.1. The GC content of the type genome is 28.75 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter appagilega sp. nov.

Candidatus Pelagibacter appagilega (NL. fem. n. *appagilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902568875*. The type genome for the species is the GenBank assembly GCA_902568875.1. The GC content of the type genome is 27.88 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Pelagibacter appecitia sp. nov.

Candidatus Pelagibacter appecitia (NL. fem. n. *appecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902581405*. The type genome for the species is the GenBank assembly GCA_902581405.1. The GC content of the type genome is 29.88 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter apporicula sp. nov.

Candidatus Pelagibacter apporicula (NL. fem. n. *apporicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902514945*. The type genome for the species is the GenBank assembly GCA_902514945.1. The GC content of the type genome is 29.29 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter apporisca sp. nov.

Candidatus Pelagibacter apporisca (NL. fem. n. *apporisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp900177485*. The type genome for the species is the GenBank assembly RS_GCF_900177485.1. The GC content of the type genome is 29.04 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Pelagibacter appugedo sp. nov.

Candidatus Pelagibacter appugedo (NL. fem. n. *appugedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902521675*. The type genome for the species is the GenBank assembly GCA_902521675.1. The GC content of the type genome is 29.22 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter appugimonas sp. nov.

Candidatus Pelagibacter appugimonas (NL. fem. n. *appugimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902569615*. The type genome for the species is the GenBank assembly GCA_902569615.1. The GC content of the type genome is 28.18 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter apsocicella sp. nov.

Candidatus Pelagibacter apsocicella (NL. fem. n. *apsocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902576765*. The type genome for the species is the GenBank assembly GCA_902576765.1. The GC content of the type genome is 29.08 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter apsurivita sp. nov.

Candidatus Pelagibacter apsurivita (NL. fem. n. *apsurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902584225*. The type genome for the species is the GenBank assembly GCA_902584225.1. The GC content of the type genome is 29.77 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter arancilega sp. nov.

Candidatus Pelagibacter arancilega (NL. fem. n. *arancilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902579085*. The type genome for the species is the GenBank assembly GCA_902579085.1. The GC content of the type genome is 28.58 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter arancitrix sp. nov.

Candidatus Pelagibacter arancitrix (NL. fem. n. *arancitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902570915*. The type genome for the species is the GenBank assembly GCA_902570915.1. The GC content of the type genome is 29.79 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter arcatimonia sp. nov.

Candidatus Pelagibacter arcatimonia (NL. fem. n. *arcatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571525*. The type genome for the species is the GenBank assembly GCA_902571525.1. The GC content of the type genome is 29.14 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter arcatitrix sp. nov.

Candidatus Pelagibacter arcatitrix (NL. fem. n. *arcatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902574215*. The type genome for the species is the GenBank assembly GCA_902574215.1. The GC content of the type genome is 29.51 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter arceligena sp. nov.

Candidatus Pelagibacter arceligena (NL. fem. n. *arceligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653365*. The type genome for the species is the GenBank assembly GCA_014653365.1. The GC content of the type genome is 29.06 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Pelagibacter arcubitia sp. nov.

Candidatus Pelagibacter arcubitia (NL. fem. n. *arcubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902608845*. The type genome for the species is the GenBank assembly GCA_902608845.1. The GC content of the type genome is 29.45 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter argitimonas sp. nov.

Candidatus Pelagibacter argitimonas (NL. fem. n. *argitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902628565*. The type genome for the species is the GenBank assembly GCA_902628565.1. The GC content of the type genome is 29.5 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter armipibula sp. nov.

Candidatus Pelagibacter armipibula (NL. fem. n. *armipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902626575*. The type genome for the species is the GenBank assembly GCA_902626575.1. The GC content of the type genome is 29.17 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter armipugo sp. nov.

Candidatus Pelagibacter armipugo (NL. fem. n. *armipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902535745*. The type genome for the species is the GenBank assembly GCA_902535745.1. The GC content of the type genome is 29.65 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter arnacicella sp. nov.

Candidatus Pelagibacter arnacicella (NL. fem. n. *arnacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594335*. The type genome for the species is the GenBank assembly GCA_902594335.1. The GC content of the type genome is 29.63 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter artilitas sp. nov.

Candidatus Pelagibacter artilitas (NL. fem. n. *artilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902591775*. The type genome for the species is the GenBank assembly GCA_902591775.1. The GC content of the type genome is 29.5 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter artocedo sp. nov.

Candidatus Pelagibacter artocedo (NL. fem. n. *artocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902516425*. The type genome for the species is the GenBank assembly GCA_902516425.1. The GC content of the type genome is 29.68 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter artocitura sp. nov.

Candidatus Pelagibacter artocitura (NL. fem. n. *artocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902551735*. The type genome for the species is the GenBank assembly GCA_902551735.1. The GC content of the type genome is 28.19 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter artolicella sp. nov.

Candidatus Pelagibacter artolicella (NL. fem. n. *artolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902515195*. The type genome for the species is the GenBank assembly GCA_902515195.1. The GC content of the type genome is 28.54 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter artufigena sp. nov.

Candidatus Pelagibacter artufigena (NL. fem. n. *artufigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902515095*. The type genome for the species is the GenBank assembly GCA_902515095.1. The GC content of the type genome is 29.2 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter aruspigena sp. nov.

Candidatus Pelagibacter aruspigena (NL. fem. n. *aruspigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902568975*. The type genome for the species is the GenBank assembly GCA_902568975.1. The GC content of the type genome is 28.26 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter ascelivita sp. nov.

Candidatus Pelagibacter ascelivita (NL. fem. n. *ascelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595795*. The type genome for the species is the GenBank assembly GCA_902595795.1. The GC content of the type genome is 29.31 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter ascisentia sp. nov.

Candidatus Pelagibacter ascisentia (NL. fem. n. *ascisentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902605865*. The type genome for the species is the GenBank assembly GCA_902605865.1. The GC content of the type genome is 29.53 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Pelagibacter assefago sp. nov.

Candidatus Pelagibacter assefago (NL. fem. n. *assefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902632545*. The type genome for the species is the GenBank assembly GCA_902632545.1. The GC content of the type genome is 29.17 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter assicax sp. nov.

Candidatus Pelagibacter assicax (NL. fem. n. *assicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902535155*. The type genome for the species is the GenBank assembly GCA_902535155.1. The GC content of the type genome is 29.09 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter attelastra sp. nov.

Candidatus Pelagibacter attelastra (NL. fem. n. *attelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902577285*. The type genome for the species is the GenBank assembly GCA_902577285.1. The GC content of the type genome is 29.52 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter baropitoga sp. nov.

Candidatus Pelagibacter baropitoga (NL. fem. n. *baropitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902525565*. The type genome for the species is the GenBank assembly GCA_902525565.1. The GC content of the type genome is 29.4 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter benemisca sp. nov.

Candidatus Pelagibacter benemisca (NL. fem. n. *benemisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902557385*. The type genome for the species is the GenBank assembly GCA_902556865.1. The GC content of the type genome is 28.91 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter benepitia sp. nov.

Candidatus Pelagibacter benepitia (NL. fem. n. *benepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902574725*. The type genome for the species is the GenBank assembly GCA_902574725.1. The GC content of the type genome is 28.64 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter benevigena sp. nov.

Candidatus Pelagibacter benevigena (NL. fem. n. *benevigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003215185*. The type genome for the species is the GenBank assembly GCA_003215185.1. The GC content of the type genome is 27.9 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter benevitas sp. nov.

Candidatus Pelagibacter benevitas (NL. fem. n. *benevitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902611465*. The type genome for the species is the GenBank assembly GCA_902611465.1. The GC content of the type genome is 29.33 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter benivisca sp. nov.

Candidatus Pelagibacter benivisca (NL. fem. n. *benivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902572005*. The type genome for the species is the GenBank assembly GCA_902572005.1. The GC content of the type genome is 29.32 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter betacousia sp. nov.

Candidatus Pelagibacter betacousia (NL. fem. n. *betacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524235*. The type genome for the species is the GenBank assembly GCA_902524235.1. The GC content of the type genome is 28.85 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter bicalugo sp. nov.

Candidatus Pelagibacter bicalugo (NL. fem. n. *bicalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902569285*. The type genome for the species is the GenBank assembly GCA_902569285.1. The GC content of the type genome is 28.07 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter bicinivita sp. nov.

Candidatus Pelagibacter bicinivita (NL. fem. n. *bicinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560015*. The type genome for the species is the GenBank assembly GCA_902560015.1. The GC content of the type genome is 29.16 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Pelagibacter bicorimonia sp. nov.

Candidatus Pelagibacter bicorimonia (NL. fem. n. *bicorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902574345*. The type genome for the species is the GenBank assembly GCA_902574345.1. The GC content of the type genome is 29.81 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter bicorivita sp. nov.

Candidatus Pelagibacter bicorivita (NL. fem. n. *bicorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902555945*. The type genome for the species is the GenBank assembly GCA_902555945.1. The GC content of the type genome is 28.54 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter bifaratio sp. nov.

Candidatus Pelagibacter bifaratio (NL. fem. n. *bifaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902512765*. The type genome for the species is the GenBank assembly GCA_902512765.1. The GC content of the type genome is 29.57 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter bifisimonas sp. nov.

Candidatus Pelagibacter bifisimonas (NL. fem. n. *bifisimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902578175*. The type genome for the species is the GenBank assembly GCA_902578175.1. The GC content of the type genome is 29.82 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter binocedo sp. nov.

Candidatus Pelagibacter binocedo (NL. fem. n. *binocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902527485*. The type genome for the species is the GenBank assembly GCA_902527485.1. The GC content of the type genome is 29.51 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter bipaliforma sp. nov.

Candidatus Pelagibacter bipaliforma (NL. fem. n. *bipaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902572945*. The type genome for the species is the GenBank assembly GCA_902572945.1. The GC content of the type genome is 29.37 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter biparago sp. nov.

Candidatus Pelagibacter biparago (NL. fem. n. *biparago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003283905*. The type genome for the species is the GenBank assembly GCA_003283905.1. The GC content of the type genome is 29.15 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Pelagibacter biparastra sp. nov.

Candidatus Pelagibacter biparastra (NL. fem. n. *biparastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902580275*. The type genome for the species is the GenBank assembly GCA_902580275.1. The GC content of the type genome is 29.16 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter biparax sp. nov.

Candidatus Pelagibacter biparax (NL. fem. n. *biparax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902536005*. The type genome for the species is the GenBank assembly GCA_902536005.1. The GC content of the type genome is 29.32 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter biparimonas sp. nov.

Candidatus Pelagibacter biparimonas (NL. fem. n. *biparimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003282985*. The type genome for the species is the GenBank assembly GCA_902518535.1. The GC content of the type genome is 29.63 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter biparitudo sp. nov.

Candidatus Pelagibacter biparitudo (NL. fem. n. *biparitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003281005*. The type genome for the species is the GenBank assembly GCA_003281005.1. The GC content of the type genome is 29.17 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter biparivita sp. nov.

Candidatus Pelagibacter biparivita (NL. fem. n. *biparivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902543575*. The type genome for the species is the GenBank assembly GCA_902518585.1. The GC content of the type genome is 29.28 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter bipenentia sp. nov.

Candidatus Pelagibacter bipenentia (NL. fem. n. *bipenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596595*. The type genome for the species is the GenBank assembly GCA_902596595.1. The GC content of the type genome is 29.23 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter bipenitudo sp. nov.

Candidatus Pelagibacter bipenitudo (NL. fem. n. *bipenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902590125*. The type genome for the species is the GenBank assembly GCA_902590125.1. The GC content of the type genome is 28.75 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Pelagibacter bisacatica sp. nov.

Candidatus Pelagibacter bisacatica (NL. fem. n. *bisacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003282975*. The type genome for the species is the GenBank assembly GCA_003282975.1. The GC content of the type genome is 29.53 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter bisulitrix sp. nov.

Candidatus Pelagibacter bisulitrix (NL. fem. n. *bisulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902558795*. The type genome for the species is the GenBank assembly GCA_902558795.1. The GC content of the type genome is 29.66 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter biveritrix sp. nov.

Candidatus Pelagibacter biveritrix (NL. fem. n. *biveritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902634935*. The type genome for the species is the GenBank assembly GCA_902634935.1. The GC content of the type genome is 29.44 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter bonititrix sp. nov.

Candidatus Pelagibacter bonititrix (NL. fem. n. *bonititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902550285*. The type genome for the species is the GenBank assembly GCA_902550285.1. The GC content of the type genome is 28.27 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter bugilessa sp. nov.

Candidatus Pelagibacter bugilessa (NL. fem. n. *bugilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560625*. The type genome for the species is the GenBank assembly GCA_902560625.1. The GC content of the type genome is 28.83 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter bulapatica sp. nov.

Candidatus Pelagibacter bulapatica (NL. fem. n. *bulapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902606065*. The type genome for the species is the GenBank assembly GCA_902606065.1. The GC content of the type genome is 29.63 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter bulapitio sp. nov.

Candidatus Pelagibacter bulapitio (NL. fem. n. *bulapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014654265*. The type genome for the species is the GenBank assembly GCA_014654265.1. The GC content of the type genome is 28.65 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter buxanicella sp. nov.

Candidatus Pelagibacter buxanicella (NL. fem. n. *buxanicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902635685*. The type genome for the species is the GenBank assembly GCA_902635685.1. The GC content of the type genome is 29.43 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter buxanitica sp. nov.

Candidatus Pelagibacter buxanitica (NL. fem. n. *buxanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003210025*. The type genome for the species is the GenBank assembly GCA_902578885.1. The GC content of the type genome is 29.13 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Pelagibacter cacaligena sp. nov.

Candidatus Pelagibacter cacaligena (NL. fem. n. *cacaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902537665*. The type genome for the species is the GenBank assembly GCA_902537665.1. The GC content of the type genome is 29.39 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter cacopilega sp. nov.

Candidatus Pelagibacter cacopilega (NL. fem. n. *cacopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902541515*. The type genome for the species is the GenBank assembly GCA_902541515.1. The GC content of the type genome is 29.77 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Pelagibacter cadavessa sp. nov.

Candidatus Pelagibacter cadavessa (NL. fem. n. *cadavessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902529105*. The type genome for the species is the GenBank assembly GCA_902529105.1. The GC content of the type genome is 29.03 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter cadavimonia sp. nov.

Candidatus Pelagibacter cadavimonia (NL. fem. n. *cadavimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604565*. The type genome for the species is the GenBank assembly GCA_902604565.1. The GC content of the type genome is 29.55 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter caduritas sp. nov.

Candidatus Pelagibacter caduritas (NL. fem. n. *caduritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560565*. The type genome for the species is the GenBank assembly GCA_902630695.1. The GC content of the type genome is 29.39 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter canacicula sp. nov.

Candidatus Pelagibacter canacicula (NL. fem. n. *canacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902576045*. The type genome for the species is the GenBank assembly GCA_902576045.1. The GC content of the type genome is 29.49 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter capilentia sp. nov.

Candidatus Pelagibacter capilentia (NL. fem. n. *capilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902567045*. The type genome for the species is the GenBank assembly GCA_014654125.1. The GC content of the type genome is 29.36 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter capilibra sp. nov.

Candidatus Pelagibacter capilibra (NL. fem. n. *capilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902636075*. The type genome for the species is the GenBank assembly GCA_902636075.1. The GC content of the type genome is 29.71 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Pelagibacter capiligena sp. nov.

Candidatus Pelagibacter capiligena (NL. fem. n. *capiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902610315*. The type genome for the species is the GenBank assembly GCA_902610315.1. The GC content of the type genome is 28.82 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter capilugo sp. nov.

Candidatus Pelagibacter capilugo (NL. fem. n. *capilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571925*. The type genome for the species is the GenBank assembly GCA_902571925.1. The GC content of the type genome is 29.14 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter capucitica sp. nov.

Candidatus Pelagibacter capucitica (NL. fem. n. *capucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902625825*. The type genome for the species is the GenBank assembly GCA_902625825.1. The GC content of the type genome is 29.9 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter capucugo sp. nov.

Candidatus Pelagibacter capucugo (NL. fem. n. *capucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003216235*. The type genome for the species is the GenBank assembly GCA_902564395.1. The GC content of the type genome is 28.5 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter carunigena sp. nov.

Candidatus Pelagibacter carunigena (NL. fem. n. *carunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902556765*. The type genome for the species is the GenBank assembly GCA_902585665.1. The GC content of the type genome is 29.23 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter casabilega sp. nov.

Candidatus Pelagibacter casabilega (NL. fem. n. *casabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902557585*. The type genome for the species is the GenBank assembly GCA_902557585.1. The GC content of the type genome is 30.38 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Pelagibacter caseliforma sp. nov.

Candidatus Pelagibacter caseliforma (NL. fem. n. *caseliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902633185*. The type genome for the species is the GenBank assembly GCA_902633185.1. The GC content of the type genome is 29.76 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter casigicella sp. nov.

Candidatus Pelagibacter casigicella (NL. fem. n. *casigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902569105*. The type genome for the species is the GenBank assembly GCA_902569105.1. The GC content of the type genome is 29.02 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter catafax sp. nov.

Candidatus Pelagibacter catafax (NL. fem. n. *catafax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571425*. The type genome for the species is the GenBank assembly GCA_902571425.1. The GC content of the type genome is 29.33 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Pelagibacter catagitudo sp. nov.

Candidatus Pelagibacter catagitudo (NL. fem. n. *catagitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902532225*. The type genome for the species is the GenBank assembly GCA_902532225.1. The GC content of the type genome is 28.64 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter catalibra sp. nov.

Candidatus Pelagibacter catalibra (NL. fem. n. *catalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592965*. The type genome for the species is the GenBank assembly GCA_902592965.1. The GC content of the type genome is 28.91 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter catalitas sp. nov.

Candidatus Pelagibacter catalitas (NL. fem. n. *catalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003281725*. The type genome for the species is the GenBank assembly GCA_003281725.1. The GC content of the type genome is 28.92 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter catecax sp. nov.

Candidatus Pelagibacter catecax (NL. fem. n. *catecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902586025*. The type genome for the species is the GenBank assembly GCA_902586025.1. The GC content of the type genome is 29.45 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter catilimonas sp. nov.

Candidatus Pelagibacter catilimonas (NL. fem. n. *catilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902514665*. The type genome for the species is the GenBank assembly GCA_902514665.1. The GC content of the type genome is 29.37 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter catilitica sp. nov.

Candidatus Pelagibacter catilitica (NL. fem. n. *catilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604305*. The type genome for the species is the GenBank assembly GCA_902604305.1. The GC content of the type genome is 28.4 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter catobitudo sp. nov.

Candidatus Pelagibacter catobitudo (NL. fem. n. *catobitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902614905*. The type genome for the species is the GenBank assembly GCA_902614905.1. The GC content of the type genome is 28.88 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter cenobitudo sp. nov.

Candidatus Pelagibacter cenobitudo (NL. fem. n. *cenobitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902538885*. The type genome for the species is the GenBank assembly GCA_902538885.1. The GC content of the type genome is 29.53 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter ceracicella sp. nov.

Candidatus Pelagibacter ceracicella (NL. fem. n. *ceracicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902586395*. The type genome for the species is the GenBank assembly GCA_902586395.1. The GC content of the type genome is 29.52 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Pelagibacter ceracilega sp. nov.

Candidatus Pelagibacter ceracilega (NL. fem. n. *ceracilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902613065*. The type genome for the species is the GenBank assembly GCA_902567545.1. The GC content of the type genome is 29.25 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter ceracitrix sp. nov.

Candidatus Pelagibacter ceracitrix (NL. fem. n. *ceracitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902578525*. The type genome for the species is the GenBank assembly GCA_902578525.1. The GC content of the type genome is 28.6 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter cerebousia sp. nov.

Candidatus Pelagibacter cerebousia (NL. fem. n. *cerebousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003210095*. The type genome for the species is the GenBank assembly GCA_902576855.1. The GC content of the type genome is 28.7 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter cerucicella sp. nov.

Candidatus Pelagibacter cerucicella (NL. fem. n. *cerucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902565935*. The type genome for the species is the GenBank assembly GCA_902597265.1. The GC content of the type genome is 29.15 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter cerucitas sp. nov.

Candidatus Pelagibacter cerucitas (NL. fem. n. *cerucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597515*. The type genome for the species is the GenBank assembly GCA_902597515.1. The GC content of the type genome is 29.16 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter chalbax sp. nov.

Candidatus Pelagibacter chalbax (NL. fem. n. *chalbax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902615975*. The type genome for the species is the GenBank assembly GCA_902615975.1. The GC content of the type genome is 29.37 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Pelagibacter cibariforma sp. nov.

Candidatus Pelagibacter cibariforma (NL. fem. n. *cibariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902527415*. The type genome for the species is the GenBank assembly GCA_902527415.1. The GC content of the type genome is 29.39 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter cibicago sp. nov.

Candidatus Pelagibacter cibicago (NL. fem. n. *cibicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902532565*. The type genome for the species is the GenBank assembly GCA_902532565.1. The GC content of the type genome is 28.95 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter cibicicella sp. nov.

Candidatus Pelagibacter cibicicella (NL. fem. n. *cibicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902609535*. The type genome for the species is the GenBank assembly GCA_902609535.1. The GC content of the type genome is 29.44 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter cicatastra sp. nov.

Candidatus Pelagibacter cicatastra (NL. fem. n. *cicatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902599995*. The type genome for the species is the GenBank assembly GCA_902599995.1. The GC content of the type genome is 29.96 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter cicatitura sp. nov.

Candidatus Pelagibacter cicatitura (NL. fem. n. *cicatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902544135*. The type genome for the species is the GenBank assembly GCA_902567075.1. The GC content of the type genome is 29.71 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter cicilatica sp. nov.

Candidatus Pelagibacter cicilatica (NL. fem. n. *cicilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902556505*. The type genome for the species is the GenBank assembly GCA_902556505.1. The GC content of the type genome is 29.33 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter cilibitia sp. nov.

Candidatus Pelagibacter cilibitia (NL. fem. n. *cilibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902526115*. The type genome for the species is the GenBank assembly GCA_902526115.1. The GC content of the type genome is 29.93 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter cilibitudo sp. nov.

Candidatus Pelagibacter cilibitudo (NL. fem. n. *cilibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003212275*. The type genome for the species is the GenBank assembly GCA_003212275.1. The GC content of the type genome is 29.49 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter cimelago sp. nov.

Candidatus Pelagibacter cimelago (NL. fem. n. *cimelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902537055*. The type genome for the species is the GenBank assembly GCA_902537055.1. The GC content of the type genome is 29.1 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pelagibacter cimelilega sp. nov.

Candidatus Pelagibacter cimelilega (NL. fem. n. *cimelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003279715*. The type genome for the species is the GenBank assembly GCA_003279715.1. The GC content of the type genome is 29.2 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pelagibacter cimitedo sp. nov.

Candidatus Pelagibacter cimitedo (NL. fem. n. *cimitedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902600635*. The type genome for the species is the GenBank assembly GCA_902600635.1. The GC content of the type genome is 29.17 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter cinipimonia sp. nov.

Candidatus Pelagibacter cinipimonia (NL. fem. n. *cinipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902587435*. The type genome for the species is the GenBank assembly GCA_902587435.1. The GC content of the type genome is 28.43 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter cisoritudo sp. nov.

Candidatus Pelagibacter cisoritudo (NL. fem. n. *cisoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902586485*. The type genome for the species is the GenBank assembly GCA_902586485.1. The GC content of the type genome is 29.33 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter cisorousia sp. nov.

Candidatus Pelagibacter cisorousia (NL. fem. n. *cisorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902551755*. The type genome for the species is the GenBank assembly GCA_902551755.1. The GC content of the type genome is 29.51 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter citipitoga sp. nov.

Candidatus Pelagibacter citipitoga (NL. fem. n. *citipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902572925*. The type genome for the species is the GenBank assembly GCA_902572925.1. The GC content of the type genome is 29.13 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter citivivita sp. nov.

Candidatus Pelagibacter citivivita (NL. fem. n. *citivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902526405*. The type genome for the species is the GenBank assembly GCA_902526405.1. The GC content of the type genome is 29.58 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter citocastra sp. nov.

Candidatus Pelagibacter citocastra (NL. fem. n. *citocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902587665*. The type genome for the species is the GenBank assembly GCA_902588095.1. The GC content of the type genome is 29.47 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter cituvatio sp. nov.

Candidatus Pelagibacter cituvatio (NL. fem. n. *cituvatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902581445*. The type genome for the species is the GenBank assembly GCA_902581445.1. The GC content of the type genome is 29.23 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter cituvilenta sp. nov.

Candidatus Pelagibacter cituvilenta (NL. fem. n. *cituvilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902612325*. The type genome for the species is the GenBank assembly GCA_902616875.1. The GC content of the type genome is 29.86 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter clancitoga sp. nov.

Candidatus Pelagibacter clancitoga (NL. fem. n. *clancitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902532195*. The type genome for the species is the GenBank assembly GCA_902532195.1. The GC content of the type genome is 28.03 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter cnestetta sp. nov.

Candidatus Pelagibacter cnestetta (NL. fem. n. *cnestetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902606445*. The type genome for the species is the GenBank assembly GCA_902606445.1. The GC content of the type genome is 28.91 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter cobalibula sp. nov.

Candidatus Pelagibacter cobalibula (NL. fem. n. *cobalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp000155895*. The type genome for the species is the GenBank assembly GCA_902558745.1. The GC content of the type genome is 29.11 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter codifimonia sp. nov.

Candidatus Pelagibacter codifimonia (NL. fem. n. *codifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902633585*. The type genome for the species is the GenBank assembly GCA_902633585.1. The GC content of the type genome is 29.31 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter cohonax sp. nov.

Candidatus Pelagibacter cohonax (NL. fem. n. *cohonax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902537905*. The type genome for the species is the GenBank assembly GCA_902537905.1. The GC content of the type genome is 29.45 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter colubicella sp. nov.

Candidatus Pelagibacter colubicella (NL. fem. n. *colubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902562875*. The type genome for the species is the GenBank assembly GCA_902562875.1. The GC content of the type genome is 28.8 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter colutimonas sp. nov.

Candidatus Pelagibacter colutimonas (NL. fem. n. *colutimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902609675*. The type genome for the species is the GenBank assembly GCA_902609675.1. The GC content of the type genome is 29.56 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter conabitia sp. nov.

Candidatus Pelagibacter conabitia (NL. fem. n. *conabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902611845*. The type genome for the species is the GenBank assembly GCA_902586795.1. The GC content of the type genome is 29.21 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter conibago sp. nov.

Candidatus Pelagibacter conibago (NL. fem. n. *conibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902561095*. The type genome for the species is the GenBank assembly GCA_902561095.1. The GC content of the type genome is 30.05 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter conifilega sp. nov.

Candidatus Pelagibacter conifilega (NL. fem. n. *conifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902528645*. The type genome for the species is the GenBank assembly GCA_902528645.1. The GC content of the type genome is 29.4 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter conopitudo sp. nov.

Candidatus Pelagibacter conopitudo (NL. fem. n. *conopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902581585*. The type genome for the species is the GenBank assembly GCA_902581585.1. The GC content of the type genome is 29.45 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Pelagibacter cosiditrix sp. nov.

Candidatus Pelagibacter cosiditrix (NL. fem. n. *cosiditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902569405*. The type genome for the species is the GenBank assembly GCA_902569405.1. The GC content of the type genome is 28.47 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pelagibacter coticitio sp. nov.

Candidatus Pelagibacter coticitio (NL. fem. n. *coticitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524545*. The type genome for the species is the GenBank assembly GCA_902524545.1. The GC content of the type genome is 29.26 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter crastetta sp. nov.

Candidatus Pelagibacter crastetta (NL. fem. n. *crastetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902609915*. The type genome for the species is the GenBank assembly GCA_902609915.1. The GC content of the type genome is 28.94 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter crastitio sp. nov.

Candidatus Pelagibacter crastitio (NL. fem. n. *crastitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902551895*. The type genome for the species is the GenBank assembly GCA_902551895.1. The GC content of the type genome is 28.47 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter crusmatica sp. nov.

Candidatus Pelagibacter crusmatica (NL. fem. n. *crusmatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597425*. The type genome for the species is the GenBank assembly GCA_902597425.1. The GC content of the type genome is 28.38 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter cucurifica sp. nov.

Candidatus Pelagibacter cucurifica (NL. fem. n. *cucurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596045*. The type genome for the species is the GenBank assembly GCA_902572705.1. The GC content of the type genome is 28.89 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter culibitica sp. nov.

Candidatus Pelagibacter culibitica (NL. fem. n. *culibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902564245*. The type genome for the species is the GenBank assembly GCA_902564245.1. The GC content of the type genome is 27.68 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter culigilenta sp. nov.

Candidatus Pelagibacter culigilenta (NL. fem. n. *culigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902623215*. The type genome for the species is the GenBank assembly GCA_902615935.1. The GC content of the type genome is 29.51 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter cululibula sp. nov.

Candidatus Pelagibacter cululibula (NL. fem. n. *cululibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902580505*. The type genome for the species is the GenBank assembly GCA_902580505.1. The GC content of the type genome is 29.09 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter cunabisca sp. nov.

Candidatus Pelagibacter cunabisca (NL. fem. n. *cunabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902581925*. The type genome for the species is the GenBank assembly GCA_902581925.1. The GC content of the type genome is 29.26 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter cunabitoga sp. nov.

Candidatus Pelagibacter cunabitoga (NL. fem. n. *cunabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902616645*. The type genome for the species is the GenBank assembly GCA_902616645.1. The GC content of the type genome is 29.15 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter cuticimonia sp. nov.

Candidatus Pelagibacter cuticimonia (NL. fem. n. *cuticimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902587155*. The type genome for the species is the GenBank assembly GCA_902587155.1. The GC content of the type genome is 29.27 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter daducetta sp. nov.

Candidatus Pelagibacter daducetta (NL. fem. n. *daducetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003278805*. The type genome for the species is the GenBank assembly GCA_003278805.1. The GC content of the type genome is 29.28 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pelagibacter daducicula sp. nov.

Candidatus Pelagibacter daducicula (NL. fem. n. *daducicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902603925*. The type genome for the species is the GenBank assembly GCA_902603925.1. The GC content of the type genome is 29.35 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter dapifago sp. nov.

Candidatus Pelagibacter dapifago (NL. fem. n. *dapifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902619665*. The type genome for the species is the GenBank assembly GCA_902578145.1. The GC content of the type genome is 28.87 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter dapifentia sp. nov.

Candidatus Pelagibacter dapifentia (NL. fem. n. *dapifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902573465*. The type genome for the species is the GenBank assembly GCA_902557925.1. The GC content of the type genome is 29.47 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Pelagibacter debucatica sp. nov.

Candidatus Pelagibacter debucatica (NL. fem. n. *debucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902567235*. The type genome for the species is the GenBank assembly GCA_902567235.1. The GC content of the type genome is 28.63 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Pelagibacter debucilega sp. nov.

Candidatus Pelagibacter debucilega (NL. fem. n. *debucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902627645*. The type genome for the species is the GenBank assembly GCA_902627645.1. The GC content of the type genome is 29.28 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter debucitura sp. nov.

Candidatus Pelagibacter debucitura (NL. fem. n. *debucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902520355*. The type genome for the species is the GenBank assembly GCA_902520355.1. The GC content of the type genome is 29.43 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter decacifica sp. nov.

Candidatus Pelagibacter decacifica (NL. fem. n. *decacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902515185*. The type genome for the species is the GenBank assembly GCA_902515185.1. The GC content of the type genome is 28.89 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter decapilenta sp. nov.

Candidatus Pelagibacter decapilenta (NL. fem. n. *decapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595635*. The type genome for the species is the GenBank assembly GCA_902595635.1. The GC content of the type genome is 29.35 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter decapitudo sp. nov.

Candidatus Pelagibacter decapitudo (NL. fem. n. *decapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592675*. The type genome for the species is the GenBank assembly GCA_902592675.1. The GC content of the type genome is 29.18 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter decativita sp. nov.

Candidatus Pelagibacter decativita (NL. fem. n. *decativita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003211555*. The type genome for the species is the GenBank assembly GCA_003283045.1. The GC content of the type genome is 29.72 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter dececilega sp. nov.

Candidatus Pelagibacter dececilega (NL. fem. n. *dececilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902598655*. The type genome for the species is the GenBank assembly GCA_902598655.1. The GC content of the type genome is 29.21 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter dececitas sp. nov.

Candidatus Pelagibacter dececitas (NL. fem. n. *dececitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902606075*. The type genome for the species is the GenBank assembly GCA_902610725.1. The GC content of the type genome is 29.06 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter decinago sp. nov.

Candidatus Pelagibacter decinago (NL. fem. n. *decinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902593445*. The type genome for the species is the GenBank assembly GCA_902593445.1. The GC content of the type genome is 29.4 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Pelagibacter decinedo sp. nov.

Candidatus Pelagibacter decinedo (NL. fem. n. *decinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902540595*. The type genome for the species is the GenBank assembly GCA_902554715.1. The GC content of the type genome is 30.03 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter decinentia sp. nov.

Candidatus Pelagibacter decinentia (NL. fem. n. *decinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902538255*. The type genome for the species is the GenBank assembly GCA_902538255.1. The GC content of the type genome is 29.2 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter decunilenta sp. nov.

Candidatus Pelagibacter decunilenta (NL. fem. n. *decunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003282945*. The type genome for the species is the GenBank assembly GCA_902515595.1. The GC content of the type genome is 29.4 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter defacatio sp. nov.

Candidatus Pelagibacter defacatio (NL. fem. n. *defacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902542855*. The type genome for the species is the GenBank assembly GCA_902542855.1. The GC content of the type genome is 29.68 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter defenax sp. nov.

Candidatus Pelagibacter defenax (NL. fem. n. *defenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597895*. The type genome for the species is the GenBank assembly GCA_902633835.1. The GC content of the type genome is 28.71 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter defunilenta sp. nov.

Candidatus Pelagibacter defunilenta (NL. fem. n. *defunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902523515*. The type genome for the species is the GenBank assembly GCA_902523515.1. The GC content of the type genome is 29.16 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter dehinicula sp. nov.

Candidatus Pelagibacter dehinicula (NL. fem. n. *dehinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902558585*. The type genome for the species is the GenBank assembly GCA_902558585.1. The GC content of the type genome is 29.15 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter dehinousia sp. nov.

Candidatus Pelagibacter dehinousia (NL. fem. n. *dehinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902634455*. The type genome for the species is the GenBank assembly GCA_902634455.1. The GC content of the type genome is 28.05 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter dehonitoga sp. nov.

Candidatus Pelagibacter dehonitoga (NL. fem. n. *dehonitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902548405*. The type genome for the species is the GenBank assembly GCA_902548405.1. The GC content of the type genome is 29.66 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter delapetta sp. nov.

Candidatus Pelagibacter delapetta (NL. fem. n. *delapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902603045*. The type genome for the species is the GenBank assembly GCA_902603045.1. The GC content of the type genome is 29.64 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter delapimonia sp. nov.

Candidatus Pelagibacter delapimonia (NL. fem. n. *delapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902625715*. The type genome for the species is the GenBank assembly GCA_902625715.1. The GC content of the type genome is 29.39 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter delubitudo sp. nov.

Candidatus Pelagibacter delubitudo (NL. fem. n. *delubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902540275*. The type genome for the species is the GenBank assembly GCA_902540275.1. The GC content of the type genome is 28.31 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter delucessa sp. nov.

Candidatus Pelagibacter delucessa (NL. fem. n. *delucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902618205*. The type genome for the species is the GenBank assembly GCA_902575895.1. The GC content of the type genome is 29.42 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter demadifica sp. nov.

Candidatus Pelagibacter demadifica (NL. fem. n. *demadifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902533585*. The type genome for the species is the GenBank assembly GCA_902533585.1. The GC content of the type genome is 28.79 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter demagedo sp. nov.

Candidatus Pelagibacter demagedo (NL. fem. n. *demagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902580895*. The type genome for the species is the GenBank assembly GCA_902592865.1. The GC content of the type genome is 29.79 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter demagimonia sp. nov.

Candidatus Pelagibacter demagimonia (NL. fem. n. *demagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902527635*. The type genome for the species is the GenBank assembly GCA_902527635.1. The GC content of the type genome is 29.73 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter denavastra sp. nov.

Candidatus Pelagibacter denavastra (NL. fem. n. *denavastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003212295*. The type genome for the species is the GenBank assembly GCA_902592815.1. The GC content of the type genome is 28.94 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter denavedo sp. nov.

Candidatus Pelagibacter denavedo (NL. fem. n. *denavedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902609685*. The type genome for the species is the GenBank assembly GCA_902547665.1. The GC content of the type genome is 30.01 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Pelagibacter denicago sp. nov.

Candidatus Pelagibacter denicago (NL. fem. n. *denicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902557235*. The type genome for the species is the GenBank assembly GCA_902557235.1. The GC content of the type genome is 29.02 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter denigousia sp. nov.

Candidatus Pelagibacter denigousia (NL. fem. n. *denigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902618485*. The type genome for the species is the GenBank assembly GCA_902585725.1. The GC content of the type genome is 29.4 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter denoritica sp. nov.

Candidatus Pelagibacter denoritica (NL. fem. n. *denoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902518925*. The type genome for the species is the GenBank assembly GCA_902518925.1. The GC content of the type genome is 29.04 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Pelagibacter depacilega sp. nov.

Candidatus Pelagibacter depacilega (NL. fem. n. *depacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594655*. The type genome for the species is the GenBank assembly GCA_902594655.1. The GC content of the type genome is 29.2 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter deparitudo sp. nov.

Candidatus Pelagibacter deparitudo (NL. fem. n. *deparitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902593845*. The type genome for the species is the GenBank assembly GCA_902577125.1. The GC content of the type genome is 29.22 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter depasigena sp. nov.

Candidatus Pelagibacter depasigena (NL. fem. n. *depasigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902536765*. The type genome for the species is the GenBank assembly GCA_902536765.1. The GC content of the type genome is 29.26 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter depelago sp. nov.

Candidatus Pelagibacter depelago (NL. fem. n. *depelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902623495*. The type genome for the species is the GenBank assembly GCA_902541935.1. The GC content of the type genome is 29.09 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter depeletta sp. nov.

Candidatus Pelagibacter depeletta (NL. fem. n. *depeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571975*. The type genome for the species is the GenBank assembly GCA_902571975.1. The GC content of the type genome is 29.64 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter depelitoga sp. nov.

Candidatus Pelagibacter depelitoga (NL. fem. n. *depelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597335*. The type genome for the species is the GenBank assembly GCA_902560585.1. The GC content of the type genome is 29.54 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pelagibacter depubitia sp. nov.

Candidatus Pelagibacter depubitia (NL. fem. n. *depubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp002170205*. The type genome for the species is the GenBank assembly GCA_002170205.2. The GC content of the type genome is 30.12 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter derecax sp. nov.

Candidatus Pelagibacter derecax (NL. fem. n. *derecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902578265*. The type genome for the species is the GenBank assembly GCA_902621155.1. The GC content of the type genome is 29.51 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter desacitas sp. nov.

Candidatus Pelagibacter desacitas (NL. fem. n. *desacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902578325*. The type genome for the species is the GenBank assembly GCA_902578325.1. The GC content of the type genome is 29.06 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter desepatica sp. nov.

Candidatus Pelagibacter desepatica (NL. fem. n. *desepatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902533445*. The type genome for the species is the GenBank assembly GCA_902570835.1. The GC content of the type genome is 29.36 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter desepivita sp. nov.

Candidatus Pelagibacter desepivita (NL. fem. n. *desepivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902622545*. The type genome for the species is the GenBank assembly GCA_902547585.1. The GC content of the type genome is 28.78 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter desonetta sp. nov.

Candidatus Pelagibacter desonetta (NL. fem. n. *desonetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902544985*. The type genome for the species is the GenBank assembly GCA_902544985.1. The GC content of the type genome is 29.21 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter desorilega sp. nov.

Candidatus Pelagibacter desorilega (NL. fem. n. *desorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902519695*. The type genome for the species is the GenBank assembly GCA_902519695.1. The GC content of the type genome is 29.68 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter detesastra sp. nov.

Candidatus Pelagibacter detesastra (NL. fem. n. *detesastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653625*. The type genome for the species is the GenBank assembly GCA_014653625.1. The GC content of the type genome is 28.45 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter detesibra sp. nov.

Candidatus Pelagibacter detesibra (NL. fem. n. *detesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902558205*. The type genome for the species is the GenBank assembly GCA_902558205.1. The GC content of the type genome is 29.29 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Pelagibacter detorentia sp. nov.

Candidatus Pelagibacter detorentia (NL. fem. n. *detorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp000299095*. The type genome for the species is the GenBank assembly RS_GCF_000299095.1. The GC content of the type genome is 28.63 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Pelagibacter detoritura sp. nov.

Candidatus Pelagibacter detoritura (NL. fem. n. *detoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902541745*. The type genome for the species is the GenBank assembly GCA_902532515.1. The GC content of the type genome is 29.12 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter detosicella sp. nov.

Candidatus Pelagibacter detosicella (NL. fem. n. *detosicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594255*. The type genome for the species is the GenBank assembly GCA_902594255.1. The GC content of the type genome is 29.52 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter detumastra sp. nov.

Candidatus Pelagibacter detumastra (NL. fem. n. *detumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902628495*. The type genome for the species is the GenBank assembly GCA_902628495.1. The GC content of the type genome is 28.94 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter detumisca sp. nov.

Candidatus Pelagibacter detumisca (NL. fem. n. *detumisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902634775*. The type genome for the species is the GenBank assembly GCA_902634775.1. The GC content of the type genome is 29.87 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter dicanax sp. nov.

Candidatus Pelagibacter dicanax (NL. fem. n. *dicanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604575*. The type genome for the species is the GenBank assembly GCA_902604575.1. The GC content of the type genome is 29.31 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter dicibatio sp. nov.

Candidatus Pelagibacter dicibatio (NL. fem. n. *dicibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902603555*. The type genome for the species is the GenBank assembly GCA_902603555.1. The GC content of the type genome is 28.4 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter dicimitica sp. nov.

Candidatus Pelagibacter dicimitica (NL. fem. n. *dicimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902587095*. The type genome for the species is the GenBank assembly GCA_902587095.1. The GC content of the type genome is 28.91 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter didacitia sp. nov.

Candidatus Pelagibacter didacitia (NL. fem. n. *didacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902519945*. The type genome for the species is the GenBank assembly GCA_902519945.1. The GC content of the type genome is 29.4 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter dilacilenta sp. nov.

Candidatus Pelagibacter dilacilenta (NL. fem. n. *dilacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597675*. The type genome for the species is the GenBank assembly GCA_902580835.1. The GC content of the type genome is 29.76 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter dilacivita sp. nov.

Candidatus Pelagibacter dilacivita (NL. fem. n. *dilacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902554765*. The type genome for the species is the GenBank assembly GCA_902554765.1. The GC content of the type genome is 28.74 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter dileciforma sp. nov.

Candidatus Pelagibacter dileciforma (NL. fem. n. *dileciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902573585*. The type genome for the species is the GenBank assembly GCA_902573585.1. The GC content of the type genome is 28.78 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter dilibicella sp. nov.

Candidatus Pelagibacter dilibicella (NL. fem. n. *dilibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902517615*. The type genome for the species is the GenBank assembly GCA_902517615.1. The GC content of the type genome is 29.15 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Pelagibacter dilicatica sp. nov.

Candidatus Pelagibacter dilicatica (NL. fem. n. *dilicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902571135*. The type genome for the species is the GenBank assembly GCA_902571135.1. The GC content of the type genome is 29.28 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter diluvitas sp. nov.

Candidatus Pelagibacter diluvitas (NL. fem. n. *diluvitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902636025*. The type genome for the species is the GenBank assembly GCA_902547155.1. The GC content of the type genome is 29.54 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter dimacifica sp. nov.

Candidatus Pelagibacter dimacifica (NL. fem. n. *dimacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604265*. The type genome for the species is the GenBank assembly GCA_902604265.1. The GC content of the type genome is 28.05 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter dimacousia sp. nov.

Candidatus Pelagibacter dimacousia (NL. fem. n. *dimacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003213015*. The type genome for the species is the GenBank assembly GCA_003213015.1. The GC content of the type genome is 29.49 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter dinupitoga sp. nov.

Candidatus Pelagibacter dinupitoga (NL. fem. n. *dinupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902605605*. The type genome for the species is the GenBank assembly GCA_902605605.1. The GC content of the type genome is 29.62 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter diponentia sp. nov.

Candidatus Pelagibacter diponentia (NL. fem. n. *diponentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902614975*. The type genome for the species is the GenBank assembly GCA_902614975.1. The GC content of the type genome is 29.36 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter diponiforma sp. nov.

Candidatus Pelagibacter diponiforma (NL. fem. n. *diponiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902590365*. The type genome for the species is the GenBank assembly GCA_902590365.1. The GC content of the type genome is 28.29 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter direpago sp. nov.

Candidatus Pelagibacter direpago (NL. fem. n. *direpago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524345*. The type genome for the species is the GenBank assembly GCA_902542605.1. The GC content of the type genome is 29.55 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter direpatica sp. nov.

Candidatus Pelagibacter direpatica (NL. fem. n. *direpatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902555465*. The type genome for the species is the GenBank assembly GCA_902577975.1. The GC content of the type genome is 28.75 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter direpisca sp. nov.

Candidatus Pelagibacter direpisca (NL. fem. n. *direpisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653535*. The type genome for the species is the GenBank assembly GCA_014653535.1. The GC content of the type genome is 28.9 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter diritentia sp. nov.

Candidatus Pelagibacter diritentia (NL. fem. n. *diritentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902534735*. The type genome for the species is the GenBank assembly GCA_902623855.1. The GC content of the type genome is 29.46 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Pelagibacter diriticella sp. nov.

Candidatus Pelagibacter diriticella (NL. fem. n. *diriticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902599485*. The type genome for the species is the GenBank assembly GCA_902599485.1. The GC content of the type genome is 29.5 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter diritisca sp. nov.

Candidatus Pelagibacter diritisca (NL. fem. n. *diritisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902623785*. The type genome for the species is the GenBank assembly GCA_902623785.1. The GC content of the type genome is 29.72 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter divolitica sp. nov.

Candidatus Pelagibacter divolitica (NL. fem. n. *divolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp002732835*. The type genome for the species is the GenBank assembly GCA_002732835.1. The GC content of the type genome is 30.03 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter divorousia sp. nov.

Candidatus Pelagibacter divorousia (NL. fem. n. *divorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902606105*. The type genome for the species is the GenBank assembly GCA_902606105.1. The GC content of the type genome is 29.68 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter docibitio sp. nov.

Candidatus Pelagibacter docibitio (NL. fem. n. *docibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902521075*. The type genome for the species is the GenBank assembly GCA_902521075.1. The GC content of the type genome is 29.42 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter domabitudo sp. nov.

Candidatus Pelagibacter domabitudo (NL. fem. n. *domabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902558435*. The type genome for the species is the GenBank assembly GCA_902558435.1. The GC content of the type genome is 29.29 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Pelagibacter domicimonia sp. nov.

Candidatus Pelagibacter domicimonia (NL. fem. n. *domicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902572515*. The type genome for the species is the GenBank assembly GCA_902572515.1. The GC content of the type genome is 29.3 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Pelagibacter domipatio sp. nov.

Candidatus Pelagibacter domipatio (NL. fem. n. *domipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902558705*. The type genome for the species is the GenBank assembly GCA_902525025.1. The GC content of the type genome is 29.33 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter doxolitas sp. nov.

Candidatus Pelagibacter doxolitas (NL. fem. n. *doxolitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902543405*. The type genome for the species is the GenBank assembly GCA_902543405.1. The GC content of the type genome is 29.51 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Pelagibacter ducilitica sp. nov.

Candidatus Pelagibacter ducilitica (NL. fem. n. *ducilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902603625*. The type genome for the species is the GenBank assembly GCA_902603625.1. The GC content of the type genome is 28.89 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter duponessa sp. nov.

Candidatus Pelagibacter duponessa (NL. fem. n. *duponessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902546765*. The type genome for the species is the GenBank assembly GCA_902579025.1. The GC content of the type genome is 29.65 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter dupunitudo sp. nov.

Candidatus Pelagibacter dupunitudo (NL. fem. n. *dupunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003216255*. The type genome for the species is the GenBank assembly GCA_003209635.1. The GC content of the type genome is 28.29 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter eccilatica sp. nov.

Candidatus Pelagibacter eccilatica (NL. fem. n. *eccilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902518595*. The type genome for the species is the GenBank assembly GCA_902518595.1. The GC content of the type genome is 28.79 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Pelagibacter ecfacitia sp. nov.

Candidatus Pelagibacter ecfacitia (NL. fem. n. *ecfacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902613755*. The type genome for the species is the GenBank assembly GCA_902613755.1. The GC content of the type genome is 29.19 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Pelagibacter echogentia sp. nov.

Candidatus Pelagibacter echogentia (NL. fem. n. *echogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902551445*. The type genome for the species is the GenBank assembly GCA_902551445.1. The GC content of the type genome is 28.86 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter echogimonia sp. nov.

Candidatus Pelagibacter echogimonia (NL. fem. n. *echogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902538525*. The type genome for the species is the GenBank assembly GCA_902538525.1. The GC content of the type genome is 29.06 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter echogousia sp. nov.

Candidatus Pelagibacter echogousia (NL. fem. n. *echogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902620265*. The type genome for the species is the GenBank assembly GCA_902620265.1. The GC content of the type genome is 29.11 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter ectenax sp. nov.

Candidatus Pelagibacter ectenax (NL. fem. n. *ectenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902603475*. The type genome for the species is the GenBank assembly GCA_902603475.1. The GC content of the type genome is 29.62 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter edulcibula sp. nov.

Candidatus Pelagibacter edulcibula (NL. fem. n. *edulcibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524535*. The type genome for the species is the GenBank assembly GCA_902524535.1. The GC content of the type genome is 29.42 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter edulcitas sp. nov.

Candidatus Pelagibacter edulcitas (NL. fem. n. *edulcitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902572155*. The type genome for the species is the GenBank assembly GCA_902572155.1. The GC content of the type genome is 29.06 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter effemessa sp. nov.

Candidatus Pelagibacter effemessa (NL. fem. n. *effemessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902566775*. The type genome for the species is the GenBank assembly GCA_902566775.1. The GC content of the type genome is 28.69 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter effemicella sp. nov.

Candidatus Pelagibacter effemicella (NL. fem. n. *effemicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902583635*. The type genome for the species is the GenBank assembly GCA_902583635.1. The GC content of the type genome is 29.37 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter effigedo sp. nov.

Candidatus Pelagibacter effigedo (NL. fem. n. *effigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902581695*. The type genome for the species is the GenBank assembly GCA_902581695.1. The GC content of the type genome is 29.28 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter egritiforma sp. nov.

Candidatus Pelagibacter egritiforma (NL. fem. n. *egritiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902633535*. The type genome for the species is the GenBank assembly GCA_902633535.1. The GC content of the type genome is 28.85 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Pelagibacter ellipax sp. nov.

Candidatus Pelagibacter ellipax (NL. fem. n. *ellipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp013204495*. The type genome for the species is the GenBank assembly GCA_013204495.1. The GC content of the type genome is 30.19 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pelagibacter emancago sp. nov.

Candidatus Pelagibacter emancago (NL. fem. n. *emancago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902515175*. The type genome for the species is the GenBank assembly GCA_902515175.1. The GC content of the type genome is 29.66 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Pelagibacter emancentia sp. nov.

Candidatus Pelagibacter emancentia (NL. fem. n. *emancentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902566755*. The type genome for the species is the GenBank assembly GCA_902566755.1. The GC content of the type genome is 29.7 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter encenilega sp. nov.

Candidatus Pelagibacter encenilega (NL. fem. n. *encenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902606115*. The type genome for the species is the GenBank assembly GCA_902606115.1. The GC content of the type genome is 29.03 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter encolago sp. nov.

Candidatus Pelagibacter encolago (NL. fem. n. *encolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902614125*. The type genome for the species is the GenBank assembly GCA_902614125.1. The GC content of the type genome is 29.64 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter endivedo sp. nov.

Candidatus Pelagibacter endivedo (NL. fem. n. *endivedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902567765*. The type genome for the species is the GenBank assembly GCA_902567765.1. The GC content of the type genome is 29.15 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter endivibra sp. nov.

Candidatus Pelagibacter endivibra (NL. fem. n. *endivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp002692475*. The type genome for the species is the GenBank assembly GCA_002692475.1. The GC content of the type genome is 29.54 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter endivibula sp. nov.

Candidatus Pelagibacter endivibula (NL. fem. n. *endivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902634275*. The type genome for the species is the GenBank assembly GCA_902634275.1. The GC content of the type genome is 28.52 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter endivitia sp. nov.

Candidatus Pelagibacter endivitia (NL. fem. n. *endivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592285*. The type genome for the species is the GenBank assembly GCA_902592285.1. The GC content of the type genome is 28.76 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter energatica sp. nov.

Candidatus Pelagibacter energatica (NL. fem. n. *energatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902582845*. The type genome for the species is the GenBank assembly GCA_902582845.1. The GC content of the type genome is 29.47 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter enimvimonia sp. nov.

Candidatus Pelagibacter enimvimonia (NL. fem. n. *enimvimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595115*. The type genome for the species is the GenBank assembly GCA_902595115.1. The GC content of the type genome is 29.12 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter ensicibula sp. nov.

Candidatus Pelagibacter ensicibula (NL. fem. n. *ensicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604795*. The type genome for the species is the GenBank assembly GCA_902604795.1. The GC content of the type genome is 29.24 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter ensifisca sp. nov.

Candidatus Pelagibacter ensifisca (NL. fem. n. *ensifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902538915*. The type genome for the species is the GenBank assembly GCA_902538915.1. The GC content of the type genome is 29.41 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter ephipitio sp. nov.

Candidatus Pelagibacter ephipitio (NL. fem. n. *ephipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp002101315*. The type genome for the species is the GenBank assembly RS_GCF_002101315.1. The GC content of the type genome is 29.21 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter episcitica sp. nov.

Candidatus Pelagibacter episcitica (NL. fem. n. *episcitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560225*. The type genome for the species is the GenBank assembly GCA_902560225.1. The GC content of the type genome is 28.93 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter epitrifica sp. nov.

Candidatus Pelagibacter epitrifica (NL. fem. n. *epitrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902603305*. The type genome for the species is the GenBank assembly GCA_902603305.1. The GC content of the type genome is 29.63 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Pelagibacter errabivita sp. nov.

Candidatus Pelagibacter errabivita (NL. fem. n. *errabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902533775*. The type genome for the species is the GenBank assembly GCA_902533775.1. The GC content of the type genome is 29.38 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter eviscigena sp. nov.

Candidatus Pelagibacter eviscigena (NL. fem. n. *eviscigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902587735*. The type genome for the species is the GenBank assembly GCA_902587735.1. The GC content of the type genome is 28.17 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter exaspitas sp. nov.

Candidatus Pelagibacter exaspitas (NL. fem. n. *exaspitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902551985*. The type genome for the species is the GenBank assembly GCA_902551985.1. The GC content of the type genome is 29.52 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Pelagibacter excomedo sp. nov.

Candidatus Pelagibacter excomedo (NL. fem. n. *excomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604605*. The type genome for the species is the GenBank assembly GCA_902604605.1. The GC content of the type genome is 28.61 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter excomimonas sp. nov.

Candidatus Pelagibacter excomimonas (NL. fem. n. *excomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902628305*. The type genome for the species is the GenBank assembly GCA_902628305.1. The GC content of the type genome is 29.71 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter excucitia sp. nov.

Candidatus Pelagibacter excucitia (NL. fem. n. *excucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902558225*. The type genome for the species is the GenBank assembly GCA_902558225.1. The GC content of the type genome is 29.34 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter excucivita sp. nov.

Candidatus Pelagibacter excucivita (NL. fem. n. *excucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524995*. The type genome for the species is the GenBank assembly GCA_902524995.1. The GC content of the type genome is 29.37 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter exentigena sp. nov.

Candidatus Pelagibacter exentigena (NL. fem. n. *exentigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902546145*. The type genome for the species is the GenBank assembly GCA_902546145.1. The GC content of the type genome is 29.56 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter exhilibra sp. nov.

Candidatus Pelagibacter exhilibra (NL. fem. n. *exhilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902531885*. The type genome for the species is the GenBank assembly GCA_902531885.1. The GC content of the type genome is 28.51 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter exhilicella sp. nov.

Candidatus Pelagibacter exhilicella (NL. fem. n. *exhilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902556825*. The type genome for the species is the GenBank assembly GCA_902556825.1. The GC content of the type genome is 28.5 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Pelagibacter exhilitoga sp. nov.

Candidatus Pelagibacter exhilitoga (NL. fem. n. *exhilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902591845*. The type genome for the species is the GenBank assembly GCA_902591845.1. The GC content of the type genome is 29.37 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter exhorivita sp. nov.

Candidatus Pelagibacter exhorivita (NL. fem. n. *exhorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902600855*. The type genome for the species is the GenBank assembly GCA_902600855.1. The GC content of the type genome is 29.07 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter expasax sp. nov.

Candidatus Pelagibacter expasax (NL. fem. n. *expasax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594395*. The type genome for the species is the GenBank assembly GCA_902594395.1. The GC content of the type genome is 29.46 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Pelagibacter expisedo sp. nov.

Candidatus Pelagibacter expisedo (NL. fem. n. *expisedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902513415*. The type genome for the species is the GenBank assembly GCA_902513415.1. The GC content of the type genome is 28.09 % and the genome length is 0.48 Mbp.

Description of *Candidatus* Pelagibacter exsatisca sp. nov.

Candidatus Pelagibacter exsatisca (NL. fem. n. *exsatisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902551215*. The type genome for the species is the GenBank assembly GCA_902551215.1. The GC content of the type genome is 28.24 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter exsisiforma sp. nov.

Candidatus Pelagibacter exsisiforma (NL. fem. n. *exsisiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902627935*. The type genome for the species is the GenBank assembly GCA_902627935.1. The GC content of the type genome is 29.08 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter exsisitio sp. nov.

Candidatus Pelagibacter exsisitio (NL. fem. n. *exsisitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902539035*. The type genome for the species is the GenBank assembly GCA_902539035.1. The GC content of the type genome is 29.83 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter exsolitura sp. nov.

Candidatus Pelagibacter exsolitura (NL. fem. n. *exsolitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902635515*. The type genome for the species is the GenBank assembly GCA_902635515.1. The GC content of the type genome is 29.3 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter extinitia sp. nov.

Candidatus Pelagibacter extinitia (NL. fem. n. *extinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902602575*. The type genome for the species is the GenBank assembly GCA_902602575.1. The GC content of the type genome is 29.89 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Pelagibacter extorilenta sp. nov.

Candidatus Pelagibacter extorilenta (NL. fem. n. *extorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597215*. The type genome for the species is the GenBank assembly GCA_902597215.1. The GC content of the type genome is 28.7 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Pelagibacter exturiforma sp. nov.

Candidatus Pelagibacter exturiforma (NL. fem. n. *exturiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902624515*. The type genome for the species is the GenBank assembly GCA_902624515.1. The GC content of the type genome is 28.75 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter famelilega sp. nov.

Candidatus Pelagibacter famelilega (NL. fem. n. *famelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902520685*. The type genome for the species is the GenBank assembly GCA_902520685.1. The GC content of the type genome is 29.05 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter famelitudo sp. nov.

Candidatus Pelagibacter famelitudo (NL. fem. n. *famelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902529645*. The type genome for the species is the GenBank assembly GCA_902529645.1. The GC content of the type genome is 29.21 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Pelagibacter faticitura sp. nov.

Candidatus Pelagibacter faticitura (NL. fem. n. *faticitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902522115*. The type genome for the species is the GenBank assembly GCA_902528895.1. The GC content of the type genome is 29.81 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter fatilitio sp. nov.

Candidatus Pelagibacter fatilitio (NL. fem. n. *fatilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902569055*. The type genome for the species is the GenBank assembly GCA_902619645.1. The GC content of the type genome is 27.88 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter favilibra sp. nov.

Candidatus Pelagibacter favilibra (NL. fem. n. *favilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902520645*. The type genome for the species is the GenBank assembly GCA_902520645.1. The GC content of the type genome is 29.84 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter favilugo sp. nov.

Candidatus Pelagibacter favilugo (NL. fem. n. *favilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902547535*. The type genome for the species is the GenBank assembly GCA_902561315.1. The GC content of the type genome is 29.93 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Pelagibacter feculax sp. nov.

Candidatus Pelagibacter feculax (NL. fem. n. *feculax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902552035*. The type genome for the species is the GenBank assembly GCA_902540115.1. The GC content of the type genome is 29.03 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter fecunibra sp. nov.

Candidatus Pelagibacter fecunibra (NL. fem. n. *fecunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597865*. The type genome for the species is the GenBank assembly GCA_902597865.1. The GC content of the type genome is 29.7 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter fedititia sp. nov.

Candidatus Pelagibacter fedititia (NL. fem. n. *fedititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902516625*. The type genome for the species is the GenBank assembly GCA_902516625.1. The GC content of the type genome is 29.63 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter fefeligena sp. nov.

Candidatus Pelagibacter fefeligena (NL. fem. n. *fefeligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560075*. The type genome for the species is the GenBank assembly GCA_902560075.1. The GC content of the type genome is 29.06 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter fefelimonas sp. nov.

Candidatus Pelagibacter fefelimonas (NL. fem. n. *fefelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902584685*. The type genome for the species is the GenBank assembly GCA_902584685.1. The GC content of the type genome is 29.7 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter fefelitas sp. nov.

Candidatus Pelagibacter fefelitas (NL. fem. n. *fefelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653605*. The type genome for the species is the GenBank assembly GCA_014653605.1. The GC content of the type genome is 28.81 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter fefelitica sp. nov.

Candidatus Pelagibacter fefelitica (NL. fem. n. *fefelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902622245*. The type genome for the species is the GenBank assembly GCA_902622245.1. The GC content of the type genome is 29.14 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Pelagibacter feficimonia sp. nov.

Candidatus Pelagibacter feficimonia (NL. fem. n. *feficimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902628635*. The type genome for the species is the GenBank assembly GCA_902628635.1. The GC content of the type genome is 29.06 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter femelastra sp. nov.

Candidatus Pelagibacter femelastra (NL. fem. n. *femelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902589345*. The type genome for the species is the GenBank assembly GCA_902582915.1. The GC content of the type genome is 28.54 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter femelimonas sp. nov.

Candidatus Pelagibacter femelimonas (NL. fem. n. *femelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902561765*. The type genome for the species is the GenBank assembly GCA_902569655.1. The GC content of the type genome is 29.32 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter fibicastra sp. nov.

Candidatus Pelagibacter fibicastra (NL. fem. n. *fibicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902538495*. The type genome for the species is the GenBank assembly GCA_902600515.1. The GC content of the type genome is 29.71 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter ficedifica sp. nov.

Candidatus Pelagibacter ficedifica (NL. fem. n. *ficedifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596185*. The type genome for the species is the GenBank assembly GCA_902596185.1. The GC content of the type genome is 29.53 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter fidenibula sp. nov.

Candidatus Pelagibacter fidenibula (NL. fem. n. *fidenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902590295*. The type genome for the species is the GenBank assembly GCA_902590295.1. The GC content of the type genome is 29.48 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Pelagibacter fiducastra sp. nov.

Candidatus Pelagibacter fiducastra (NL. fem. n. *fiducastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902594825*. The type genome for the species is the GenBank assembly GCA_902594825.1. The GC content of the type genome is 28.9 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter fiducimonia sp. nov.

Candidatus Pelagibacter fiducimonia (NL. fem. n. *fiducimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902561075*. The type genome for the species is the GenBank assembly GCA_902561075.1. The GC content of the type genome is 28.72 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter figilimonas sp. nov.

Candidatus Pelagibacter figilimonas (NL. fem. n. *figilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902563555*. The type genome for the species is the GenBank assembly GCA_902563555.1. The GC content of the type genome is 29.64 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter forinitica sp. nov.

Candidatus Pelagibacter forinitica (NL. fem. n. *forinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902633125*. The type genome for the species is the GenBank assembly GCA_902536225.1. The GC content of the type genome is 29.56 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter fraglibula sp. nov.

Candidatus Pelagibacter fraglibula (NL. fem. n. *fraglibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902525935*. The type genome for the species is the GenBank assembly GCA_902525935.1. The GC content of the type genome is 29.23 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter fragliforma sp. nov.

Candidatus Pelagibacter fragliforma (NL. fem. n. *fragliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902543535*. The type genome for the species is the GenBank assembly GCA_902543535.1. The GC content of the type genome is 29.46 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter fragmastra sp. nov.

Candidatus Pelagibacter fragmastra (NL. fem. n. *fragmastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902569725*. The type genome for the species is the GenBank assembly GCA_902569725.1. The GC content of the type genome is 28.54 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter fragmibula sp. nov.

Candidatus Pelagibacter fragmibula (NL. fem. n. *fragmibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902523495*. The type genome for the species is the GenBank assembly GCA_902523495.1. The GC content of the type genome is 29.71 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter fuligivita sp. nov.

Candidatus Pelagibacter fuligivita (NL. fem. n. *fuligivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902570505*. The type genome for the species is the GenBank assembly GCA_902570505.1. The GC content of the type genome is 28.64 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter fumaciforma sp. nov.

Candidatus Pelagibacter fumaciforma (NL. fem. n. *fumaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604785*. The type genome for the species is the GenBank assembly GCA_902604785.1. The GC content of the type genome is 28.45 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter fumacigena sp. nov.

Candidatus Pelagibacter fumacigena (NL. fem. n. *fumacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902623075*. The type genome for the species is the GenBank assembly GCA_902623075.1. The GC content of the type genome is 29.36 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pelagibacter fumifousia sp. nov.

Candidatus Pelagibacter fumifousia (NL. fem. n. *fumifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902543485*. The type genome for the species is the GenBank assembly GCA_902543485.1. The GC content of the type genome is 29.13 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Pelagibacter funebitio sp. nov.

Candidatus Pelagibacter funebitio (NL. fem. n. *funebitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902526595*. The type genome for the species is the GenBank assembly GCA_902526595.1. The GC content of the type genome is 29.57 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter furibimonia sp. nov.

Candidatus Pelagibacter furibimonia (NL. fem. n. *furibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902597055*. The type genome for the species is the GenBank assembly GCA_902597055.1. The GC content of the type genome is 29.75 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter futatifica sp. nov.

Candidatus Pelagibacter futatifica (NL. fem. n. *futatifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902578255*. The type genome for the species is the GenBank assembly GCA_902578255.1. The GC content of the type genome is 29.65 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter galacitura sp. nov.

Candidatus Pelagibacter galacitura (NL. fem. n. *galacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902525355*. The type genome for the species is the GenBank assembly GCA_902525355.1. The GC content of the type genome is 29.34 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter gasificula sp. nov.

Candidatus Pelagibacter gasificula (NL. fem. n. *gasificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902616245*. The type genome for the species is the GenBank assembly GCA_902519015.1. The GC content of the type genome is 29.18 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter gasomilenta sp. nov.

Candidatus Pelagibacter gasomilenta (NL. fem. n. *gasomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003213215*. The type genome for the species is the GenBank assembly GCA_902550995.1. The GC content of the type genome is 29.53 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Pelagibacter gemebago sp. nov.

Candidatus Pelagibacter gemebago (NL. fem. n. *gemebago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902558545*. The type genome for the species is the GenBank assembly GCA_902558545.1. The GC content of the type genome is 29.5 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter gemebitura sp. nov.

Candidatus Pelagibacter gemebitura (NL. fem. n. *gemebitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902617645*. The type genome for the species is the GenBank assembly GCA_902617645.1. The GC content of the type genome is 29.2 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter genufitica sp. nov.

Candidatus Pelagibacter genufitica (NL. fem. n. *genufitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902600205*. The type genome for the species is the GenBank assembly GCA_902600205.1. The GC content of the type genome is 29.4 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter grallibula sp. nov.

Candidatus Pelagibacter grallibula (NL. fem. n. *grallibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902528575*. The type genome for the species is the GenBank assembly GCA_902528575.1. The GC content of the type genome is 29.53 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter grallitoga sp. nov.

Candidatus Pelagibacter grallitoga (NL. fem. n. *grallitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003282055*. The type genome for the species is the GenBank assembly GCA_003282055.1. The GC content of the type genome is 29.36 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Pelagibacter halucentia sp. nov.

Candidatus Pelagibacter halucentia (NL. fem. n. *halucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902576395*. The type genome for the species is the GenBank assembly GCA_902576395.1. The GC content of the type genome is 29.53 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter halucimonas sp. nov.

Candidatus Pelagibacter halucimonas (NL. fem. n. *halucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902617825*. The type genome for the species is the GenBank assembly GCA_902617825.1. The GC content of the type genome is 29.8 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Pelagibacter halucisca sp. nov.

Candidatus Pelagibacter halucisca (NL. fem. n. *halucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902574705*. The type genome for the species is the GenBank assembly GCA_902574705.1. The GC content of the type genome is 29.05 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter hegumilenta sp. nov.

Candidatus Pelagibacter hegumilenta (NL. fem. n. *hegumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902596515*. The type genome for the species is the GenBank assembly GCA_902551505.1. The GC content of the type genome is 29.59 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter hemidilega sp. nov.

Candidatus Pelagibacter hemidilega (NL. fem. n. *hemidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003210075*. The type genome for the species is the GenBank assembly GCA_902577415.1. The GC content of the type genome is 28.77 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter hemidugo sp. nov.

Candidatus Pelagibacter hemidugo (NL. fem. n. *hemidugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902553675*. The type genome for the species is the GenBank assembly GCA_902553675.1. The GC content of the type genome is 29.5 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter hemitisca sp. nov.

Candidatus Pelagibacter hemitisca (NL. fem. n. *hemitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592265*. The type genome for the species is the GenBank assembly GCA_902592265.1. The GC content of the type genome is 29.31 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter hexapifica sp. nov.

Candidatus Pelagibacter hexapifica (NL. fem. n. *hexapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604525*. The type genome for the species is the GenBank assembly GCA_902604525.1. The GC content of the type genome is 29.88 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter hibisago sp. nov.

Candidatus Pelagibacter hibisago (NL. fem. n. *hibisago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902518835*. The type genome for the species is the GenBank assembly GCA_902518835.1. The GC content of the type genome is 28.96 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter hibisiforma sp. nov.

Candidatus Pelagibacter hibisiforma (NL. fem. n. *hibisiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902620465*. The type genome for the species is the GenBank assembly GCA_902635745.1. The GC content of the type genome is 29.22 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter hirunifica sp. nov.

Candidatus Pelagibacter hirunifica (NL. fem. n. *hirunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902552755*. The type genome for the species is the GenBank assembly GCA_902552755.1. The GC content of the type genome is 29.29 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter hirunisca sp. nov.

Candidatus Pelagibacter hirunisca (NL. fem. n. *hirunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902526645*. The type genome for the species is the GenBank assembly GCA_902596395.1. The GC content of the type genome is 28.79 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter homicago sp. nov.

Candidatus Pelagibacter homicago (NL. fem. n. *homicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594605*. The type genome for the species is the GenBank assembly GCA_902594605.1. The GC content of the type genome is 29.89 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter homiledo sp. nov.

Candidatus Pelagibacter homiledo (NL. fem. n. *homiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902539145*. The type genome for the species is the GenBank assembly GCA_902539145.1. The GC content of the type genome is 29.61 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Pelagibacter homilitura sp. nov.

Candidatus Pelagibacter homilitura (NL. fem. n. *homilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902616725*. The type genome for the species is the GenBank assembly GCA_902541925.1. The GC content of the type genome is 29.74 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter homogitio sp. nov.

Candidatus Pelagibacter homogitio (NL. fem. n. *homogitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560815*. The type genome for the species is the GenBank assembly GCA_902560815.1. The GC content of the type genome is 28.33 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter homolifica sp. nov.

Candidatus Pelagibacter homolifica (NL. fem. n. *homolifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp003214525*. The type genome for the species is the GenBank assembly GCA_902569805.1. The GC content of the type genome is 28.68 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter homulilenta sp. nov.

Candidatus Pelagibacter homulilenta (NL. fem. n. *homulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902582385*. The type genome for the species is the GenBank assembly GCA_902582385.1. The GC content of the type genome is 28.56 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter homuniforma sp. nov.

Candidatus Pelagibacter homuniforma (NL. fem. n. *homuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902545405*. The type genome for the species is the GenBank assembly GCA_902545405.1. The GC content of the type genome is 29.51 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter idcirastra sp. nov.

Candidatus Pelagibacter idcirastra (NL. fem. n. *idcirastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902624465*. The type genome for the species is the GenBank assembly GCA_902624465.1. The GC content of the type genome is 29.3 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter idipsitoga sp. nov.

Candidatus Pelagibacter idipsitoga (NL. fem. n. *idipsitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902574695*. The type genome for the species is the GenBank assembly GCA_902574695.1. The GC content of the type genome is 29.08 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter ignifessa sp. nov.

Candidatus Pelagibacter ignifessa (NL. fem. n. *ignifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592875*. The type genome for the species is the GenBank assembly GCA_902592875.1. The GC content of the type genome is 30.82 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter ignifisca sp. nov.

Candidatus Pelagibacter ignifisca (NL. fem. n. *ignifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902556285*. The type genome for the species is the GenBank assembly GCA_902556285.1. The GC content of the type genome is 29.67 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter ignipatio sp. nov.

Candidatus Pelagibacter ignipatio (NL. fem. n. *ignipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902635545*. The type genome for the species is the GenBank assembly GCA_902635545.1. The GC content of the type genome is 28.4 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter ignomatica sp. nov.

Candidatus Pelagibacter ignomatica (NL. fem. n. *ignomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592325*. The type genome for the species is the GenBank assembly GCA_902592325.1. The GC content of the type genome is 28.56 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter ignosastra sp. nov.

Candidatus Pelagibacter ignosastra (NL. fem. n. *ignosastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902570425*. The type genome for the species is the GenBank assembly GCA_902570425.1. The GC content of the type genome is 28.79 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter ignosetta sp. nov.

Candidatus Pelagibacter ignosetta (NL. fem. n. *ignosetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595815*. The type genome for the species is the GenBank assembly GCA_902595815.1. The GC content of the type genome is 29.4 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter illapousia sp. nov.

Candidatus Pelagibacter illapousia (NL. fem. n. *illapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902577875*. The type genome for the species is the GenBank assembly GCA_902577875.1. The GC content of the type genome is 29.2 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter illepilenta sp. nov.

Candidatus Pelagibacter illepilenta (NL. fem. n. *illepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902535275*. The type genome for the species is the GenBank assembly GCA_902535275.1. The GC content of the type genome is 29.51 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter illunitas sp. nov.

Candidatus Pelagibacter illunitas (NL. fem. n. *illunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902627745*. The type genome for the species is the GenBank assembly GCA_902627745.1. The GC content of the type genome is 29.55 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter imbecitica sp. nov.

Candidatus Pelagibacter imbecitica (NL. fem. n. *imbecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902566365*. The type genome for the species is the GenBank assembly GCA_902566365.1. The GC content of the type genome is 28.85 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter immacimonas sp. nov.

Candidatus Pelagibacter immacimonas (NL. fem. n. *immacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902518235*. The type genome for the species is the GenBank assembly GCA_902518235.1. The GC content of the type genome is 29.86 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter immacitas sp. nov.

Candidatus Pelagibacter immacitas (NL. fem. n. *immacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902563435*. The type genome for the species is the GenBank assembly GCA_902563435.1. The GC content of the type genome is 29.81 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter immacitoga sp. nov.

Candidatus Pelagibacter immacitoga (NL. fem. n. *immacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571955*. The type genome for the species is the GenBank assembly GCA_902571955.1. The GC content of the type genome is 29.19 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter immigicula sp. nov.

Candidatus Pelagibacter immigicula (NL. fem. n. *immigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902600245*. The type genome for the species is the GenBank assembly GCA_902600245.1. The GC content of the type genome is 29.41 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter impacago sp. nov.

Candidatus Pelagibacter impacago (NL. fem. n. *impacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902627735*. The type genome for the species is the GenBank assembly GCA_902627735.1. The GC content of the type genome is 28.45 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter impavitudo sp. nov.

Candidatus Pelagibacter impavitudo (NL. fem. n. *impavitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902582735*. The type genome for the species is the GenBank assembly GCA_902582735.1. The GC content of the type genome is 29.61 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter impilibra sp. nov.

Candidatus Pelagibacter impilibra (NL. fem. n. *impilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902554745*. The type genome for the species is the GenBank assembly GCA_902554745.1. The GC content of the type genome is 29.5 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter impiressa sp. nov.

Candidatus Pelagibacter impiressa (NL. fem. n. *impiressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604035*. The type genome for the species is the GenBank assembly GCA_902604035.1. The GC content of the type genome is 29.85 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter impugago sp. nov.

Candidatus Pelagibacter impugago (NL. fem. n. *impugago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902566315*. The type genome for the species is the GenBank assembly GCA_902566315.1. The GC content of the type genome is 29.7 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter inabrisca sp. nov.

Candidatus Pelagibacter inabrisca (NL. fem. n. *inabrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902583075*. The type genome for the species is the GenBank assembly GCA_902583075.1. The GC content of the type genome is 29.39 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Pelagibacter inabsitoga sp. nov.

Candidatus Pelagibacter inabsitoga (NL. fem. n. *inabsitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902546085*. The type genome for the species is the GenBank assembly GCA_902546085.1. The GC content of the type genome is 29.19 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter inacciforma sp. nov.

Candidatus Pelagibacter inacciforma (NL. fem. n. *inacciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902556265*. The type genome for the species is the GenBank assembly GCA_902556265.1. The GC content of the type genome is 28.72 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter inbelitas sp. nov.

Candidatus Pelagibacter inbelitas (NL. fem. n. *inbelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902587755*. The type genome for the species is the GenBank assembly GCA_902587755.1. The GC content of the type genome is 29.01 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Pelagibacter incesax sp. nov.

Candidatus Pelagibacter incesax (NL. fem. n. *incesax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902547785*. The type genome for the species is the GenBank assembly GCA_902547785.1. The GC content of the type genome is 29.24 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter inconilega sp. nov.

Candidatus Pelagibacter inconilega (NL. fem. n. *inconilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902564385*. The type genome for the species is the GenBank assembly GCA_902564385.1. The GC content of the type genome is 29.4 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter indevigena sp. nov.

Candidatus Pelagibacter indevigena (NL. fem. n. *indevigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902537575*. The type genome for the species is the GenBank assembly GCA_902537575.1. The GC content of the type genome is 29.71 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter indilax sp. nov.

Candidatus Pelagibacter indilax (NL. fem. n. *indilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902510635*. The type genome for the species is the GenBank assembly GCA_902510635.1. The GC content of the type genome is 28.29 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter indipitica sp. nov.

Candidatus Pelagibacter indipitica (NL. fem. n. *indipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902522385*. The type genome for the species is the GenBank assembly GCA_902522385.1. The GC content of the type genome is 29.23 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter indupax sp. nov.

Candidatus Pelagibacter indupax (NL. fem. n. *indupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902514745*. The type genome for the species is the GenBank assembly GCA_902514745.1. The GC content of the type genome is 29.56 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter inergitoga sp. nov.

Candidatus Pelagibacter inergitoga (NL. fem. n. *inergitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902559605*. The type genome for the species is the GenBank assembly GCA_902559605.1. The GC content of the type genome is 29.47 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter infacugo sp. nov.

Candidatus Pelagibacter infacugo (NL. fem. n. *infacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902520695*. The type genome for the species is the GenBank assembly GCA_902520695.1. The GC content of the type genome is 29.52 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Pelagibacter infanedo sp. nov.

Candidatus Pelagibacter infanedo (NL. fem. n. *infanedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902570125*. The type genome for the species is the GenBank assembly GCA_902570125.1. The GC content of the type genome is 29.51 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Pelagibacter infanitia sp. nov.

Candidatus Pelagibacter infanitia (NL. fem. n. *infanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902590915*. The type genome for the species is the GenBank assembly GCA_902590915.1. The GC content of the type genome is 30.08 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter infelatica sp. nov.

Candidatus Pelagibacter infelatica (NL. fem. n. *infelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902622655*. The type genome for the species is the GenBank assembly GCA_902622655.1. The GC content of the type genome is 29.42 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter infisimonas sp. nov.

Candidatus Pelagibacter infisimonas (NL. fem. n. *infisimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902572775*. The type genome for the species is the GenBank assembly GCA_902572775.1. The GC content of the type genome is 29.53 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter inhonitas sp. nov.

Candidatus Pelagibacter inhonitas (NL. fem. n. *inhonitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588835*. The type genome for the species is the GenBank assembly GCA_902588835.1. The GC content of the type genome is 29.74 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter inlecitoga sp. nov.

Candidatus Pelagibacter inlecitoga (NL. fem. n. *inlecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902555655*. The type genome for the species is the GenBank assembly GCA_902555655.1. The GC content of the type genome is 28.76 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter inlecivita sp. nov.

Candidatus Pelagibacter inlecivita (NL. fem. n. *inlecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902585415*. The type genome for the species is the GenBank assembly GCA_902585415.1. The GC content of the type genome is 28.81 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter inmemigena sp. nov.

Candidatus Pelagibacter inmemigena (NL. fem. n. *inmemigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902515625*. The type genome for the species is the GenBank assembly GCA_902515625.1. The GC content of the type genome is 30.14 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter inmeniforma sp. nov.

Candidatus Pelagibacter inmeniforma (NL. fem. n. *inmeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp002708525*. The type genome for the species is the GenBank assembly GCA_002708525.1. The GC content of the type genome is 29.76 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Pelagibacter inmitilega sp. nov.

Candidatus Pelagibacter inmitilega (NL. fem. n. *inmitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595285*. The type genome for the species is the GenBank assembly GCA_902595285.1. The GC content of the type genome is 29.44 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter inmobugo sp. nov.

Candidatus Pelagibacter inmobugo (NL. fem. n. *inmobugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902575835*. The type genome for the species is the GenBank assembly GCA_902575835.1. The GC content of the type genome is 29.65 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter inmodentia sp. nov.

Candidatus Pelagibacter inmodentia (NL. fem. n. *inmodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp002169255*. The type genome for the species is the GenBank assembly GCA_002169255.1. The GC content of the type genome is 30.01 % and the genome length is 0.44 Mbp.

Description of *Candidatus* Pelagibacter inmodiforma sp. nov.

Candidatus Pelagibacter inmodiforma (NL. fem. n. *inmodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604175*. The type genome for the species is the GenBank assembly GCA_902604175.1. The GC content of the type genome is 29.98 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter inmodigena sp. nov.

Candidatus Pelagibacter inmodigena (NL. fem. n. *inmodigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902510495*. The type genome for the species is the GenBank assembly GCA_902510495.1. The GC content of the type genome is 29.01 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Pelagibacter inmuticella sp. nov.

Candidatus Pelagibacter inmuticella (NL. fem. n. *inmuticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902514605*. The type genome for the species is the GenBank assembly GCA_902514605.1. The GC content of the type genome is 29.77 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter innuletta sp. nov.

Candidatus Pelagibacter innuletta (NL. fem. n. *innuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902523615*. The type genome for the species is the GenBank assembly GCA_902523615.1. The GC content of the type genome is 28.72 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter innulitoga sp. nov.

Candidatus Pelagibacter innulitoga (NL. fem. n. *innulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902570715*. The type genome for the species is the GenBank assembly GCA_902570715.1. The GC content of the type genome is 28.63 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Pelagibacter innupetta sp. nov.

Candidatus Pelagibacter innupetta (NL. fem. n. *innupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902624045*. The type genome for the species is the GenBank assembly GCA_902624045.1. The GC content of the type genome is 29.49 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter inpasilega sp. nov.

Candidatus Pelagibacter inpasilega (NL. fem. n. *inpasilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902524595*. The type genome for the species is the GenBank assembly GCA_902524595.1. The GC content of the type genome is 29.03 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter inperiforma sp. nov.

Candidatus Pelagibacter inperiforma (NL. fem. n. *inperiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902610755*. The type genome for the species is the GenBank assembly GCA_902610755.1. The GC content of the type genome is 29.69 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter inpudilega sp. nov.

Candidatus Pelagibacter inpudilega (NL. fem. n. *inpudilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902522525*. The type genome for the species is the GenBank assembly GCA_902522525.1. The GC content of the type genome is 29.68 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter inrecilenta sp. nov.

Candidatus Pelagibacter inrecilenta (NL. fem. n. *inrecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902530715*. The type genome for the species is the GenBank assembly GCA_902530715.1. The GC content of the type genome is 29.15 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Pelagibacter inrefitrix sp. nov.

Candidatus Pelagibacter inrefitrix (NL. fem. n. *inrefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902531765*. The type genome for the species is the GenBank assembly GCA_902531765.1. The GC content of the type genome is 29.29 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter inregedo sp. nov.

Candidatus Pelagibacter inregedo (NL. fem. n. *inregedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902606645*. The type genome for the species is the GenBank assembly GCA_902606645.1. The GC content of the type genome is 30.06 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Pelagibacter inrelisca sp. nov.

Candidatus Pelagibacter inrelisca (NL. fem. n. *inrelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604005*. The type genome for the species is the GenBank assembly GCA_902604005.1. The GC content of the type genome is 28.68 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Pelagibacter inrevedo sp. nov.

Candidatus Pelagibacter inrevedo (NL. fem. n. *inrevedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902572225*. The type genome for the species is the GenBank assembly GCA_902572225.1. The GC content of the type genome is 29.79 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter insemibra sp. nov.

Candidatus Pelagibacter insemibra (NL. fem. n. *insemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902570525*. The type genome for the species is the GenBank assembly GCA_902570525.1. The GC content of the type genome is 29.12 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter insemitio sp. nov.

Candidatus Pelagibacter insemitio (NL. fem. n. *insemitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902566535*. The type genome for the species is the GenBank assembly GCA_902566535.1. The GC content of the type genome is 28.78 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter insibitas sp. nov.

Candidatus Pelagibacter insibitas (NL. fem. n. *insibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902519375*. The type genome for the species is the GenBank assembly GCA_902519375.1. The GC content of the type genome is 29.03 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter insinilega sp. nov.

Candidatus Pelagibacter insinilega (NL. fem. n. *insinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp002169475*. The type genome for the species is the GenBank assembly GCA_002169475.2. The GC content of the type genome is 29.14 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter insomitica sp. nov.

Candidatus Pelagibacter insomitica (NL. fem. n. *insomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902522325*. The type genome for the species is the GenBank assembly GCA_902522325.1. The GC content of the type genome is 28.32 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter insorisca sp. nov.

Candidatus Pelagibacter insorisca (NL. fem. n. *insorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902515985*. The type genome for the species is the GenBank assembly GCA_902515985.1. The GC content of the type genome is 29.07 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter insorousia sp. nov.

Candidatus Pelagibacter insorousia (NL. fem. n. *insorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902539195*. The type genome for the species is the GenBank assembly GCA_902539195.1. The GC content of the type genome is 28.91 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter insufax sp. nov.

Candidatus Pelagibacter insufax (NL. fem. n. *insufax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902626645*. The type genome for the species is the GenBank assembly GCA_902626645.1. The GC content of the type genome is 29.68 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter insufisca sp. nov.

Candidatus Pelagibacter insufisca (NL. fem. n. *insufisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902576785*. The type genome for the species is the GenBank assembly GCA_902576785.1. The GC content of the type genome is 28.88 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter intabitudo sp. nov.

Candidatus Pelagibacter intabitudo (NL. fem. n. *intabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902517735*. The type genome for the species is the GenBank assembly GCA_902517735.1. The GC content of the type genome is 28.7 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter intamicella sp. nov.

Candidatus Pelagibacter intamicella (NL. fem. n. *intamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902626725*. The type genome for the species is the GenBank assembly GCA_902626725.1. The GC content of the type genome is 29.17 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter intorimonia sp. nov.

Candidatus Pelagibacter intorimonia (NL. fem. n. *intorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014654165*. The type genome for the species is the GenBank assembly GCA_014654165.1. The GC content of the type genome is 28.9 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter intorisca sp. nov.

Candidatus Pelagibacter intorisca (NL. fem. n. *intorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902630065*. The type genome for the species is the GenBank assembly GCA_902630065.1. The GC content of the type genome is 29.41 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter inurbax sp. nov.

Candidatus Pelagibacter inurbax (NL. fem. n. *inurbax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902579855*. The type genome for the species is the GenBank assembly GCA_902579855.1. The GC content of the type genome is 29.33 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter invicitia sp. nov.

Candidatus Pelagibacter invicitia (NL. fem. n. *invicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902519625*. The type genome for the species is the GenBank assembly GCA_902519625.1. The GC content of the type genome is 28.12 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Pelagibacter invinilega sp. nov.

Candidatus Pelagibacter invinilega (NL. fem. n. *invinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902607805*. The type genome for the species is the GenBank assembly GCA_902607805.1. The GC content of the type genome is 27.7 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter invoritio sp. nov.

Candidatus Pelagibacter invoritio (NL. fem. n. *invoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902624015*. The type genome for the species is the GenBank assembly GCA_902624015.1. The GC content of the type genome is 29.26 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter irredibra sp. nov.

Candidatus Pelagibacter irredibra (NL. fem. n. *irredibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595105*. The type genome for the species is the GenBank assembly GCA_902595105.1. The GC content of the type genome is 30.1 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter irredicula sp. nov.

Candidatus Pelagibacter irredicula (NL. fem. n. *irredicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902579985*. The type genome for the species is the GenBank assembly GCA_902579985.1. The GC content of the type genome is 27.63 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter irrelago sp. nov.

Candidatus Pelagibacter irrelago (NL. fem. n. *irrelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902617625*. The type genome for the species is the GenBank assembly GCA_902617625.1. The GC content of the type genome is 29.62 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter irremilega sp. nov.

Candidatus Pelagibacter irremilega (NL. fem. n. *irremilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902545635*. The type genome for the species is the GenBank assembly GCA_902545635.1. The GC content of the type genome is 29.41 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter irrevicella sp. nov.

Candidatus Pelagibacter irrevicella (NL. fem. n. *irrevicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902617975*. The type genome for the species is the GenBank assembly GCA_902617975.1. The GC content of the type genome is 29.31 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter labeciforma sp. nov.

Candidatus Pelagibacter labeciforma (NL. fem. n. *labeciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560805*. The type genome for the species is the GenBank assembly GCA_902560805.1. The GC content of the type genome is 29.28 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pelagibacter labecitrix sp. nov.

Candidatus Pelagibacter labecitrix (NL. fem. n. *labecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902552475*. The type genome for the species is the GenBank assembly GCA_902552475.1. The GC content of the type genome is 28.12 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter laculivita sp. nov.

Candidatus Pelagibacter laculivita (NL. fem. n. *laculivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902545825*. The type genome for the species is the GenBank assembly GCA_902545825.1. The GC content of the type genome is 29.3 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter lanifimonia sp. nov.

Candidatus Pelagibacter lanifimonia (NL. fem. n. *lanifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902557155*. The type genome for the species is the GenBank assembly GCA_902557155.1. The GC content of the type genome is 29.25 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Pelagibacter lanigitrix sp. nov.

Candidatus Pelagibacter lanigitrix (NL. fem. n. *lanigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902573295*. The type genome for the species is the GenBank assembly GCA_902573295.1. The GC content of the type genome is 29.28 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter lapicivita sp. nov.

Candidatus Pelagibacter lapicivita (NL. fem. n. *lapicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902522365*. The type genome for the species is the GenBank assembly GCA_902522365.1. The GC content of the type genome is 29.57 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter lapiledo sp. nov.

Candidatus Pelagibacter lapiledo (NL. fem. n. *lapiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902540785*. The type genome for the species is the GenBank assembly GCA_902540785.1. The GC content of the type genome is 29.69 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter lapilitia sp. nov.

Candidatus Pelagibacter lapilitia (NL. fem. n. *lapilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902633515*. The type genome for the species is the GenBank assembly GCA_902633515.1. The GC content of the type genome is 29.93 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter lavabigena sp. nov.

Candidatus Pelagibacter lavabigena (NL. fem. n. *lavabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902624635*. The type genome for the species is the GenBank assembly GCA_902624635.1. The GC content of the type genome is 29.45 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter laxitigena sp. nov.

Candidatus Pelagibacter laxitigena (NL. fem. n. *laxitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902527265*. The type genome for the species is the GenBank assembly GCA_902527265.1. The GC content of the type genome is 29.42 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter lenimax sp. nov.

Candidatus Pelagibacter lenimax (NL. fem. n. *lenimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902636165*. The type genome for the species is the GenBank assembly GCA_902636165.1. The GC content of the type genome is 29.15 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Pelagibacter lenimimonia sp. nov.

Candidatus Pelagibacter lenimimonia (NL. fem. n. *lenimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902532525*. The type genome for the species is the GenBank assembly GCA_902532525.1. The GC content of the type genome is 29.33 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter lenocago sp. nov.

Candidatus Pelagibacter lenocago (NL. fem. n. *lenocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902629285*. The type genome for the species is the GenBank assembly GCA_902629285.1. The GC content of the type genome is 28.97 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Pelagibacter lenunatica sp. nov.

Candidatus Pelagibacter lenunatica (NL. fem. n. *lenunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902622795*. The type genome for the species is the GenBank assembly GCA_902557265.1. The GC content of the type genome is 29.59 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter lenunimonas sp. nov.

Candidatus Pelagibacter lenunimonas (NL. fem. n. *lenunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595885*. The type genome for the species is the GenBank assembly GCA_902595885.1. The GC content of the type genome is 29.29 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter lenunitura sp. nov.

Candidatus Pelagibacter lenunitura (NL. fem. n. *lenunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902631265*. The type genome for the species is the GenBank assembly GCA_902631265.1. The GC content of the type genome is 29.98 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter letifastra sp. nov.

Candidatus Pelagibacter letifastra (NL. fem. n. *letifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902621345*. The type genome for the species is the GenBank assembly GCA_902621345.1. The GC content of the type genome is 29.5 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Pelagibacter letifentia sp. nov.

Candidatus Pelagibacter letifentia (NL. fem. n. *letifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902618695*. The type genome for the species is the GenBank assembly GCA_902618695.1. The GC content of the type genome is 29.25 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Pelagibacter letifisca sp. nov.

Candidatus Pelagibacter letifisca (NL. fem. n. *letifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902603905*. The type genome for the species is the GenBank assembly GCA_902603905.1. The GC content of the type genome is 28.56 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter licenax sp. nov.

Candidatus Pelagibacter licenax (NL. fem. n. *licenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902624585*. The type genome for the species is the GenBank assembly GCA_902624585.1. The GC content of the type genome is 29.65 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter licenetta sp. nov.

Candidatus Pelagibacter licenetta (NL. fem. n. *licenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902629585*. The type genome for the species is the GenBank assembly GCA_902629585.1. The GC content of the type genome is 29.03 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter linigastra sp. nov.

Candidatus Pelagibacter linigastra (NL. fem. n. *linigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596925*. The type genome for the species is the GenBank assembly GCA_902596925.1. The GC content of the type genome is 29.3 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter locelilenta sp. nov.

Candidatus Pelagibacter locelilenta (NL. fem. n. *locelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902599575*. The type genome for the species is the GenBank assembly GCA_902599575.1. The GC content of the type genome is 29.06 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter loraricella sp. nov.

Candidatus Pelagibacter loraricella (NL. fem. n. *loraricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902629075*. The type genome for the species is the GenBank assembly GCA_902629075.1. The GC content of the type genome is 28.8 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter loripicula sp. nov.

Candidatus Pelagibacter loripicula (NL. fem. n. *loripicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902608975*. The type genome for the species is the GenBank assembly GCA_902608975.1. The GC content of the type genome is 28.52 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter lubenetta sp. nov.

Candidatus Pelagibacter lubenetta (NL. fem. n. *lubenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902551455*. The type genome for the species is the GenBank assembly GCA_902551455.1. The GC content of the type genome is 27.76 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter lubenitas sp. nov.

Candidatus Pelagibacter lubenitas (NL. fem. n. *lubenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902515965*. The type genome for the species is the GenBank assembly GCA_902515965.1. The GC content of the type genome is 29.8 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter lubenitio sp. nov.

Candidatus Pelagibacter lubenitio (NL. fem. n. *lubenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp002170275*. The type genome for the species is the GenBank assembly GCA_002170275.2. The GC content of the type genome is 27.73 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Pelagibacter lucelifica sp. nov.

Candidatus Pelagibacter lucelifica (NL. fem. n. *lucelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594245*. The type genome for the species is the GenBank assembly GCA_902594245.1. The GC content of the type genome is 29.09 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Pelagibacter lucubentia sp. nov.

Candidatus Pelagibacter lucubentia (NL. fem. n. *lucubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902570055*. The type genome for the species is the GenBank assembly GCA_902570055.1. The GC content of the type genome is 28.59 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter luculitas sp. nov.

Candidatus Pelagibacter luculitas (NL. fem. n. *luculitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597575*. The type genome for the species is the GenBank assembly GCA_902597575.1. The GC content of the type genome is 29.77 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter ludimousia sp. nov.

Candidatus Pelagibacter ludimousia (NL. fem. n. *ludimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014654115*. The type genome for the species is the GenBank assembly GCA_014654115.1. The GC content of the type genome is 29.55 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter luticitoga sp. nov.

Candidatus Pelagibacter luticitoga (NL. fem. n. *luticitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902629935*. The type genome for the species is the GenBank assembly GCA_902629935.1. The GC content of the type genome is 29.57 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter lutulatio sp. nov.

Candidatus Pelagibacter lutulatio (NL. fem. n. *lutulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902589455*. The type genome for the species is the GenBank assembly GCA_902589455.1. The GC content of the type genome is 29.5 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Pelagibacter luxuratica sp. nov.

Candidatus Pelagibacter luxuratica (NL. fem. n. *luxuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp011526385*. The type genome for the species is the GenBank assembly GCA_010025285.1. The GC content of the type genome is 30.42 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Pelagibacter mahemicella sp. nov.

Candidatus Pelagibacter mahemicella (NL. fem. n. *mahemicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902624535*. The type genome for the species is the GenBank assembly GCA_902624535.1. The GC content of the type genome is 29.95 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter mahemicula sp. nov.

Candidatus Pelagibacter mahemicula (NL. fem. n. *mahemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653975*. The type genome for the species is the GenBank assembly GCA_014653975.1. The GC content of the type genome is 28.86 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter maledimonas sp. nov.

Candidatus Pelagibacter maledimonas (NL. fem. n. *maledimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902634695*. The type genome for the species is the GenBank assembly GCA_902634695.1. The GC content of the type genome is 28.05 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Pelagibacter malifatio sp. nov.

Candidatus Pelagibacter malifatio (NL. fem. n. *malifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653385*. The type genome for the species is the GenBank assembly GCA_014653385.1. The GC content of the type genome is 29.21 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Pelagibacter malifentia sp. nov.

Candidatus Pelagibacter malifentia (NL. fem. n. *malifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp012963775*. The type genome for the species is the GenBank assembly GCA_012963775.1. The GC content of the type genome is 28.33 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Pelagibacter malifimonia sp. nov.

Candidatus Pelagibacter malifimonia (NL. fem. n. *malifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902591535*. The type genome for the species is the GenBank assembly GCA_902591535.1. The GC content of the type genome is 29.3 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter malifugo sp. nov.

Candidatus Pelagibacter malifugo (NL. fem. n. *malifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902549785*. The type genome for the species is the GenBank assembly GCA_902549785.1. The GC content of the type genome is 29.45 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter maligicella sp. nov.

Candidatus Pelagibacter maligicella (NL. fem. n. *maligicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003279765*. The type genome for the species is the GenBank assembly GCA_902558955.1. The GC content of the type genome is 29.65 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter maligilenta sp. nov.

Candidatus Pelagibacter maligilenta (NL. fem. n. *maligilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902519325*. The type genome for the species is the GenBank assembly GCA_902519325.1. The GC content of the type genome is 29.1 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter malogitio sp. nov.

Candidatus Pelagibacter malogitio (NL. fem. n. *malogitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902584995*. The type genome for the species is the GenBank assembly GCA_902584995.1. The GC content of the type genome is 29.71 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter manubibra sp. nov.

Candidatus Pelagibacter manubibra (NL. fem. n. *manubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003278065*. The type genome for the species is the GenBank assembly GCA_902559505.1. The GC content of the type genome is 28.57 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter manubigena sp. nov.

Candidatus Pelagibacter manubigena (NL. fem. n. *manubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp003212415*. The type genome for the species is the GenBank assembly GCA_902589275.1. The GC content of the type genome is 28.53 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter manubisca sp. nov.

Candidatus Pelagibacter manubisca (NL. fem. n. *manubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902533945*. The type genome for the species is the GenBank assembly GCA_902533945.1. The GC content of the type genome is 28.18 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter manufitas sp. nov.

Candidatus Pelagibacter manufitas (NL. fem. n. *manufitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594865*. The type genome for the species is the GenBank assembly GCA_902594865.1. The GC content of the type genome is 29.2 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter masocetta sp. nov.

Candidatus Pelagibacter masocetta (NL. fem. n. *masocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902522895*. The type genome for the species is the GenBank assembly GCA_902522895.1. The GC content of the type genome is 28.71 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Pelagibacter masocisca sp. nov.

Candidatus Pelagibacter masocisca (NL. fem. n. *masocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902516395*. The type genome for the species is the GenBank assembly GCA_902516395.1. The GC content of the type genome is 29.88 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter masocitica sp. nov.

Candidatus Pelagibacter masocitica (NL. fem. n. *masocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902529715*. The type genome for the species is the GenBank assembly GCA_902529715.1. The GC content of the type genome is 28.44 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter mavorilenta sp. nov.

Candidatus Pelagibacter mavorilenta (NL. fem. n. *mavorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902577075*. The type genome for the species is the GenBank assembly GCA_902577075.1. The GC content of the type genome is 29.41 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Pelagibacter mavorousia sp. nov.

Candidatus Pelagibacter mavorousia (NL. fem. n. *mavorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902628195*. The type genome for the species is the GenBank assembly GCA_902628195.1. The GC content of the type genome is 28.48 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter maxiliforma sp. nov.

Candidatus Pelagibacter maxiliforma (NL. fem. n. *maxiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902619925*. The type genome for the species is the GenBank assembly GCA_902619925.1. The GC content of the type genome is 29.03 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter maxilitio sp. nov.

Candidatus Pelagibacter maxilitio (NL. fem. n. *maxilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902634885*. The type genome for the species is the GenBank assembly GCA_902528455.1. The GC content of the type genome is 30.04 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter medimisca sp. nov.

Candidatus Pelagibacter medimisca (NL. fem. n. *medimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902552985*. The type genome for the species is the GenBank assembly GCA_902552985.1. The GC content of the type genome is 28.13 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter melilibra sp. nov.

Candidatus Pelagibacter melilibra (NL. fem. n. *melilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902545555*. The type genome for the species is the GenBank assembly GCA_902545555.1. The GC content of the type genome is 29.34 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter melopibra sp. nov.

Candidatus Pelagibacter melopibra (NL. fem. n. *melopibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594235*. The type genome for the species is the GenBank assembly GCA_902594235.1. The GC content of the type genome is 28.67 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Pelagibacter menapisca sp. nov.

Candidatus Pelagibacter menapisca (NL. fem. n. *menapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902598825*. The type genome for the species is the GenBank assembly GCA_902602935.1. The GC content of the type genome is 28.97 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Pelagibacter meridicella sp. nov.

Candidatus Pelagibacter meridicella (NL. fem. n. *meridicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902587315*. The type genome for the species is the GenBank assembly GCA_902587315.1. The GC content of the type genome is 28.37 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter meridimonia sp. nov.

Candidatus Pelagibacter meridimonia (NL. fem. n. *meridimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902584915*. The type genome for the species is the GenBank assembly GCA_902584915.1. The GC content of the type genome is 28.71 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter milifentia sp. nov.

Candidatus Pelagibacter milifentia (NL. fem. n. *milifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902516465*. The type genome for the species is the GenBank assembly GCA_902516465.1. The GC content of the type genome is 29.09 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter milifetta sp. nov.

Candidatus Pelagibacter milifetta (NL. fem. n. *milifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014654245*. The type genome for the species is the GenBank assembly GCA_014654245.1. The GC content of the type genome is 28.95 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Pelagibacter milipatica sp. nov.

Candidatus Pelagibacter milipatica (NL. fem. n. *milipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902555065*. The type genome for the species is the GenBank assembly GCA_902555065.1. The GC content of the type genome is 29.22 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pelagibacter miracicula sp. nov.

Candidatus Pelagibacter miracicula (NL. fem. n. *miracicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902632875*. The type genome for the species is the GenBank assembly GCA_902632875.1. The GC content of the type genome is 29.28 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Pelagibacter miracitica sp. nov.

Candidatus Pelagibacter miracitica (NL. fem. n. *miracitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902536925*. The type genome for the species is the GenBank assembly GCA_902536925.1. The GC content of the type genome is 29.23 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter mirifibra sp. nov.

Candidatus Pelagibacter mirifibra (NL. fem. n. *mirifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902517745*. The type genome for the species is the GenBank assembly GCA_902540725.1. The GC content of the type genome is 29.41 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter momoriforma sp. nov.

Candidatus Pelagibacter momoriforma (NL. fem. n. *momoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902531175*. The type genome for the species is the GenBank assembly GCA_902531175.1. The GC content of the type genome is 29.15 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Pelagibacter momoritudo sp. nov.

Candidatus Pelagibacter momoritudo (NL. fem. n. *momoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902591755*. The type genome for the species is the GenBank assembly GCA_902554875.1. The GC content of the type genome is 29.67 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter momorugo sp. nov.

Candidatus Pelagibacter momorugo (NL. fem. n. *momorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902623975*. The type genome for the species is the GenBank assembly GCA_902548495.1. The GC content of the type genome is 29.06 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter monumago sp. nov.

Candidatus Pelagibacter monumago (NL. fem. n. *monumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902589725*. The type genome for the species is the GenBank assembly GCA_902591955.1. The GC content of the type genome is 29.2 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter monumivita sp. nov.

Candidatus Pelagibacter monumivita (NL. fem. n. *monumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902612345*. The type genome for the species is the GenBank assembly GCA_902612345.1. The GC content of the type genome is 28.79 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter morigigena sp. nov.

Candidatus Pelagibacter morigigena (NL. fem. n. *morigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588925*. The type genome for the species is the GenBank assembly GCA_902588925.1. The GC content of the type genome is 29.57 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Pelagibacter munificella sp. nov.

Candidatus Pelagibacter munificella (NL. fem. n. *munificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902589765*. The type genome for the species is the GenBank assembly GCA_902589765.1. The GC content of the type genome is 29.5 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter munifimonia sp. nov.

Candidatus Pelagibacter munifimonia (NL. fem. n. *munifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902531455*. The type genome for the species is the GenBank assembly GCA_902531455.1. The GC content of the type genome is 29.78 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Pelagibacter munifitio sp. nov.

Candidatus Pelagibacter munifitio (NL. fem. n. *munifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902531025*. The type genome for the species is the GenBank assembly GCA_902531025.1. The GC content of the type genome is 28.76 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter munimisca sp. nov.

Candidatus Pelagibacter munimisca (NL. fem. n. *munimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902583295*. The type genome for the species is the GenBank assembly GCA_902583295.1. The GC content of the type genome is 29.74 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter murilifica sp. nov.

Candidatus Pelagibacter murilifica (NL. fem. n. *murilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902629575*. The type genome for the species is the GenBank assembly GCA_902629575.1. The GC content of the type genome is 29.12 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter musulicella sp. nov.

Candidatus Pelagibacter musulicella (NL. fem. n. *musulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902582315*. The type genome for the species is the GenBank assembly GCA_902539855.1. The GC content of the type genome is 29.86 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter musulilenta sp. nov.

Candidatus Pelagibacter musulilenta (NL. fem. n. *musulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588975*. The type genome for the species is the GenBank assembly GCA_902588975.1. The GC content of the type genome is 29.4 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter navicax sp. nov.

Candidatus Pelagibacter navicax (NL. fem. n. *navicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902591185*. The type genome for the species is the GenBank assembly GCA_902591185.1. The GC content of the type genome is 28.67 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter necopatica sp. nov.

Candidatus Pelagibacter necopatica (NL. fem. n. *necopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902565385*. The type genome for the species is the GenBank assembly GCA_902565385.1. The GC content of the type genome is 29.19 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter necubatica sp. nov.

Candidatus Pelagibacter necubatica (NL. fem. n. *necubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902518155*. The type genome for the species is the GenBank assembly GCA_902550055.1. The GC content of the type genome is 29.72 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter nicomisca sp. nov.

Candidatus Pelagibacter nicomisca (NL. fem. n. *nicomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003213615*. The type genome for the species is the GenBank assembly GCA_902571845.1. The GC content of the type genome is 29.29 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Pelagibacter nicotago sp. nov.

Candidatus Pelagibacter nicotago (NL. fem. n. *nicotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902609235*. The type genome for the species is the GenBank assembly GCA_902609235.1. The GC content of the type genome is 29.54 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Pelagibacter nimirago sp. nov.

Candidatus Pelagibacter nimirago (NL. fem. n. *nimirago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902518185*. The type genome for the species is the GenBank assembly GCA_902518185.1. The GC content of the type genome is 29.2 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter nimiressa sp. nov.

Candidatus Pelagibacter nimiressa (NL. fem. n. *nimiressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902547215*. The type genome for the species is the GenBank assembly GCA_902547215.1. The GC content of the type genome is 29.57 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter noninilega sp. nov.

Candidatus Pelagibacter noninilega (NL. fem. n. *noninilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902635865*. The type genome for the species is the GenBank assembly GCA_902635865.1. The GC content of the type genome is 29.16 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter notabago sp. nov.

Candidatus Pelagibacter notabago (NL. fem. n. *notabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571055*. The type genome for the species is the GenBank assembly GCA_902605255.1. The GC content of the type genome is 29.36 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter notabatio sp. nov.

Candidatus Pelagibacter notabatio (NL. fem. n. *notabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571375*. The type genome for the species is the GenBank assembly GCA_902571375.1. The GC content of the type genome is 28.75 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter notacedo sp. nov.

Candidatus Pelagibacter notacedo (NL. fem. n. *notacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588595*. The type genome for the species is the GenBank assembly GCA_902588595.1. The GC content of the type genome is 28.64 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter notacifica sp. nov.

Candidatus Pelagibacter notacifica (NL. fem. n. *notacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902509725*. The type genome for the species is the GenBank assembly GCA_902509725.1. The GC content of the type genome is 29.02 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Pelagibacter notacitas sp. nov.

Candidatus Pelagibacter notacitas (NL. fem. n. *notacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902558815*. The type genome for the species is the GenBank assembly GCA_902536055.1. The GC content of the type genome is 28.89 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter nubecitica sp. nov.

Candidatus Pelagibacter nubecitica (NL. fem. n. *nubecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003279775*. The type genome for the species is the GenBank assembly GCA_902554775.1. The GC content of the type genome is 29.41 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter nubigedo sp. nov.

Candidatus Pelagibacter nubigedo (NL. fem. n. *nubigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595465*. The type genome for the species is the GenBank assembly GCA_902595465.1. The GC content of the type genome is 29.08 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter nubigentia sp. nov.

Candidatus Pelagibacter nubigentia (NL. fem. n. *nubigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902574525*. The type genome for the species is the GenBank assembly GCA_902574525.1. The GC content of the type genome is 29.42 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter nubigitrix sp. nov.

Candidatus Pelagibacter nubigitrix (NL. fem. n. *nubigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597725*. The type genome for the species is the GenBank assembly GCA_902597725.1. The GC content of the type genome is 29.68 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter nugacisca sp. nov.

Candidatus Pelagibacter nugacisca (NL. fem. n. *nugacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902569245*. The type genome for the species is the GenBank assembly GCA_902569245.1. The GC content of the type genome is 29.77 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter nugacousia sp. nov.

Candidatus Pelagibacter nugacousia (NL. fem. n. *nugacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560185*. The type genome for the species is the GenBank assembly GCA_902520215.1. The GC content of the type genome is 29.95 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter nutamibula sp. nov.

Candidatus Pelagibacter nutamibula (NL. fem. n. *nutamibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902632315*. The type genome for the species is the GenBank assembly GCA_902632315.1. The GC content of the type genome is 29.28 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter nutamugo sp. nov.

Candidatus Pelagibacter nutamugo (NL. fem. n. *nutamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902543295*. The type genome for the species is the GenBank assembly GCA_902543295.1. The GC content of the type genome is 29.27 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Pelagibacter obambimonas sp. nov.

Candidatus Pelagibacter obambimonas (NL. fem. n. *obambimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902569975*. The type genome for the species is the GenBank assembly GCA_902569975.1. The GC content of the type genome is 28.77 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter obambitia sp. nov.

Candidatus Pelagibacter obambitia (NL. fem. n. *obambitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596785*. The type genome for the species is the GenBank assembly GCA_902596785.1. The GC content of the type genome is 29.47 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter obfusilega sp. nov.

Candidatus Pelagibacter obfusilega (NL. fem. n. *obfusilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902601895*. The type genome for the species is the GenBank assembly GCA_902601895.1. The GC content of the type genome is 29.08 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter oblanastra sp. nov.

Candidatus Pelagibacter oblanastra (NL. fem. n. *oblanastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902618565*. The type genome for the species is the GenBank assembly GCA_902618565.1. The GC content of the type genome is 29.48 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter oblivitio sp. nov.

Candidatus Pelagibacter oblivitio (NL. fem. n. *oblivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902519455*. The type genome for the species is the GenBank assembly GCA_902519455.1. The GC content of the type genome is 30.26 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter oblucatio sp. nov.

Candidatus Pelagibacter oblucatio (NL. fem. n. *oblucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902634485*. The type genome for the species is the GenBank assembly GCA_902634485.1. The GC content of the type genome is 28.18 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter oblucessa sp. nov.

Candidatus Pelagibacter oblucessa (NL. fem. n. *oblucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902576115*. The type genome for the species is the GenBank assembly GCA_902576115.1. The GC content of the type genome is 29.3 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter obsecitio sp. nov.

Candidatus Pelagibacter obsecitio (NL. fem. n. *obsecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653375*. The type genome for the species is the GenBank assembly GCA_014653375.1. The GC content of the type genome is 29.24 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter obtecicula sp. nov.

Candidatus Pelagibacter obtecicula (NL. fem. n. *obtecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902623415*. The type genome for the species is the GenBank assembly GCA_902623415.1. The GC content of the type genome is 29.09 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter obtesetta sp. nov.

Candidatus Pelagibacter obtesetta (NL. fem. n. *obtesetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902561015*. The type genome for the species is the GenBank assembly GCA_902561015.1. The GC content of the type genome is 29.52 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter obtesimonia sp. nov.

Candidatus Pelagibacter obtesimonia (NL. fem. n. *obtesimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp009693705*. The type genome for the species is the GenBank assembly GCA_009693705.1. The GC content of the type genome is 28.68 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Pelagibacter obtorastra sp. nov.

Candidatus Pelagibacter obtorastra (NL. fem. n. *obtorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902556905*. The type genome for the species is the GenBank assembly GCA_902556905.1. The GC content of the type genome is 29.45 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Pelagibacter obvalilega sp. nov.

Candidatus Pelagibacter obvalilega (NL. fem. n. *obvalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902585265*. The type genome for the species is the GenBank assembly GCA_902585265.1. The GC content of the type genome is 29.13 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter obveratio sp. nov.

Candidatus Pelagibacter obveratio (NL. fem. n. *obveratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902579465*. The type genome for the species is the GenBank assembly GCA_902579465.1. The GC content of the type genome is 29.69 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter obvolitudo sp. nov.

Candidatus Pelagibacter obvolitudo (NL. fem. n. *obvolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592985*. The type genome for the species is the GenBank assembly GCA_902592985.1. The GC content of the type genome is 28.22 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter occenessa sp. nov.

Candidatus Pelagibacter occenessa (NL. fem. n. *occenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902608385*. The type genome for the species is the GenBank assembly GCA_902608385.1. The GC content of the type genome is 28.4 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter occenifica sp. nov.

Candidatus Pelagibacter occenifica (NL. fem. n. *occenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014654035*. The type genome for the species is the GenBank assembly GCA_014654035.1. The GC content of the type genome is 28.34 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter occucugo sp. nov.

Candidatus Pelagibacter occucugo (NL. fem. n. *occucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902616205*. The type genome for the species is the GenBank assembly GCA_902616205.1. The GC content of the type genome is 29.55 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter occumivita sp. nov.

Candidatus Pelagibacter occumivita (NL. fem. n. *occumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902554315*. The type genome for the species is the GenBank assembly GCA_902554315.1. The GC content of the type genome is 28.36 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter ocissilega sp. nov.

Candidatus Pelagibacter ocissilega (NL. fem. n. *ocissilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902555535*. The type genome for the species is the GenBank assembly GCA_902555535.1. The GC content of the type genome is 29.42 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter ocissilenta sp. nov.

Candidatus Pelagibacter ocissilenta (NL. fem. n. *ocissilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902632935*. The type genome for the species is the GenBank assembly GCA_902632935.1. The GC content of the type genome is 29.15 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter octobago sp. nov.

Candidatus Pelagibacter octobago (NL. fem. n. *octobago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902599605*. The type genome for the species is the GenBank assembly GCA_902599605.1. The GC content of the type genome is 29.68 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter octobugo sp. nov.

Candidatus Pelagibacter octobugo (NL. fem. n. *octobugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902529785*. The type genome for the species is the GenBank assembly GCA_902529785.1. The GC content of the type genome is 29.97 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter octupiforma sp. nov.

Candidatus Pelagibacter octupiforma (NL. fem. n. *octupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902579215*. The type genome for the species is the GenBank assembly GCA_902579215.1. The GC content of the type genome is 28.59 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter octupilenta sp. nov.

Candidatus Pelagibacter octupilenta (NL. fem. n. *octupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604545*. The type genome for the species is the GenBank assembly GCA_902604545.1. The GC content of the type genome is 29.22 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter octusicula sp. nov.

Candidatus Pelagibacter octusicula (NL. fem. n. *octusicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902614355*. The type genome for the species is the GenBank assembly GCA_902614355.1. The GC content of the type genome is 29.57 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter odollicula sp. nov.

Candidatus Pelagibacter odollicula (NL. fem. n. *odollicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902553465*. The type genome for the species is the GenBank assembly GCA_902553465.1. The GC content of the type genome is 28.44 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Pelagibacter odollitoga sp. nov.

Candidatus Pelagibacter odollitoga (NL. fem. n. *odollitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902518395*. The type genome for the species is the GenBank assembly GCA_902518395.1. The GC content of the type genome is 29.54 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter offulimonas sp. nov.

Candidatus Pelagibacter offulimonas (NL. fem. n. *offulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902611405*. The type genome for the species is the GenBank assembly GCA_902611405.1. The GC content of the type genome is 29.33 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pelagibacter omninentia sp. nov.

Candidatus Pelagibacter omninentia (NL. fem. n. *omninentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902635845*. The type genome for the species is the GenBank assembly GCA_902635845.1. The GC content of the type genome is 29.57 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter omnipitio sp. nov.

Candidatus Pelagibacter omnipitio (NL. fem. n. *omnipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902631595*. The type genome for the species is the GenBank assembly GCA_902631595.1. The GC content of the type genome is 29.35 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter omnivitia sp. nov.

Candidatus Pelagibacter omnivitia (NL. fem. n. *omnivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653455*. The type genome for the species is the GenBank assembly GCA_014653455.1. The GC content of the type genome is 28.84 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter omnivousia sp. nov.

Candidatus Pelagibacter omnivousia (NL. fem. n. *omnivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902537895*. The type genome for the species is the GenBank assembly GCA_902537895.1. The GC content of the type genome is 29.64 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter onocrisca sp. nov.

Candidatus Pelagibacter onocrisca (NL. fem. n. *onocrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592935*. The type genome for the species is the GenBank assembly GCA_902592935.1. The GC content of the type genome is 29.17 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter oppanilenta sp. nov.

Candidatus Pelagibacter oppanilenta (NL. fem. n. *oppanilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902537555*. The type genome for the species is the GenBank assembly GCA_902537555.1. The GC content of the type genome is 29.13 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Pelagibacter oppugifica sp. nov.

Candidatus Pelagibacter oppugifica (NL. fem. n. *oppugifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902580535*. The type genome for the species is the GenBank assembly GCA_902580535.1. The GC content of the type genome is 29.82 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter optabax sp. nov.

Candidatus Pelagibacter optabax (NL. fem. n. *optabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902574685*. The type genome for the species is the GenBank assembly GCA_902574685.1. The GC content of the type genome is 29.28 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter optumetta sp. nov.

Candidatus Pelagibacter optumetta (NL. fem. n. *optumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902626245*. The type genome for the species is the GenBank assembly GCA_902626245.1. The GC content of the type genome is 28.73 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter pabiligena sp. nov.

Candidatus Pelagibacter pabiligena (NL. fem. n. *pabiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902619595*. The type genome for the species is the GenBank assembly GCA_902619595.1. The GC content of the type genome is 29.16 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter pabilisca sp. nov.

Candidatus Pelagibacter pabilisca (NL. fem. n. *pabilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902609705*. The type genome for the species is the GenBank assembly GCA_902609705.1. The GC content of the type genome is 29.28 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter papavitio sp. nov.

Candidatus Pelagibacter papavitio (NL. fem. n. *papavitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604355*. The type genome for the species is the GenBank assembly GCA_902604355.1. The GC content of the type genome is 29.81 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter paralitio sp. nov.

Candidatus Pelagibacter paralitio (NL. fem. n. *paralitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902563075*. The type genome for the species is the GenBank assembly GCA_902563075.1. The GC content of the type genome is 29.69 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter parocugo sp. nov.

Candidatus Pelagibacter parocugo (NL. fem. n. *parocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596375*. The type genome for the species is the GenBank assembly GCA_902596375.1. The GC content of the type genome is 29.3 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter paropetta sp. nov.

Candidatus Pelagibacter paropetta (NL. fem. n. *paropetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902550635*. The type genome for the species is the GenBank assembly GCA_902550635.1. The GC content of the type genome is 28.25 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter paropitoga sp. nov.

Candidatus Pelagibacter paropitoga (NL. fem. n. *paropitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902539445*. The type genome for the species is the GenBank assembly GCA_902539445.1. The GC content of the type genome is 29.33 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter paropivita sp. nov.

Candidatus Pelagibacter paropivita (NL. fem. n. *paropivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902556065*. The type genome for the species is the GenBank assembly GCA_902572465.1. The GC content of the type genome is 29.83 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter patibimonas sp. nov.

Candidatus Pelagibacter patibimonas (NL. fem. n. *patibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp001704055*. The type genome for the species is the GenBank assembly GCA_902521355.1. The GC content of the type genome is 29.41 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter pavicatio sp. nov.

Candidatus Pelagibacter pavicatio (NL. fem. n. *pavicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003213155*. The type genome for the species is the GenBank assembly GCA_902596765.1. The GC content of the type genome is 29.58 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter pedepago sp. nov.

Candidatus Pelagibacter pedepago (NL. fem. n. *pedepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902586125*. The type genome for the species is the GenBank assembly GCA_902579505.1. The GC content of the type genome is 29.24 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter pedifitio sp. nov.

Candidatus Pelagibacter pedifitio (NL. fem. n. *pedifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902542975*. The type genome for the species is the GenBank assembly GCA_902542975.1. The GC content of the type genome is 29.42 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter penecitia sp. nov.

Candidatus Pelagibacter penecitia (NL. fem. n. *penecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902541315*. The type genome for the species is the GenBank assembly GCA_902541315.1. The GC content of the type genome is 29.19 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter pericitrix sp. nov.

Candidatus Pelagibacter pericitrix (NL. fem. n. *pericitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902555585*. The type genome for the species is the GenBank assembly GCA_902530875.1. The GC content of the type genome is 29.66 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter peripitudo sp. nov.

Candidatus Pelagibacter peripitudo (NL. fem. n. *peripitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902619745*. The type genome for the species is the GenBank assembly GCA_902619745.1. The GC content of the type genome is 29.36 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter pimenago sp. nov.

Candidatus Pelagibacter pimenago (NL. fem. n. *pimenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902515205*. The type genome for the species is the GenBank assembly GCA_902515205.1. The GC content of the type genome is 28.84 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter pinacessa sp. nov.

Candidatus Pelagibacter pinacessa (NL. fem. n. *pinacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902593235*. The type genome for the species is the GenBank assembly GCA_902593235.1. The GC content of the type genome is 29.57 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter pinaciforma sp. nov.

Candidatus Pelagibacter pinaciforma (NL. fem. n. *pinaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003212925*. The type genome for the species is the GenBank assembly GCA_003212925.1. The GC content of the type genome is 29.35 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter pinifibula sp. nov.

Candidatus Pelagibacter pinifibula (NL. fem. n. *pinifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902518165*. The type genome for the species is the GenBank assembly GCA_902518165.1. The GC content of the type genome is 29.3 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Pelagibacter pinigessa sp. nov.

Candidatus Pelagibacter pinigessa (NL. fem. n. *pinigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014654065*. The type genome for the species is the GenBank assembly GCA_014654065.1. The GC content of the type genome is 28.88 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pelagibacter pinigimonia sp. nov.

Candidatus Pelagibacter pinigimonia (NL. fem. n. *pinigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902550805*. The type genome for the species is the GenBank assembly GCA_902550805.1. The GC content of the type genome is 28.26 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter pocilifica sp. nov.

Candidatus Pelagibacter pocilifica (NL. fem. n. *pocilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp008638165*. The type genome for the species is the GenBank assembly GCA_008638165.1. The GC content of the type genome is 29.54 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter podagicella sp. nov.

Candidatus Pelagibacter podagicella (NL. fem. n. *podagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902543375*. The type genome for the species is the GenBank assembly GCA_902543375.1. The GC content of the type genome is 29.22 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter pomifigena sp. nov.

Candidatus Pelagibacter pomifigena (NL. fem. n. *pomifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902573705*. The type genome for the species is the GenBank assembly GCA_902573705.1. The GC content of the type genome is 28.94 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter pomifitio sp. nov.

Candidatus Pelagibacter pomifitio (NL. fem. n. *pomifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902602105*. The type genome for the species is the GenBank assembly GCA_902602105.1. The GC content of the type genome is 28.85 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Pelagibacter procrugo sp. nov.

Candidatus Pelagibacter procrugo (NL. fem. n. *procrugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902541285*. The type genome for the species is the GenBank assembly GCA_902541285.1. The GC content of the type genome is 28.95 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter prodritrix sp. nov.

Candidatus Pelagibacter prodritrix (NL. fem. n. *prodritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902515485*. The type genome for the species is the GenBank assembly GCA_902515485.1. The GC content of the type genome is 29.39 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter prognitia sp. nov.

Candidatus Pelagibacter prognitia (NL. fem. n. *prognitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp002457485*. The type genome for the species is the GenBank assembly GCA_002457485.1. The GC content of the type genome is 28.34 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter pudibedo sp. nov.

Candidatus Pelagibacter pudibedo (NL. fem. n. *pudibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902601235*. The type genome for the species is the GenBank assembly GCA_902601235.1. The GC content of the type genome is 28.7 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter ranunatio sp. nov.

Candidatus Pelagibacter ranunatio (NL. fem. n. *ranunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902579925*. The type genome for the species is the GenBank assembly GCA_902524035.1. The GC content of the type genome is 29.27 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter rarefatica sp. nov.

Candidatus Pelagibacter rarefatica (NL. fem. n. *rarefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588315*. The type genome for the species is the GenBank assembly GCA_902588315.1. The GC content of the type genome is 29.23 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter rarefivita sp. nov.

Candidatus Pelagibacter rarefivita (NL. fem. n. *rarefivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560685*. The type genome for the species is the GenBank assembly GCA_902560685.1. The GC content of the type genome is 28.48 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter ratifibula sp. nov.

Candidatus Pelagibacter ratifibula (NL. fem. n. *ratifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902627805*. The type genome for the species is the GenBank assembly GCA_902627805.1. The GC content of the type genome is 29.51 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter ratifitia sp. nov.

Candidatus Pelagibacter ratifitia (NL. fem. n. *ratifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594705*. The type genome for the species is the GenBank assembly GCA_902622695.1. The GC content of the type genome is 29.18 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Pelagibacter ratifitio sp. nov.

Candidatus Pelagibacter ratifitio (NL. fem. n. *ratifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902611265*. The type genome for the species is the GenBank assembly GCA_902611265.1. The GC content of the type genome is 29.72 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter recocitura sp. nov.

Candidatus Pelagibacter recocitura (NL. fem. n. *recocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp001704065*. The type genome for the species is the GenBank assembly GCA_902519165.1. The GC content of the type genome is 29.2 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Pelagibacter recomessa sp. nov.

Candidatus Pelagibacter recomessa (NL. fem. n. *recomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter sp902624345*. The type genome for the species is the GenBank assembly GCA_902624345.1. The GC content of the type genome is 30.48 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Pelagibacter recorastra sp. nov.

Candidatus Pelagibacter recorastra (NL. fem. n. *recorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571915*. The type genome for the species is the GenBank assembly GCA_902571915.1. The GC content of the type genome is 29.34 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter refinilenta sp. nov.

Candidatus Pelagibacter refinilenta (NL. fem. n. *refinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902580135*. The type genome for the species is the GenBank assembly GCA_902580135.1. The GC content of the type genome is 28.33 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter reforitio sp. nov.

Candidatus Pelagibacter reforitio (NL. fem. n. *reforitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003282205*. The type genome for the species is the GenBank assembly GCA_902525505.1. The GC content of the type genome is 29.39 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Pelagibacter refunugo sp. nov.

Candidatus Pelagibacter refunugo (NL. fem. n. *refunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902568235*. The type genome for the species is the GenBank assembly GCA_902568235.1. The GC content of the type genome is 28.53 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter regifitoga sp. nov.

Candidatus Pelagibacter regifitoga (NL. fem. n. *regifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp001438335*. The type genome for the species is the GenBank assembly GCA_001439165.1. The GC content of the type genome is 31.57 % and the genome length is 1.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water; brackish water collected from the surface of the Baltic Sea".

Description of *Candidatus* Pelagibacter regigatio sp. nov.

Candidatus Pelagibacter regigatio (NL. fem. n. *regigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902555275*. The type genome for the species is the GenBank assembly GCA_902601645.1. The GC content of the type genome is 29.83 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter regigitoga sp. nov.

Candidatus Pelagibacter regigitoga (NL. fem. n. *regigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902557995*. The type genome for the species is the GenBank assembly GCA_902557995.1. The GC content of the type genome is 29.64 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter relapago sp. nov.

Candidatus Pelagibacter relapago (NL. fem. n. *relapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902516065*. The type genome for the species is the GenBank assembly GCA_902516065.1. The GC content of the type genome is 28.53 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter relapatio sp. nov.

Candidatus Pelagibacter relapatio (NL. fem. n. *relapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902525295*. The type genome for the species is the GenBank assembly GCA_902525295.1. The GC content of the type genome is 29.08 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter relapibra sp. nov.

Candidatus Pelagibacter relapibra (NL. fem. n. *relapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902613855*. The type genome for the species is the GenBank assembly GCA_902613855.1. The GC content of the type genome is 29.38 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pelagibacter relapitica sp. nov.

Candidatus Pelagibacter relapitica (NL. fem. n. *relapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003209915*. The type genome for the species is the GenBank assembly GCA_902524825.1. The GC content of the type genome is 30.2 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter relecatio sp. nov.

Candidatus Pelagibacter relecatio (NL. fem. n. *relecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902599625*. The type genome for the species is the GenBank assembly GCA_902599625.1. The GC content of the type genome is 29.72 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter relecetta sp. nov.

Candidatus Pelagibacter relecetta (NL. fem. n. *relecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp002101295*. The type genome for the species is the GenBank assembly RS_GCF_002101295.1. The GC content of the type genome is 29.44 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Pelagibacter relecimonia sp. nov.

Candidatus Pelagibacter relecimonia (NL. fem. n. *relecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902590535*. The type genome for the species is the GenBank assembly GCA_902590535.1. The GC content of the type genome is 29.34 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter renavastra sp. nov.

Candidatus Pelagibacter renavastra (NL. fem. n. *renavastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902587215*. The type genome for the species is the GenBank assembly GCA_902587215.1. The GC content of the type genome is 28.91 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter repagatio sp. nov.

Candidatus Pelagibacter repagatio (NL. fem. n. *repagatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003278165*. The type genome for the species is the GenBank assembly GCA_003278165.1. The GC content of the type genome is 29.21 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter repecitoga sp. nov.

Candidatus Pelagibacter repecitoga (NL. fem. n. *repecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902589315*. The type genome for the species is the GenBank assembly GCA_902589315.1. The GC content of the type genome is 29.46 %

and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter repecivita sp. nov.

Candidatus Pelagibacter repecivita (NL. fem. n. *repecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902582765*. The type genome for the species is the GenBank assembly GCA_902582765.1. The GC content of the type genome is 29.59 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter repepivita sp. nov.

Candidatus Pelagibacter repepivita (NL. fem. n. *repepivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902521805*. The type genome for the species is the GenBank assembly GCA_902521805.1. The GC content of the type genome is 28.58 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter repuritoga sp. nov.

Candidatus Pelagibacter repuritoga (NL. fem. n. *repuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902570695*. The type genome for the species is the GenBank assembly GCA_902570695.1. The GC content of the type genome is 29.22 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Pelagibacter repuritudo sp. nov.

Candidatus Pelagibacter repuritudo (NL. fem. n. *repuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902611175*. The type genome for the species is the GenBank assembly GCA_902611175.1. The GC content of the type genome is 29.42 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter resacicula sp. nov.

Candidatus Pelagibacter resacicula (NL. fem. n. *resacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902610675*. The type genome for the species is the GenBank assembly GCA_902610675.1. The GC content of the type genome is 29.15 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter resalago sp. nov.

Candidatus Pelagibacter resalago (NL. fem. n. *resalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560245*. The type genome for the species is the GenBank assembly GCA_902560245.1. The GC content of the type genome is 29.0 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter resalilenta sp. nov.

Candidatus Pelagibacter resalilenta (NL. fem. n. *resalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902615145*. The type genome for the species is the GenBank assembly GCA_902585885.1. The GC content of the type genome is 29.36 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter resalimonia sp. nov.

Candidatus Pelagibacter resalimonia (NL. fem. n. *resalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902555435*. The type genome for the species is the GenBank assembly GCA_902594715.1. The GC content of the type genome is 29.43 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Pelagibacter resulilenta sp. nov.

Candidatus Pelagibacter resulilenta (NL. fem. n. *resulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902564565*. The type genome for the species is the GenBank assembly GCA_902564565.1. The GC content of the type genome is 28.72 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter resupicella sp. nov.

Candidatus Pelagibacter resupicella (NL. fem. n. *resupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902514755*. The type genome for the species is the GenBank assembly GCA_902514755.1. The GC content of the type genome is 29.51 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter retunibra sp. nov.

Candidatus Pelagibacter retunibra (NL. fem. n. *retunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003282825*. The type genome for the species is the GenBank assembly GCA_003282825.1. The GC content of the type genome is 29.0 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter revecedo sp. nov.

Candidatus Pelagibacter revecedo (NL. fem. n. *revecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902600485*. The type genome for the species is the GenBank assembly GCA_902600485.1. The GC content of the type genome is 28.84 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter revecisca sp. nov.

Candidatus Pelagibacter revecisca (NL. fem. n. *revecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902535625*. The type genome for the species is the GenBank assembly GCA_902535625.1. The GC content of the type genome is 29.22 %

and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter ridibessa sp. nov.

Candidatus Pelagibacter ridibessa (NL. fem. n. *ridibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596915*. The type genome for the species is the GenBank assembly GCA_902596915.1. The GC content of the type genome is 29.58 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter rinocicula sp. nov.

Candidatus Pelagibacter rinocicula (NL. fem. n. *rinocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902559635*. The type genome for the species is the GenBank assembly GCA_902582125.1. The GC content of the type genome is 28.15 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter rinocimonas sp. nov.

Candidatus Pelagibacter rinocimonas (NL. fem. n. *rinocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902516435*. The type genome for the species is the GenBank assembly GCA_902516435.1. The GC content of the type genome is 29.71 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter rorarax sp. nov.

Candidatus Pelagibacter rorarax (NL. fem. n. *rorarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902624315*. The type genome for the species is the GenBank assembly GCA_902624315.1. The GC content of the type genome is 29.72 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Pelagibacter rorarilenta sp. nov.

Candidatus Pelagibacter rorarilenta (NL. fem. n. *rorarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902566805*. The type genome for the species is the GenBank assembly GCA_902576565.1. The GC content of the type genome is 28.6 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter rosarimonia sp. nov.

Candidatus Pelagibacter rosarimonia (NL. fem. n. *rosarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902576335*. The type genome for the species is the GenBank assembly GCA_902528885.1. The GC content of the type genome is 29.91 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter rudecitrix sp. nov.

Candidatus Pelagibacter rudecitrix (NL. fem. n. *rudecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902633885*. The type genome for the species is the GenBank assembly GCA_902633885.1. The GC content of the type genome is 28.08 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Pelagibacter rudicedo sp. nov.

Candidatus Pelagibacter rudicedo (NL. fem. n. *rudicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902623735*. The type genome for the species is the GenBank assembly GCA_902623735.1. The GC content of the type genome is 29.4 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter ruricitica sp. nov.

Candidatus Pelagibacter ruricitica (NL. fem. n. *ruricitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003280485*. The type genome for the species is the GenBank assembly GCA_003280485.1. The GC content of the type genome is 29.23 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter ruricivita sp. nov.

Candidatus Pelagibacter ruricivita (NL. fem. n. *ruricivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902607215*. The type genome for the species is the GenBank assembly GCA_902607215.1. The GC content of the type genome is 28.96 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Pelagibacter sacomitica sp. nov.

Candidatus Pelagibacter sacomitica (NL. fem. n. *sacomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902564265*. The type genome for the species is the GenBank assembly GCA_902564265.1. The GC content of the type genome is 29.49 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter sacopimonas sp. nov.

Candidatus Pelagibacter sacopimonas (NL. fem. n. *sacopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902528175*. The type genome for the species is the GenBank assembly GCA_902528175.1. The GC content of the type genome is 29.06 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter salubetta sp. nov.

Candidatus Pelagibacter salubetta (NL. fem. n. *salubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902577525*. The type genome for the species is the GenBank assembly GCA_902577525.1. The GC content of the type genome is 28.59 %

and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter sarabibra sp. nov.

Candidatus Pelagibacter sarabibra (NL. fem. n. *sarabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597695*. The type genome for the species is the GenBank assembly GCA_902597695.1. The GC content of the type genome is 29.95 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Pelagibacter sarabivita sp. nov.

Candidatus Pelagibacter sarabivita (NL. fem. n. *sarabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902573755*. The type genome for the species is the GenBank assembly GCA_902573755.1. The GC content of the type genome is 29.71 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter saxopitrix sp. nov.

Candidatus Pelagibacter saxopitrix (NL. fem. n. *saxopitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003215055*. The type genome for the species is the GenBank assembly GCA_902566655.1. The GC content of the type genome is 28.5 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter scelledo sp. nov.

Candidatus Pelagibacter scelledo (NL. fem. n. *scelledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588965*. The type genome for the species is the GenBank assembly GCA_902588965.1. The GC content of the type genome is 28.7 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter scellicula sp. nov.

Candidatus Pelagibacter scellicula (NL. fem. n. *scellicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902569415*. The type genome for the species is the GenBank assembly GCA_902569415.1. The GC content of the type genome is 28.54 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter scorbatio sp. nov.

Candidatus Pelagibacter scorbatio (NL. fem. n. *scorbatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595595*. The type genome for the species is the GenBank assembly GCA_902595595.1. The GC content of the type genome is 29.45 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter secunibula sp. nov.

Candidatus Pelagibacter secunibula (NL. fem. n. *secunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653985*. The type genome for the species is the GenBank assembly GCA_014653985.1. The GC content of the type genome is 29.45 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Pelagibacter selecitrix sp. nov.

Candidatus Pelagibacter selecitrix (NL. fem. n. *selecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902616165*. The type genome for the species is the GenBank assembly GCA_902616165.1. The GC content of the type genome is 29.01 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter semifitio sp. nov.

Candidatus Pelagibacter semifitio (NL. fem. n. *semifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902612575*. The type genome for the species is the GenBank assembly GCA_902541335.1. The GC content of the type genome is 29.83 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter semigago sp. nov.

Candidatus Pelagibacter semigago (NL. fem. n. *semigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594675*. The type genome for the species is the GenBank assembly GCA_902594675.1. The GC content of the type genome is 29.32 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Pelagibacter semigilenta sp. nov.

Candidatus Pelagibacter semigilenta (NL. fem. n. *semigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902528375*. The type genome for the species is the GenBank assembly GCA_902528375.1. The GC content of the type genome is 29.55 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter semigousia sp. nov.

Candidatus Pelagibacter semigousia (NL. fem. n. *semigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902614055*. The type genome for the species is the GenBank assembly GCA_902614055.1. The GC content of the type genome is 29.6 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Pelagibacter semipago sp. nov.

Candidatus Pelagibacter semipago (NL. fem. n. *semipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902528135*. The type genome for the species is the GenBank assembly GCA_902528135.1. The GC content of the type genome is 29.62 %

and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter semipetta sp. nov.

Candidatus Pelagibacter semipetta (NL. fem. n. *semipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902579105*. The type genome for the species is the GenBank assembly GCA_902530335.1. The GC content of the type genome is 27.96 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter semipicella sp. nov.

Candidatus Pelagibacter semipicella (NL. fem. n. *semipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902618975*. The type genome for the species is the GenBank assembly GCA_902618975.1. The GC content of the type genome is 28.85 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter semipousia sp. nov.

Candidatus Pelagibacter semipousia (NL. fem. n. *semipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588255*. The type genome for the species is the GenBank assembly GCA_902588255.1. The GC content of the type genome is 28.88 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pelagibacter semodentia sp. nov.

Candidatus Pelagibacter semodentia (NL. fem. n. *semodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003282895*. The type genome for the species is the GenBank assembly GCA_902515655.1. The GC content of the type genome is 29.12 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter semunatica sp. nov.

Candidatus Pelagibacter semunatica (NL. fem. n. *semunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902568855*. The type genome for the species is the GenBank assembly GCA_902568855.1. The GC content of the type genome is 29.32 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter semunitio sp. nov.

Candidatus Pelagibacter semunitio (NL. fem. n. *semunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003210015*. The type genome for the species is the GenBank assembly GCA_003210015.1. The GC content of the type genome is 28.86 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter senipetta sp. nov.

Candidatus Pelagibacter senipetta (NL. fem. n. *senipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902585365*. The type genome for the species is the GenBank assembly GCA_902620685.1. The GC content of the type genome is 28.85 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter seposatio sp. nov.

Candidatus Pelagibacter seposatio (NL. fem. n. *seposatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902516345*. The type genome for the species is the GenBank assembly GCA_902516345.1. The GC content of the type genome is 29.33 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter sicinitas sp. nov.

Candidatus Pelagibacter sicinitas (NL. fem. n. *sicinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014654455*. The type genome for the species is the GenBank assembly GCA_014654455.1. The GC content of the type genome is 28.42 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Pelagibacter sicubilega sp. nov.

Candidatus Pelagibacter sicubilega (NL. fem. n. *sicubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902554195*. The type genome for the species is the GenBank assembly GCA_902554195.1. The GC content of the type genome is 29.39 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter sicubitura sp. nov.

Candidatus Pelagibacter sicubitura (NL. fem. n. *sicubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902627075*. The type genome for the species is the GenBank assembly GCA_902627075.1. The GC content of the type genome is 29.35 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter siminitoga sp. nov.

Candidatus Pelagibacter siminitoga (NL. fem. n. *siminitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902580945*. The type genome for the species is the GenBank assembly GCA_902580945.1. The GC content of the type genome is 29.38 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Pelagibacter siteletta sp. nov.

Candidatus Pelagibacter siteletta (NL. fem. n. *siteletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902553695*. The type genome for the species is the GenBank assembly GCA_902553695.1. The GC content of the type genome is 28.6 %

and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter sitelifica sp. nov.

Candidatus Pelagibacter sitelifica (NL. fem. n. *sitelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653355*. The type genome for the species is the GenBank assembly GCA_014653355.1. The GC content of the type genome is 28.55 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Pelagibacter sitelitoga sp. nov.

Candidatus Pelagibacter sitelitoga (NL. fem. n. *sitelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902599335*. The type genome for the species is the GenBank assembly GCA_902599335.1. The GC content of the type genome is 28.99 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Pelagibacter siticatica sp. nov.

Candidatus Pelagibacter siticatica (NL. fem. n. *siticatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902540235*. The type genome for the species is the GenBank assembly GCA_902540235.1. The GC content of the type genome is 29.6 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter socagibula sp. nov.

Candidatus Pelagibacter socagibula (NL. fem. n. *socagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902536975*. The type genome for the species is the GenBank assembly GCA_902536975.1. The GC content of the type genome is 29.75 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter socagitia sp. nov.

Candidatus Pelagibacter socagitia (NL. fem. n. *socagitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003281045*. The type genome for the species is the GenBank assembly GCA_003281045.1. The GC content of the type genome is 29.86 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter solacimonia sp. nov.

Candidatus Pelagibacter solacimonia (NL. fem. n. *solacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp007833635*. The type genome for the species is the GenBank assembly RS_GCF_007833635.1. The GC content of the type genome is 29.22 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Pelagibacter solifago sp. nov.

Candidatus Pelagibacter solifago (NL. fem. n. *solifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902517175*. The type genome for the species is the GenBank assembly GCA_902517175.1. The GC content of the type genome is 29.72 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter solificula sp. nov.

Candidatus Pelagibacter solificula (NL. fem. n. *solificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902559395*. The type genome for the species is the GenBank assembly GCA_902559395.1. The GC content of the type genome is 29.42 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter sonabimonas sp. nov.

Candidatus Pelagibacter sonabimonas (NL. fem. n. *sonabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902557215*. The type genome for the species is the GenBank assembly GCA_902541105.1. The GC content of the type genome is 29.27 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter sonivitio sp. nov.

Candidatus Pelagibacter sonivitio (NL. fem. n. *sonivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902578775*. The type genome for the species is the GenBank assembly GCA_902578775.1. The GC content of the type genome is 28.87 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Pelagibacter sotulatio sp. nov.

Candidatus Pelagibacter sotulatio (NL. fem. n. *sotulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902592445*. The type genome for the species is the GenBank assembly GCA_902538815.1. The GC content of the type genome is 29.42 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter spastilega sp. nov.

Candidatus Pelagibacter spastilega (NL. fem. n. *spastilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653665*. The type genome for the species is the GenBank assembly GCA_014653665.1. The GC content of the type genome is 29.57 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter stercitura sp. nov.

Candidatus Pelagibacter stercitura (NL. fem. n. *stercitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902552805*. The type genome for the species is the GenBank assembly GCA_902552805.1. The GC content of the type genome is 29.45 %

and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter subinousia sp. nov.

Candidatus Pelagibacter subinousia (NL. fem. n. *subinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902586495*. The type genome for the species is the GenBank assembly GCA_902586495.1. The GC content of the type genome is 29.54 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter suboditoga sp. nov.

Candidatus Pelagibacter suboditoga (NL. fem. n. *suboditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902599955*. The type genome for the species is the GenBank assembly GCA_902599955.1. The GC content of the type genome is 29.92 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter suboditura sp. nov.

Candidatus Pelagibacter suboditura (NL. fem. n. *suboditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595535*. The type genome for the species is the GenBank assembly GCA_902595535.1. The GC content of the type genome is 28.72 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Pelagibacter subucisca sp. nov.

Candidatus Pelagibacter subucisca (NL. fem. n. *subucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902589395*. The type genome for the species is the GenBank assembly GCA_902589395.1. The GC content of the type genome is 29.34 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Pelagibacter sugiliforma sp. nov.

Candidatus Pelagibacter sugiliforma (NL. fem. n. *sugiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902632515*. The type genome for the species is the GenBank assembly GCA_902632515.1. The GC content of the type genome is 28.51 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter supelessa sp. nov.

Candidatus Pelagibacter supelessa (NL. fem. n. *supelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596975*. The type genome for the species is the GenBank assembly GCA_902596975.1. The GC content of the type genome is 29.5 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Pelagibacter supelilenta sp. nov.

Candidatus Pelagibacter supelilenta (NL. fem. n. *supelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014654235*. The type genome for the species is the GenBank assembly GCA_014654235.1. The GC content of the type genome is 29.52 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter susicitia sp. nov.

Candidatus Pelagibacter susicitia (NL. fem. n. *susicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902597555*. The type genome for the species is the GenBank assembly GCA_902597555.1. The GC content of the type genome is 29.41 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter tabifisca sp. nov.

Candidatus Pelagibacter tabifisca (NL. fem. n. *tabifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902625035*. The type genome for the species is the GenBank assembly GCA_902625035.1. The GC content of the type genome is 29.33 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter tabitetta sp. nov.

Candidatus Pelagibacter tabitetta (NL. fem. n. *tabitetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003280005*. The type genome for the species is the GenBank assembly GCA_003280005.1. The GC content of the type genome is 28.81 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter taraxitas sp. nov.

Candidatus Pelagibacter taraxitas (NL. fem. n. *taraxitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902622805*. The type genome for the species is the GenBank assembly GCA_902625795.1. The GC content of the type genome is 29.11 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter televitrix sp. nov.

Candidatus Pelagibacter televitrix (NL. fem. n. *televitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902576375*. The type genome for the species is the GenBank assembly GCA_902576375.1. The GC content of the type genome is 29.37 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Pelagibacter tenebimonas sp. nov.

Candidatus Pelagibacter tenebimonas (NL. fem. n. *tenebimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902582605*. The type genome for the species is the GenBank assembly GCA_902582605.1. The GC content of the type genome is 29.58 %

and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter tenemivita sp. nov.

Candidatus Pelagibacter tenemivita (NL. fem. n. *tenemivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902584015*. The type genome for the species is the GenBank assembly GCA_902584015.1. The GC content of the type genome is 29.54 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter tenemugo sp. nov.

Candidatus Pelagibacter tenemugo (NL. fem. n. *tenemugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902559305*. The type genome for the species is the GenBank assembly GCA_902559305.1. The GC content of the type genome is 28.4 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Pelagibacter tenilax sp. nov.

Candidatus Pelagibacter tenilax (NL. fem. n. *tenilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902623305*. The type genome for the species is the GenBank assembly GCA_902623305.1. The GC content of the type genome is 29.05 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter tenilivita sp. nov.

Candidatus Pelagibacter tenilivita (NL. fem. n. *tenilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902520335*. The type genome for the species is the GenBank assembly GCA_902520335.1. The GC content of the type genome is 29.18 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter tetenedo sp. nov.

Candidatus Pelagibacter tetenedo (NL. fem. n. *tetenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902634305*. The type genome for the species is the GenBank assembly GCA_902634305.1. The GC content of the type genome is 28.28 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter thapsax sp. nov.

Candidatus Pelagibacter thapsax (NL. fem. n. *thapsax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902582235*. The type genome for the species is the GenBank assembly GCA_902582235.1. The GC content of the type genome is 29.68 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter tibicugo sp. nov.

Candidatus Pelagibacter tibicugo (NL. fem. n. *tibicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp014653775*. The type genome for the species is the GenBank assembly GCA_014653775.1. The GC content of the type genome is 27.8 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter timeficella sp. nov.

Candidatus Pelagibacter timeficella (NL. fem. n. *timeficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902562645*. The type genome for the species is the GenBank assembly GCA_902533545.1. The GC content of the type genome is 29.2 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter timefisca sp. nov.

Candidatus Pelagibacter timefisca (NL. fem. n. *timefisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003213695*. The type genome for the species is the GenBank assembly GCA_003213695.1. The GC content of the type genome is 28.66 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter tirocimonas sp. nov.

Candidatus Pelagibacter tirocimonas (NL. fem. n. *tirocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902519255*. The type genome for the species is the GenBank assembly GCA_902534025.1. The GC content of the type genome is 29.33 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter tirunicella sp. nov.

Candidatus Pelagibacter tirunicella (NL. fem. n. *tirunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902615445*. The type genome for the species is the GenBank assembly GCA_902615445.1. The GC content of the type genome is 29.41 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter tirunilega sp. nov.

Candidatus Pelagibacter tirunilega (NL. fem. n. *tirunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902596325*. The type genome for the species is the GenBank assembly GCA_902601715.1. The GC content of the type genome is 29.13 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Pelagibacter tumefitoga sp. nov.

Candidatus Pelagibacter tumefitoga (NL. fem. n. *tumefitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902571015*. The type genome for the species is the GenBank assembly GCA_902571015.1. The GC content of the type genome is 29.13 %

and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter turibibula sp. nov.

Candidatus Pelagibacter turibibula (NL. fem. n. *turibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902611145*. The type genome for the species is the GenBank assembly GCA_902567935.1. The GC content of the type genome is 28.18 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Pelagibacter turibousia sp. nov.

Candidatus Pelagibacter turibousia (NL. fem. n. *turibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902560855*. The type genome for the species is the GenBank assembly GCA_902560855.1. The GC content of the type genome is 28.39 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter turifibra sp. nov.

Candidatus Pelagibacter turifibra (NL. fem. n. *turifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902554995*. The type genome for the species is the GenBank assembly GCA_902554995.1. The GC content of the type genome is 29.67 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter umbiletta sp. nov.

Candidatus Pelagibacter umbiletta (NL. fem. n. *umbiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902545035*. The type genome for the species is the GenBank assembly GCA_902545035.1. The GC content of the type genome is 29.39 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter utillitas sp. nov.

Candidatus Pelagibacter utillitas (NL. fem. n. *utillitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902632275*. The type genome for the species is the GenBank assembly GCA_902632275.1. The GC content of the type genome is 28.78 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Pelagibacter utrarisca sp. nov.

Candidatus Pelagibacter utrarisca (NL. fem. n. *utrarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902633985*. The type genome for the species is the GenBank assembly GCA_902633985.1. The GC content of the type genome is 29.23 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pelagibacter uxorcitica sp. nov.

Candidatus Pelagibacter uxorcitica (NL. fem. n. *uxorcitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902588895*. The type genome for the species is the GenBank assembly GCA_902588895.1. The GC content of the type genome is 29.28 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Pelagibacter uxorcousia sp. nov.

Candidatus Pelagibacter uxorcousia (NL. fem. n. *uxorcousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902570545*. The type genome for the species is the GenBank assembly GCA_902570545.1. The GC content of the type genome is 29.66 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter vacilitoga sp. nov.

Candidatus Pelagibacter vacilitoga (NL. fem. n. *vacilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902583345*. The type genome for the species is the GenBank assembly GCA_902583345.1. The GC content of the type genome is 28.85 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Pelagibacter vanidago sp. nov.

Candidatus Pelagibacter vanidago (NL. fem. n. *vanidago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902628275*. The type genome for the species is the GenBank assembly GCA_902628275.1. The GC content of the type genome is 29.19 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Pelagibacter vaniditudo sp. nov.

Candidatus Pelagibacter vaniditudo (NL. fem. n. *vaniditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902543245*. The type genome for the species is the GenBank assembly GCA_902578735.1. The GC content of the type genome is 29.17 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Pelagibacter vanitatica sp. nov.

Candidatus Pelagibacter vanitatica (NL. fem. n. *vanitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902594915*. The type genome for the species is the GenBank assembly GCA_902594915.1. The GC content of the type genome is 28.74 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter vecorastra sp. nov.

Candidatus Pelagibacter vecorastra (NL. fem. n. *vecorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902525625*. The type genome for the species is the GenBank assembly GCA_902526275.1. The GC content of the type genome is 29.68 %

and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter vecoratio sp. nov.

Candidatus Pelagibacter vecoratio (NL. fem. n. *vecoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902564785*. The type genome for the species is the GenBank assembly GCA_902564785.1. The GC content of the type genome is 29.53 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter vehemibra sp. nov.

Candidatus Pelagibacter vehemibra (NL. fem. n. *vehemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902521005*. The type genome for the species is the GenBank assembly GCA_902573185.1. The GC content of the type genome is 28.63 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter venefedo sp. nov.

Candidatus Pelagibacter venefedo (NL. fem. n. *venefedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902532645*. The type genome for the species is the GenBank assembly GCA_902532645.1. The GC content of the type genome is 29.42 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter vepalicella sp. nov.

Candidatus Pelagibacter vepalicella (NL. fem. n. *vepalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902555665*. The type genome for the species is the GenBank assembly GCA_902555665.1. The GC content of the type genome is 29.39 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter vepalisca sp. nov.

Candidatus Pelagibacter vepalisca (NL. fem. n. *vepalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902554335*. The type genome for the species is the GenBank assembly GCA_902554335.1. The GC content of the type genome is 28.89 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter vepalitio sp. nov.

Candidatus Pelagibacter vepalitio (NL. fem. n. *vepalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902541825*. The type genome for the species is the GenBank assembly GCA_902612225.1. The GC content of the type genome is 29.46 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter veridifica sp. nov.

Candidatus Pelagibacter veridifica (NL. fem. n. *veridifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902534465*. The type genome for the species is the GenBank assembly GCA_902534465.1. The GC content of the type genome is 29.6 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pelagibacter viburicella sp. nov.

Candidatus Pelagibacter viburicella (NL. fem. n. *viburicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902591025*. The type genome for the species is the GenBank assembly GCA_902591025.1. The GC content of the type genome is 29.37 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pelagibacter viburitoga sp. nov.

Candidatus Pelagibacter viburitoga (NL. fem. n. *viburitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902618855*. The type genome for the species is the GenBank assembly GCA_902618855.1. The GC content of the type genome is 28.99 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter vicatedo sp. nov.

Candidatus Pelagibacter vicatedo (NL. fem. n. *vicatedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902562205*. The type genome for the species is the GenBank assembly GCA_902562205.1. The GC content of the type genome is 29.65 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter vicecatica sp. nov.

Candidatus Pelagibacter vicecatica (NL. fem. n. *vicecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902566705*. The type genome for the species is the GenBank assembly GCA_902566705.1. The GC content of the type genome is 29.28 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pelagibacter videlitrix sp. nov.

Candidatus Pelagibacter videlitrix (NL. fem. n. *videlitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902591695*. The type genome for the species is the GenBank assembly GCA_902591695.1. The GC content of the type genome is 29.33 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter vigenitas sp. nov.

Candidatus Pelagibacter vigenitas (NL. fem. n. *vigenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902539165*. The type genome for the species is the GenBank assembly GCA_902555265.1. The GC content of the type genome is 29.82 %

and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter viginifica sp. nov.

Candidatus Pelagibacter viginifica (NL. fem. n. *viginifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604975*. The type genome for the species is the GenBank assembly GCA_902604975.1. The GC content of the type genome is 29.43 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter vinolilenta sp. nov.

Candidatus Pelagibacter vinolilenta (NL. fem. n. *vinolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902607115*. The type genome for the species is the GenBank assembly GCA_902607115.1. The GC content of the type genome is 28.53 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter vinulousia sp. nov.

Candidatus Pelagibacter vinulousia (NL. fem. n. *vinulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902533075*. The type genome for the species is the GenBank assembly GCA_902533075.1. The GC content of the type genome is 28.79 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter viragetta sp. nov.

Candidatus Pelagibacter viragetta (NL. fem. n. *viragetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902554035*. The type genome for the species is the GenBank assembly GCA_902554035.1. The GC content of the type genome is 28.7 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter visibicella sp. nov.

Candidatus Pelagibacter visibicella (NL. fem. n. *visibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902631135*. The type genome for the species is the GenBank assembly GCA_902631135.1. The GC content of the type genome is 28.94 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Pelagibacter visificella sp. nov.

Candidatus Pelagibacter visificella (NL. fem. n. *visificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902627565*. The type genome for the species is the GenBank assembly GCA_902627565.1. The GC content of the type genome is 28.98 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter visifivita sp. nov.

Candidatus Pelagibacter visifivita (NL. fem. n. *visifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902517495*. The type genome for the species is the GenBank assembly GCA_902517495.1. The GC content of the type genome is 29.69 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter visocitia sp. nov.

Candidatus Pelagibacter visocitia (NL. fem. n. *visocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902522915*. The type genome for the species is the GenBank assembly GCA_902522915.1. The GC content of the type genome is 28.95 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter vitupitudo sp. nov.

Candidatus Pelagibacter vitupitudo (NL. fem. n. *vitupitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902580335*. The type genome for the species is the GenBank assembly GCA_902580335.1. The GC content of the type genome is 29.26 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter vocifedo sp. nov.

Candidatus Pelagibacter vocifedo (NL. fem. n. *vocifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902615425*. The type genome for the species is the GenBank assembly GCA_902615425.1. The GC content of the type genome is 29.39 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter volubiforma sp. nov.

Candidatus Pelagibacter volubiforma (NL. fem. n. *volubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp003279685*. The type genome for the species is the GenBank assembly GCA_902558255.1. The GC content of the type genome is 29.27 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Pelagibacter voragentia sp. nov.

Candidatus Pelagibacter voragentia (NL. fem. n. *voragentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902604245*. The type genome for the species is the GenBank assembly GCA_902604245.1. The GC content of the type genome is 29.58 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Pelagibacter voragitia sp. nov.

Candidatus Pelagibacter voragitia (NL. fem. n. *voragitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902577625*. The type genome for the species is the GenBank assembly GCA_902577625.1. The GC content of the type genome is 28.57 %

and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter xenopitrix sp. nov.

Candidatus Pelagibacter xenopitrix (NL. fem. n. *xenopitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902583645*. The type genome for the species is the GenBank assembly GCA_902583645.1. The GC content of the type genome is 29.25 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter xeramastra sp. nov.

Candidatus Pelagibacter xeramastra (NL. fem. n. *xeramastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter sp902595125*. The type genome for the species is the GenBank assembly GCA_902605005.1. The GC content of the type genome is 28.76 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Pelagibacter aclasicella sp. nov.

Candidatus Pelagibacter aclasicella (NL. fem. n. *aclasicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902603945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902603945.1. The GC content of the type genome is 30.08 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter adfulimonas sp. nov.

Candidatus Pelagibacter adfulimonas (NL. fem. n. *adfulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902631535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902631535.1. The GC

content of the type genome is 29.65 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter adnecedo sp. nov.

Candidatus Pelagibacter adnecedo (NL. fem. n. *adnecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp002169755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002169755.1. The GC content of the type genome is 29.61 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter adoscessa sp. nov.

Candidatus Pelagibacter adoscessa (NL. fem. n. *adoscessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp014653815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014653815.1. The GC content of the type genome is 29.12 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter adsesessa sp. nov.

Candidatus Pelagibacter adsesessa (NL. fem. n. *adsesessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902598125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902598125.1. The GC content of the type genome is 29.57 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pelagibacter adtacilega sp. nov.

Candidatus Pelagibacter adtacilega (NL. fem. n. *adtacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902535255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902535255.1. The GC content of the type genome is 29.98 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter advigivita sp. nov.

Candidatus Pelagibacter advigivita (NL. fem. n. *advigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902582165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902582165.1. The GC content of the type genome is 29.71 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter affanibra sp. nov.

Candidatus Pelagibacter affanibra (NL. fem. n. *affanibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902569465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902569465.1. The GC content of the type genome is 29.84 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Pelagibacter affulatio sp. nov.

Candidatus Pelagibacter affulatio (NL. fem. n. *affulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902624495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902624495.1. The GC content of the type genome is 30.43 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter agratitura sp. nov.

Candidatus Pelagibacter agratitura (NL. fem. n. *agratitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902625945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902625945.1. The GC content of the type genome is 29.7 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter allibedo sp. nov.

Candidatus Pelagibacter allibedo (NL. fem. n. *allibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902615435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902615435.1. The GC content of the type genome is 29.64 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter alluvicella sp. nov.

Candidatus Pelagibacter alluvicella (NL. fem. n. *alluvicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902633595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902633595.1. The GC content of the type genome is 30.25 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Pelagibacter ambadatica sp. nov.

Candidatus Pelagibacter ambadatica (NL. fem. n. *ambadatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp014653835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014653835.1. The GC

content of the type genome is 29.58 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter anactimonas sp. nov.

Candidatus Pelagibacter anactimonas (NL. fem. n. *anactimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902561585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902561585.1. The GC content of the type genome is 29.55 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter anarricula sp. nov.

Candidatus Pelagibacter anarricula (NL. fem. n. *anarricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902523095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902523095.1. The GC content of the type genome is 29.51 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter ancipitoga sp. nov.

Candidatus Pelagibacter ancipitoga (NL. fem. n. *ancipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902545945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902545945.1. The GC content of the type genome is 29.7 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter annucibra sp. nov.

Candidatus Pelagibacter annucibra (NL. fem. n. *annucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902578315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902578315.1. The GC content of the type genome is 29.86 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter aphoretta sp. nov.

Candidatus Pelagibacter aphoretta (NL. fem. n. *aphoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902635795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902635795.1. The GC content of the type genome is 29.89 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter apposousia sp. nov.

Candidatus Pelagibacter apposousia (NL. fem. n. *apposousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902554785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902554785.1. The GC content of the type genome is 30.0 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Pelagibacter arcipitrix sp. nov.

Candidatus Pelagibacter arcipitrix (NL. fem. n. *arcipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902623395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902623395.1. The GC content of the type genome is 29.57 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter aspilitudo sp. nov.

Candidatus Pelagibacter aspilitudo (NL. fem. n. *aspilitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902590465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902590465.1. The GC content of the type genome is 29.81 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter atlanibula sp. nov.

Candidatus Pelagibacter atlanibula (NL. fem. n. *atlanibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902536385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536385.1. The GC content of the type genome is 29.79 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter baditicella sp. nov.

Candidatus Pelagibacter baditicella (NL. fem. n. *baditicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902619675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902633135.1. The GC content of the type genome is 30.04 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter badititia sp. nov.

Candidatus Pelagibacter badititia (NL. fem. n. *badititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902630925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902630925.1. The GC

content of the type genome is 29.85 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter benepivita sp. nov.

Candidatus Pelagibacter benepivita (NL. fem. n. *benepivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902610975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902610975.1. The GC content of the type genome is 29.7 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter bicapastra sp. nov.

Candidatus Pelagibacter bicapastra (NL. fem. n. *bicapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902566945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902566945.1. The GC content of the type genome is 29.62 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter brasmitas sp. nov.

Candidatus Pelagibacter brasmitas (NL. fem. n. *brasmitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902632445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902632445.1. The GC content of the type genome is 29.66 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter bucolicula sp. nov.

Candidatus Pelagibacter bucolicula (NL. fem. n. *bucolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902618555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902618555.1. The GC content of the type genome is 29.91 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter cacomitica sp. nov.

Candidatus Pelagibacter cacomitica (NL. fem. n. *cacomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902583585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902583585.1. The GC content of the type genome is 29.78 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter cadavax sp. nov.

Candidatus Pelagibacter cadavax (NL. fem. n. *cadavax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902569785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902569785.1. The GC content of the type genome is 29.4 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter catalessa sp. nov.

Candidatus Pelagibacter catalessa (NL. fem. n. *catalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902592655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902592655.1. The GC content of the type genome is 29.82 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter catalitoga sp. nov.

Candidatus Pelagibacter catalitoga (NL. fem. n. *catalitoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp003283025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902514955.1. The GC content of the type genome is 29.22 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Pelagibacter catobastra sp. nov.

Candidatus Pelagibacter catobastra (NL. fem. n. *catobastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902574045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902574045.1. The GC content of the type genome is 29.69 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter cenacimonas sp. nov.

Candidatus Pelagibacter cenacimonas (NL. fem. n. *cenacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902619835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902619835.1. The GC content of the type genome is 29.61 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter cenotastra sp. nov.

Candidatus Pelagibacter cenotastra (NL. fem. n. *cenotastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902552345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902552345.1. The GC

content of the type genome is 29.85 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter codifastra sp. nov.

Candidatus Pelagibacter codifastra (NL. fem. n. *codifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp003213555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003213555.1. The GC content of the type genome is 30.05 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Pelagibacter colubimonia sp. nov.

Candidatus Pelagibacter colubimonia (NL. fem. n. *colubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp003284275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902509665.1. The GC content of the type genome is 29.91 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter cosigax sp. nov.

Candidatus Pelagibacter cosigax (NL. fem. n. *cosigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902587515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902587515.1. The GC content of the type genome is 29.51 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Pelagibacter cruppitoga sp. nov.

Candidatus Pelagibacter cruppitoga (NL. fem. n. *cruppitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902613915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902613915.1. The GC content of the type genome is 29.49 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter culilibula sp. nov.

Candidatus Pelagibacter culilibula (NL. fem. n. *culilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902539235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902539235.1. The GC content of the type genome is 29.66 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter decupatio sp. nov.

Candidatus Pelagibacter decupatio (NL. fem. n. *decupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902536205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536205.1. The GC content of the type genome is 29.75 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Pelagibacter delacentia sp. nov.

Candidatus Pelagibacter delacentia (NL. fem. n. *delacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902572605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902558755.1. The GC content of the type genome is 29.34 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter delapitio sp. nov.

Candidatus Pelagibacter delapitio (NL. fem. n. *delapitio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902580565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902580565.1. The GC content of the type genome is 29.24 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter demagisca sp. nov.

Candidatus Pelagibacter demagisca (NL. fem. n. *demagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902590755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902590755.1. The GC content of the type genome is 29.98 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter demigitoga sp. nov.

Candidatus Pelagibacter demigitoga (NL. fem. n. *demigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902620585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902620585.1. The GC content of the type genome is 29.57 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter denigitoga sp. nov.

Candidatus Pelagibacter denigitoga (NL. fem. n. *denigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902585045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902557915.1. The GC

content of the type genome is 29.83 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter denomisca sp. nov.

Candidatus Pelagibacter denomisca (NL. fem. n. *denomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp002169935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002169935.2. The GC content of the type genome is 30.25 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Pelagibacter depecifica sp. nov.

Candidatus Pelagibacter depecifica (NL. fem. n. *depecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902566675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902566675.1. The GC content of the type genome is 30.18 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Pelagibacter desorax sp. nov.

Candidatus Pelagibacter desorax (NL. fem. n. *desorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902601705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902611735.1. The GC content of the type genome is 29.96 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter detesago sp. nov.

Candidatus Pelagibacter detesago (NL. fem. n. *detesago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902569735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902580485.1. The GC content of the type genome is 29.32 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter dilicax sp. nov.

Candidatus Pelagibacter dilicax (NL. fem. n. *dilicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902624195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902624195.1. The GC content of the type genome is 30.1 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter dilicitica sp. nov.

Candidatus Pelagibacter dilicitica (NL. fem. n. *dilicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902610115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902610115.1. The GC content of the type genome is 29.82 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Pelagibacter dilogicella sp. nov.

Candidatus Pelagibacter dilogicella (NL. fem. n. *dilogicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902517535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902517535.1. The GC content of the type genome is 29.49 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter diluvitia sp. nov.

Candidatus Pelagibacter diluvitia (NL. fem. n. *diluvitia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902596205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902537695.1. The GC content of the type genome is 30.12 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Pelagibacter divoribra sp. nov.

Candidatus Pelagibacter divoribra (NL. fem. n. *divoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902616145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902616145.1. The GC content of the type genome is 29.9 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter docibisca sp. nov.

Candidatus Pelagibacter docibisca (NL. fem. n. *docibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902590625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902590625.1. The GC content of the type genome is 30.0 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Pelagibacter domabitia sp. nov.

Candidatus Pelagibacter domabitia (NL. fem. n. *domabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902593905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902593905.1. The GC

content of the type genome is 30.06 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Pelagibacter doxolibula sp. nov.

Candidatus Pelagibacter doxolibula (NL. fem. n. *doxolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902577575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902577575.1. The GC content of the type genome is 29.96 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter ducilousia sp. nov.

Candidatus Pelagibacter ducilousia (NL. fem. n. *ducilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902591415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902591415.1. The GC content of the type genome is 29.64 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter duricatica sp. nov.

Candidatus Pelagibacter duricatica (NL. fem. n. *duricatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902544345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902544345.1. The GC content of the type genome is 30.07 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter effemedo sp. nov.

Candidatus Pelagibacter effemedo (NL. fem. n. *effemedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902556855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902556855.1. The GC content of the type genome is 29.89 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter effemifica sp. nov.

Candidatus Pelagibacter effemifica (NL. fem. n. *effemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902573345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902573345.1. The GC content of the type genome is 29.5 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter epicrentia sp. nov.

Candidatus Pelagibacter epicrentia (NL. fem. n. *epicrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902519635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902519635.1. The GC content of the type genome is 29.71 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Pelagibacter expanigena sp. nov.

Candidatus Pelagibacter expanigena (NL. fem. n. *expanigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902547825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902547825.1. The GC content of the type genome is 29.63 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter exsorigena sp. nov.

Candidatus Pelagibacter exsorigena (NL. fem. n. *exsorigena* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902598735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902598735.1. The GC content of the type genome is 29.72 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pelagibacter fidenivita sp. nov.

Candidatus Pelagibacter fidenivita (NL. fem. n. *fidenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902557785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902557785.1. The GC content of the type genome is 29.95 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pelagibacter fiducilega sp. nov.

Candidatus Pelagibacter fiducilega (NL. fem. n. *fiducilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902619495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902597295.1. The GC content of the type genome is 30.05 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter forabitica sp. nov.

Candidatus Pelagibacter forabitica (NL. fem. n. *forabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp002704145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002704145.1. The GC

content of the type genome is 28.55 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter fuligastra sp. nov.

Candidatus Pelagibacter fuligastra (NL. fem. n. *fuligastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902589705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902589705.1. The GC content of the type genome is 29.64 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Pelagibacter fumacilega sp. nov.

Candidatus Pelagibacter fumacilega (NL. fem. n. *fumacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902538445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902550265.1. The GC content of the type genome is 29.98 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Pelagibacter hecatugo sp. nov.

Candidatus Pelagibacter hecatugo (NL. fem. n. *hecatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902613545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902613545.1. The GC content of the type genome is 29.65 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter homagigena sp. nov.

Candidatus Pelagibacter homagigena (NL. fem. n. *homagigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902590505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902592505.1. The GC content of the type genome is 29.97 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter homagitas sp. nov.

Candidatus Pelagibacter homagitas (NL. fem. n. *homagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902579115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902579115.1. The GC content of the type genome is 29.73 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Pelagibacter homunago sp. nov.

Candidatus Pelagibacter homunago (NL. fem. n. *homunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902537845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902537845.1. The GC content of the type genome is 29.91 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter humecitia sp. nov.

Candidatus Pelagibacter humecitia (NL. fem. n. *humecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902573985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902634675.1. The GC content of the type genome is 29.79 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter idcirigena sp. nov.

Candidatus Pelagibacter idcirigena (NL. fem. n. *idcirigena* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902572345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902572345.1. The GC content of the type genome is 29.91 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter ignobatica sp. nov.

Candidatus Pelagibacter ignobatica (NL. fem. n. *ignobatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902626045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902626045.1. The GC content of the type genome is 29.9 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter imbelatica sp. nov.

Candidatus Pelagibacter imbelatica (NL. fem. n. *imbelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902542795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902542795.1. The GC content of the type genome is 30.1 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Pelagibacter immatitas sp. nov.

Candidatus Pelagibacter immatitas (NL. fem. n. *immatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902532595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902532595.1. The GC

content of the type genome is 29.85 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Pelagibacter impacitio sp. nov.

Candidatus Pelagibacter impacitio (NL. fem. n. *impacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902615715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902615715.1. The GC content of the type genome is 29.6 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Pelagibacter indevugo sp. nov.

Candidatus Pelagibacter indevugo (NL. fem. n. *indevugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902557935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902557935.1. The GC content of the type genome is 29.96 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter indomilenta sp. nov.

Candidatus Pelagibacter indomilenta (NL. fem. n. *indomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902617025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902617025.1. The GC content of the type genome is 29.7 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter inlecax sp. nov.

Candidatus Pelagibacter inlecax (NL. fem. n. *inlecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902572475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902572475.1. The GC content of the type genome is 30.46 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Pelagibacter innasibra sp. nov.

Candidatus Pelagibacter innasibra (NL. fem. n. *innasibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902542165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902542165.1. The GC content of the type genome is 29.76 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Pelagibacter innasicella sp. nov.

Candidatus Pelagibacter innasicella (NL. fem. n. *innasicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902630665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902630665.1. The GC content of the type genome is 30.21 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Pelagibacter inpelimonas sp. nov.

Candidatus Pelagibacter inpelimonas (NL. fem. n. *inpelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902551865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902551865.1. The GC content of the type genome is 28.92 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Pelagibacter intecitica sp. nov.

Candidatus Pelagibacter intecitica (NL. fem. n. *intecitica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902594835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902594835.1. The GC content of the type genome is 30.17 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Pelagibacter irregax sp. nov.

Candidatus Pelagibacter irregax (NL. fem. n. *irregax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902582875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902582875.1. The GC content of the type genome is 29.07 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Pelagibacter lupanibula sp. nov.

Candidatus Pelagibacter lupanibula (NL. fem. n. *lupanibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902589155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902589155.1. The GC content of the type genome is 29.69 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Pelagibacter mahelibra sp. nov.

Candidatus Pelagibacter mahelibra (NL. fem. n. *mahelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp014653545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014653545.1. The GC

content of the type genome is 29.56 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter melilatica sp. nov.

Candidatus Pelagibacter melilatica (NL. fem. n. *melilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902597175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902597175.1. The GC content of the type genome is 30.09 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pelagibacter melopiforma sp. nov.

Candidatus Pelagibacter melopiforma (NL. fem. n. *melopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902632145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902632145.1. The GC content of the type genome is 29.81 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Pelagibacter metapilenta sp. nov.

Candidatus Pelagibacter metapilenta (NL. fem. n. *metapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902610515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902610515.1. The GC content of the type genome is 29.77 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Pelagibacter monopastra sp. nov.

Candidatus Pelagibacter monopastra (NL. fem. n. *monopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902605035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902605035.1. The GC content of the type genome is 29.71 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter musulitoga sp. nov.

Candidatus Pelagibacter musulitoga (NL. fem. n. *musulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902523185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902523185.1. The GC content of the type genome is 30.08 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter myalgibra sp. nov.

Candidatus Pelagibacter myalgibra (NL. fem. n. *myalgibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902590845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902590845.1. The GC content of the type genome is 29.61 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Pelagibacter nubifatio sp. nov.

Candidatus Pelagibacter nubifatio (NL. fem. n. *nubifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902570575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902570575.1. The GC content of the type genome is 29.72 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter obrigiforma sp. nov.

Candidatus Pelagibacter obrigiforma (NL. fem. n. *obrigiforma* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902595375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902595375.1. The GC content of the type genome is 29.71 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pelagibacter octinimonia sp. nov.

Candidatus Pelagibacter octinimonia (NL. fem. n. *octinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902543665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902543665.1. The GC content of the type genome is 29.94 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Pelagibacter perabatica sp. nov.

Candidatus Pelagibacter perabatica (NL. fem. n. *perabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902635225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902588845.1. The GC content of the type genome is 30.3 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter peribetta sp. nov.

Candidatus Pelagibacter peribetta (NL. fem. n. *peribetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902612235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902612235.1. The GC

content of the type genome is 29.72 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter peripisca sp. nov.

Candidatus Pelagibacter peripisca (NL. fem. n. *peripisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902598315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902598315.1. The GC content of the type genome is 29.74 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter plosticula sp. nov.

Candidatus Pelagibacter plosticula (NL. fem. n. *plosticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902524945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902524945.1. The GC content of the type genome is 29.6 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Pelagibacter proclitura sp. nov.

Candidatus Pelagibacter proclitura (NL. fem. n. *proclitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902604055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902604055.1. The GC content of the type genome is 29.82 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter prospibula sp. nov.

Candidatus Pelagibacter prospibula (NL. fem. n. *prospibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902624885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902624885.1. The GC content of the type genome is 30.06 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Pelagibacter refacatio sp. nov.

Candidatus Pelagibacter refacatio (NL. fem. n. *refacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902573905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902573905.1. The GC content of the type genome is 29.47 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Pelagibacter remedago sp. nov.

Candidatus Pelagibacter remedago (NL. fem. n. *remedago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902536305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536305.1. The GC content of the type genome is 29.51 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Pelagibacter renavimonia sp. nov.

Candidatus Pelagibacter renavimonia (NL. fem. n. *renavimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902557775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902557775.1. The GC content of the type genome is 29.59 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter repudicella sp. nov.

Candidatus Pelagibacter repudicella (NL. fem. n. *repudicella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp003278125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278125.1. The GC content of the type genome is 29.37 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Pelagibacter rumifibula sp. nov.

Candidatus Pelagibacter rumifibula (NL. fem. n. *rumifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp003282965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003282965.1. The GC content of the type genome is 29.37 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Pelagibacter scintitrix sp. nov.

Candidatus Pelagibacter scintitrix (NL. fem. n. *scintitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902535505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902535505.1. The GC content of the type genome is 30.0 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Pelagibacter selibimonia sp. nov.

Candidatus Pelagibacter selibimonia (NL. fem. n. *selibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902589305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902589305.1. The GC

content of the type genome is 29.58 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pelagibacter semipimonas sp. nov.

Candidatus Pelagibacter semipimonas (NL. fem. n. *semipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902628815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902628815.1. The GC content of the type genome is 30.15 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Pelagibacter semivedo sp. nov.

Candidatus Pelagibacter semivedo (NL. fem. n. *semivedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp014654415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014654415.1. The GC content of the type genome is 29.17 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter senacatica sp. nov.

Candidatus Pelagibacter senacatica (NL. fem. n. *senacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp003282835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003282835.1. The GC content of the type genome is 29.63 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter serotilega sp. nov.

Candidatus Pelagibacter serotilega (NL. fem. n. *serotilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902601545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902601545.1. The GC content of the type genome is 29.91 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Pelagibacter siligitas sp. nov.

Candidatus Pelagibacter siligitas (NL. fem. n. *siligitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902555185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902553215.1. The GC content of the type genome is 30.12 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Pelagibacter subofiforma sp. nov.

Candidatus Pelagibacter subofiforma (NL. fem. n. *subofiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902536085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536085.1. The GC content of the type genome is 29.94 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Pelagibacter tegimitoga sp. nov.

Candidatus Pelagibacter tegimitoga (NL. fem. n. *tegimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902590285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902590285.1. The GC content of the type genome is 29.84 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter telefivita sp. nov.

Candidatus Pelagibacter telefivita (NL. fem. n. *telefivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902598595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902598595.1. The GC content of the type genome is 29.33 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Pelagibacter tigurimonia sp. nov.

Candidatus Pelagibacter tigurimonia (NL. fem. n. *tigurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp002457475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002457475.1. The GC content of the type genome is 29.4 % and the genome length is 0.42 Mbp.

Description of *Candidatus* Pelagibacter utrolivita sp. nov.

Candidatus Pelagibacter utrolivita (NL. fem. n. *utrolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902557605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902557605.1. The GC content of the type genome is 30.0 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Pelagibacter velifisca sp. nov.

Candidatus Pelagibacter velifisca (NL. fem. n. *velifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902548045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902548045.1. The GC

content of the type genome is 29.37 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Pelagibacter venabentia sp. nov.

Candidatus Pelagibacter venabentia (NL. fem. n. *venabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp002170125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002170125.1. The GC content of the type genome is 28.46 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Pelagibacter verifago sp. nov.

Candidatus Pelagibacter verifago (NL. fem. n. *verifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902522955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902522955.1. The GC content of the type genome is 29.49 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Pelagibacter vinulibra sp. nov.

Candidatus Pelagibacter vinulibra (NL. fem. n. *vinulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902575095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902575095.1. The GC content of the type genome is 29.58 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Pelagibacter visibedo sp. nov.

Candidatus Pelagibacter visibedo (NL. fem. n. *visibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pelagibacter_A sp902609855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902609855.1. The GC content of the type genome is 29.57 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pelagibacter visocicella sp. nov.

Candidatus Pelagibacter visocicella (NL. fem. n. *visocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902595625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902595625.1. The GC content of the type genome is 30.13 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Pelagibacter visocitas sp. nov.

Candidatus Pelagibacter visocitas (NL. fem. n. *visocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902625125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902625125.1. The GC content of the type genome is 29.87 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Pelagibacter vitifitica sp. nov.

Candidatus Pelagibacter vitifitica (NL. fem. n. *vitifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902549495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902549495.1. The GC content of the type genome is 30.0 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pelagibacter vivifitrix sp. nov.

Candidatus Pelagibacter vivifitrix (NL. fem. n. *vivifitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902626185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902626185.1. The GC content of the type genome is 29.97 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Pelagibacter volucimonas sp. nov.

Candidatus Pelagibacter volucimonas (NL. fem. n. *volucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp003281795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281795.1. The GC content of the type genome is 29.78 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Pelagibacter xeropatica sp. nov.

Candidatus Pelagibacter xeropatica (NL. fem. n. *xeropatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacter_A sp902630915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902630915.1. The GC content of the type genome is 29.92 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Pelagibacterium colubatio sp. nov.

Candidatus Pelagibacterium colubatio (NL. fem. n. *colubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacterium sp003345525*. The type genome for the species is the GenBank assembly RS_GCF_003345525.1. The GC content of the type genome is 64.5 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Pelagibacterium conopugo sp. nov.

Candidatus Pelagibacterium conopugo (NL. fem. n. *conopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacterium sp003390885*. The type genome for the species is the GenBank assembly RS_GCF_003390885.1. The GC content of the type genome is 62.68 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Pelagibacterium lucifitura sp. nov.

Candidatus Pelagibacterium lucifitura (NL. fem. n. *lucifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacterium sp002337455*. The type genome for the species is the GenBank assembly GCA_002337455.1. The GC content of the type genome is 61.2 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Pelagibacterium pinigilega sp. nov.

Candidatus Pelagibacterium pinigilega (NL. fem. n. *pinigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacterium sp002723255*. The type genome for the species is the GenBank assembly GCA_002337365.1. The GC content of the type genome is 60.86 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Pelagibacterium vatilitica sp. nov.

Candidatus Pelagibacterium vatilitica (NL. fem. n. *vatilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibacterium sp002375765*. The type genome for the species is the GenBank assembly GCA_002375765.1. The GC content of the type genome is 60.72 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Pelagibius effosisca sp. nov.

Candidatus Pelagibius effosisca (NL. fem. n. *effosisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagibius sp001657395*. The type genome for the species is the GenBank assembly GCA_001657395.1. The GC content of the type genome is 66.03 % and the genome length is 5.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture inoculated with black band disease microbial mat".

Description of *Candidatus* Pelagicoccus resulastra sp. nov.

Candidatus Pelagicoccus resulastra (NL. fem. n. *resulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagicoccus sp000155695*. The type genome for the species is the GenBank assembly RS_GCF_000155695.1. The GC content of the type genome is 54.26 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Pelagimonas adpicitoga sp. nov.

Candidatus Pelagimonas adpicitoga (NL. fem. n. *adpicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelagimonas sp004804335*. The type genome for the species is the GenBank assembly RS_GCF_004804335.1. The GC content of the type genome is 61.26 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Pelistega conamilega sp. nov.

Candidatus Pelistega conamilega (NL. fem. n. *conamilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelistega sp009833965*. The type genome for the species is the GenBank assembly RS_GCF_010686785.1. The GC content of the type genome is 37.13 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Pelobium abpatimonas sp. nov.

Candidatus Pelobium abpatimonas (NL. fem. n. *abpatimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelobium sp005116455*. The type genome for the species is the GenBank assembly RS_GCF_005116455.1. The GC content of the type genome is 33.91 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Pelobium curabivita sp. nov.

Candidatus Pelobium curabivita (NL. fem. n. *curabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelobium sp014378285*. The type genome for the species is the GenBank assembly GCA_014378285.1. The GC content of the type genome is 32.89 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Pelobium demulitica sp. nov.

Candidatus Pelobium demulitica (NL. fem. n. *demulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelobium sp014378105*. The type genome for the species is the GenBank assembly GCA_014378105.1. The GC content of the type genome is 34.41 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Pelobium excinitrix sp. nov.

Candidatus Pelobium excinitrix (NL. fem. n. *excinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelobium sp004294495*. The type genome for the species is the GenBank assembly GCA_004294495.1. The GC content of the type genome is 34.01 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Pelobium exentessa sp. nov.

Candidatus Pelobium exentessa (NL. fem. n. *exentessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelobium sp009674685*. The type genome for the species is the GenBank assembly RS_GCF_009674685.1. The GC content of the type genome is 34.39

% and the genome length is 3.9 Mbp.

Description of *Candidatus* Pelobium halucitura sp. nov.

Candidatus Pelobium halucitura (NL. fem. n. *halucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelobium sp004293485*. The type genome for the species is the GenBank assembly GCA_004293485.1. The GC content of the type genome is 35.61 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Pelobium hegumilega sp. nov.

Candidatus Pelobium hegumilega (NL. fem. n. *hegumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelobium sp013298995*. The type genome for the species is the GenBank assembly GCA_013298995.1. The GC content of the type genome is 36.48 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Pelobium vilitentia sp. nov.

Candidatus Pelobium vilitentia (NL. fem. n. *vilitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelobium sp004292865*. The type genome for the species is the GenBank assembly GCA_004292865.1. The GC content of the type genome is 36.6 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Pelolinea exaggatio sp. nov.

Candidatus Pelolinea exaggatio (NL. fem. n. *exaggatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelolinea sp013178095*. The type genome for the species is the GenBank assembly GCA_013178095.1. The GC content of the type genome is 52.64 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Pelolinea impinitoga sp. nov.

Candidatus Pelolinea impinitoga (NL. fem. n. *impinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelolinea sp002412595*. The type genome for the species is the GenBank assembly GCA_002412595.1. The GC content of the type genome is 50.07 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Pelomonas abluvugo sp. nov.

Candidatus Pelomonas abluvugo (NL. fem. n. *abluvugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelomonas sp001425055*. The type genome for the species is the GenBank assembly RS_GCF_001425055.1. The GC content of the type genome is 67.62 % and the genome length is 6.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pelomonas adpelastra sp. nov.

Candidatus Pelomonas adpelastra (NL. fem. n. *adpelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelomonas sp001426885*. The type genome for the species is the GenBank assembly RS_GCF_001426885.1. The GC content of the type genome is 69.0 % and the genome length is 5.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pelomonas almucago sp. nov.

Candidatus Pelomonas almucago (NL. fem. n. *almucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelomonas sp003550215*. The type genome for the species is the GenBank assembly RS_GCF_003550215.1. The GC content of the type genome is 68.4 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Pelomonas cerarilega sp. nov.

Candidatus Pelomonas cerarilega (NL. fem. n. *cerarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelomonas sp001425165*. The type genome for the species is the GenBank assembly RS_GCF_001427705.1. The GC content of the type genome is 67.79 % and the genome length is 5.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pelomonas desucitia sp. nov.

Candidatus Pelomonas desucitia (NL. fem. n. *desucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelomonas sp003963075*. The type genome for the species is the GenBank assembly GCA_013823315.1. The GC content of the type genome is 69.06 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Pelomonas eccisilega sp. nov.

Candidatus Pelomonas eccisilega (NL. fem. n. *eccisilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelomonas sp001425705*. The type genome for the species is the GenBank assembly RS_GCF_001425705.1. The GC content of the type genome is 67.41 % and the genome length is 6.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pelomonas inordisca sp. nov.

Candidatus Pelomonas inordisca (NL. fem. n. *inordisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelomonas sp003963005*. The type genome for the species is the GenBank assembly GCA_003963005.1. The GC content of the type genome is 68.7 % and the genome length is 6.24 Mbp.

Description of *Candidatus* Pelomonas lenocitrix sp. nov.

Candidatus Pelomonas lenocitrix (NL. fem. n. *lenocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelomonas sp009996515*. The type genome for the species is the GenBank assembly GCA_009996515.1. The GC content of the type genome is 70.22 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Pelosinus ludibilega sp. nov.

Candidatus Pelosinus ludibilega (NL. fem. n. *ludibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pelosinus sp000725345*. The type genome for the species is the GenBank assembly RS_GCF_000725345.1. The GC content of the type genome is 38.68 % and the genome length is 5.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pristine sediments".

Description of *Candidatus* Penecana cobalessa sp. nov.

Candidatus Penecana cobalessa (NL. fem. n. *cobalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCMQ01 sp005503335*. The type genome for the species is the GenBank assembly RS_GCF_005503345.1. The GC content of the type genome is 68.22 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Penecana gen. nov.

Candidatus Penecana (NL. fem. n. *Penecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCMQ01*. The type species for the genus is *Candidatus* Penecana cobalessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Penecaria obsatigena sp. nov.

Candidatus Penecaria obsatigena (NL. fem. n. *obsatigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *E26-bin7 sp004377365*. The type genome for the species is the GenBank assembly GCA_004377365.1. The GC content of the type genome is 57.14 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Penecaria gen. nov.

Candidatus Penecaria (NL. fem. n. *Penecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E26-bin7*. The type species for the genus is *Candidatus* Penecaria obsatigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E26-bin7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penecariaceae.

Description of *Candidatus* Penecariaceae fam. nov.

Candidatus Penecariaceae (NL. fem. n. *Penecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E26-bin7.* The type genus for the taxon is *Candidatus* Penecaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *E26-bin7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Penecariales.

Description of *Candidatus* Penecariales ord. nov.

Candidatus Penecariales (NL. fem. n. *Penecariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E26-bin7.* The type genus for the taxon is *Candidatus* Penecaria .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Penecella afranitica sp. nov.

Candidatus Penecella afranitica (NL. fem. n. *afranitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGQ01 sp011338205*. The type genome for the species is the

GenBank assembly GCA_011338205.1. The GC content of the type genome is 47.38 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Penecella gen. nov.

Candidatus Penecella (NL. fem. n. *Penecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTGQ01*. The type species for the genus is *Candidatus* Penecella afranitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTGQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penecellaceae.

Description of *Candidatus* Penecellaceae fam. nov.

Candidatus Penecellaceae (NL. fem. n. *Penecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTGQ01.* The type genus for the taxon is *Candidatus* Penecella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTGQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Penecellales.

Description of *Candidatus* Penecellales ord. nov.

Candidatus Penecellales (NL. fem. n. *Penecellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTGQ01.* The type genus for the taxon is *Candidatus* Penecella .

According to the original version of GTDB R06-RS202, this family belongs to the class *SZUA-182*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rinocanae.

Description of *Candidatus* Penecia antacicella sp. nov.

Candidatus Penecia antacicella (NL. fem. n. *antacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *NP-4 sp005888595*. The type genome for the species is the GenBank assembly GCA_005888595.1. The GC content of the type genome is 64.76 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Penecia gen. nov.

Candidatus Penecia (NL. fem. n. *Penecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NP-4*. The type species for the genus is *Candidatus* Penecia antacicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *13-1-40CM-64-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refululaceae.

Description of *Candidatus* Penecia benemitio sp. nov.

Candidatus Penecia benemitio (NL. fem. n. *benemitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NP-4 sp005882335*. The type genome for the species is the GenBank assembly GCA_005882335.1. The GC content of the type genome is 64.87 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Penecia lanifitia sp. nov.

Candidatus Penecia lanifitia (NL. fem. n. *lanifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NP-4 sp005882295*. The type genome for the species is the GenBank assembly GCA_005884525.1. The GC content of the type genome is 65.2 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Penecida benepilega sp. nov.

Candidatus Penecida benepilega (NL. fem. n. *benepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2722455 sp002722455*. The type genome for the species is the GenBank assembly GCA_002722455.1. The GC content of the type genome is 30.95 %

and the genome length is 2.48 Mbp.

Description of *Candidatus* Penecida gen. nov.

Candidatus Penecida (NL. fem. n. *Penecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2722455*. The type species for the genus is *Candidatus* Penecida benepilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2722455*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penecidaceae.

Description of *Candidatus* Penecidaceae fam. nov.

Candidatus Penecidaceae (NL. fem. n. *Penecidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2722455.* The type genus for the taxon is *Candidatus* Penecida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defulidales.

Description of *Candidatus* Penecosa democugo sp. nov.

Candidatus Penecosa democugo (NL. fem. n. *democugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7446 sp002478685*. The type genome for the species is the GenBank assembly GCA_002470905.1. The GC content of the type genome is 39.56 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Penecosa gen. nov.

Candidatus Penecosa (NL. fem. n. *Penecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7446*. The type species for the genus is *Candidatus* Penecosa democugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Penecosa expugitica sp. nov.

Candidatus Penecosa expugitica (NL. fem. n. *expugitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7446 sp002862645*. The type genome for the species is the GenBank assembly GCA_002862645.1. The GC content of the type genome is 40.15 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Penecosa habacitudo sp. nov.

Candidatus Penecosa habacitudo (NL. fem. n. *habacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7446 sp002313325*. The type genome for the species is the GenBank assembly GCA_002313325.1. The GC content of the type genome is 41.3 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Penecosa hemidatica sp. nov.

Candidatus Penecosa hemidatica (NL. fem. n. *hemidatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7446 sp002470745*. The type genome for the species is the GenBank assembly GCA_003331305.1. The GC content of the type genome is 39.78 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Penecosa intoritia sp. nov.

Candidatus Penecosa intoritia (NL. fem. n. *intoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7446 sp009886265*. The type genome for the species is the GenBank assembly GCA_009886265.1. The GC content of the type genome is 41.83 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Penecosa panifedo sp. nov.

Candidatus Penecosa panifedo (NL. fem. n. *panifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7446 sp002698745*. The type genome for the species is the GenBank assembly GCA_002698745.1. The GC content of the type genome is 37.8 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Penecosa patibicella sp. nov.

Candidatus Penecosa patibicella (NL. fem. n. *patibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7446 sp002862705*. The type genome for the species is the GenBank assembly GCA_002862705.1. The GC content of the type genome is 42.01 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Penecosa uxorcimonas sp. nov.

Candidatus Penecosa uxorcimonas (NL. fem. n. *uxorcimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7446 sp009937085*. The type genome for the species is the GenBank assembly GCA_009937085.1. The GC content of the type genome is 39.81 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Penecula semibimonas sp. nov.

Candidatus Penecula semibimonas (NL. fem. n. *semibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHNJ01 sp004295055*. The type genome for the species is the GenBank assembly GCA_004295055.1. The GC content of the type genome is 48.51 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Penecula gen. nov.

Candidatus Penecula (NL. fem. n. *Penecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHNJ01*. The type species for the genus is *Candidatus* Penecula semibimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHNJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peneculaceae.

Description of *Candidatus* Peneculaceae fam. nov.

Candidatus Peneculaceae (NL. fem. n. *Peneculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHNJ01.* The type genus for the taxon is *Candidatus* Penecula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHNJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peneculales.

Description of *Candidatus* Peneculales ord. nov.

Candidatus Peneculales (NL. fem. n. *Peneculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHNJ01.* The type genus for the taxon is *Candidatus* Penecula .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Penicana labecibra sp. nov.

Candidatus Penicana labecibra (NL. fem. n. *labecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITYE01 sp903896535*. The type genome for the species is the GenBank assembly GCA_903893615.1. The GC content of the type genome is 67.97 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Penicana gen. nov.

Candidatus Penicana (NL. fem. n. *Penicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CAITYE01*. The type species for the genus is *Candidatus* Penicana labecibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Penicella agnicimonas sp. nov.

Candidatus Penicella agnicimonas (NL. fem. n. *agnicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWR01 sp004356735*. The type genome for the species is the GenBank assembly GCA_004356735.1. The GC content of the type genome is 65.63 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Penicella gen. nov.

Candidatus Penicella (NL. fem. n. *Penicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMWR01*. The type species for the genus is *Candidatus* Penicella agnicimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMWR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penicellaceae.

Description of *Candidatus* Penicellaceae fam. nov.

Candidatus Penicellaceae (NL. fem. n. *Penicellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMWR01.* The type genus for the taxon is *Candidatus* Penicella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxifiales.

Description of *Candidatus* Penicia antegiforma sp. nov.

Candidatus Penicia antegiforma (NL. fem. n. *antegiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSBP01 sp011049465*. The type genome for the species is the GenBank assembly GCA_011049465.1. The GC content of the type genome is 48.48 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Penicia gen. nov.

Candidatus Penicia (NL. fem. n. *Penicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSBP01*. The type species for the genus is *Candidatus* Penicia antegiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSBP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peniciaceae.

Description of *Candidatus* Peniciaceae fam. nov.

Candidatus Peniciaceae (NL. fem. n. *Peniciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSBP01.* The type genus for the taxon is *Candidatus* Penicia .

According to the original version of GTDB R06-RS202, this family belongs to the order *PGYV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decinulales.

Description of *Candidatus* Penicida butubimonia sp. nov.

Candidatus Penicida butubimonia (NL. fem. n. *butubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8653 sp002862275*. The type genome for the species is the GenBank assembly GCA_002862275.1. The GC content of the type genome is 57.1 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Penicida gen. nov.

Candidatus Penicida (NL. fem. n. *Penicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA8653*. The type species for the genus is *Candidatus* Penicida butubimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Penicida coninilenta sp. nov.

Candidatus Penicida coninilenta (NL. fem. n. *coninilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8653 sp002705085*. The type genome for the species is the GenBank assembly GCA_002705085.1. The GC content of the type genome is 57.74 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Penicida domipugo sp. nov.

Candidatus Penicida domipugo (NL. fem. n. *domipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8653 sp002168105*. The type genome for the species is the GenBank assembly GCA_003516385.1. The GC content of the type genome is 57.58 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Penicida inocciforma sp. nov.

Candidatus Penicida inocciforma (NL. fem. n. *inocciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8653 sp002700845*. The type genome for the species is the GenBank assembly GCA_002700845.1. The GC content of the type genome is 55.05 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Penicosa bucelago sp. nov.

Candidatus Penicosa bucelago (NL. fem. n. *bucelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIKNB01 sp903828685*. The type genome for the species is the GenBank assembly GCA_903891345.1. The GC content of the type genome is 54.42 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Penicosa gen. nov.

Candidatus Penicosa (NL. fem. n. *Penicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKNB01*. The type species for the genus is *Candidatus* Penicosa bucelago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-60-25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugigulaceae.

Description of *Candidatus* Penurana aspilatio sp. nov.

Candidatus Penurana aspilatio (NL. fem. n. *aspilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002724975 sp002724975*. The type genome for the species is the GenBank assembly GCA_002724975.1. The GC content of the type genome is 35.87 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Penurana gen. nov.

Candidatus Penurana (NL. fem. n. *Penurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002724975*. The type species for the genus is *Candidatus* Penurana aspilatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002724975*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penuranaceae.

Description of *Candidatus* Penuranaceae fam. nov.

Candidatus Penuranaceae (NL. fem. n. *Penuranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *GCA-002724975*. The type genus for the taxon is *Candidatus* Penurana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Penurana nivomessa sp. nov.

Candidatus Penurana nivomessa (NL. fem. n. *nivomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002724975 sp002771565*. The type genome for the species is the GenBank assembly GCA_002796365.1. The GC content of the type genome is 43.77 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Penuraria forabax sp. nov.

Candidatus Penuraria forabax (NL. fem. n. *forabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12470 sp000999315*. The type genome for the species is the GenBank assembly GCA_000999315.1. The GC content of the type genome is 43.09 % and the genome length is 1.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Penuraria gen. nov.

Candidatus Penuraria (NL. fem. n. *Penuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12470*. The type species for the genus is *Candidatus* Penuraria forabax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12470*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penurariaceae.

Description of *Candidatus* Penurariaceae fam. nov.

Candidatus Penurariaceae (NL. fem. n. *Penurariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12470.* The type genus for the taxon is *Candidatus* Penuraria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Penurella ammurugo sp. nov.

Candidatus Penurella ammurugo (NL. fem. n. *ammurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3254 sp903890885*. The type genome for the species is the GenBank assembly GCA_903890885.1. The GC content of the type genome is 47.07 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Penurella gen. nov.

Candidatus Penurella (NL. fem. n. *Penurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3254*. The type species for the genus is *Candidatus* Penurella ammurugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3254*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Penurellaceae.

Description of *Candidatus* Penurellaceae fam. nov.

Candidatus Penurellaceae (NL. fem. n. *Penurellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3254.* The type genus for the taxon is *Candidatus* Penurella .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Penurella arvecax sp. nov.

Candidatus Penurella arvecax (NL. fem. n. *arvecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3254 sp011389395*. The type genome for the species is the GenBank assembly GCA_011389395.1. The GC content of the type genome is 47.35 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Penurella ascelicula sp. nov.

Candidatus Penurella ascelicula (NL. fem. n. *ascelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3254 sp011328975*. The type genome for the species is the GenBank assembly GCA_011328975.1. The GC content of the type genome is 45.9 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Penurella bicoritas sp. nov.

Candidatus Penurella bicoritas (NL. fem. n. *bicoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3254 sp002362735*. The type genome for the species is the GenBank assembly GCA_002362735.1. The GC content of the type genome is 45.33 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Penurida capudentia sp. nov.

Candidatus Penurida capudentia (NL. fem. n. *capudentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-590 sp000431135*. The type genome for the species is the GenBank assembly GCA_000431135.1. The GC content of the type genome is 40.62 % and the genome length is 2.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Penurida gen. nov.

Candidatus Penurida (NL. fem. n. *Penurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-590*. The type species for the genus is *Candidatus* Penurida capudentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Penurida colepifica sp. nov.

Candidatus Penurida colepifica (NL. fem. n. *colepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-590 sp900769115*. The type genome for the species is the GenBank assembly RS_GCF_900769115.1. The GC content of the type genome is 41.55 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Penurida denunivita sp. nov.

Candidatus Penurida denunivita (NL. fem. n. *denunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-590 sp900313855*. The type genome for the species is the GenBank assembly GCA_902763015.1. The GC content of the type genome is 40.0 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Penurida dimacitudo sp. nov.

Candidatus Penurida dimacitudo (NL. fem. n. *dimacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-590 sp900552885*. The type genome for the species is the GenBank assembly GCA_900552885.1. The GC content of the type genome is 41.94 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Penurida maledastra sp. nov.

Candidatus Penurida maledastra (NL. fem. n. *maledastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-590 sp900548855*. The type genome for the species is the GenBank assembly GCA_900548855.1. The GC content of the type genome is 40.45 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Penurida pecunugo sp. nov.

Candidatus Penurida pecunugo (NL. fem. n. *pecunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-590 sp003530125*. The type genome for the species is the GenBank assembly GCA_003530125.1. The GC content of the type genome is 40.78 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Penurida saburicella sp. nov.

Candidatus Penurida saburicella (NL. fem. n. *saburicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-590 sp900544905*. The type genome for the species is the GenBank assembly RS_GCF_900752105.1. The GC content of the type genome is 41.98 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Penurida thessastra sp. nov.

Candidatus Penurida thessastra (NL. fem. n. *thessastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-590 sp902793335*. The type genome for the species is the GenBank assembly GCA_902793335.1. The GC content of the type genome is 37.15 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Penurosa desoritoga sp. nov.

Candidatus Penurosa desoritoga (NL. fem. n. *desoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6934 sp002346625*. The type genome for the species is the GenBank assembly GCA_002450735.1. The GC content of the type genome is 44.84 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Penurosa gen. nov.

Candidatus Penurosa (NL. fem. n. *Penurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6934*. The type species for the genus is *Candidatus* Penurosa desoritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Penurula curabifica sp. nov.

Candidatus Penurula curabifica (NL. fem. n. *curabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITVN01 sp903895855*. The type genome for the species is the GenBank assembly GCA_903840645.1. The GC content of the type genome is 47.32 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Penurula gen. nov.

Candidatus Penurula (NL. fem. n. *Penurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITVN01*. The type species for the genus is *Candidatus* Penurula curabifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Pepenana resalitia sp. nov.

Candidatus Pepenana resalitia (NL. fem. n. *resalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPGG2 sp001643475*. The type genome for the species is the GenBank assembly GCA_001643475.1. The GC content of the type genome is 54.25 % and the genome length is 2.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment sample collected at the water-sediment interface from the South Pacific gyre; IODP site U1369".

Description of *Candidatus* Pepenana gen. nov.

Candidatus Pepenana (NL. fem. n. *Pepenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPGG2*. The type species for the genus is *Candidatus* Pepenana resalitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SPGG2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pepenanaceae.

Description of *Candidatus* Pepenanaceae fam. nov.

Candidatus Pepenanaceae (NL. fem. n. *Pepenanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SPGG2.* The type genus for the taxon is *Candidatus* Pepenana .

According to GTDB R06-RS202, this family belongs to the order *Acidiferrobacterales*.

Description of *Candidatus* Pepenaria cunabiforma sp. nov.

Candidatus Pepenaria cunabiforma (NL. fem. n. *cunabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLRQ01 sp903826575*. The type genome for the species is the GenBank assembly GCA_903854465.1. The GC content of the type genome is 58.91 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Pepenaria gen. nov.

Candidatus Pepenaria (NL. fem. n. *Pepenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLRQ01*. The type species for the genus is *Candidatus* Pepenaria cunabiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirifidaceae.

Description of *Candidatus* Pepenaria lacinatica sp. nov.

Candidatus Pepenaria lacinatica (NL. fem. n. *lacinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLRQ01 sp009697815*. The type genome for the species is the GenBank assembly GCA_009697815.1. The GC content of the type genome is 66.26 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Pepenaria saburitica sp. nov.

Candidatus Pepenaria saburitica (NL. fem. n. *saburitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLRQ01 sp903918645*. The type genome for the species is the GenBank assembly GCA_903900425.1. The GC content of the type genome is 62.0 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Pepenella antepentia sp. nov.

Candidatus Pepenella antepentia (NL. fem. n. *antepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YA12-FULL-61-11 sp001799195*. The type genome for the species is the GenBank assembly GCA_001799195.1. The GC content of the type genome is 60.63 % and the genome length is 4.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Pepenella gen. nov.

Candidatus Pepenella (NL. fem. n. *Pepenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YA12-FULL-61-11*. The type species for the genus is *Candidatus* Pepenella antepentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *YA12-FULL-61-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pepenellaceae.

Description of *Candidatus* Pepenellaceae fam. nov.

Candidatus Pepenellaceae (NL. fem. n. *Pepenellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *YA12-FULL-61-11.* The type genus for the taxon is *Candidatus* Pepenella .

According to the original version of GTDB R06-RS202, this family belongs to the order *YA12-FULL-61-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pepenellales.

Description of *Candidatus* Pepenellales ord. nov.

Candidatus Pepenellales (NL. fem. n. *Pepenellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *YA12-FULL-61-11.* The type genus for the taxon is *Candidatus* Pepenella .

According to the original version of GTDB R06-RS202, this family belongs to the class *YA12-FULL-61-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Pepenellae.

Description of *Candidatus* Pepenellae class. nov.

Candidatus Pepenellae (NL. fem. n. *c__Pepenellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *YA12-FULL-61-11.* The type genus for the taxon is *Candidatus* Pepenella .

According to GTDB R06-RS202, this class belongs to the phylum *Bdellovibrionota*.

Description of *Candidatus* Pepenia assubicella sp. nov.

Candidatus Pepenia assubicella (NL. fem. n. *assubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *12-FULL-67-14b sp009694735*. The type genome for the species is the GenBank assembly GCA_009694735.1. The GC content of the type genome is 65.39 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Pepenia gen. nov.

Candidatus Pepenia (NL. fem. n. *Pepenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *12-FULL-67-14b*. The type species for the genus is *Candidatus* Pepenia assubicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Pepenia cocodago sp. nov.

Candidatus Pepenia cocodago (NL. fem. n. *cocodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *12-FULL-67-14b sp001768615*. The type genome for the species is the GenBank assembly GCA_001768615.1. The GC content of the type genome is 67.21 % and the genome length is 5.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Pepenia hecatatica sp. nov.

Candidatus Pepenia hecatatica (NL. fem. n. *hecatatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *12-FULL-67-14b sp013813075*. The type genome for the species is the GenBank assembly GCA_013813075.1. The GC content of the type genome is 63.92 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Pepenia rubigitoga sp. nov.

Candidatus Pepenia rubigitoga (NL. fem. n. *rubigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *12-FULL-67-14b sp002737365*. The type genome for the species is the GenBank assembly GCA_009694685.1. The GC content of the type genome is 65.14 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Pepenida decaciforma sp. nov.

Candidatus Pepenida decaciforma (NL. fem. n. *decaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8592 sp002722525*. The type genome for the species is the GenBank assembly GCA_002722525.1. The GC content of the type genome is 45.68 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pepenida gen. nov.

Candidatus Pepenida (NL. fem. n. *Pepenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8592*. The type species for the genus is *Candidatus* Pepenida decaciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8592*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pepenidaceae.

Description of *Candidatus* Pepenidaceae fam. nov.

Candidatus Pepenidaceae (NL. fem. n. *Pepenidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8592.* The type genus for the taxon is *Candidatus* Pepenida .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Pepenida diminitica sp. nov.

Candidatus Pepenida diminitica (NL. fem. n. *diminitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8592 sp002720485*. The type genome for the species is the GenBank assembly RS_GCF_902550405.1. The GC content of the type genome is 47.08 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Pepenida hirunitrix sp. nov.

Candidatus Pepenida hirunitrix (NL. fem. n. *hirunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8592 sp002703045*. The type genome for the species is the GenBank assembly GCA_002703045.1. The GC content of the type genome is 46.28 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Pepenida immeditica sp. nov.

Candidatus Pepenida immeditica (NL. fem. n. *immeditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8592 sp002715405*. The type genome for the species is the GenBank assembly GCA_002715405.1. The GC content of the type genome is 41.92 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Pepenida omnivitica sp. nov.

Candidatus Pepenida omnivitica (NL. fem. n. *omnivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8592 sp902565595*. The type genome for the species is the GenBank assembly RS_GCF_902565595.1. The GC content of the type genome is 46.28 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Pepenida recumigena sp. nov.

Candidatus Pepenida recumigena (NL. fem. n. *recumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8592 sp002724825*. The type genome for the species is the GenBank assembly GCA_002321515.1. The GC content of the type genome is 46.1 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Pepenida regigibra sp. nov.

Candidatus Pepenida regigibra (NL. fem. n. *regigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8592 sp002715425*. The type genome for the species is the GenBank assembly GCA_002715425.1. The GC content of the type genome is 45.68 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Pepenosa gemebicula sp. nov.

Candidatus Pepenosa gemebicula (NL. fem. n. *gemebicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3947 sp002385545*. The type genome for the species is the GenBank assembly GCA_012521235.1. The GC content of the type genome is 34.2 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Pepenosa gen. nov.

Candidatus Pepenosa (NL. fem. n. *Pepenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3947*. The type species for the genus is *Candidatus* Pepenosa gemebicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pepenosa malivilenta sp. nov.

Candidatus Pepenosa malivilenta (NL. fem. n. *malivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3947 sp003541575*. The type genome for the species is the GenBank assembly GCA_003541575.1. The GC content of the type genome is 34.22 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Pepenosa subofitrix sp. nov.

Candidatus Pepenosa subofitrix (NL. fem. n. *subofitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3947 sp006351925*. The type genome for the species is the

GenBank assembly RS_GCF_010367625.1. The GC content of the type genome is 36.31 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Pepenosa tametitio sp. nov.

Candidatus Pepenosa tametitio (NL. fem. n. *tametitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3947 sp900095445*. The type genome for the species is the GenBank assembly RS_GCF_900095445.1. The GC content of the type genome is 32.42 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biogas sludge".

Description of *Candidatus* Pepenula venabitica sp. nov.

Candidatus Pepenula venabitica (NL. fem. n. *venabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PETJ01 sp002781125*. The type genome for the species is the GenBank assembly GCA_009993345.1. The GC content of the type genome is 37.09 % and the genome length is 0.32 Mbp.

Description of *Candidatus* Pepenula gen. nov.

Candidatus Pepenula (NL. fem. n. *Pepenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PETJ01*. The type species for the genus is *Candidatus* Pepenula venabitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PETJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pepenulaceae.

Description of *Candidatus* Pepenulaceae fam. nov.

Candidatus Pepenulaceae (NL. fem. n. *Pepenulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PETJ01*. The type genus for the taxon is *Candidatus* Pepenula .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Peptacetobacter dicanentia sp. nov.

Candidatus Peptacetobacter dicanentia (NL. fem. n. *dicanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptacetobacter sp900539645*. The type genome for the species is the GenBank assembly GCA_900539645.1. The GC content of the type genome is 31.41 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Peptacetobacter selecitura sp. nov.

Candidatus Peptacetobacter selecitura (NL. fem. n. *selecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptacetobacter sp900550335*. The type genome for the species is the GenBank assembly RS_GCF_900758995.1. The GC content of the type genome is 31.41 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Peptidiphaga bucolessa sp. nov.

Candidatus Peptidiphaga bucolessa (NL. fem. n. *bucolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptidiphaga sp000466165*. The type genome for the species is the GenBank assembly RS_GCF_000466165.1. The GC content of the type genome is 67.72 % and the genome length is 2.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "subgingival plaque biofilm of oral cavity".

Description of *Candidatus* Peptoclostridium encomitio sp. nov.

Candidatus Peptoclostridium encomitio (NL. fem. n. *encomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptoclostridium_A sp009881055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009881055.1. The GC content of the type genome is 44.16 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Peptoniphilus manubitura sp. nov.

Candidatus Peptoniphilus manubitura (NL. fem. n. *manubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptoniphilus_A sp900538655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900538655.1. The GC content of the type genome is 31.37 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Peptoniphilus depocilega sp. nov.

Candidatus Peptoniphilus depocilega (NL. fem. n. *depocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptoniphilus_B sp000478985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000478985.1. The GC content of the type genome is 31.62 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Peptoniphilus bucelimonia sp. nov.

Candidatus Peptoniphilus bucelimonia (NL. fem. n. *bucelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptoniphilus_C sp900343085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900343085.1. The GC content of the type genome is 48.62 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Peptoniphilus renavatio sp. nov.

Candidatus Peptoniphilus renavatio (NL. fem. n. *renavatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptoniphilus_C sp903819165*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_903819165.1. The GC content of the type genome is 45.74 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Peptoniphilus sarabitrix sp. nov.

Candidatus Peptoniphilus sarabitrix (NL. fem. n. *sarabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptoniphilus_C sp902363535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902363535.1. The GC content of the type genome is 48.91 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Peptoniphilus eccisax sp. nov.

Candidatus Peptoniphilus eccisax (NL. fem. n. *eccisax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptoniphilus_E sp000952975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000952975.1. The GC content of the type genome is 34.85 % and the genome length is 1.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Peptostreptococcus adposimonas sp. nov.

Candidatus Peptostreptococcus adposimonas (NL. fem. n. *adposimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptostreptococcus sp000758885*. The type genome for the species is the GenBank assembly RS_GCF_000758885.1. The GC content of the type genome is 36.58 % and the genome length is 1.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Peptostreptococcus armificula sp. nov.

Candidatus Peptostreptococcus armificula (NL. fem. n. *armificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptostreptococcus sp900112955*. The type genome for the species is the GenBank assembly RS_GCF_900112955.1. The GC content of the type genome is 32.93 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Peptostreptococcus cunabimonia sp. nov.

Candidatus Peptostreptococcus cunabimonia (NL. fem. n. *cunabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptostreptococcus sp900240845*. The type genome for the species is the GenBank assembly RS_GCF_900240845.1. The GC content of the type genome is 30.43 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Peptostreptococcus desurimonia sp. nov.

Candidatus Peptostreptococcus desurimonia (NL. fem. n. *desurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peptostreptococcus sp900759325*. The type genome for the species is the GenBank assembly GCA_900759325.1. The GC content of the type genome is 37.41 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Perabana velivedo sp. nov.

Candidatus Perabana velivedo (NL. fem. n. *velivedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYK01 sp009692845*. The type genome for the species is the GenBank assembly GCA_009692845.1. The GC content of the type genome is 62.66 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Perabana gen. nov.

Candidatus Perabana (NL. fem. n. *Perabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYK01*. The type species for the genus is *Candidatus* Perabana

velivedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perabanaceae.

Description of *Candidatus* Perabanaceae fam. nov.

Candidatus Perabanaceae (NL. fem. n. *Perabanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYK01*. The type genus for the taxon is *Candidatus* Perabana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6077*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Doxolariales.

Description of *Candidatus* Perabaria laxitatica sp. nov.

Candidatus Perabaria laxitatica (NL. fem. n. *laxitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITEC01 sp903891325*. The type genome for the species is the GenBank assembly GCA_903911625.1. The GC content of the type genome is 66.87 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Perabaria gen. nov.

Candidatus Perabaria (NL. fem. n. *Perabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITEC01*. The type species for the genus is *Candidatus* Perabaria laxitatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Perabella inmacastra sp. nov.

Candidatus Perabella inmacastra (NL. fem. n. *inmacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CACZRW01 sp902783675*. The type genome for the species is the GenBank assembly GCA_902783675.1. The GC content of the type genome is 47.87 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Perabella gen. nov.

Candidatus Perabella (NL. fem. n. *Perabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACZRW01*. The type species for the genus is *Candidatus* Perabella inmacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACZRW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perabellaceae.

Description of *Candidatus* Perabellaceae fam. nov.

Candidatus Perabellaceae (NL. fem. n. *Perabellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACZRW01.* The type genus for the taxon is *Candidatus* Perabella .

According to the original version of GTDB R06-RS202, this family belongs to the order *RF32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resaculales.

Description of *Candidatus* Perabia cituvessa sp. nov.

Candidatus Perabia cituvessa (NL. fem. n. *cituvessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2287 sp002345675*. The type genome for the species is the GenBank assembly GCA_002345675.1. The GC content of the type genome is 39.72 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Perabia gen. nov.

Candidatus Perabia (NL. fem. n. *Perabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2287*. The type species for the genus is *Candidatus* Perabia

cituvessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BBW3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribiaceae.

Description of *Candidatus* Perabida adcogisca sp. nov.

Candidatus Perabida adcogisca (NL. fem. n. *adcogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-11 sp003560935*. The type genome for the species is the GenBank assembly GCA_003560935.1. The GC content of the type genome is 45.93 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Perabida gen. nov.

Candidatus Perabida (NL. fem. n. *Perabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3Sed10-11*. The type species for the genus is *Candidatus* Perabida adcogisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *T3Sed10-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perabidaceae.

Description of *Candidatus* Perabidaceae fam. nov.

Candidatus Perabidaceae (NL. fem. n. *Perabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T3Sed10-11.* The type genus for the taxon is *Candidatus* Perabida .

According to the original version of GTDB R06-RS202, this family belongs to the order *T3Sed10-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Perabidales.

Description of *Candidatus* Perabidales ord. nov.

Candidatus Perabidales (NL. fem. n. *Perabidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T3Sed10-11*. The type genus for the taxon is *Candidatus* Perabida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Vagabanae.

Description of *Candidatus* Perabida defunifica sp. nov.

Candidatus Perabida defunifica (NL. fem. n. *defunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-11 sp007131635*. The type genome for the species is the GenBank assembly GCA_007118365.1. The GC content of the type genome is 45.35 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Perabida metucibula sp. nov.

Candidatus Perabida metucibula (NL. fem. n. *metucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-11 sp007128495*. The type genome for the species is the GenBank assembly GCA_007128495.1. The GC content of the type genome is 45.02 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Perabida subofigena sp. nov.

Candidatus Perabida subofigena (NL. fem. n. *subofigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-11 sp003567775*. The type genome for the species is the GenBank assembly GCA_003560035.1. The GC content of the type genome is 44.61 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Perabida tetenitica sp. nov.

Candidatus Perabida tetenitica (NL. fem. n. *tetenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *T3Sed10-11 sp003568415*. The type genome for the species is the GenBank assembly GCA_003561255.1. The GC content of the type genome is 44.07 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Perabida vocamugo sp. nov.

Candidatus Perabida vocamugo (NL. fem. n. *vocamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-11 sp003562775*. The type genome for the species is the GenBank assembly GCA_003562775.1. The GC content of the type genome is 44.6 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Perabosa bigaritura sp. nov.

Candidatus Perabosa bigaritura (NL. fem. n. *bigaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOV01 sp012838615*. The type genome for the species is the GenBank assembly GCA_012838615.1. The GC content of the type genome is 38.88 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Perabosa gen. nov.

Candidatus Perabosa (NL. fem. n. *Perabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOV01*. The type species for the genus is *Candidatus* Perabosa bigaritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUOV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perabosaceae.

Description of *Candidatus* Perabosaceae fam. nov.

Candidatus Perabosaceae (NL. fem. n. *Perabosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUOV01.* The type genus for the taxon is *Candidatus* Perabosa .

According to the original version of GTDB R06-RS202, this family belongs to the order

DULZ01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lucelellales.

Description of *Candidatus* Perabula peracitas sp. nov.

Candidatus Perabula peracitas (NL. fem. n. *peracitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1188 sp003132605*. The type genome for the species is the GenBank assembly GCA_003132605.1. The GC content of the type genome is 58.52 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Perabula gen. nov.

Candidatus Perabula (NL. fem. n. *Perabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1188*. The type species for the genus is *Candidatus* Perabula peracitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Perabula sonabatio sp. nov.

Candidatus Perabula sonabatio (NL. fem. n. *sonabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1188 sp003160265*. The type genome for the species is the GenBank assembly GCA_003139295.1. The GC content of the type genome is 56.98 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Peracana aciscessa sp. nov.

Candidatus Peracana aciscessa (NL. fem. n. *aciscessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSWJ01 sp011327585*. The type genome for the species is the GenBank assembly GCA_011327585.1. The GC content of the type genome is 41.27 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Peracana gen. nov.

Candidatus Peracana (NL. fem. n. *Peracana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSWJ01*. The type species for the genus is *Candidatus* Peracana aciscessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSWJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peracanaceae.

Description of *Candidatus* Peracanaceae fam. nov.

Candidatus Peracanaceae (NL. fem. n. *Peracanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSWJ01.* The type genus for the taxon is *Candidatus* Peracana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Peracaria adnubibra sp. nov.

Candidatus Peracaria adnubibra (NL. fem. n. *adnubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B51-G9 sp003648225*. The type genome for the species is the GenBank assembly GCA_003648225.1. The GC content of the type genome is 37.86 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Peracaria gen. nov.

Candidatus Peracaria (NL. fem. n. *Peracaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B51-G9*. The type species for the genus is *Candidatus* Peracaria adnubibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B51-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peracariaceae.

Description of *Candidatus* Peracariaceae fam. nov.

Candidatus Peracariaceae (NL. fem. n. *Peracariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B51-G9.* The type genus for the taxon is *Candidatus* Peracaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3054*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venunellales.

Description of *Candidatus* Peracella cerevimonia sp. nov.

Candidatus Peracella cerevimonia (NL. fem. n. *cerevimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-45-19 sp001002405*. The type genome for the species is the GenBank assembly GCA_001002405.1. The GC content of the type genome is 46.78 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Peracella gen. nov.

Candidatus Peracella (NL. fem. n. *Peracella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-45-19*. The type species for the genus is *Candidatus* Peracella cerevimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Peracella verifigena sp. nov.

Candidatus Peracella verifigena (NL. fem. n. *verifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-45-19 sp001001555*. The type genome for the species is the GenBank assembly GCA_001001555.1. The GC content of the type genome is 46.12 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Peracia sicunitica sp. nov.

Candidatus Peracia sicunitica (NL. fem. n. *sicunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLGK01 sp007123775*. The type genome for the species is the GenBank assembly GCA_003562215.1. The GC content of the type genome is 56.76 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Peracia gen. nov.

Candidatus Peracia (NL. fem. n. *Peracia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLGK01*. The type species for the genus is *Candidatus* Peracia sicunitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Peracida peripitas sp. nov.

Candidatus Peracida peripitas (NL. fem. n. *peripitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002790615 sp002780175*. The type genome for the species is the GenBank assembly GCA_002771255.1. The GC content of the type genome is 40.23 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Peracida gen. nov.

Candidatus Peracida (NL. fem. n. *Peracida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002790615*. The type species for the genus is *Candidatus* Peracida peripitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Peracosa benevessa sp. nov.

Candidatus Peracosa benevessa (NL. fem. n. *benevessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SOIY01 sp004376785*. The type genome for the species is the GenBank assembly GCA_004376785.1. The GC content of the type genome is 36.57 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Peracosa gen. nov.

Candidatus Peracosa (NL. fem. n. *Peracosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SOIY01*. The type species for the genus is *Candidatus* Peracosa benevessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-42*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Labeciaceae.

Description of *Candidatus* Peradana defunedo sp. nov.

Candidatus Peradana defunedo (NL. fem. n. *defunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YA12-FULL-60-10 sp001803315*. The type genome for the species is the GenBank assembly GCA_001803285.1. The GC content of the type genome is 60.15 % and the genome length is 3.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point B".

Description of *Candidatus* Peradana gen. nov.

Candidatus Peradana (NL. fem. n. *Peradana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YA12-FULL-60-10*. The type species for the genus is *Candidatus* Peradana defunedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *YA12-FULL-60-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peradanaceae.

Description of *Candidatus* Peradanaceae fam. nov.

Candidatus Peradanaceae (NL. fem. n. *Peradanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *YA12-FULL-60-10.* The type genus for the taxon is *Candidatus* Peradana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depupellales.

Description of *Candidatus* Peradaria maleditura sp. nov.

Candidatus Peradaria maleditura (NL. fem. n. *maleditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-57-13 sp001805055*. The type genome for the species is the GenBank assembly GCA_001803725.1. The GC content of the type genome is 57.07 % and the genome length is 2.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 4 / D; 5m depth; 0.2 filter".

Description of *Candidatus* Peradaria gen. nov.

Candidatus Peradaria (NL. fem. n. *Peradaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-57-13*. The type species for the genus is *Candidatus* Peradaria maleditura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9217*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volucosaceae.

Description of *Candidatus* Peradella detesicella sp. nov.

Candidatus Peradella detesicella (NL. fem. n. *detesicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCC-7336 sp000332275*. The type genome for the species is the

GenBank assembly RS_GCF_000332275.1. The GC content of the type genome is 53.71 % and the genome length is 5.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea water from a tank".

Description of *Candidatus* Peradella gen. nov.

Candidatus Peradella (NL. fem. n. *Peradella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCC-7336*. The type species for the genus is *Candidatus* Peradella detesicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PCC-7336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peradellaceae.

Description of *Candidatus* Peradellaceae fam. nov.

Candidatus Peradellaceae (NL. fem. n. *Peradellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PCC-7336.* The type genus for the taxon is *Candidatus* Peradella .

According to the original version of GTDB R06-RS202, this family belongs to the order *PCC-7336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peradellales.

Description of *Candidatus* Peradellales ord. nov.

Candidatus Peradellales (NL. fem. n. *Peradellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PCC-7336.* The type genus for the taxon is *Candidatus* Peradella .

According to the GTDB R06-RS202, this order belongs to the class *Cyanobacteriia*.

Description of *Candidatus* Peradia amnenilega sp. nov.

Candidatus Peradia amnenilega (NL. fem. n. *amnenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2253 sp002068415*. The type genome for the species is the

GenBank assembly GCA_002068415.1. The GC content of the type genome is 37.27 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Peradia gen. nov.

Candidatus Peradia (NL. fem. n. *Peradia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2253*. The type species for the genus is *Candidatus* Peradia amnenilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Peradia feculimonia sp. nov.

Candidatus Peradia feculimonia (NL. fem. n. *feculimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2253 sp002347755*. The type genome for the species is the GenBank assembly GCA_002347755.1. The GC content of the type genome is 45.44 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Peradida antipimonia sp. nov.

Candidatus Peradida antipimonia (NL. fem. n. *antipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVL01 sp007129455*. The type genome for the species is the GenBank assembly GCA_007129455.1. The GC content of the type genome is 43.4 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Peradida gen. nov.

Candidatus Peradida (NL. fem. n. *Peradida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKVL01*. The type species for the genus is *Candidatus* Peradida antipimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family

CSBR16-193. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimidosaceae.

Description of *Candidatus* Peradida nubifimonia sp. nov.

Candidatus Peradida nubifimonia (NL. fem. n. *nubifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVL01 sp007125155*. The type genome for the species is the GenBank assembly GCA_003565365.1. The GC content of the type genome is 45.03 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Peradosa cemenifica sp. nov.

Candidatus Peradosa cemenifica (NL. fem. n. *cemenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6777 sp002731275*. The type genome for the species is the GenBank assembly GCA_002453135.1. The GC content of the type genome is 51.31 % and the genome length is 10.17 Mbp.

Description of *Candidatus* Peradosa gen. nov.

Candidatus Peradosa (NL. fem. n. *Peradosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6777*. The type species for the genus is *Candidatus* Peradosa cemenifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6777*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peradosaceae.

Description of *Candidatus* Peradosaceae fam. nov.

Candidatus Peradosaceae (NL. fem. n. *Peradosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6777*. The type genus for the taxon is *Candidatus* Peradosa .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA6777. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peradosales.

Description of *Candidatus* Peradosales ord. nov.

Candidatus Peradosales (NL. fem. n. *Peradosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6777.* The type genus for the taxon is *Candidatus* Peradosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6777*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Peradosae.

Description of *Candidatus* Peradosae class. nov.

Candidatus Peradosae (NL. fem. n. *c__Peradosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6777.* The type genus for the taxon is *Candidatus* Peradosa .

According to GTDB R06-RS202, this class belongs to the phylum *Myxococcota*.

Description of *Candidatus* Peradula demadentia sp. nov.

Candidatus Peradula demadentia (NL. fem. n. *demadentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12086 sp003518365*. The type genome for the species is the GenBank assembly GCA_003536515.1. The GC content of the type genome is 42.51 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Peradula gen. nov.

Candidatus Peradula (NL. fem. n. *Peradula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12086*. The type species for the genus is *Candidatus* Peradula demadentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Peradula domigugo sp. nov.

Candidatus Peradula domigugo (NL. fem. n. *domigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12086 sp002792995*. The type genome for the species is the GenBank assembly GCA_002792995.1. The GC content of the type genome is 41.19 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Peradula murelitia sp. nov.

Candidatus Peradula murelitia (NL. fem. n. *murelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12086 sp002784795*. The type genome for the species is the GenBank assembly GCA_002773105.1. The GC content of the type genome is 42.57 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Peradula turicisca sp. nov.

Candidatus Peradula turicisca (NL. fem. n. *turicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12086 sp001871445*. The type genome for the species is the GenBank assembly GCA_002322435.1. The GC content of the type genome is 41.0 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Perexana sarabatio sp. nov.

Candidatus Perexana sarabatio (NL. fem. n. *sarabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AF33-28 sp003477885*. The type genome for the species is the GenBank assembly RS_GCF_900751945.1. The GC content of the type genome is 50.01 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Perexana gen. nov.

Candidatus Perexana (NL. fem. n. *Perexana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AF33-28*. The type species for the genus is *Candidatus* Perexana sarabatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Perexaria resacitas sp. nov.

Candidatus Perexaria resacitas (NL. fem. n. *resacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4124 sp903862255*. The type genome for the species is the GenBank assembly GCA_903862255.1. The GC content of the type genome is 39.28 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Perexaria gen. nov.

Candidatus Perexaria (NL. fem. n. *Perexaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4124*. The type species for the genus is *Candidatus* Perexaria resacitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relaposaceae.

Description of *Candidatus* Perexaria rudecilenta sp. nov.

Candidatus Perexaria rudecilenta (NL. fem. n. *rudecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4124 sp002413705*. The type genome for the species is the GenBank assembly GCA_002413705.1. The GC content of the type genome is 42.81 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Perexella exosciforma sp. nov.

Candidatus Perexella exosciforma (NL. fem. n. *exosciforma* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-39-9b sp001816695*. The type genome for the species is the GenBank assembly GCA_001816695.1. The GC content of the type genome is 39.34 % and the genome length is 0.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Perexella gen. nov.

Candidatus Perexella (NL. fem. n. *Perexella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-39-9b*. The type species for the genus is *Candidatus* Perexella exosciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-39-9b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perexellaceae.

Description of *Candidatus* Perexellaceae fam. nov.

Candidatus Perexellaceae (NL. fem. n. *Perexellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-39-9b.* The type genus for the taxon is *Candidatus* Perexella .

According to GTDB R06-RS202, this family belongs to the order *Woykebacterales*.

Description of *Candidatus* Perexia detecimonia sp. nov.

Candidatus Perexia detecimonia (NL. fem. n. *detecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PGYQ01 sp002839745*. The type genome for the species is the GenBank assembly GCA_002839745.1. The GC content of the type genome is 27.65 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Perexia gen. nov.

Candidatus Perexia (NL. fem. n. *Perexia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PGYQ01*. The type species for the genus is *Candidatus* Perexia detecimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PGYQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perexiaceae.

Description of *Candidatus* Perexiaceae fam. nov.

Candidatus Perexiaceae (NL. fem. n. *Perexiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PGYQ01*. The type genus for the taxon is *Candidatus* Perexia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2591*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peribosales.

Description of *Candidatus* Perexida depetatio sp. nov.

Candidatus Perexida depetatio (NL. fem. n. *depetatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYYT01 sp903903945*. The type genome for the species is the GenBank assembly GCA_903870205.1. The GC content of the type genome is 52.71 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Perexida gen. nov.

Candidatus Perexida (NL. fem. n. *Perexida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYYT01*. The type species for the genus is *Candidatus* Perexida depetatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYYT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perexidaceae.

Description of *Candidatus* Perexidaceae fam. nov.

Candidatus Perexidaceae (NL. fem. n. *Perexidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYYT01*. The type genus for the taxon is *Candidatus* Perexida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIYYT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Perexidales.

Description of *Candidatus* Perexidales ord. nov.

Candidatus Perexidales (NL. fem. n. *Perexidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYYT01*. The type genus for the taxon is *Candidatus* Perexida .

According to the original version of GTDB R06-RS202, this family belongs to the class *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Loripellae.

Description of *Candidatus* Perexida semipatica sp. nov.

Candidatus Perexida semipatica (NL. fem. n. *semipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYYT01 sp903930455*. The type genome for the species is the GenBank assembly GCA_903930455.1. The GC content of the type genome is 52.39 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Perexosa obtenastra sp. nov.

Candidatus Perexosa obtenastra (NL. fem. n. *obtenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tc-Br11-B2g6-7 sp009908945*. The type genome for the species is the GenBank assembly GCA_009908945.1. The GC content of the type genome is 63.63 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Perexosa gen. nov.

Candidatus Perexosa (NL. fem. n. *Perexosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Tc-Br11-B2g6-7*. The type species for the genus is *Candidatus* Perexosa obtenastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Perexosa retecilenta sp. nov.

Candidatus Perexosa retecilenta (NL. fem. n. *retecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tc-Br11-B2g6-7 sp001564055*. The type genome for the species is the GenBank assembly GCA_003554425.1. The GC content of the type genome is 62.03 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Perexosa subabisca sp. nov.

Candidatus Perexosa subabisca (NL. fem. n. *subabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tc-Br11-B2g6-7 sp007124945*. The type genome for the species is the GenBank assembly GCA_007130135.1. The GC content of the type genome is 57.95 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Perexula defaratio sp. nov.

Candidatus Perexula defaratio (NL. fem. n. *defaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKRQ01 sp009837205*. The type genome for the species is the GenBank assembly GCA_009837205.1. The GC content of the type genome is 50.52 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Perexula gen. nov.

Candidatus Perexula (NL. fem. n. *Perexula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RKRQ01*. The type species for the genus is *Candidatus* Perexula defaratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RKRQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perexulaceae.

Description of *Candidatus* Perexulaceae fam. nov.

Candidatus Perexulaceae (NL. fem. n. *Perexulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RKRQ01.* The type genus for the taxon is *Candidatus* Perexula .

According to the original version of GTDB R06-RS202, this family belongs to the order *RKRQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Perexulales.

Description of *Candidatus* Perexulales ord. nov.

Candidatus Perexulales (NL. fem. n. *Perexulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RKRQ01.* The type genus for the taxon is *Candidatus* Perexula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1144*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Conifellae.

Description of *Candidatus* Perexula detumedo sp. nov.

Candidatus Perexula detumedo (NL. fem. n. *detumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKRQ01 sp009840385*. The type genome for the species is the GenBank assembly GCA_009835375.1. The GC content of the type genome is 50.96 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Perexula rurigentia sp. nov.

Candidatus Perexula rurigentia (NL. fem. n. *rurigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKRQ01 sp007571325*. The type genome for the species is the GenBank assembly GCA_007571035.1. The GC content of the type genome is 44.21 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Peribacillus admodugo sp. nov.

Candidatus Peribacillus admodugo (NL. fem. n. *admodugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peribacillus sp003429085*. The type genome for the species is the GenBank assembly RS_GCF_003429085.1. The GC content of the type genome is 41.71 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Peribacillus cepurigena sp. nov.

Candidatus Peribacillus cepurigena (NL. fem. n. *cepurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peribacillus sp001510645*. The type genome for the species is the GenBank assembly RS_GCF_001510645.1. The GC content of the type genome is 37.41 % and the genome length is 5.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Peribacillus detosivita sp. nov.

Candidatus Peribacillus detosivita (NL. fem. n. *detosivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peribacillus sp002835675*. The type genome for the species is the GenBank assembly RS_GCF_005217145.1. The GC content of the type genome is 40.04 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Peribacillus immodilenta sp. nov.

Candidatus Peribacillus immodilenta (NL. fem. n. *immodilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peribacillus sp002863565*. The type genome for the species is the GenBank assembly RS_GCF_002863565.1. The GC content of the type genome is 40.81 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Peribacillus incivimonas sp. nov.

Candidatus Peribacillus incivimonas (NL. fem. n. *incivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peribacillus sp002860285*. The type genome for the species is the GenBank assembly RS_GCF_002860285.1. The GC content of the type genome is 39.53 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Peribacillus sepositrix sp. nov.

Candidatus Peribacillus sepositrix (NL. fem. n. *sepositrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peribacillus sp900112495*. The type genome for the species is the GenBank assembly RS_GCF_900112495.1. The GC content of the type genome is 41.0 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Peribacter divolicula sp. nov.

Candidatus Peribacter divolicula (NL. fem. n. *divolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Peribacter sp001872575*. The type genome for the species is the GenBank assembly GCA_002322595.1. The GC content of the type genome is 54.3 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Peribana funivicella sp. nov.

Candidatus Peribana funivicella (NL. fem. n. *funivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFJ01 sp011064745*. The type genome for the species is the GenBank assembly GCA_011064745.1. The GC content of the type genome is 30.93 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Peribana gen. nov.

Candidatus Peribana (NL. fem. n. *Peribana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFJ01*. The type species for the genus is *Candidatus* Peribana funivicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Peribaria dilibimonas sp. nov.

Candidatus Peribaria dilibimonas (NL. fem. n. *dilibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4811 sp002328075*. The type genome for the species is the GenBank assembly GCA_002328075.1. The GC content of the type genome is 62.27 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Peribaria gen. nov.

Candidatus Peribaria (NL. fem. n. *Peribaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4811*. The type species for the genus is *Candidatus* Peribaria dilibimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4811*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribariaceae.

Description of *Candidatus* Peribariaceae fam. nov.

Candidatus Peribariaceae (NL. fem. n. *Peribariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4811*. The type genus for the taxon is *Candidatus* Peribaria .

According to GTDB R06-RS202, this family belongs to the order *Promineofilales*.

Description of *Candidatus* Peribella redunitio sp. nov.

Candidatus Peribella redunitio (NL. fem. n. *redunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSMQ01 sp011047655*. The type genome for the species is the GenBank assembly GCA_011047655.1. The GC content of the type genome is 41.86 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Peribella gen. nov.

Candidatus Peribella (NL. fem. n. *Peribella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSMQ01*. The type species for the genus is *Candidatus* Peribella redunitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSMQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribellaceae.

Description of *Candidatus* Peribellaceae fam. nov.

Candidatus Peribellaceae (NL. fem. n. *Peribellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSMQ01.* The type genus for the taxon is *Candidatus* Peribella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6902*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monodosales.

Description of *Candidatus* Peribida periditura sp. nov.

Candidatus Peribida periditura (NL. fem. n. *periditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYZ01 sp009692535*. The type genome for the species is the GenBank assembly GCA_009692535.1. The GC content of the type genome is 70.53 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Peribida gen. nov.

Candidatus Peribida (NL. fem. n. *Peribida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYZ01*. The type species for the genus is *Candidatus* Peribida periditura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribidaceae.

Description of *Candidatus* Peribidaceae fam. nov.

Candidatus Peribidaceae (NL. fem. n. *Peribidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYZ01.* The type genus for the taxon is *Candidatus* Peribida .

According to GTDB R06-RS202, this family belongs to the order *Haliangiales*.

Description of *Candidatus* Peribosa arundimonia sp. nov.

Candidatus Peribosa arundimonia (NL. fem. n. *arundimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2591 sp002339755*. The type genome for the species is the GenBank assembly GCA_002339755.1. The GC content of the type genome is 32.65 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Peribosa gen. nov.

Candidatus Peribosa (NL. fem. n. *Peribosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2591*. The type species for the genus is *Candidatus* Peribosa arundimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2591*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peribosaceae.

Description of *Candidatus* Peribosaceae fam. nov.

Candidatus Peribosaceae (NL. fem. n. *Peribosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2591*. The type genus for the taxon is *Candidatus* Peribosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2591*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peribosales.

Description of *Candidatus* Peribosales ord. nov.

Candidatus Peribosales (NL. fem. n. *Peribosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2591*. The type genus for the taxon is *Candidatus* Peribosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Peribula recucitoga sp. nov.

Candidatus Peribula recucitoga (NL. fem. n. *recucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AM07-15 sp003477405*. The type genome for the species is the GenBank assembly GCA_900553375.1. The GC content of the type genome is 56.15 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Peribula gen. nov.

Candidatus Peribula (NL. fem. n. *Peribula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AM07-15*. The type species for the genus is *Candidatus* Peribula recucitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pericaria funivitrix sp. nov.

Candidatus Pericaria funivitrix (NL. fem. n. *funivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BAIKAL-G1 sp903855705*. The type genome for the species is the GenBank assembly GCA_903906915.1. The GC content of the type genome is 65.29 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Pericaria gen. nov.

Candidatus Pericaria (NL. fem. n. *Pericaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BAIKAL-G1*. The type species for the genus is *Candidatus* Pericaria funivitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pericaria serotessa sp. nov.

Candidatus Pericaria serotessa (NL. fem. n. *serotessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BAIKAL-G1 sp002737305*. The type genome for the species is the GenBank assembly GCA_002737305.1. The GC content of the type genome is 66.35 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Pericella arcubilega sp. nov.

Candidatus Pericella arcubilega (NL. fem. n. *arcubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBAY01 sp005239945*. The type genome for the species is the GenBank assembly GCA_005239945.1. The GC content of the type genome is 37.92 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Pericella gen. nov.

Candidatus Pericella (NL. fem. n. *Pericella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBAY01*. The type species for the genus is *Candidatus* Pericella arcubilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBAY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pericellaceae.

Description of *Candidatus* Pericellaceae fam. nov.

Candidatus Pericellaceae (NL. fem. n. *Pericellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBAY01*. The type genus for the taxon is *Candidatus* Pericella .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-40-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nivomanales.

Description of *Candidatus* Pericida anancitura sp. nov.

Candidatus Pericida anancitura (NL. fem. n. *anancitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-46-11 sp001779955*. The type genome for the species is the GenBank assembly GCA_001779955.1. The GC content of the type genome is 46.04 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Pericida gen. nov.

Candidatus Pericida (NL. fem. n. *Pericida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-46-11*. The type species for the genus is *Candidatus* Pericida anancitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-46-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pericidaceae.

Description of *Candidatus* Pericidaceae fam. nov.

Candidatus Pericidaceae (NL. fem. n. *Pericidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-46-11.* The type genus for the taxon is *Candidatus* Pericida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA920*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denicosales.

Description of *Candidatus* Pericosa catagivita sp. nov.

Candidatus Pericosa catagivita (NL. fem. n. *catagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp001604105*. The type genome for the species is the GenBank assembly GCA_001604105.1. The GC content of the type genome is 55.2 % and the genome length is 3.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Pericosa gen. nov.

Candidatus Pericosa (NL. fem. n. *Pericosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Firm-11*. The type species for the genus is *Candidatus* Pericosa catagivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Pericosa celumimonia sp. nov.

Candidatus Pericosa celumimonia (NL. fem. n. *celumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp012517815*. The type genome for the species is the GenBank assembly GCA_012517815.1. The GC content of the type genome is 63.66 %

and the genome length is 3.88 Mbp.

Description of *Candidatus* Pericosa cocolibula sp. nov.

Candidatus Pericosa cocolibula (NL. fem. n. *cocolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp004556545*. The type genome for the species is the GenBank assembly GCA_004556545.1. The GC content of the type genome is 58.39 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Pericosa defulicella sp. nov.

Candidatus Pericosa defulicella (NL. fem. n. *defulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp012523405*. The type genome for the species is the GenBank assembly GCA_012523405.1. The GC content of the type genome is 49.04 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Pericosa domigago sp. nov.

Candidatus Pericosa domigago (NL. fem. n. *domigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp001604115*. The type genome for the species is the GenBank assembly GCA_001604115.1. The GC content of the type genome is 61.16 % and the genome length is 1.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Pericosa exsuribra sp. nov.

Candidatus Pericosa exsuribra (NL. fem. n. *exsuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp009783365*. The type genome for the species is the GenBank assembly GCA_009783365.1. The GC content of the type genome is 55.85 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Pericosa infucicella sp. nov.

Candidatus Pericosa infucicella (NL. fem. n. *infucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp900550955*. The type genome for the species is the GenBank assembly GCA_900550955.1. The GC content of the type genome is 59.59 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Pericosa luxuritrix sp. nov.

Candidatus Pericosa luxuritrix (NL. fem. n. *luxuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp900540045*. The type genome for the species is the GenBank assembly RS_GCF_900759065.1. The GC content of the type genome is 60.77 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Pericosa panifitura sp. nov.

Candidatus Pericosa panifitura (NL. fem. n. *panifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp900553905*. The type genome for the species is the GenBank assembly RS_GCF_900759185.1. The GC content of the type genome is 62.72 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Pericosa pocilitica sp. nov.

Candidatus Pericosa pocilitica (NL. fem. n. *pocilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp012729115*. The type genome for the species is the GenBank assembly GCA_012729115.1. The GC content of the type genome is 55.84 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Pericosa sotulivita sp. nov.

Candidatus Pericosa sotulivita (NL. fem. n. *sotulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-11 sp900548145*. The type genome for the species is the GenBank assembly RS_GCF_900756425.1. The GC content of the type genome is 58.01 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Peridana herinastra sp. nov.

Candidatus Peridana herinastra (NL. fem. n. *herinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHBD01 sp002841865*. The type genome for the species is the GenBank assembly GCA_002841865.1. The GC content of the type genome is 59.86 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Peridana gen. nov.

Candidatus Peridana (NL. fem. n. *Peridana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHBD01*. The type species for the genus is *Candidatus* Peridana herinastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHBD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peridanaceae.

Description of *Candidatus* Peridanaceae fam. nov.

Candidatus Peridanaceae (NL. fem. n. *Peridanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PHBD01.* The type genus for the taxon is *Candidatus* Peridana .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Peridana indevisca sp. nov.

Candidatus Peridana indevisca (NL. fem. n. *indevisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHBD01 sp013177825*. The type genome for the species is the GenBank assembly GCA_013177825.1. The GC content of the type genome is 59.92 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Peridaria accorimonas sp. nov.

Candidatus Peridaria accorimonas (NL. fem. n. *accorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902509695*. The type genome for the species is the GenBank assembly GCA_902509695.1. The GC content of the type genome is 31.36 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Peridaria gen. nov.

Candidatus Peridaria (NL. fem. n. *Peridaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HIMB59*. The type species for the genus is *Candidatus* Peridaria accorimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HIMB59*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peridariaceae.

Description of *Candidatus* Peridariaceae fam. nov.

Candidatus Peridariaceae (NL. fem. n. *Peridariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HIMB59.* The type genus for the taxon is *Candidatus* Peridaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *HIMB59*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peridariales.

Description of *Candidatus* Peridariales ord. nov.

Candidatus Peridariales (NL. fem. n. *Peridariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HIMB59.* The type genus for the taxon is *Candidatus* Peridaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Peridaria adfanitoga sp. nov.

Candidatus Peridaria adfanitoga (NL. fem. n. *adfanitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp004321805*. The type genome for the species is the GenBank assembly GCA_004321805.1. The GC content of the type genome is 31.07 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Peridaria adpelago sp. nov.

Candidatus Peridaria adpelago (NL. fem. n. *adpelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902527045*. The type genome for the species is the GenBank assembly GCA_902527045.1. The GC content of the type genome is 30.73 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Peridaria adpicentia sp. nov.

Candidatus Peridaria adpicentia (NL. fem. n. *adpicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902632575*. The type genome for the species is the GenBank assembly GCA_902632575.1. The GC content of the type genome is 30.77 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Peridaria atrusessa sp. nov.

Candidatus Peridaria atrusessa (NL. fem. n. *atrusessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902574995*. The type genome for the species is the GenBank assembly GCA_902574995.1. The GC content of the type genome is 30.88 %

and the genome length is 1.16 Mbp.

Description of *Candidatus* Peridaria bipalilenta sp. nov.

Candidatus Peridaria bipalilenta (NL. fem. n. *bipalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902527545*. The type genome for the species is the GenBank assembly GCA_902613445.1. The GC content of the type genome is 30.47 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Peridaria bipatimonia sp. nov.

Candidatus Peridaria bipatimonia (NL. fem. n. *bipatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902615815*. The type genome for the species is the GenBank assembly GCA_902599045.1. The GC content of the type genome is 30.64 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Peridaria catecitio sp. nov.

Candidatus Peridaria catecitio (NL. fem. n. *catecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902524245*. The type genome for the species is the GenBank assembly GCA_902590065.1. The GC content of the type genome is 30.43 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Peridaria cisalilenta sp. nov.

Candidatus Peridaria cisalilenta (NL. fem. n. *cisalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902610415*. The type genome for the species is the GenBank assembly GCA_902523865.1. The GC content of the type genome is 31.13 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Peridaria cucurax sp. nov.

Candidatus Peridaria cucurax (NL. fem. n. *cucurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902594145*. The type genome for the species is the GenBank assembly GCA_902594145.1. The GC content of the type genome is 30.65 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Peridaria curabago sp. nov.

Candidatus Peridaria curabago (NL. fem. n. *curabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902521155*. The type genome for the species is the GenBank assembly GCA_902521155.1. The GC content of the type genome is 31.01 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Peridaria decomastra sp. nov.

Candidatus Peridaria decomastra (NL. fem. n. *decomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp003281065*. The type genome for the species is the GenBank assembly GCA_003281065.1. The GC content of the type genome is 30.33 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Peridaria delubibra sp. nov.

Candidatus Peridaria delubibra (NL. fem. n. *delubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902521465*. The type genome for the species is the GenBank assembly GCA_902521465.1. The GC content of the type genome is 30.33 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Peridaria denomatica sp. nov.

Candidatus Peridaria denomatica (NL. fem. n. *denomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902595525*. The type genome for the species is the GenBank assembly GCA_902595525.1. The GC content of the type genome is 30.95 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Peridaria depopastra sp. nov.

Candidatus Peridaria depopastra (NL. fem. n. *depopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902518505*. The type genome for the species is the GenBank assembly GCA_902561065.1. The GC content of the type genome is 30.81 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Peridaria desacibula sp. nov.

Candidatus Peridaria desacibula (NL. fem. n. *desacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902610175*. The type genome for the species is the GenBank assembly GCA_902610175.1. The GC content of the type genome is 30.32 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Peridaria desonago sp. nov.

Candidatus Peridaria desonago (NL. fem. n. *desonago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902613845*. The type genome for the species is the GenBank assembly GCA_902543135.1. The GC content of the type genome is 30.76 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Peridaria detecicula sp. nov.

Candidatus Peridaria detecicula (NL. fem. n. *detecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp003216195*. The type genome for the species is the GenBank assembly GCA_003216195.1. The GC content of the type genome is 30.3 %

and the genome length is 1.24 Mbp.

Description of *Candidatus* Peridaria dicimiforma sp. nov.

Candidatus Peridaria dicimiforma (NL. fem. n. *dicimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902530745*. The type genome for the species is the GenBank assembly GCA_902560395.1. The GC content of the type genome is 30.44 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Peridaria dimidibula sp. nov.

Candidatus Peridaria dimidibula (NL. fem. n. *dimidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902610255*. The type genome for the species is the GenBank assembly GCA_902610255.1. The GC content of the type genome is 30.42 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Peridaria dinupivita sp. nov.

Candidatus Peridaria dinupivita (NL. fem. n. *dinupivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902543855*. The type genome for the species is the GenBank assembly GCA_902543855.1. The GC content of the type genome is 30.44 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Peridaria domicitrix sp. nov.

Candidatus Peridaria domicitrix (NL. fem. n. *domicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp000299115*. The type genome for the species is the GenBank assembly RS_GCF_000299115.1. The GC content of the type genome is 32.26 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Peridaria domigitia sp. nov.

Candidatus Peridaria domigitia (NL. fem. n. *domigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902538085*. The type genome for the species is the GenBank assembly GCA_902538085.1. The GC content of the type genome is 30.32 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Peridaria famelatio sp. nov.

Candidatus Peridaria famelatio (NL. fem. n. *famelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902536405*. The type genome for the species is the GenBank assembly GCA_902633905.1. The GC content of the type genome is 30.9 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Peridaria forinastra sp. nov.

Candidatus Peridaria forinastra (NL. fem. n. *forinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902591315*. The type genome for the species is the GenBank assembly GCA_902591315.1. The GC content of the type genome is 30.49 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Peridaria holovatica sp. nov.

Candidatus Peridaria holovatica (NL. fem. n. *holovatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902575065*. The type genome for the species is the GenBank assembly GCA_902575065.1. The GC content of the type genome is 30.52 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Peridaria homolilenta sp. nov.

Candidatus Peridaria homolilenta (NL. fem. n. *homolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902555695*. The type genome for the species is the GenBank assembly GCA_902617075.1. The GC content of the type genome is 31.01 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Peridaria impinivita sp. nov.

Candidatus Peridaria impinivita (NL. fem. n. *impinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902529795*. The type genome for the species is the GenBank assembly GCA_902529795.1. The GC content of the type genome is 32.1 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Peridaria intemessa sp. nov.

Candidatus Peridaria intemessa (NL. fem. n. *intemessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902575725*. The type genome for the species is the GenBank assembly GCA_902575725.1. The GC content of the type genome is 30.85 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Peridaria luxurax sp. nov.

Candidatus Peridaria luxurax (NL. fem. n. *luxurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902599405*. The type genome for the species is the GenBank assembly GCA_902523135.1. The GC content of the type genome is 30.85 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Peridaria manibatio sp. nov.

Candidatus Peridaria manibatio (NL. fem. n. *manibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902560595*. The type genome for the species is the GenBank assembly GCA_902560595.1. The GC content of the type genome is 30.73 %

and the genome length is 1.1 Mbp.

Description of *Candidatus* Peridaria meriditudo sp. nov.

Candidatus Peridaria meriditudo (NL. fem. n. *meriditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902616855*. The type genome for the species is the GenBank assembly GCA_902595575.1. The GC content of the type genome is 30.45 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Peridaria minurax sp. nov.

Candidatus Peridaria minurax (NL. fem. n. *minurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902617465*. The type genome for the species is the GenBank assembly GCA_902564165.1. The GC content of the type genome is 30.59 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Peridaria murelitas sp. nov.

Candidatus Peridaria murelitas (NL. fem. n. *murelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902514885*. The type genome for the species is the GenBank assembly GCA_902514885.1. The GC content of the type genome is 30.94 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Peridaria obnunax sp. nov.

Candidatus Peridaria obnunax (NL. fem. n. *obnunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902528805*. The type genome for the species is the GenBank assembly GCA_902528805.1. The GC content of the type genome is 31.04 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Peridaria palificella sp. nov.

Candidatus Peridaria palificella (NL. fem. n. *palificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902526965*. The type genome for the species is the GenBank assembly GCA_902526965.1. The GC content of the type genome is 30.68 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Peridaria peraditoga sp. nov.

Candidatus Peridaria peraditoga (NL. fem. n. *peraditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902515765*. The type genome for the species is the GenBank assembly GCA_902515765.1. The GC content of the type genome is 31.51 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Peridaria pimenitio sp. nov.

Candidatus Peridaria pimenitio (NL. fem. n. *pimenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp008638215*. The type genome for the species is the GenBank assembly GCA_008638275.1. The GC content of the type genome is 32.28 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Peridaria propricella sp. nov.

Candidatus Peridaria propricella (NL. fem. n. *propricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902516235*. The type genome for the species is the GenBank assembly GCA_902516235.1. The GC content of the type genome is 30.81 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Peridaria relecentia sp. nov.

Candidatus Peridaria relecentia (NL. fem. n. *relecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902522585*. The type genome for the species is the GenBank assembly GCA_902522585.1. The GC content of the type genome is 32.26 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Peridaria repudentia sp. nov.

Candidatus Peridaria repudentia (NL. fem. n. *repudentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902588615*. The type genome for the species is the GenBank assembly GCA_902589775.1. The GC content of the type genome is 30.73 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Peridaria robigitoga sp. nov.

Candidatus Peridaria robigitoga (NL. fem. n. *robigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp002705265*. The type genome for the species is the GenBank assembly GCA_002705265.1. The GC content of the type genome is 27.99 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Peridaria sanabicula sp. nov.

Candidatus Peridaria sanabicula (NL. fem. n. *sanabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902617515*. The type genome for the species is the GenBank assembly GCA_902617515.1. The GC content of the type genome is 30.67 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Peridaria serotitas sp. nov.

Candidatus Peridaria serotitas (NL. fem. n. *serotitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp002690585*. The type genome for the species is the GenBank assembly GCA_902538105.1. The GC content of the type genome is 30.66 %

and the genome length is 1.21 Mbp.

Description of *Candidatus* Peridaria siligatio sp. nov.

Candidatus Peridaria siligatio (NL. fem. n. *siligatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902521485*. The type genome for the species is the GenBank assembly GCA_902597535.1. The GC content of the type genome is 30.68 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Peridaria sonipiforma sp. nov.

Candidatus Peridaria sonipiforma (NL. fem. n. *sonipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902542505*. The type genome for the species is the GenBank assembly GCA_902542505.1. The GC content of the type genome is 30.36 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Peridaria susicugo sp. nov.

Candidatus Peridaria susicugo (NL. fem. n. *susicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902621205*. The type genome for the species is the GenBank assembly GCA_902530005.1. The GC content of the type genome is 30.63 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Peridaria tegumivita sp. nov.

Candidatus Peridaria tegumivita (NL. fem. n. *tegumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902546975*. The type genome for the species is the GenBank assembly GCA_902614175.1. The GC content of the type genome is 30.91 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Peridaria tenemigena sp. nov.

Candidatus Peridaria tenemigena (NL. fem. n. *tenemigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902524785*. The type genome for the species is the GenBank assembly GCA_902524785.1. The GC content of the type genome is 31.09 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Peridaria tenemisca sp. nov.

Candidatus Peridaria tenemisca (NL. fem. n. *tenemisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902619375*. The type genome for the species is the GenBank assembly GCA_902592365.1. The GC content of the type genome is 30.48 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Peridaria timefentia sp. nov.

Candidatus Peridaria timefentia (NL. fem. n. *timefentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902611415*. The type genome for the species is the GenBank assembly GCA_902539635.1. The GC content of the type genome is 30.64 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Peridaria tomacugo sp. nov.

Candidatus Peridaria tomacugo (NL. fem. n. *tomacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902527525*. The type genome for the species is the GenBank assembly GCA_902527525.1. The GC content of the type genome is 31.03 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Peridaria verifimonia sp. nov.

Candidatus Peridaria verifimonia (NL. fem. n. *verifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp002169365*. The type genome for the species is the GenBank assembly GCA_002169365.1. The GC content of the type genome is 34.02 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Peridaria visibetta sp. nov.

Candidatus Peridaria visibetta (NL. fem. n. *visibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902613185*. The type genome for the species is the GenBank assembly GCA_902519575.1. The GC content of the type genome is 30.85 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Peridaria visifitica sp. nov.

Candidatus Peridaria visifitica (NL. fem. n. *visifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB59 sp902540985*. The type genome for the species is the GenBank assembly GCA_902619695.1. The GC content of the type genome is 30.59 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Peridella detecetta sp. nov.

Candidatus Peridella detecetta (NL. fem. n. *detecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-01-FULL-39-8 sp001789355*. The type genome for the species is the GenBank assembly GCA_001789355.1. The GC content of the type genome is 38.73 % and the genome length is 1.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Peridella gen. nov.

Candidatus Peridella (NL. fem. n. *Peridella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-01-FULL-39-8*. The type species for the genus is *Candidatus*

Peridella detecetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Peridida cotenousia sp. nov.

Candidatus Peridida cotenousia (NL. fem. n. *cotenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-932 sp903970575*. The type genome for the species is the GenBank assembly GCA_903970575.1. The GC content of the type genome is 62.29 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Peridida gen. nov.

Candidatus Peridida (NL. fem. n. *Peridida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-932*. The type species for the genus is *Candidatus* Peridida cotenousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BOG-932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Perididaceae.

Description of *Candidatus* Perididaceae fam. nov.

Candidatus Perididaceae (NL. fem. n. *Perididaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BOG-932.* The type genus for the taxon is *Candidatus* Peridida .

According to GTDB R06-RS202, this family belongs to the order *Azospirillales_A*.

Description of *Candidatus* Peridida echidifica sp. nov.

Candidatus Peridida echidifica (NL. fem. n. *echidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *BOG-932 sp003165335*. The type genome for the species is the GenBank assembly GCA_003165335.1. The GC content of the type genome is 59.22 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Peridosa haricatica sp. nov.

Candidatus Peridosa haricatica (NL. fem. n. *haricatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2252 sp002382605*. The type genome for the species is the GenBank assembly GCA_002382605.1. The GC content of the type genome is 53.97 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Peridosa gen. nov.

Candidatus Peridosa (NL. fem. n. *Peridosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2252*. The type species for the genus is *Candidatus* Peridosa haricatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Peripana nimirax sp. nov.

Candidatus Peripana nimirax (NL. fem. n. *nimirax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-48-32b sp001773725*. The type genome for the species is the GenBank assembly GCA_001773725.1. The GC content of the type genome is 47.81 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Peripana gen. nov.

Candidatus Peripana (NL. fem. n. *Peripana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-48-32b*. The type species for the genus is *Candidatus* Peripana nimirax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Peripella inhabitoga sp. nov.

Candidatus Peripella inhabitoga (NL. fem. n. *inhabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGX01 sp013152135*. The type genome for the species is the GenBank assembly GCA_013152135.1. The GC content of the type genome is 54.23 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Peripella gen. nov.

Candidatus Peripella (NL. fem. n. *Peripella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGX01*. The type species for the genus is *Candidatus* Peripella inhabitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADGX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peripellaceae.

Description of *Candidatus* Peripellaceae fam. nov.

Candidatus Peripellaceae (NL. fem. n. *Peripellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADGX01*. The type genus for the taxon is *Candidatus* Peripella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-365*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipinariales.

Description of *Candidatus* Periposa impiligena sp. nov.

Candidatus Periposa impiligena (NL. fem. n. *impiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABLXB01 sp013178305*. The type genome for the species is the

GenBank assembly GCA_013178305.1. The GC content of the type genome is 62.14 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Periposa gen. nov.

Candidatus Periposa (NL. fem. n. *Periposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABLXB01*. The type species for the genus is *Candidatus* Periposa impiligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABLXB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Periposaceae.

Description of *Candidatus* Periposaceae fam. nov.

Candidatus Periposaceae (NL. fem. n. *Periposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABLXB01*. The type genus for the taxon is *Candidatus* Periposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABLXB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Periposales.

Description of *Candidatus* Periposales ord. nov.

Candidatus Periposales (NL. fem. n. *Periposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABLXB01*. The type genus for the taxon is *Candidatus* Periposa .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetariae.

Description of *Candidatus* Peripula delubimonia sp. nov.

Candidatus Peripula delubimonia (NL. fem. n. *delubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2786225 sp009991425*. The type genome for the species is the GenBank assembly GCA_009995445.1. The GC content of the type genome is 34.8 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Peripula gen. nov.

Candidatus Peripula (NL. fem. n. *Peripula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2786225*. The type species for the genus is *Candidatus* Peripula delubimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Peripula inoblessa sp. nov.

Candidatus Peripula inoblessa (NL. fem. n. *inoblessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2786225 sp002786225*. The type genome for the species is the GenBank assembly GCA_002786225.1. The GC content of the type genome is 35.11 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Perlucidibaca codifitrix sp. nov.

Candidatus Perlucidibaca codifitrix (NL. fem. n. *codifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Perlucidibaca sp002943415*. The type genome for the species is the GenBank assembly RS_GCF_002943415.1. The GC content of the type genome is 67.79 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Perlucidibaca occucatica sp. nov.

Candidatus Perlucidibaca occucatica (NL. fem. n. *occucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Perlucidibaca sp002342025*. The type genome for the species is the GenBank assembly GCA_002342025.1. The GC content of the type genome is 55.18 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Permianibacter incesibra sp. nov.

Candidatus Permianibacter incesibra (NL. fem. n. *incesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Permianibacter sp013179735*. The type genome for the species is the GenBank assembly RS_GCF_013179735.1. The GC content of the type genome is 59.14 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Peroparia cohurugo sp. nov.

Candidatus Peroparia cohurugo (NL. fem. n. *cohurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACEL01 sp011682535*. The type genome for the species is the GenBank assembly GCA_011682535.1. The GC content of the type genome is 61.94 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Peroparia gen. nov.

Candidatus Peroparia (NL. fem. n. *Peroparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACEL01*. The type species for the genus is *Candidatus* Peroparia cohurugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACEL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peropariaceae.

Description of *Candidatus* Peropariaceae fam. nov.

Candidatus Peropariaceae (NL. fem. n. *Peropariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAACEL01.* The type genus for the taxon is *Candidatus* Peroparia .

According to GTDB R06-RS202, this family belongs to the order *Hydrogenedentiales*.

Description of *Candidatus* Peropella abnepibra sp. nov.

Candidatus Peropella abnepibra (NL. fem. n. *abnepibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AcAMD-2 sp903922115*. The type genome for the species is the GenBank assembly GCA_903922115.1. The GC content of the type genome is 57.42 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Peropella gen. nov.

Candidatus Peropella (NL. fem. n. *Peropella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AcAMD-2*. The type species for the genus is *Candidatus* Peropella abnepibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12327*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denoriaceae.

Description of *Candidatus* Peropella embamitio sp. nov.

Candidatus Peropella embamitio (NL. fem. n. *embamitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AcAMD-2 sp000754455*. The type genome for the species is the GenBank assembly GCA_000754455.1. The GC content of the type genome is 57.34 % and the genome length is 0.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water column of the freshwater reservoir Embalse de Amadorio in Spain".

Description of *Candidatus* Peropella subofetta sp. nov.

Candidatus Peropella subofetta (NL. fem. n. *subofetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AcAMD-2 sp903920865*. The type genome for the species is the GenBank assembly GCA_903880055.1. The GC content of the type genome is 55.44 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Peropia cocodicula sp. nov.

Candidatus Peropia cocodicula (NL. fem. n. *cocodicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTS01 sp011389735*. The type genome for the species is the GenBank assembly GCA_011389735.1. The GC content of the type genome is 48.78 % and the genome length is 6.52 Mbp.

Description of *Candidatus* Peropia gen. nov.

Candidatus Peropia (NL. fem. n. *Peropia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABTS01*. The type species for the genus is *Candidatus* Peropia cocodicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAABTS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peropiaceae.

Description of *Candidatus* Peropiaceae fam. nov.

Candidatus Peropiaceae (NL. fem. n. *Peropiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAABTS01*. The type genus for the taxon is *Candidatus* Peropia .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Peropida demulugo sp. nov.

Candidatus Peropida demulugo (NL. fem. n. *demulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2712105 sp002712105*. The type genome for the species is the GenBank assembly RS_GCF_902601495.1. The GC content of the type genome is 31.49 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Peropida gen. nov.

Candidatus Peropida (NL. fem. n. *Peropida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2712105*. The type species for the genus is *Candidatus* Peropida demulugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Peroposa ignifitia sp. nov.

Candidatus Peroposa ignifitia (NL. fem. n. *ignifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU036 sp012727635*. The type genome for the species is the GenBank assembly GCA_012727635.1. The GC content of the type genome is 40.88 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Peroposa gen. nov.

Candidatus Peroposa (NL. fem. n. *Peroposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU036*. The type species for the genus is *Candidatus* Peroposa ignifitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Peroposa lenocivita sp. nov.

Candidatus Peroposa lenocivita (NL. fem. n. *lenocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU036 sp001512625*. The type genome for the species is the GenBank assembly GCA_001512625.1. The GC content of the type genome is 41.18 % and the genome length is 1.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Peropula adlocimonia sp. nov.

Candidatus Peropula adlocimonia (NL. fem. n. *adlocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp902763535*. The type genome for the species is the GenBank assembly GCA_902763535.1. The GC content of the type genome is 39.4 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Peropula gen. nov.

Candidatus Peropula (NL. fem. n. *Peropula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-495*. The type species for the genus is *Candidatus* Peropula adlocimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-239*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobosaceae.

Description of *Candidatus* Peropula artolitoga sp. nov.

Candidatus Peropula artolitoga (NL. fem. n. *artolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp902799835*. The type genome for the species is the GenBank assembly GCA_902799835.1. The GC content of the type genome is 38.58 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Peropula bimotitio sp. nov.

Candidatus Peropula bimotitio (NL. fem. n. *bimotitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp001917125*. The type genome for the species is the GenBank assembly GCA_900540245.1. The GC content of the type genome is 47.38 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Peropula brabrivita sp. nov.

Candidatus Peropula brabrivita (NL. fem. n. *brabrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp900551585*. The type genome for the species is the GenBank assembly GCA_900551585.1. The GC content of the type genome is 44.23 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Peropula casabousia sp. nov.

Candidatus Peropula casabousia (NL. fem. n. *casabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp900762585*. The type genome for the species is the GenBank assembly RS_GCF_900762585.1. The GC content of the type genome is 44.3 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Peropula citipedo sp. nov.

Candidatus Peropula citipedo (NL. fem. n. *citipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp000436375*. The type genome for the species is the GenBank assembly GCA_900538915.1. The GC content of the type genome is 49.03 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Peropula defalitica sp. nov.

Candidatus Peropula defalitica (NL. fem. n. *defalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp902761535*. The type genome for the species is the GenBank assembly GCA_902761535.1. The GC content of the type genome is 38.01 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Peropula denixisca sp. nov.

Candidatus Peropula denixisca (NL. fem. n. *denixisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp900538765*. The type genome for the species is the GenBank assembly GCA_900538765.1. The GC content of the type genome is 44.62 %

and the genome length is 1.87 Mbp.

Description of *Candidatus* Peropula miracitudo sp. nov.

Candidatus Peropula miracitudo (NL. fem. n. *miracitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp900540425*. The type genome for the species is the GenBank assembly GCA_900540425.1. The GC content of the type genome is 46.76 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Peropula selecedo sp. nov.

Candidatus Peropula selecedo (NL. fem. n. *selecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp902778645*. The type genome for the species is the GenBank assembly GCA_902778645.1. The GC content of the type genome is 40.44 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Peropula viripugo sp. nov.

Candidatus Peropula viripugo (NL. fem. n. *viripugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-495 sp000432275*. The type genome for the species is the GenBank assembly GCA_000432275.1. The GC content of the type genome is 46.08 % and the genome length is 1.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Persephonella arrugessa sp. nov.

Candidatus Persephonella arrugessa (NL. fem. n. *arrugessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Persephonella sp013153235*. The type genome for the species is the GenBank assembly GCA_013153235.1. The GC content of the type genome is 42.36 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Persephonella cetarimonas sp. nov.

Candidatus Persephonella cetarimonas (NL. fem. n. *cetarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Persephonella sp000703045*. The type genome for the species is the GenBank assembly RS_GCF_000703045.1. The GC content of the type genome is 34.57 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Persephonella direcessa sp. nov.

Candidatus Persephonella direcessa (NL. fem. n. *direcessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Persephonella sp013153295*. The type genome for the species is the GenBank assembly GCA_013153295.1. The GC content of the type genome is 39.5 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Persephonella essonatica sp. nov.

Candidatus Persephonella essonatica (NL. fem. n. *essonatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Persephonella sp013153765*. The type genome for the species is the GenBank assembly GCA_013153765.1. The GC content of the type genome is 45.25 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Persephonella nehalibra sp. nov.

Candidatus Persephonella nehalibra (NL. fem. n. *nehalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Persephonella sp000703085*. The type genome for the species is the GenBank assembly RS_GCF_000703085.1. The GC content of the type genome is 34.44 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Persicitalea maledicula sp. nov.

Candidatus Persicitalea maledicula (NL. fem. n. *maledicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Persicitalea sp009296315*. The type genome for the species is the GenBank assembly RS_GCF_009296315.1. The GC content of the type genome is 50.67 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Persicobacter dilecitica sp. nov.

Candidatus Persicobacter dilecitica (NL. fem. n. *dilecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Persicobacter sp001274635*. The type genome for the species is the GenBank assembly RS_GCF_001274635.1. The GC content of the type genome is 42.46 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Seaweeds surface".

Description of *Candidatus* Petrimonas algifitio sp. nov.

Candidatus Petrimonas algifitio (NL. fem. n. *algifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Petrimonas sp002069095*. The type genome for the species is the GenBank assembly GCA_002069095.1. The GC content of the type genome is 40.11 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Petrimonas mavorilega sp. nov.

Candidatus Petrimonas mavorilega (NL. fem. n. *mavorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Petrimonas sp012728465*. The type genome for the species is the GenBank assembly GCA_012728465.1. The GC content of the type genome is 36.26 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Petrimonas redacigena sp. nov.

Candidatus Petrimonas redacigena (NL. fem. n. *redacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Petrimonas sp001898165*. The type genome for the species is the

GenBank assembly GCA_001898165.1. The GC content of the type genome is 43.11 % and the genome length is 3.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Petrimonas turibicula sp. nov.

Candidatus Petrimonas turibicula (NL. fem. n. *turibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Petrimonas sp002356435*. The type genome for the species is the GenBank assembly GCA_003519725.1. The GC content of the type genome is 44.82 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Petrimonas vocamibra sp. nov.

Candidatus Petrimonas vocamibra (NL. fem. n. *vocamibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Petrimonas sp002316835*. The type genome for the species is the GenBank assembly GCA_002316835.1. The GC content of the type genome is 40.26 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Petrocella apposatio sp. nov.

Candidatus Petrocella apposatio (NL. fem. n. *apposatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Petrocella sp002841495*. The type genome for the species is the GenBank assembly GCA_002841495.1. The GC content of the type genome is 37.21 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Petrocella omnimisca sp. nov.

Candidatus Petrocella omnimisca (NL. fem. n. *omnimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Petrocella sp002841435*. The type genome for the species is the GenBank assembly GCA_002841435.1. The GC content of the type genome is 36.78 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Petrotoga invesax sp. nov.

Candidatus Petrotoga invesax (NL. fem. n. *invesax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Petrotoga sp003265365*. The type genome for the species is the GenBank assembly RS_GCF_003265365.1. The GC content of the type genome is 31.19 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Petulana docibugo sp. nov.

Candidatus Petulana docibugo (NL. fem. n. *docibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-8 sp000992165*. The type genome for the species is the GenBank assembly GCA_000992985.1. The GC content of the type genome is 37.62 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Petulana gen. nov.

Candidatus Petulana (NL. fem. n. *Petulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-37-8*. The type species for the genus is *Candidatus* Petulana docibugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Camilariaceae.

Description of *Candidatus* Petularia inhabago sp. nov.

Candidatus Petularia inhabago (NL. fem. n. *inhabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-41-21 sp002778645*. The type genome for the species is the GenBank assembly GCA_002778645.1. The GC content of the type genome is 38.59 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Petularia gen. nov.

Candidatus Petularia (NL. fem. n. *Petularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-41-21*. The type species for the genus is *Candidatus* Petularia inhabago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Petularia secunilega sp. nov.

Candidatus Petularia secunilega (NL. fem. n. *secunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-41-21 sp001871235*. The type genome for the species is the GenBank assembly GCA_002772225.1. The GC content of the type genome is 40.56 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Petulella derelugo sp. nov.

Candidatus Petulella derelugo (NL. fem. n. *derelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU083 sp012838915*. The type genome for the species is the GenBank assembly GCA_012838915.1. The GC content of the type genome is 43.39 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Petulella gen. nov.

Candidatus Petulella (NL. fem. n. *Petulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU083*. The type species for the genus is *Candidatus* Petulella derelugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU083*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petulellaceae.

Description of *Candidatus* Petulellaceae fam. nov.

Candidatus Petulellaceae (NL. fem. n. *Petulellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU083.* The type genus for the taxon is *Candidatus* Petulella .

According to GTDB R06-RS202, this family belongs to the order *Caldicoprobacterales*.

Description of *Candidatus* Petulella nugigedo sp. nov.

Candidatus Petulella nugigedo (NL. fem. n. *nugigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU083 sp001512915*. The type genome for the species is the GenBank assembly GCA_012719725.1. The GC content of the type genome is 43.32 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Petulia manibibula sp. nov.

Candidatus Petulia manibibula (NL. fem. n. *manibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA133 sp003224995*. The type genome for the species is the GenBank assembly GCA_003224995.1. The GC content of the type genome is 57.38 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Petulia gen. nov.

Candidatus Petulia (NL. fem. n. *Petulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp1-AA133*. The type species for the genus is *Candidatus* Petulia manibibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Petulia penuritoga sp. nov.

Candidatus Petulia penuritoga (NL. fem. n. *penuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA133 sp003225465*. The type genome for the species is the GenBank assembly GCA_013289925.1. The GC content of the type genome is 58.42 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Petulida derelisca sp. nov.

Candidatus Petulida derelisca (NL. fem. n. *derelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-FULL-52-10 sp001805645*. The type genome for the species is the GenBank assembly GCA_001805645.1. The GC content of the type genome is 49.9 % and the genome length is 1.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Petulida gen. nov.

Candidatus Petulida (NL. fem. n. *Petulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-FULL-52-10*. The type species for the genus is *Candidatus* Petulida derelisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Kpj58rc*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanellaceae.

Description of *Candidatus* Petulosa homilax sp. nov.

Candidatus Petulosa homilax (NL. fem. n. *homilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACKLF01 sp002725175*. The type genome for the species is the GenBank assembly GCA_002725175.2. The GC content of the type genome is 36.06 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Petulosa gen. nov.

Candidatus Petulosa (NL. fem. n. *Petulosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACKLF01*. The type species for the genus is *Candidatus* Petulosa homilax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Petulosa homilitoga sp. nov.

Candidatus Petulosa homilitoga (NL. fem. n. *homilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACKLF01 sp902600895*. The type genome for the species is the GenBank assembly GCA_902600895.1. The GC content of the type genome is 36.81 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Petulosa lavabatica sp. nov.

Candidatus Petulosa lavabatica (NL. fem. n. *lavabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACKLF01 sp002704385*. The type genome for the species is the GenBank assembly GCA_002704385.2. The GC content of the type genome is 36.95 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Petulula apsocago sp. nov.

Candidatus Petulula apsocago (NL. fem. n. *apsocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2294 sp002345625*. The type genome for the species is the GenBank assembly GCA_002345625.1. The GC content of the type genome is 56.78 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Petulula gen. nov.

Candidatus Petulula (NL. fem. n. *Petulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA2294*. The type species for the genus is *Candidatus* Petulula apsocago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2294*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petululaceae.

Description of *Candidatus* Petululaceae fam. nov.

Candidatus Petululaceae (NL. fem. n. *Petululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2294.* The type genus for the taxon is *Candidatus* Petulula .

According to GTDB R06-RS202, this family belongs to the order *Desulfuromonadales*.

Description of *Candidatus* Phaeocystidibacter semoditura sp. nov.

Candidatus Phaeocystidibacter semoditura (NL. fem. n. *semoditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeocystidibacter sp013373425*. The type genome for the species is the GenBank assembly GCA_013373425.1. The GC content of the type genome is 45.8 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Phaeodactylibacter facunigena sp. nov.

Candidatus Phaeodactylibacter facunigena (NL. fem. n. *facunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeodactylibacter sp009908745*. The type genome for the species is the GenBank assembly GCA_009908745.1. The GC content of the type genome is 53.45 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Phaeospirillum antecifica sp. nov.

Candidatus Phaeospirillum antecifica (NL. fem. n. *antecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeospirillum sp902729425*. The type genome for the species is the

GenBank assembly RS_GCF_902729425.1. The GC content of the type genome is 66.02 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Phaeospirillum cadaviforma sp. nov.

Candidatus Phaeospirillum cadaviforma (NL. fem. n. *cadaviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeospirillum sp002105535*. The type genome for the species is the GenBank assembly RS_GCF_002105535.1. The GC content of the type genome is 65.63 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Phaeospirillum dapifatica sp. nov.

Candidatus Phaeospirillum dapifatica (NL. fem. n. *dapifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeospirillum sp001511835*. The type genome for the species is the GenBank assembly RS_GCF_001511835.1. The GC content of the type genome is 65.67 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Phaeospirillum denigitas sp. nov.

Candidatus Phaeospirillum denigitas (NL. fem. n. *denigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeospirillum sp903853455*. The type genome for the species is the GenBank assembly GCA_903929595.1. The GC content of the type genome is 65.48 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Phaeospirillum panifibula sp. nov.

Candidatus Phaeospirillum panifibula (NL. fem. n. *panifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeospirillum sp903901915*. The type genome for the species is the GenBank assembly GCA_903889115.1. The GC content of the type genome is 65.33 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Phaeospirillum selibitrix sp. nov.

Candidatus Phaeospirillum selibitrix (NL. fem. n. *selibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeospirillum sp900184795*. The type genome for the species is the GenBank assembly RS_GCF_900184795.1. The GC content of the type genome is 65.61 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Phaeovulum cepuribula sp. nov.

Candidatus Phaeovulum cepuribula (NL. fem. n. *cepuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeovulum sp002421605*. The type genome for the species is the GenBank assembly GCA_002421605.1. The GC content of the type genome is 61.92 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Phaeovulum haricousia sp. nov.

Candidatus Phaeovulum haricousia (NL. fem. n. *haricousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeovulum sp002842855*. The type genome for the species is the GenBank assembly GCA_002842855.1. The GC content of the type genome is 64.92 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Phaeovulum obvalifica sp. nov.

Candidatus Phaeovulum obvalifica (NL. fem. n. *obvalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phaeovulum sp002422085*. The type genome for the species is the GenBank assembly GCA_002422085.1. The GC content of the type genome is 63.8 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Phascolarctobacterium ampenousia sp. nov.

Candidatus Phascolarctobacterium ampenousia (NL. fem. n. *ampenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium sp900551745*. The type genome for the species is the GenBank assembly GCA_900551745.1. The GC content of the type genome is 42.82 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Phascolarctobacterium attemilenta sp. nov.

Candidatus Phascolarctobacterium attemilenta (NL. fem. n. *attemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium sp003150755*. The type genome for the species is the GenBank assembly GCA_003150755.1. The GC content of the type genome is 45.32 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Phascolarctobacterium meridugo sp. nov.

Candidatus Phascolarctobacterium meridugo (NL. fem. n. *meridugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium sp000436095*. The type genome for the species is the GenBank assembly GCA_900540445.1. The GC content of the type genome is 45.71 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Phascolarctobacterium nugacilenta sp. nov.

Candidatus Phascolarctobacterium nugacilenta (NL. fem. n. *nugacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium sp900544795*. The type genome for the species is the GenBank assembly GCA_900544795.1. The GC content of the type genome is 47.45 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Phascolarctobacterium rurigedo sp. nov.

Candidatus Phascolarctobacterium rurigedo (NL. fem. n. *rurigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium sp900545535*. The type genome for the species is the GenBank assembly RS_GCF_900765715.1. The GC content of the type genome is

46.95 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Phascolarctobacterium subabigena sp. nov.

Candidatus Phascolarctobacterium subabigena (NL. fem. n. *subabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium sp900554395*. The type genome for the species is the GenBank assembly GCA_900554395.1. The GC content of the type genome is 45.16 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Phascolarctobacterium arcifastra sp. nov.

Candidatus Phascolarctobacterium arcifastra (NL. fem. n. *arcifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900552005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900552005.1. The GC content of the type genome is 43.92 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Phascolarctobacterium baditentia sp. nov.

Candidatus Phascolarctobacterium baditentia (NL. fem. n. *baditentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900544885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900761835.1. The GC content of the type genome is 39.65 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Phascolarctobacterium betacisca sp. nov.

Candidatus Phascolarctobacterium betacisca (NL. fem. n. *betacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Phascolarctobacterium_A sp900545025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900545025.1. The GC content of the type genome is 45.3 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Phascolarctobacterium bicalitudo sp. nov.

Candidatus Phascolarctobacterium bicalitudo (NL. fem. n. *bicalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900547415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900547415.1. The GC content of the type genome is 42.59 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Phascolarctobacterium casigessa sp. nov.

Candidatus Phascolarctobacterium casigessa (NL. fem. n. *casigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp004558595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004558595.1. The GC content of the type genome is 47.93 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Phascolarctobacterium dupuniforma sp. nov.

Candidatus Phascolarctobacterium dupuniforma (NL. fem. n. *dupuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900541915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900541915.1. The GC content of the type genome is 42.53 % and the genome

length is 1.8 Mbp.

Description of *Candidatus* Phascolarctobacterium embamax sp. nov.

Candidatus Phascolarctobacterium embamax (NL. fem. n. *embamax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900770955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900770955.1. The GC content of the type genome is 47.43 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Phascolarctobacterium exurressa sp. nov.

Candidatus Phascolarctobacterium exurressa (NL. fem. n. *exurressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900753045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900753045.1. The GC content of the type genome is 46.94 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Phascolarctobacterium exurricella sp. nov.

Candidatus Phascolarctobacterium exurricella (NL. fem. n. *exurricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp004562175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004562175.1. The GC content of the type genome is 49.93 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Phascolarctobacterium innoxiforma sp. nov.

Candidatus Phascolarctobacterium innoxiforma (NL. fem. n. *innoxiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin;

used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900757795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900757795.1. The GC content of the type genome is 43.53 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Phascolarctobacterium latibatio sp. nov.

Candidatus Phascolarctobacterium latibatio (NL. fem. n. *latibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900551335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900551335.1. The GC content of the type genome is 50.93 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Phascolarctobacterium malifastra sp. nov.

Candidatus Phascolarctobacterium malifastra (NL. fem. n. *malifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900553055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004555045.1. The GC content of the type genome is 49.07 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Phascolarctobacterium subofivita sp. nov.

Candidatus Phascolarctobacterium subofivita (NL. fem. n. *subofivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phascolarctobacterium_A sp900552855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be

incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900552855.1. The GC content of the type genome is 40.93 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Phenylobacterium adluvigena sp. nov.

Candidatus Phenylobacterium adluvigena (NL. fem. n. *adluvigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp002441055*. The type genome for the species is the GenBank assembly GCA_002441055.1. The GC content of the type genome is 67.36 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Phenylobacterium anaplentia sp. nov.

Candidatus Phenylobacterium anaplentia (NL. fem. n. *anaplentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp004297125*. The type genome for the species is the GenBank assembly GCA_004297125.1. The GC content of the type genome is 69.38 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Phenylobacterium aprarivita sp. nov.

Candidatus Phenylobacterium aprarivita (NL. fem. n. *aprarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp003254475*. The type genome for the species is the GenBank assembly RS_GCF_003254475.1. The GC content of the type genome is 70.07 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Phenylobacterium chancax sp. nov.

Candidatus Phenylobacterium chancax (NL. fem. n. *chancax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp001429025*. The type genome for the species is the GenBank assembly RS_GCF_001429025.1. The GC content of the type genome is 67.42 % and the genome length is 4.58 Mbp. The isolation source for the NCBI

BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Phenylobacterium conabisca sp. nov.

Candidatus Phenylobacterium conabisca (NL. fem. n. *conabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp001425305*. The type genome for the species is the GenBank assembly RS_GCF_001425915.1. The GC content of the type genome is 67.96 % and the genome length is 4.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Phenylobacterium conipax sp. nov.

Candidatus Phenylobacterium conipax (NL. fem. n. *conipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp903930545*. The type genome for the species is the GenBank assembly GCA_903885745.1. The GC content of the type genome is 64.64 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Phenylobacterium dececivita sp. nov.

Candidatus Phenylobacterium dececivita (NL. fem. n. *dececivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp001557235*. The type genome for the species is the GenBank assembly RS_GCF_001557235.1. The GC content of the type genome is 69.48 % and the genome length is 5.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Phenylobacterium decomago sp. nov.

Candidatus Phenylobacterium decomago (NL. fem. n. *decomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp004799395*. The type genome for the species is the GenBank assembly GCA_004799395.1. The GC content of the type genome is 68.21 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Phenylobacterium defanimonas sp. nov.

Candidatus Phenylobacterium defanimonas (NL. fem. n. *defanimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp004799545*. The type genome for the species is the GenBank assembly GCA_004799545.1. The GC content of the type genome is 70.02 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Phenylobacterium defulilenta sp. nov.

Candidatus Phenylobacterium defulilenta (NL. fem. n. *defulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp903822175*. The type genome for the species is the GenBank assembly GCA_903843495.1. The GC content of the type genome is 68.43 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Phenylobacterium desupetta sp. nov.

Candidatus Phenylobacterium desupetta (NL. fem. n. *desupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp903909375*. The type genome for the species is the GenBank assembly GCA_903909375.1. The GC content of the type genome is 65.48 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Phenylobacterium dicimitrix sp. nov.

Candidatus Phenylobacterium dicimitrix (NL. fem. n. *dicimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp001824475*. The type genome for the species is the GenBank assembly GCA_001824475.1. The GC content of the type genome is 69.37 % and the genome length is 4.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Phenylobacterium dilibitura sp. nov.

Candidatus Phenylobacterium dilibitura (NL. fem. n. *dilibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp002256425*. The type genome for the species is the GenBank assembly GCA_002256425.1. The GC content of the type genome is 64.04 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Phenylobacterium fatilimonia sp. nov.

Candidatus Phenylobacterium fatilimonia (NL. fem. n. *fatilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp004799515*. The type genome for the species is the GenBank assembly GCA_004799515.1. The GC content of the type genome is 69.54 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Phenylobacterium hexagibula sp. nov.

Candidatus Phenylobacterium hexagibula (NL. fem. n. *hexagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp903928755*. The type genome for the species is the GenBank assembly GCA_903928755.1. The GC content of the type genome is 62.53 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Phenylobacterium inmacetta sp. nov.

Candidatus Phenylobacterium inmacetta (NL. fem. n. *inmacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp004299445*. The type genome for the species is the GenBank assembly GCA_004299445.1. The GC content of the type genome is 68.76 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Phenylobacterium innupiforma sp. nov.

Candidatus Phenylobacterium innupiforma (NL. fem. n. *innupiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp013822795*. The type genome for the species is the GenBank assembly GCA_013822795.1. The GC content of the type genome is 68.37 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Phenylobacterium isoscousia sp. nov.

Candidatus Phenylobacterium isoscousia (NL. fem. n. *isoscousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp001724985*. The type genome for the species is the GenBank assembly GCA_001724985.1. The GC content of the type genome is 69.19 % and the genome length is 2.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Phenylobacterium obfenitura sp. nov.

Candidatus Phenylobacterium obfenitura (NL. fem. n. *obfenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp903912465*. The type genome for the species is the GenBank assembly GCA_903912465.1. The GC content of the type genome is 68.26 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Phenylobacterium peracifica sp. nov.

Candidatus Phenylobacterium peracifica (NL. fem. n. *peracifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp902826855*. The type genome for the species is the GenBank assembly GCA_902826855.1. The GC content of the type genome is 68.7 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Phenylobacterium perexitrix sp. nov.

Candidatus Phenylobacterium perexitrix (NL. fem. n. *perexitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp002363865*. The type genome for the species is

the GenBank assembly GCA_002363865.1. The GC content of the type genome is 68.06 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Phenylobacterium pimenibra sp. nov.

Candidatus Phenylobacterium pimenibra (NL. fem. n. *pimenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp003150835*. The type genome for the species is the GenBank assembly RS_GCF_003150835.1. The GC content of the type genome is 69.9 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Phenylobacterium revecax sp. nov.

Candidatus Phenylobacterium revecax (NL. fem. n. *revecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp903933475*. The type genome for the species is the GenBank assembly GCA_903933475.1. The GC content of the type genome is 68.17 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Phenylobacterium rinocax sp. nov.

Candidatus Phenylobacterium rinocax (NL. fem. n. *rinocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp013911965*. The type genome for the species is the GenBank assembly GCA_013911965.1. The GC content of the type genome is 70.05 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Phenylobacterium semigivita sp. nov.

Candidatus Phenylobacterium semigivita (NL. fem. n. *semigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp001724605*. The type genome for the species is the GenBank assembly GCA_001724605.1. The GC content of the type genome is 69.52 % and the genome length is 4.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Phenylobacterium utrolatica sp. nov.

Candidatus Phenylobacterium utrolatica (NL. fem. n. *utrolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp903892305*. The type genome for the species is the GenBank assembly GCA_903892305.1. The GC content of the type genome is 59.95 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Phenylobacterium vinacentia sp. nov.

Candidatus Phenylobacterium vinacentia (NL. fem. n. *vinacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp903842425*. The type genome for the species is the GenBank assembly GCA_903842425.1. The GC content of the type genome is 70.68 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Phenylobacterium volubigena sp. nov.

Candidatus Phenylobacterium volubigena (NL. fem. n. *volubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp003136395*. The type genome for the species is the GenBank assembly GCA_003136395.1. The GC content of the type genome is 68.21 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Phenylobacterium xenodifica sp. nov.

Candidatus Phenylobacterium xenodifica (NL. fem. n. *xenodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phenylobacterium sp903860975*. The type genome for the species is the GenBank assembly GCA_903876395.1. The GC content of the type genome is 62.15 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Phocaeicola arnogousia sp. nov.

Candidatus Phocaeicola arnogousia (NL. fem. n. *arnogousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900551065*. The type genome for the species is the GenBank assembly GCA_900551065.1. The GC content of the type genome is 46.42 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Phocaeicola bimeticula sp. nov.

Candidatus Phocaeicola bimeticula (NL. fem. n. *bimeticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900540105*. The type genome for the species is the GenBank assembly RS_GCF_900752755.1. The GC content of the type genome is 45.99 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Phocaeicola capilifica sp. nov.

Candidatus Phocaeicola capilifica (NL. fem. n. *capilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900541515*. The type genome for the species is the GenBank assembly GCA_900541515.1. The GC content of the type genome is 47.54 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Phocaeicola cicaritas sp. nov.

Candidatus Phocaeicola cicaritas (NL. fem. n. *cicaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900751965*. The type genome for the species is the GenBank assembly RS_GCF_900751965.1. The GC content of the type genome is 41.54 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Phocaeicola ciliciforma sp. nov.

Candidatus Phocaeicola ciliciforma (NL. fem. n. *ciliciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Phocaeicola sp900552075*. The type genome for the species is the GenBank assembly GCA_900552075.1. The GC content of the type genome is 46.23 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Phocaeicola culigimonia sp. nov.

Candidatus Phocaeicola culigimonia (NL. fem. n. *culigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900760795*. The type genome for the species is the GenBank assembly RS_GCF_900760795.1. The GC content of the type genome is 41.83 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Phocaeicola decomisca sp. nov.

Candidatus Phocaeicola decomisca (NL. fem. n. *decomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900544675*. The type genome for the species is the GenBank assembly GCA_900544675.1. The GC content of the type genome is 47.27 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Phocaeicola diludugo sp. nov.

Candidatus Phocaeicola diludugo (NL. fem. n. *diludugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900553715*. The type genome for the species is the GenBank assembly GCA_900553715.1. The GC content of the type genome is 39.28 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Phocaeicola direpastra sp. nov.

Candidatus Phocaeicola direpastra (NL. fem. n. *direpastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp011959205*. The type genome for the species is the GenBank assembly RS_GCF_011959205.1. The GC content of the type genome is 43.09 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Phocaeicola famelisca sp. nov.

Candidatus Phocaeicola famelisca (NL. fem. n. *famelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp002315285*. The type genome for the species is the GenBank assembly GCA_002315285.1. The GC content of the type genome is 48.83 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Phocaeicola fragmiforma sp. nov.

Candidatus Phocaeicola fragmiforma (NL. fem. n. *fragmiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900546355*. The type genome for the species is the GenBank assembly GCA_900546355.1. The GC content of the type genome is 46.92 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Phocaeicola hexapicula sp. nov.

Candidatus Phocaeicola hexapicula (NL. fem. n. *hexapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900542985*. The type genome for the species is the GenBank assembly GCA_900542985.1. The GC content of the type genome is 41.45 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Phocaeicola indotiforma sp. nov.

Candidatus Phocaeicola indotiforma (NL. fem. n. *indotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900556845*. The type genome for the species is the GenBank assembly GCA_900556845.1. The GC content of the type genome is 42.62 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Phocaeicola legificula sp. nov.

Candidatus Phocaeicola legificula (NL. fem. n. *legificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900552645*. The type genome for the species is the GenBank assembly GCA_900552645.1. The GC content of the type genome is 36.35 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Phocaeicola ludibago sp. nov.

Candidatus Phocaeicola ludibago (NL. fem. n. *ludibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900553185*. The type genome for the species is the GenBank assembly RS_GCF_900753025.1. The GC content of the type genome is 45.74 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Phocaeicola luxuritoga sp. nov.

Candidatus Phocaeicola luxuritoga (NL. fem. n. *luxuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp000434735*. The type genome for the species is the GenBank assembly GCA_900540795.1. The GC content of the type genome is 43.03 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Phocaeicola medimitura sp. nov.

Candidatus Phocaeicola medimitura (NL. fem. n. *medimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900554435*. The type genome for the species is the GenBank assembly GCA_900554435.1. The GC content of the type genome is 40.88 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Phocaeicola metucitia sp. nov.

Candidatus Phocaeicola metucitia (NL. fem. n. *metucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Phocaeicola sp900066455*. The type genome for the species is the GenBank assembly RS_GCF_902362595.1. The GC content of the type genome is 46.41 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Phocaeicola munimastra sp. nov.

Candidatus Phocaeicola munimastra (NL. fem. n. *munimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900544075*. The type genome for the species is the GenBank assembly GCA_900544075.1. The GC content of the type genome is 40.34 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Phocaeicola nubigitura sp. nov.

Candidatus Phocaeicola nubigitura (NL. fem. n. *nubigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900551645*. The type genome for the species is the GenBank assembly GCA_900551645.1. The GC content of the type genome is 43.32 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Phocaeicola regigago sp. nov.

Candidatus Phocaeicola regigago (NL. fem. n. *regigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900551445*. The type genome for the species is the GenBank assembly GCA_900551445.1. The GC content of the type genome is 47.02 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Phocaeicola rubigago sp. nov.

Candidatus Phocaeicola rubigago (NL. fem. n. *rubigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp000432735*. The type genome for the species is the GenBank assembly GCA_000432735.1. The GC content of the type genome is 43.43 % and the genome length is 3.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Phocaeicola rudecatica sp. nov.

Candidatus Phocaeicola rudecatica (NL. fem. n. *rudecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900557085*. The type genome for the species is the GenBank assembly GCA_900557085.1. The GC content of the type genome is 41.8 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Phocaeicola sacomimonia sp. nov.

Candidatus Phocaeicola sacomimonia (NL. fem. n. *sacomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp002493165*. The type genome for the species is the GenBank assembly GCA_002492785.1. The GC content of the type genome is 42.91 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Phocaeicola sugilax sp. nov.

Candidatus Phocaeicola sugilax (NL. fem. n. *sugilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp902388365*. The type genome for the species is the GenBank assembly RS_GCF_900765365.1. The GC content of the type genome is 43.01 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Phocaeicola telefitica sp. nov.

Candidatus Phocaeicola telefitica (NL. fem. n. *telefitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp002161765*. The type genome for the species is the GenBank assembly GCA_900547425.1. The GC content of the type genome is 45.43 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Phocaeicola tenemedo sp. nov.

Candidatus Phocaeicola tenemedo (NL. fem. n. *tenemedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900546095*. The type genome for the species is the GenBank assembly GCA_900546095.1. The GC content of the type genome is 48.65 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Phocaeicola tenilisca sp. nov.

Candidatus Phocaeicola tenilisca (NL. fem. n. *tenilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900546645*. The type genome for the species is the GenBank assembly GCA_900546645.1. The GC content of the type genome is 43.09 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Phocaeicola tirocessa sp. nov.

Candidatus Phocaeicola tirocessa (NL. fem. n. *tirocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp900066445*. The type genome for the species is the GenBank assembly RS_GCF_902362605.1. The GC content of the type genome is 40.19 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Phocaeicola veridigena sp. nov.

Candidatus Phocaeicola veridigena (NL. fem. n. *veridigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp902779535*. The type genome for the species is the GenBank assembly GCA_902801285.1. The GC content of the type genome is 43.3 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Phocaeicola veriditudo sp. nov.

Candidatus Phocaeicola veriditudo (NL. fem. n. *veriditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Phocaeicola sp000436795*. The type genome for the species is the GenBank assembly GCA_900540195.1. The GC content of the type genome is 43.01 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Phocaeicola virecisca sp. nov.

Candidatus Phocaeicola virecisca (NL. fem. n. *virecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phocaeicola sp002161565*. The type genome for the species is the GenBank assembly GCA_000432695.1. The GC content of the type genome is 45.85 % and the genome length is 3.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Phorcysia culibedo sp. nov.

Candidatus Phorcysia culibedo (NL. fem. n. *culibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phorcysia sp003978805*. The type genome for the species is the GenBank assembly GCA_003978805.1. The GC content of the type genome is 46.98 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Phormidesmis alembimonas sp. nov.

Candidatus Phormidesmis alembimonas (NL. fem. n. *alembimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phormidesmis sp000155595*. The type genome for the species is the GenBank assembly RS_GCF_000155595.1. The GC content of the type genome is 48.24 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Phormidesmis arremitura sp. nov.

Candidatus Phormidesmis arremitura (NL. fem. n. *arremitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phormidesmis sp002286735*. The type genome for the species is the GenBank assembly RS_GCF_002286735.1. The GC content of the type genome is 52.93 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Phormidesmis idcirousia sp. nov.

Candidatus Phormidesmis idcirousia (NL. fem. n. *idcirousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phormidesmis sp012033015*. The type genome for the species is the GenBank assembly GCA_012033015.1. The GC content of the type genome is 49.89 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Phormidium citivitio sp. nov.

Candidatus Phormidium citivitio (NL. fem. n. *citivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phormidium_A sp007126595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012911965.1. The GC content of the type genome is 51.4 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Phormidium dicabedo sp. nov.

Candidatus Phormidium dicabedo (NL. fem. n. *dicabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phormidium_A sp004299065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004299065.1. The GC content of the type genome is 52.15 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Phormidium impilimonia sp. nov.

Candidatus Phormidium impilimonia (NL. fem. n. *impilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phormidium_A sp001314905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_001314905.1. The GC content of the type genome is 51.08 % and the genome length is 4.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-O from microbial mat sample; contains cyanobacterium Phormidium OSCR and associated heterotrophs".

Description of *Candidatus* Phormidium lanifitoga sp. nov.

Candidatus Phormidium lanifitoga (NL. fem. n. *lanifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phormidium_A sp009846485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009846485.1. The GC content of the type genome is 51.83 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Phormidium salubousia sp. nov.

Candidatus Phormidium salubousia (NL. fem. n. *salubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phormidium_A sp007693465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007693465.1. The GC content of the type genome is 52.47 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Photobacterium antegimonas sp. nov.

Candidatus Photobacterium antegimonas (NL. fem. n. *antegimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Photobacterium sp003614885*. The type genome for the species is the GenBank assembly RS_GCF_003614885.1. The GC content of the type genome is 50.16 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Photobacterium daducitoga sp. nov.

Candidatus Photobacterium daducitoga (NL. fem. n. *daducitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Photobacterium sp003026105*. The type genome for the species is the GenBank assembly RS_GCF_003026075.1. The GC content of the type genome is 40.04 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Photobacterium tameticella sp. nov.

Candidatus Photobacterium tameticella (NL. fem. n. *tameticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Photobacterium sp000153325*. The type genome for the species is the GenBank assembly RS_GCF_000153325.1. The GC content of the type genome is 39.56 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Photobacterium tubicastra sp. nov.

Candidatus Photobacterium tubicastra (NL. fem. n. *tubicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Photobacterium sp004104355*. The type genome for the species is the GenBank assembly RS_GCF_004104355.1. The GC content of the type genome is 46.45 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Photorhabdus citocax sp. nov.

Candidatus Photorhabdus citocax (NL. fem. n. *citocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Photorhabdus sp003545805*. The type genome for the species is the GenBank assembly RS_GCF_003545805.1. The GC content of the type genome is 42.96 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Phreatobacter colapitia sp. nov.

Candidatus Phreatobacter colapitia (NL. fem. n. *colapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phreatobacter sp005160265*. The type genome for the species is the GenBank assembly RS_GCF_005160265.1. The GC content of the type genome is 65.77

% and the genome length is 4.98 Mbp.

Description of *Candidatus* Phreatobacter incocastra sp. nov.

Candidatus Phreatobacter incocastra (NL. fem. n. *incocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phreatobacter sp000751295*. The type genome for the species is the GenBank assembly RS_GCF_000751295.2. The GC content of the type genome is 68.27 % and the genome length is 7.13 Mbp.

Description of *Candidatus* Phreatobacter volubatica sp. nov.

Candidatus Phreatobacter volubatica (NL. fem. n. *volubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phreatobacter sp001464235*. The type genome for the species is the GenBank assembly GCA_001464235.1. The GC content of the type genome is 69.84 % and the genome length is 4.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Phycicoccus antipitoga sp. nov.

Candidatus Phycicoccus antipitoga (NL. fem. n. *antipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phycicoccus sp013201035*. The type genome for the species is the GenBank assembly RS_GCF_013201035.1. The GC content of the type genome is 73.98 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Phycicoccus detositura sp. nov.

Candidatus Phycicoccus detositura (NL. fem. n. *detositura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phycicoccus sp004025965*. The type genome for the species is the GenBank assembly RS_GCF_004025965.2. The GC content of the type genome is 74.11 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Phycicoccus excucitoga sp. nov.

Candidatus Phycicoccus excucitoga (NL. fem. n. *excucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phycicoccus sp011383005*. The type genome for the species is the GenBank assembly RS_GCF_011383005.1. The GC content of the type genome is 73.61 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Phycicoccus subabitura sp. nov.

Candidatus Phycicoccus subabitura (NL. fem. n. *subabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phycicoccus sp001428065*. The type genome for the species is the GenBank assembly RS_GCF_001428065.1. The GC content of the type genome is 73.31 % and the genome length is 3.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Phyllobacterium acertiforma sp. nov.

Candidatus Phyllobacterium acertiforma (NL. fem. n. *acertiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phyllobacterium sp900473175*. The type genome for the species is the GenBank assembly RS_GCF_900473175.1. The GC content of the type genome is 58.26 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Phyllobacterium citocedo sp. nov.

Candidatus Phyllobacterium citocedo (NL. fem. n. *citocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phyllobacterium sp900113985*. The type genome for the species is the GenBank assembly RS_GCF_900113985.1. The GC content of the type genome is 58.95 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Phyllobacterium conabatio sp. nov.

Candidatus Phyllobacterium conabatio (NL. fem. n. *conabatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phyllobacterium sp014189505*. The type genome for the species is the GenBank assembly RS_GCF_014189505.1. The GC content of the type genome is 55.4 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Phyllobacterium domigatica sp. nov.

Candidatus Phyllobacterium domigatica (NL. fem. n. *domigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phyllobacterium sp900473335*. The type genome for the species is the GenBank assembly RS_GCF_900473335.1. The GC content of the type genome is 52.5 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Phyllobacterium encenitoga sp. nov.

Candidatus Phyllobacterium encenitoga (NL. fem. n. *encenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phyllobacterium sp900471815*. The type genome for the species is the GenBank assembly RS_GCF_900471815.1. The GC content of the type genome is 53.21 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Phyllobacterium forinibra sp. nov.

Candidatus Phyllobacterium forinibra (NL. fem. n. *forinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phyllobacterium sp900104355*. The type genome for the species is the GenBank assembly RS_GCF_900104355.1. The GC content of the type genome is 55.12 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Phyllobacterium inpinitica sp. nov.

Candidatus Phyllobacterium inpinitica (NL. fem. n. *inpinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phyllobacterium sp000282595*. The type genome for the species is the GenBank assembly RS_GCF_000282595.1. The GC content of the type genome is 52.98 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Phyllobacterium invicifica sp. nov.

Candidatus Phyllobacterium invicifica (NL. fem. n. *invicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phyllobacterium sp900539805*. The type genome for the species is the GenBank assembly GCA_900539805.1. The GC content of the type genome is 59.29 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Phyllobacterium rutabiforma sp. nov.

Candidatus Phyllobacterium rutabiforma (NL. fem. n. *rutabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phyllobacterium sp900472835*. The type genome for the species is the GenBank assembly RS_GCF_900465825.1. The GC content of the type genome is 55.14 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Phytoactinopolyspora scintimonia sp. nov.

Candidatus Phytoactinopolyspora scintimonia (NL. fem. n. *scintimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytoactinopolyspora sp011320225*. The type genome for the species is the GenBank assembly RS_GCF_011320225.1. The GC content of the type genome is 66.86 % and the genome length is 6.59 Mbp.

Description of *Candidatus* Phytobacter sugilisca sp. nov.

Candidatus Phytobacter sugilisca (NL. fem. n. *sugilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytobacter sp002377245*. The type genome for the species is the GenBank assembly GCA_002377245.1. The GC content of the type genome is 53.67 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Phytoplasma catagisca sp. nov.

Candidatus Phytoplasma catagisca (NL. fem. n. *catagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytoplasma sp000309485*. The type genome for the species is the GenBank assembly RS_GCF_000309405.1. The GC content of the type genome is 27.33 % and the genome length is 0.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Vaccinium witches -broom".

Description of *Candidatus* Phytoplasma cenobastra sp. nov.

Candidatus Phytoplasma cenobastra (NL. fem. n. *cenobastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytoplasma sp000012225*. The type genome for the species is the GenBank assembly GCA_002554195.1. The GC content of the type genome is 27.11 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Phytoplasma egritibula sp. nov.

Candidatus Phytoplasma egritibula (NL. fem. n. *egritibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytoplasma sp009268105*. The type genome for the species is the GenBank assembly RS_GCF_009268105.1. The GC content of the type genome is 19.86 % and the genome length is 0.51 Mbp.

Description of *Candidatus* Phytoplasma locelimonas sp. nov.

Candidatus Phytoplasma locelimonas (NL. fem. n. *locelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytoplasma sp009268075*. The type genome for the species is the GenBank assembly RS_GCF_009268075.1. The GC content of the type genome is 20.48 % and the genome length is 0.48 Mbp.

Description of *Candidatus* Phytoplasma noninitica sp. nov.

Candidatus Phytoplasma noninitica (NL. fem. n. *noninitica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytoplasma sp001623385*. The type genome for the species is the GenBank assembly GCA_001623385.2. The GC content of the type genome is 27.87 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf veins".

Description of *Candidatus* Phytoplasma pacifimonas sp. nov.

Candidatus Phytoplasma pacifimonas (NL. fem. n. *pacifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytoplasma sp000009845*. The type genome for the species is the GenBank assembly GCA_000009845.1. The GC content of the type genome is 27.76 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Phytoplasma perexetta sp. nov.

Candidatus Phytoplasma perexetta (NL. fem. n. *perexetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytoplasma sp000364425*. The type genome for the species is the GenBank assembly RS_GCF_000364425.1. The GC content of the type genome is 24.37 % and the genome length is 0.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "artificially infected Catharanthus roseus".

Description of *Candidatus* Phytoplasma tomogivita sp. nov.

Candidatus Phytoplasma tomogivita (NL. fem. n. *tomogivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Phytoplasma sp000495255*. The type genome for the species is the GenBank assembly RS_GCF_000495255.1. The GC content of the type genome is 27.14 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "WBD-infected periwinkle".

Description of *Candidatus* Pigmentiphaga bicalatica sp. nov.

Candidatus Pigmentiphaga bicalatica (NL. fem. n. *bicalatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pigmentiphaga sp002188465*. The type genome for the species is the GenBank assembly RS_GCF_002188465.1. The GC content of the type genome is 66.74 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Pigmentiphaga letifousia sp. nov.

Candidatus Pigmentiphaga letifousia (NL. fem. n. *letifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pigmentiphaga sp001898625*. The type genome for the species is the GenBank assembly GCA_001724095.1. The GC content of the type genome is 67.23 % and the genome length is 6.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Pigmentiphaga macilitica sp. nov.

Candidatus Pigmentiphaga macilitica (NL. fem. n. *macilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pigmentiphaga sp009360345*. The type genome for the species is the GenBank assembly GCA_009360905.1. The GC content of the type genome is 67.39 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Pigmentiphaga palificula sp. nov.

Candidatus Pigmentiphaga palificula (NL. fem. n. *palificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pigmentiphaga sp002188635*. The type genome for the species is the GenBank assembly RS_GCF_004352985.1. The GC content of the type genome is 67.37 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Pigmentiphaga teteniforma sp. nov.

Candidatus Pigmentiphaga teteniforma (NL. fem. n. *teteniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pigmentiphaga sp003854895*. The type genome for the species is the GenBank assembly RS_GCF_003854895.1. The GC content of the type genome is 67.8 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Pimenana emancitio sp. nov.

Candidatus Pimenana emancitio (NL. fem. n. *emancitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYKU01 sp009697455*. The type genome for the species is the GenBank assembly GCA_009697455.1. The GC content of the type genome is 60.78 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Pimenana gen. nov.

Candidatus Pimenana (NL. fem. n. *Pimenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYKU01*. The type species for the genus is *Candidatus* Pimenana emancitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pimenana gasomitoga sp. nov.

Candidatus Pimenana gasomitoga (NL. fem. n. *gasomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYKU01 sp005808865*. The type genome for the species is the GenBank assembly GCA_005773685.1. The GC content of the type genome is 60.61 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Pimenaria vagabitudo sp. nov.

Candidatus Pimenaria vagabitudo (NL. fem. n. *vagabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-0-80-42-15 sp002780005*. The type genome for the species is the

GenBank assembly GCA_002322955.1. The GC content of the type genome is 42.75 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Pimenaria gen. nov.

Candidatus Pimenaria (NL. fem. n. *Pimenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-0-80-42-15*. The type species for the genus is *Candidatus* Pimenaria vagabitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *0-14-0-80-42-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pimenariaceae.

Description of *Candidatus* Pimenariaceae fam. nov.

Candidatus Pimenariaceae (NL. fem. n. *Pimenariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *0-14-0-80-42-15.* The type genus for the taxon is *Candidatus* Pimenaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1560_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fetutulales.

Description of *Candidatus* Pimenella ranunessa sp. nov.

Candidatus Pimenella ranunessa (NL. fem. n. *ranunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2690565 sp011522825*. The type genome for the species is the GenBank assembly GCA_011522825.1. The GC content of the type genome is 40.22 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Pimenella gen. nov.

Candidatus Pimenella (NL. fem. n. *Pimenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2690565*. The type species for the genus is *Candidatus* Pimenella ranunessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-45221*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamiaceae.

Description of *Candidatus* Pimenella vavasitoga sp. nov.

Candidatus Pimenella vavasitoga (NL. fem. n. *vavasitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2690565 sp002457235*. The type genome for the species is the GenBank assembly GCA_002690565.1. The GC content of the type genome is 38.42 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Pimenia genufentia sp. nov.

Candidatus Pimenia genufentia (NL. fem. n. *genufentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1472 sp900552095*. The type genome for the species is the GenBank assembly GCA_900552095.1. The GC content of the type genome is 49.57 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Pimenia gen. nov.

Candidatus Pimenia (NL. fem. n. *Pimenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1472*. The type species for the genus is *Candidatus* Pimenia genufentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pimenida lavacax sp. nov.

Candidatus Pimenida lavacax (NL. fem. n. *lavacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2392 sp002343805*. The type genome for the species is the GenBank assembly GCA_013361035.1. The GC content of the type genome is 63.89 %

and the genome length is 3.29 Mbp.

Description of *Candidatus* Pimenida gen. nov.

Candidatus Pimenida (NL. fem. n. *Pimenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2392*. The type species for the genus is *Candidatus* Pimenida lavacax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2392*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pimenidaceae.

Description of *Candidatus* Pimenidaceae fam. nov.

Candidatus Pimenidaceae (NL. fem. n. *Pimenidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2392.* The type genus for the taxon is *Candidatus* Pimenida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2392*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pimenidales.

Description of *Candidatus* Pimenidales ord. nov.

Candidatus Pimenidales (NL. fem. n. *Pimenidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2392.* The type genus for the taxon is *Candidatus* Pimenida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8742*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Pavicidae.

Description of *Candidatus* Pimenida sarabastra sp. nov.

Candidatus Pimenida sarabastra (NL. fem. n. *sarabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2392 sp003576915*. The type genome for the species is the

GenBank assembly GCA_008363065.1. The GC content of the type genome is 64.63 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Pimenosa fumacibra sp. nov.

Candidatus Pimenosa fumacibra (NL. fem. n. *fumacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12402 sp001801305*. The type genome for the species is the GenBank assembly GCA_001801305.1. The GC content of the type genome is 42.06 % and the genome length is 1.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 5 / E; 5m depth; 0.2 filter".

Description of *Candidatus* Pimenosa gen. nov.

Candidatus Pimenosa (NL. fem. n. *Pimenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12402*. The type species for the genus is *Candidatus* Pimenosa fumacibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12402*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pimenosaceae.

Description of *Candidatus* Pimenosaceae fam. nov.

Candidatus Pimenosaceae (NL. fem. n. *Pimenosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12402.* The type genus for the taxon is *Candidatus* Pimenosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA12402*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pimenosales.

Description of *Candidatus* Pimenosales ord. nov.

Candidatus Pimenosales (NL. fem. n. *Pimenosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA12402*. The type genus for the taxon is *Candidatus* Pimenosa .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Pimenosa irrecibula sp. nov.

Candidatus Pimenosa irrecibula (NL. fem. n. *irrecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12402 sp001801315*. The type genome for the species is the GenBank assembly GCA_001801315.1. The GC content of the type genome is 41.28 % and the genome length is 1.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Pinacana adlenitica sp. nov.

Candidatus Pinacana adlenitica (NL. fem. n. *adlenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp009691705*. The type genome for the species is the GenBank assembly GCA_009691705.1. The GC content of the type genome is 58.71 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Pinacana gen. nov.

Candidatus Pinacana (NL. fem. n. *Pinacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-60-MAGs104*. The type species for the genus is *Candidatus* Pinacana adlenitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Pinacana bicodiforma sp. nov.

Candidatus Pinacana bicodiforma (NL. fem. n. *bicodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp005799495*. The type genome for the species is the GenBank assembly GCA_005799495.1. The GC content of the type genome is 63.48 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Pinacana decitibra sp. nov.

Candidatus Pinacana decitibra (NL. fem. n. *decitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp009692015*. The type genome for the species is the GenBank assembly GCA_009692015.1. The GC content of the type genome is 60.42 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Pinacana depupitoga sp. nov.

Candidatus Pinacana depupitoga (NL. fem. n. *depupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp005799205*. The type genome for the species is the GenBank assembly GCA_005808715.1. The GC content of the type genome is 60.11 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Pinacana disidentia sp. nov.

Candidatus Pinacana disidentia (NL. fem. n. *disidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp903919715*. The type genome for the species is the GenBank assembly GCA_903836795.1. The GC content of the type genome is 54.01 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Pinacana meriditica sp. nov.

Candidatus Pinacana meriditica (NL. fem. n. *meriditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp903961015*. The type genome for the species is the GenBank assembly GCA_903949295.1. The GC content of the type genome is 51.38 %

and the genome length is 2.86 Mbp.

Description of *Candidatus* Pinacana negotibula sp. nov.

Candidatus Pinacana negotibula (NL. fem. n. *negotibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp009926625*. The type genome for the species is the GenBank assembly GCA_009926625.1. The GC content of the type genome is 63.61 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Pinacana nicotitas sp. nov.

Candidatus Pinacana nicotitas (NL. fem. n. *nicotitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp009691915*. The type genome for the species is the GenBank assembly GCA_009691915.1. The GC content of the type genome is 63.6 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Pinacana nubecessa sp. nov.

Candidatus Pinacana nubecessa (NL. fem. n. *nubecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp005792145*. The type genome for the species is the GenBank assembly GCA_005788705.1. The GC content of the type genome is 52.07 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Pinacana peripax sp. nov.

Candidatus Pinacana peripax (NL. fem. n. *peripax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp005799475*. The type genome for the species is the GenBank assembly GCA_005805125.1. The GC content of the type genome is 64.96 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Pinacana volucigena sp. nov.

Candidatus Pinacana volucigena (NL. fem. n. *volucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-60-MAGs104 sp009691725*. The type genome for the species is the GenBank assembly GCA_009691725.1. The GC content of the type genome is 58.49 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Pinacaria navifitia sp. nov.

Candidatus Pinacaria navifitia (NL. fem. n. *navifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7366 sp002469885*. The type genome for the species is the GenBank assembly GCA_002469885.1. The GC content of the type genome is 43.4 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Pinacaria gen. nov.

Candidatus Pinacaria (NL. fem. n. *Pinacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7366*. The type species for the genus is *Candidatus* Pinacaria navifitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7366*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pinacariaceae.

Description of *Candidatus* Pinacariaceae fam. nov.

Candidatus Pinacariaceae (NL. fem. n. *Pinacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7366.* The type genus for the taxon is *Candidatus* Pinacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7366*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pinacariales.

Description of *Candidatus* Pinacariales ord. nov.

Candidatus Pinacariales (NL. fem. n. *Pinacariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7366.* The type genus for the taxon is *Candidatus* Pinacaria .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Pinacida abrepitura sp. nov.

Candidatus Pinacida abrepitura (NL. fem. n. *abrepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-0-10-38-17 sp002774085*. The type genome for the species is the GenBank assembly GCA_002774085.1. The GC content of the type genome is 38.46 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Pinacida gen. nov.

Candidatus Pinacida (NL. fem. n. *Pinacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-0-10-38-17*. The type species for the genus is *Candidatus* Pinacida abrepitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *0-14-0-10-38-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pinacidaceae.

Description of *Candidatus* Pinacidaceae fam. nov.

Candidatus Pinacidaceae (NL. fem. n. *Pinacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *0-14-0-10-38-17.* The type genus for the taxon is *Candidatus* Pinacida .

According to the original version of GTDB R06-RS202, this family belongs to the order *0-14-0-10-38-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pinacidales.

Description of *Candidatus* Pinacidales ord. nov.

Candidatus Pinacidales (NL. fem. n. *Pinacidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *0-14-0-10-38-17.* The type genus for the taxon is *Candidatus* Pinacida .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Pinacosa bicinax sp. nov.

Candidatus Pinacosa bicinax (NL. fem. n. *bicinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-39-10 sp000993275*. The type genome for the species is the GenBank assembly GCA_000993275.1. The GC content of the type genome is 38.32 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Pinacosa gen. nov.

Candidatus Pinacosa (NL. fem. n. *Pinacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-39-10*. The type species for the genus is *Candidatus* Pinacosa bicinax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CPR2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defanosaceae.

Description of *Candidatus* Pinacosa nocenitia sp. nov.

Candidatus Pinacosa nocenitia (NL. fem. n. *nocenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-39-10 sp001872945*. The type genome for the species is the GenBank assembly GCA_002790275.1. The GC content of the type genome is 37.2 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pinifana figilitas sp. nov.

Candidatus Pinifana figilitas (NL. fem. n. *figilitas* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYYN01 sp903930435*. The type genome for the species is the GenBank assembly GCA_903930435.1. The GC content of the type genome is 58.25 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Pinifana gen. nov.

Candidatus Pinifana (NL. fem. n. *Pinifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYYN01*. The type species for the genus is *Candidatus* Pinifana figilitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pinifaria cotenifica sp. nov.

Candidatus Pinifaria cotenifica (NL. fem. n. *cotenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WG-1 sp900539665*. The type genome for the species is the GenBank assembly GCA_900539665.1. The GC content of the type genome is 40.44 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Pinifaria gen. nov.

Candidatus Pinifaria (NL. fem. n. *Pinifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WG-1*. The type species for the genus is *Candidatus* Pinifaria cotenifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pinifaria excamilenta sp. nov.

Candidatus Pinifaria excamilenta (NL. fem. n. *excamilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WG-1 sp000222855*. The type genome for the species is the GenBank assembly RS_GCF_000222855.1. The GC content of the type genome is 30.42 % and the genome length is 2.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "foregut of the Tammar wallaby".

Description of *Candidatus* Pinifella ceromiforma sp. nov.

Candidatus Pinifella ceromiforma (NL. fem. n. *ceromiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BD1 sp003569365*. The type genome for the species is the GenBank assembly GCA_014191295.1. The GC content of the type genome is 61.29 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Pinifella gen. nov.

Candidatus Pinifella (NL. fem. n. *Pinifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BD1*. The type species for the genus is *Candidatus* Pinifella ceromiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11657*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dibapulaceae.

Description of *Candidatus* Pinifella dilicibra sp. nov.

Candidatus Pinifella dilicibra (NL. fem. n. *dilicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BD1 sp003670425*. The type genome for the species is the GenBank assembly GCA_003670425.1. The GC content of the type genome is 61.9 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Pinifia adsifibula sp. nov.

Candidatus Pinifia adsifibula (NL. fem. n. *adsifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTKA01 sp011524605*. The type genome for the species is the GenBank assembly GCA_011524605.1. The GC content of the type genome is 39.24 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Pinifia gen. nov.

Candidatus Pinifia (NL. fem. n. *Pinifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTKA01*. The type species for the genus is *Candidatus* Pinifia adsifibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WTKA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pinifiaceae.

Description of *Candidatus* Pinifiaceae fam. nov.

Candidatus Pinifiaceae (NL. fem. n. *Pinifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WTKA01.* The type genus for the taxon is *Candidatus* Pinifia .

According to GTDB R06-RS202, this family belongs to the order *Rhizobiales*.

Description of *Candidatus* Pinifida defenago sp. nov.

Candidatus Pinifida defenago (NL. fem. n. *defenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002690875 sp902618535*. The type genome for the species is the GenBank assembly GCA_902595915.1. The GC content of the type genome is 30.26 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pinifida gen. nov.

Candidatus Pinifida (NL. fem. n. *Pinifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002690875*. The type species for the genus is *Candidatus* Pinifida

defenago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Pinifida depopousia sp. nov.

Candidatus Pinifida depopousia (NL. fem. n. *depopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002690875 sp902536485*. The type genome for the species is the GenBank assembly GCA_902536485.1. The GC content of the type genome is 29.82 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Pinifida holisivita sp. nov.

Candidatus Pinifida holisivita (NL. fem. n. *holisivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002690875 sp002689325*. The type genome for the species is the GenBank assembly GCA_002689325.1. The GC content of the type genome is 29.48 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Pinifida manupitia sp. nov.

Candidatus Pinifida manupitia (NL. fem. n. *manupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002690875 sp902537615*. The type genome for the species is the GenBank assembly GCA_902537615.1. The GC content of the type genome is 29.77 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Pinifida salubitoga sp. nov.

Candidatus Pinifida salubitoga (NL. fem. n. *salubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002690875 sp002690875*. The type genome for the species is the

GenBank assembly GCA_002690875.1. The GC content of the type genome is 29.05 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Pinifosa denicentia sp. nov.

Candidatus Pinifosa denicentia (NL. fem. n. *denicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXLM01 sp009841605*. The type genome for the species is the GenBank assembly GCA_009838445.1. The GC content of the type genome is 60.95 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Pinifosa gen. nov.

Candidatus Pinifosa (NL. fem. n. *Pinifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXLM01*. The type species for the genus is *Candidatus* Pinifosa denicentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VXLM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pinifosaceae.

Description of *Candidatus* Pinifosaceae fam. nov.

Candidatus Pinifosaceae (NL. fem. n. *Pinifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXLM01.* The type genus for the taxon is *Candidatus* Pinifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defulidales.

Description of *Candidatus* Pinifula cohonastra sp. nov.

Candidatus Pinifula cohonastra (NL. fem. n. *cohonastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6770 sp002453255*. The type genome for the species is the

GenBank assembly GCA_002453255.1. The GC content of the type genome is 36.03 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Pinifula gen. nov.

Candidatus Pinifula (NL. fem. n. *Pinifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6770*. The type species for the genus is *Candidatus* Pinifula cohonastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pinifula munimicula sp. nov.

Candidatus Pinifula munimicula (NL. fem. n. *munimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6770 sp002707155*. The type genome for the species is the GenBank assembly GCA_002707155.1. The GC content of the type genome is 37.22 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Pinigana delecastra sp. nov.

Candidatus Pinigana delecastra (NL. fem. n. *delecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISUE01 sp903888615*. The type genome for the species is the GenBank assembly GCA_903888615.1. The GC content of the type genome is 42.35 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Pinigana gen. nov.

Candidatus Pinigana (NL. fem. n. *Pinigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISUE01*. The type species for the genus is *Candidatus* Pinigana delecastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAISUE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Piniganaceae.

Description of *Candidatus* Piniganaceae fam. nov.

Candidatus Piniganaceae (NL. fem. n. *Piniganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAISUE01*. The type genus for the taxon is *Candidatus* Pinigana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAISUE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Piniganales.

Description of *Candidatus* Piniganales ord. nov.

Candidatus Piniganales (NL. fem. n. *Piniganales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAISUE01*. The type genus for the taxon is *Candidatus* Pinigana .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Pinigaria depecetta sp. nov.

Candidatus Pinigaria depecetta (NL. fem. n. *depecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXOB01 sp005776945*. The type genome for the species is the GenBank assembly GCA_005800745.1. The GC content of the type genome is 68.39 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Pinigaria gen. nov.

Candidatus Pinigaria (NL. fem. n. *Pinigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXOB01*. The type species for the genus is *Candidatus* Pinigaria depecetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2862545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tolutanaceae.

Description of *Candidatus* Pinigella vanitatio sp. nov.

Candidatus Pinigella vanitatio (NL. fem. n. *vanitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-911 sp003133265*. The type genome for the species is the GenBank assembly GCA_003133265.1. The GC content of the type genome is 66.26 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Pinigella gen. nov.

Candidatus Pinigella (NL. fem. n. *Pinigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-911*. The type species for the genus is *Candidatus* Pinigella vanitatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pinigia palifugo sp. nov.

Candidatus Pinigia palifugo (NL. fem. n. *palifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TTA-H9 sp002071415*. The type genome for the species is the GenBank assembly GCA_002071415.1. The GC content of the type genome is 39.67 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Pinigia gen. nov.

Candidatus Pinigia (NL. fem. n. *Pinigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TTA-H9*. The type species for the genus is *Candidatus* Pinigia palifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TTA-H9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pinigiaceae.

Description of *Candidatus* Pinigiaceae fam. nov.

Candidatus Pinigiaceae (NL. fem. n. *Pinigiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TTA-H9.* The type genus for the taxon is *Candidatus* Pinigia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Pinigia purulitica sp. nov.

Candidatus Pinigia purulitica (NL. fem. n. *purulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TTA-H9 sp002418865*. The type genome for the species is the GenBank assembly GCA_001509275.1. The GC content of the type genome is 37.84 % and the genome length is 2.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample SB1".

Description of *Candidatus* Pinigida adinvicula sp. nov.

Candidatus Pinigida adinvicula (NL. fem. n. *adinvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0103 sp903928365*. The type genome for the species is the GenBank assembly GCA_903928365.1. The GC content of the type genome is 41.53 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Pinigida gen. nov.

Candidatus Pinigida (NL. fem. n. *Pinigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M0103*. The type species for the genus is *Candidatus* Pinigida adinvicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pinigida alceditia sp. nov.

Candidatus Pinigida alceditia (NL. fem. n. *alceditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0103 sp903930085*. The type genome for the species is the GenBank assembly GCA_903930085.1. The GC content of the type genome is 36.91 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Pinigida bimetigena sp. nov.

Candidatus Pinigida bimetigena (NL. fem. n. *bimetigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0103 sp903945495*. The type genome for the species is the GenBank assembly GCA_903936675.1. The GC content of the type genome is 36.32 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Pinigida coninitudo sp. nov.

Candidatus Pinigida coninitudo (NL. fem. n. *coninitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0103 sp006227105*. The type genome for the species is the GenBank assembly GCA_006227105.1. The GC content of the type genome is 39.83 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Pinigida dedigatio sp. nov.

Candidatus Pinigida dedigatio (NL. fem. n. *dedigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0103 sp903873915*. The type genome for the species is the GenBank assembly GCA_903920645.1. The GC content of the type genome is 42.08 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Pinigida denupivita sp. nov.

Candidatus Pinigida denupivita (NL. fem. n. *denupivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0103 sp903887095*. The type genome for the species is the GenBank assembly GCA_903887095.1. The GC content of the type genome is 38.15 % and the

genome length is 2.55 Mbp.

Description of *Candidatus* Pinigida homolisca sp. nov.

Candidatus Pinigida homolisca (NL. fem. n. *homolisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0103 sp009885545*. The type genome for the species is the GenBank assembly GCA_009885545.1. The GC content of the type genome is 33.81 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Pinigosa famelibula sp. nov.

Candidatus Pinigosa famelibula (NL. fem. n. *famelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS687 sp900551705*. The type genome for the species is the GenBank assembly RS_GCF_900770135.1. The GC content of the type genome is 32.81 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pinigosa gen. nov.

Candidatus Pinigosa (NL. fem. n. *Pinigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS687*. The type species for the genus is *Candidatus* Pinigosa famelibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Pinigosa pinifitia sp. nov.

Candidatus Pinigosa pinifitia (NL. fem. n. *pinifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS687 sp900545735*. The type genome for the species is the GenBank assembly GCA_900545735.1. The GC content of the type genome is 32.81 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Pinigosa venabilenta sp. nov.

Candidatus Pinigosa venabilenta (NL. fem. n. *venabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS687 sp900544595*. The type genome for the species is the GenBank assembly RS_GCF_900768255.1. The GC content of the type genome is 35.15 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Pinigula ascenitrix sp. nov.

Candidatus Pinigula ascenitrix (NL. fem. n. *ascenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQR01 sp007117625*. The type genome for the species is the GenBank assembly GCA_007117625.1. The GC content of the type genome is 37.88 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Pinigula gen. nov.

Candidatus Pinigula (NL. fem. n. *Pinigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLQR01*. The type species for the genus is *Candidatus* Pinigula ascenitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pinigula dilacitia sp. nov.

Candidatus Pinigula dilacitia (NL. fem. n. *dilacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQR01 sp007132465*. The type genome for the species is the GenBank assembly GCA_007132465.1. The GC content of the type genome is 51.12 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Pinigula ectenugo sp. nov.

Candidatus Pinigula ectenugo (NL. fem. n. *ectenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQR01 sp007131405*. The type genome for the species is the GenBank assembly GCA_007131405.1. The GC content of the type genome is 39.76 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Pinigula recoretta sp. nov.

Candidatus Pinigula recoretta (NL. fem. n. *recoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQR01 sp007123975*. The type genome for the species is the GenBank assembly GCA_007116395.1. The GC content of the type genome is 51.94 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pinigula vagabimonas sp. nov.

Candidatus Pinigula vagabimonas (NL. fem. n. *vagabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQR01 sp007116205*. The type genome for the species is the GenBank assembly GCA_007116205.1. The GC content of the type genome is 36.93 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Pirellula bicubentia sp. nov.

Candidatus Pirellula bicubentia (NL. fem. n. *bicubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pirellula_B sp001610875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001610875.1. The GC content of the type genome is 54.25 % and the genome length is 6.53 Mbp.

Description of *Candidatus* Pirellula ciciletta sp. nov.

Candidatus Pirellula ciciletta (NL. fem. n. *ciciletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pirellula_B sp903930765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903930765.1. The GC content of the type genome is 54.39 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Pirellula fusifago sp. nov.

Candidatus Pirellula fusifago (NL. fem. n. *fusifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pirellula_B sp003671195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003670855.1. The GC content of the type genome is 55.56 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Pirellula indiricula sp. nov.

Candidatus Pirellula indiricula (NL. fem. n. *indiricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pirellula_B sp903858115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903858115.1. The GC content of the type genome is 50.89 % and the genome length is 7.89 Mbp.

Description of *Candidatus* Pirellula palifentia sp. nov.

Candidatus Pirellula palifentia (NL. fem. n. *palifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pirellula_B sp903820735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903820735.1. The GC content of the type genome is 52.19 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Pirellula parociforma sp. nov.

Candidatus Pirellula parociforma (NL. fem. n. *parociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pirellula_B sp903892365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903892365.1. The GC content of the type genome is 51.45 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Pirellula recumousia sp. nov.

Candidatus Pirellula recumousia (NL. fem. n. *recumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pirellula_B sp903837255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903915205.1. The GC content of the type genome is 54.67 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Pirellula refunitura sp. nov.

Candidatus Pirellula refunitura (NL. fem. n. *refunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pirellula_B sp903892355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903892355.1. The GC content of the type genome is 53.95 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Piscirickettsia inlumilega sp. nov.

Candidatus Piscirickettsia inlumilega (NL. fem. n. *inlumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Piscirickettsia sp001644975*. The type genome for the species is the

GenBank assembly RS_GCF_001644975.1. The GC content of the type genome is 39.22 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Planctomonas dehonimonia sp. nov.

Candidatus Planctomonas dehonimonia (NL. fem. n. *dehonimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planctomonas sp008642235*. The type genome for the species is the GenBank assembly RS_GCF_008642235.1. The GC content of the type genome is 69.07 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Planctomyces lenunentia sp. nov.

Candidatus Planctomyces lenunentia (NL. fem. n. *lenunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planctomyces_A sp001610835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001610835.1. The GC content of the type genome is 65.56 % and the genome length is 8.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sugar beet rhizosphere".

Description of *Candidatus* Planctomyces abveritica sp. nov.

Candidatus Planctomyces abveritica (NL. fem. n. *abveritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planctomyces_B sp007750395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007750395.1. The GC content of the type genome is 50.32 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Planctomyces delucentia sp. nov.

Candidatus Planctomyces delucentia (NL. fem. n. *delucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planctomyces_B sp002702685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002702685.1. The GC content of the type genome is 56.03 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Planctopirus denomago sp. nov.

Candidatus Planctopirus denomago (NL. fem. n. *denomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planctopirus sp013822855*. The type genome for the species is the GenBank assembly GCA_013822855.1. The GC content of the type genome is 60.4 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Planktomarina decacitio sp. nov.

Candidatus Planktomarina decacitio (NL. fem. n. *decacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktomarina sp000981705*. The type genome for the species is the GenBank assembly GCA_003452055.1. The GC content of the type genome is 48.15 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Planktomarina lubenigena sp. nov.

Candidatus Planktomarina lubenigena (NL. fem. n. *lubenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktomarina sp002683685*. The type genome for the species is the GenBank assembly GCA_902732755.1. The GC content of the type genome is 54.8 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Planktomarina ruricessa sp. nov.

Candidatus Planktomarina ruricessa (NL. fem. n. *ruricessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktomarina sp002698165*. The type genome for the species is the

GenBank assembly GCA_002698165.1. The GC content of the type genome is 42.31 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Planktophila ablepilenta sp. nov.

Candidatus Planktophila ablepilenta (NL. fem. n. *ablepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009700025*. The type genome for the species is the GenBank assembly GCA_009700025.1. The GC content of the type genome is 45.03 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Planktophila adfamatica sp. nov.

Candidatus Planktophila adfamatica (NL. fem. n. *adfamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009691145*. The type genome for the species is the GenBank assembly GCA_009691145.1. The GC content of the type genome is 48.92 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Planktophila adnumilega sp. nov.

Candidatus Planktophila adnumilega (NL. fem. n. *adnumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009700715*. The type genome for the species is the GenBank assembly GCA_009700715.1. The GC content of the type genome is 47.79 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Planktophila adtagigena sp. nov.

Candidatus Planktophila adtagigena (NL. fem. n. *adtagigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903858325*. The type genome for the species is the GenBank assembly GCA_903858325.1. The GC content of the type genome is 45.4 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Planktophila aggubousia sp. nov.

Candidatus Planktophila aggubousia (NL. fem. n. *aggubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009699765*. The type genome for the species is the GenBank assembly GCA_009699765.1. The GC content of the type genome is 46.46 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Planktophila agrimitas sp. nov.

Candidatus Planktophila agrimitas (NL. fem. n. *agrimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903839585*. The type genome for the species is the GenBank assembly GCA_903839585.1. The GC content of the type genome is 48.39 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Planktophila apsimugo sp. nov.

Candidatus Planktophila apsimugo (NL. fem. n. *apsimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903922325*. The type genome for the species is the GenBank assembly GCA_903922325.1. The GC content of the type genome is 45.86 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Planktophila capilatica sp. nov.

Candidatus Planktophila capilatica (NL. fem. n. *capilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp002430075*. The type genome for the species is the GenBank assembly GCA_002430075.1. The GC content of the type genome is 47.38 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Planktophila capuditura sp. nov.

Candidatus Planktophila capuditura (NL. fem. n. *capuditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903894425*. The type genome for the species is the GenBank assembly GCA_903894425.1. The GC content of the type genome is 45.91 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Planktophila carecugo sp. nov.

Candidatus Planktophila carecugo (NL. fem. n. *carecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009706135*. The type genome for the species is the GenBank assembly GCA_009706135.1. The GC content of the type genome is 44.31 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Planktophila catagicella sp. nov.

Candidatus Planktophila catagicella (NL. fem. n. *catagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp007279945*. The type genome for the species is the GenBank assembly GCA_007279945.1. The GC content of the type genome is 46.48 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Planktophila cepulifica sp. nov.

Candidatus Planktophila cepulifica (NL. fem. n. *cepulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903921405*. The type genome for the species is the GenBank assembly GCA_903856755.1. The GC content of the type genome is 46.8 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Planktophila chancousia sp. nov.

Candidatus Planktophila chancousia (NL. fem. n. *chancousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009703165*. The type genome for the species is the GenBank assembly GCA_009703165.1. The GC content of the type genome is 49.42 %

and the genome length is 0.97 Mbp.

Description of *Candidatus* Planktophila cibaritrix sp. nov.

Candidatus Planktophila cibaritrix (NL. fem. n. *cibaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009694515*. The type genome for the species is the GenBank assembly GCA_009691125.1. The GC content of the type genome is 48.62 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Planktophila cocodifica sp. nov.

Candidatus Planktophila cocodifica (NL. fem. n. *cocodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp002284875*. The type genome for the species is the GenBank assembly GCA_013467655.1. The GC content of the type genome is 46.96 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Planktophila codifitas sp. nov.

Candidatus Planktophila codifitas (NL. fem. n. *codifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009702965*. The type genome for the species is the GenBank assembly GCA_009702965.1. The GC content of the type genome is 47.98 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Planktophila decamilenta sp. nov.

Candidatus Planktophila decamilenta (NL. fem. n. *decamilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009704505*. The type genome for the species is the GenBank assembly GCA_009704505.1. The GC content of the type genome is 44.3 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Planktophila decamitura sp. nov.

Candidatus Planktophila decamitura (NL. fem. n. *decamitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009701085*. The type genome for the species is the GenBank assembly GCA_009705805.1. The GC content of the type genome is 49.31 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Planktophila defulatio sp. nov.

Candidatus Planktophila defulatio (NL. fem. n. *defulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903932885*. The type genome for the species is the GenBank assembly GCA_903934975.1. The GC content of the type genome is 45.25 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Planktophila democitudo sp. nov.

Candidatus Planktophila democitudo (NL. fem. n. *democitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903874255*. The type genome for the species is the GenBank assembly GCA_903874255.1. The GC content of the type genome is 44.91 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Planktophila denicibula sp. nov.

Candidatus Planktophila denicibula (NL. fem. n. *denicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp001438925*. The type genome for the species is the GenBank assembly GCA_002346325.1. The GC content of the type genome is 47.1 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Planktophila denoratica sp. nov.

Candidatus Planktophila denoratica (NL. fem. n. *denoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009702835*. The type genome for the species is the GenBank assembly GCA_009705965.1. The GC content of the type genome is 47.26 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Planktophila depetibra sp. nov.

Candidatus Planktophila depetibra (NL. fem. n. *depetibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903954055*. The type genome for the species is the GenBank assembly GCA_903953775.1. The GC content of the type genome is 48.71 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Planktophila depupatio sp. nov.

Candidatus Planktophila depupatio (NL. fem. n. *depupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp010032875*. The type genome for the species is the GenBank assembly GCA_010033045.1. The GC content of the type genome is 44.36 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Planktophila dilibitia sp. nov.

Candidatus Planktophila dilibitia (NL. fem. n. *dilibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009698845*. The type genome for the species is the GenBank assembly GCA_009698845.1. The GC content of the type genome is 46.36 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Planktophila direcicella sp. nov.

Candidatus Planktophila direcicella (NL. fem. n. *direcicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903825015*. The type genome for the species is the GenBank assembly GCA_903823235.1. The GC content of the type genome is 45.42 %

and the genome length is 1.21 Mbp.

Description of *Candidatus* Planktophila docibitudo sp. nov.

Candidatus Planktophila docibitudo (NL. fem. n. *docibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp010024385*. The type genome for the species is the GenBank assembly GCA_010022475.1. The GC content of the type genome is 45.42 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Planktophila excucitrix sp. nov.

Candidatus Planktophila excucitrix (NL. fem. n. *excucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009705165*. The type genome for the species is the GenBank assembly GCA_009705165.1. The GC content of the type genome is 44.83 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Planktophila exorbetta sp. nov.

Candidatus Planktophila exorbetta (NL. fem. n. *exorbetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009699575*. The type genome for the species is the GenBank assembly GCA_009699575.1. The GC content of the type genome is 46.18 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Planktophila expanimonia sp. nov.

Candidatus Planktophila expanimonia (NL. fem. n. *expanimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp002284895*. The type genome for the species is the GenBank assembly RS_GCF_002284895.1. The GC content of the type genome is 45.45 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Planktophila exsatitia sp. nov.

Candidatus Planktophila exsatitia (NL. fem. n. *exsatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp000372185*. The type genome for the species is the GenBank assembly GCA_000372185.1. The GC content of the type genome is 47.61 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Planktophila feculiforma sp. nov.

Candidatus Planktophila feculiforma (NL. fem. n. *feculiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009701945*. The type genome for the species is the GenBank assembly GCA_009701945.1. The GC content of the type genome is 47.92 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Planktophila fetulibula sp. nov.

Candidatus Planktophila fetulibula (NL. fem. n. *fetulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp013205535*. The type genome for the species is the GenBank assembly GCA_013205535.1. The GC content of the type genome is 49.58 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Planktophila forinitas sp. nov.

Candidatus Planktophila forinitas (NL. fem. n. *forinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903865885*. The type genome for the species is the GenBank assembly GCA_903865885.1. The GC content of the type genome is 47.98 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Planktophila galacilega sp. nov.

Candidatus Planktophila galacilega (NL. fem. n. *galacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009698295*. The type genome for the species is the GenBank assembly GCA_009698295.1. The GC content of the type genome is 46.81 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Planktophila genocigena sp. nov.

Candidatus Planktophila genocigena (NL. fem. n. *genocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009924725*. The type genome for the species is the GenBank assembly GCA_009924725.1. The GC content of the type genome is 46.24 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Planktophila hegumiforma sp. nov.

Candidatus Planktophila hegumiforma (NL. fem. n. *hegumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009699825*. The type genome for the species is the GenBank assembly GCA_009701555.1. The GC content of the type genome is 44.16 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Planktophila hemidetta sp. nov.

Candidatus Planktophila hemidetta (NL. fem. n. *hemidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903852955*. The type genome for the species is the GenBank assembly GCA_009705835.1. The GC content of the type genome is 44.74 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Planktophila hemitago sp. nov.

Candidatus Planktophila hemitago (NL. fem. n. *hemitago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903939005*. The type genome for the species is the GenBank assembly GCA_903939005.1. The GC content of the type genome is 46.27 %

and the genome length is 1.2 Mbp.

Description of *Candidatus* Planktophila homagitudo sp. nov.

Candidatus Planktophila homagitudo (NL. fem. n. *homagitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903893085*. The type genome for the species is the GenBank assembly GCA_903893085.1. The GC content of the type genome is 46.49 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Planktophila inadfibra sp. nov.

Candidatus Planktophila inadfibra (NL. fem. n. *inadfibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009691135*. The type genome for the species is the GenBank assembly GCA_009691135.1. The GC content of the type genome is 46.74 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Planktophila infinitoga sp. nov.

Candidatus Planktophila infinitoga (NL. fem. n. *infinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903901905*. The type genome for the species is the GenBank assembly GCA_903901905.1. The GC content of the type genome is 44.19 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Planktophila innupatio sp. nov.

Candidatus Planktophila innupatio (NL. fem. n. *innupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903844585*. The type genome for the species is the GenBank assembly GCA_903844585.1. The GC content of the type genome is 45.76 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Planktophila inobsedo sp. nov.

Candidatus Planktophila inobsedo (NL. fem. n. *inobsedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009699645*. The type genome for the species is the GenBank assembly GCA_009699645.1. The GC content of the type genome is 47.43 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Planktophila irrefago sp. nov.

Candidatus Planktophila irrefago (NL. fem. n. *irrefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009923805*. The type genome for the species is the GenBank assembly GCA_009923805.1. The GC content of the type genome is 46.8 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Planktophila ludibax sp. nov.

Candidatus Planktophila ludibax (NL. fem. n. *ludibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp000378885*. The type genome for the species is the GenBank assembly GCA_000504645.1. The GC content of the type genome is 44.24 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Planktophila macililega sp. nov.

Candidatus Planktophila macililega (NL. fem. n. *macililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009702845*. The type genome for the species is the GenBank assembly GCA_009702845.1. The GC content of the type genome is 47.5 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Planktophila manibisca sp. nov.

Candidatus Planktophila manibisca (NL. fem. n. *manibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009699165*. The type genome for the species is the GenBank assembly GCA_009699165.1. The GC content of the type genome is 46.43 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Planktophila metucifica sp. nov.

Candidatus Planktophila metucifica (NL. fem. n. *metucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009702925*. The type genome for the species is the GenBank assembly GCA_009703025.1. The GC content of the type genome is 44.08 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Planktophila milipitica sp. nov.

Candidatus Planktophila milipitica (NL. fem. n. *milipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903904665*. The type genome for the species is the GenBank assembly GCA_903904665.1. The GC content of the type genome is 45.93 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Planktophila mimogibula sp. nov.

Candidatus Planktophila mimogibula (NL. fem. n. *mimogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009702525*. The type genome for the species is the GenBank assembly GCA_009700555.1. The GC content of the type genome is 45.85 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Planktophila negotatica sp. nov.

Candidatus Planktophila negotatica (NL. fem. n. *negotatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009705025*. The type genome for the species is the GenBank assembly GCA_009702655.1. The GC content of the type genome is 44.59 %

and the genome length is 0.9 Mbp.

Description of *Candidatus* Planktophila nehalisca sp. nov.

Candidatus Planktophila nehalisca (NL. fem. n. *nehalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp002284855*. The type genome for the species is the GenBank assembly GCA_013467635.1. The GC content of the type genome is 49.05 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Planktophila nucifimonas sp. nov.

Candidatus Planktophila nucifimonas (NL. fem. n. *nucifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp005800815*. The type genome for the species is the GenBank assembly GCA_005809035.1. The GC content of the type genome is 50.34 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Planktophila nugacicula sp. nov.

Candidatus Planktophila nugacicula (NL. fem. n. *nugacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903890345*. The type genome for the species is the GenBank assembly GCA_903890345.1. The GC content of the type genome is 44.64 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Planktophila nutabitoga sp. nov.

Candidatus Planktophila nutabitoga (NL. fem. n. *nutabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009698975*. The type genome for the species is the GenBank assembly GCA_009698975.1. The GC content of the type genome is 48.38 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Planktophila obtecax sp. nov.

Candidatus Planktophila obtecax (NL. fem. n. *obtecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009704515*. The type genome for the species is the GenBank assembly GCA_009704515.1. The GC content of the type genome is 47.22 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Planktophila obvalitura sp. nov.

Candidatus Planktophila obvalitura (NL. fem. n. *obvalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009705185*. The type genome for the species is the GenBank assembly GCA_009705185.1. The GC content of the type genome is 45.91 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Planktophila obvericula sp. nov.

Candidatus Planktophila obvericula (NL. fem. n. *obvericula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009704445*. The type genome for the species is the GenBank assembly GCA_009704445.1. The GC content of the type genome is 44.11 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Planktophila pavicugo sp. nov.

Candidatus Planktophila pavicugo (NL. fem. n. *pavicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009726135*. The type genome for the species is the GenBank assembly GCA_009705975.1. The GC content of the type genome is 44.96 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Planktophila peripigena sp. nov.

Candidatus Planktophila peripigena (NL. fem. n. *peripigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009700365*. The type genome for the species is the GenBank assembly GCA_009700365.1. The GC content of the type genome is 47.32 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Planktophila pomifibula sp. nov.

Candidatus Planktophila pomifibula (NL. fem. n. *pomifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009698815*. The type genome for the species is the GenBank assembly GCA_009698815.1. The GC content of the type genome is 46.79 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Planktophila refacisca sp. nov.

Candidatus Planktophila refacisca (NL. fem. n. *refacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009705035*. The type genome for the species is the GenBank assembly GCA_009703585.1. The GC content of the type genome is 47.31 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Planktophila robigessa sp. nov.

Candidatus Planktophila robigessa (NL. fem. n. *robigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009698675*. The type genome for the species is the GenBank assembly GCA_009698675.1. The GC content of the type genome is 47.52 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Planktophila rosacifica sp. nov.

Candidatus Planktophila rosacifica (NL. fem. n. *rosacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp003569265*. The type genome for the species is the GenBank assembly GCA_003569265.1. The GC content of the type genome is 46.26 %

and the genome length is 0.64 Mbp.

Description of *Candidatus* Planktophila rutabilega sp. nov.

Candidatus Planktophila rutabilega (NL. fem. n. *rutabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903922745*. The type genome for the species is the GenBank assembly GCA_903922745.1. The GC content of the type genome is 45.83 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Planktophila sacopatio sp. nov.

Candidatus Planktophila sacopatio (NL. fem. n. *sacopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903845465*. The type genome for the species is the GenBank assembly GCA_903836915.1. The GC content of the type genome is 48.01 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Planktophila scellitudo sp. nov.

Candidatus Planktophila scellitudo (NL. fem. n. *scellitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009705235*. The type genome for the species is the GenBank assembly GCA_009705235.1. The GC content of the type genome is 45.24 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Planktophila siminitio sp. nov.

Candidatus Planktophila siminitio (NL. fem. n. *siminitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903852815*. The type genome for the species is the GenBank assembly GCA_903852815.1. The GC content of the type genome is 44.38 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Planktophila smegmitura sp. nov.

Candidatus Planktophila smegmitura (NL. fem. n. *smegmitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp005789205*. The type genome for the species is the GenBank assembly GCA_005789205.1. The GC content of the type genome is 45.41 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Planktophila smegmivita sp. nov.

Candidatus Planktophila smegmivita (NL. fem. n. *smegmivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp014190015*. The type genome for the species is the GenBank assembly GCA_014190015.1. The GC content of the type genome is 45.11 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Planktophila subucitoga sp. nov.

Candidatus Planktophila subucitoga (NL. fem. n. *subucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903920065*. The type genome for the species is the GenBank assembly GCA_903920065.1. The GC content of the type genome is 48.27 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Planktophila susicessa sp. nov.

Candidatus Planktophila susicessa (NL. fem. n. *susicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009701185*. The type genome for the species is the GenBank assembly GCA_903831525.1. The GC content of the type genome is 45.86 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Planktophila telegessa sp. nov.

Candidatus Planktophila telegessa (NL. fem. n. *telegessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903832395*. The type genome for the species is the GenBank assembly GCA_903876055.1. The GC content of the type genome is 47.13 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Planktophila televugo sp. nov.

Candidatus Planktophila televugo (NL. fem. n. *televugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009698445*. The type genome for the species is the GenBank assembly GCA_009701915.1. The GC content of the type genome is 44.9 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Planktophila tresvugo sp. nov.

Candidatus Planktophila tresvugo (NL. fem. n. *tresvugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903820565*. The type genome for the species is the GenBank assembly GCA_903820565.1. The GC content of the type genome is 45.65 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Planktophila velifastra sp. nov.

Candidatus Planktophila velifastra (NL. fem. n. *velifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp009699795*. The type genome for the species is the GenBank assembly GCA_009699795.1. The GC content of the type genome is 45.58 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Planktophila vinacatio sp. nov.

Candidatus Planktophila vinacatio (NL. fem. n. *vinacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktophila sp903918325*. The type genome for the species is the GenBank assembly GCA_903918325.1. The GC content of the type genome is 45.59 %

and the genome length is 1.23 Mbp.

Description of *Candidatus* Planktosalinus encenisca sp. nov.

Candidatus Planktosalinus encenisca (NL. fem. n. *encenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktosalinus sp002842575*. The type genome for the species is the GenBank assembly GCA_002842575.1. The GC content of the type genome is 34.06 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Planktosalinus metabiforma sp. nov.

Candidatus Planktosalinus metabiforma (NL. fem. n. *metabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktosalinus sp001873105*. The type genome for the species is the GenBank assembly GCA_002770945.1. The GC content of the type genome is 34.29 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Planktotalea bigemetta sp. nov.

Candidatus Planktotalea bigemetta (NL. fem. n. *bigemetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktotalea sp000156115*. The type genome for the species is the GenBank assembly GCA_003539745.1. The GC content of the type genome is 53.54 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Planktothricoides annucousia sp. nov.

Candidatus Planktothricoides annucousia (NL. fem. n. *annucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktothricoides sp001276715*. The type genome for the species is the GenBank assembly RS_GCF_001276715.1. The GC content of the type genome is 43.46 % and the genome length is 7.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Freshwater reservoir".

Description of *Candidatus* Planktothricoides pecunago sp. nov.

Candidatus Planktothricoides pecunago (NL. fem. n. *pecunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktothricoides sp011390955*. The type genome for the species is the GenBank assembly GCA_011390955.1. The GC content of the type genome is 43.72 % and the genome length is 7.12 Mbp.

Description of *Candidatus* Planktothrix armidastra sp. nov.

Candidatus Planktothrix armidastra (NL. fem. n. *armidastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktothrix sp903893625*. The type genome for the species is the GenBank assembly GCA_903893625.1. The GC content of the type genome is 39.53 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Planktothrix depubago sp. nov.

Candidatus Planktothrix depubago (NL. fem. n. *depubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktothrix sp003456035*. The type genome for the species is the GenBank assembly GCA_003456035.1. The GC content of the type genome is 38.87 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Planktothrix levidiforma sp. nov.

Candidatus Planktothrix levidiforma (NL. fem. n. *levidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktothrix sp900009135*. The type genome for the species is the GenBank assembly RS_GCF_900009135.1. The GC content of the type genome is 40.14 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Planktothrix oblocago sp. nov.

Candidatus Planktothrix oblocago (NL. fem. n. *oblocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planktothrix sp001873365*. The type genome for the species is the GenBank assembly GCA_001873365.1. The GC content of the type genome is 39.84 % and the genome length is 4.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Planobacterium herinitrix sp. nov.

Candidatus Planobacterium herinitrix (NL. fem. n. *herinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planobacterium sp014041915*. The type genome for the species is the GenBank assembly RS_GCF_014041915.1. The GC content of the type genome is 43.03 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Planobacterium pavimigena sp. nov.

Candidatus Planobacterium pavimigena (NL. fem. n. *pavimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planobacterium sp002319955*. The type genome for the species is the GenBank assembly GCA_002319955.1. The GC content of the type genome is 42.47 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Planobacterium rubigibra sp. nov.

Candidatus Planobacterium rubigibra (NL. fem. n. *rubigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planobacterium sp008831505*. The type genome for the species is the GenBank assembly RS_GCF_008831505.1. The GC content of the type genome is 43.42 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Planococcus anamnisca sp. nov.

Candidatus Planococcus anamnisca (NL. fem. n. *anamnisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Planococcus sp007859275*. The type genome for the species is the GenBank assembly RS_GCF_007859275.1. The GC content of the type genome is 44.27 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Planococcus assudilenta sp. nov.

Candidatus Planococcus assudilenta (NL. fem. n. *assudilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planococcus sp009707665*. The type genome for the species is the GenBank assembly RS_GCF_009707665.1. The GC content of the type genome is 49.06 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Planococcus biparitio sp. nov.

Candidatus Planococcus biparitio (NL. fem. n. *biparitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planococcus sp002833405*. The type genome for the species is the GenBank assembly RS_GCF_002835975.1. The GC content of the type genome is 47.85 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Planococcus bisacibula sp. nov.

Candidatus Planococcus bisacibula (NL. fem. n. *bisacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planococcus sp007004635*. The type genome for the species is the GenBank assembly RS_GCF_007004635.1. The GC content of the type genome is 44.78 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Planococcus defasitoga sp. nov.

Candidatus Planococcus defasitoga (NL. fem. n. *defasitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planococcus sp007859295*. The type genome for the species is the GenBank assembly RS_GCF_007859295.1. The GC content of the type genome is 43.63 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Planococcus peripifica sp. nov.

Candidatus Planococcus peripifica (NL. fem. n. *peripifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planococcus sp000775575*. The type genome for the species is the GenBank assembly RS_GCF_000775575.1. The GC content of the type genome is 46.28 % and the genome length is 3.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Planococcus rubefatio sp. nov.

Candidatus Planococcus rubefatio (NL. fem. n. *rubefatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planococcus sp007859395*. The type genome for the species is the GenBank assembly RS_GCF_007859395.1. The GC content of the type genome is 45.61 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Planococcus saburibra sp. nov.

Candidatus Planococcus saburibra (NL. fem. n. *saburibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planococcus sp003668635*. The type genome for the species is the GenBank assembly RS_GCF_003668635.1. The GC content of the type genome is 44.49 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Planococcus xenopitoga sp. nov.

Candidatus Planococcus xenopitoga (NL. fem. n. *xenopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Planococcus sp000785555*. The type genome for the species is the GenBank assembly RS_GCF_000785555.1. The GC content of the type genome is 39.33 % and the genome length is 3.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil (sea shore)".

Description of *Candidatus* Plantibacter arbavastra sp. nov.

Candidatus Plantibacter arbavastra (NL. fem. n. *arbavastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Plantibacter sp900177795*. The type genome for the species is the GenBank assembly RS_GCF_900177795.1. The GC content of the type genome is 69.23 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Plantibacter ficulax sp. nov.

Candidatus Plantibacter ficulax (NL. fem. n. *ficulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Plantibacter sp001423185*. The type genome for the species is the GenBank assembly RS_GCF_001423185.1. The GC content of the type genome is 69.67 % and the genome length is 3.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Plascella exaspilega sp. nov.

Candidatus Plascella exaspilega (NL. fem. n. *exaspilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISUK01 sp903888645*. The type genome for the species is the GenBank assembly GCA_903888645.1. The GC content of the type genome is 59.33 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Plascella gen. nov.

Candidatus Plascella (NL. fem. n. *Plascella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISUK01*. The type species for the genus is *Candidatus* Plascella exaspilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Plascida herinatio sp. nov.

Candidatus Plascida herinatio (NL. fem. n. *herinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDDZ01 sp013287335*. The type genome for the species is the GenBank assembly GCA_013287335.1. The GC content of the type genome is 42.2 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Plascida gen. nov.

Candidatus Plascida (NL. fem. n. *Plascida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDDZ01*. The type species for the genus is *Candidatus* Plascida herinatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAKFR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recucanaceae.

Description of *Candidatus* Plascula advoredo sp. nov.

Candidatus Plascula advoredo (NL. fem. n. *advoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An7 sp002161805*. The type genome for the species is the GenBank assembly RS_GCF_002161805.1. The GC content of the type genome is 62.94 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Plascula gen. nov.

Candidatus Plascula (NL. fem. n. *Plascula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *An7*. The type species for the genus is *Candidatus* Plascula advoredo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Plascula aggenessa sp. nov.

Candidatus Plascula aggenessa (NL. fem. n. *aggenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An7 sp002159335*. The type genome for the species is the GenBank assembly RS_GCF_002159335.1. The GC content of the type genome is 65.33 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Plascula anaclimonia sp. nov.

Candidatus Plascula anaclimonia (NL. fem. n. *anaclimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An7 sp002159765*. The type genome for the species is the GenBank assembly RS_GCF_002159765.1. The GC content of the type genome is 65.27 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Plasticicumulans masocivita sp. nov.

Candidatus Plasticicumulans masocivita (NL. fem. n. *masocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Plasticicumulans sp003962905*. The type genome for the species is the GenBank assembly GCA_003962905.1. The GC content of the type genome is 70.14 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Pleionea arcebilega sp. nov.

Candidatus Pleionea arcebilega (NL. fem. n. *arcebilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pleionea sp013373375*. The type genome for the species is the GenBank assembly GCA_013373375.1. The GC content of the type genome is 40.45 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Pleionea hirunentia sp. nov.

Candidatus Pleionea hirunentia (NL. fem. n. *hirunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pleionea sp013373545*. The type genome for the species is the GenBank assembly GCA_013372895.1. The GC content of the type genome is 45.36 %

and the genome length is 3.45 Mbp.

Description of *Candidatus* Pleomorphomonas adposastra sp. nov.

Candidatus Pleomorphomonas adposastra (NL. fem. n. *adposastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pleomorphomonas sp004366315*. The type genome for the species is the GenBank assembly RS_GCF_004366315.1. The GC content of the type genome is 61.69 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Pleomorphomonas notacentia sp. nov.

Candidatus Pleomorphomonas notacentia (NL. fem. n. *notacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pleomorphomonas sp011759535*. The type genome for the species is the GenBank assembly RS_GCF_011761225.1. The GC content of the type genome is 63.23 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Pleurocapsa cisoritura sp. nov.

Candidatus Pleurocapsa cisoritura (NL. fem. n. *cisoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pleurocapsa sp003003995*. The type genome for the species is the GenBank assembly RS_GCF_003003995.1. The GC content of the type genome is 39.73 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Pleurocapsa crabritica sp. nov.

Candidatus Pleurocapsa crabritica (NL. fem. n. *crabritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pleurocapsa sp002368355*. The type genome for the species is the GenBank assembly RS_GCF_002368355.1. The GC content of the type genome is 36.62 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Pleurocapsa depelilega sp. nov.

Candidatus Pleurocapsa depelilega (NL. fem. n. *depelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pleurocapsa sp012034765*. The type genome for the species is the GenBank assembly GCA_012033675.1. The GC content of the type genome is 39.88 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Pleurocapsa lupanisca sp. nov.

Candidatus Pleurocapsa lupanisca (NL. fem. n. *lupanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pleurocapsa sp000332195*. The type genome for the species is the GenBank assembly RS_GCF_000332195.1. The GC content of the type genome is 38.74 % and the genome length is 7.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "snail shell".

Description of *Candidatus* Plostella benepatica sp. nov.

Candidatus Plostella benepatica (NL. fem. n. *benepatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PPGL01 sp003173915*. The type genome for the species is the GenBank assembly GCA_003173915.1. The GC content of the type genome is 36.42 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Plostella gen. nov.

Candidatus Plostella (NL. fem. n. *Plostella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PPGL01*. The type species for the genus is *Candidatus* Plostella benepatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Plostia proscicella sp. nov.

Candidatus Plostia proscicella (NL. fem. n. *proscicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRKO01 sp011051745*. The type genome for the species is the GenBank assembly GCA_011051745.1. The GC content of the type genome is 63.19 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Plostia gen. nov.

Candidatus Plostia (NL. fem. n. *Plostia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRKO01*. The type species for the genus is *Candidatus* Plostia proscicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3940*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpidaceae.

Description of *Candidatus* Plostida semifastra sp. nov.

Candidatus Plostida semifastra (NL. fem. n. *semifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YN15 sp003285005*. The type genome for the species is the GenBank assembly RS_GCF_003285005.1. The GC content of the type genome is 55.01 % and the genome length is 7.41 Mbp.

Description of *Candidatus* Plostida gen. nov.

Candidatus Plostida (NL. fem. n. *Plostida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YN15*. The type species for the genus is *Candidatus* Plostida semifastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Plostosa anacledo sp. nov.

Candidatus Plostosa anacledo (NL. fem. n. *anacledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2272 sp002347725*. The type genome for the species is the GenBank assembly GCA_002347725.1. The GC content of the type genome is 66.85 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Plostosa gen. nov.

Candidatus Plostosa (NL. fem. n. *Plostosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2272*. The type species for the genus is *Candidatus* Plostosa anacledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2279*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depeciaceae.

Description of *Candidatus* Plostula enigmitrix sp. nov.

Candidatus Plostula enigmitrix (NL. fem. n. *enigmitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-42-9 sp002790635*. The type genome for the species is the GenBank assembly GCA_002790635.1. The GC content of the type genome is 42.3 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Plostula gen. nov.

Candidatus Plostula (NL. fem. n. *Plostula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-42-9*. The type species for the genus is *Candidatus* Plostula enigmitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colimulaceae.

Description of *Candidatus* Pluscaria impilitia sp. nov.

Candidatus Pluscaria impilitia (NL. fem. n. *impilitia* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED722 sp002690625*. The type genome for the species is the GenBank assembly GCA_002690625.1. The GC content of the type genome is 28.69 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Pluscaria gen. nov.

Candidatus Pluscaria (NL. fem. n. *Pluscaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED722*. The type species for the genus is *Candidatus* Pluscaria impilitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED131*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citoculaceae.

Description of *Candidatus* Pluscella propritio sp. nov.

Candidatus Pluscella propritio (NL. fem. n. *propritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OMHY01 sp900298985*. The type genome for the species is the GenBank assembly GCA_900298985.1. The GC content of the type genome is 37.77 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Pluscella gen. nov.

Candidatus Pluscella (NL. fem. n. *Pluscella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OMHY01*. The type species for the genus is *Candidatus* Pluscella propritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pluscida andabitas sp. nov.

Candidatus Pluscida andabitas (NL. fem. n. *andabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AMD01 sp004100265*. The type genome for the species is the GenBank assembly GCA_004100265.1. The GC content of the type genome is 54.77 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Pluscida gen. nov.

Candidatus Pluscida (NL. fem. n. *Pluscida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AMD01*. The type species for the genus is *Candidatus* Pluscida andabitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pluscosa hemidicula sp. nov.

Candidatus Pluscosa hemidicula (NL. fem. n. *hemidicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEZ01 sp011174845*. The type genome for the species is the GenBank assembly GCA_011174845.1. The GC content of the type genome is 51.34 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Pluscosa gen. nov.

Candidatus Pluscosa (NL. fem. n. *Pluscosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUEZ01*. The type species for the genus is *Candidatus* Pluscosa hemidicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Binocidaceae.

Description of *Candidatus* Pluscosa inmolibra sp. nov.

Candidatus Pluscosa inmolibra (NL. fem. n. *inmolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEZ01 sp011174825*. The type genome for the species is the GenBank assembly GCA_011174825.1. The GC content of the type genome is 51.27 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Pocilana delebisca sp. nov.

Candidatus Pocilana delebisca (NL. fem. n. *delebisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUWA01 sp903827245*. The type genome for the species is the GenBank assembly GCA_903825655.1. The GC content of the type genome is 64.86 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Pocilana gen. nov.

Candidatus Pocilana (NL. fem. n. *Pocilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUWA01*. The type species for the genus is *Candidatus* Pocilana delebisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pocilana resulicula sp. nov.

Candidatus Pocilana resulicula (NL. fem. n. *resulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUWA01 sp903902745*. The type genome for the species is the GenBank assembly GCA_903888405.1. The GC content of the type genome is 64.31 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Pocilaria expalatica sp. nov.

Candidatus Pocilaria expalatica (NL. fem. n. *expalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch38 sp013178105*. The type genome for the species is the GenBank

assembly GCA_013178105.1. The GC content of the type genome is 40.45 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Pocilaria gen. nov.

Candidatus Pocilaria (NL. fem. n. *Pocilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch38*. The type species for the genus is *Candidatus* Pocilaria expalatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pocilariaceae.

Description of *Candidatus* Pocilariaceae fam. nov.

Candidatus Pocilariaceae (NL. fem. n. *Pocilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch38.* The type genus for the taxon is *Candidatus* Pocilaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3567*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bugilellales.

Description of *Candidatus* Pocilella defalugo sp. nov.

Candidatus Pocilella defalugo (NL. fem. n. *defalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002779355 sp002779355*. The type genome for the species is the GenBank assembly GCA_002779355.1. The GC content of the type genome is 39.02 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Pocilella gen. nov.

Candidatus Pocilella (NL. fem. n. *Pocilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002779355*. The type species for the genus is *Candidatus* Pocilella defalugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002779355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pocilellaceae.

Description of *Candidatus* Pocilellaceae fam. nov.

Candidatus Pocilellaceae (NL. fem. n. *Pocilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002779355.* The type genus for the taxon is *Candidatus* Pocilella .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Pocilida conibessa sp. nov.

Candidatus Pocilida conibessa (NL. fem. n. *conibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NBLK01 sp002084505*. The type genome for the species is the GenBank assembly GCA_002084505.1. The GC content of the type genome is 32.08 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Pocilida gen. nov.

Candidatus Pocilida (NL. fem. n. *Pocilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NBLK01*. The type species for the genus is *Candidatus* Pocilida conibessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NBLK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pocilidaceae.

Description of *Candidatus* Pocilidaceae fam. nov.

Candidatus Pocilidaceae (NL. fem. n. *Pocilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NBLK01.* The type genus for the taxon is *Candidatus* Pocilida .

According to the original version of GTDB R06-RS202, this family belongs to the order

Rs-D84. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delapiales.

Description of *Candidatus* Pocilosa petulitrix sp. nov.

Candidatus Pocilosa petulitrix (NL. fem. n. *petulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXV01 sp010672785*. The type genome for the species is the GenBank assembly GCA_010672785.1. The GC content of the type genome is 36.27 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Pocilosa gen. nov.

Candidatus Pocilosa (NL. fem. n. *Pocilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDXV01*. The type species for the genus is *Candidatus* Pocilosa petulitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pocilosa semilatica sp. nov.

Candidatus Pocilosa semilatica (NL. fem. n. *semilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXV01 sp004292695*. The type genome for the species is the GenBank assembly GCA_004292695.1. The GC content of the type genome is 36.01 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Pocilula medimedo sp. nov.

Candidatus Pocilula medimedo (NL. fem. n. *medimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-555 sp003140175*. The type genome for the species is the GenBank assembly GCA_003140175.1. The GC content of the type genome is 69.45 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Pocilula gen. nov.

Candidatus Pocilula (NL. fem. n. *Pocilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-555*. The type species for the genus is *Candidatus* Pocilula medimedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-555*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pocilulaceae.

Description of *Candidatus* Pocilulaceae fam. nov.

Candidatus Pocilulaceae (NL. fem. n. *Pocilulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PALSA-555.* The type genus for the taxon is *Candidatus* Pocilula .

According to the original version of GTDB R06-RS202, this family belongs to the order *IMCC26256*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rosarellales.

Description of *Candidatus* Podagana ceraritas sp. nov.

Candidatus Podagana ceraritas (NL. fem. n. *ceraritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUVD01 sp903902515*. The type genome for the species is the GenBank assembly GCA_903882295.1. The GC content of the type genome is 65.14 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Podagana gen. nov.

Candidatus Podagana (NL. fem. n. *Podagana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUVD01*. The type species for the genus is *Candidatus* Podagana ceraritas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Cisorariaceae.

Description of *Candidatus* Podagaria denupigena sp. nov.

Candidatus Podagaria denupigena (NL. fem. n. *denupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12087 sp001796335*. The type genome for the species is the GenBank assembly GCA_003518405.1. The GC content of the type genome is 48.48 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Podagaria gen. nov.

Candidatus Podagaria (NL. fem. n. *Podagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12087*. The type species for the genus is *Candidatus* Podagaria denupigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Podagella penecitudo sp. nov.

Candidatus Podagella penecitudo (NL. fem. n. *penecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQV01 sp007131285*. The type genome for the species is the GenBank assembly GCA_007131285.1. The GC content of the type genome is 61.37 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Podagella gen. nov.

Candidatus Podagella (NL. fem. n. *Podagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLQV01*. The type species for the genus is *Candidatus* Podagella penecitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SLQV01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Podagellaceae.

Description of *Candidatus* Podagellaceae fam. nov.

Candidatus Podagellaceae (NL. fem. n. *Podagellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLQV01*. The type genus for the taxon is *Candidatus* Podagella .

According to GTDB R06-RS202, this family belongs to the order *Polyangiales*.

Description of *Candidatus* Podagella tumefago sp. nov.

Candidatus Podagella tumefago (NL. fem. n. *tumefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQV01 sp007124745*. The type genome for the species is the GenBank assembly GCA_007120075.1. The GC content of the type genome is 63.42 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Podagia aspilousia sp. nov.

Candidatus Podagia aspilousia (NL. fem. n. *aspilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMXJ01 sp013002065*. The type genome for the species is the GenBank assembly GCA_013002065.1. The GC content of the type genome is 39.55 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Podagia gen. nov.

Candidatus Podagia (NL. fem. n. *Podagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMXJ01*. The type species for the genus is *Candidatus* Podagia aspilousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Podagia cilibivita sp. nov.

Candidatus Podagia cilibivita (NL. fem. n. *cilibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMXJ01 sp004356305*. The type genome for the species is the GenBank assembly GCA_004356275.1. The GC content of the type genome is 40.24 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Podagia conipibula sp. nov.

Candidatus Podagia conipibula (NL. fem. n. *conipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMXJ01 sp009827225*. The type genome for the species is the GenBank assembly GCA_009827225.1. The GC content of the type genome is 41.85 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Podagia dehonetta sp. nov.

Candidatus Podagia dehonetta (NL. fem. n. *dehonetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMXJ01 sp013043825*. The type genome for the species is the GenBank assembly GCA_013043825.1. The GC content of the type genome is 43.75 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Podagida favonastra sp. nov.

Candidatus Podagida favonastra (NL. fem. n. *favonastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG159 sp902796435*. The type genome for the species is the GenBank assembly GCA_902773275.1. The GC content of the type genome is 55.04 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Podagida gen. nov.

Candidatus Podagida (NL. fem. n. *Podagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG159*. The type species for the genus is *Candidatus* Podagida favonastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1390*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibiaceae.

Description of *Candidatus* Podagida hegumitas sp. nov.

Candidatus Podagida hegumitas (NL. fem. n. *hegumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG159 sp900316145*. The type genome for the species is the GenBank assembly GCA_902796645.1. The GC content of the type genome is 52.74 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Podagosa viburousia sp. nov.

Candidatus Podagosa viburousia (NL. fem. n. *viburousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITYL01 sp903896595*. The type genome for the species is the GenBank assembly GCA_903957455.1. The GC content of the type genome is 62.08 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Podagosa gen. nov.

Candidatus Podagosa (NL. fem. n. *Podagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITYL01*. The type species for the genus is *Candidatus* Podagosa viburousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITYL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Podagosaceae.

Description of *Candidatus* Podagosaceae fam. nov.

Candidatus Podagosaceae (NL. fem. n. *Podagosaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAITYL01*. The type genus for the taxon is *Candidatus* Podagosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semilidales.

Description of *Candidatus* Podagula desupivita sp. nov.

Candidatus Podagula desupivita (NL. fem. n. *desupivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP197 sp014323865*. The type genome for the species is the GenBank assembly GCA_014323865.1. The GC content of the type genome is 63.96 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Podagula gen. nov.

Candidatus Podagula (NL. fem. n. *Podagula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SP197*. The type species for the genus is *Candidatus* Podagula desupivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SP197*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Podagulaceae.

Description of *Candidatus* Podagulaceae fam. nov.

Candidatus Podagulaceae (NL. fem. n. *Podagulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SP197*. The type genus for the taxon is *Candidatus* Podagula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SP197*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Podagulales.

Description of *Candidatus* Podagulales ord. nov.

Candidatus Podagulales (NL. fem. n. *Podagulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SP197.* The type genus for the taxon is *Candidatus* Podagula .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Podagula exindibra sp. nov.

Candidatus Podagula exindibra (NL. fem. n. *exindibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SP197 sp002722885*. The type genome for the species is the GenBank assembly GCA_002722885.1. The GC content of the type genome is 62.11 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Polaribacter adcesitura sp. nov.

Candidatus Polaribacter adcesitura (NL. fem. n. *adcesitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp000687935*. The type genome for the species is the GenBank assembly RS_GCF_000687935.1. The GC content of the type genome is 29.99 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Polaribacter adlacilenta sp. nov.

Candidatus Polaribacter adlacilenta (NL. fem. n. *adlacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp003537695*. The type genome for the species is the GenBank assembly GCA_003537695.1. The GC content of the type genome is 35.09 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Polaribacter apoplilenta sp. nov.

Candidatus Polaribacter apoplilenta (NL. fem. n. *apoplilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp003335085*. The type genome for the species is the GenBank assembly RS_GCF_003335085.1. The GC content of the type genome is 30.7 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Polaribacter artilax sp. nov.

Candidatus Polaribacter artilax (NL. fem. n. *artilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp011379025*. The type genome for the species is the GenBank assembly RS_GCF_011379025.1. The GC content of the type genome is 30.37 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Polaribacter cacaliforma sp. nov.

Candidatus Polaribacter cacaliforma (NL. fem. n. *cacaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp001873065*. The type genome for the species is the GenBank assembly GCA_002784685.1. The GC content of the type genome is 31.36 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Polaribacter conabitudo sp. nov.

Candidatus Polaribacter conabitudo (NL. fem. n. *conabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp900105145*. The type genome for the species is the GenBank assembly RS_GCF_900105145.1. The GC content of the type genome is 29.04 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Polaribacter cuticivita sp. nov.

Candidatus Polaribacter cuticivita (NL. fem. n. *cuticivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp002831685*. The type genome for the species is the GenBank assembly RS_GCF_002831685.1. The GC content of the type genome is 30.64 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Polaribacter dehinastra sp. nov.

Candidatus Polaribacter dehinastra (NL. fem. n. *dehinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp900106075*. The type genome for the species is the GenBank assembly RS_GCF_900106075.1. The GC content of the type genome is 30.89 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Polaribacter denoressa sp. nov.

Candidatus Polaribacter denoressa (NL. fem. n. *denoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp002163835*. The type genome for the species is the GenBank assembly RS_GCF_002163835.1. The GC content of the type genome is 30.23 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Polaribacter ephemitio sp. nov.

Candidatus Polaribacter ephemitio (NL. fem. n. *ephemitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp000766795*. The type genome for the species is the GenBank assembly RS_GCF_000766795.1. The GC content of the type genome is 29.24 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface seawater; North Sea".

Description of *Candidatus* Polaribacter expalax sp. nov.

Candidatus Polaribacter expalax (NL. fem. n. *expalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp009832745*. The type genome for the species is the GenBank assembly RS_GCF_009832745.1. The GC content of the type genome is 30.54 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Polaribacter faticisca sp. nov.

Candidatus Polaribacter faticisca (NL. fem. n. *faticisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp002005425*. The type genome for the species is the GenBank assembly RS_GCF_900143115.1. The GC content of the type genome is 29.91 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Polaribacter hemititas sp. nov.

Candidatus Polaribacter hemititas (NL. fem. n. *hemititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp007997085*. The type genome for the species is the GenBank assembly RS_GCF_007997085.1. The GC content of the type genome is 31.46 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Polaribacter illepitura sp. nov.

Candidatus Polaribacter illepitura (NL. fem. n. *illepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp003129485*. The type genome for the species is the GenBank assembly RS_GCF_003129485.1. The GC content of the type genome is 30.09 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Polaribacter inconitica sp. nov.

Candidatus Polaribacter inconitica (NL. fem. n. *inconitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp000981625*. The type genome for the species is the GenBank assembly GCA_000981625.1. The GC content of the type genome is 30.31 % and the genome length is 2.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Amundsen Sea polynya".

Description of *Candidatus* Polaribacter insopibra sp. nov.

Candidatus Polaribacter insopibra (NL. fem. n. *insopibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp007997075*. The type genome for the species is the GenBank assembly RS_GCF_007997075.1. The GC content of the type genome is 31.34 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Polaribacter lucerastra sp. nov.

Candidatus Polaribacter lucerastra (NL. fem. n. *lucerastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp000152945*. The type genome for the species is the GenBank assembly RS_GCF_000152945.2. The GC content of the type genome is 30.59 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Polaribacter monumimonia sp. nov.

Candidatus Polaribacter monumimonia (NL. fem. n. *monumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp002340765*. The type genome for the species is the GenBank assembly GCA_002340765.1. The GC content of the type genome is 31.6 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Polaribacter patibicula sp. nov.

Candidatus Polaribacter patibicula (NL. fem. n. *patibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp014352875*. The type genome for the species is the GenBank assembly RS_GCF_014352875.1. The GC content of the type genome is 29.71 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Polaribacter pinacitrix sp. nov.

Candidatus Polaribacter pinacitrix (NL. fem. n. *pinacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp002471825*. The type genome for the species is the GenBank assembly GCA_002471825.1. The GC content of the type genome is 38.04 %

and the genome length is 2.95 Mbp.

Description of *Candidatus* Polaribacter protrisca sp. nov.

Candidatus Polaribacter protrisca (NL. fem. n. *protrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp013373105*. The type genome for the species is the GenBank assembly GCA_013373105.1. The GC content of the type genome is 29.62 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Polaribacter ranunisca sp. nov.

Candidatus Polaribacter ranunisca (NL. fem. n. *ranunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp002163675*. The type genome for the species is the GenBank assembly RS_GCF_002163675.1. The GC content of the type genome is 29.72 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Polaribacter reforetta sp. nov.

Candidatus Polaribacter reforetta (NL. fem. n. *reforetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter sp009796785*. The type genome for the species is the GenBank assembly RS_GCF_009796785.1. The GC content of the type genome is 30.45 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Polaribacter detepago sp. nov.

Candidatus Polaribacter detepago (NL. fem. n. *detepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaribacter_A sp013373385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013373385.1. The GC content of the type genome is 31.96 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Polaromonas aciscitura sp. nov.

Candidatus Polaromonas aciscitura (NL. fem. n. *aciscitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp903926695*. The type genome for the species is the GenBank assembly GCA_903926695.1. The GC content of the type genome is 61.35 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Polaromonas addivibula sp. nov.

Candidatus Polaromonas addivibula (NL. fem. n. *addivibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp002413395*. The type genome for the species is the GenBank assembly GCA_002413395.1. The GC content of the type genome is 59.13 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Polaromonas addubibra sp. nov.

Candidatus Polaromonas addubibra (NL. fem. n. *addubibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp900103405*. The type genome for the species is the GenBank assembly RS_GCF_900103405.1. The GC content of the type genome is 64.71 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Polaromonas adnarigena sp. nov.

Candidatus Polaromonas adnarigena (NL. fem. n. *adnarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp002001015*. The type genome for the species is the GenBank assembly RS_GCF_002001015.1. The GC content of the type genome is 61.07 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Polaromonas agrapax sp. nov.

Candidatus Polaromonas agrapax (NL. fem. n. *agrapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp000282655*. The type genome for the species is the GenBank assembly RS_GCF_000282655.1. The GC content of the type genome is 64.95 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Polaromonas alcedatica sp. nov.

Candidatus Polaromonas alcedatica (NL. fem. n. *alcedatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp002379085*. The type genome for the species is the GenBank assembly RS_GCF_002379085.1. The GC content of the type genome is 63.77 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Polaromonas amercago sp. nov.

Candidatus Polaromonas amercago (NL. fem. n. *amercago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp903941205*. The type genome for the species is the GenBank assembly GCA_903941205.1. The GC content of the type genome is 62.33 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Polaromonas annubedo sp. nov.

Candidatus Polaromonas annubedo (NL. fem. n. *annubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp900116715*. The type genome for the species is the GenBank assembly RS_GCF_900116715.1. The GC content of the type genome is 62.82 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Polaromonas antecicula sp. nov.

Candidatus Polaromonas antecicula (NL. fem. n. *antecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Polaromonas sp002381615*. The type genome for the species is the GenBank assembly GCA_002381615.1. The GC content of the type genome is 59.57 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Polaromonas apporitia sp. nov.

Candidatus Polaromonas apporitia (NL. fem. n. *apporitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp014376885*. The type genome for the species is the GenBank assembly GCA_014376885.1. The GC content of the type genome is 64.77 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Polaromonas arnogetta sp. nov.

Candidatus Polaromonas arnogetta (NL. fem. n. *arnogetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp013205645*. The type genome for the species is the GenBank assembly GCA_013205645.1. The GC content of the type genome is 58.76 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Polaromonas ceraricella sp. nov.

Candidatus Polaromonas ceraricella (NL. fem. n. *ceraricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp003711205*. The type genome for the species is the GenBank assembly RS_GCF_009664225.1. The GC content of the type genome is 63.05 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Polaromonas decomigena sp. nov.

Candidatus Polaromonas decomigena (NL. fem. n. *decomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp012927485*. The type genome for the species is the GenBank assembly GCA_012927485.1. The GC content of the type genome is 57.71 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Polaromonas ficulentia sp. nov.

Candidatus Polaromonas ficulentia (NL. fem. n. *ficulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp900112285*. The type genome for the species is the GenBank assembly RS_GCF_900112285.1. The GC content of the type genome is 61.26 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Polaromonas lacinisca sp. nov.

Candidatus Polaromonas lacinisca (NL. fem. n. *lacinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp010365105*. The type genome for the species is the GenBank assembly GCA_010365105.1. The GC content of the type genome is 61.53 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Polaromonas obsigitia sp. nov.

Candidatus Polaromonas obsigitia (NL. fem. n. *obsigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp002379095*. The type genome for the species is the GenBank assembly RS_GCF_002379095.1. The GC content of the type genome is 63.51 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Polaromonas offirago sp. nov.

Candidatus Polaromonas offirago (NL. fem. n. *offirago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp000013865*. The type genome for the species is the GenBank assembly RS_GCF_000013865.1. The GC content of the type genome is 61.97 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Polaromonas patibatica sp. nov.

Candidatus Polaromonas patibatica (NL. fem. n. *patibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp013824015*. The type genome for the species is the GenBank assembly GCA_013824015.1. The GC content of the type genome is 65.14 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Polaromonas plostitrix sp. nov.

Candidatus Polaromonas plostitrix (NL. fem. n. *plostitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp001770785*. The type genome for the species is the GenBank assembly GCA_001770785.1. The GC content of the type genome is 60.47 % and the genome length is 3.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Polaromonas pocilitrix sp. nov.

Candidatus Polaromonas pocilitrix (NL. fem. n. *pocilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp000688115*. The type genome for the species is the GenBank assembly RS_GCF_000688115.1. The GC content of the type genome is 59.87 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Polaromonas sacomitio sp. nov.

Candidatus Polaromonas sacomitio (NL. fem. n. *sacomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp002256925*. The type genome for the species is the GenBank assembly GCA_002278975.1. The GC content of the type genome is 62.57 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Polaromonas scombatica sp. nov.

Candidatus Polaromonas scombatica (NL. fem. n. *scombatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp012927455*. The type genome for the species is the GenBank assembly GCA_012927455.1. The GC content of the type genome is 60.7 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Polaromonas semimitudo sp. nov.

Candidatus Polaromonas semimitudo (NL. fem. n. *semimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp012927415*. The type genome for the species is the GenBank assembly GCA_012927415.1. The GC content of the type genome is 59.73 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Polaromonas telegetta sp. nov.

Candidatus Polaromonas telegetta (NL. fem. n. *telegetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp002278925*. The type genome for the species is the GenBank assembly GCA_002282035.1. The GC content of the type genome is 62.54 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Polaromonas tenemibula sp. nov.

Candidatus Polaromonas tenemibula (NL. fem. n. *tenemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp004293655*. The type genome for the species is the GenBank assembly GCA_004293655.1. The GC content of the type genome is 57.98 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Polaromonas totiditoga sp. nov.

Candidatus Polaromonas totiditoga (NL. fem. n. *totiditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp903844825*. The type genome for the species is the GenBank assembly GCA_903844825.1. The GC content of the type genome is 62.4 %

and the genome length is 4.66 Mbp.

Description of *Candidatus* Polaromonas vehicatica sp. nov.

Candidatus Polaromonas vehicatica (NL. fem. n. *vehicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp013817205*. The type genome for the species is the GenBank assembly GCA_013817205.1. The GC content of the type genome is 62.2 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Polaromonas velifitia sp. nov.

Candidatus Polaromonas velifitia (NL. fem. n. *velifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polaromonas sp000751355*. The type genome for the species is the GenBank assembly RS_GCF_000751355.1. The GC content of the type genome is 61.38 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Polyangium lenunibra sp. nov.

Candidatus Polyangium lenunibra (NL. fem. n. *lenunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polyangium sp005144635*. The type genome for the species is the GenBank assembly RS_GCF_005144635.1. The GC content of the type genome is 69.45 % and the genome length is 12.31 Mbp.

Description of *Candidatus* Polycyclovorans cisorivita sp. nov.

Candidatus Polycyclovorans cisorivita (NL. fem. n. *cisorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polycyclovorans sp002706265*. The type genome for the species is the GenBank assembly GCA_002414935.1. The GC content of the type genome is 65.96 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Polymorphobacter adsusivita sp. nov.

Candidatus Polymorphobacter adsusivita (NL. fem. n. *adsusivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polymorphobacter sp002256005*. The type genome for the species is the GenBank assembly GCA_002256005.1. The GC content of the type genome is 66.85 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Polymorphobacter favonitas sp. nov.

Candidatus Polymorphobacter favonitas (NL. fem. n. *favonitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polymorphobacter sp002423025*. The type genome for the species is the GenBank assembly GCA_002423025.1. The GC content of the type genome is 65.72 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Polymorphobacter inculitio sp. nov.

Candidatus Polymorphobacter inculitio (NL. fem. n. *inculitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polymorphobacter sp013298745*. The type genome for the species is the GenBank assembly GCA_013298745.1. The GC content of the type genome is 63.92 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Polymorphobacter obsolitio sp. nov.

Candidatus Polymorphobacter obsolitio (NL. fem. n. *obsolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polymorphobacter sp003241875*. The type genome for the species is the GenBank assembly GCA_003241875.1. The GC content of the type genome is 67.73 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Polymorphobacter papililega sp. nov.

Candidatus Polymorphobacter papililega (NL. fem. n. *papililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polymorphobacter sp903939555*. The type genome for the species is the GenBank assembly GCA_903937155.1. The GC content of the type genome is 64.45 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Polynucleobacter acricatio sp. nov.

Candidatus Polynucleobacter acricatio (NL. fem. n. *acricatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903835865*. The type genome for the species is the GenBank assembly GCA_903835865.1. The GC content of the type genome is 45.26 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Polynucleobacter acrifitica sp. nov.

Candidatus Polynucleobacter acrifitica (NL. fem. n. *acrifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp000428385*. The type genome for the species is the GenBank assembly GCA_000428385.1. The GC content of the type genome is 43.7 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Polynucleobacter admurastra sp. nov.

Candidatus Polynucleobacter admurastra (NL. fem. n. *admurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp002797575*. The type genome for the species is the GenBank assembly RS_GCF_002797575.1. The GC content of the type genome is 45.56 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Polynucleobacter adnecitio sp. nov.

Candidatus Polynucleobacter adnecitio (NL. fem. n. *adnecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp009923575*. The type genome for the species is the GenBank assembly GCA_009923575.1. The GC content of the type genome is 45.95 %

and the genome length is 1.63 Mbp.

Description of *Candidatus* Polynucleobacter agravatica sp. nov.

Candidatus Polynucleobacter agravatica (NL. fem. n. *agravatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp013307225*. The type genome for the species is the GenBank assembly RS_GCF_013307225.1. The GC content of the type genome is 45.11 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Polynucleobacter artolitrix sp. nov.

Candidatus Polynucleobacter artolitrix (NL. fem. n. *artolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp000342265*. The type genome for the species is the GenBank assembly RS_GCF_000342265.1. The GC content of the type genome is 46.09 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Polynucleobacter ascelitia sp. nov.

Candidatus Polynucleobacter ascelitia (NL. fem. n. *ascelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903909925*. The type genome for the species is the GenBank assembly GCA_903909925.1. The GC content of the type genome is 45.09 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Polynucleobacter assibitas sp. nov.

Candidatus Polynucleobacter assibitas (NL. fem. n. *assibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903930665*. The type genome for the species is the GenBank assembly GCA_903930665.1. The GC content of the type genome is 44.04 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Polynucleobacter attesisca sp. nov.

Candidatus Polynucleobacter attesisca (NL. fem. n. *attesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903900805*. The type genome for the species is the GenBank assembly GCA_903900805.1. The GC content of the type genome is 44.84 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Polynucleobacter cepuligena sp. nov.

Candidatus Polynucleobacter cepuligena (NL. fem. n. *cepuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903918115*. The type genome for the species is the GenBank assembly GCA_903918115.1. The GC content of the type genome is 45.92 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Polynucleobacter cilibimonia sp. nov.

Candidatus Polynucleobacter cilibimonia (NL. fem. n. *cilibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903821995*. The type genome for the species is the GenBank assembly GCA_903851665.1. The GC content of the type genome is 40.08 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Polynucleobacter colipitio sp. nov.

Candidatus Polynucleobacter colipitio (NL. fem. n. *colipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903880555*. The type genome for the species is the GenBank assembly GCA_903911705.1. The GC content of the type genome is 45.74 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Polynucleobacter colubago sp. nov.

Candidatus Polynucleobacter colubago (NL. fem. n. *colubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903843235*. The type genome for the species is the GenBank assembly GCA_903905925.1. The GC content of the type genome is 45.59 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Polynucleobacter cosigessa sp. nov.

Candidatus Polynucleobacter cosigessa (NL. fem. n. *cosigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903858445*. The type genome for the species is the GenBank assembly GCA_903858445.1. The GC content of the type genome is 44.62 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Polynucleobacter cunabitas sp. nov.

Candidatus Polynucleobacter cunabitas (NL. fem. n. *cunabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903953215*. The type genome for the species is the GenBank assembly GCA_903860375.1. The GC content of the type genome is 46.65 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Polynucleobacter debucago sp. nov.

Candidatus Polynucleobacter debucago (NL. fem. n. *debucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903889595*. The type genome for the species is the GenBank assembly GCA_903889595.1. The GC content of the type genome is 39.8 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Polynucleobacter decunisca sp. nov.

Candidatus Polynucleobacter decunisca (NL. fem. n. *decunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903995005*. The type genome for the species is the GenBank assembly GCA_903995005.1. The GC content of the type genome is 44.92 %

and the genome length is 1.66 Mbp.

Description of *Candidatus* Polynucleobacter defanilega sp. nov.

Candidatus Polynucleobacter defanilega (NL. fem. n. *defanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp013205155*. The type genome for the species is the GenBank assembly GCA_013205155.1. The GC content of the type genome is 43.62 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Polynucleobacter defarimonia sp. nov.

Candidatus Polynucleobacter defarimonia (NL. fem. n. *defarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903944725*. The type genome for the species is the GenBank assembly GCA_903934065.1. The GC content of the type genome is 44.33 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Polynucleobacter defulousia sp. nov.

Candidatus Polynucleobacter defulousia (NL. fem. n. *defulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903935355*. The type genome for the species is the GenBank assembly GCA_903945305.1. The GC content of the type genome is 44.31 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Polynucleobacter desupigena sp. nov.

Candidatus Polynucleobacter desupigena (NL. fem. n. *desupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp013307245*. The type genome for the species is the GenBank assembly RS_GCF_013307245.1. The GC content of the type genome is 44.92 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Polynucleobacter dilemugo sp. nov.

Candidatus Polynucleobacter dilemugo (NL. fem. n. *dilemugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903846025*. The type genome for the species is the GenBank assembly GCA_903860025.1. The GC content of the type genome is 44.8 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Polynucleobacter fuligilenta sp. nov.

Candidatus Polynucleobacter fuligilenta (NL. fem. n. *fuligilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp900176405*. The type genome for the species is the GenBank assembly RS_GCF_900176405.1. The GC content of the type genome is 40.97 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Polynucleobacter luculitoga sp. nov.

Candidatus Polynucleobacter luculitoga (NL. fem. n. *luculitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903827075*. The type genome for the species is the GenBank assembly GCA_903856235.1. The GC content of the type genome is 45.8 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Polynucleobacter maligiforma sp. nov.

Candidatus Polynucleobacter maligiforma (NL. fem. n. *maligiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903843315*. The type genome for the species is the GenBank assembly GCA_903869295.1. The GC content of the type genome is 45.32 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Polynucleobacter mirabimonia sp. nov.

Candidatus Polynucleobacter mirabimonia (NL. fem. n. *mirabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903837335*. The type genome for the species is the GenBank assembly GCA_903860235.1. The GC content of the type genome is 45.5 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Polynucleobacter munifatio sp. nov.

Candidatus Polynucleobacter munifatio (NL. fem. n. *munifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903875135*. The type genome for the species is the GenBank assembly GCA_903832385.1. The GC content of the type genome is 42.01 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Polynucleobacter mutabimonia sp. nov.

Candidatus Polynucleobacter mutabimonia (NL. fem. n. *mutabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp009924985*. The type genome for the species is the GenBank assembly GCA_009924985.1. The GC content of the type genome is 45.96 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Polynucleobacter nicomilega sp. nov.

Candidatus Polynucleobacter nicomilega (NL. fem. n. *nicomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp002359975*. The type genome for the species is the GenBank assembly GCA_002359975.1. The GC content of the type genome is 46.24 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Polynucleobacter obnunentia sp. nov.

Candidatus Polynucleobacter obnunentia (NL. fem. n. *obnunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp001889925*. The type genome for the species is the GenBank assembly RS_GCF_001889925.1. The GC content of the type genome is 45.55

% and the genome length is 2.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater".

Description of *Candidatus* Polynucleobacter regifastra sp. nov.

Candidatus Polynucleobacter regifastra (NL. fem. n. *regifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903826775*. The type genome for the species is the GenBank assembly GCA_903827885.1. The GC content of the type genome is 42.96 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Polynucleobacter relecitas sp. nov.

Candidatus Polynucleobacter relecitas (NL. fem. n. *relecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903867305*. The type genome for the species is the GenBank assembly GCA_903846645.1. The GC content of the type genome is 41.21 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Polynucleobacter semifilenta sp. nov.

Candidatus Polynucleobacter semifilenta (NL. fem. n. *semifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp001870365*. The type genome for the species is the GenBank assembly RS_GCF_001870365.1. The GC content of the type genome is 45.46 % and the genome length is 2.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater".

Description of *Candidatus* Polynucleobacter sugilimonia sp. nov.

Candidatus Polynucleobacter sugilimonia (NL. fem. n. *sugilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903892315*. The type genome for the species is the GenBank assembly GCA_903892315.1. The GC content of the type genome is 45.87 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Polynucleobacter tegumilenta sp. nov.

Candidatus Polynucleobacter tegumilenta (NL. fem. n. *tegumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903871735*. The type genome for the species is the GenBank assembly GCA_903871735.1. The GC content of the type genome is 42.06 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Polynucleobacter televastra sp. nov.

Candidatus Polynucleobacter televastra (NL. fem. n. *televastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp008015455*. The type genome for the species is the GenBank assembly GCA_008015455.1. The GC content of the type genome is 42.98 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Polynucleobacter tomogago sp. nov.

Candidatus Polynucleobacter tomogago (NL. fem. n. *tomogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903845455*. The type genome for the species is the GenBank assembly GCA_903850475.1. The GC content of the type genome is 44.7 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Polynucleobacter urbicisca sp. nov.

Candidatus Polynucleobacter urbicisca (NL. fem. n. *urbicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp009927445*. The type genome for the species is the GenBank assembly GCA_009927445.1. The GC content of the type genome is 42.41 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Polynucleobacter veridetta sp. nov.

Candidatus Polynucleobacter veridetta (NL. fem. n. *veridetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903876105*. The type genome for the species is the GenBank assembly GCA_903876105.1. The GC content of the type genome is 44.92 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Polynucleobacter vilitimonia sp. nov.

Candidatus Polynucleobacter vilitimonia (NL. fem. n. *vilitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp009928245*. The type genome for the species is the GenBank assembly GCA_010027495.1. The GC content of the type genome is 47.81 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Polynucleobacter vitifessa sp. nov.

Candidatus Polynucleobacter vitifessa (NL. fem. n. *vitifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp903944255*. The type genome for the species is the GenBank assembly GCA_903944255.1. The GC content of the type genome is 43.84 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Polynucleobacter vitupitura sp. nov.

Candidatus Polynucleobacter vitupitura (NL. fem. n. *vitupitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp003482545*. The type genome for the species is the GenBank assembly GCA_003482545.1. The GC content of the type genome is 44.55 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Polynucleobacter vocifentia sp. nov.

Candidatus Polynucleobacter vocifentia (NL. fem. n. *vocifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Polynucleobacter sp001830325*. The type genome for the species is the GenBank assembly GCA_001830325.1. The GC content of the type genome is 45.55 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Polynucleobacter xeropastra sp. nov.

Candidatus Polynucleobacter xeropastra (NL. fem. n. *xeropastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Polynucleobacter sp002292975*. The type genome for the species is the GenBank assembly GCA_002292975.1. The GC content of the type genome is 46.53 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Pomifana detotessa sp. nov.

Candidatus Pomifana detotessa (NL. fem. n. *detotessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1609 sp002321895*. The type genome for the species is the GenBank assembly GCA_002712385.1. The GC content of the type genome is 42.06 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Pomifana gen. nov.

Candidatus Pomifana (NL. fem. n. *Pomifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1609*. The type species for the genus is *Candidatus* Pomifana detotessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1609*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifanaceae.

Description of *Candidatus* Pomifanaceae fam. nov.

Candidatus Pomifanaceae (NL. fem. n. *Pomifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA1609*. The type genus for the taxon is *Candidatus* Pomifana .

According to GTDB R06-RS202, this family belongs to the order *Bdellovibrionales*.

Description of *Candidatus* Pomifaria albogitrix sp. nov.

Candidatus Pomifaria albogitrix (NL. fem. n. *albogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED144 sp002170005*. The type genome for the species is the GenBank assembly GCA_002170005.2. The GC content of the type genome is 33.41 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Pomifaria gen. nov.

Candidatus Pomifaria (NL. fem. n. *Pomifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED144*. The type species for the genus is *Candidatus* Pomifaria albogitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufidaceae.

Description of *Candidatus* Pomifaria nubigimonas sp. nov.

Candidatus Pomifaria nubigimonas (NL. fem. n. *nubigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED144 sp902615915*. The type genome for the species is the GenBank assembly GCA_902615915.1. The GC content of the type genome is 33.35 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Pomifella metucitoga sp. nov.

Candidatus Pomifella metucitoga (NL. fem. n. *metucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLCJ01 sp007125835*. The type genome for the species is the

GenBank assembly GCA_007121895.1. The GC content of the type genome is 61.86 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Pomifella gen. nov.

Candidatus Pomifella (NL. fem. n. *Pomifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLCJ01*. The type species for the genus is *Candidatus* Pomifella metucitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLCJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifellaceae.

Description of *Candidatus* Pomifellaceae fam. nov.

Candidatus Pomifellaceae (NL. fem. n. *Pomifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLCJ01*. The type genus for the taxon is *Candidatus* Pomifella .

According to GTDB R06-RS202, this family belongs to the order *Verrucomicrobiales*.

Description of *Candidatus* Pomifia catilatica sp. nov.

Candidatus Pomifia catilatica (NL. fem. n. *catilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-46-22 sp002796245*. The type genome for the species is the GenBank assembly GCA_002787725.1. The GC content of the type genome is 46.34 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Pomifia gen. nov.

Candidatus Pomifia (NL. fem. n. *Pomifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-46-22*. The type species for the genus is *Candidatus* Pomifia catilatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA12402. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pimenosaceae.

Description of *Candidatus* Pomifida capilivita sp. nov.

Candidatus Pomifida capilivita (NL. fem. n. *capilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWPN01 sp003557125*. The type genome for the species is the GenBank assembly GCA_003557125.1. The GC content of the type genome is 62.64 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Pomifida gen. nov.

Candidatus Pomifida (NL. fem. n. *Pomifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWPN01*. The type species for the genus is *Candidatus* Pomifida capilivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWPN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifidaceae.

Description of *Candidatus* Pomifidaceae fam. nov.

Candidatus Pomifidaceae (NL. fem. n. *Pomifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWPN01.* The type genus for the taxon is *Candidatus* Pomifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cacomariales.

Description of *Candidatus* Pomifosa negiditoga sp. nov.

Candidatus Pomifosa negiditoga (NL. fem. n. *negiditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MWDF01 sp002070415*. The type genome for the species is the GenBank assembly GCA_002070415.1. The GC content of the type genome is 58.08 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Pomifosa gen. nov.

Candidatus Pomifosa (NL. fem. n. *Pomifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWDF01*. The type species for the genus is *Candidatus* Pomifosa negiditoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MWDF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pomifosaceae.

Description of *Candidatus* Pomifosaceae fam. nov.

Candidatus Pomifosaceae (NL. fem. n. *Pomifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWDF01.* The type genus for the taxon is *Candidatus* Pomifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTUO25*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxifariales.

Description of *Candidatus* Pomifula conifitoga sp. nov.

Candidatus Pomifula conifitoga (NL. fem. n. *conifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAISYW01 sp903889795*. The type genome for the species is the GenBank assembly GCA_903863625.1. The GC content of the type genome is 44.86 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Pomifula gen. nov.

Candidatus Pomifula (NL. fem. n. *Pomifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISYW01*. The type species for the genus is *Candidatus* Pomifula

conifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Pontibacillus cosigugo sp. nov.

Candidatus Pontibacillus cosigugo (NL. fem. n. *cosigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacillus sp009858175*. The type genome for the species is the GenBank assembly RS_GCF_009858175.1. The GC content of the type genome is 38.59 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Pontibacter adlubicella sp. nov.

Candidatus Pontibacter adlubicella (NL. fem. n. *adlubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacter sp014306105*. The type genome for the species is the GenBank assembly RS_GCF_014306105.1. The GC content of the type genome is 45.38 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Pontibacter artolivita sp. nov.

Candidatus Pontibacter artolivita (NL. fem. n. *artolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacter sp010119545*. The type genome for the species is the GenBank assembly RS_GCF_010119545.1. The GC content of the type genome is 45.58 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Pontibacter demagifica sp. nov.

Candidatus Pontibacter demagifica (NL. fem. n. *demagifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacter sp003284895*. The type genome for the species is the

GenBank assembly RS_GCF_003284895.1. The GC content of the type genome is 45.52 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Pontibacter domabimonia sp. nov.

Candidatus Pontibacter domabimonia (NL. fem. n. *domabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacter sp010015475*. The type genome for the species is the GenBank assembly RS_GCF_010015475.1. The GC content of the type genome is 47.7 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Pontibacter exsatentia sp. nov.

Candidatus Pontibacter exsatentia (NL. fem. n. *exsatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacter sp006385705*. The type genome for the species is the GenBank assembly RS_GCF_006385705.1. The GC content of the type genome is 52.57 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Pontibacter homicitica sp. nov.

Candidatus Pontibacter homicitica (NL. fem. n. *homicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacter sp014297265*. The type genome for the species is the GenBank assembly RS_GCF_014297265.1. The GC content of the type genome is 43.93 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Pontibacter obnoxatica sp. nov.

Candidatus Pontibacter obnoxatica (NL. fem. n. *obnoxatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacter sp014212495*. The type genome for the species is the GenBank assembly RS_GCF_014212495.1. The GC content of the type genome is 47.81 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Pontibacter obrigitas sp. nov.

Candidatus Pontibacter obrigitas (NL. fem. n. *obrigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacter sp001907195*. The type genome for the species is the GenBank assembly RS_GCF_001907195.1. The GC content of the type genome is 53.56 % and the genome length is 4.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea water".

Description of *Candidatus* Pontibacter vepalitia sp. nov.

Candidatus Pontibacter vepalitia (NL. fem. n. *vepalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontibacter sp010686685*. The type genome for the species is the GenBank assembly RS_GCF_010686685.1. The GC content of the type genome is 46.06 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Ponticaulis cacalitura sp. nov.

Candidatus Ponticaulis cacalitura (NL. fem. n. *cacalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ponticaulis sp002173095*. The type genome for the species is the GenBank assembly GCA_002691215.1. The GC content of the type genome is 54.75 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Ponticaulis cosigousia sp. nov.

Candidatus Ponticaulis cosigousia (NL. fem. n. *cosigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ponticaulis sp002723155*. The type genome for the species is the GenBank assembly GCA_002687635.1. The GC content of the type genome is 54.81 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Ponticaulis dicibago sp. nov.

Candidatus Ponticaulis dicibago (NL. fem. n. *dicibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ponticaulis sp002699325*. The type genome for the species is the GenBank assembly GCA_002699325.1. The GC content of the type genome is 55.61 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Ponticaulis hexagigena sp. nov.

Candidatus Ponticaulis hexagigena (NL. fem. n. *hexagigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ponticaulis sp002692725*. The type genome for the species is the GenBank assembly GCA_002692725.1. The GC content of the type genome is 55.2 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Ponticaulis holisastra sp. nov.

Candidatus Ponticaulis holisastra (NL. fem. n. *holisastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ponticaulis sp002338565*. The type genome for the species is the GenBank assembly GCA_002338565.1. The GC content of the type genome is 55.27 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Ponticaulis siligitio sp. nov.

Candidatus Ponticaulis siligitio (NL. fem. n. *siligitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ponticaulis sp002701295*. The type genome for the species is the GenBank assembly GCA_002701295.1. The GC content of the type genome is 54.4 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Pontiella alecticula sp. nov.

Candidatus Pontiella alecticula (NL. fem. n. *alecticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontiella sp003230915*. The type genome for the species is the GenBank assembly GCA_003230915.1. The GC content of the type genome is 52.57 %

and the genome length is 1.9 Mbp.

Description of *Candidatus* Pontiella mahelitrix sp. nov.

Candidatus Pontiella mahelitrix (NL. fem. n. *mahelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontiella sp004299845*. The type genome for the species is the GenBank assembly RS_GCF_004299845.1. The GC content of the type genome is 52.0 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Pontiella nosocousia sp. nov.

Candidatus Pontiella nosocousia (NL. fem. n. *nosocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontiella sp013042165*. The type genome for the species is the GenBank assembly GCA_013042165.1. The GC content of the type genome is 55.77 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Pontiella obfenetta sp. nov.

Candidatus Pontiella obfenetta (NL. fem. n. *obfenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontiella sp003246265*. The type genome for the species is the GenBank assembly GCA_003246265.1. The GC content of the type genome is 63.43 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Pontiella omnigilega sp. nov.

Candidatus Pontiella omnigilega (NL. fem. n. *omnigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontiella sp003252225*. The type genome for the species is the GenBank assembly GCA_003252225.1. The GC content of the type genome is 53.63 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Pontiella sicunibra sp. nov.

Candidatus Pontiella sicunibra (NL. fem. n. *sicunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontiella sp012729265*. The type genome for the species is the GenBank assembly GCA_012729265.1. The GC content of the type genome is 53.1 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Pontimonas depubatica sp. nov.

Candidatus Pontimonas depubatica (NL. fem. n. *depubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontimonas sp009704535*. The type genome for the species is the GenBank assembly GCA_009704535.1. The GC content of the type genome is 58.9 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Pontimonas impigetta sp. nov.

Candidatus Pontimonas impigetta (NL. fem. n. *impigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontimonas sp007117135*. The type genome for the species is the GenBank assembly GCA_007117135.1. The GC content of the type genome is 56.67 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Pontimonas rubigilega sp. nov.

Candidatus Pontimonas rubigilega (NL. fem. n. *rubigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontimonas sp002172585*. The type genome for the species is the GenBank assembly GCA_002172585.1. The GC content of the type genome is 59.43 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Pontimonas rurigitura sp. nov.

Candidatus Pontimonas rurigitura (NL. fem. n. *rurigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontimonas sp001438965*. The type genome for the species is the GenBank assembly GCA_001438965.1. The GC content of the type genome is 55.73 % and the genome length is 1.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water; brackish water collected from the surface of the Baltic Sea".

Description of *Candidatus* Pontimonas sacomitudo sp. nov.

Candidatus Pontimonas sacomitudo (NL. fem. n. *sacomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontimonas sp000754445*. The type genome for the species is the GenBank assembly GCA_002293055.1. The GC content of the type genome is 59.17 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Pontixanthobacter sacomedo sp. nov.

Candidatus Pontixanthobacter sacomedo (NL. fem. n. *sacomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontixanthobacter sp012972675*. The type genome for the species is the GenBank assembly RS_GCF_012972675.1. The GC content of the type genome is 55.49 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Pontixanthobacter visifousia sp. nov.

Candidatus Pontixanthobacter visifousia (NL. fem. n. *visifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pontixanthobacter sp003344885*. The type genome for the species is the GenBank assembly RS_GCF_003344885.1. The GC content of the type genome is 57.87 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Porisulfidus exsorifica sp. nov.

Candidatus Porisulfidus exsorifica (NL. fem. n. *exsorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Porisulfidus sp002631715*. The type genome for the species is the GenBank assembly GCA_002631715.1. The GC content of the type genome is 59.48 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Porphyromonas ammatibra sp. nov.

Candidatus Porphyromonas ammatibra (NL. fem. n. *ammatibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp000768875*. The type genome for the species is the GenBank assembly RS_GCF_000768875.1. The GC content of the type genome is 53.86 % and the genome length is 1.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dog mouth".

Description of *Candidatus* Porphyromonas attoritura sp. nov.

Candidatus Porphyromonas attoritura (NL. fem. n. *attoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp001552775*. The type genome for the species is the GenBank assembly RS_GCF_001552775.1. The GC content of the type genome is 42.86 % and the genome length is 1.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Porphyromonas bacifax sp. nov.

Candidatus Porphyromonas bacifax (NL. fem. n. *bacifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp900538385*. The type genome for the species is the GenBank assembly GCA_900761795.1. The GC content of the type genome is 52.23 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Porphyromonas butubugo sp. nov.

Candidatus Porphyromonas butubugo (NL. fem. n. *butubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp900539155*. The type genome for the species is the GenBank assembly GCA_900759085.1. The GC content of the type genome is 53.63 %

and the genome length is 1.88 Mbp.

Description of *Candidatus* Porphyromonas deculousia sp. nov.

Candidatus Porphyromonas deculousia (NL. fem. n. *deculousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp900548415*. The type genome for the species is the GenBank assembly GCA_900548415.1. The GC content of the type genome is 54.62 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Porphyromonas defasibra sp. nov.

Candidatus Porphyromonas defasibra (NL. fem. n. *defasibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp000467855*. The type genome for the species is the GenBank assembly RS_GCF_000467855.2. The GC content of the type genome is 55.68 % and the genome length is 2.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dental plaque biofilm of the third molar".

Description of *Candidatus* Porphyromonas intesiforma sp. nov.

Candidatus Porphyromonas intesiforma (NL. fem. n. *intesiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp003640335*. The type genome for the species is the GenBank assembly GCA_003640335.1. The GC content of the type genome is 42.75 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Porphyromonas megalimonas sp. nov.

Candidatus Porphyromonas megalimonas (NL. fem. n. *megalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp000769075*. The type genome for the species is the GenBank assembly RS_GCF_000768935.1. The GC content of the type genome is 49.69 % and the genome length is 2.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dog mouth".

Description of *Candidatus* Porphyromonas senacax sp. nov.

Candidatus Porphyromonas senacax (NL. fem. n. *senacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp900546675*. The type genome for the species is the GenBank assembly GCA_900546675.1. The GC content of the type genome is 52.72 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Porphyromonas vitifedo sp. nov.

Candidatus Porphyromonas vitifedo (NL. fem. n. *vitifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas sp900539765*. The type genome for the species is the GenBank assembly GCA_900759295.1. The GC content of the type genome is 52.99 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Porphyromonas acrifax sp. nov.

Candidatus Porphyromonas acrifax (NL. fem. n. *acrifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas_A sp900541275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900541275.1. The GC content of the type genome is 56.35 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Porphyromonas capilitica sp. nov.

Candidatus Porphyromonas capilitica (NL. fem. n. *capilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas_A sp900554935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900554935.1. The GC content of the type genome is 48.01 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Porphyromonas cohuriforma sp. nov.

Candidatus Porphyromonas cohuriforma (NL. fem. n. *cohuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas_A sp001808555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001808555.1. The GC content of the type genome is 55.56 % and the genome length is 2.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "bone misc".

Description of *Candidatus* Porphyromonas delubugo sp. nov.

Candidatus Porphyromonas delubugo (NL. fem. n. *delubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas_A sp004555765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004555765.1. The GC content of the type genome is 53.69 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Porphyromonas monacitia sp. nov.

Candidatus Porphyromonas monacitia (NL. fem. n. *monacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porphyromonas_A sp900120395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900120395.1. The GC content of the type genome is 51.86 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Porticoccus accapax sp. nov.

Candidatus Porticoccus accapax (NL. fem. n. *accapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp002733125*. The type genome for the species is the GenBank assembly GCA_002733125.1. The GC content of the type genome is 53.44 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Porticoccus anaplilega sp. nov.

Candidatus Porticoccus anaplilega (NL. fem. n. *anaplilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp002390525*. The type genome for the species is the GenBank assembly GCA_002390525.1. The GC content of the type genome is 36.59 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Porticoccus arcititura sp. nov.

Candidatus Porticoccus arcititura (NL. fem. n. *arcititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp006227015*. The type genome for the species is the GenBank assembly GCA_006227015.1. The GC content of the type genome is 53.24 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Porticoccus catocitura sp. nov.

Candidatus Porticoccus catocitura (NL. fem. n. *catocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp006226995*. The type genome for the species is the GenBank assembly GCA_006226995.1. The GC content of the type genome is 52.64 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Porticoccus expurimonas sp. nov.

Candidatus Porticoccus expurimonas (NL. fem. n. *expurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp011049795*. The type genome for the species is the GenBank assembly GCA_011049795.1. The GC content of the type genome is 47.02 %

and the genome length is 3.19 Mbp.

Description of *Candidatus* Porticoccus intecicella sp. nov.

Candidatus Porticoccus intecicella (NL. fem. n. *intecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp002341315*. The type genome for the species is the GenBank assembly GCA_002341315.1. The GC content of the type genome is 53.51 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Porticoccus metucisca sp. nov.

Candidatus Porticoccus metucisca (NL. fem. n. *metucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp002707685*. The type genome for the species is the GenBank assembly GCA_002325295.1. The GC content of the type genome is 52.77 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Porticoccus solivilenta sp. nov.

Candidatus Porticoccus solivilenta (NL. fem. n. *solivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp002367235*. The type genome for the species is the GenBank assembly GCA_002367235.1. The GC content of the type genome is 48.36 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Porticoccus triclatica sp. nov.

Candidatus Porticoccus triclatica (NL. fem. n. *triclatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp002685455*. The type genome for the species is the GenBank assembly GCA_002685455.1. The GC content of the type genome is 34.63 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Porticoccus vitabitia sp. nov.

Candidatus Porticoccus vitabitia (NL. fem. n. *vitabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp002746985*. The type genome for the species is the GenBank assembly GCA_002746985.1. The GC content of the type genome is 44.46 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Porticoccus xeramitica sp. nov.

Candidatus Porticoccus xeramitica (NL. fem. n. *xeramitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Porticoccus sp002390285*. The type genome for the species is the GenBank assembly GCA_002389205.1. The GC content of the type genome is 47.59 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Poseidonibacter abrepousia sp. nov.

Candidatus Poseidonibacter abrepousia (NL. fem. n. *abrepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Poseidonibacter sp002685075*. The type genome for the species is the GenBank assembly GCA_002685075.1. The GC content of the type genome is 27.4 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Poseidonibacter anxifugo sp. nov.

Candidatus Poseidonibacter anxifugo (NL. fem. n. *anxifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Poseidonibacter sp002470185*. The type genome for the species is the GenBank assembly GCA_002470185.1. The GC content of the type genome is 28.19 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Poseidonibacter inrecicella sp. nov.

Candidatus Poseidonibacter inrecicella (NL. fem. n. *inrecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Poseidonibacter sp003667345*. The type genome for the species is the GenBank assembly RS_GCF_003667345.1. The GC content of the type genome is 27.07 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Poseidonibacter malificella sp. nov.

Candidatus Poseidonibacter malificella (NL. fem. n. *malificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Poseidonibacter sp009208075*. The type genome for the species is the GenBank assembly RS_GCF_009208095.1. The GC content of the type genome is 27.57 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Practella adtacisca sp. nov.

Candidatus Practella adtacisca (NL. fem. n. *adtacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MM1 sp001648895*. The type genome for the species is the GenBank assembly RS_GCF_001648895.1. The GC content of the type genome is 46.78 % and the genome length is 2.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "grassland soil".

Description of *Candidatus* Practella gen. nov.

Candidatus Practella (NL. fem. n. *Practella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MM1*. The type species for the genus is *Candidatus* Practella adtacisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Practia alluventia sp. nov.

Candidatus Practia alluventia (NL. fem. n. *alluventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-48-17 sp001818775*. The type genome for the species is

the GenBank assembly GCA_001818775.1. The GC content of the type genome is 48.11 % and the genome length is 1.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Practia gen. nov.

Candidatus Practia (NL. fem. n. *Practia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-48-17*. The type species for the genus is *Candidatus* Practia alluventia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-48-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicubariaceae.

Description of *Candidatus* Practida dilogisca sp. nov.

Candidatus Practida dilogisca (NL. fem. n. *dilogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICB01 sp009691555*. The type genome for the species is the GenBank assembly GCA_009691555.1. The GC content of the type genome is 46.49 % and the genome length is 0.51 Mbp.

Description of *Candidatus* Practida gen. nov.

Candidatus Practida (NL. fem. n. *Practida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICB01*. The type species for the genus is *Candidatus* Practida dilogisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BJGX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Necopellaceae.

Description of *Candidatus* Practida foricousia sp. nov.

Candidatus Practida foricousia (NL. fem. n. *foricousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICB01 sp009691435*. The type genome for the species is the GenBank assembly GCA_009691435.1. The GC content of the type genome is 42.94 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Practosa atricisca sp. nov.

Candidatus Practosa atricisca (NL. fem. n. *atricisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJS01 sp009777165*. The type genome for the species is the GenBank assembly GCA_009777165.1. The GC content of the type genome is 60.9 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Practosa gen. nov.

Candidatus Practosa (NL. fem. n. *Practosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRJS01*. The type species for the genus is *Candidatus* Practosa atricisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Practosa estoviforma sp. nov.

Candidatus Practosa estoviforma (NL. fem. n. *estoviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRJS01 sp009778475*. The type genome for the species is the GenBank assembly GCA_009778475.1. The GC content of the type genome is 62.97 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Practula ancepitudo sp. nov.

Candidatus Practula ancepitudo (NL. fem. n. *ancepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1191 sp013289615*. The type genome for the species is the GenBank assembly GCA_013289615.1. The GC content of the type genome is 64.54 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Practula gen. nov.

Candidatus Practula (NL. fem. n. *Practula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1191*. The type species for the genus is *Candidatus* Practula ancepitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Practula cibicivita sp. nov.

Candidatus Practula cibicivita (NL. fem. n. *cibicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1191 sp003162555*. The type genome for the species is the GenBank assembly GCA_003162555.1. The GC content of the type genome is 65.33 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Practula resalibula sp. nov.

Candidatus Practula resalibula (NL. fem. n. *resalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1191 sp003132025*. The type genome for the species is the GenBank assembly GCA_003132025.1. The GC content of the type genome is 64.2 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Pradoshia extunicula sp. nov.

Candidatus Pradoshia extunicula (NL. fem. n. *extunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pradoshia sp001183965*. The type genome for the species is the GenBank assembly RS_GCF_001183965.1. The GC content of the type genome is 42.9

% and the genome length is 4.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Pradoshia fecunitica sp. nov.

Candidatus Pradoshia fecunitica (NL. fem. n. *fecunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pradoshia sp001685035*. The type genome for the species is the GenBank assembly RS_GCF_008087365.1. The GC content of the type genome is 37.58 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Pragmana indupentia sp. nov.

Candidatus Pragmana indupentia (NL. fem. n. *indupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSYU01 sp011367365*. The type genome for the species is the GenBank assembly GCA_011367365.1. The GC content of the type genome is 59.5 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Pragmana gen. nov.

Candidatus Pragmana (NL. fem. n. *Pragmana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSYU01*. The type species for the genus is *Candidatus* Pragmana indupentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pragmaria inmenicula sp. nov.

Candidatus Pragmaria inmenicula (NL. fem. n. *inmenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGF01 sp007376445*. The type genome for the species is the GenBank assembly GCA_007376445.1. The GC content of the type genome is 46.38 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Pragmaria gen. nov.

Candidatus Pragmaria (NL. fem. n. *Pragmaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGF01*. The type species for the genus is *Candidatus* Pragmaria inmenicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WO2-44-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinacellaceae.

Description of *Candidatus* Pragmella epigrisca sp. nov.

Candidatus Pragmella epigrisca (NL. fem. n. *epigrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHC01 sp013152085*. The type genome for the species is the GenBank assembly GCA_013152085.1. The GC content of the type genome is 43.57 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Pragmella gen. nov.

Candidatus Pragmella (NL. fem. n. *Pragmella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHC01*. The type species for the genus is *Candidatus* Pragmella epigrisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VadinHA17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categariaceae.

Description of *Candidatus* Pragmida lugubitura sp. nov.

Candidatus Pragmida lugubitura (NL. fem. n. *lugubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-368 sp003246505*. The type genome for the species is the GenBank assembly GCA_003246505.1. The GC content of the type genome is 58.37 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Pragmida gen. nov.

Candidatus Pragmida (NL. fem. n. *Pragmida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-368*. The type species for the genus is *Candidatus* Pragmida lugubitura .

According to GTDB R06-RS202, this genus belongs to the family _B.

Description of *Candidatus* Pragmosa adtilicella sp. nov.

Candidatus Pragmosa adtilicella (NL. fem. n. *adtilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTIW01 sp011333945*. The type genome for the species is the GenBank assembly GCA_011333945.1. The GC content of the type genome is 51.46 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Pragmosa gen. nov.

Candidatus Pragmosa (NL. fem. n. *Pragmosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTIW01*. The type species for the genus is *Candidatus* Pragmosa adtilicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicellaceae.

Description of *Candidatus* Prevotella ablepugo sp. nov.

Candidatus Prevotella ablepugo (NL. fem. n. *ablepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902790625*. The type genome for the species is the GenBank assembly GCA_902790625.1. The GC content of the type genome is 55.19 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Prevotella acculousia sp. nov.

Candidatus Prevotella acculousia (NL. fem. n. *acculousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900548535*. The type genome for the species is the GenBank assembly GCA_900548535.1. The GC content of the type genome is 46.59 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Prevotella adaggetta sp. nov.

Candidatus Prevotella adaggetta (NL. fem. n. *adaggetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900772835*. The type genome for the species is the GenBank assembly GCA_900772835.1. The GC content of the type genome is 51.83 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Prevotella adcubitudo sp. nov.

Candidatus Prevotella adcubitudo (NL. fem. n. *adcubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900550365*. The type genome for the species is the GenBank assembly GCA_900550365.1. The GC content of the type genome is 49.76 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Prevotella adlapitrix sp. nov.

Candidatus Prevotella adlapitrix (NL. fem. n. *adlapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002317355*. The type genome for the species is the GenBank assembly GCA_002317355.1. The GC content of the type genome is 43.16 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Prevotella admuratica sp. nov.

Candidatus Prevotella admuratica (NL. fem. n. *admuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902778265*. The type genome for the species is the GenBank assembly GCA_902778265.1. The GC content of the type genome is 43.28 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Prevotella adnicilenta sp. nov.

Candidatus Prevotella adnicilenta (NL. fem. n. *adnicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902789415*. The type genome for the species is the GenBank assembly GCA_902789415.1. The GC content of the type genome is 47.39 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Prevotella adnubivita sp. nov.

Candidatus Prevotella adnubivita (NL. fem. n. *adnubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002363695*. The type genome for the species is the GenBank assembly GCA_002363695.1. The GC content of the type genome is 53.39 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Prevotella adpagitura sp. nov.

Candidatus Prevotella adpagitura (NL. fem. n. *adpagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp013166605*. The type genome for the species is the GenBank assembly RS_GCF_013166605.1. The GC content of the type genome is 44.4 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Prevotella adrecago sp. nov.

Candidatus Prevotella adrecago (NL. fem. n. *adrecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000619825*. The type genome for the species is the GenBank assembly RS_GCF_000619825.1. The GC content of the type genome is 47.75

% and the genome length is 3.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "cow rumen".

Description of *Candidatus* Prevotella adsicessa sp. nov.

Candidatus Prevotella adsicessa (NL. fem. n. *adsicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002316005*. The type genome for the species is the GenBank assembly GCA_002316005.1. The GC content of the type genome is 45.55 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Prevotella affamifica sp. nov.

Candidatus Prevotella affamifica (NL. fem. n. *affamifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902772585*. The type genome for the species is the GenBank assembly GCA_902772585.1. The GC content of the type genome is 48.8 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Prevotella affunifica sp. nov.

Candidatus Prevotella affunifica (NL. fem. n. *affunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902800495*. The type genome for the species is the GenBank assembly GCA_902800495.1. The GC content of the type genome is 52.88 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Prevotella aggubibula sp. nov.

Candidatus Prevotella aggubibula (NL. fem. n. *aggubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902803475*. The type genome for the species is the GenBank assembly GCA_902803475.1. The GC content of the type genome is 46.2 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Prevotella agnomago sp. nov.

Candidatus Prevotella agnomago (NL. fem. n. *agnomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002372235*. The type genome for the species is the GenBank assembly GCA_002372235.1. The GC content of the type genome is 51.89 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Prevotella alcibiforma sp. nov.

Candidatus Prevotella alcibiforma (NL. fem. n. *alcibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002353525*. The type genome for the species is the GenBank assembly GCA_002353525.1. The GC content of the type genome is 51.14 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Prevotella algifatio sp. nov.

Candidatus Prevotella algifatio (NL. fem. n. *algifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900556825*. The type genome for the species is the GenBank assembly GCA_900556825.1. The GC content of the type genome is 46.09 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Prevotella allacilega sp. nov.

Candidatus Prevotella allacilega (NL. fem. n. *allacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902770845*. The type genome for the species is the GenBank assembly GCA_902770845.1. The GC content of the type genome is 53.41 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Prevotella almucax sp. nov.

Candidatus Prevotella almucax (NL. fem. n. *almucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002361535*. The type genome for the species is the GenBank assembly GCA_002361535.1. The GC content of the type genome is 48.71 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Prevotella almucitia sp. nov.

Candidatus Prevotella almucitia (NL. fem. n. *almucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000163055*. The type genome for the species is the GenBank assembly RS_GCF_000163055.2. The GC content of the type genome is 37.5 % and the genome length is 2.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Prevotella alsulibra sp. nov.

Candidatus Prevotella alsulibra (NL. fem. n. *alsulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp003043945*. The type genome for the species is the GenBank assembly RS_GCF_003043945.1. The GC content of the type genome is 49.47 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Prevotella ambidetta sp. nov.

Candidatus Prevotella ambidetta (NL. fem. n. *ambidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp001552765*. The type genome for the species is the GenBank assembly RS_GCF_001552765.1. The GC content of the type genome is 45.82 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Prevotella ammatetta sp. nov.

Candidatus Prevotella ammatetta (NL. fem. n. *ammatetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp002251435*. The type genome for the species is the GenBank assembly RS_GCF_002251435.1. The GC content of the type genome is 45.62 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Prevotella anteciforma sp. nov.

Candidatus Prevotella anteciforma (NL. fem. n. *anteciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902803455*. The type genome for the species is the GenBank assembly GCA_902803455.1. The GC content of the type genome is 49.37 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Prevotella antepifica sp. nov.

Candidatus Prevotella antepifica (NL. fem. n. *antepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002392645*. The type genome for the species is the GenBank assembly GCA_002392645.1. The GC content of the type genome is 47.22 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Prevotella arcatitica sp. nov.

Candidatus Prevotella arcatitica (NL. fem. n. *arcatitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002379425*. The type genome for the species is the GenBank assembly GCA_002379425.1. The GC content of the type genome is 52.13 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Prevotella argimessa sp. nov.

Candidatus Prevotella argimessa (NL. fem. n. *argimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902774795*. The type genome for the species is the GenBank assembly GCA_902774795.1. The GC content of the type genome is 46.48 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Prevotella ascisago sp. nov.

Candidatus Prevotella ascisago (NL. fem. n. *ascisago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900771975*. The type genome for the species is the GenBank assembly GCA_900771975.1. The GC content of the type genome is 44.45 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Prevotella baditugo sp. nov.

Candidatus Prevotella baditugo (NL. fem. n. *baditugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp004554665*. The type genome for the species is the GenBank assembly GCA_004554665.1. The GC content of the type genome is 53.59 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Prevotella benivatio sp. nov.

Candidatus Prevotella benivatio (NL. fem. n. *benivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900556395*. The type genome for the species is the GenBank assembly GCA_900556395.1. The GC content of the type genome is 45.34 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Prevotella betacitio sp. nov.

Candidatus Prevotella betacitio (NL. fem. n. *betacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900318555*. The type genome for the species is the GenBank assembly GCA_900317115.1. The GC content of the type genome is 49.68 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Prevotella bicapatica sp. nov.

Candidatus Prevotella bicapatica (NL. fem. n. *bicapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900290275*. The type genome for the species is the GenBank assembly GCA_900542775.1. The GC content of the type genome is 44.68 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Prevotella bicapetta sp. nov.

Candidatus Prevotella bicapetta (NL. fem. n. *bicapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900318815*. The type genome for the species is the GenBank assembly GCA_902780275.1. The GC content of the type genome is 52.31 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Prevotella bigaricella sp. nov.

Candidatus Prevotella bigaricella (NL. fem. n. *bigaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900554695*. The type genome for the species is the GenBank assembly GCA_900752585.1. The GC content of the type genome is 46.92 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Prevotella bipinibra sp. nov.

Candidatus Prevotella bipinibra (NL. fem. n. *bipinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900318685*. The type genome for the species is the GenBank assembly GCA_902801505.1. The GC content of the type genome is 53.25 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Prevotella bisacedo sp. nov.

Candidatus Prevotella bisacedo (NL. fem. n. *bisacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp902801375*. The type genome for the species is the GenBank assembly GCA_902761765.1. The GC content of the type genome is 51.8 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Prevotella bisulago sp. nov.

Candidatus Prevotella bisulago (NL. fem. n. *bisulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900550035*. The type genome for the species is the GenBank assembly GCA_900550035.1. The GC content of the type genome is 47.39 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Prevotella bonificula sp. nov.

Candidatus Prevotella bonificula (NL. fem. n. *bonificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000424185*. The type genome for the species is the GenBank assembly RS_GCF_000424185.1. The GC content of the type genome is 51.48 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Prevotella bovicilenta sp. nov.

Candidatus Prevotella bovicilenta (NL. fem. n. *bovicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900554835*. The type genome for the species is the GenBank assembly GCA_900554835.1. The GC content of the type genome is 42.77 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Prevotella bucelatio sp. nov.

Candidatus Prevotella bucelatio (NL. fem. n. *bucelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002353225*. The type genome for the species is the GenBank assembly GCA_002353445.1. The GC content of the type genome is 46.89 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Prevotella butubedo sp. nov.

Candidatus Prevotella butubedo (NL. fem. n. *butubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900317405*. The type genome for the species is the GenBank assembly GCA_902758595.1. The GC content of the type genome is 47.79 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Prevotella camilicula sp. nov.

Candidatus Prevotella camilicula (NL. fem. n. *camilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316285*. The type genome for the species is the GenBank assembly GCA_900316285.1. The GC content of the type genome is 52.44 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Prevotella canacentia sp. nov.

Candidatus Prevotella canacentia (NL. fem. n. *canacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900770395*. The type genome for the species is the GenBank assembly GCA_900770395.1. The GC content of the type genome is 47.78 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Prevotella capucibra sp. nov.

Candidatus Prevotella capucibra (NL. fem. n. *capucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002440225*. The type genome for the species is the GenBank assembly GCA_002440225.1. The GC content of the type genome is 46.63 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Prevotella caravastra sp. nov.

Candidatus Prevotella caravastra (NL. fem. n. *caravastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902761605*. The type genome for the species is the GenBank assembly GCA_902761605.1. The GC content of the type genome is 46.57 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Prevotella carucatica sp. nov.

Candidatus Prevotella carucatica (NL. fem. n. *carucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902780025*. The type genome for the species is the GenBank assembly GCA_902780025.1. The GC content of the type genome is 52.76 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Prevotella carunousia sp. nov.

Candidatus Prevotella carunousia (NL. fem. n. *carunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002314055*. The type genome for the species is the GenBank assembly GCA_003517365.1. The GC content of the type genome is 45.62 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Prevotella casigitia sp. nov.

Candidatus Prevotella casigitia (NL. fem. n. *casigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902798425*. The type genome for the species is the GenBank assembly GCA_902798425.1. The GC content of the type genome is 48.75 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Prevotella catagimonia sp. nov.

Candidatus Prevotella catagimonia (NL. fem. n. *catagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp902800185*. The type genome for the species is the GenBank assembly GCA_902800185.1. The GC content of the type genome is 50.29 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Prevotella catapilega sp. nov.

Candidatus Prevotella catapilega (NL. fem. n. *catapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900318915*. The type genome for the species is the GenBank assembly GCA_902779555.1. The GC content of the type genome is 55.22 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Prevotella catobiforma sp. nov.

Candidatus Prevotella catobiforma (NL. fem. n. *catobiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900762125*. The type genome for the species is the GenBank assembly GCA_900762125.1. The GC content of the type genome is 55.99 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Prevotella catobimonas sp. nov.

Candidatus Prevotella catobimonas (NL. fem. n. *catobimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900313215*. The type genome for the species is the GenBank assembly GCA_000431915.1. The GC content of the type genome is 46.82 % and the genome length is 2.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Prevotella celamitoga sp. nov.

Candidatus Prevotella celamitoga (NL. fem. n. *celamitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315835*. The type genome for the species is the GenBank assembly GCA_902756465.1. The GC content of the type genome is 54.79 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Prevotella cementitura sp. nov.

Candidatus Prevotella cementitura (NL. fem. n. *cementitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902799765*. The type genome for the species is the GenBank assembly GCA_902764205.1. The GC content of the type genome is 48.15 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Prevotella cenacatio sp. nov.

Candidatus Prevotella cenacatio (NL. fem. n. *cenacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900552965*. The type genome for the species is the GenBank assembly GCA_900552965.1. The GC content of the type genome is 48.75 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Prevotella cenodousia sp. nov.

Candidatus Prevotella cenodousia (NL. fem. n. *cenodousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902769805*. The type genome for the species is the GenBank assembly GCA_902769025.1. The GC content of the type genome is 46.75 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Prevotella cenotitio sp. nov.

Candidatus Prevotella cenotitio (NL. fem. n. *cenotitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002449535*. The type genome for the species is the GenBank assembly GCA_002449535.1. The GC content of the type genome is 44.7 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Prevotella cerebicula sp. nov.

Candidatus Prevotella cerebicula (NL. fem. n. *cerebicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902783165*. The type genome for the species is the GenBank assembly GCA_902783165.1. The GC content of the type genome is 45.22 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Prevotella cerimax sp. nov.

Candidatus Prevotella cerimax (NL. fem. n. *cerimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902799455*. The type genome for the species is the GenBank assembly GCA_902799455.1. The GC content of the type genome is 45.08 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Prevotella cerofilenta sp. nov.

Candidatus Prevotella cerofilenta (NL. fem. n. *cerofilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902776665*. The type genome for the species is the GenBank assembly GCA_902775015.1. The GC content of the type genome is 50.81 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Prevotella ceromisca sp. nov.

Candidatus Prevotella ceromisca (NL. fem. n. *ceromisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902786565*. The type genome for the species is the GenBank assembly GCA_902786565.1. The GC content of the type genome is 55.74 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Prevotella cibarimonas sp. nov.

Candidatus Prevotella cibarimonas (NL. fem. n. *cibarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp902770635*. The type genome for the species is the GenBank assembly GCA_902770635.1. The GC content of the type genome is 48.13 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Prevotella cicaritica sp. nov.

Candidatus Prevotella cicaritica (NL. fem. n. *cicaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315095*. The type genome for the species is the GenBank assembly GCA_902771415.1. The GC content of the type genome is 48.07 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Prevotella ciciligena sp. nov.

Candidatus Prevotella ciciligena (NL. fem. n. *ciciligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002317385*. The type genome for the species is the GenBank assembly GCA_002317385.1. The GC content of the type genome is 53.2 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Prevotella ciminiforma sp. nov.

Candidatus Prevotella ciminiforma (NL. fem. n. *ciminiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002251295*. The type genome for the species is the GenBank assembly GCA_902756905.1. The GC content of the type genome is 46.15 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Prevotella cinipax sp. nov.

Candidatus Prevotella cinipax (NL. fem. n. *cinipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp004558865*. The type genome for the species is the GenBank assembly GCA_004558865.1. The GC content of the type genome is 56.3 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Prevotella cisoribula sp. nov.

Candidatus Prevotella cisoribula (NL. fem. n. *cisoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002353585*. The type genome for the species is the GenBank assembly GCA_902768195.1. The GC content of the type genome is 47.01 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Prevotella citipago sp. nov.

Candidatus Prevotella citipago (NL. fem. n. *citipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902762565*. The type genome for the species is the GenBank assembly GCA_902762565.1. The GC content of the type genome is 47.51 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Prevotella cocibivita sp. nov.

Candidatus Prevotella cocibivita (NL. fem. n. *cocibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002372575*. The type genome for the species is the GenBank assembly GCA_902781295.1. The GC content of the type genome is 52.69 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Prevotella cohonugo sp. nov.

Candidatus Prevotella cohonugo (NL. fem. n. *cohonugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902797505*. The type genome for the species is the GenBank assembly GCA_902797505.1. The GC content of the type genome is 46.94 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Prevotella cohoritura sp. nov.

Candidatus Prevotella cohoritura (NL. fem. n. *cohoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900769275*. The type genome for the species is the GenBank assembly GCA_900769275.1. The GC content of the type genome is 49.31 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Prevotella colipentia sp. nov.

Candidatus Prevotella colipentia (NL. fem. n. *colipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314985*. The type genome for the species is the GenBank assembly GCA_900316765.1. The GC content of the type genome is 48.48 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Prevotella conabastra sp. nov.

Candidatus Prevotella conabastra (NL. fem. n. *conabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900100635*. The type genome for the species is the GenBank assembly GCA_902790305.1. The GC content of the type genome is 49.01 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Prevotella conifentia sp. nov.

Candidatus Prevotella conifentia (NL. fem. n. *conifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902774925*. The type genome for the species is the GenBank assembly GCA_902774925.1. The GC content of the type genome is 49.66 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Prevotella corocivita sp. nov.

Candidatus Prevotella corocivita (NL. fem. n. *corocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp900314935*. The type genome for the species is the GenBank assembly GCA_900313325.1. The GC content of the type genome is 48.5 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Prevotella cosidibula sp. nov.

Candidatus Prevotella cosidibula (NL. fem. n. *cosidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900544825*. The type genome for the species is the GenBank assembly GCA_900544825.1. The GC content of the type genome is 46.48 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Prevotella cosiditio sp. nov.

Candidatus Prevotella cosiditio (NL. fem. n. *cosiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902767775*. The type genome for the species is the GenBank assembly GCA_902780705.1. The GC content of the type genome is 50.05 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Prevotella coturatica sp. nov.

Candidatus Prevotella coturatica (NL. fem. n. *coturatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902785945*. The type genome for the species is the GenBank assembly GCA_902785945.1. The GC content of the type genome is 49.08 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Prevotella coturugo sp. nov.

Candidatus Prevotella coturugo (NL. fem. n. *coturugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900543585*. The type genome for the species is the GenBank assembly GCA_900765035.1. The GC content of the type genome is 51.44 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Prevotella culibax sp. nov.

Candidatus Prevotella culibax (NL. fem. n. *culibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp013333285*. The type genome for the species is the GenBank assembly GCA_013333075.2. The GC content of the type genome is 42.07 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Prevotella culigitio sp. nov.

Candidatus Prevotella culigitio (NL. fem. n. *culigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900320445*. The type genome for the species is the GenBank assembly GCA_900320445.1. The GC content of the type genome is 47.2 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Prevotella curotitoga sp. nov.

Candidatus Prevotella curotitoga (NL. fem. n. *curotitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000436695*. The type genome for the species is the GenBank assembly GCA_000436695.1. The GC content of the type genome is 43.69 % and the genome length is 3.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Prevotella daducitura sp. nov.

Candidatus Prevotella daducitura (NL. fem. n. *daducitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900554545*. The type genome for the species is the GenBank assembly GCA_900765385.1. The GC content of the type genome is 50.44 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Prevotella dapifitia sp. nov.

Candidatus Prevotella dapifitia (NL. fem. n. *dapifitia* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902801155*. The type genome for the species is the GenBank assembly GCA_902778865.1. The GC content of the type genome is 43.64 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Prevotella debucax sp. nov.

Candidatus Prevotella debucax (NL. fem. n. *debucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000434975*. The type genome for the species is the GenBank assembly GCA_004562625.1. The GC content of the type genome is 52.59 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Prevotella decacugo sp. nov.

Candidatus Prevotella decacugo (NL. fem. n. *decacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900545525*. The type genome for the species is the GenBank assembly GCA_900545525.1. The GC content of the type genome is 47.87 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Prevotella decapugo sp. nov.

Candidatus Prevotella decapugo (NL. fem. n. *decapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002350805*. The type genome for the species is the GenBank assembly GCA_002350805.1. The GC content of the type genome is 52.7 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Prevotella decunetta sp. nov.

Candidatus Prevotella decunetta (NL. fem. n. *decunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900769055*. The type genome for the species is the GenBank assembly GCA_900769055.1. The GC content of the type genome is 49.85 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Prevotella decunitrix sp. nov.

Candidatus Prevotella decunitrix (NL. fem. n. *decunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902801425*. The type genome for the species is the GenBank assembly GCA_902801425.1. The GC content of the type genome is 43.52 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Prevotella defaliforma sp. nov.

Candidatus Prevotella defaliforma (NL. fem. n. *defaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902800585*. The type genome for the species is the GenBank assembly GCA_902771475.1. The GC content of the type genome is 45.27 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Prevotella defasisca sp. nov.

Candidatus Prevotella defasisca (NL. fem. n. *defasisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902776195*. The type genome for the species is the GenBank assembly GCA_902776195.1. The GC content of the type genome is 47.71 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Prevotella defetugo sp. nov.

Candidatus Prevotella defetugo (NL. fem. n. *defetugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902784755*. The type genome for the species is the GenBank assembly GCA_902772175.1. The GC content of the type genome is 46.82 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Prevotella deforilega sp. nov.

Candidatus Prevotella deforilega (NL. fem. n. *deforilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902799355*. The type genome for the species is the GenBank assembly GCA_902799355.1. The GC content of the type genome is 49.51 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Prevotella defunastra sp. nov.

Candidatus Prevotella defunastra (NL. fem. n. *defunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002490315*. The type genome for the species is the GenBank assembly GCA_002490315.1. The GC content of the type genome is 52.52 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Prevotella dehisitica sp. nov.

Candidatus Prevotella dehisitica (NL. fem. n. *dehisitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002353295*. The type genome for the species is the GenBank assembly GCA_002342425.1. The GC content of the type genome is 45.94 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Prevotella dehonatica sp. nov.

Candidatus Prevotella dehonatica (NL. fem. n. *dehonatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902780635*. The type genome for the species is the GenBank assembly GCA_902780635.1. The GC content of the type genome is 49.99 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Prevotella delebago sp. nov.

Candidatus Prevotella delebago (NL. fem. n. *delebago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900546575*. The type genome for the species is the GenBank assembly GCA_900763605.1. The GC content of the type genome is 49.53 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Prevotella delebicella sp. nov.

Candidatus Prevotella delebicella (NL. fem. n. *delebicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp003447235*. The type genome for the species is the GenBank assembly GCA_900539795.1. The GC content of the type genome is 54.45 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Prevotella delebitica sp. nov.

Candidatus Prevotella delebitica (NL. fem. n. *delebitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900551275*. The type genome for the species is the GenBank assembly GCA_900551275.1. The GC content of the type genome is 44.6 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Prevotella delebitudo sp. nov.

Candidatus Prevotella delebitudo (NL. fem. n. *delebitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900318625*. The type genome for the species is the GenBank assembly GCA_900318625.1. The GC content of the type genome is 53.13 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Prevotella delucicella sp. nov.

Candidatus Prevotella delucicella (NL. fem. n. *delucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp900318855*. The type genome for the species is the GenBank assembly GCA_002353675.1. The GC content of the type genome is 53.38 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Prevotella delucivita sp. nov.

Candidatus Prevotella delucivita (NL. fem. n. *delucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002353975*. The type genome for the species is the GenBank assembly GCA_002353975.1. The GC content of the type genome is 51.0 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Prevotella demagitura sp. nov.

Candidatus Prevotella demagitura (NL. fem. n. *demagitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900557035*. The type genome for the species is the GenBank assembly GCA_900557035.1. The GC content of the type genome is 46.85 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Prevotella demigimonia sp. nov.

Candidatus Prevotella demigimonia (NL. fem. n. *demigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900547085*. The type genome for the species is the GenBank assembly GCA_900547085.1. The GC content of the type genome is 46.24 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Prevotella demigitas sp. nov.

Candidatus Prevotella demigitas (NL. fem. n. *demigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902771785*. The type genome for the species is the GenBank assembly GCA_902771785.1. The GC content of the type genome is 54.54 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Prevotella denavago sp. nov.

Candidatus Prevotella denavago (NL. fem. n. *denavago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000702825*. The type genome for the species is the GenBank assembly RS_GCF_000702825.1. The GC content of the type genome is 47.6 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Prevotella denixitoga sp. nov.

Candidatus Prevotella denixitoga (NL. fem. n. *denixitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900320845*. The type genome for the species is the GenBank assembly GCA_900320845.1. The GC content of the type genome is 49.75 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Prevotella denupilenta sp. nov.

Candidatus Prevotella denupilenta (NL. fem. n. *denupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900540375*. The type genome for the species is the GenBank assembly GCA_900765965.1. The GC content of the type genome is 51.33 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Prevotella deparilenta sp. nov.

Candidatus Prevotella deparilenta (NL. fem. n. *deparilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316985*. The type genome for the species is the GenBank assembly GCA_902775365.1. The GC content of the type genome is 49.03 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Prevotella depicax sp. nov.

Candidatus Prevotella depicax (NL. fem. n. *depicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002394385*. The type genome for the species is the GenBank assembly GCA_002353365.1. The GC content of the type genome is 49.72 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Prevotella derelifica sp. nov.

Candidatus Prevotella derelifica (NL. fem. n. *derelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp004556065*. The type genome for the species is the GenBank assembly GCA_004560865.1. The GC content of the type genome is 52.38 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Prevotella derelousia sp. nov.

Candidatus Prevotella derelousia (NL. fem. n. *derelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900313615*. The type genome for the species is the GenBank assembly GCA_902772255.1. The GC content of the type genome is 48.73 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Prevotella desepentia sp. nov.

Candidatus Prevotella desepentia (NL. fem. n. *desepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900549175*. The type genome for the species is the GenBank assembly GCA_900549175.1. The GC content of the type genome is 51.6 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Prevotella detecisca sp. nov.

Candidatus Prevotella detecisca (NL. fem. n. *detecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp002353825*. The type genome for the species is the GenBank assembly GCA_002353825.1. The GC content of the type genome is 49.22 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Prevotella detenetta sp. nov.

Candidatus Prevotella detenetta (NL. fem. n. *detenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900322095*. The type genome for the species is the GenBank assembly GCA_002481285.1. The GC content of the type genome is 52.45 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Prevotella detosatio sp. nov.

Candidatus Prevotella detosatio (NL. fem. n. *detosatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314995*. The type genome for the species is the GenBank assembly GCA_902786485.1. The GC content of the type genome is 50.46 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Prevotella detositio sp. nov.

Candidatus Prevotella detositio (NL. fem. n. *detositio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900551055*. The type genome for the species is the GenBank assembly GCA_900765345.1. The GC content of the type genome is 52.39 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Prevotella devecisca sp. nov.

Candidatus Prevotella devecisca (NL. fem. n. *devecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002391185*. The type genome for the species is the GenBank assembly GCA_902802675.1. The GC content of the type genome is 41.3 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Prevotella dibapibra sp. nov.

Candidatus Prevotella dibapibra (NL. fem. n. *dibapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316445*. The type genome for the species is the GenBank assembly GCA_900316445.1. The GC content of the type genome is 49.96 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Prevotella dibucicella sp. nov.

Candidatus Prevotella dibucicella (NL. fem. n. *dibucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316565*. The type genome for the species is the GenBank assembly GCA_002472535.1. The GC content of the type genome is 49.34 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Prevotella dicanetta sp. nov.

Candidatus Prevotella dicanetta (NL. fem. n. *dicanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315035*. The type genome for the species is the GenBank assembly GCA_900315035.1. The GC content of the type genome is 48.15 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Prevotella dilecivita sp. nov.

Candidatus Prevotella dilecivita (NL. fem. n. *dilecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp004792655*. The type genome for the species is the GenBank assembly RS_GCF_004792655.1. The GC content of the type genome is 47.05 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Prevotella diludatica sp. nov.

Candidatus Prevotella diludatica (NL. fem. n. *diludatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902760315*. The type genome for the species is the GenBank assembly GCA_902760315.1. The GC content of the type genome is 51.66 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Prevotella diludousia sp. nov.

Candidatus Prevotella diludousia (NL. fem. n. *diludousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900109055*. The type genome for the species is the GenBank assembly RS_GCF_000746155.1. The GC content of the type genome is 47.44 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Prevotella dimacitas sp. nov.

Candidatus Prevotella dimacitas (NL. fem. n. *dimacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902792855*. The type genome for the species is the GenBank assembly GCA_902792855.1. The GC content of the type genome is 53.31 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Prevotella domabilenta sp. nov.

Candidatus Prevotella domabilenta (NL. fem. n. *domabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002373375*. The type genome for the species is the GenBank assembly GCA_002396105.1. The GC content of the type genome is 47.23 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Prevotella domipilenta sp. nov.

Candidatus Prevotella domipilenta (NL. fem. n. *domipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp902792685*. The type genome for the species is the GenBank assembly GCA_902792685.1. The GC content of the type genome is 47.72 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Prevotella duricitica sp. nov.

Candidatus Prevotella duricitica (NL. fem. n. *duricitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900110895*. The type genome for the species is the GenBank assembly RS_GCF_900110895.1. The GC content of the type genome is 49.0 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Prevotella ecciledo sp. nov.

Candidatus Prevotella ecciledo (NL. fem. n. *ecciledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900546345*. The type genome for the species is the GenBank assembly GCA_900546345.1. The GC content of the type genome is 51.15 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Prevotella egregatica sp. nov.

Candidatus Prevotella egregatica (NL. fem. n. *egregatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902776545*. The type genome for the species is the GenBank assembly GCA_902776545.1. The GC content of the type genome is 49.81 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Prevotella encepedo sp. nov.

Candidatus Prevotella encepedo (NL. fem. n. *encepedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900767615*. The type genome for the species is the GenBank assembly GCA_900767615.1. The GC content of the type genome is 47.79 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Prevotella ensifilenta sp. nov.

Candidatus Prevotella ensifilenta (NL. fem. n. *ensifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902786665*. The type genome for the species is the GenBank assembly GCA_902786665.1. The GC content of the type genome is 50.95 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Prevotella epigrax sp. nov.

Candidatus Prevotella epigrax (NL. fem. n. *epigrax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902795605*. The type genome for the species is the GenBank assembly GCA_902795605.1. The GC content of the type genome is 53.86 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Prevotella everbibula sp. nov.

Candidatus Prevotella everbibula (NL. fem. n. *everbibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902770195*. The type genome for the species is the GenBank assembly GCA_902770195.1. The GC content of the type genome is 47.63 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Prevotella excinitas sp. nov.

Candidatus Prevotella excinitas (NL. fem. n. *excinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000599605*. The type genome for the species is the GenBank assembly RS_GCF_000599605.1. The GC content of the type genome is 45.08 % and the genome length is 3.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dental abscess".

Description of *Candidatus* Prevotella excomugo sp. nov.

Candidatus Prevotella excomugo (NL. fem. n. *excomugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002407775*. The type genome for the species is the GenBank assembly GCA_002407775.1. The GC content of the type genome is 43.51 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Prevotella facunitoga sp. nov.

Candidatus Prevotella facunitoga (NL. fem. n. *facunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp013166545*. The type genome for the species is the GenBank assembly RS_GCF_013166575.1. The GC content of the type genome is 47.73 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Prevotella faticatio sp. nov.

Candidatus Prevotella faticatio (NL. fem. n. *faticatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002353205*. The type genome for the species is the GenBank assembly GCA_002353205.1. The GC content of the type genome is 54.54 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Prevotella faticentia sp. nov.

Candidatus Prevotella faticentia (NL. fem. n. *faticentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900320045*. The type genome for the species is the GenBank assembly GCA_902784655.1. The GC content of the type genome is 51.85 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Prevotella fatilitas sp. nov.

Candidatus Prevotella fatilitas (NL. fem. n. *fatilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900322175*. The type genome for the species is the GenBank assembly GCA_900322175.1. The GC content of the type genome is 47.23 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Prevotella favonilega sp. nov.

Candidatus Prevotella favonilega (NL. fem. n. *favonilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002297965*. The type genome for the species is the GenBank assembly GCA_002297965.1. The GC content of the type genome is 46.74 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Prevotella femelicella sp. nov.

Candidatus Prevotella femelicella (NL. fem. n. *femelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900553965*. The type genome for the species is the GenBank assembly GCA_900764985.1. The GC content of the type genome is 52.65 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Prevotella fetifessa sp. nov.

Candidatus Prevotella fetifessa (NL. fem. n. *fetifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315765*. The type genome for the species is the GenBank assembly GCA_902756705.1. The GC content of the type genome is 46.32 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Prevotella fetulentia sp. nov.

Candidatus Prevotella fetulentia (NL. fem. n. *fetulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900548745*. The type genome for the species is the GenBank assembly GCA_900548745.1. The GC content of the type genome is 45.1 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Prevotella fetulicula sp. nov.

Candidatus Prevotella fetulicula (NL. fem. n. *fetulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002371695*. The type genome for the species is the GenBank assembly GCA_002371695.1. The GC content of the type genome is 51.73 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Prevotella fidenitia sp. nov.

Candidatus Prevotella fidenitia (NL. fem. n. *fidenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315635*. The type genome for the species is the GenBank assembly GCA_902788355.1. The GC content of the type genome is 47.4 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Prevotella forabessa sp. nov.

Candidatus Prevotella forabessa (NL. fem. n. *forabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314455*. The type genome for the species is the GenBank assembly GCA_900314455.1. The GC content of the type genome is 48.26 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Prevotella foricitas sp. nov.

Candidatus Prevotella foricitas (NL. fem. n. *foricitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900322035*. The type genome for the species is the GenBank assembly GCA_900322035.1. The GC content of the type genome is 50.14 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Prevotella gabinicella sp. nov.

Candidatus Prevotella gabinicella (NL. fem. n. *gabinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315565*. The type genome for the species is the GenBank assembly GCA_900315565.1. The GC content of the type genome is 51.08 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Prevotella galacetta sp. nov.

Candidatus Prevotella galacetta (NL. fem. n. *galacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902785695*. The type genome for the species is the GenBank assembly GCA_902785695.1. The GC content of the type genome is 47.66 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Prevotella genocastra sp. nov.

Candidatus Prevotella genocastra (NL. fem. n. *genocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900552675*. The type genome for the species is the GenBank assembly GCA_900552675.1. The GC content of the type genome is 48.01 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Prevotella genuficella sp. nov.

Candidatus Prevotella genuficella (NL. fem. n. *genuficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900320905*. The type genome for the species is the GenBank assembly GCA_902792705.1. The GC content of the type genome is 49.9 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Prevotella gerunedo sp. nov.

Candidatus Prevotella gerunedo (NL. fem. n. *gerunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp900318885*. The type genome for the species is the GenBank assembly GCA_900318885.1. The GC content of the type genome is 50.02 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Prevotella haricigena sp. nov.

Candidatus Prevotella haricigena (NL. fem. n. *haricigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902779455*. The type genome for the species is the GenBank assembly GCA_902779455.1. The GC content of the type genome is 57.9 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Prevotella hegumitudo sp. nov.

Candidatus Prevotella hegumitudo (NL. fem. n. *hegumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002481295*. The type genome for the species is the GenBank assembly GCA_902779715.1. The GC content of the type genome is 52.21 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Prevotella hexamatica sp. nov.

Candidatus Prevotella hexamatica (NL. fem. n. *hexamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002409785*. The type genome for the species is the GenBank assembly GCA_002417885.1. The GC content of the type genome is 44.42 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Prevotella homogitica sp. nov.

Candidatus Prevotella homogitica (NL. fem. n. *homogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000479005*. The type genome for the species is the GenBank assembly RS_GCF_000479005.1. The GC content of the type genome is 45.66 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Prevotella homulatica sp. nov.

Candidatus Prevotella homulatica (NL. fem. n. *homulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315525*. The type genome for the species is the GenBank assembly GCA_902794785.1. The GC content of the type genome is 49.68 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Prevotella homunetta sp. nov.

Candidatus Prevotella homunetta (NL. fem. n. *homunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902782305*. The type genome for the species is the GenBank assembly GCA_902782305.1. The GC content of the type genome is 46.66 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Prevotella homunitica sp. nov.

Candidatus Prevotella homunitica (NL. fem. n. *homunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902775975*. The type genome for the species is the GenBank assembly GCA_902775975.1. The GC content of the type genome is 50.38 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Prevotella horometta sp. nov.

Candidatus Prevotella horometta (NL. fem. n. *horometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp003043925*. The type genome for the species is the GenBank assembly RS_GCF_003043925.1. The GC content of the type genome is 47.54 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Prevotella illunago sp. nov.

Candidatus Prevotella illunago (NL. fem. n. *illunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002251245*. The type genome for the species is the GenBank assembly RS_GCF_002251245.1. The GC content of the type genome is 47.64 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Prevotella immadisca sp. nov.

Candidatus Prevotella immadisca (NL. fem. n. *immadisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902799975*. The type genome for the species is the GenBank assembly GCA_902799975.1. The GC content of the type genome is 46.27 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Prevotella immedibula sp. nov.

Candidatus Prevotella immedibula (NL. fem. n. *immedibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002437115*. The type genome for the species is the GenBank assembly GCA_002437115.1. The GC content of the type genome is 53.04 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Prevotella impigivita sp. nov.

Candidatus Prevotella impigivita (NL. fem. n. *impigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902775605*. The type genome for the species is the GenBank assembly GCA_902775605.1. The GC content of the type genome is 49.55 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Prevotella indecitica sp. nov.

Candidatus Prevotella indecitica (NL. fem. n. *indecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp902776685*. The type genome for the species is the GenBank assembly GCA_902776685.1. The GC content of the type genome is 51.4 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Prevotella indubedo sp. nov.

Candidatus Prevotella indubedo (NL. fem. n. *indubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002393725*. The type genome for the species is the GenBank assembly GCA_002393725.1. The GC content of the type genome is 48.86 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Prevotella indubugo sp. nov.

Candidatus Prevotella indubugo (NL. fem. n. *indubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002393705*. The type genome for the species is the GenBank assembly GCA_002393705.1. The GC content of the type genome is 54.88 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Prevotella infinetta sp. nov.

Candidatus Prevotella infinetta (NL. fem. n. *infinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000467895*. The type genome for the species is the GenBank assembly RS_GCF_000467895.1. The GC content of the type genome is 41.11 % and the genome length is 3.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "subgingival plaque biofilm".

Description of *Candidatus* Prevotella infisitura sp. nov.

Candidatus Prevotella infisitura (NL. fem. n. *infisitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902799655*. The type genome for the species is the GenBank assembly GCA_902799655.1. The GC content of the type genome is 48.83 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Prevotella inhosessa sp. nov.

Candidatus Prevotella inhosessa (NL. fem. n. *inhosessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902798285*. The type genome for the species is the GenBank assembly GCA_902798285.1. The GC content of the type genome is 48.28 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Prevotella inlapastra sp. nov.

Candidatus Prevotella inlapastra (NL. fem. n. *inlapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000688375*. The type genome for the species is the GenBank assembly RS_GCF_000688375.1. The GC content of the type genome is 45.26 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Prevotella inlepousia sp. nov.

Candidatus Prevotella inlepousia (NL. fem. n. *inlepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902768785*. The type genome for the species is the GenBank assembly GCA_902768785.1. The GC content of the type genome is 48.38 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Prevotella inlibivita sp. nov.

Candidatus Prevotella inlibivita (NL. fem. n. *inlibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900556275*. The type genome for the species is the GenBank assembly GCA_900556275.1. The GC content of the type genome is 51.01 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Prevotella innumedo sp. nov.

Candidatus Prevotella innumedo (NL. fem. n. *innumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902765585*. The type genome for the species is the GenBank assembly GCA_902765585.1. The GC content of the type genome is 53.0 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Prevotella inretibra sp. nov.

Candidatus Prevotella inretibra (NL. fem. n. *inretibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900770515*. The type genome for the species is the GenBank assembly GCA_900770515.1. The GC content of the type genome is 46.25 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Prevotella intesilega sp. nov.

Candidatus Prevotella intesilega (NL. fem. n. *intesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002342415*. The type genome for the species is the GenBank assembly GCA_002342415.1. The GC content of the type genome is 52.02 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Prevotella intolitio sp. nov.

Candidatus Prevotella intolitio (NL. fem. n. *intolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900555035*. The type genome for the species is the GenBank assembly GCA_900555035.1. The GC content of the type genome is 46.69 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Prevotella inveticella sp. nov.

Candidatus Prevotella inveticella (NL. fem. n. *inveticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prevotella sp902763615*. The type genome for the species is the GenBank assembly GCA_902763615.1. The GC content of the type genome is 48.16 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Prevotella irremibula sp. nov.

Candidatus Prevotella irremibula (NL. fem. n. *irremibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002305505*. The type genome for the species is the GenBank assembly GCA_002305505.1. The GC content of the type genome is 52.6 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Prevotella irrotibra sp. nov.

Candidatus Prevotella irrotibra (NL. fem. n. *irrotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902767045*. The type genome for the species is the GenBank assembly GCA_902767045.1. The GC content of the type genome is 51.42 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Prevotella laculago sp. nov.

Candidatus Prevotella laculago (NL. fem. n. *laculago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002371715*. The type genome for the species is the GenBank assembly GCA_002371715.1. The GC content of the type genome is 54.43 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Prevotella laculicula sp. nov.

Candidatus Prevotella laculicula (NL. fem. n. *laculicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp013166515*. The type genome for the species is the GenBank assembly RS_GCF_013166515.1. The GC content of the type genome is 46.24 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Prevotella lavacago sp. nov.

Candidatus Prevotella lavacago (NL. fem. n. *lavacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000435635*. The type genome for the species is the GenBank assembly GCA_000435635.1. The GC content of the type genome is 50.99 % and the genome length is 2.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Prevotella lenimitica sp. nov.

Candidatus Prevotella lenimitica (NL. fem. n. *lenimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002479145*. The type genome for the species is the GenBank assembly GCA_002436785.1. The GC content of the type genome is 53.71 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Prevotella lubenicula sp. nov.

Candidatus Prevotella lubenicula (NL. fem. n. *lubenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902784065*. The type genome for the species is the GenBank assembly GCA_902784065.1. The GC content of the type genome is 48.77 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Prevotella lubenisca sp. nov.

Candidatus Prevotella lubenisca (NL. fem. n. *lubenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902762325*. The type genome for the species is the GenBank assembly GCA_902762325.1. The GC content of the type genome is 45.75 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Prevotella lucelatio sp. nov.

Candidatus Prevotella lucelatio (NL. fem. n. *lucelatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000436035*. The type genome for the species is the GenBank assembly GCA_000436035.1. The GC content of the type genome is 46.14 % and the genome length is 2.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Prevotella ludimitio sp. nov.

Candidatus Prevotella ludimitio (NL. fem. n. *ludimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002353555*. The type genome for the species is the GenBank assembly GCA_002353555.1. The GC content of the type genome is 51.26 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Prevotella lugubitia sp. nov.

Candidatus Prevotella lugubitia (NL. fem. n. *lugubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902779745*. The type genome for the species is the GenBank assembly GCA_902779745.1. The GC content of the type genome is 48.64 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Prevotella lugubitudo sp. nov.

Candidatus Prevotella lugubitudo (NL. fem. n. *lugubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900770845*. The type genome for the species is the GenBank assembly GCA_900770845.1. The GC content of the type genome is 55.3 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Prevotella lupanentia sp. nov.

Candidatus Prevotella lupanentia (NL. fem. n. *lupanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900557255*. The type genome for the species is the GenBank assembly GCA_003450425.1. The GC content of the type genome is 45.05 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Prevotella lupanimonia sp. nov.

Candidatus Prevotella lupanimonia (NL. fem. n. *lupanimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902800925*. The type genome for the species is the GenBank assembly GCA_902800925.1. The GC content of the type genome is 49.19 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Prevotella mahemimonas sp. nov.

Candidatus Prevotella mahemimonas (NL. fem. n. *mahemimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902776475*. The type genome for the species is the GenBank assembly GCA_902776475.1. The GC content of the type genome is 52.37 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Prevotella malagitio sp. nov.

Candidatus Prevotella malagitio (NL. fem. n. *malagitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900199555*. The type genome for the species is the GenBank assembly GCA_902760775.1. The GC content of the type genome is 46.12 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Prevotella malivatio sp. nov.

Candidatus Prevotella malivatio (NL. fem. n. *malivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902775075*. The type genome for the species is the GenBank assembly GCA_902775075.1. The GC content of the type genome is 41.93 %

and the genome length is 3.7 Mbp.

Description of *Candidatus* Prevotella manomigena sp. nov.

Candidatus Prevotella manomigena (NL. fem. n. *manomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315695*. The type genome for the species is the GenBank assembly GCA_902765065.1. The GC content of the type genome is 48.24 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Prevotella metucatica sp. nov.

Candidatus Prevotella metucatica (NL. fem. n. *metucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902774815*. The type genome for the species is the GenBank assembly GCA_902774815.1. The GC content of the type genome is 51.59 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Prevotella milifitrix sp. nov.

Candidatus Prevotella milifitrix (NL. fem. n. *milifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900319905*. The type genome for the species is the GenBank assembly GCA_902759695.1. The GC content of the type genome is 51.47 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Prevotella mimogitia sp. nov.

Candidatus Prevotella mimogitia (NL. fem. n. *mimogitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902775475*. The type genome for the species is the GenBank assembly GCA_902777445.1. The GC content of the type genome is 57.28 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Prevotella miracibula sp. nov.

Candidatus Prevotella miracibula (NL. fem. n. *miracibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902800595*. The type genome for the species is the GenBank assembly GCA_902798045.1. The GC content of the type genome is 48.56 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Prevotella momoressa sp. nov.

Candidatus Prevotella momoressa (NL. fem. n. *momoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314655*. The type genome for the species is the GenBank assembly GCA_002394045.1. The GC content of the type genome is 49.53 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Prevotella morigivita sp. nov.

Candidatus Prevotella morigivita (NL. fem. n. *morigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315455*. The type genome for the species is the GenBank assembly GCA_902778915.1. The GC content of the type genome is 51.87 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Prevotella munimicella sp. nov.

Candidatus Prevotella munimicella (NL. fem. n. *munimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900199655*. The type genome for the species is the GenBank assembly RS_GCF_900199655.1. The GC content of the type genome is 53.14 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Prevotella murelilega sp. nov.

Candidatus Prevotella murelilega (NL. fem. n. *murelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314755*. The type genome for the species is the GenBank assembly GCA_002472625.1. The GC content of the type genome is 47.44 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Prevotella murilentia sp. nov.

Candidatus Prevotella murilentia (NL. fem. n. *murilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902771445*. The type genome for the species is the GenBank assembly GCA_902769115.1. The GC content of the type genome is 51.83 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Prevotella musulatio sp. nov.

Candidatus Prevotella musulatio (NL. fem. n. *musulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900540415*. The type genome for the species is the GenBank assembly GCA_900757985.1. The GC content of the type genome is 55.93 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Prevotella negotitrix sp. nov.

Candidatus Prevotella negotitrix (NL. fem. n. *negotitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002350355*. The type genome for the species is the GenBank assembly GCA_902793365.1. The GC content of the type genome is 51.16 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Prevotella nidififorma sp. nov.

Candidatus Prevotella nidififorma (NL. fem. n. *nidififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002265625*. The type genome for the species is the GenBank assembly RS_GCF_002265625.1. The GC content of the type genome is 48.69

% and the genome length is 3.72 Mbp.

Description of *Candidatus* Prevotella nimirilenta sp. nov.

Candidatus Prevotella nimirilenta (NL. fem. n. *nimirilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900107705*. The type genome for the species is the GenBank assembly GCA_902767515.1. The GC content of the type genome is 49.19 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Prevotella nocenitoga sp. nov.

Candidatus Prevotella nocenitoga (NL. fem. n. *nocenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902766505*. The type genome for the species is the GenBank assembly GCA_902796275.1. The GC content of the type genome is 48.47 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Prevotella nocumastra sp. nov.

Candidatus Prevotella nocumastra (NL. fem. n. *nocumastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900319715*. The type genome for the species is the GenBank assembly GCA_902758495.1. The GC content of the type genome is 51.41 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Prevotella noninedo sp. nov.

Candidatus Prevotella noninedo (NL. fem. n. *noninedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002300055*. The type genome for the species is the GenBank assembly GCA_004553805.1. The GC content of the type genome is 54.71 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Prevotella nubecitoga sp. nov.

Candidatus Prevotella nubecitoga (NL. fem. n. *nubecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314195*. The type genome for the species is the GenBank assembly GCA_902804035.1. The GC content of the type genome is 46.9 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Prevotella nubifisca sp. nov.

Candidatus Prevotella nubifisca (NL. fem. n. *nubifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002361655*. The type genome for the species is the GenBank assembly GCA_002361655.1. The GC content of the type genome is 53.88 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Prevotella nubigago sp. nov.

Candidatus Prevotella nubigago (NL. fem. n. *nubigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316475*. The type genome for the species is the GenBank assembly GCA_902789235.1. The GC content of the type genome is 52.66 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Prevotella nucifilega sp. nov.

Candidatus Prevotella nucifilega (NL. fem. n. *nucifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002251365*. The type genome for the species is the GenBank assembly GCA_004553465.1. The GC content of the type genome is 50.77 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Prevotella nugacentia sp. nov.

Candidatus Prevotella nugacentia (NL. fem. n. *nugacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002298815*. The type genome for the species is the GenBank assembly RS_GCF_013166595.1. The GC content of the type genome is 46.99 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Prevotella nugacicella sp. nov.

Candidatus Prevotella nugacicella (NL. fem. n. *nugacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315545*. The type genome for the species is the GenBank assembly GCA_902756085.1. The GC content of the type genome is 45.95 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Prevotella nugivigena sp. nov.

Candidatus Prevotella nugivigena (NL. fem. n. *nugivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314365*. The type genome for the species is the GenBank assembly GCA_900314365.1. The GC content of the type genome is 51.16 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Prevotella nutabilega sp. nov.

Candidatus Prevotella nutabilega (NL. fem. n. *nutabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900554045*. The type genome for the species is the GenBank assembly GCA_900753105.1. The GC content of the type genome is 52.68 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Prevotella obfusitas sp. nov.

Candidatus Prevotella obfusitas (NL. fem. n. *obfusitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902800245*. The type genome for the species is the GenBank assembly GCA_902800245.1. The GC content of the type genome is 49.66 %

and the genome length is 3.48 Mbp.

Description of *Candidatus* Prevotella obfusitrix sp. nov.

Candidatus Prevotella obfusitrix (NL. fem. n. *obfusitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902784565*. The type genome for the species is the GenBank assembly GCA_902784565.1. The GC content of the type genome is 50.22 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Prevotella oblonatio sp. nov.

Candidatus Prevotella oblonatio (NL. fem. n. *oblonatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902781315*. The type genome for the species is the GenBank assembly GCA_902781315.1. The GC content of the type genome is 54.01 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Prevotella obsecisca sp. nov.

Candidatus Prevotella obsecisca (NL. fem. n. *obsecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902769705*. The type genome for the species is the GenBank assembly GCA_902769705.1. The GC content of the type genome is 49.21 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Prevotella omnivitio sp. nov.

Candidatus Prevotella omnivitio (NL. fem. n. *omnivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002369515*. The type genome for the species is the GenBank assembly GCA_002369515.1. The GC content of the type genome is 53.59 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Prevotella opusciforma sp. nov.

Candidatus Prevotella opusciforma (NL. fem. n. *opusciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902768105*. The type genome for the species is the GenBank assembly GCA_902768105.1. The GC content of the type genome is 51.84 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Prevotella oratricula sp. nov.

Candidatus Prevotella oratricula (NL. fem. n. *oratricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902776935*. The type genome for the species is the GenBank assembly GCA_902776935.1. The GC content of the type genome is 46.67 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Prevotella pabililenta sp. nov.

Candidatus Prevotella pabililenta (NL. fem. n. *pabililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902760345*. The type genome for the species is the GenBank assembly GCA_902775655.1. The GC content of the type genome is 50.15 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Prevotella panifatio sp. nov.

Candidatus Prevotella panifatio (NL. fem. n. *panifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002439605*. The type genome for the species is the GenBank assembly GCA_002439605.1. The GC content of the type genome is 47.03 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Prevotella papavivita sp. nov.

Candidatus Prevotella papavivita (NL. fem. n. *papavivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900110085*. The type genome for the species is the GenBank assembly GCA_902755835.1. The GC content of the type genome is 49.07 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Prevotella pavicago sp. nov.

Candidatus Prevotella pavicago (NL. fem. n. *pavicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900113305*. The type genome for the species is the GenBank assembly RS_GCF_900113305.1. The GC content of the type genome is 50.46 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Prevotella pedifago sp. nov.

Candidatus Prevotella pedifago (NL. fem. n. *pedifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902783625*. The type genome for the species is the GenBank assembly GCA_902783625.1. The GC content of the type genome is 48.05 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Prevotella penicastra sp. nov.

Candidatus Prevotella penicastra (NL. fem. n. *penicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900551985*. The type genome for the species is the GenBank assembly GCA_900551985.1. The GC content of the type genome is 46.68 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Prevotella perabiforma sp. nov.

Candidatus Prevotella perabiforma (NL. fem. n. *perabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902799905*. The type genome for the species is the GenBank assembly GCA_902799905.1. The GC content of the type genome is 50.79 %

and the genome length is 3.42 Mbp.

Description of *Candidatus* Prevotella perabitura sp. nov.

Candidatus Prevotella perabitura (NL. fem. n. *perabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002449845*. The type genome for the species is the GenBank assembly GCA_002449845.1. The GC content of the type genome is 43.44 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Prevotella perexessa sp. nov.

Candidatus Prevotella perexessa (NL. fem. n. *perexessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316295*. The type genome for the species is the GenBank assembly GCA_902759545.1. The GC content of the type genome is 47.81 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Prevotella perexitio sp. nov.

Candidatus Prevotella perexitio (NL. fem. n. *perexitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000758925*. The type genome for the species is the GenBank assembly RS_GCF_000758925.1. The GC content of the type genome is 48.38 % and the genome length is 2.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Prevotella peridatio sp. nov.

Candidatus Prevotella peridatio (NL. fem. n. *peridatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314945*. The type genome for the species is the GenBank assembly GCA_902799215.1. The GC content of the type genome is 50.97 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Prevotella petulimonia sp. nov.

Candidatus Prevotella petulimonia (NL. fem. n. *petulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900557405*. The type genome for the species is the GenBank assembly GCA_900557405.1. The GC content of the type genome is 50.62 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Prevotella petulousia sp. nov.

Candidatus Prevotella petulousia (NL. fem. n. *petulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900321965*. The type genome for the species is the GenBank assembly GCA_900321965.1. The GC content of the type genome is 52.54 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Prevotella pinigentia sp. nov.

Candidatus Prevotella pinigentia (NL. fem. n. *pinigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900318395*. The type genome for the species is the GenBank assembly GCA_900317895.1. The GC content of the type genome is 49.94 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Prevotella pocilatica sp. nov.

Candidatus Prevotella pocilatica (NL. fem. n. *pocilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900319305*. The type genome for the species is the GenBank assembly GCA_902778445.1. The GC content of the type genome is 49.58 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Prevotella purulilega sp. nov.

Candidatus Prevotella purulilega (NL. fem. n. *purulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900547005*. The type genome for the species is the GenBank assembly GCA_900547005.1. The GC content of the type genome is 46.31 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Prevotella reforigena sp. nov.

Candidatus Prevotella reforigena (NL. fem. n. *reforigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002299635*. The type genome for the species is the GenBank assembly GCA_900545355.1. The GC content of the type genome is 51.71 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Prevotella reforilega sp. nov.

Candidatus Prevotella reforilega (NL. fem. n. *reforilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900119285*. The type genome for the species is the GenBank assembly RS_GCF_900119285.1. The GC content of the type genome is 45.26 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Prevotella refunax sp. nov.

Candidatus Prevotella refunax (NL. fem. n. *refunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp004555245*. The type genome for the species is the GenBank assembly GCA_004562255.1. The GC content of the type genome is 53.76 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Prevotella refunitoga sp. nov.

Candidatus Prevotella refunitoga (NL. fem. n. *refunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316265*. The type genome for the species is the GenBank assembly GCA_902788065.1. The GC content of the type genome is 48.58 %

and the genome length is 2.99 Mbp.

Description of *Candidatus* Prevotella regigedo sp. nov.

Candidatus Prevotella regigedo (NL. fem. n. *regigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp003483565*. The type genome for the species is the GenBank assembly GCA_002418045.1. The GC content of the type genome is 39.0 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Prevotella relapitudo sp. nov.

Candidatus Prevotella relapitudo (NL. fem. n. *relapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900115435*. The type genome for the species is the GenBank assembly GCA_002394225.1. The GC content of the type genome is 47.17 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Prevotella relecisca sp. nov.

Candidatus Prevotella relecisca (NL. fem. n. *relecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900321425*. The type genome for the species is the GenBank assembly GCA_002351045.1. The GC content of the type genome is 48.04 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Prevotella remuliforma sp. nov.

Candidatus Prevotella remuliforma (NL. fem. n. *remuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000431975*. The type genome for the species is the GenBank assembly GCA_000431975.1. The GC content of the type genome is 49.81 % and the genome length is 2.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Prevotella remulugo sp. nov.

Candidatus Prevotella remulugo (NL. fem. n. *remulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002451555*. The type genome for the species is the GenBank assembly GCA_002296725.1. The GC content of the type genome is 45.25 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Prevotella repagimonas sp. nov.

Candidatus Prevotella repagimonas (NL. fem. n. *repagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900313805*. The type genome for the species is the GenBank assembly GCA_902760185.1. The GC content of the type genome is 52.13 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Prevotella repepibra sp. nov.

Candidatus Prevotella repepibra (NL. fem. n. *repepibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002392835*. The type genome for the species is the GenBank assembly GCA_902769385.1. The GC content of the type genome is 58.43 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Prevotella repuribula sp. nov.

Candidatus Prevotella repuribula (NL. fem. n. *repuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900320585*. The type genome for the species is the GenBank assembly GCA_902767835.1. The GC content of the type genome is 54.78 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Prevotella resalitudo sp. nov.

Candidatus Prevotella resalitudo (NL. fem. n. *resalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902800365*. The type genome for the species is the GenBank assembly GCA_902800365.1. The GC content of the type genome is 46.86 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Prevotella resulessa sp. nov.

Candidatus Prevotella resulessa (NL. fem. n. *resulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900317305*. The type genome for the species is the GenBank assembly GCA_900317305.1. The GC content of the type genome is 52.88 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Prevotella resurago sp. nov.

Candidatus Prevotella resurago (NL. fem. n. *resurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316015*. The type genome for the species is the GenBank assembly GCA_902790705.1. The GC content of the type genome is 46.74 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Prevotella resurimonas sp. nov.

Candidatus Prevotella resurimonas (NL. fem. n. *resurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902778535*. The type genome for the species is the GenBank assembly GCA_902762575.1. The GC content of the type genome is 53.26 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Prevotella retunivita sp. nov.

Candidatus Prevotella retunivita (NL. fem. n. *retunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900318795*. The type genome for the species is the GenBank assembly GCA_900318795.1. The GC content of the type genome is 50.71 %

and the genome length is 2.77 Mbp.

Description of *Candidatus* Prevotella ridibedo sp. nov.

Candidatus Prevotella ridibedo (NL. fem. n. *ridibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315105*. The type genome for the species is the GenBank assembly GCA_902756335.1. The GC content of the type genome is 42.5 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Prevotella risibilega sp. nov.

Candidatus Prevotella risibilega (NL. fem. n. *risibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900320255*. The type genome for the species is the GenBank assembly GCA_902775225.1. The GC content of the type genome is 51.35 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Prevotella rorarousia sp. nov.

Candidatus Prevotella rorarousia (NL. fem. n. *rorarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002298545*. The type genome for the species is the GenBank assembly GCA_002298545.1. The GC content of the type genome is 45.14 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Prevotella rosarigena sp. nov.

Candidatus Prevotella rosarigena (NL. fem. n. *rosarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902764705*. The type genome for the species is the GenBank assembly GCA_902764705.1. The GC content of the type genome is 49.11 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Prevotella rubigessa sp. nov.

Candidatus Prevotella rubigessa (NL. fem. n. *rubigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902761905*. The type genome for the species is the GenBank assembly GCA_902761905.1. The GC content of the type genome is 47.44 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Prevotella rumifitrix sp. nov.

Candidatus Prevotella rumifitrix (NL. fem. n. *rumifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902800435*. The type genome for the species is the GenBank assembly GCA_902800435.1. The GC content of the type genome is 55.71 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Prevotella ruricetta sp. nov.

Candidatus Prevotella ruricetta (NL. fem. n. *ruricetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp001553265*. The type genome for the species is the GenBank assembly RS_GCF_001553265.1. The GC content of the type genome is 43.78 % and the genome length is 2.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vagina".

Description of *Candidatus* Prevotella sacopentia sp. nov.

Candidatus Prevotella sacopentia (NL. fem. n. *sacopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315075*. The type genome for the species is the GenBank assembly GCA_902757795.1. The GC content of the type genome is 45.79 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Prevotella saxifitrix sp. nov.

Candidatus Prevotella saxifitrix (NL. fem. n. *saxifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316685*. The type genome for the species is the GenBank assembly GCA_902758895.1. The GC content of the type genome is 51.94 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Prevotella saxopisca sp. nov.

Candidatus Prevotella saxopisca (NL. fem. n. *saxopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002437285*. The type genome for the species is the GenBank assembly GCA_002476725.1. The GC content of the type genome is 56.45 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Prevotella selecastra sp. nov.

Candidatus Prevotella selecastra (NL. fem. n. *selecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315955*. The type genome for the species is the GenBank assembly GCA_002472205.1. The GC content of the type genome is 51.32 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Prevotella semapentia sp. nov.

Candidatus Prevotella semapentia (NL. fem. n. *semapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900317685*. The type genome for the species is the GenBank assembly GCA_002353775.1. The GC content of the type genome is 51.98 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Prevotella semapicella sp. nov.

Candidatus Prevotella semapicella (NL. fem. n. *semapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902778255*. The type genome for the species is the GenBank assembly GCA_902774545.1. The GC content of the type genome is 48.66 %

and the genome length is 3.1 Mbp.

Description of *Candidatus* Prevotella semilugo sp. nov.

Candidatus Prevotella semilugo (NL. fem. n. *semilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902788605*. The type genome for the species is the GenBank assembly GCA_902762015.1. The GC content of the type genome is 50.38 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Prevotella semipifica sp. nov.

Candidatus Prevotella semipifica (NL. fem. n. *semipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002354095*. The type genome for the species is the GenBank assembly GCA_002373015.1. The GC content of the type genome is 47.45 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Prevotella semoditio sp. nov.

Candidatus Prevotella semoditio (NL. fem. n. *semoditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902798615*. The type genome for the species is the GenBank assembly GCA_902799115.1. The GC content of the type genome is 43.45 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Prevotella semunousia sp. nov.

Candidatus Prevotella semunousia (NL. fem. n. *semunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002437565*. The type genome for the species is the GenBank assembly GCA_002451485.1. The GC content of the type genome is 51.87 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Prevotella semunugo sp. nov.

Candidatus Prevotella semunugo (NL. fem. n. *semunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002394365*. The type genome for the species is the GenBank assembly GCA_002448415.1. The GC content of the type genome is 47.42 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Prevotella siligivita sp. nov.

Candidatus Prevotella siligivita (NL. fem. n. *siligivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900548585*. The type genome for the species is the GenBank assembly GCA_900548585.1. The GC content of the type genome is 52.58 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Prevotella siminago sp. nov.

Candidatus Prevotella siminago (NL. fem. n. *siminago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900765465*. The type genome for the species is the GenBank assembly GCA_900765465.1. The GC content of the type genome is 47.66 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Prevotella siminibula sp. nov.

Candidatus Prevotella siminibula (NL. fem. n. *siminibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900317545*. The type genome for the species is the GenBank assembly GCA_902794525.1. The GC content of the type genome is 52.59 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Prevotella solifatica sp. nov.

Candidatus Prevotella solifatica (NL. fem. n. *solifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902784615*. The type genome for the species is the GenBank assembly GCA_902784615.1. The GC content of the type genome is 50.49 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Prevotella subabax sp. nov.

Candidatus Prevotella subabax (NL. fem. n. *subabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp013333935*. The type genome for the species is the GenBank assembly GCA_013333935.1. The GC content of the type genome is 47.98 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Prevotella subacatio sp. nov.

Candidatus Prevotella subacatio (NL. fem. n. *subacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000436595*. The type genome for the species is the GenBank assembly GCA_000436595.1. The GC content of the type genome is 48.74 % and the genome length is 2.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Prevotella subacetta sp. nov.

Candidatus Prevotella subacetta (NL. fem. n. *subacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315775*. The type genome for the species is the GenBank assembly GCA_902774975.1. The GC content of the type genome is 47.59 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Prevotella subadicula sp. nov.

Candidatus Prevotella subadicula (NL. fem. n. *subadicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900552515*. The type genome for the species is the

GenBank assembly GCA_900757805.1. The GC content of the type genome is 47.91 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Prevotella subofitio sp. nov.

Candidatus Prevotella subofitio (NL. fem. n. *subofitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900553465*. The type genome for the species is the GenBank assembly GCA_900553465.1. The GC content of the type genome is 48.36 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Prevotella sugilitio sp. nov.

Candidatus Prevotella sugilitio (NL. fem. n. *sugilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902794405*. The type genome for the species is the GenBank assembly GCA_902794405.1. The GC content of the type genome is 50.26 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Prevotella supelentia sp. nov.

Candidatus Prevotella supelentia (NL. fem. n. *supelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900315745*. The type genome for the species is the GenBank assembly GCA_902799635.1. The GC content of the type genome is 46.92 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Prevotella supelitas sp. nov.

Candidatus Prevotella supelitas (NL. fem. n. *supelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314915*. The type genome for the species is the GenBank assembly GCA_900319825.1. The GC content of the type genome is 48.6 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Prevotella tabifimonia sp. nov.

Candidatus Prevotella tabifimonia (NL. fem. n. *tabifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900318585*. The type genome for the species is the GenBank assembly GCA_900318585.1. The GC content of the type genome is 53.02 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Prevotella tegimitica sp. nov.

Candidatus Prevotella tegimitica (NL. fem. n. *tegimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900548195*. The type genome for the species is the GenBank assembly GCA_902766535.1. The GC content of the type genome is 45.02 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Prevotella tenebessa sp. nov.

Candidatus Prevotella tenebessa (NL. fem. n. *tenebessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002351725*. The type genome for the species is the GenBank assembly GCA_902765795.1. The GC content of the type genome is 47.02 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Prevotella tenematica sp. nov.

Candidatus Prevotella tenematica (NL. fem. n. *tenematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900313235*. The type genome for the species is the GenBank assembly GCA_902758125.1. The GC content of the type genome is 50.38 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Prevotella terebilega sp. nov.

Candidatus Prevotella terebilega (NL. fem. n. *terebilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900314715*. The type genome for the species is the GenBank assembly GCA_902755825.1. The GC content of the type genome is 42.85 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Prevotella tolutitudo sp. nov.

Candidatus Prevotella tolutitudo (NL. fem. n. *tolutitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900553595*. The type genome for the species is the GenBank assembly GCA_900763795.1. The GC content of the type genome is 53.86 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Prevotella totidessa sp. nov.

Candidatus Prevotella totidessa (NL. fem. n. *totidessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900546535*. The type genome for the species is the GenBank assembly GCA_004562525.1. The GC content of the type genome is 47.27 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Prevotella turicessa sp. nov.

Candidatus Prevotella turicessa (NL. fem. n. *turicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002480935*. The type genome for the species is the GenBank assembly GCA_002481425.1. The GC content of the type genome is 51.37 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Prevotella utricatica sp. nov.

Candidatus Prevotella utricatica (NL. fem. n. *utricatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp003932845*. The type genome for the species is the GenBank assembly RS_GCF_003932845.1. The GC content of the type genome is 44.37

% and the genome length is 2.61 Mbp.

Description of *Candidatus* Prevotella vacilitia sp. nov.

Candidatus Prevotella vacilitia (NL. fem. n. *vacilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000436915*. The type genome for the species is the GenBank assembly GCA_900546165.1. The GC content of the type genome is 43.15 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Prevotella vavasiforma sp. nov.

Candidatus Prevotella vavasiforma (NL. fem. n. *vavasiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002353485*. The type genome for the species is the GenBank assembly GCA_002353485.1. The GC content of the type genome is 53.55 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Prevotella vehemibula sp. nov.

Candidatus Prevotella vehemibula (NL. fem. n. *vehemibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp004557285*. The type genome for the species is the GenBank assembly GCA_004557285.1. The GC content of the type genome is 50.84 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Prevotella venucilenta sp. nov.

Candidatus Prevotella venucilenta (NL. fem. n. *venucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900543975*. The type genome for the species is the GenBank assembly GCA_004553785.1. The GC content of the type genome is 51.34 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Prevotella venucisca sp. nov.

Candidatus Prevotella venucisca (NL. fem. n. *venucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000433175*. The type genome for the species is the GenBank assembly GCA_000433175.1. The GC content of the type genome is 48.13 % and the genome length is 2.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Prevotella verecitas sp. nov.

Candidatus Prevotella verecitas (NL. fem. n. *verecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900553155*. The type genome for the species is the GenBank assembly GCA_900763235.1. The GC content of the type genome is 50.28 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Prevotella veridivita sp. nov.

Candidatus Prevotella veridivita (NL. fem. n. *veridivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002305235*. The type genome for the species is the GenBank assembly GCA_002305235.1. The GC content of the type genome is 53.35 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Prevotella viburisca sp. nov.

Candidatus Prevotella viburisca (NL. fem. n. *viburisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900544495*. The type genome for the species is the GenBank assembly GCA_900544495.1. The GC content of the type genome is 48.3 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Prevotella vigenax sp. nov.

Candidatus Prevotella vigenax (NL. fem. n. *vigenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900768785*. The type genome for the species is the GenBank assembly GCA_900768785.1. The GC content of the type genome is 39.5 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Prevotella vinaciforma sp. nov.

Candidatus Prevotella vinaciforma (NL. fem. n. *vinaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900319895*. The type genome for the species is the GenBank assembly GCA_900319895.1. The GC content of the type genome is 48.5 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Prevotella virecimonas sp. nov.

Candidatus Prevotella virecimonas (NL. fem. n. *virecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900770025*. The type genome for the species is the GenBank assembly GCA_900770025.1. The GC content of the type genome is 51.43 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Prevotella viripousia sp. nov.

Candidatus Prevotella viripousia (NL. fem. n. *viripousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902792635*. The type genome for the species is the GenBank assembly GCA_902791045.1. The GC content of the type genome is 50.74 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Prevotella visifetta sp. nov.

Candidatus Prevotella visifetta (NL. fem. n. *visifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002405875*. The type genome for the species is the GenBank assembly GCA_002405875.1. The GC content of the type genome is 46.22 %

and the genome length is 2.14 Mbp.

Description of *Candidatus* Prevotella visociforma sp. nov.

Candidatus Prevotella visociforma (NL. fem. n. *visociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp902771155*. The type genome for the species is the GenBank assembly GCA_902771155.1. The GC content of the type genome is 49.26 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Prevotella visocitoga sp. nov.

Candidatus Prevotella visocitoga (NL. fem. n. *visocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002933775*. The type genome for the species is the GenBank assembly GCA_002493205.1. The GC content of the type genome is 48.6 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Prevotella vitifitoga sp. nov.

Candidatus Prevotella vitifitoga (NL. fem. n. *vitifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002299275*. The type genome for the species is the GenBank assembly GCA_002299275.1. The GC content of the type genome is 44.01 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Prevotella vitigatio sp. nov.

Candidatus Prevotella vitigatio (NL. fem. n. *vitigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900556795*. The type genome for the species is the GenBank assembly GCA_900767545.1. The GC content of the type genome is 45.62 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Prevotella vocifimonia sp. nov.

Candidatus Prevotella vocifimonia (NL. fem. n. *vocifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp900316645*. The type genome for the species is the GenBank assembly GCA_900317665.1. The GC content of the type genome is 47.99 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Prevotella volunivita sp. nov.

Candidatus Prevotella volunivita (NL. fem. n. *volunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp000257925*. The type genome for the species is the GenBank assembly RS_GCF_009728485.1. The GC content of the type genome is 41.48 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Prevotella voragitrix sp. nov.

Candidatus Prevotella voragitrix (NL. fem. n. *voragitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002251385*. The type genome for the species is the GenBank assembly GCA_900551785.1. The GC content of the type genome is 54.43 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Prevotella xenopilenta sp. nov.

Candidatus Prevotella xenopilenta (NL. fem. n. *xenopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002395135*. The type genome for the species is the GenBank assembly GCA_902781335.1. The GC content of the type genome is 49.5 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Prevotella xeropicula sp. nov.

Candidatus Prevotella xeropicula (NL. fem. n. *xeropicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotella sp002342665*. The type genome for the species is the GenBank assembly GCA_002342665.1. The GC content of the type genome is 52.47 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Prevotellamassilia adperentia sp. nov.

Candidatus Prevotellamassilia adperentia (NL. fem. n. *adperentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp004552195*. The type genome for the species is the GenBank assembly GCA_004552195.1. The GC content of the type genome is 54.92 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Prevotellamassilia alsulimonia sp. nov.

Candidatus Prevotellamassilia alsulimonia (NL. fem. n. *alsulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900772575*. The type genome for the species is the GenBank assembly RS_GCF_900772575.1. The GC content of the type genome is 57.44 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Prevotellamassilia aperciforma sp. nov.

Candidatus Prevotellamassilia aperciforma (NL. fem. n. *aperciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp002431845*. The type genome for the species is the GenBank assembly GCA_002431845.1. The GC content of the type genome is 42.41 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Prevotellamassilia arcatago sp. nov.

Candidatus Prevotellamassilia arcatago (NL. fem. n. *arcatago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp004552155*. The type genome for the species is the GenBank assembly GCA_004552155.1. The GC content of the type genome is 54.44

% and the genome length is 2.34 Mbp.

Description of *Candidatus* Prevotellamassilia cerimitura sp. nov.

Candidatus Prevotellamassilia cerimitura (NL. fem. n. *cerimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp004557035*. The type genome for the species is the GenBank assembly GCA_004557035.1. The GC content of the type genome is 54.44 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Prevotellamassilia cocodilega sp. nov.

Candidatus Prevotellamassilia cocodilega (NL. fem. n. *cocodilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp004555425*. The type genome for the species is the GenBank assembly GCA_004553195.1. The GC content of the type genome is 54.96 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Prevotellamassilia defetessa sp. nov.

Candidatus Prevotellamassilia defetessa (NL. fem. n. *defetessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900556465*. The type genome for the species is the GenBank assembly GCA_900556465.1. The GC content of the type genome is 62.66 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Prevotellamassilia defunousia sp. nov.

Candidatus Prevotellamassilia defunousia (NL. fem. n. *defunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900541335*. The type genome for the species is the GenBank assembly GCA_900541335.1. The GC content of the type genome is 48.76 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Prevotellamassilia excetugo sp. nov.

Candidatus Prevotellamassilia excetugo (NL. fem. n. *excetugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900752815*. The type genome for the species is the GenBank assembly RS_GCF_900752815.1. The GC content of the type genome is 53.88 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Prevotellamassilia feditetta sp. nov.

Candidatus Prevotellamassilia feditetta (NL. fem. n. *feditetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900768625*. The type genome for the species is the GenBank assembly RS_GCF_900768625.1. The GC content of the type genome is 51.61 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Prevotellamassilia homogugo sp. nov.

Candidatus Prevotellamassilia homogugo (NL. fem. n. *homogugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp004557185*. The type genome for the species is the GenBank assembly GCA_004557185.1. The GC content of the type genome is 58.14 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Prevotellamassilia inbecimonas sp. nov.

Candidatus Prevotellamassilia inbecimonas (NL. fem. n. *inbecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp004558535*. The type genome for the species is the GenBank assembly GCA_004558535.1. The GC content of the type genome is 56.89 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Prevotellamassilia manomivita sp. nov.

Candidatus Prevotellamassilia manomivita (NL. fem. n. *manomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900542795*. The type genome for the species is the GenBank assembly GCA_900542795.1. The GC content of the type genome is 43.77 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Prevotellamassilia mimogicella sp. nov.

Candidatus Prevotellamassilia mimogicella (NL. fem. n. *mimogicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp002933955*. The type genome for the species is the GenBank assembly RS_GCF_011960185.1. The GC content of the type genome is 47.12 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Prevotellamassilia nidifessa sp. nov.

Candidatus Prevotellamassilia nidifessa (NL. fem. n. *nidifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900541575*. The type genome for the species is the GenBank assembly GCA_900541575.1. The GC content of the type genome is 46.09 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Prevotellamassilia obsuribula sp. nov.

Candidatus Prevotellamassilia obsuribula (NL. fem. n. *obsuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp004562975*. The type genome for the species is the GenBank assembly GCA_004562975.1. The GC content of the type genome is 55.2 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Prevotellamassilia ornitimonia sp. nov.

Candidatus Prevotellamassilia ornitimonia (NL. fem. n. *ornitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp009775705*. The type genome for the species is the GenBank assembly GCA_009775705.1. The GC content of the type genome is 51.89

% and the genome length is 2.52 Mbp.

Description of *Candidatus* Prevotellamassilia perexitas sp. nov.

Candidatus Prevotellamassilia perexitas (NL. fem. n. *perexitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900539625*. The type genome for the species is the GenBank assembly RS_GCF_900767245.1. The GC content of the type genome is 50.86 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Prevotellamassilia relecilega sp. nov.

Candidatus Prevotellamassilia relecilega (NL. fem. n. *relecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900546605*. The type genome for the species is the GenBank assembly RS_GCF_900767625.1. The GC content of the type genome is 43.25 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Prevotellamassilia resupessa sp. nov.

Candidatus Prevotellamassilia resupessa (NL. fem. n. *resupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900543155*. The type genome for the species is the GenBank assembly RS_GCF_900768945.1. The GC content of the type genome is 43.72 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Prevotellamassilia sotulicula sp. nov.

Candidatus Prevotellamassilia sotulicula (NL. fem. n. *sotulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp004556745*. The type genome for the species is the GenBank assembly GCA_004551685.1. The GC content of the type genome is 54.94 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Prevotellamassilia totidifica sp. nov.

Candidatus Prevotellamassilia totidifica (NL. fem. n. *totidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp004552865*. The type genome for the species is the GenBank assembly GCA_004552865.1. The GC content of the type genome is 53.27 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Prevotellamassilia visocitura sp. nov.

Candidatus Prevotellamassilia visocitura (NL. fem. n. *visocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp000437675*. The type genome for the species is the GenBank assembly GCA_900547665.1. The GC content of the type genome is 47.5 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Prevotellamassilia xenopessa sp. nov.

Candidatus Prevotellamassilia xenopessa (NL. fem. n. *xenopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prevotellamassilia sp900540885*. The type genome for the species is the GenBank assembly RS_GCF_900763495.1. The GC content of the type genome is 45.51 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Priestia saburatica sp. nov.

Candidatus Priestia saburatica (NL. fem. n. *saburatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Priestia sp003184905*. The type genome for the species is the GenBank assembly RS_GCF_003184905.1. The GC content of the type genome is 37.64 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Problana turibitrix sp. nov.

Candidatus Problana turibitrix (NL. fem. n. *turibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMML01 sp014379105*. The type genome for the species is the GenBank assembly GCA_014379105.1. The GC content of the type genome is 59.68 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Problana gen. nov.

Candidatus Problana (NL. fem. n. *Problana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMML01*. The type species for the genus is *Candidatus* Problana turibitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hariciaceae.

Description of *Candidatus* Problaria invinisca sp. nov.

Candidatus Problaria invinisca (NL. fem. n. *invinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CEB3 sp001029295*. The type genome for the species is the GenBank assembly RS_GCF_001029295.1. The GC content of the type genome is 52.58 % and the genome length is 5.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sulfidogenic bioreactor run at pH 2.4 which was inoculated with two (moderately) acidophilic sulfate reducing isolates and an enrichment culture of an anaerobic streamer mat from an acidic (pH 2.5) stream draining of an abandoned copper mine in south-west Spain".

Description of *Candidatus* Problaria gen. nov.

Candidatus Problaria (NL. fem. n. *Problaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CEB3*. The type species for the genus is *Candidatus* Problaria invinisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Problella apposastra sp. nov.

Candidatus Problella apposastra (NL. fem. n. *apposastra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GM202ARS2 sp014323835*. The type genome for the species is the GenBank assembly GCA_014323835.1. The GC content of the type genome is 53.12 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Problella gen. nov.

Candidatus Problella (NL. fem. n. *Problella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GM202ARS2*. The type species for the genus is *Candidatus* Problella apposastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GM7ARS4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomellaceae.

Description of *Candidatus* Problia fraglitica sp. nov.

Candidatus Problia fraglitica (NL. fem. n. *fraglitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR5 sp005887895*. The type genome for the species is the GenBank assembly GCA_005887895.1. The GC content of the type genome is 71.05 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Problia gen. nov.

Candidatus Problia (NL. fem. n. *Problia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AR5*. The type species for the genus is *Candidatus* Problia fraglitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Problia veriditas sp. nov.

Candidatus Problia veriditas (NL. fem. n. *veriditas* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR5 sp003220265*. The type genome for the species is the GenBank assembly GCA_003220265.1. The GC content of the type genome is 70.65 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Problida absorugo sp. nov.

Candidatus Problida absorugo (NL. fem. n. *absorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3222 sp002363035*. The type genome for the species is the GenBank assembly GCA_002363035.1. The GC content of the type genome is 48.4 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Problida gen. nov.

Candidatus Problida (NL. fem. n. *Problida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3222*. The type species for the genus is *Candidatus* Problida absorugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9783*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisanaceae.

Description of *Candidatus* Problosa depetitio sp. nov.

Candidatus Problosa depetitio (NL. fem. n. *depetitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYOA01 sp012520525*. The type genome for the species is the GenBank assembly GCA_012520525.1. The GC content of the type genome is 42.34 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Problosa gen. nov.

Candidatus Problosa (NL. fem. n. *Problosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYOA01*. The type species for the genus is *Candidatus* Problosa depetitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Problula mutabimonas sp. nov.

Candidatus Problula mutabimonas (NL. fem. n. *mutabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002840935 sp002840935*. The type genome for the species is the GenBank assembly GCA_002840935.1. The GC content of the type genome is 37.6 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Problula gen. nov.

Candidatus Problula (NL. fem. n. *Problula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002840935*. The type species for the genus is *Candidatus* Problula mutabimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-32-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domigidaceae.

Description of *Candidatus* Prochlorococcus bicinitoga sp. nov.

Candidatus Prochlorococcus bicinitoga (NL. fem. n. *bicinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003212515*. The type genome for the species is the GenBank assembly GCA_003280255.1. The GC content of the type genome is 36.25 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Prochlorococcus coturitio sp. nov.

Candidatus Prochlorococcus coturitio (NL. fem. n. *coturitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp000760215*. The type genome for the species is the GenBank assembly RS_GCF_000760215.1. The GC content of the type genome is 36.35 % and the genome length is 1.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ocean".

Description of *Candidatus* Prochlorococcus depopimonas sp. nov.

Candidatus Prochlorococcus depopimonas (NL. fem. n. *depopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003278345*. The type genome for the species is the GenBank assembly GCA_003278345.1. The GC content of the type genome is 34.86 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Prochlorococcus endivitrix sp. nov.

Candidatus Prochlorococcus endivitrix (NL. fem. n. *endivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003215475*. The type genome for the species is the GenBank assembly GCA_003215475.1. The GC content of the type genome is 35.24 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Prochlorococcus fetifibra sp. nov.

Candidatus Prochlorococcus fetifibra (NL. fem. n. *fetifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003215795*. The type genome for the species is the GenBank assembly GCA_003215795.1. The GC content of the type genome is 37.39 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Prochlorococcus ignipibula sp. nov.

Candidatus Prochlorococcus ignipibula (NL. fem. n. *ignipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp902590775*. The type genome for the species is the

GenBank assembly GCA_902590775.1. The GC content of the type genome is 34.65 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Prochlorococcus inlacicella sp. nov.

Candidatus Prochlorococcus inlacicella (NL. fem. n. *inlacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003278425*. The type genome for the species is the GenBank assembly GCA_003278425.1. The GC content of the type genome is 36.47 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Prochlorococcus inretitica sp. nov.

Candidatus Prochlorococcus inretitica (NL. fem. n. *inretitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003212695*. The type genome for the species is the GenBank assembly GCA_003212695.1. The GC content of the type genome is 35.11 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Prochlorococcus lugubousia sp. nov.

Candidatus Prochlorococcus lugubousia (NL. fem. n. *lugubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003279445*. The type genome for the species is the GenBank assembly GCA_003209775.1. The GC content of the type genome is 37.41 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Prochlorococcus nugivago sp. nov.

Candidatus Prochlorococcus nugivago (NL. fem. n. *nugivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003215555*. The type genome for the species is the GenBank assembly GCA_003215555.1. The GC content of the type genome is 34.79 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Prochlorococcus panifitrix sp. nov.

Candidatus Prochlorococcus panifitrix (NL. fem. n. *panifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003214695*. The type genome for the species is the GenBank assembly GCA_003214695.1. The GC content of the type genome is 37.11 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Prochlorococcus viburitura sp. nov.

Candidatus Prochlorococcus viburitura (NL. fem. n. *viburitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus sp003212555*. The type genome for the species is the GenBank assembly GCA_003212555.1. The GC content of the type genome is 36.78 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Prochlorococcus abhinibula sp. nov.

Candidatus Prochlorococcus abhinibula (NL. fem. n. *abhinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902537275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902537275.1. The GC content of the type genome is 30.95 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Prochlorococcus abrumitudo sp. nov.

Candidatus Prochlorococcus abrumitudo (NL. fem. n. *abrumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902596585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902596585.1. The GC content of the type genome is 31.41 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Prochlorococcus absocicula sp. nov.

Candidatus Prochlorococcus absocicula (NL. fem. n. *absocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216415.1. The GC content of the type genome is 31.33 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Prochlorococcus acceretta sp. nov.

Candidatus Prochlorococcus acceretta (NL. fem. n. *acceretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212115.1. The GC content of the type genome is 31.9 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Prochlorococcus accucilega sp. nov.

Candidatus Prochlorococcus accucilega (NL. fem. n. *accucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902609995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902609995.1. The GC content of the type genome is 31.09 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Prochlorococcus aciscibra sp. nov.

Candidatus Prochlorococcus aciscibra (NL. fem. n. *aciscibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_003279005.1. The GC content of the type genome is 30.85 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Prochlorococcus acrocitas sp. nov.

Candidatus Prochlorococcus acrocitas (NL. fem. n. *acrocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902573565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902573565.1. The GC content of the type genome is 31.6 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Prochlorococcus acrotentia sp. nov.

Candidatus Prochlorococcus acrotentia (NL. fem. n. *acrotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278525.1. The GC content of the type genome is 31.33 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Prochlorococcus acrotigena sp. nov.

Candidatus Prochlorococcus acrotigena (NL. fem. n. *acrotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902618335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902618335.1. The GC content of the type genome is 31.11 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Prochlorococcus actaritas sp. nov.

Candidatus Prochlorococcus actaritas (NL. fem. n. *actaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902615165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902615165.1. The GC content of the type genome is 31.53 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Prochlorococcus adhinastra sp. nov.

Candidatus Prochlorococcus adhinastra (NL. fem. n. *adhinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp002026105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002026105.1. The GC content of the type genome is 31.15 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Prochlorococcus adnecitudo sp. nov.

Candidatus Prochlorococcus adnecitudo (NL. fem. n. *adnecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214815.1. The GC content of the type genome is 31.43 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Prochlorococcus adnicentia sp. nov.

Candidatus Prochlorococcus adnicentia (NL. fem. n. *adnicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902616595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902616595.1. The GC content of the type genome is 31.31 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Prochlorococcus adporitas sp. nov.

Candidatus Prochlorococcus adporitas (NL. fem. n. *adporitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000757845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000757845.1. The GC content of the type genome is 31.17 % and the genome length is 1.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Prochlorococcus adsesax sp. nov.

Candidatus Prochlorococcus adsesax (NL. fem. n. *adsesax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902538695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902538695.1. The GC content of the type genome is 31.49 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Prochlorococcus adsicetta sp. nov.

Candidatus Prochlorococcus adsicetta (NL. fem. n. *adsicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212395.1. The GC content of the type genome is 31.22 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Prochlorococcus adsiciforma sp. nov.

Candidatus Prochlorococcus adsiciforma (NL. fem. n. *adsiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278045.1. The GC content of the type genome is 31.73 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Prochlorococcus adsifugo sp. nov.

Candidatus Prochlorococcus adsifugo (NL. fem. n. *adsifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209375.1. The GC content of the type genome is 31.45 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Prochlorococcus adsucatica sp. nov.

Candidatus Prochlorococcus adsucatica (NL. fem. n. *adsucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp002025945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002025945.1. The GC content of the type genome is 31.33 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Prochlorococcus affabatio sp. nov.

Candidatus Prochlorococcus affabatio (NL. fem. n. *affabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209565.1. The GC content of the type genome is 31.47 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Prochlorococcus affabigena sp. nov.

Candidatus Prochlorococcus affabigena (NL. fem. n. *affabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902536455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536455.1. The GC content of the type genome is 31.7 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Prochlorococcus afranitio sp. nov.

Candidatus Prochlorococcus afranitio (NL. fem. n. *afranitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216535.1. The GC content of the type genome is 31.25 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Prochlorococcus aggesisca sp. nov.

Candidatus Prochlorococcus aggesisca (NL. fem. n. *aggesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902542595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902542595.1. The GC content of the type genome is 31.33 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Prochlorococcus aggubitura sp. nov.

Candidatus Prochlorococcus aggubitura (NL. fem. n. *aggubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281605*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281605.1. The GC content of the type genome is 31.31 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Prochlorococcus agratitoga sp. nov.

Candidatus Prochlorococcus agratitoga (NL. fem. n. *agratitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281335.1. The GC content of the type genome is 31.46 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Prochlorococcus alcalastra sp. nov.

Candidatus Prochlorococcus alcalastra (NL. fem. n. *alcalastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902573045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902573045.1. The GC content of the type genome is 31.77 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Prochlorococcus aminnifica sp. nov.

Candidatus Prochlorococcus aminnifica (NL. fem. n. *aminnifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000635535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000635535.1. The GC content of the type genome is 31.33 % and the genome length is 0.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "raw seawater".

Description of *Candidatus* Prochlorococcus ammulatica sp. nov.

Candidatus Prochlorococcus ammulatica (NL. fem. n. *ammulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902621675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902621675.1. The GC content of the type genome is 31.61 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Prochlorococcus antepitica sp. nov.

Candidatus Prochlorococcus antepitica (NL. fem. n. *antepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216835.1. The GC content of the type genome is 30.9 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Prochlorococcus arcatitia sp. nov.

Candidatus Prochlorococcus arcatitia (NL. fem. n. *arcatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902536065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536065.1. The GC content of the type genome is 31.13 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Prochlorococcus artifastra sp. nov.

Candidatus Prochlorococcus artifastra (NL. fem. n. *artifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003211315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_003211315.1. The GC content of the type genome is 30.89 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Prochlorococcus artopibula sp. nov.

Candidatus Prochlorococcus artopibula (NL. fem. n. *artopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp002026065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002026065.1. The GC content of the type genome is 31.34 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Prochlorococcus aruspitura sp. nov.

Candidatus Prochlorococcus aruspitura (NL. fem. n. *aruspitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902534685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902534685.1. The GC content of the type genome is 31.27 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Prochlorococcus assibitoga sp. nov.

Candidatus Prochlorococcus assibitoga (NL. fem. n. *assibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214295.1. The GC content of the type genome is 31.49 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Prochlorococcus assucitrix sp. nov.

Candidatus Prochlorococcus assucitrix (NL. fem. n. *assucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902538225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902538225.1. The GC content of the type genome is 31.05 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Prochlorococcus aterrago sp. nov.

Candidatus Prochlorococcus aterrago (NL. fem. n. *aterrago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210155.1. The GC content of the type genome is 31.33 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Prochlorococcus aterredo sp. nov.

Candidatus Prochlorococcus aterredo (NL. fem. n. *aterredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210235.1. The GC content of the type genome is 30.75 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Prochlorococcus atricago sp. nov.

Candidatus Prochlorococcus atricago (NL. fem. n. *atricago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209675.1. The GC content of the type genome is 31.34 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Prochlorococcus baditastra sp. nov.

Candidatus Prochlorococcus baditastra (NL. fem. n. *baditastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902519235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902519235.1. The GC content of the type genome is 31.6 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Prochlorococcus benifatio sp. nov.

Candidatus Prochlorococcus benifatio (NL. fem. n. *benifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280335.1. The GC content of the type genome is 30.99 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Prochlorococcus bimotax sp. nov.

Candidatus Prochlorococcus bimotax (NL. fem. n. *bimotax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902572075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902540935.1. The GC content of the type genome is 31.17 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Prochlorococcus bipinedo sp. nov.

Candidatus Prochlorococcus bipinedo (NL. fem. n. *bipinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902573335*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902573335.1. The GC content of the type genome is 31.58 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Prochlorococcus biveriforma sp. nov.

Candidatus Prochlorococcus biveriforma (NL. fem. n. *biveriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000634215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000634795.1. The GC content of the type genome is 31.24 % and the genome length is 1.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "raw seawater".

Description of *Candidatus* Prochlorococcus blacticula sp. nov.

Candidatus Prochlorococcus blacticula (NL. fem. n. *blacticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280895.1. The GC content of the type genome is 31.24 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Prochlorococcus bovicicella sp. nov.

Candidatus Prochlorococcus bovicicella (NL. fem. n. *bovicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214975.1. The GC content of the type genome is 31.2 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Prochlorococcus bovicousia sp. nov.

Candidatus Prochlorococcus bovicousia (NL. fem. n. *bovicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278735.1. The GC content of the type genome is 31.51 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Prochlorococcus bucelatica sp. nov.

Candidatus Prochlorococcus bucelatica (NL. fem. n. *bucelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210275.1. The GC content of the type genome is 30.77 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Prochlorococcus cadurilega sp. nov.

Candidatus Prochlorococcus cadurilega (NL. fem. n. *cadurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212195.1. The GC content of the type genome is 31.53 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Prochlorococcus calipimonia sp. nov.

Candidatus Prochlorococcus calipimonia (NL. fem. n. *calipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902626435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_902626435.1. The GC content of the type genome is 31.3 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Prochlorococcus camilax sp. nov.

Candidatus Prochlorococcus camilax (NL. fem. n. *camilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281625.1. The GC content of the type genome is 31.4 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Prochlorococcus capabibra sp. nov.

Candidatus Prochlorococcus capabibra (NL. fem. n. *capabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902538515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902538515.1. The GC content of the type genome is 31.17 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Prochlorococcus carecilega sp. nov.

Candidatus Prochlorococcus carecilega (NL. fem. n. *carecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214115.1. The GC content of the type genome is 31.57 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Prochlorococcus casabitas sp. nov.

Candidatus Prochlorococcus casabitas (NL. fem. n. *casabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902570945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902570945.1. The GC content of the type genome is 31.54 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Prochlorococcus celamilega sp. nov.

Candidatus Prochlorococcus celamilega (NL. fem. n. *celamilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212055.1. The GC content of the type genome is 31.36 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Prochlorococcus celumugo sp. nov.

Candidatus Prochlorococcus celumugo (NL. fem. n. *celumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210135.1. The GC content of the type genome is 31.4 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Prochlorococcus cerimitia sp. nov.

Candidatus Prochlorococcus cerimitia (NL. fem. n. *cerimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902616515.1. The GC content of the type genome is 31.86 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Prochlorococcus cimeletta sp. nov.

Candidatus Prochlorococcus cimeletta (NL. fem. n. *cimeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902576415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902576415.1. The GC content of the type genome is 31.4 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Prochlorococcus ciminivita sp. nov.

Candidatus Prochlorococcus ciminivita (NL. fem. n. *ciminivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000291825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000291825.1. The GC content of the type genome is 31.41 % and the genome length is 0.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "15m depth in Pacific Ocean".

Description of *Candidatus* Prochlorococcus cinefetta sp. nov.

Candidatus Prochlorococcus cinefetta (NL. fem. n. *cinefetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902535025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902535025.1. The GC content of the type genome is 31.45 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Prochlorococcus cinipilenta sp. nov.

Candidatus Prochlorococcus cinipilenta (NL. fem. n. *cinipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902572825*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902572825.1. The GC content of the type genome is 31.25 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Prochlorococcus citipitio sp. nov.

Candidatus Prochlorococcus citipitio (NL. fem. n. *citipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902570735.1. The GC content of the type genome is 31.75 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Prochlorococcus cnestatio sp. nov.

Candidatus Prochlorococcus cnestatio (NL. fem. n. *cnestatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281525.1. The GC content of the type genome is 31.24 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Prochlorococcus cobaligena sp. nov.

Candidatus Prochlorococcus cobaligena (NL. fem. n. *cobaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902624085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902624085.1. The GC content of the type genome is 30.31 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Prochlorococcus cocibatica sp. nov.

Candidatus Prochlorococcus cocibatica (NL. fem. n. *cocibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281165.1. The GC content of the type genome is 31.4 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Prochlorococcus cohurigena sp. nov.

Candidatus Prochlorococcus cohurigena (NL. fem. n. *cohurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902606255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902606255.1. The GC content of the type genome is 31.61 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Prochlorococcus colapivita sp. nov.

Candidatus Prochlorococcus colapivita (NL. fem. n. *colapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281455.1. The GC content of the type genome is 31.53 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Prochlorococcus colutiforma sp. nov.

Candidatus Prochlorococcus colutiforma (NL. fem. n. *colutiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902525585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902525585.1. The GC content of the type genome is 31.35 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Prochlorococcus conubitrix sp. nov.

Candidatus Prochlorococcus conubitrix (NL. fem. n. *conubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902624105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902624105.1. The GC content of the type genome is 30.79 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Prochlorococcus cruppatio sp. nov.

Candidatus Prochlorococcus cruppatio (NL. fem. n. *cruppatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902571335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902571335.1. The GC content of the type genome is 31.35 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Prochlorococcus culilessa sp. nov.

Candidatus Prochlorococcus culilessa (NL. fem. n. *culilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214175.1. The GC content of the type genome is 31.33 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Prochlorococcus cululilenta sp. nov.

Candidatus Prochlorococcus cululilenta (NL. fem. n. *cululilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279115*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281445.1. The GC content of the type genome is 31.2 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Prochlorococcus cululimonas sp. nov.

Candidatus Prochlorococcus cululimonas (NL. fem. n. *cululimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003211655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003211655.1. The GC content of the type genome is 31.24 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Prochlorococcus curacimonas sp. nov.

Candidatus Prochlorococcus curacimonas (NL. fem. n. *curacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000635015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902597705.1. The GC content of the type genome is 31.85 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Prochlorococcus decapousia sp. nov.

Candidatus Prochlorococcus decapousia (NL. fem. n. *decapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280575.1. The GC content of the type genome is 31.32 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Prochlorococcus decatugo sp. nov.

Candidatus Prochlorococcus decatugo (NL. fem. n. *decatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209655.1. The GC content of the type genome is 30.72 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Prochlorococcus decupitoga sp. nov.

Candidatus Prochlorococcus decupitoga (NL. fem. n. *decupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278855.1. The GC content of the type genome is 31.66 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Prochlorococcus dedigentia sp. nov.

Candidatus Prochlorococcus dedigentia (NL. fem. n. *dedigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003283415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902523145.1. The GC content of the type genome is 30.84 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Prochlorococcus dedigitio sp. nov.

Candidatus Prochlorococcus dedigitio (NL. fem. n. *dedigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902622625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902622625.1. The GC content of the type genome is 31.63 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Prochlorococcus defacitura sp. nov.

Candidatus Prochlorococcus defacitura (NL. fem. n. *defacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902536775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536775.1. The GC content of the type genome is 31.42 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Prochlorococcus defesifica sp. nov.

Candidatus Prochlorococcus defesifica (NL. fem. n. *defesifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003208695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003208695.1. The GC content of the type genome is 31.19 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Prochlorococcus deforatica sp. nov.

Candidatus Prochlorococcus deforatica (NL. fem. n. *deforatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214235.1. The GC content of the type genome is 31.25 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Prochlorococcus defunitia sp. nov.

Candidatus Prochlorococcus defunitia (NL. fem. n. *defunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281225*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281225.1. The GC content of the type genome is 31.13 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Prochlorococcus defunitio sp. nov.

Candidatus Prochlorococcus defunitio (NL. fem. n. *defunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281255.1. The GC content of the type genome is 31.28 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Prochlorococcus delebimonas sp. nov.

Candidatus Prochlorococcus delebimonas (NL. fem. n. *delebimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003213255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003213255.1. The GC content of the type genome is 31.23 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Prochlorococcus demigatica sp. nov.

Candidatus Prochlorococcus demigatica (NL. fem. n. *demigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279015.1. The GC content of the type genome is 31.35 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Prochlorococcus denicastra sp. nov.

Candidatus Prochlorococcus denicastra (NL. fem. n. *denicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278955.1. The GC content of the type genome is 31.39 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Prochlorococcus denomastra sp. nov.

Candidatus Prochlorococcus denomastra (NL. fem. n. *denomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902595095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003217005.1. The GC content of the type genome is 31.66 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Prochlorococcus denomimonas sp. nov.

Candidatus Prochlorococcus denomimonas (NL. fem. n. *denomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003282425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209505.1. The GC content of the type genome is 30.73 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Prochlorococcus depiciforma sp. nov.

Candidatus Prochlorococcus depiciforma (NL. fem. n. *depiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902527105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902527105.1. The GC content of the type genome is 31.22 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Prochlorococcus desacatio sp. nov.

Candidatus Prochlorococcus desacatio (NL. fem. n. *desacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281715.1. The GC content of the type genome is 31.48 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Prochlorococcus desepousia sp. nov.

Candidatus Prochlorococcus desepousia (NL. fem. n. *desepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281385.1. The GC content of the type genome is 31.22 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Prochlorococcus desoricula sp. nov.

Candidatus Prochlorococcus desoricula (NL. fem. n. *desoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278545.1. The GC content of the type genome is 31.24 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Prochlorococcus desuledo sp. nov.

Candidatus Prochlorococcus desuledo (NL. fem. n. *desuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214315*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214315.1. The GC content of the type genome is 31.21 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Prochlorococcus detunugo sp. nov.

Candidatus Prochlorococcus detunugo (NL. fem. n. *detunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212535.1. The GC content of the type genome is 31.19 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Prochlorococcus dicibibra sp. nov.

Candidatus Prochlorococcus dicibibra (NL. fem. n. *dicibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003213955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003213955.1. The GC content of the type genome is 30.6 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Prochlorococcus didacimonas sp. nov.

Candidatus Prochlorococcus didacimonas (NL. fem. n. *didacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216615.1. The GC content of the type genome is 31.0 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Prochlorococcus dilaciforma sp. nov.

Candidatus Prochlorococcus dilaciforma (NL. fem. n. *dilaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902521995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902542055.1. The GC content of the type genome is 31.64 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Prochlorococcus dilogibra sp. nov.

Candidatus Prochlorococcus dilogibra (NL. fem. n. *dilogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210215.1. The GC content of the type genome is 30.94 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Prochlorococcus divorilenta sp. nov.

Candidatus Prochlorococcus divorilenta (NL. fem. n. *divorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902578845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902578845.1. The GC content of the type genome is 31.29 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Prochlorococcus domicitica sp. nov.

Candidatus Prochlorococcus domicitica (NL. fem. n. *domicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209425.1. The GC content of the type genome is 31.01 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Prochlorococcus duricousia sp. nov.

Candidatus Prochlorococcus duricousia (NL. fem. n. *duricousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003211335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003211335.1. The GC content of the type genome is 31.38 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Prochlorococcus duricugo sp. nov.

Candidatus Prochlorococcus duricugo (NL. fem. n. *duricugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281585.1. The GC content of the type genome is 31.44 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Prochlorococcus ecastisca sp. nov.

Candidatus Prochlorococcus ecastisca (NL. fem. n. *ecastisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902620895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902620895.1. The GC content of the type genome is 31.13 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Prochlorococcus echiditia sp. nov.

Candidatus Prochlorococcus echiditia (NL. fem. n. *echiditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902578445*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902578445.1. The GC content of the type genome is 31.14 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Prochlorococcus effacisca sp. nov.

Candidatus Prochlorococcus effacisca (NL. fem. n. *effacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902626425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902626425.1. The GC content of the type genome is 31.38 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Prochlorococcus egritugo sp. nov.

Candidatus Prochlorococcus egritugo (NL. fem. n. *egritugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902600395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902600395.1. The GC content of the type genome is 31.3 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Prochlorococcus ellebitoga sp. nov.

Candidatus Prochlorococcus ellebitoga (NL. fem. n. *ellebitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp002026145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002026145.1. The GC content of the type genome is 31.33 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Prochlorococcus embamimonia sp. nov.

Candidatus Prochlorococcus embamimonia (NL. fem. n. *embamimonia* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278765.1. The GC content of the type genome is 31.43 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Prochlorococcus emortimonas sp. nov.

Candidatus Prochlorococcus emortimonas (NL. fem. n. *emortimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212035.1. The GC content of the type genome is 31.55 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Prochlorococcus encenitio sp. nov.

Candidatus Prochlorococcus encenitio (NL. fem. n. *encenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279845.1. The GC content of the type genome is 31.17 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Prochlorococcus encolitia sp. nov.

Candidatus Prochlorococcus encolitia (NL. fem. n. *encolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902565305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902565305.1.

The GC content of the type genome is 31.66 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Prochlorococcus enigmilenta sp. nov.

Candidatus Prochlorococcus enigmilenta (NL. fem. n. *enigmilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902606505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902606505.1. The GC content of the type genome is 31.53 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Prochlorococcus epiclibra sp. nov.

Candidatus Prochlorococcus epiclibra (NL. fem. n. *epiclibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902572675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902572675.1. The GC content of the type genome is 31.46 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Prochlorococcus epogdentia sp. nov.

Candidatus Prochlorococcus epogdentia (NL. fem. n. *epogdentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216455.1. The GC content of the type genome is 31.35 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Prochlorococcus epogdifica sp. nov.

Candidatus Prochlorococcus epogdifica (NL. fem. n. *epogdifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prochlorococcus_A sp002025975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002025975.1. The GC content of the type genome is 31.27 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Prochlorococcus errabousia sp. nov.

Candidatus Prochlorococcus errabousia (NL. fem. n. *errabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216915.1. The GC content of the type genome is 31.31 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Prochlorococcus excarax sp. nov.

Candidatus Prochlorococcus excarax (NL. fem. n. *excarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214085.1. The GC content of the type genome is 31.38 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Prochlorococcus exheditas sp. nov.

Candidatus Prochlorococcus exheditas (NL. fem. n. *exheditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000634415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000634415.1. The GC content of the type genome is 31.08 % and the genome length is 1.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "raw seawater".

Description of *Candidatus* Prochlorococcus expisivita sp. nov.

Candidatus Prochlorococcus expisivita (NL. fem. n. *expisivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212175.1. The GC content of the type genome is 31.37 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Prochlorococcus extinitio sp. nov.

Candidatus Prochlorococcus extinitio (NL. fem. n. *extinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278895.1. The GC content of the type genome is 31.33 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Prochlorococcus fetulitudo sp. nov.

Candidatus Prochlorococcus fetulitudo (NL. fem. n. *fetulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902526435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902526435.1. The GC content of the type genome is 31.02 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Prochlorococcus foricax sp. nov.

Candidatus Prochlorococcus foricax (NL. fem. n. *foricax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902611225*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902611225.1. The GC content of the type genome is 31.39 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Prochlorococcus fumacimonia sp. nov.

Candidatus Prochlorococcus fumacimonia (NL. fem. n. *fumacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902564235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902564235.1. The GC content of the type genome is 31.46 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Prochlorococcus gasifibra sp. nov.

Candidatus Prochlorococcus gasifibra (NL. fem. n. *gasifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209415.1. The GC content of the type genome is 31.38 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Prochlorococcus grallitudo sp. nov.

Candidatus Prochlorococcus grallitudo (NL. fem. n. *grallitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210695.1. The GC content of the type genome is 30.98 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Prochlorococcus halucilega sp. nov.

Candidatus Prochlorococcus halucilega (NL. fem. n. *halucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281315.1. The GC content of the type genome is 31.6 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Prochlorococcus hemidibula sp. nov.

Candidatus Prochlorococcus hemidibula (NL. fem. n. *hemidibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902594875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902594875.1. The GC content of the type genome is 31.57 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Prochlorococcus hemititio sp. nov.

Candidatus Prochlorococcus hemititio (NL. fem. n. *hemititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214055.1. The GC content of the type genome is 31.37 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Prochlorococcus hibisatica sp. nov.

Candidatus Prochlorococcus hibisatica (NL. fem. n. *hibisatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003211955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003211955.1. The GC content of the type genome is 31.36 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Prochlorococcus holisetta sp. nov.

Candidatus Prochlorococcus holisetta (NL. fem. n. *holisetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902572395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902572395.1. The GC content of the type genome is 31.45 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Prochlorococcus holisitia sp. nov.

Candidatus Prochlorococcus holisitia (NL. fem. n. *holisitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280165.1. The GC content of the type genome is 32.39 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Prochlorococcus homagax sp. nov.

Candidatus Prochlorococcus homagax (NL. fem. n. *homagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280985.1. The GC content of the type genome is 31.18 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Prochlorococcus homagetta sp. nov.

Candidatus Prochlorococcus homagetta (NL. fem. n. *homagetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209585*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209585.1. The GC content of the type genome is 31.37 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Prochlorococcus humecicella sp. nov.

Candidatus Prochlorococcus humecicella (NL. fem. n. *humecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281685.1. The GC content of the type genome is 31.34 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Prochlorococcus humeciforma sp. nov.

Candidatus Prochlorococcus humeciforma (NL. fem. n. *humeciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902535185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902535185.1. The GC content of the type genome is 31.63 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Prochlorococcus humecitura sp. nov.

Candidatus Prochlorococcus humecitura (NL. fem. n. *humecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003211115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003211115.1. The GC content of the type genome is 30.73 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Prochlorococcus illepatica sp. nov.

Candidatus Prochlorococcus illepatica (NL. fem. n. *illepatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216725.1. The GC content of the type genome is 30.7 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Prochlorococcus imbecugo sp. nov.

Candidatus Prochlorococcus imbecugo (NL. fem. n. *imbecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902591275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902591275.1. The GC content of the type genome is 31.82 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Prochlorococcus immedago sp. nov.

Candidatus Prochlorococcus immedago (NL. fem. n. *immedago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003213375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003213375.1. The GC content of the type genome is 31.41 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Prochlorococcus immoditas sp. nov.

Candidatus Prochlorococcus immoditas (NL. fem. n. *immoditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278925.1. The GC content of the type genome is 31.27 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Prochlorococcus immurousia sp. nov.

Candidatus Prochlorococcus immurousia (NL. fem. n. *immurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902595175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902595175.1. The GC content of the type genome is 31.66 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Prochlorococcus impavugo sp. nov.

Candidatus Prochlorococcus impavugo (NL. fem. n. *impavugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003213235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003213235.1. The GC content of the type genome is 31.17 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Prochlorococcus inabsitrix sp. nov.

Candidatus Prochlorococcus inabsitrix (NL. fem. n. *inabsitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902582995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902582995.1. The GC content of the type genome is 31.61 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Prochlorococcus inardugo sp. nov.

Candidatus Prochlorococcus inardugo (NL. fem. n. *inardugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902536555*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536555.1. The GC content of the type genome is 31.03 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Prochlorococcus inargiforma sp. nov.

Candidatus Prochlorococcus inargiforma (NL. fem. n. *inargiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902536725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536725.1. The GC content of the type genome is 31.43 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Prochlorococcus indidousia sp. nov.

Candidatus Prochlorococcus indidousia (NL. fem. n. *indidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212615.1. The GC content of the type genome is 31.42 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Prochlorococcus indipitudo sp. nov.

Candidatus Prochlorococcus indipitudo (NL. fem. n. *indipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902618795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902618795.1. The GC content of the type genome is 31.7 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Prochlorococcus indivago sp. nov.

Candidatus Prochlorococcus indivago (NL. fem. n. *indivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279055.1. The GC content of the type genome is 31.42 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Prochlorococcus infelugo sp. nov.

Candidatus Prochlorococcus infelugo (NL. fem. n. *infelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281635.1. The GC content of the type genome is 31.41 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Prochlorococcus infenastra sp. nov.

Candidatus Prochlorococcus infenastra (NL. fem. n. *infenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281505.1. The GC content of the type genome is 31.29 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Prochlorococcus infiricella sp. nov.

Candidatus Prochlorococcus infiricella (NL. fem. n. *infiricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214355.1. The GC content of the type genome is 33.1 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Prochlorococcus inlocilega sp. nov.

Candidatus Prochlorococcus inlocilega (NL. fem. n. *inlocilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902535175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902535175.1. The GC content of the type genome is 31.27 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Prochlorococcus inmacimonas sp. nov.

Candidatus Prochlorococcus inmacimonas (NL. fem. n. *inmacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902572065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902572065.1. The GC content of the type genome is 31.2 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Prochlorococcus innabugo sp. nov.

Candidatus Prochlorococcus innabugo (NL. fem. n. *innabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278705.1. The GC content of the type genome is 31.38 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Prochlorococcus inperessa sp. nov.

Candidatus Prochlorococcus inperessa (NL. fem. n. *inperessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209475*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209475.1. The GC content of the type genome is 31.43 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Prochlorococcus inresedo sp. nov.

Candidatus Prochlorococcus inresedo (NL. fem. n. *inresedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902625845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902625845.1. The GC content of the type genome is 30.21 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Prochlorococcus insalisca sp. nov.

Candidatus Prochlorococcus insalisca (NL. fem. n. *insalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210895.1. The GC content of the type genome is 30.58 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Prochlorococcus insenibula sp. nov.

Candidatus Prochlorococcus insenibula (NL. fem. n. *insenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210825.1. The GC content of the type genome is 31.01 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Prochlorococcus insinibra sp. nov.

Candidatus Prochlorococcus insinibra (NL. fem. n. *insinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281645.1. The GC content of the type genome is 31.35 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Prochlorococcus intemimonia sp. nov.

Candidatus Prochlorococcus intemimonia (NL. fem. n. *intemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003282225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003282225.1. The GC content of the type genome is 30.99 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Prochlorococcus intenitrix sp. nov.

Candidatus Prochlorococcus intenitrix (NL. fem. n. *intenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216795.1. The GC content of the type genome is 31.45 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Prochlorococcus irreditoga sp. nov.

Candidatus Prochlorococcus irreditoga (NL. fem. n. *irreditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214215.1. The GC content of the type genome is 31.29 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Prochlorococcus irremifica sp. nov.

Candidatus Prochlorococcus irremifica (NL. fem. n. *irremifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212755.1. The GC content of the type genome is 31.18 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Prochlorococcus laculibra sp. nov.

Candidatus Prochlorococcus laculibra (NL. fem. n. *laculibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216755.1. The GC content of the type genome is 31.55 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Prochlorococcus lametatica sp. nov.

Candidatus Prochlorococcus lametatica (NL. fem. n. *lametatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281485.1. The GC content of the type genome is 31.49 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Prochlorococcus lanififorma sp. nov.

Candidatus Prochlorococcus lanififorma (NL. fem. n. *lanififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209055*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209055.1. The GC content of the type genome is 30.8 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Prochlorococcus lanigastra sp. nov.

Candidatus Prochlorococcus lanigastra (NL. fem. n. *lanigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902627335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902627335.1. The GC content of the type genome is 30.83 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Prochlorococcus lanigitoga sp. nov.

Candidatus Prochlorococcus lanigitoga (NL. fem. n. *lanigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280725.1. The GC content of the type genome is 31.11 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Prochlorococcus legifitura sp. nov.

Candidatus Prochlorococcus legifitura (NL. fem. n. *legifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212655.1. The GC content of the type genome is 31.47 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Prochlorococcus lorarifica sp. nov.

Candidatus Prochlorococcus lorarifica (NL. fem. n. *lorarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902572595.1. The GC content of the type genome is 31.39 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Prochlorococcus loripastra sp. nov.

Candidatus Prochlorococcus loripastra (NL. fem. n. *loripastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902534675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902534675.1. The GC content of the type genome is 31.73 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Prochlorococcus luculivita sp. nov.

Candidatus Prochlorococcus luculivita (NL. fem. n. *luculivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902612005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902575525.1. The GC content of the type genome is 31.29 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Prochlorococcus malagatio sp. nov.

Candidatus Prochlorococcus malagatio (NL. fem. n. *malagatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902628235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902628235.1. The GC content of the type genome is 30.02 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Prochlorococcus manibitrix sp. nov.

Candidatus Prochlorococcus manibitrix (NL. fem. n. *manibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902601255.1. The GC content of the type genome is 31.75 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Prochlorococcus manubitoga sp. nov.

Candidatus Prochlorococcus manubitoga (NL. fem. n. *manubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000634115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000634115.1. The GC content of the type genome is 31.0 % and the genome length is 1.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "raw seawater".

Description of *Candidatus* Prochlorococcus maxiletta sp. nov.

Candidatus Prochlorococcus maxiletta (NL. fem. n. *maxiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279105.1. The GC content of the type genome is 31.45 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Prochlorococcus maxilitudo sp. nov.

Candidatus Prochlorococcus maxilitudo (NL. fem. n. *maxilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280935.1. The GC content of the type genome is 31.46 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Prochlorococcus melilitio sp. nov.

Candidatus Prochlorococcus melilitio (NL. fem. n. *melilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902574425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902574425.1. The GC content of the type genome is 31.42 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Prochlorococcus monocivita sp. nov.

Candidatus Prochlorococcus monocivita (NL. fem. n. *monocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279945.1. The GC content of the type genome is 31.13 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Prochlorococcus navifibula sp. nov.

Candidatus Prochlorococcus navifibula (NL. fem. n. *navifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902520485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902520485.1. The GC content of the type genome is 31.58 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Prochlorococcus nidifitas sp. nov.

Candidatus Prochlorococcus nidifitas (NL. fem. n. *nidifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212005.1. The GC content of the type genome is 30.5 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Prochlorococcus nitelicella sp. nov.

Candidatus Prochlorococcus nitelicella (NL. fem. n. *nitelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281185.1. The GC content of the type genome is 31.06 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Prochlorococcus nitelitoga sp. nov.

Candidatus Prochlorococcus nitelitoga (NL. fem. n. *nitelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902627325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902627325.1. The GC content of the type genome is 30.81 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Prochlorococcus nubigivita sp. nov.

Candidatus Prochlorococcus nubigivita (NL. fem. n. *nubigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000634515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_902543475.1. The GC content of the type genome is 31.56 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Prochlorococcus obtemousia sp. nov.

Candidatus Prochlorococcus obtemousia (NL. fem. n. *obtemousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902590355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902590355.1. The GC content of the type genome is 31.27 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Prochlorococcus offiritura sp. nov.

Candidatus Prochlorococcus offiritura (NL. fem. n. *offiritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902616385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902616385.1. The GC content of the type genome is 31.33 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Prochlorococcus ossucilenta sp. nov.

Candidatus Prochlorococcus ossucilenta (NL. fem. n. *ossucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902591865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902591865.1. The GC content of the type genome is 31.25 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Prochlorococcus palififica sp. nov.

Candidatus Prochlorococcus palififica (NL. fem. n. *palififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp002026005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002026005.1. The GC content of the type genome is 31.18 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Prochlorococcus panifitas sp. nov.

Candidatus Prochlorococcus panifitas (NL. fem. n. *panifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003208885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003208885.1. The GC content of the type genome is 31.01 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Prochlorococcus papavitica sp. nov.

Candidatus Prochlorococcus papavitica (NL. fem. n. *papavitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278875.1. The GC content of the type genome is 31.32 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Prochlorococcus papavousia sp. nov.

Candidatus Prochlorococcus papavousia (NL. fem. n. *papavousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902615195.1. The GC content of the type genome is 31.52 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Prochlorococcus parocitas sp. nov.

Candidatus Prochlorococcus parocitas (NL. fem. n. *parocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003215815.1. The GC content of the type genome is 31.98 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Prochlorococcus patibimonia sp. nov.

Candidatus Prochlorococcus patibimonia (NL. fem. n. *patibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280915.1. The GC content of the type genome is 31.4 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Prochlorococcus pavicitio sp. nov.

Candidatus Prochlorococcus pavicitio (NL. fem. n. *pavicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000634735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278585.1. The GC content of the type genome is 31.34 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Prochlorococcus pecunatica sp. nov.

Candidatus Prochlorococcus pecunatica (NL. fem. n. *pecunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902583265*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902583265.1. The GC content of the type genome is 31.7 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Prochlorococcus pedifisca sp. nov.

Candidatus Prochlorococcus pedifisca (NL. fem. n. *pedifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003211415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281705.1. The GC content of the type genome is 31.12 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Prochlorococcus peracicella sp. nov.

Candidatus Prochlorococcus peracicella (NL. fem. n. *peracicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902525125.1. The GC content of the type genome is 31.55 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Prochlorococcus pericatio sp. nov.

Candidatus Prochlorococcus pericatio (NL. fem. n. *pericatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp002026015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002026015.1. The GC content of the type genome is 31.38 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Prochlorococcus problatio sp. nov.

Candidatus Prochlorococcus problatio (NL. fem. n. *problatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279935.1. The GC content of the type genome is 30.84 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Prochlorococcus prospentia sp. nov.

Candidatus Prochlorococcus prospentia (NL. fem. n. *prospentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003212375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003212375.1. The GC content of the type genome is 30.78 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Prochlorococcus ratifousia sp. nov.

Candidatus Prochlorococcus ratifousia (NL. fem. n. *ratifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902572915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902572915.1. The GC content of the type genome is 31.47 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Prochlorococcus recocessa sp. nov.

Candidatus Prochlorococcus recocessa (NL. fem. n. *recocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216465.1.

The GC content of the type genome is 30.82 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Prochlorococcus recocimonia sp. nov.

Candidatus Prochlorococcus recocimonia (NL. fem. n. *recocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210915.1. The GC content of the type genome is 30.85 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Prochlorococcus recocitia sp. nov.

Candidatus Prochlorococcus recocitia (NL. fem. n. *recocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003210655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210655.1. The GC content of the type genome is 31.08 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Prochlorococcus recocivita sp. nov.

Candidatus Prochlorococcus recocivita (NL. fem. n. *recocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902537445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902537445.1. The GC content of the type genome is 31.47 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Prochlorococcus recogitica sp. nov.

Candidatus Prochlorococcus recogitica (NL. fem. n. *recogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prochlorococcus_A sp003281285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281285.1. The GC content of the type genome is 31.59 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Prochlorococcus remediforma sp. nov.

Candidatus Prochlorococcus remediforma (NL. fem. n. *remediforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003213855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003213855.1. The GC content of the type genome is 31.73 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Prochlorococcus repagicella sp. nov.

Candidatus Prochlorococcus repagicella (NL. fem. n. *repagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902539115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902539115.1. The GC content of the type genome is 31.55 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Prochlorococcus repecibra sp. nov.

Candidatus Prochlorococcus repecibra (NL. fem. n. *repecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000634195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000634195.1. The GC content of the type genome is 31.38 % and the genome length is 1.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "raw seawater".

Description of *Candidatus* Prochlorococcus repurentia sp. nov.

Candidatus Prochlorococcus repurentia (NL. fem. n. *repurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281365.1. The GC content of the type genome is 31.18 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Prochlorococcus resalitas sp. nov.

Candidatus Prochlorococcus resalitas (NL. fem. n. *resalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216775.1. The GC content of the type genome is 31.18 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Prochlorococcus retecibra sp. nov.

Candidatus Prochlorococcus retecibra (NL. fem. n. *retecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902518475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902518475.1. The GC content of the type genome is 31.56 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Prochlorococcus retecivita sp. nov.

Candidatus Prochlorococcus retecivita (NL. fem. n. *retecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902600475*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902600475.1. The GC content of the type genome is 31.24 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Prochlorococcus robigitura sp. nov.

Candidatus Prochlorococcus robigitura (NL. fem. n. *robigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209065.1. The GC content of the type genome is 30.81 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Prochlorococcus rosacitio sp. nov.

Candidatus Prochlorococcus rosacitio (NL. fem. n. *rosacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902622705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902622705.1. The GC content of the type genome is 31.57 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Prochlorococcus rubicax sp. nov.

Candidatus Prochlorococcus rubicax (NL. fem. n. *rubicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003278845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902596945.1. The GC content of the type genome is 31.26 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Prochlorococcus rubigitrix sp. nov.

Candidatus Prochlorococcus rubigitrix (NL. fem. n. *rubigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902574955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902574955.1. The GC content of the type genome is 31.56 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Prochlorococcus rubigitudo sp. nov.

Candidatus Prochlorococcus rubigitudo (NL. fem. n. *rubigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281415.1. The GC content of the type genome is 31.43 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Prochlorococcus rurigiforma sp. nov.

Candidatus Prochlorococcus rurigiforma (NL. fem. n. *rurigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902522795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902522795.1. The GC content of the type genome is 31.46 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Prochlorococcus scammicula sp. nov.

Candidatus Prochlorococcus scammicula (NL. fem. n. *scammicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003211135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003211135.1. The GC content of the type genome is 30.68 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Prochlorococcus scintatio sp. nov.

Candidatus Prochlorococcus scintatio (NL. fem. n. *scintatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902537395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902537395.1. The GC content of the type genome is 31.33 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Prochlorococcus scombilega sp. nov.

Candidatus Prochlorococcus scombilega (NL. fem. n. *scombilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003209795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209795.1. The GC content of the type genome is 30.88 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Prochlorococcus secuniforma sp. nov.

Candidatus Prochlorococcus secuniforma (NL. fem. n. *secuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003214195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214195.1. The GC content of the type genome is 31.3 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Prochlorococcus semidentia sp. nov.

Candidatus Prochlorococcus semidentia (NL. fem. n. *semidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902623195*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902623195.1. The GC content of the type genome is 30.61 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Prochlorococcus semipivita sp. nov.

Candidatus Prochlorococcus semipivita (NL. fem. n. *semipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279875.1. The GC content of the type genome is 30.6 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Prochlorococcus senipilenta sp. nov.

Candidatus Prochlorococcus senipilenta (NL. fem. n. *senipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281405.1. The GC content of the type genome is 31.34 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Prochlorococcus siminentia sp. nov.

Candidatus Prochlorococcus siminentia (NL. fem. n. *siminentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003281125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003281125.1. The GC content of the type genome is 31.66 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Prochlorococcus solificella sp. nov.

Candidatus Prochlorococcus solificella (NL. fem. n. *solificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp000635495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000634355.1. The GC content of the type genome is 31.14 % and the genome length is 0.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "raw seawater".

Description of *Candidatus* Prochlorococcus subinentia sp. nov.

Candidatus Prochlorococcus subinentia (NL. fem. n. *subinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902525075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902525075.1. The GC content of the type genome is 31.33 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Prochlorococcus subucetta sp. nov.

Candidatus Prochlorococcus subucetta (NL. fem. n. *subucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279535.1. The GC content of the type genome is 31.78 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Prochlorococcus taraxax sp. nov.

Candidatus Prochlorococcus taraxax (NL. fem. n. *taraxax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003280655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_902573135.1. The GC content of the type genome is 31.57 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Prochlorococcus tibicibra sp. nov.

Candidatus Prochlorococcus tibicibra (NL. fem. n. *tibicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003213275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003213275.1. The GC content of the type genome is 31.4 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Prochlorococcus tirocentia sp. nov.

Candidatus Prochlorococcus tirocentia (NL. fem. n. *tirocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902624785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902624785.1. The GC content of the type genome is 29.66 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Prochlorococcus tolutatica sp. nov.

Candidatus Prochlorococcus tolutatica (NL. fem. n. *tolutatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp002025865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902618265.1. The GC content of the type genome is 31.5 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Prochlorococcus tolutifica sp. nov.

Candidatus Prochlorococcus tolutifica (NL. fem. n. *tolutifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902626525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902626525.1. The GC content of the type genome is 30.77 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Prochlorococcus tubicigena sp. nov.

Candidatus Prochlorococcus tubicigena (NL. fem. n. *tubicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp002026165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002026165.1. The GC content of the type genome is 31.23 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Prochlorococcus undevatio sp. nov.

Candidatus Prochlorococcus undevatio (NL. fem. n. *undevatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003279855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279855.1. The GC content of the type genome is 30.86 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Prochlorococcus undeventia sp. nov.

Candidatus Prochlorococcus undeventia (NL. fem. n. *undeventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp003216355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216355.1. The GC content of the type genome is 31.57 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Prochlorococcus unetvitica sp. nov.

Candidatus Prochlorococcus unetvitica (NL. fem. n. *unetvitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902617605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902617605.1. The GC content of the type genome is 31.5 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Prochlorococcus unetvitura sp. nov.

Candidatus Prochlorococcus unetvitura (NL. fem. n. *unetvitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902558895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902558895.1. The GC content of the type genome is 31.72 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Prochlorococcus vacilugo sp. nov.

Candidatus Prochlorococcus vacilugo (NL. fem. n. *vacilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902550485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902550485.1. The GC content of the type genome is 30.91 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Prochlorococcus venucatica sp. nov.

Candidatus Prochlorococcus venucatica (NL. fem. n. *venucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902574405*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902574405.1. The GC content of the type genome is 31.31 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Prochlorococcus viceciforma sp. nov.

Candidatus Prochlorococcus viceciforma (NL. fem. n. *viceciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp001989455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902525905.1. The GC content of the type genome is 31.65 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Prochlorococcus vitigentia sp. nov.

Candidatus Prochlorococcus vitigentia (NL. fem. n. *vitigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902571795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902571795.1. The GC content of the type genome is 31.2 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Prochlorococcus xeropifica sp. nov.

Candidatus Prochlorococcus xeropifica (NL. fem. n. *xeropifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_A sp902536545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902536545.1. The GC content of the type genome is 31.45 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Prochlorococcus accoretta sp. nov.

Candidatus Prochlorococcus accoretta (NL. fem. n. *accoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216175.1. The GC content of the type genome is 35.2 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Prochlorococcus acroledo sp. nov.

Candidatus Prochlorococcus acroledo (NL. fem. n. *acroledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003283665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003283665.1. The GC content of the type genome is 34.89 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Prochlorococcus adrotiforma sp. nov.

Candidatus Prochlorococcus adrotiforma (NL. fem. n. *adrotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp000757865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000757865.1. The GC content of the type genome is 34.91 % and the genome length is 1.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Prochlorococcus angipiforma sp. nov.

Candidatus Prochlorococcus angipiforma (NL. fem. n. *angipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003283745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_003283745.1. The GC content of the type genome is 34.84 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Prochlorococcus ascisitas sp. nov.

Candidatus Prochlorococcus ascisitas (NL. fem. n. *ascisitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003278445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003278445.1. The GC content of the type genome is 34.38 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Prochlorococcus binocago sp. nov.

Candidatus Prochlorococcus binocago (NL. fem. n. *binocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003279585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279585.1. The GC content of the type genome is 34.58 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Prochlorococcus capabatica sp. nov.

Candidatus Prochlorococcus capabatica (NL. fem. n. *capabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003215315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003215315.1. The GC content of the type genome is 35.63 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Prochlorococcus cenobilenta sp. nov.

Candidatus Prochlorococcus cenobilenta (NL. fem. n. *cenobilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216275.1. The GC content of the type genome is 34.38 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Prochlorococcus cilicitica sp. nov.

Candidatus Prochlorococcus cilicitica (NL. fem. n. *cilicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003280445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280445.1. The GC content of the type genome is 35.09 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Prochlorococcus cisalicula sp. nov.

Candidatus Prochlorococcus cisalicula (NL. fem. n. *cisalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp902564695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902564695.1. The GC content of the type genome is 34.1 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Prochlorococcus cituvastra sp. nov.

Candidatus Prochlorococcus cituvastra (NL. fem. n. *cituvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003279565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279565.1. The GC content of the type genome is 34.75 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Prochlorococcus dececousia sp. nov.

Candidatus Prochlorococcus dececousia (NL. fem. n. *dececousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216295.1. The GC content of the type genome is 34.44 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Prochlorococcus denupousia sp. nov.

Candidatus Prochlorococcus denupousia (NL. fem. n. *denupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003284445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003284445.1. The GC content of the type genome is 35.01 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Prochlorococcus desorimonia sp. nov.

Candidatus Prochlorococcus desorimonia (NL. fem. n. *desorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216895.1. The GC content of the type genome is 34.68 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Prochlorococcus dibucilenta sp. nov.

Candidatus Prochlorococcus dibucilenta (NL. fem. n. *dibucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003283685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_003283685.1. The GC content of the type genome is 35.12 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Prochlorococcus dicanicella sp. nov.

Candidatus Prochlorococcus dicanicella (NL. fem. n. *dicanicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003284375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003284375.1. The GC content of the type genome is 35.07 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Prochlorococcus dimadicula sp. nov.

Candidatus Prochlorococcus dimadicula (NL. fem. n. *dimadicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216975.1. The GC content of the type genome is 34.59 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Prochlorococcus dimidetta sp. nov.

Candidatus Prochlorococcus dimidetta (NL. fem. n. *dimidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003279655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279655.1. The GC content of the type genome is 34.76 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Prochlorococcus doxolastra sp. nov.

Candidatus Prochlorococcus doxolastra (NL. fem. n. *doxolastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216955.1. The GC content of the type genome is 34.68 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Prochlorococcus ecciletta sp. nov.

Candidatus Prochlorococcus ecciletta (NL. fem. n. *ecciletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216575.1. The GC content of the type genome is 34.32 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Prochlorococcus feficedo sp. nov.

Candidatus Prochlorococcus feficedo (NL. fem. n. *feficedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003280265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003280265.1. The GC content of the type genome is 34.6 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Prochlorococcus immemitoga sp. nov.

Candidatus Prochlorococcus immemitoga (NL. fem. n. *immemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003213355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003213355.1. The GC content of the type genome is 35.28 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Prochlorococcus ingigimonas sp. nov.

Candidatus Prochlorococcus ingigimonas (NL. fem. n. *ingigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216595.1. The GC content of the type genome is 34.85 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Prochlorococcus monogatio sp. nov.

Candidatus Prochlorococcus monogatio (NL. fem. n. *monogatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216675.1. The GC content of the type genome is 34.86 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Prochlorococcus murelousia sp. nov.

Candidatus Prochlorococcus murelousia (NL. fem. n. *murelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp902634795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902634795.1. The GC content of the type genome is 34.9 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Prochlorococcus obtenigena sp. nov.

Candidatus Prochlorococcus obtenigena (NL. fem. n. *obtenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003212625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_003212625.1. The GC content of the type genome is 34.34 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Prochlorococcus pinacicula sp. nov.

Candidatus Prochlorococcus pinacicula (NL. fem. n. *pinacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp902629395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902629395.1. The GC content of the type genome is 34.98 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Prochlorococcus recomitura sp. nov.

Candidatus Prochlorococcus recomitura (NL. fem. n. *recomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003277985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003277985.1. The GC content of the type genome is 34.85 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Prochlorococcus semidiforma sp. nov.

Candidatus Prochlorococcus semidiforma (NL. fem. n. *semidiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003279635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279635.1. The GC content of the type genome is 35.08 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Prochlorococcus semigitudo sp. nov.

Candidatus Prochlorococcus semigitudo (NL. fem. n. *semigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003209755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209755.1. The GC content of the type genome is 34.63 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Prochlorococcus siligibra sp. nov.

Candidatus Prochlorococcus siligibra (NL. fem. n. *siligibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216815.1. The GC content of the type genome is 34.55 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Prochlorococcus sitelisca sp. nov.

Candidatus Prochlorococcus sitelisca (NL. fem. n. *sitelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003216715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003216715.1. The GC content of the type genome is 34.57 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Prochlorococcus sonabilega sp. nov.

Candidatus Prochlorococcus sonabilega (NL. fem. n. *sonabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003279455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003279455.1. The GC content of the type genome is 34.45 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Prochlorococcus velifugo sp. nov.

Candidatus Prochlorococcus velifugo (NL. fem. n. *velifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003215895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003215895.1. The GC content of the type genome is 35.29 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Prochlorococcus viburax sp. nov.

Candidatus Prochlorococcus viburax (NL. fem. n. *viburax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003284185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003284185.1. The GC content of the type genome is 34.74 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Prochlorococcus vitupimonia sp. nov.

Candidatus Prochlorococcus vitupimonia (NL. fem. n. *vitupimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003215695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003215695.1. The GC content of the type genome is 36.29 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Prochlorococcus voragisca sp. nov.

Candidatus Prochlorococcus voragisca (NL. fem. n. *voragisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_B sp003279615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_003279505.1. The GC content of the type genome is 34.57 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Prochlorococcus defacilenta sp. nov.

Candidatus Prochlorococcus defacilenta (NL. fem. n. *defacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_C sp000760295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000760335.1. The GC content of the type genome is 50.61 % and the genome length is 2.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ocean".

Description of *Candidatus* Prochlorococcus inardivita sp. nov.

Candidatus Prochlorococcus inardivita (NL. fem. n. *inardivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_C sp003214855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003214855.1. The GC content of the type genome is 49.29 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Prochlorococcus invecicella sp. nov.

Candidatus Prochlorococcus invecicella (NL. fem. n. *invecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_D sp003217035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003217035.1. The GC content of the type genome is 37.42 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Prochlorococcus munifica sp. nov.

Candidatus Prochlorococcus munifica (NL. fem. n. *munifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochlorococcus_D sp000760175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000760175.1. The GC content of the type genome is 37.02 % and the genome length is 1.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ocean".

Description of *Candidatus* Prochloron bicaligena sp. nov.

Candidatus Prochloron bicaligena (NL. fem. n. *bicaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prochloron sp014323965*. The type genome for the species is the GenBank assembly GCA_014323965.1. The GC content of the type genome is 43.91 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Proclana inexsimonas sp. nov.

Candidatus Proclana inexsimonas (NL. fem. n. *inexsimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMEW01 sp007375735*. The type genome for the species is the GenBank assembly GCA_007375735.1. The GC content of the type genome is 60.0 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Proclana gen. nov.

Candidatus Proclana (NL. fem. n. *Proclana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMEW01*. The type species for the genus is *Candidatus* Proclana inexsimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Proclella defositura sp. nov.

Candidatus Proclella defositura (NL. fem. n. *defositura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RECH01 sp007694125*. The type genome for the species is the GenBank assembly GCA_007694125.1. The GC content of the type genome is 53.93 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Proclella gen. nov.

Candidatus Proclella (NL. fem. n. *Proclella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RECH01*. The type species for the genus is *Candidatus* Proclella defositura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Proclia voragessa sp. nov.

Candidatus Proclia voragessa (NL. fem. n. *voragessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-50-11-A sp001804315*. The type genome for the species is the GenBank assembly GCA_001804315.1. The GC content of the type genome is 49.88 % and the genome length is 2.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Proclia gen. nov.

Candidatus Proclia (NL. fem. n. *Proclia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-50-11-A*. The type species for the genus is *Candidatus* Proclia voragessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *01-FULL-45-10b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semipidaceae.

Description of *Candidatus* Proclosa navicitia sp. nov.

Candidatus Proclosa navicitia (NL. fem. n. *navicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AA32 sp003222275*. The type genome for the species is the GenBank assembly GCA_003222275.1. The GC content of the type genome is 69.62 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Proclosa gen. nov.

Candidatus Proclosa (NL. fem. n. *Proclosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AA32*. The type species for the genus is *Candidatus* Proclosa navicitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Exsanellaceae.

Description of *Candidatus* Proclosa recomibula sp. nov.

Candidatus Proclosa recomibula (NL. fem. n. *recomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AA32 sp003223555*. The type genome for the species is the GenBank assembly GCA_003223555.1. The GC content of the type genome is 71.04 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Proclula ceraritura sp. nov.

Candidatus Proclula ceraritura (NL. fem. n. *ceraritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYMU01 sp012521215*. The type genome for the species is the GenBank assembly GCA_012521215.1. The GC content of the type genome is 41.76 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Proclula gen. nov.

Candidatus Proclula (NL. fem. n. *Proclula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYMU01*. The type species for the genus is *Candidatus* Proclula ceraritura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Proclula cotenago sp. nov.

Candidatus Proclula cotenago (NL. fem. n. *cotenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYMU01 sp012523535*. The type genome for the species is the GenBank assembly GCA_012523535.1. The GC content of the type genome is 42.54 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Proclula ficedibra sp. nov.

Candidatus Proclula ficedibra (NL. fem. n. *ficedibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYMU01 sp012520405*. The type genome for the species is the GenBank assembly GCA_012520405.1. The GC content of the type genome is 41.81 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Procrana adsecitoga sp. nov.

Candidatus Procrana adsecitoga (NL. fem. n. *adsecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABABU01 sp014238065*. The type genome for the species is the GenBank assembly GCA_014238065.1. The GC content of the type genome is 62.19 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Procrana gen. nov.

Candidatus Procrana (NL. fem. n. *Procrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABABU01*. The type species for the genus is *Candidatus* Procrana

adsecitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TK06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaculaceae.

Description of *Candidatus* Procraria reduvago sp. nov.

Candidatus Procraria reduvago (NL. fem. n. *reduvago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3ABIN03 sp002898075*. The type genome for the species is the GenBank assembly GCA_002898075.1. The GC content of the type genome is 36.38 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Procraria gen. nov.

Candidatus Procraria (NL. fem. n. *Procraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3ABIN03*. The type species for the genus is *Candidatus* Procraria reduvago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Procrida corocigena sp. nov.

Candidatus Procrida corocigena (NL. fem. n. *corocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMCJ01 sp008081395*. The type genome for the species is the GenBank assembly GCA_008081395.1. The GC content of the type genome is 47.09 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Procrida gen. nov.

Candidatus Procrida (NL. fem. n. *Procrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMCJ01*. The type species for the genus is *Candidatus* Procrida corocigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin95*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalariaceae.

Description of *Candidatus* Procrula adbelax sp. nov.

Candidatus Procrula adbelax (NL. fem. n. *adbelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XN24 sp011058255*. The type genome for the species is the GenBank assembly RS_GCF_011058255.1. The GC content of the type genome is 69.1 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Procrula gen. nov.

Candidatus Procrula (NL. fem. n. *Procrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XN24*. The type species for the genus is *Candidatus* Procrula adbelax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWYM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cisalellaceae.

Description of *Candidatus* Procrula coturicella sp. nov.

Candidatus Procrula coturicella (NL. fem. n. *coturicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XN24 sp011064545*. The type genome for the species is the GenBank assembly RS_GCF_011064545.1. The GC content of the type genome is 66.49 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Procrula videlibra sp. nov.

Candidatus Procrula videlibra (NL. fem. n. *videlibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XN24 sp011089885*. The type genome for the species is the GenBank

assembly RS_GCF_011089885.1. The GC content of the type genome is 67.77 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Prodrana advigentia sp. nov.

Candidatus Prodrana advigentia (NL. fem. n. *advigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1332 sp003152105*. The type genome for the species is the GenBank assembly GCA_003152105.1. The GC content of the type genome is 33.86 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Prodrana gen. nov.

Candidatus Prodrana (NL. fem. n. *Prodrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1332*. The type species for the genus is *Candidatus* Prodrana advigentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Prodraria depopitoga sp. nov.

Candidatus Prodraria depopitoga (NL. fem. n. *depopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-16 sp005880805*. The type genome for the species is the GenBank assembly GCA_005880805.1. The GC content of the type genome is 68.98 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Prodraria gen. nov.

Candidatus Prodraria (NL. fem. n. *Prodraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-16*. The type species for the genus is *Candidatus* Prodraria depopitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family

CSP1-4. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Prodraria fumifibra sp. nov.

Candidatus Prodraria fumifibra (NL. fem. n. *fumifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-16 sp005883615*. The type genome for the species is the GenBank assembly GCA_005883615.1. The GC content of the type genome is 68.02 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Prodrida immobigena sp. nov.

Candidatus Prodrida immobigena (NL. fem. n. *immobigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM13006 sp900756575*. The type genome for the species is the GenBank assembly GCA_900756575.1. The GC content of the type genome is 55.85 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Prodrida gen. nov.

Candidatus Prodrida (NL. fem. n. *Prodrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM13006*. The type species for the genus is *Candidatus* Prodrida immobigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Prodrida ornitibula sp. nov.

Candidatus Prodrida ornitibula (NL. fem. n. *ornitibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM13006 sp900757695*. The type genome for the species is the GenBank assembly GCA_900757695.1. The GC content of the type genome is 54.21 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Prodrosa plascicella sp. nov.

Candidatus Prodrosa plascicella (NL. fem. n. *plascicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYGD01 sp012727915*. The type genome for the species is the GenBank assembly GCA_012727915.1. The GC content of the type genome is 25.19 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Prodrosa gen. nov.

Candidatus Prodrosa (NL. fem. n. *Prodrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYGD01*. The type species for the genus is *Candidatus* Prodrosa plascicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Prodrula obrigifica sp. nov.

Candidatus Prodrula obrigifica (NL. fem. n. *obrigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12619 sp900753195*. The type genome for the species is the GenBank assembly RS_GCF_900753195.1. The GC content of the type genome is 48.73 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Prodrula gen. nov.

Candidatus Prodrula (NL. fem. n. *Prodrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12619*. The type species for the genus is *Candidatus* Prodrula obrigifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA644*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bifisanaceae.

Description of *Candidatus* Prognana colutatio sp. nov.

Candidatus Prognana colutatio (NL. fem. n. *colutatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2632 sp002359825*. The type genome for the species is the GenBank assembly GCA_002359825.1. The GC content of the type genome is 37.13 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Prognana gen. nov.

Candidatus Prognana (NL. fem. n. *Prognana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2632*. The type species for the genus is *Candidatus* Prognana colutatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Prognana indomitrix sp. nov.

Candidatus Prognana indomitrix (NL. fem. n. *indomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2632 sp002364735*. The type genome for the species is the GenBank assembly GCA_002364735.1. The GC content of the type genome is 36.24 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Prognana lacinitudo sp. nov.

Candidatus Prognana lacinitudo (NL. fem. n. *lacinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2632 sp012840785*. The type genome for the species is the GenBank assembly GCA_012840785.1. The GC content of the type genome is 37.72 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Prognella ardificella sp. nov.

Candidatus Prognella ardificella (NL. fem. n. *ardificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SALINAS58 sp013336795*. The type genome for the species is the GenBank assembly RS_GCF_013336795.1. The GC content of the type genome is 61.38 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Prognella gen. nov.

Candidatus Prognella (NL. fem. n. *Prognella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SALINAS58*. The type species for the genus is *Candidatus* Prognella ardificella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Prognella lacinugo sp. nov.

Candidatus Prognella lacinugo (NL. fem. n. *lacinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SALINAS58 sp012979275*. The type genome for the species is the GenBank assembly RS_GCF_012979275.1. The GC content of the type genome is 63.02 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Prognia dimadiforma sp. nov.

Candidatus Prognia dimadiforma (NL. fem. n. *dimadiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSV01 sp009379915*. The type genome for the species is the GenBank assembly GCA_009379915.1. The GC content of the type genome is 64.35 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Prognia gen. nov.

Candidatus Prognia (NL. fem. n. *Prognia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSV01*. The type species for the genus is *Candidatus* Prognia

dimadiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHSQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recumanaceae.

Description of *Candidatus* Prognida orgetatio sp. nov.

Candidatus Prognida orgetatio (NL. fem. n. *orgetatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-186 sp003230545*. The type genome for the species is the GenBank assembly GCA_003230545.1. The GC content of the type genome is 58.47 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Prognida gen. nov.

Candidatus Prognida (NL. fem. n. *Prognida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-186*. The type species for the genus is *Candidatus* Prognida orgetatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nehalariaceae.

Description of *Candidatus* Prognosa inmemilega sp. nov.

Candidatus Prognosa inmemilega (NL. fem. n. *inmemilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R-H-3 sp002198655*. The type genome for the species is the GenBank assembly RS_GCF_002198655.1. The GC content of the type genome is 74.24 % and the genome length is 7.2 Mbp.

Description of *Candidatus* Prognosa gen. nov.

Candidatus Prognosa (NL. fem. n. *Prognosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *R-H-3*. The type species for the genus is *Candidatus* Prognosa inmemilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Prognosa manupicula sp. nov.

Candidatus Prognosa manupicula (NL. fem. n. *manupicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *R-H-3 sp002198675*. The type genome for the species is the GenBank assembly RS_GCF_002198675.1. The GC content of the type genome is 74.18 % and the genome length is 7.26 Mbp.

Description of *Candidatus* Prognula eclecitura sp. nov.

Candidatus Prognula eclecitura (NL. fem. n. *eclecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCG01 sp013359225*. The type genome for the species is the GenBank assembly GCA_013359225.1. The GC content of the type genome is 42.72 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Prognula gen. nov.

Candidatus Prognula (NL. fem. n. *Prognula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCG01*. The type species for the genus is *Candidatus* Prognula eclecitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecariaceae.

Description of *Candidatus* Prograria cerimedo sp. nov.

Candidatus Prograria cerimedo (NL. fem. n. *cerimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CADCTG01 sp902805625*. The type genome for the species is the GenBank assembly GCA_902805625.1. The GC content of the type genome is 72.32 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Prograria gen. nov.

Candidatus Prograria (NL. fem. n. *Prograria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCTG01*. The type species for the genus is *Candidatus* Prograria cerimedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Prograria detunilenta sp. nov.

Candidatus Prograria detunilenta (NL. fem. n. *detunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCTG01 sp902805645*. The type genome for the species is the GenBank assembly GCA_902805645.1. The GC content of the type genome is 72.5 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Progria absegugo sp. nov.

Candidatus Progria absegugo (NL. fem. n. *absegugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMS01 sp012839745*. The type genome for the species is the GenBank assembly GCA_012839745.1. The GC content of the type genome is 36.38 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Progria gen. nov.

Candidatus Progria (NL. fem. n. *Progria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMS01*. The type species for the genus is *Candidatus* Progria absegugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Progrida pinigax sp. nov.

Candidatus Progrida pinigax (NL. fem. n. *pinigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CETP13 sp001885315*. The type genome for the species is the GenBank assembly GCA_001885315.1. The GC content of the type genome is 33.37 % and the genome length is 2.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "activated sludge".

Description of *Candidatus* Progrida gen. nov.

Candidatus Progrida (NL. fem. n. *Progrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CETP13*. The type species for the genus is *Candidatus* Progrida pinigax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Progrosa demulitoga sp. nov.

Candidatus Progrosa demulitoga (NL. fem. n. *demulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADBRU01 sp902797165*. The type genome for the species is the GenBank assembly GCA_902797165.1. The GC content of the type genome is 43.68 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Progrosa gen. nov.

Candidatus Progrosa (NL. fem. n. *Progrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADBRU01*. The type species for the genus is *Candidatus* Progrosa demulitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Progrosa innecitrix sp. nov.

Candidatus Progrosa innecitrix (NL. fem. n. *innecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADBRU01 sp900762815*. The type genome for the species is the GenBank assembly RS_GCF_900762815.1. The GC content of the type genome is 54.17 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Progrula dupunax sp. nov.

Candidatus Progrula dupunax (NL. fem. n. *dupunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDK01 sp012729295*. The type genome for the species is the GenBank assembly GCA_012729295.1. The GC content of the type genome is 46.94 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Progrula gen. nov.

Candidatus Progrula (NL. fem. n. *Progrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYDK01*. The type species for the genus is *Candidatus* Progrula dupunax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Progrula inresatica sp. nov.

Candidatus Progrula inresatica (NL. fem. n. *inresatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYDK01 sp012523305*. The type genome for the species is the GenBank assembly GCA_012523305.1. The GC content of the type genome is 44.85 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Prolixibacter didacago sp. nov.

Candidatus Prolixibacter didacago (NL. fem. n. *didacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prolixibacter sp009617875*. The type genome for the species is the GenBank assembly RS_GCF_009617875.1. The GC content of the type genome is 45.1 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Prolixibacter hecatitio sp. nov.

Candidatus Prolixibacter hecatitio (NL. fem. n. *hecatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prolixibacter sp009617895*. The type genome for the species is the GenBank assembly RS_GCF_009617895.1. The GC content of the type genome is 44.66 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Promicromonospora macilentia sp. nov.

Candidatus Promicromonospora macilentia (NL. fem. n. *macilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Promicromonospora sp900608595*. The type genome for the species is the GenBank assembly RS_GCF_900608595.1. The GC content of the type genome is 71.2 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Promicromonospora pavicibra sp. nov.

Candidatus Promicromonospora pavicibra (NL. fem. n. *pavicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Promicromonospora sp003058225*. The type genome for the species is the GenBank assembly RS_GCF_004341335.1. The GC content of the type genome is 71.43 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Promineofilum hirunicella sp. nov.

Candidatus Promineofilum hirunicella (NL. fem. n. *hirunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Promineofilum sp014237545*. The type genome for the species is the GenBank assembly GCA_014237545.1. The GC content of the type genome is 61.8 %

and the genome length is 5.32 Mbp.

Description of *Candidatus* Propionibacterium taraxitrix sp. nov.

Candidatus Propionibacterium taraxitrix (NL. fem. n. *taraxitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionibacterium sp900289195*. The type genome for the species is the GenBank assembly RS_GCF_900289195.1. The GC content of the type genome is 68.86 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Propioniciclava artocitoga sp. nov.

Candidatus Propioniciclava artocitoga (NL. fem. n. *artocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propioniciclava sp012517965*. The type genome for the species is the GenBank assembly GCA_012517965.1. The GC content of the type genome is 72.12 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Propionicimonas aciscitia sp. nov.

Candidatus Propionicimonas aciscitia (NL. fem. n. *aciscitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp013791955*. The type genome for the species is the GenBank assembly GCA_013791955.1. The GC content of the type genome is 64.95 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Propionicimonas conipibra sp. nov.

Candidatus Propionicimonas conipibra (NL. fem. n. *conipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp001603275*. The type genome for the species is the GenBank assembly GCA_001603275.1. The GC content of the type genome is 67.64 % and the genome length is 3.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Propionicimonas desucitoga sp. nov.

Candidatus Propionicimonas desucitoga (NL. fem. n. *desucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp003451975*. The type genome for the species is the GenBank assembly GCA_003451975.1. The GC content of the type genome is 64.3 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Propionicimonas favoniforma sp. nov.

Candidatus Propionicimonas favoniforma (NL. fem. n. *favoniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp002843035*. The type genome for the species is the GenBank assembly GCA_002843035.1. The GC content of the type genome is 69.9 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Propionicimonas incocitudo sp. nov.

Candidatus Propionicimonas incocitudo (NL. fem. n. *incocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp002413345*. The type genome for the species is the GenBank assembly GCA_002413345.1. The GC content of the type genome is 61.52 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Propionicimonas indilibra sp. nov.

Candidatus Propionicimonas indilibra (NL. fem. n. *indilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp002441465*. The type genome for the species is the GenBank assembly GCA_002441465.1. The GC content of the type genome is 68.17 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Propionicimonas lametedo sp. nov.

Candidatus Propionicimonas lametedo (NL. fem. n. *lametedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp002841335*. The type genome for the species is the GenBank assembly GCA_002841335.1. The GC content of the type genome is 67.15 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Propionicimonas malogatica sp. nov.

Candidatus Propionicimonas malogatica (NL. fem. n. *malogatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp009778535*. The type genome for the species is the GenBank assembly GCA_009778535.1. The GC content of the type genome is 53.16 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Propionicimonas navififorma sp. nov.

Candidatus Propionicimonas navififorma (NL. fem. n. *navififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp002482525*. The type genome for the species is the GenBank assembly GCA_002482525.1. The GC content of the type genome is 64.84 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Propionicimonas turififorma sp. nov.

Candidatus Propionicimonas turififorma (NL. fem. n. *turififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionicimonas sp002428365*. The type genome for the species is the GenBank assembly GCA_002428365.1. The GC content of the type genome is 64.99 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Propionimicrobium carecifica sp. nov.

Candidatus Propionimicrobium carecifica (NL. fem. n. *carecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Propionimicrobium sp900155645*. The type genome for the species is the GenBank assembly RS_GCF_900155645.1. The GC content of the type genome is 50.64 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Propionivibrio altipastra sp. nov.

Candidatus Propionivibrio altipastra (NL. fem. n. *altipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionivibrio sp003249625*. The type genome for the species is the GenBank assembly GCA_003249625.1. The GC content of the type genome is 59.05 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Propionivibrio curabetta sp. nov.

Candidatus Propionivibrio curabetta (NL. fem. n. *curabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionivibrio sp903917505*. The type genome for the species is the GenBank assembly GCA_903917505.1. The GC content of the type genome is 63.74 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Propionivibrio inhumifica sp. nov.

Candidatus Propionivibrio inhumifica (NL. fem. n. *inhumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionivibrio sp903916205*. The type genome for the species is the GenBank assembly GCA_903916205.1. The GC content of the type genome is 53.25 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Propionivibrio insicastra sp. nov.

Candidatus Propionivibrio insicastra (NL. fem. n. *insicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionivibrio sp903910495*. The type genome for the species is the GenBank assembly GCA_903910495.1. The GC content of the type genome is 57.51 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Propionivibrio manufastra sp. nov.

Candidatus Propionivibrio manufastra (NL. fem. n. *manufastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionivibrio sp002304785*. The type genome for the species is the GenBank assembly GCA_002304785.1. The GC content of the type genome is 60.82 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Propionivibrio siminetta sp. nov.

Candidatus Propionivibrio siminetta (NL. fem. n. *siminetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Propionivibrio sp903886975*. The type genome for the species is the GenBank assembly GCA_903886975.1. The GC content of the type genome is 61.45 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Proprana allacax sp. nov.

Candidatus Proprana allacax (NL. fem. n. *allacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVZL01 sp011772495*. The type genome for the species is the GenBank assembly GCA_011772495.1. The GC content of the type genome is 44.3 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Proprana gen. nov.

Candidatus Proprana (NL. fem. n. *Proprana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVZL01*. The type species for the genus is *Candidatus* Proprana allacax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Propraria abligitoga sp. nov.

Candidatus Propraria abligitoga (NL. fem. n. *abligitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRQN01 sp011051755*. The type genome for the species is the GenBank assembly GCA_011051755.1. The GC content of the type genome is 57.04 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Propraria gen. nov.

Candidatus Propraria (NL. fem. n. *Propraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRQN01*. The type species for the genus is *Candidatus* Propraria abligitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-152*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibulaceae.

Description of *Candidatus* Propraria carucousia sp. nov.

Candidatus Propraria carucousia (NL. fem. n. *carucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRQN01 sp011371455*. The type genome for the species is the GenBank assembly GCA_011371455.1. The GC content of the type genome is 63.53 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Proprella mahemitia sp. nov.

Candidatus Proprella mahemitia (NL. fem. n. *mahemitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B11-G15 sp003646745*. The type genome for the species is the GenBank assembly GCA_003646745.1. The GC content of the type genome is 49.68 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Proprella gen. nov.

Candidatus Proprella (NL. fem. n. *Proprella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B11-G15*. The type species for the genus is *Candidatus* Proprella mahemitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-54-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Funivariaceae.

Description of *Candidatus* Proprida horomitia sp. nov.

Candidatus Proprida horomitia (NL. fem. n. *horomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TFI-002 sp900230115*. The type genome for the species is the GenBank assembly RS_GCF_900230115.1. The GC content of the type genome is 37.38 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Proprida gen. nov.

Candidatus Proprida (NL. fem. n. *Proprida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TFI-002*. The type species for the genus is *Candidatus* Proprida horomitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Proprula offunimonas sp. nov.

Candidatus Proprula offunimonas (NL. fem. n. *offunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABXHR01 sp013373515*. The type genome for the species is the GenBank assembly GCA_013373515.1. The GC content of the type genome is 51.99 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Proprula gen. nov.

Candidatus Proprula (NL. fem. n. *Proprula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JABXHR01*. The type species for the genus is *Candidatus* Proprula offunimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Proscaria almititoga sp. nov.

Candidatus Proscaria almititoga (NL. fem. n. *almititoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-39-49 sp002787635*. The type genome for the species is the GenBank assembly GCA_002787635.1. The GC content of the type genome is 39.15 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Proscaria gen. nov.

Candidatus Proscaria (NL. fem. n. *Proscaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-39-49*. The type species for the genus is *Candidatus* Proscaria almititoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6187*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sarabidaceae.

Description of *Candidatus* Proscella dicanilega sp. nov.

Candidatus Proscella dicanilega (NL. fem. n. *dicanilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW132 sp009909035*. The type genome for the species is the GenBank assembly GCA_009909035.1. The GC content of the type genome is 47.82 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Proscella gen. nov.

Candidatus Proscella (NL. fem. n. *Proscella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SW132*. The type species for the genus is *Candidatus* Proscella

dicanilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Proscella inmoretta sp. nov.

Candidatus Proscella inmoretta (NL. fem. n. *inmoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW132 sp003390325*. The type genome for the species is the GenBank assembly RS_GCF_003390325.1. The GC content of the type genome is 44.76 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Proscella inrevitudo sp. nov.

Candidatus Proscella inrevitudo (NL. fem. n. *inrevitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW132 sp003555185*. The type genome for the species is the GenBank assembly GCA_003555185.1. The GC content of the type genome is 41.72 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Proscella irrecitio sp. nov.

Candidatus Proscella irrecitio (NL. fem. n. *irrecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW132 sp007129085*. The type genome for the species is the GenBank assembly GCA_007129085.1. The GC content of the type genome is 43.9 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Proscia decaticula sp. nov.

Candidatus Proscia decaticula (NL. fem. n. *decaticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFGY01 sp004556455*. The type genome for the species is the GenBank assembly GCA_004556455.1. The GC content of the type genome is 51.0 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Proscia gen. nov.

Candidatus Proscia (NL. fem. n. *Proscia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFGY01*. The type species for the genus is *Candidatus* Proscia decaticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decunariaceae.

Description of *Candidatus* Proscida totidousia sp. nov.

Candidatus Proscida totidousia (NL. fem. n. *totidousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LHW63021 sp003289645*. The type genome for the species is the GenBank assembly RS_GCF_003289645.1. The GC content of the type genome is 72.04 % and the genome length is 7.5 Mbp.

Description of *Candidatus* Proscida gen. nov.

Candidatus Proscida (NL. fem. n. *Proscida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LHW63021*. The type species for the genus is *Candidatus* Proscida totidousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Proscula defasicula sp. nov.

Candidatus Proscula defasicula (NL. fem. n. *defasicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-230 sp003228395*. The type genome for the species is the GenBank assembly GCA_003228395.1. The GC content of the type genome is 42.61 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Proscula gen. nov.

Candidatus Proscula (NL. fem. n. *Proscula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-230*. The type species for the genus is *Candidatus* Proscula defasicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Proslana ampenitio sp. nov.

Candidatus Proslana ampenitio (NL. fem. n. *ampenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHZ01 sp013151575*. The type genome for the species is the GenBank assembly GCA_013151575.1. The GC content of the type genome is 54.67 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Proslana gen. nov.

Candidatus Proslana (NL. fem. n. *Proslana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHZ01*. The type species for the genus is *Candidatus* Proslana ampenitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-152*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Docibulaceae.

Description of *Candidatus* Proslella excamigena sp. nov.

Candidatus Proslella excamigena (NL. fem. n. *excamigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-36 sp003599345*. The type genome for the species is the GenBank assembly GCA_003599345.1. The GC content of the type genome is 66.58 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Proslella gen. nov.

Candidatus Proslella (NL. fem. n. *Proslella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-36*. The type species for the genus is *Candidatus* Proslella excamigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9673*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimacanaceae.

Description of *Candidatus* Proslosa lanificula sp. nov.

Candidatus Proslosa lanificula (NL. fem. n. *lanificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG39 sp003242495*. The type genome for the species is the GenBank assembly GCA_003242495.1. The GC content of the type genome is 67.29 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Proslosa gen. nov.

Candidatus Proslosa (NL. fem. n. *Proslosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG39*. The type species for the genus is *Candidatus* Proslosa lanificula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Prospana inaccibula sp. nov.

Candidatus Prospana inaccibula (NL. fem. n. *inaccibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1293 sp900550385*. The type genome for the species is the GenBank assembly GCA_900550385.1. The GC content of the type genome is 65.66 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Prospana gen. nov.

Candidatus Prospana (NL. fem. n. *Prospana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1293*. The type species for the genus is *Candidatus* Prospana inaccibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Prospana revulago sp. nov.

Candidatus Prospana revulago (NL. fem. n. *revulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1293 sp900754495*. The type genome for the species is the GenBank assembly RS_GCF_900754495.1. The GC content of the type genome is 65.54 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Prosparia dimacentia sp. nov.

Candidatus Prosparia dimacentia (NL. fem. n. *dimacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J125 sp003694325*. The type genome for the species is the GenBank assembly GCA_003694325.1. The GC content of the type genome is 72.07 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Prosparia gen. nov.

Candidatus Prosparia (NL. fem. n. *Prosparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J125*. The type species for the genus is *Candidatus* Prosparia dimacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilanaceae.

Description of *Candidatus* Prospella catabentia sp. nov.

Candidatus Prospella catabentia (NL. fem. n. *catabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACEWU01 sp902563335*. The type genome for the species is the GenBank assembly GCA_902563335.1. The GC content of the type genome is 40.03 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Prospella gen. nov.

Candidatus Prospella (NL. fem. n. *Prospella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACEWU01*. The type species for the genus is *Candidatus* Prospella catabentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Prospida antepimonas sp. nov.

Candidatus Prospida antepimonas (NL. fem. n. *antepimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-52-10 sp001805655*. The type genome for the species is the GenBank assembly GCA_001805655.1. The GC content of the type genome is 52.05 % and the genome length is 1.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Prospida gen. nov.

Candidatus Prospida (NL. fem. n. *Prospida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-52-10*. The type species for the genus is *Candidatus* Prospida antepimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Kpj58rc*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanellaceae.

Description of *Candidatus* Prospula dimadivita sp. nov.

Candidatus Prospula dimadivita (NL. fem. n. *dimadivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNKL01 sp013822425*. The type genome for the species is the GenBank assembly GCA_013822425.1. The GC content of the type genome is 67.8 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Prospula gen. nov.

Candidatus Prospula (NL. fem. n. *Prospula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNKL01*. The type species for the genus is *Candidatus* Prospula dimadivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Prosthecobacter admigivita sp. nov.

Candidatus Prosthecobacter admigivita (NL. fem. n. *admigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecobacter sp002482965*. The type genome for the species is the GenBank assembly GCA_002482965.1. The GC content of the type genome is 59.34 % and the genome length is 7.01 Mbp.

Description of *Candidatus* Prosthecobacter afranibra sp. nov.

Candidatus Prosthecobacter afranibra (NL. fem. n. *afranibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecobacter sp003506995*. The type genome for the species is the GenBank assembly GCA_003506995.1. The GC content of the type genome is 60.94 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Prosthecobacter aggubifica sp. nov.

Candidatus Prosthecobacter aggubifica (NL. fem. n. *aggubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Prosthecobacter sp002336895*. The type genome for the species is the GenBank assembly GCA_002336895.1. The GC content of the type genome is 60.98 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Prosthecobacter casabicula sp. nov.

Candidatus Prosthecobacter casabicula (NL. fem. n. *casabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecobacter sp903960845*. The type genome for the species is the GenBank assembly GCA_903960845.1. The GC content of the type genome is 58.64 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Prosthecobacter cerofibula sp. nov.

Candidatus Prosthecobacter cerofibula (NL. fem. n. *cerofibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecobacter sp002343505*. The type genome for the species is the GenBank assembly GCA_003545395.1. The GC content of the type genome is 64.04 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Prosthecobacter inobritica sp. nov.

Candidatus Prosthecobacter inobritica (NL. fem. n. *inobritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecobacter sp002279765*. The type genome for the species is the GenBank assembly GCA_002279765.1. The GC content of the type genome is 59.5 % and the genome length is 7.17 Mbp.

Description of *Candidatus* Prosthecobacter mimogessa sp. nov.

Candidatus Prosthecobacter mimogessa (NL. fem. n. *mimogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecobacter sp003453085*. The type genome for the species is the GenBank assembly GCA_003453085.1. The GC content of the type genome is 59.28 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Prosthecobacter revecimonas sp. nov.

Candidatus Prosthecobacter revecimonas (NL. fem. n. *revecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecobacter sp903848465*. The type genome for the species is the GenBank assembly GCA_903917765.1. The GC content of the type genome is 59.3 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Prosthecobacter sitelatica sp. nov.

Candidatus Prosthecobacter sitelatica (NL. fem. n. *sitelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecobacter sp903838675*. The type genome for the species is the GenBank assembly GCA_903925485.1. The GC content of the type genome is 58.92 % and the genome length is 7.36 Mbp.

Description of *Candidatus* Prosthecochloris benevilega sp. nov.

Candidatus Prosthecochloris benevilega (NL. fem. n. *benevilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecochloris sp002113825*. The type genome for the species is the GenBank assembly RS_GCF_002113825.1. The GC content of the type genome is 52.04 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Prosthecochloris xeropedo sp. nov.

Candidatus Prosthecochloris xeropedo (NL. fem. n. *xeropedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Prosthecochloris sp003344365*. The type genome for the species is the GenBank assembly RS_GCF_013357945.1. The GC content of the type genome is 55.1 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Protaetiibacter ammuletta sp. nov.

Candidatus Protaetiibacter ammuletta (NL. fem. n. *ammuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Protaetiibacter sp008017545*. The type genome for the species is the GenBank assembly RS_GCF_008017545.1. The GC content of the type genome is 69.4 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Protaetiibacter cucuritura sp. nov.

Candidatus Protaetiibacter cucuritura (NL. fem. n. *cucuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Protaetiibacter sp014483895*. The type genome for the species is the GenBank assembly RS_GCF_014483895.1. The GC content of the type genome is 71.54 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Protaetiibacter defaritio sp. nov.

Candidatus Protaetiibacter defaritio (NL. fem. n. *defaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Protaetiibacter sp008365275*. The type genome for the species is the GenBank assembly RS_GCF_008365275.1. The GC content of the type genome is 71.14 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Protaetiibacter ecnepentia sp. nov.

Candidatus Protaetiibacter ecnepentia (NL. fem. n. *ecnepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Protaetiibacter sp004216815*. The type genome for the species is the GenBank assembly RS_GCF_004216815.1. The GC content of the type genome is 70.74 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Protaetiibacter incenitura sp. nov.

Candidatus Protaetiibacter incenitura (NL. fem. n. *incenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Protaetiibacter sp001898835*. The type genome for the species is the GenBank assembly GCA_001898835.1. The GC content of the type genome is 71.58 % and the genome length is 3.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Protaetiibacter inhonax sp. nov.

Candidatus Protaetiibacter inhonax (NL. fem. n. *inhonax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Protaetiibacter sp003852775*. The type genome for the species is the GenBank assembly GCA_003852775.1. The GC content of the type genome is 71.3 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Protaetiibacter lavabugo sp. nov.

Candidatus Protaetiibacter lavabugo (NL. fem. n. *lavabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Protaetiibacter sp011751905*. The type genome for the species is the GenBank assembly RS_GCF_011751905.1. The GC content of the type genome is 69.18 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Protaetiibacter uberrilenta sp. nov.

Candidatus Protaetiibacter uberrilenta (NL. fem. n. *uberrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Protaetiibacter sp003243275*. The type genome for the species is the GenBank assembly GCA_003243275.1. The GC content of the type genome is 69.33 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Proteiniclasticum conipivita sp. nov.

Candidatus Proteiniclasticum conipivita (NL. fem. n. *conipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniclasticum sp003510765*. The type genome for the species is the GenBank assembly GCA_003510765.1. The GC content of the type genome is 44.13 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Proteiniclasticum frigdentia sp. nov.

Candidatus Proteiniclasticum frigdentia (NL. fem. n. *frigdentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniclasticum sp009930125*. The type genome for the species is the GenBank assembly GCA_009930125.1. The GC content of the type genome is 46.25 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Proteiniclasticum semigifica sp. nov.

Candidatus Proteiniclasticum semigifica (NL. fem. n. *semigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniclasticum sp003514505*. The type genome for the species is the GenBank assembly GCA_003514505.1. The GC content of the type genome is 43.33 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Proteiniphilum aciscicula sp. nov.

Candidatus Proteiniphilum aciscicula (NL. fem. n. *aciscicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp012727735*. The type genome for the species is the GenBank assembly GCA_012727735.1. The GC content of the type genome is 48.57 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Proteiniphilum ammixessa sp. nov.

Candidatus Proteiniphilum ammixessa (NL. fem. n. *ammixessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp012799155*. The type genome for the species is the GenBank assembly GCA_012799155.1. The GC content of the type genome is 49.83 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Proteiniphilum benemivita sp. nov.

Candidatus Proteiniphilum benemivita (NL. fem. n. *benemivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp002383605*. The type genome for the species is the GenBank assembly GCA_002383605.1. The GC content of the type genome is 46.9 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Proteiniphilum conaratica sp. nov.

Candidatus Proteiniphilum conaratica (NL. fem. n. *conaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp003517675*. The type genome for the species is the GenBank assembly GCA_003517675.1. The GC content of the type genome is 48.66 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Proteiniphilum cuticitoga sp. nov.

Candidatus Proteiniphilum cuticitoga (NL. fem. n. *cuticitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp002411515*. The type genome for the species is the GenBank assembly GCA_002411515.1. The GC content of the type genome is 46.64 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Proteiniphilum fetifago sp. nov.

Candidatus Proteiniphilum fetifago (NL. fem. n. *fetifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp002408485*. The type genome for the species is the GenBank assembly GCA_002408665.1. The GC content of the type genome is 47.16 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Proteiniphilum fumacessa sp. nov.

Candidatus Proteiniphilum fumacessa (NL. fem. n. *fumacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Proteiniphilum sp012728155*. The type genome for the species is the GenBank assembly GCA_012728155.1. The GC content of the type genome is 44.22 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Proteiniphilum haricitica sp. nov.

Candidatus Proteiniphilum haricitica (NL. fem. n. *haricitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp002398565*. The type genome for the species is the GenBank assembly GCA_002398565.1. The GC content of the type genome is 44.96 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Proteiniphilum homicax sp. nov.

Candidatus Proteiniphilum homicax (NL. fem. n. *homicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp001768325*. The type genome for the species is the GenBank assembly GCA_003489185.1. The GC content of the type genome is 46.33 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Proteiniphilum homogiforma sp. nov.

Candidatus Proteiniphilum homogiforma (NL. fem. n. *homogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp012837345*. The type genome for the species is the GenBank assembly GCA_012837345.1. The GC content of the type genome is 51.37 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Proteiniphilum lupanitio sp. nov.

Candidatus Proteiniphilum lupanitio (NL. fem. n. *lupanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp003712195*. The type genome for the species is the GenBank assembly RS_GCF_003712195.1. The GC content of the type genome is 45.33 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Proteiniphilum pudibibra sp. nov.

Candidatus Proteiniphilum pudibibra (NL. fem. n. *pudibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp002410825*. The type genome for the species is the GenBank assembly GCA_002410825.1. The GC content of the type genome is 43.43 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Proteiniphilum rorififica sp. nov.

Candidatus Proteiniphilum rorififica (NL. fem. n. *rorififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp011620695*. The type genome for the species is the GenBank assembly GCA_011620695.1. The GC content of the type genome is 51.5 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Proteiniphilum vitigilega sp. nov.

Candidatus Proteiniphilum vitigilega (NL. fem. n. *vitigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp002410345*. The type genome for the species is the GenBank assembly GCA_002399305.1. The GC content of the type genome is 42.33 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Proteiniphilum vitigivita sp. nov.

Candidatus Proteiniphilum vitigivita (NL. fem. n. *vitigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteiniphilum sp002305715*. The type genome for the species is the GenBank assembly GCA_002305715.1. The GC content of the type genome is 42.55 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Proteocatella inurbitas sp. nov.

Candidatus Proteocatella inurbitas (NL. fem. n. *inurbitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteocatella sp009929415*. The type genome for the species is the GenBank assembly GCA_009929415.1. The GC content of the type genome is 43.29 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Proteus bulapitoga sp. nov.

Candidatus Proteus bulapitoga (NL. fem. n. *bulapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteus sp003144405*. The type genome for the species is the GenBank assembly RS_GCF_003144405.1. The GC content of the type genome is 38.14 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Proteus cicatetta sp. nov.

Candidatus Proteus cicatetta (NL. fem. n. *cicatetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteus sp011046025*. The type genome for the species is the GenBank assembly RS_GCF_011046025.1. The GC content of the type genome is 38.4 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Proteus cululigena sp. nov.

Candidatus Proteus cululigena (NL. fem. n. *cululigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteus sp001722135*. The type genome for the species is the GenBank assembly RS_GCF_001742985.1. The GC content of the type genome is 38.02 % and the genome length is 4.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces".

Description of *Candidatus* Proteus murelitrix sp. nov.

Candidatus Proteus murelitrix (NL. fem. n. *murelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteus sp008808075*. The type genome for the species is the GenBank assembly RS_GCF_008808075.1. The GC content of the type genome is 37.98 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Proteus navicitoga sp. nov.

Candidatus Proteus navicitoga (NL. fem. n. *navicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteus sp003144505*. The type genome for the species is the GenBank assembly RS_GCF_003144505.1. The GC content of the type genome is 38.07 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Proteus refacicella sp. nov.

Candidatus Proteus refacicella (NL. fem. n. *refacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteus sp003144375*. The type genome for the species is the GenBank assembly RS_GCF_003144375.1. The GC content of the type genome is 37.42 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Proteus vocamentia sp. nov.

Candidatus Proteus vocamentia (NL. fem. n. *vocamentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Proteus sp003144395*. The type genome for the species is the GenBank assembly RS_GCF_003144395.1. The GC content of the type genome is 37.81 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Protochlamydia excanitio sp. nov.

Candidatus Protochlamydia excanitio (NL. fem. n. *excanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Protochlamydia sp013695355*. The type genome for the species is the GenBank assembly GCA_013695355.1. The GC content of the type genome is 38.45 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Protochlamydia modifibula sp. nov.

Candidatus Protochlamydia modifibula (NL. fem. n. *modifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Protochlamydia sp001545115*. The type genome for the species is the GenBank assembly RS_GCF_001545115.1. The GC content of the type genome is 42.05 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Protrana sonabatica sp. nov.

Candidatus Protrana sonabatica (NL. fem. n. *sonabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MADRE3 sp004796425*. The type genome for the species is the GenBank assembly GCA_004796425.1. The GC content of the type genome is 46.91 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Protrana gen. nov.

Candidatus Protrana (NL. fem. n. *Protrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MADRE3*. The type species for the genus is *Candidatus* Protrana sonabatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Protraria inreditoga sp. nov.

Candidatus Protraria inreditoga (NL. fem. n. *inreditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKXG01 sp007128525*. The type genome for the species is the GenBank assembly GCA_007128525.1. The GC content of the type genome is 61.13 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Protraria gen. nov.

Candidatus Protraria (NL. fem. n. *Protraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKXG01*. The type species for the genus is *Candidatus* Protraria inreditoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Protrella corocibra sp. nov.

Candidatus Protrella corocibra (NL. fem. n. *corocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-34-10 sp001821915*. The type genome for the species is the GenBank assembly GCA_001821915.1. The GC content of the type genome is 33.7 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Protrella gen. nov.

Candidatus Protrella (NL. fem. n. *Protrella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-34-10*. The type species for the genus is *Candidatus* Protrella corocibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Protria metapax sp. nov.

Candidatus Protria metapax (NL. fem. n. *metapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFXY01 sp009921385*. The type genome for the species is the GenBank assembly GCA_009921385.1. The GC content of the type genome is 35.07 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Protria gen. nov.

Candidatus Protria (NL. fem. n. *Protria* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFXY01*. The type species for the genus is *Candidatus* Protria metapax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1997*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decapiaceae.

Description of *Candidatus* Protrosa sicaritio sp. nov.

Candidatus Protrosa sicaritio (NL. fem. n. *sicaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1755 sp002314805*. The type genome for the species is the GenBank assembly GCA_002314805.1. The GC content of the type genome is 48.2 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Protrosa gen. nov.

Candidatus Protrosa (NL. fem. n. *Protrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1755*. The type species for the genus is *Candidatus* Protrosa sicaritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Protrula dicabifica sp. nov.

Candidatus Protrula dicabifica (NL. fem. n. *dicabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZCTH02-B3 sp002159065*. The type genome for the species is the GenBank assembly GCA_002159065.1. The GC content of the type genome is 62.51 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Protrula gen. nov.

Candidatus Protrula (NL. fem. n. *Protrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZCTH02-B3*. The type species for the genus is *Candidatus* Protrula dicabifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Providencia bonifitoga sp. nov.

Candidatus Providencia bonifitoga (NL. fem. n. *bonifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Providencia sp003533305*. The type genome for the species is the GenBank assembly GCA_003533305.1. The GC content of the type genome is 38.95 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Providencia galacivita sp. nov.

Candidatus Providencia galacivita (NL. fem. n. *galacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Providencia sp002843235*. The type genome for the species is the GenBank assembly RS_GCF_011077905.1. The GC content of the type genome is 40.97 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Pseudacidovorax curotessa sp. nov.

Candidatus Pseudacidovorax curotessa (NL. fem. n. *curotessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudacidovorax sp900156165*. The type genome for the species is the GenBank assembly RS_GCF_900156165.1. The GC content of the type genome is 68.98 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Pseudacidovorax semodifica sp. nov.

Candidatus Pseudacidovorax semodifica (NL. fem. n. *semodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudacidovorax sp903864295*. The type genome for the species is the GenBank assembly GCA_903864295.1. The GC content of the type genome is 69.58 % and the genome length is 6.54 Mbp.

Description of *Candidatus* Pseudaminobacter bimotivita sp. nov.

Candidatus Pseudaminobacter bimotivita (NL. fem. n. *bimotivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudaminobacter sp900116595*. The type genome for the species is the GenBank assembly RS_GCF_003596305.1. The GC content of the type genome is 61.28 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Pseudanabaena casigago sp. nov.

Candidatus Pseudanabaena casigago (NL. fem. n. *casigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp002325645*. The type genome for the species is the GenBank assembly GCA_002325645.1. The GC content of the type genome is 42.79 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Pseudanabaena defarigena sp. nov.

Candidatus Pseudanabaena defarigena (NL. fem. n. *defarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp006937785*. The type genome for the species is the GenBank assembly RS_GCF_006937785.1. The GC content of the type genome is 41.98 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Pseudanabaena detecastra sp. nov.

Candidatus Pseudanabaena detecastra (NL. fem. n. *detecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp002251945*. The type genome for the species is the GenBank assembly RS_GCF_002251945.1. The GC content of the type genome is 42.17 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Pseudanabaena dilicitia sp. nov.

Candidatus Pseudanabaena dilicitia (NL. fem. n. *dilicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp001873375*. The type genome for the species is the GenBank assembly GCA_001873375.1. The GC content of the type genome is 44.32 % and the genome length is 3.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Pseudanabaena fuligedo sp. nov.

Candidatus Pseudanabaena fuligedo (NL. fem. n. *fuligedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp003249035*. The type genome for the species is the GenBank assembly GCA_003249035.1. The GC content of the type genome is 42.23 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Pseudanabaena levidifica sp. nov.

Candidatus Pseudanabaena levidifica (NL. fem. n. *levidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp003967015*. The type genome for the species is the GenBank assembly RS_GCF_003967015.1. The GC content of the type genome is 42.19 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Pseudanabaena nocenibra sp. nov.

Candidatus Pseudanabaena nocenibra (NL. fem. n. *nocenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp903819605*. The type genome for the species is the GenBank assembly GCA_903844015.1. The GC content of the type genome is 41.5 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Pseudanabaena peribousia sp. nov.

Candidatus Pseudanabaena peribousia (NL. fem. n. *peribousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp001402795*. The type genome for the species is the GenBank assembly RS_GCF_001402795.1. The GC content of the type genome is 43.33 % and the genome length is 5.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater".

Description of *Candidatus* Pseudanabaena progrimonia sp. nov.

Candidatus Pseudanabaena progrimonia (NL. fem. n. *progrimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp003249015*. The type genome for the species is the GenBank assembly GCA_003249015.1. The GC content of the type genome is 43.15 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Pseudanabaena utpoticula sp. nov.

Candidatus Pseudanabaena utpoticula (NL. fem. n. *utpoticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudanabaena sp002914585*. The type genome for the species is the GenBank assembly RS_GCF_002914585.1. The GC content of the type genome is 42.05 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Pseudarthrobacter abinditio sp. nov.

Candidatus Pseudarthrobacter abinditio (NL. fem. n. *abinditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp002892835*. The type genome for the species is the GenBank assembly RS_GCF_002892835.1. The GC content of the type genome is 64.88 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Pseudarthrobacter aciscitoga sp. nov.

Candidatus Pseudarthrobacter aciscitoga (NL. fem. n. *aciscitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp014217545*. The type genome for the species is the GenBank assembly RS_GCF_014217545.1. The GC content of the type genome is 64.89 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Pseudarthrobacter adfamisca sp. nov.

Candidatus Pseudarthrobacter adfamisca (NL. fem. n. *adfamisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp006715305*. The type genome for the species is the GenBank assembly RS_GCF_006715305.1. The GC content of the type genome is 64.72 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Pseudarthrobacter adrenicella sp. nov.

Candidatus Pseudarthrobacter adrenicella (NL. fem. n. *adrenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp902506095*. The type genome for the species is the GenBank assembly RS_GCF_902506095.1. The GC content of the type genome is 65.62 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Pseudarthrobacter adsesilenta sp. nov.

Candidatus Pseudarthrobacter adsesilenta (NL. fem. n. *adsesilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp902506025*. The type genome for the species is the GenBank assembly RS_GCF_902506025.1. The GC content of the type genome is 66.32 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Pseudarthrobacter bifarimonas sp. nov.

Candidatus Pseudarthrobacter bifarimonas (NL. fem. n. *bifarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp002953935*. The type genome for the species is the GenBank assembly RS_GCF_002953935.1. The GC content of the type genome is

65.38 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Pseudarthrobacter bipalibra sp. nov.

Candidatus Pseudarthrobacter bipalibra (NL. fem. n. *bipalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp000374865*. The type genome for the species is the GenBank assembly RS_GCF_004364695.1. The GC content of the type genome is 66.15 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Pseudarthrobacter bonitedo sp. nov.

Candidatus Pseudarthrobacter bonitedo (NL. fem. n. *bonitedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp013359725*. The type genome for the species is the GenBank assembly RS_GCF_013359725.1. The GC content of the type genome is 66.16 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Pseudarthrobacter buceledo sp. nov.

Candidatus Pseudarthrobacter buceledo (NL. fem. n. *buceledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp003061105*. The type genome for the species is the GenBank assembly RS_GCF_003061105.1. The GC content of the type genome is 64.75 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Pseudarthrobacter corocitica sp. nov.

Candidatus Pseudarthrobacter corocitica (NL. fem. n. *corocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp005796185*. The type genome for the species is the GenBank assembly RS_GCF_005796185.1. The GC content of the type genome is 64.95 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Pseudarthrobacter coticibra sp. nov.

Candidatus Pseudarthrobacter coticibra (NL. fem. n. *coticibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp900110595*. The type genome for the species is the GenBank assembly RS_GCF_006680095.1. The GC content of the type genome is 64.78 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Pseudarthrobacter coticigena sp. nov.

Candidatus Pseudarthrobacter coticigena (NL. fem. n. *coticigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp001428335*. The type genome for the species is the GenBank assembly RS_GCF_001428335.1. The GC content of the type genome is 65.01 % and the genome length is 4.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Pseudarthrobacter defasitrix sp. nov.

Candidatus Pseudarthrobacter defasitrix (NL. fem. n. *defasitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp900168295*. The type genome for the species is the GenBank assembly RS_GCF_002934405.1. The GC content of the type genome is 65.19 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Pseudarthrobacter delecicula sp. nov.

Candidatus Pseudarthrobacter delecicula (NL. fem. n. *delecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp004320525*. The type genome for the species is the GenBank assembly RS_GCF_004320525.1. The GC content of the type genome is 65.4 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Pseudarthrobacter democitoga sp. nov.

Candidatus Pseudarthrobacter democitoga (NL. fem. n. *democitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp001663775*. The type genome for the species is the GenBank assembly RS_GCF_001663775.1. The GC content of the type genome is 64.67 % and the genome length is 4.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "As-contaminated aquifer sediment".

Description of *Candidatus* Pseudarthrobacter detosetta sp. nov.

Candidatus Pseudarthrobacter detosetta (NL. fem. n. *detosetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp001641125*. The type genome for the species is the GenBank assembly RS_GCF_001641125.1. The GC content of the type genome is 65.4 % and the genome length is 4.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rhizosphere of wild oats".

Description of *Candidatus* Pseudarthrobacter dilicentia sp. nov.

Candidatus Pseudarthrobacter dilicentia (NL. fem. n. *dilicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp000374905*. The type genome for the species is the GenBank assembly RS_GCF_006715715.1. The GC content of the type genome is 66.04 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Pseudarthrobacter ephematio sp. nov.

Candidatus Pseudarthrobacter ephematio (NL. fem. n. *ephematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp003208335*. The type genome for the species is the GenBank assembly RS_GCF_003208335.1. The GC content of the type genome is 65.81 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Pseudarthrobacter epistisca sp. nov.

Candidatus Pseudarthrobacter epistisca (NL. fem. n. *epistisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp005796205*. The type genome for the species is the GenBank assembly RS_GCF_005796205.1. The GC content of the type genome is 65.32 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Pseudarthrobacter excamitio sp. nov.

Candidatus Pseudarthrobacter excamitio (NL. fem. n. *excamitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp002929215*. The type genome for the species is the GenBank assembly RS_GCF_002929215.1. The GC content of the type genome is 64.34 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Pseudarthrobacter fetutugo sp. nov.

Candidatus Pseudarthrobacter fetutugo (NL. fem. n. *fetutugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp006517815*. The type genome for the species is the GenBank assembly RS_GCF_006517215.1. The GC content of the type genome is 66.09 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Pseudarthrobacter ficedilega sp. nov.

Candidatus Pseudarthrobacter ficedilega (NL. fem. n. *ficedilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp006715295*. The type genome for the species is the GenBank assembly RS_GCF_006715295.1. The GC content of the type genome is 65.77 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Pseudarthrobacter ficeditica sp. nov.

Candidatus Pseudarthrobacter ficeditica (NL. fem. n. *ficeditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp005796225*. The type genome for the species is the GenBank assembly RS_GCF_005796225.1. The GC content of the type genome is 64.6 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Pseudarthrobacter illuvax sp. nov.

Candidatus Pseudarthrobacter illuvax (NL. fem. n. *illuvax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp009911795*. The type genome for the species is the GenBank assembly RS_GCF_009911795.1. The GC content of the type genome is 64.74 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Pseudarthrobacter infelibra sp. nov.

Candidatus Pseudarthrobacter infelibra (NL. fem. n. *infelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp002370555*. The type genome for the species is the GenBank assembly GCA_002370555.1. The GC content of the type genome is 65.0 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Pseudarthrobacter inforibra sp. nov.

Candidatus Pseudarthrobacter inforibra (NL. fem. n. *inforibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp001428075*. The type genome for the species is the GenBank assembly RS_GCF_001428075.1. The GC content of the type genome is 65.8 % and the genome length is 4.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Pseudarthrobacter inhumiforma sp. nov.

Candidatus Pseudarthrobacter inhumiforma (NL. fem. n. *inhumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp009741265*. The type genome for the species is the GenBank assembly RS_GCF_009741265.1. The GC content of the type genome is 65.42 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Pseudarthrobacter inlepitio sp. nov.

Candidatus Pseudarthrobacter inlepitio (NL. fem. n. *inlepitio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp013362385*. The type genome for the species is the GenBank assembly GCA_013362385.1. The GC content of the type genome is 67.49 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Pseudarthrobacter inlumitudo sp. nov.

Candidatus Pseudarthrobacter inlumitudo (NL. fem. n. *inlumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp900537115*. The type genome for the species is the GenBank assembly RS_GCF_900537115.1. The GC content of the type genome is 64.83 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Pseudarthrobacter inoblilega sp. nov.

Candidatus Pseudarthrobacter inoblilega (NL. fem. n. *inoblilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp006715225*. The type genome for the species is the GenBank assembly RS_GCF_006715225.1. The GC content of the type genome is 65.77 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Pseudarthrobacter lavabicula sp. nov.

Candidatus Pseudarthrobacter lavabicula (NL. fem. n. *lavabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp001424565*. The type genome for the species is the GenBank assembly RS_GCF_001424565.1. The GC content of the type genome is 66.28 % and the genome length is 4.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pseudarthrobacter lenimitrix sp. nov.

Candidatus Pseudarthrobacter lenimitrix (NL. fem. n. *lenimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp002427975*. The type genome for the species is the GenBank assembly GCA_002413225.1. The GC content of the type genome is 65.39 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Pseudarthrobacter nugigentia sp. nov.

Candidatus Pseudarthrobacter nugigentia (NL. fem. n. *nugigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp002929755*. The type genome for the species is the GenBank assembly RS_GCF_006517235.1. The GC content of the type genome is 65.01 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Pseudarthrobacter selecousia sp. nov.

Candidatus Pseudarthrobacter selecousia (NL. fem. n. *selecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp006151685*. The type genome for the species is the GenBank assembly RS_GCF_901007635.1. The GC content of the type genome is 65.62 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Pseudarthrobacter sitelivita sp. nov.

Candidatus Pseudarthrobacter sitelivita (NL. fem. n. *sitelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp006715285*. The type genome for the species is the GenBank assembly RS_GCF_006715285.1. The GC content of the type genome is 65.86 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Pseudarthrobacter solipitrix sp. nov.

Candidatus Pseudarthrobacter solipitrix (NL. fem. n. *solipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp003287955*. The type genome for the species is the GenBank assembly RS_GCF_003287955.1. The GC content of the type genome is

64.88 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Pseudarthrobacter tegimatio sp. nov.

Candidatus Pseudarthrobacter tegimatio (NL. fem. n. *tegimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp001423525*. The type genome for the species is the GenBank assembly RS_GCF_001423525.1. The GC content of the type genome is 66.17 % and the genome length is 4.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pseudarthrobacter telefitudo sp. nov.

Candidatus Pseudarthrobacter telefitudo (NL. fem. n. *telefitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudarthrobacter sp006715165*. The type genome for the species is the GenBank assembly RS_GCF_006715165.1. The GC content of the type genome is 65.55 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Pseudescherichia conabitas sp. nov.

Candidatus Pseudescherichia conabitas (NL. fem. n. *conabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudescherichia sp002298805*. The type genome for the species is the GenBank assembly RS_GCF_007680145.1. The GC content of the type genome is 56.31 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Pseudescherichia inrelibra sp. nov.

Candidatus Pseudescherichia inrelibra (NL. fem. n. *inrelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudescherichia sp002480085*. The type genome for the species is the GenBank assembly GCA_002480085.1. The GC content of the type genome is 57.32 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Pseudescherichia repecago sp. nov.

Candidatus Pseudescherichia repecago (NL. fem. n. *repecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudescherichia sp002918705*. The type genome for the species is the GenBank assembly GCA_002482285.1. The GC content of the type genome is 57.04 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Pseudidiomarina ossaressa sp. nov.

Candidatus Pseudidiomarina ossaressa (NL. fem. n. *ossaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudidiomarina sp002423905*. The type genome for the species is the GenBank assembly GCA_002423905.1. The GC content of the type genome is 50.42 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Pseudidiomarina socagitrix sp. nov.

Candidatus Pseudidiomarina socagitrix (NL. fem. n. *socagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudidiomarina sp002279005*. The type genome for the species is the GenBank assembly GCA_002279005.1. The GC content of the type genome is 47.52 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Pseudidiomarina tabifibula sp. nov.

Candidatus Pseudidiomarina tabifibula (NL. fem. n. *tabifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudidiomarina sp902806985*. The type genome for the species is the GenBank assembly GCA_902703395.1. The GC content of the type genome is 49.53 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Pseudoalteromonas acrobilega sp. nov.

Candidatus Pseudoalteromonas acrobilega (NL. fem. n. *acrobilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp001469895*. The type genome for the species is the GenBank assembly RS_GCF_001469895.1. The GC content of the type genome is 41.24 % and the genome length is 4.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "brine-seawater interface".

Description of *Candidatus* Pseudoalteromonas albogisca sp. nov.

Candidatus Pseudoalteromonas albogisca (NL. fem. n. *albogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002289345*. The type genome for the species is the GenBank assembly RS_GCF_002289345.1. The GC content of the type genome is 43.14 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Pseudoalteromonas appugigena sp. nov.

Candidatus Pseudoalteromonas appugigena (NL. fem. n. *appugigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp000239855*. The type genome for the species is the GenBank assembly RS_GCF_000239855.1. The GC content of the type genome is 38.86 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Pseudoalteromonas armigitura sp. nov.

Candidatus Pseudoalteromonas armigitura (NL. fem. n. *armigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp013140855*. The type genome for the species is the GenBank assembly RS_GCF_013140855.1. The GC content of the type genome is 41.98 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Pseudoalteromonas cinefisca sp. nov.

Candidatus Pseudoalteromonas cinefisca (NL. fem. n. *cinefisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp001974855*. The type genome for the species is

the GenBank assembly RS_GCF_001974855.1. The GC content of the type genome is 40.16 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Pseudoalteromonas culibiforma sp. nov.

Candidatus Pseudoalteromonas culibiforma (NL. fem. n. *culibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp004103285*. The type genome for the species is the GenBank assembly RS_GCF_004103285.1. The GC content of the type genome is 43.03 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Pseudoalteromonas cunabitura sp. nov.

Candidatus Pseudoalteromonas cunabitura (NL. fem. n. *cunabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp013349995*. The type genome for the species is the GenBank assembly RS_GCF_013349945.1. The GC content of the type genome is 41.12 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Pseudoalteromonas daducigena sp. nov.

Candidatus Pseudoalteromonas daducigena (NL. fem. n. *daducigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp003590335*. The type genome for the species is the GenBank assembly RS_GCF_005887475.1. The GC content of the type genome is 41.36 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Pseudoalteromonas demagitrix sp. nov.

Candidatus Pseudoalteromonas demagitrix (NL. fem. n. *demagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002964785*. The type genome for the species is the GenBank assembly RS_GCF_002964785.1. The GC content of the type genome is 49.89 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Pseudoalteromonas funamastra sp. nov.

Candidatus Pseudoalteromonas funamastra (NL. fem. n. *funamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp001269985*. The type genome for the species is the GenBank assembly RS_GCF_000724565.2. The GC content of the type genome is 34.98 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Pseudoalteromonas hegumitrix sp. nov.

Candidatus Pseudoalteromonas hegumitrix (NL. fem. n. *hegumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002723455*. The type genome for the species is the GenBank assembly RS_GCF_004766475.1. The GC content of the type genome is 40.2 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Pseudoalteromonas hemitax sp. nov.

Candidatus Pseudoalteromonas hemitax (NL. fem. n. *hemitax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp001974875*. The type genome for the species is the GenBank assembly RS_GCF_001974875.1. The GC content of the type genome is 39.04 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Pseudoalteromonas innulitudo sp. nov.

Candidatus Pseudoalteromonas innulitudo (NL. fem. n. *innulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp001399975*. The type genome for the species is the GenBank assembly RS_GCF_001399975.1. The GC content of the type genome is 40.69 % and the genome length is 4.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "polyp tissue".

Description of *Candidatus* Pseudoalteromonas irregentia sp. nov.

Candidatus Pseudoalteromonas irregentia (NL. fem. n. *irregentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002591815*. The type genome for the species is the GenBank assembly RS_GCF_002591815.1. The GC content of the type genome is 43.29 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Pseudoalteromonas latibousia sp. nov.

Candidatus Pseudoalteromonas latibousia (NL. fem. n. *latibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002685175*. The type genome for the species is the GenBank assembly RS_GCF_011806445.1. The GC content of the type genome is 40.73 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Pseudoalteromonas lenocifica sp. nov.

Candidatus Pseudoalteromonas lenocifica (NL. fem. n. *lenocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002276045*. The type genome for the species is the GenBank assembly RS_GCF_002276045.1. The GC content of the type genome is 34.83 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Pseudoalteromonas ludimitura sp. nov.

Candidatus Pseudoalteromonas ludimitura (NL. fem. n. *ludimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002165575*. The type genome for the species is the GenBank assembly RS_GCF_002165575.1. The GC content of the type genome is 39.98 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Pseudoalteromonas maledimonia sp. nov.

Candidatus Pseudoalteromonas maledimonia (NL. fem. n. *maledimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002964665*. The type genome for the species is the GenBank assembly RS_GCF_002964665.1. The GC content of the type genome is

43.25 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Pseudoalteromonas myalgago sp. nov.

Candidatus Pseudoalteromonas myalgago (NL. fem. n. *myalgago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp009176705*. The type genome for the species is the GenBank assembly RS_GCF_009176705.1. The GC content of the type genome is 42.12 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Pseudoalteromonas nicotatio sp. nov.

Candidatus Pseudoalteromonas nicotatio (NL. fem. n. *nicotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002850255*. The type genome for the species is the GenBank assembly RS_GCF_000259115.1. The GC content of the type genome is 43.23 % and the genome length is 5.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rearing water of healthy turbot (Scophthalmus maximus)".

Description of *Candidatus* Pseudoalteromonas oblociforma sp. nov.

Candidatus Pseudoalteromonas oblociforma (NL. fem. n. *oblociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp005886535*. The type genome for the species is the GenBank assembly RS_GCF_005886535.1. The GC content of the type genome is 43.25 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Pseudoalteromonas oppugousia sp. nov.

Candidatus Pseudoalteromonas oppugousia (NL. fem. n. *oppugousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp008370255*. The type genome for the species is the GenBank assembly RS_GCF_008370255.1. The GC content of the type genome is 39.16 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Pseudoalteromonas rudecitia sp. nov.

Candidatus Pseudoalteromonas rudecitia (NL. fem. n. *rudecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002964705*. The type genome for the species is the GenBank assembly RS_GCF_002964705.1. The GC content of the type genome is 50.13 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Pseudoalteromonas tabititica sp. nov.

Candidatus Pseudoalteromonas tabititica (NL. fem. n. *tabititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002964765*. The type genome for the species is the GenBank assembly RS_GCF_002964645.1. The GC content of the type genome is 49.45 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Pseudoalteromonas tigurastra sp. nov.

Candidatus Pseudoalteromonas tigurastra (NL. fem. n. *tigurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp001401805*. The type genome for the species is the GenBank assembly RS_GCF_005887365.1. The GC content of the type genome is 40.73 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Pseudoalteromonas totidilenta sp. nov.

Candidatus Pseudoalteromonas totidilenta (NL. fem. n. *totidilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp001282135*. The type genome for the species is the GenBank assembly RS_GCF_001282135.1. The GC content of the type genome is 47.63 % and the genome length is 5.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "intertidal zone sludge sample".

Description of *Candidatus* Pseudoalteromonas vatilibula sp. nov.

Candidatus Pseudoalteromonas vatilibula (NL. fem. n. *vatilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp000498095*. The type genome for the species is the GenBank assembly RS_GCF_000498095.1. The GC content of the type genome is 37.92 % and the genome length is 4.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sponge".

Description of *Candidatus* Pseudoalteromonas venunax sp. nov.

Candidatus Pseudoalteromonas venunax (NL. fem. n. *venunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp001469215*. The type genome for the species is the GenBank assembly RS_GCF_001469215.1. The GC content of the type genome is 40.3 % and the genome length is 4.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Pseudoalteromonas veridimonia sp. nov.

Candidatus Pseudoalteromonas veridimonia (NL. fem. n. *veridimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp001468485*. The type genome for the species is the GenBank assembly RS_GCF_005886485.1. The GC content of the type genome is 39.73 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Pseudoalteromonas vivifatio sp. nov.

Candidatus Pseudoalteromonas vivifatio (NL. fem. n. *vivifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp011378855*. The type genome for the species is the GenBank assembly RS_GCF_011378855.1. The GC content of the type genome is 39.12 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Pseudoalteromonas xeropousia sp. nov.

Candidatus Pseudoalteromonas xeropousia (NL. fem. n. *xeropousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoalteromonas sp002684115*. The type genome for the species is the GenBank assembly GCA_002684115.1. The GC content of the type genome is 41.35 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Pseudobacillus chancibra sp. nov.

Candidatus Pseudobacillus chancibra (NL. fem. n. *chancibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobacillus sp003600835*. The type genome for the species is the GenBank assembly RS_GCF_003600835.1. The GC content of the type genome is 41.26 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Pseudobacillus venabatica sp. nov.

Candidatus Pseudobacillus venabatica (NL. fem. n. *venabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobacillus sp009183655*. The type genome for the species is the GenBank assembly RS_GCF_009183655.1. The GC content of the type genome is 42.27 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Pseudobacter denupugo sp. nov.

Candidatus Pseudobacter denupugo (NL. fem. n. *denupugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobacter sp012927185*. The type genome for the species is the GenBank assembly RS_GCF_012927185.1. The GC content of the type genome is 46.51 % and the genome length is 6.12 Mbp.

Description of *Candidatus* Pseudobacteriovorax procritica sp. nov.

Candidatus Pseudobacteriovorax procritica (NL. fem. n. *procritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudobacteriovorax sp013215145*. The type genome for the species is the GenBank assembly GCA_013215145.1. The GC content of the type genome is 43.62 % and the genome length is 7.39 Mbp.

Description of *Candidatus* Pseudobdellovibrio catilitura sp. nov.

Candidatus Pseudobdellovibrio catilitura (NL. fem. n. *catilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobdellovibrio sp014378765*. The type genome for the species is the GenBank assembly GCA_014378765.1. The GC content of the type genome is 41.79 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Pseudobdellovibrio direcivita sp. nov.

Candidatus Pseudobdellovibrio direcivita (NL. fem. n. *direcivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobdellovibrio sp014376435*. The type genome for the species is the GenBank assembly GCA_014376435.1. The GC content of the type genome is 40.05 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Pseudobdellovibrio furibitas sp. nov.

Candidatus Pseudobdellovibrio furibitas (NL. fem. n. *furibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobdellovibrio sp014378775*. The type genome for the species is the GenBank assembly GCA_014378775.1. The GC content of the type genome is 40.48 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Pseudobdellovibrio inredifica sp. nov.

Candidatus Pseudobdellovibrio inredifica (NL. fem. n. *inredifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobdellovibrio sp014376935*. The type genome for the species is the GenBank assembly GCA_014376935.1. The GC content of the type genome is 40.98 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Pseudobdellovibrio rubefilega sp. nov.

Candidatus Pseudobdellovibrio rubefilega (NL. fem. n. *rubefilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobdellovibrio sp001771815*. The type genome for the species is the GenBank assembly GCA_001771815.1. The GC content of the type genome is 40.22 % and the genome length is 2.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Pseudobutyrivibrio cenotatio sp. nov.

Candidatus Pseudobutyrivibrio cenotatio (NL. fem. n. *cenotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobutyrivibrio sp900100545*. The type genome for the species is the GenBank assembly RS_GCF_900100545.1. The GC content of the type genome is 38.92 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Pseudobutyrivibrio indilicula sp. nov.

Candidatus Pseudobutyrivibrio indilicula (NL. fem. n. *indilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobutyrivibrio sp900104335*. The type genome for the species is the GenBank assembly RS_GCF_900104335.1. The GC content of the type genome is 39.0 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Pseudobutyrivibrio inmobilega sp. nov.

Candidatus Pseudobutyrivibrio inmobilega (NL. fem. n. *inmobilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobutyrivibrio sp900107545*. The type genome for the species is the GenBank assembly RS_GCF_900107545.1. The GC content of the type genome is 38.54 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Pseudobutyrivibrio labecitio sp. nov.

Candidatus Pseudobutyrivibrio labecitio (NL. fem. n. *labecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobutyrivibrio sp900112855*. The type genome for the species is the GenBank assembly RS_GCF_010906925.1. The GC content of the type genome is 38.85 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Pseudobutyrivibrio nicotedo sp. nov.

Candidatus Pseudobutyrivibrio nicotedo (NL. fem. n. *nicotedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobutyrivibrio sp000621865*. The type genome for the species is the GenBank assembly RS_GCF_000621865.1. The GC content of the type genome is 38.34 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Pseudobutyrivibrio perexilega sp. nov.

Candidatus Pseudobutyrivibrio perexilega (NL. fem. n. *perexilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobutyrivibrio sp002309345*. The type genome for the species is the GenBank assembly GCA_002309345.1. The GC content of the type genome is 39.39 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Pseudobutyrivibrio ridibivita sp. nov.

Candidatus Pseudobutyrivibrio ridibivita (NL. fem. n. *ridibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobutyrivibrio sp902775195*. The type genome for the species is the GenBank assembly GCA_902775195.1. The GC content of the type genome is 38.82 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Pseudobutyrivibrio sitelicella sp. nov.

Candidatus Pseudobutyrivibrio sitelicella (NL. fem. n. *sitelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudobutyrivibrio sp900113655*. The type genome for the species is the GenBank assembly RS_GCF_900113655.1. The GC content of the type genome is 38.72 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Pseudochrobactrum daducitia sp. nov.

Candidatus Pseudochrobactrum daducitia (NL. fem. n. *daducitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudochrobactrum sp900470285*. The type genome for the species is the GenBank assembly RS_GCF_900470745.1. The GC content of the type genome is 51.36 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Pseudocitrobacter ossaritio sp. nov.

Candidatus Pseudocitrobacter ossaritio (NL. fem. n. *ossaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudocitrobacter sp000330845*. The type genome for the species is the GenBank assembly RS_GCF_000330845.1. The GC content of the type genome is 54.02 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Pseudocitrobacter turicibula sp. nov.

Candidatus Pseudocitrobacter turicibula (NL. fem. n. *turicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudocitrobacter sp008369545*. The type genome for the species is the GenBank assembly RS_GCF_008369545.1. The GC content of the type genome is 53.12 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Pseudoclavibacter catalousia sp. nov.

Candidatus Pseudoclavibacter catalousia (NL. fem. n. *catalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoclavibacter sp002931555*. The type genome for the species is the GenBank assembly RS_GCF_013409665.1. The GC content of the type genome is

68.49 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Pseudoclavibacter inexcifica sp. nov.

Candidatus Pseudoclavibacter inexcifica (NL. fem. n. *inexcifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoclavibacter sp002931075*. The type genome for the species is the GenBank assembly RS_GCF_002931075.1. The GC content of the type genome is 66.98 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Pseudoclavibacter lapicatio sp. nov.

Candidatus Pseudoclavibacter lapicatio (NL. fem. n. *lapicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoclavibacter sp002931055*. The type genome for the species is the GenBank assembly RS_GCF_002931455.1. The GC content of the type genome is 68.36 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Pseudoclavibacter bimotimonia sp. nov.

Candidatus Pseudoclavibacter bimotimonia (NL. fem. n. *bimotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoclavibacter_A sp008831235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008831185.1. The GC content of the type genome is 65.35 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Pseudodesulfovibrio arcatessa sp. nov.

Candidatus Pseudodesulfovibrio arcatessa (NL. fem. n. *arcatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudodesulfovibrio sp012516435*. The type genome for the species is the GenBank assembly RS_GCF_012516435.1. The GC content of the type genome is 53.26 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Pseudodesulfovibrio depopiforma sp. nov.

Candidatus Pseudodesulfovibrio depopiforma (NL. fem. n. *depopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudodesulfovibrio sp004025585*. The type genome for the species is the GenBank assembly RS_GCF_004025585.1. The GC content of the type genome is 56.59 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Pseudodesulfovibrio foricitoga sp. nov.

Candidatus Pseudodesulfovibrio foricitoga (NL. fem. n. *foricitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudodesulfovibrio sp008001235*. The type genome for the species is the GenBank assembly RS_GCF_008001235.1. The GC content of the type genome is 60.45 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Pseudodesulfovibrio lucelitoga sp. nov.

Candidatus Pseudodesulfovibrio lucelitoga (NL. fem. n. *lucelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudodesulfovibrio sp009729555*. The type genome for the species is the GenBank assembly RS_GCF_009729555.1. The GC content of the type genome is 61.93 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Pseudodesulfovibrio paropugo sp. nov.

Candidatus Pseudodesulfovibrio paropugo (NL. fem. n. *paropugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudodesulfovibrio sp010468615*. The type genome for the species is the GenBank assembly RS_GCF_010468615.1. The GC content of the type genome is 52.05 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Pseudodesulfovibrio venabibula sp. nov.

Candidatus Pseudodesulfovibrio venabibula (NL. fem. n. *venabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudodesulfovibrio sp009762795*. The type genome for the species is the GenBank assembly RS_GCF_009762795.1. The GC content of the type genome is 59.94 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Pseudodonghicola bicoressa sp. nov.

Candidatus Pseudodonghicola bicoressa (NL. fem. n. *bicoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudodonghicola sp004358185*. The type genome for the species is the GenBank assembly RS_GCF_004358185.1. The GC content of the type genome is 65.76 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Pseudodonghicola octupetta sp. nov.

Candidatus Pseudodonghicola octupetta (NL. fem. n. *octupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudodonghicola sp004348975*. The type genome for the species is the GenBank assembly RS_GCF_004348975.1. The GC content of the type genome is 62.73 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Pseudoduganella adnepitudo sp. nov.

Candidatus Pseudoduganella adnepitudo (NL. fem. n. *adnepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp001191005*. The type genome for the species is the GenBank assembly RS_GCF_001191005.1. The GC content of the type genome is 63.83 % and the genome length is 6.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "forest soil".

Description of *Candidatus* Pseudoduganella allubitas sp. nov.

Candidatus Pseudoduganella allubitas (NL. fem. n. *allubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp900113115*. The type genome for the species is the GenBank assembly RS_GCF_900113115.1. The GC content of the type genome is 62.61 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Pseudoduganella benififorma sp. nov.

Candidatus Pseudoduganella benififorma (NL. fem. n. *benififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp001425265*. The type genome for the species is the GenBank assembly RS_GCF_001425265.1. The GC content of the type genome is 65.89 % and the genome length is 7.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pseudoduganella codifentia sp. nov.

Candidatus Pseudoduganella codifentia (NL. fem. n. *codifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp003053665*. The type genome for the species is the GenBank assembly RS_GCF_003053665.1. The GC content of the type genome is 65.99 % and the genome length is 6.72 Mbp.

Description of *Candidatus* Pseudoduganella homagitrix sp. nov.

Candidatus Pseudoduganella homagitrix (NL. fem. n. *homagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp001425045*. The type genome for the species is the GenBank assembly RS_GCF_001425045.1. The GC content of the type genome is 65.82 % and the genome length is 7.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pseudoduganella homiciforma sp. nov.

Candidatus Pseudoduganella homiciforma (NL. fem. n. *homiciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp001425005*. The type genome for the species is the

GenBank assembly RS_GCF_001428585.1. The GC content of the type genome is 62.33 % and the genome length is 6.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pseudoduganella inexsitudo sp. nov.

Candidatus Pseudoduganella inexsitudo (NL. fem. n. *inexsitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp013369485*. The type genome for the species is the GenBank assembly RS_GCF_013369485.1. The GC content of the type genome is 63.21 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Pseudoduganella inpasitoga sp. nov.

Candidatus Pseudoduganella inpasitoga (NL. fem. n. *inpasitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp009674485*. The type genome for the species is the GenBank assembly RS_GCF_009674485.1. The GC content of the type genome is 62.75 % and the genome length is 8.17 Mbp.

Description of *Candidatus* Pseudoduganella nefarago sp. nov.

Candidatus Pseudoduganella nefarago (NL. fem. n. *nefarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp004217275*. The type genome for the species is the GenBank assembly RS_GCF_004217275.1. The GC content of the type genome is 62.58 % and the genome length is 6.24 Mbp.

Description of *Candidatus* Pseudoduganella nitelugo sp. nov.

Candidatus Pseudoduganella nitelugo (NL. fem. n. *nitelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp001427305*. The type genome for the species is the GenBank assembly RS_GCF_001427305.1. The GC content of the type genome is 62.04 % and the genome length is 6.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pseudoduganella subucugo sp. nov.

Candidatus Pseudoduganella subucugo (NL. fem. n. *subucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoduganella sp002454505*. The type genome for the species is the GenBank assembly GCA_002454505.1. The GC content of the type genome is 65.83 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Pseudoflavonifractor conubastra sp. nov.

Candidatus Pseudoflavonifractor conubastra (NL. fem. n. *conubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoflavonifractor sp014287675*. The type genome for the species is the GenBank assembly RS_GCF_009718665.1. The GC content of the type genome is 61.44 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Pseudoflavonifractor sifunentia sp. nov.

Candidatus Pseudoflavonifractor sifunentia (NL. fem. n. *sifunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoflavonifractor sp900079765*. The type genome for the species is the GenBank assembly GCA_900079765.1. The GC content of the type genome is 57.7 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Pseudofulvimonas necopitura sp. nov.

Candidatus Pseudofulvimonas necopitura (NL. fem. n. *necopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudofulvimonas sp002344355*. The type genome for the species is the GenBank assembly GCA_002343145.1. The GC content of the type genome is 72.99 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Pseudogemmobacter octacitio sp. nov.

Candidatus Pseudogemmobacter octacitio (NL. fem. n. *octacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudogemmobacter sp900105075*. The type genome for the species is the GenBank assembly RS_GCF_900105075.1. The GC content of the type genome is 62.71 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Pseudogemmobacter vaniditoga sp. nov.

Candidatus Pseudogemmobacter vaniditoga (NL. fem. n. *vaniditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudogemmobacter sp013155295*. The type genome for the species is the GenBank assembly RS_GCF_013155295.1. The GC content of the type genome is 62.89 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Pseudogracilibacillus terebiforma sp. nov.

Candidatus Pseudogracilibacillus terebiforma (NL. fem. n. *terebiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudogracilibacillus sp012518125*. The type genome for the species is the GenBank assembly GCA_012518125.1. The GC content of the type genome is 45.15 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Pseudogracilibacillus turicago sp. nov.

Candidatus Pseudogracilibacillus turicago (NL. fem. n. *turicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudogracilibacillus sp002453315*. The type genome for the species is the GenBank assembly GCA_002453315.1. The GC content of the type genome is 34.9 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Pseudogulbenkiania odonticella sp. nov.

Candidatus Pseudogulbenkiania odonticella (NL. fem. n. *odonticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudogulbenkiania sp000527175*. The type genome for the species is the GenBank assembly RS_GCF_000527175.1. The GC content of the type genome is 64.19 % and the genome length is 4.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Pseudohoeflea fetulitrix sp. nov.

Candidatus Pseudohoeflea fetulitrix (NL. fem. n. *fetulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudohoeflea sp002707605*. The type genome for the species is the GenBank assembly GCA_002325365.1. The GC content of the type genome is 61.14 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Pseudohoeflea invesitrix sp. nov.

Candidatus Pseudohoeflea invesitrix (NL. fem. n. *invesitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudohoeflea sp002709005*. The type genome for the species is the GenBank assembly GCA_002709005.1. The GC content of the type genome is 62.71 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Pseudohongiella anarritio sp. nov.

Candidatus Pseudohongiella anarritio (NL. fem. n. *anarritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudohongiella sp004535785*. The type genome for the species is the GenBank assembly RS_GCF_004535785.1. The GC content of the type genome is 52.54 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Pseudohongiella bonititia sp. nov.

Candidatus Pseudohongiella bonititia (NL. fem. n. *bonititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudohongiella sp002354805*. The type genome for the species is the GenBank assembly GCA_002693695.1. The GC content of the type genome is 55.24 %

and the genome length is 3.75 Mbp.

Description of *Candidatus* Pseudohongiella catecigena sp. nov.

Candidatus Pseudohongiella catecigena (NL. fem. n. *catecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudohongiella sp002711845*. The type genome for the species is the GenBank assembly GCA_002388485.1. The GC content of the type genome is 57.81 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Pseudohongiella defosentia sp. nov.

Candidatus Pseudohongiella defosentia (NL. fem. n. *defosentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudohongiella sp011050365*. The type genome for the species is the GenBank assembly GCA_011050365.1. The GC content of the type genome is 56.06 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Pseudohongiella rubefifica sp. nov.

Candidatus Pseudohongiella rubefifica (NL. fem. n. *rubefifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudohongiella sp002422225*. The type genome for the species is the GenBank assembly GCA_002422225.1. The GC content of the type genome is 52.12 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Pseudohongiella semibimonia sp. nov.

Candidatus Pseudohongiella semibimonia (NL. fem. n. *semibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudohongiella sp002706685*. The type genome for the species is the GenBank assembly GCA_002388765.1. The GC content of the type genome is 55.31 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Pseudolabrys adordifica sp. nov.

Candidatus Pseudolabrys adordifica (NL. fem. n. *adordifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp903891395*. The type genome for the species is the GenBank assembly GCA_903891395.1. The GC content of the type genome is 63.31 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Pseudolabrys adpelax sp. nov.

Candidatus Pseudolabrys adpelax (NL. fem. n. *adpelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp001426945*. The type genome for the species is the GenBank assembly RS_GCF_001426945.1. The GC content of the type genome is 64.01 % and the genome length is 4.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pseudolabrys ancepastra sp. nov.

Candidatus Pseudolabrys ancepastra (NL. fem. n. *ancepastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp001464835*. The type genome for the species is the GenBank assembly GCA_001464835.1. The GC content of the type genome is 63.31 % and the genome length is 3.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Pseudolabrys benifitia sp. nov.

Candidatus Pseudolabrys benifitia (NL. fem. n. *benifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp903885555*. The type genome for the species is the GenBank assembly GCA_903897385.1. The GC content of the type genome is 62.64 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Pseudolabrys bipativita sp. nov.

Candidatus Pseudolabrys bipativita (NL. fem. n. *bipativita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp003133345*. The type genome for the species is the GenBank assembly GCA_003170235.1. The GC content of the type genome is 62.71 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Pseudolabrys cerimousia sp. nov.

Candidatus Pseudolabrys cerimousia (NL. fem. n. *cerimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp903892675*. The type genome for the species is the GenBank assembly GCA_903892675.1. The GC content of the type genome is 62.91 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Pseudolabrys cnestitrix sp. nov.

Candidatus Pseudolabrys cnestitrix (NL. fem. n. *cnestitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp005153485*. The type genome for the species is the GenBank assembly RS_GCF_005153485.1. The GC content of the type genome is 63.61 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Pseudolabrys herinugo sp. nov.

Candidatus Pseudolabrys herinugo (NL. fem. n. *herinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp001899285*. The type genome for the species is the GenBank assembly GCA_001899285.1. The GC content of the type genome is 64.15 % and the genome length is 4.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Pseudolabrys inmenastra sp. nov.

Candidatus Pseudolabrys inmenastra (NL. fem. n. *inmenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp003367195*. The type genome for the species is the GenBank assembly RS_GCF_003367195.1. The GC content of the type genome is 63.28 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Pseudolabrys leviditura sp. nov.

Candidatus Pseudolabrys leviditura (NL. fem. n. *leviditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp903929045*. The type genome for the species is the GenBank assembly GCA_903828905.1. The GC content of the type genome is 62.91 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Pseudolabrys lubenitia sp. nov.

Candidatus Pseudolabrys lubenitia (NL. fem. n. *lubenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp009694265*. The type genome for the species is the GenBank assembly GCA_009694265.1. The GC content of the type genome is 62.54 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Pseudolabrys roraritura sp. nov.

Candidatus Pseudolabrys roraritura (NL. fem. n. *roraritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp903878085*. The type genome for the species is the GenBank assembly GCA_903878085.1. The GC content of the type genome is 62.86 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Pseudolabrys velivatica sp. nov.

Candidatus Pseudolabrys velivatica (NL. fem. n. *velivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp903839845*. The type genome for the species is the GenBank assembly GCA_903838555.1. The GC content of the type genome is 63.16 %

and the genome length is 3.87 Mbp.

Description of *Candidatus* Pseudolabrys veliventia sp. nov.

Candidatus Pseudolabrys veliventia (NL. fem. n. *veliventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudolabrys sp003152455*. The type genome for the species is the GenBank assembly GCA_003152455.1. The GC content of the type genome is 62.17 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Pseudoleptotrichia tirunentia sp. nov.

Candidatus Pseudoleptotrichia tirunentia (NL. fem. n. *tirunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoleptotrichia sp003932895*. The type genome for the species is the GenBank assembly RS_GCF_003932895.1. The GC content of the type genome is 29.64 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Pseudomaricurvus arcifousia sp. nov.

Candidatus Pseudomaricurvus arcifousia (NL. fem. n. *arcifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomaricurvus sp009857815*. The type genome for the species is the GenBank assembly RS_GCF_009857815.1. The GC content of the type genome is 58.95 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Pseudomaricurvus serotilenta sp. nov.

Candidatus Pseudomaricurvus serotilenta (NL. fem. n. *serotilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomaricurvus sp002707785*. The type genome for the species is the GenBank assembly GCA_002299085.1. The GC content of the type genome is 49.96 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Pseudomonas adnuligena sp. nov.

Candidatus Pseudomonas adnuligena (NL. fem. n. *adnuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas sp000955805*. The type genome for the species is the GenBank assembly RS_GCF_000955805.1. The GC content of the type genome is 65.61 % and the genome length is 6.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil".

Description of *Candidatus* Pseudomonas arnogibra sp. nov.

Candidatus Pseudomonas arnogibra (NL. fem. n. *arnogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas sp002796985*. The type genome for the species is the GenBank assembly GCA_002796985.1. The GC content of the type genome is 64.89 % and the genome length is 6.02 Mbp.

Description of *Candidatus* Pseudomonas decacilenta sp. nov.

Candidatus Pseudomonas decacilenta (NL. fem. n. *decacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas sp000349845*. The type genome for the species is the GenBank assembly RS_GCF_000349845.1. The GC content of the type genome is 65.24 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Pseudomonas detosugo sp. nov.

Candidatus Pseudomonas detosugo (NL. fem. n. *detosugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas sp002079985*. The type genome for the species is the GenBank assembly RS_GCF_002079985.1. The GC content of the type genome is 65.23 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Pseudomonas extipibula sp. nov.

Candidatus Pseudomonas extipibula (NL. fem. n. *extipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas sp009189165*. The type genome for the species is the GenBank assembly RS_GCF_009189165.1. The GC content of the type genome is 64.59 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Pseudomonas ratificella sp. nov.

Candidatus Pseudomonas ratificella (NL. fem. n. *ratificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas sp005877905*. The type genome for the species is the GenBank assembly RS_GCF_005877905.1. The GC content of the type genome is 64.78 % and the genome length is 6.68 Mbp.

Description of *Candidatus* Pseudomonas depopilega sp. nov.

Candidatus Pseudomonas depopilega (NL. fem. n. *depopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_A sp003325755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003325755.1. The GC content of the type genome is 59.95 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Pseudomonas favilitrix sp. nov.

Candidatus Pseudomonas favilitrix (NL. fem. n. *favilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_A sp003205815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002341565.1. The GC content of the type genome is 64.0 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Pseudomonas favonousia sp. nov.

Candidatus Pseudomonas favonousia (NL. fem. n. *favonousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_A sp003488145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002342105.1. The GC content of the type genome is 63.36 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Pseudomonas mahelitia sp. nov.

Candidatus Pseudomonas mahelitia (NL. fem. n. *mahelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_A sp002692525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000982865.1. The GC content of the type genome is 62.72 % and the genome length is 4.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "toluene-contaminated soil from the Barkan industrial zone".

Description of *Candidatus* Pseudomonas maxilifica sp. nov.

Candidatus Pseudomonas maxilifica (NL. fem. n. *maxilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_A sp004331835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004331835.1. The GC content of the type genome is 60.77 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Pseudomonas monodax sp. nov.

Candidatus Pseudomonas monodax (NL. fem. n. *monodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_A sp004010935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002296325.1. The GC

content of the type genome is 60.42 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Pseudomonas relecitrix sp. nov.

Candidatus Pseudomonas relecitrix (NL. fem. n. *relecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_A sp007713455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007713455.1. The GC content of the type genome is 62.57 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Pseudomonas saxopatica sp. nov.

Candidatus Pseudomonas saxopatica (NL. fem. n. *saxopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_A sp013620795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013620795.1. The GC content of the type genome is 60.64 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Pseudomonas senacastra sp. nov.

Candidatus Pseudomonas senacastra (NL. fem. n. *senacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_A sp000765155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009740185.1. The GC content of the type genome is 64.69 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Pseudomonas totidetta sp. nov.

Candidatus Pseudomonas totidetta (NL. fem. n. *totidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudomonas_A sp003527165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003527165.1. The GC content of the type genome is 61.55 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Pseudomonas infacitio sp. nov.

Candidatus Pseudomonas infacitio (NL. fem. n. *infacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_B sp001512295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001512295.1. The GC content of the type genome is 65.46 % and the genome length is 5.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "stem and leaf".

Description of *Candidatus* Pseudomonas cenoditura sp. nov.

Candidatus Pseudomonas cenoditura (NL. fem. n. *cenoditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_C sp001513025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012523245.1. The GC content of the type genome is 49.44 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Pseudomonas detenitoga sp. nov.

Candidatus Pseudomonas detenitoga (NL. fem. n. *detenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_C sp012719655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012719655.1. The GC content of the type genome is 48.8 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Pseudomonas dimacitia sp. nov.

Candidatus Pseudomonas dimacitia (NL. fem. n. *dimacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_C sp012518175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012518175.1. The GC content of the type genome is 49.57 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Pseudomonas funebicella sp. nov.

Candidatus Pseudomonas funebicella (NL. fem. n. *funebicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_C sp012728315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012728315.1. The GC content of the type genome is 48.84 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Pseudomonas humecilega sp. nov.

Candidatus Pseudomonas humecilega (NL. fem. n. *humecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_C sp002342705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002342865.1. The GC content of the type genome is 48.54 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Pseudomonas nugigitas sp. nov.

Candidatus Pseudomonas nugigitas (NL. fem. n. *nugigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_C sp012800475*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012800475.1. The GC content of the type genome is 49.11 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Pseudomonas telefitia sp. nov.

Candidatus Pseudomonas telefitia (NL. fem. n. *telefitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_C sp012513235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012513235.1. The GC content of the type genome is 48.51 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Pseudomonas admulago sp. nov.

Candidatus Pseudomonas admulago (NL. fem. n. *admulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp002296055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002296055.1. The GC content of the type genome is 61.36 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Pseudomonas alcalicella sp. nov.

Candidatus Pseudomonas alcalicella (NL. fem. n. *alcalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp007117785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007117785.1. The GC content of the type genome is 57.53 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Pseudomonas alectedo sp. nov.

Candidatus Pseudomonas alectedo (NL. fem. n. *alectedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp008638345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008638345.1. The GC content of the type genome is 58.51 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Pseudomonas armicimonas sp. nov.

Candidatus Pseudomonas armicimonas (NL. fem. n. *armicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp012735335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012735335.1. The GC content of the type genome is 62.03 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Pseudomonas decitibula sp. nov.

Candidatus Pseudomonas decitibula (NL. fem. n. *decitibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp002683975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003797945.1. The GC content of the type genome is 56.22 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Pseudomonas istinatica sp. nov.

Candidatus Pseudomonas istinatica (NL. fem. n. *istinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp002840055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002840055.1. The GC content of the type genome is 57.94 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Pseudomonas lenocicula sp. nov.

Candidatus Pseudomonas lenocicula (NL. fem. n. *lenocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp002979975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002979975.1. The GC content of the type genome is 61.5 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Pseudomonas nefanicella sp. nov.

Candidatus Pseudomonas nefanicella (NL. fem. n. *nefanicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp008365385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008365385.1. The GC content of the type genome is 57.84 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Pseudomonas oscilivita sp. nov.

Candidatus Pseudomonas oscilivita (NL. fem. n. *oscilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp007692485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007692485.1. The GC content of the type genome is 57.6 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Pseudomonas tribricula sp. nov.

Candidatus Pseudomonas tribricula (NL. fem. n. *tribricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_D sp012844345*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012844345.1. The GC content of the type genome is 58.27 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Pseudomonas abnepilenta sp. nov.

Candidatus Pseudomonas abnepilenta (NL. fem. n. *abnepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp005938045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005938045.2. The GC content of the type genome is 60.09 % and the genome length is 6.63 Mbp.

Description of *Candidatus* Pseudomonas absocatio sp. nov.

Candidatus Pseudomonas absocatio (NL. fem. n. *absocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002901475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002901475.1. The GC content of the type genome is 59.28 % and the genome length is 6.72 Mbp.

Description of *Candidatus* Pseudomonas absurilenta sp. nov.

Candidatus Pseudomonas absurilenta (NL. fem. n. *absurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000282195.1. The GC content of the type genome is 59.51 % and the genome length is 6.3 Mbp.

Description of *Candidatus* Pseudomonas acricimonia sp. nov.

Candidatus Pseudomonas acricimonia (NL. fem. n. *acricimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp007993865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007993865.1. The GC content of the type genome is 62.24 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Pseudomonas adaggessa sp. nov.

Candidatus Pseudomonas adaggessa (NL. fem. n. *adaggessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900187445.1. The GC content of the type genome is 58.69 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Pseudomonas adcomessa sp. nov.

Candidatus Pseudomonas adcomessa (NL. fem. n. *adcomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003696305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003696305.1. The GC content of the type genome is 66.62 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Pseudomonas adgenilenta sp. nov.

Candidatus Pseudomonas adgenilenta (NL. fem. n. *adgenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003061005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003061005.1. The GC content of the type genome is 60.28 % and the genome length is 5.95 Mbp.

Description of *Candidatus* Pseudomonas admulibula sp. nov.

Candidatus Pseudomonas admulibula (NL. fem. n. *admulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900108875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900108875.1. The GC content of the type genome is 60.19 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Pseudomonas adnaretta sp. nov.

Candidatus Pseudomonas adnaretta (NL. fem. n. *adnaretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014268755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268755.1. The GC content of the type genome is 63.02 % and the genome length is 6.99 Mbp.

Description of *Candidatus* Pseudomonas adnulimonia sp. nov.

Candidatus Pseudomonas adnulimonia (NL. fem. n. *adnulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000612585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000612585.1. The GC content of the type genome is 60.87 % and the genome length is 6.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mushroom".

Description of *Candidatus* Pseudomonas adpacessa sp. nov.

Candidatus Pseudomonas adpacessa (NL. fem. n. *adpacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014268505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268505.1. The GC content of the type genome is 59.7 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Pseudomonas aggenilenta sp. nov.

Candidatus Pseudomonas aggenilenta (NL. fem. n. *aggenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900187645.1. The GC content of the type genome is 62.28 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Pseudomonas aglasisca sp. nov.

Candidatus Pseudomonas aglasisca (NL. fem. n. *aglasisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004519305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004519305.1. The GC content of the type genome is 64.41 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Pseudomonas agravicula sp. nov.

Candidatus Pseudomonas agravicula (NL. fem. n. *agravicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp902706175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902706175.1. The GC content of the type genome is 59.94 % and the genome length is 6.4 Mbp.

Description of *Candidatus* Pseudomonas agrimago sp. nov.

Candidatus Pseudomonas agrimago (NL. fem. n. *agrimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009861525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009861525.1. The GC content of the type genome is 61.61 % and the genome length is 6.67 Mbp.

Description of *Candidatus* Pseudomonas algifedo sp. nov.

Candidatus Pseudomonas algifedo (NL. fem. n. *algifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004214895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004214895.1. The GC content of the type genome is 61.83 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Pseudomonas ancipibula sp. nov.

Candidatus Pseudomonas ancipibula (NL. fem. n. *ancipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000633395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000633395.1. The GC content of the type genome is 62.93 % and the genome length is 7.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Carnivorous Plant Phytotelma".

Description of *Candidatus* Pseudomonas ancipimonia sp. nov.

Candidatus Pseudomonas ancipimonia (NL. fem. n. *ancipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009799925*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009799925.1. The GC content of the type genome is 65.77 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Pseudomonas apporiforma sp. nov.

Candidatus Pseudomonas apporiforma (NL. fem. n. *apporiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009834515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009834515.1. The GC content of the type genome is 59.05 % and the genome length is 6.6 Mbp.

Description of *Candidatus* Pseudomonas ardifilega sp. nov.

Candidatus Pseudomonas ardifilega (NL. fem. n. *ardifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003105155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003105155.1. The GC content of the type genome is 62.95 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Pseudomonas armicisca sp. nov.

Candidatus Pseudomonas armicisca (NL. fem. n. *armicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp012935695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012935695.1. The GC content of the type genome is 59.21 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Pseudomonas attegugo sp. nov.

Candidatus Pseudomonas attegugo (NL. fem. n. *attegugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001269925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001269925.1. The GC content of the type genome is 60.67 % and the genome length is 6.82 Mbp.

Description of *Candidatus* Pseudomonas attesax sp. nov.

Candidatus Pseudomonas attesax (NL. fem. n. *attesax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp011369485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011369485.1. The GC content of the type genome is 59.62 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Pseudomonas baditatica sp. nov.

Candidatus Pseudomonas baditatica (NL. fem. n. *baditatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009761815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009761815.1. The GC content of the type genome is 59.84 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Pseudomonas benivitas sp. nov.

Candidatus Pseudomonas benivitas (NL. fem. n. *benivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001655615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001655615.1. The GC content of the type genome is 59.41 % and the genome length is 6.5 Mbp. The isolation

source for the NCBI BioSample associated with the type genome is descibed as "plant root".

Description of *Candidatus* Pseudomonas bimotilega sp. nov.

Candidatus Pseudomonas bimotilega (NL. fem. n. *bimotilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003033885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009831705.1. The GC content of the type genome is 60.44 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Pseudomonas bipalitia sp. nov.

Candidatus Pseudomonas bipalitia (NL. fem. n. *bipalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004353925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004353925.1. The GC content of the type genome is 59.8 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Pseudomonas bisulimonia sp. nov.

Candidatus Pseudomonas bisulimonia (NL. fem. n. *bisulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003097135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003097135.1. The GC content of the type genome is 62.76 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Pseudomonas bovicastra sp. nov.

Candidatus Pseudomonas bovicastra (NL. fem. n. *bovicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003151075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003151075.1. The GC content of the type genome is 59.07 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Pseudomonas buceliforma sp. nov.

Candidatus Pseudomonas buceliforma (NL. fem. n. *buceliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000935045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000935045.1. The GC content of the type genome is 62.45 % and the genome length is 6.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "PAH contaminated soil".

Description of *Candidatus* Pseudomonas buxanibra sp. nov.

Candidatus Pseudomonas buxanibra (NL. fem. n. *buxanibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013823775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013823775.1. The GC content of the type genome is 58.85 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Pseudomonas calipigena sp. nov.

Candidatus Pseudomonas calipigena (NL. fem. n. *calipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002029345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002029345.1. The GC content of the type genome is 60.02 % and the genome length is 7.35 Mbp.

Description of *Candidatus* Pseudomonas canacimonia sp. nov.

Candidatus Pseudomonas canacimonia (NL. fem. n. *canacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902498265.1. The GC content of the type genome is 58.82 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Pseudomonas capucetta sp. nov.

Candidatus Pseudomonas capucetta (NL. fem. n. *capucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000801235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000801235.1. The GC content of the type genome is 60.98 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Pseudomonas caselitica sp. nov.

Candidatus Pseudomonas caselitica (NL. fem. n. *caselitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001655595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010448615.1. The GC content of the type genome is 60.56 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Pseudomonas catabitia sp. nov.

Candidatus Pseudomonas catabitia (NL. fem. n. *catabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009763245*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009763245.1. The GC content of the type genome is 62.97 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Pseudomonas cemenilenta sp. nov.

Candidatus Pseudomonas cemenilenta (NL. fem. n. *cemenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003523465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003523465.1. The GC content of the type genome is 62.85 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Pseudomonas cenacitio sp. nov.

Candidatus Pseudomonas cenacitio (NL. fem. n. *cenacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001592875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001592875.1. The GC content of the type genome is 63.98 % and the genome length is 4.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rhizosphere sediment of Phragmites karka from lake water".

Description of *Candidatus* Pseudomonas cenotax sp. nov.

Candidatus Pseudomonas cenotax (NL. fem. n. *cenotax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002263605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002263605.1. The GC content of the type genome is 59.81 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Pseudomonas cenotisca sp. nov.

Candidatus Pseudomonas cenotisca (NL. fem. n. *cenotisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900582625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900582625.1. The GC content of the type genome is 60.79 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Pseudomonas ceracastra sp. nov.

Candidatus Pseudomonas ceracastra (NL. fem. n. *ceracastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009764265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009764265.1. The GC content of the type genome is 60.46 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Pseudomonas cerevibula sp. nov.

Candidatus Pseudomonas cerevibula (NL. fem. n. *cerevibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001422615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001422615.1. The GC content of the type genome is 61.36 % and the genome length is 6.28 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pseudomonas cerevilenta sp. nov.

Candidatus Pseudomonas cerevilenta (NL. fem. n. *cerevilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp012985465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012985525.1. The GC content of the type genome is 61.0 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Pseudomonas cetaribra sp. nov.

Candidatus Pseudomonas cetaribra (NL. fem. n. *cetaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004310295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004310295.1. The GC content of the type genome is 58.87 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Pseudomonas cetarousia sp. nov.

Candidatus Pseudomonas cetarousia (NL. fem. n. *cetarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003050835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003217055.1. The GC content of the type genome is 61.44 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Pseudomonas chalbibula sp. nov.

Candidatus Pseudomonas chalbibula (NL. fem. n. *chalbibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000418555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000418555.1. The GC content of the type genome is 63.42 % and the genome length is 5.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "glyphosate-polluted soil".

Description of *Candidatus* Pseudomonas cicaritoga sp. nov.

Candidatus Pseudomonas cicaritoga (NL. fem. n. *cicaritoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014207255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014207255.1. The GC content of the type genome is 60.36 % and the genome length is 6.89 Mbp.

Description of *Candidatus* Pseudomonas cilibicula sp. nov.

Candidatus Pseudomonas cilibicula (NL. fem. n. *cilibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900187455.1. The GC content of the type genome is 62.7 % and the genome length is 7.24 Mbp.

Description of *Candidatus* Pseudomonas cilicigena sp. nov.

Candidatus Pseudomonas cilicigena (NL. fem. n. *cilicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009707515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009707515.1. The GC content of the type genome is 58.88 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Pseudomonas cinefibra sp. nov.

Candidatus Pseudomonas cinefibra (NL. fem. n. *cinefibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001269815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902706155.1. The GC

content of the type genome is 58.9 % and the genome length is 6.35 Mbp.

Description of *Candidatus* Pseudomonas cocolivita sp. nov.

Candidatus Pseudomonas cocolivita (NL. fem. n. *cocolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002383725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002345435.1. The GC content of the type genome is 61.29 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Pseudomonas cohoritio sp. nov.

Candidatus Pseudomonas cohoritio (NL. fem. n. *cohoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900005815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005233685.1. The GC content of the type genome is 60.77 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Pseudomonas colapatio sp. nov.

Candidatus Pseudomonas colapatio (NL. fem. n. *colapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001465025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001465025.1. The GC content of the type genome is 58.64 % and the genome length is 4.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Pseudomonas colapax sp. nov.

Candidatus Pseudomonas colapax (NL. fem. n. *colapax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001945395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001945395.1. The GC content of the type genome is 63.17 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Pseudomonas colepivita sp. nov.

Candidatus Pseudomonas colepivita (NL. fem. n. *colepivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014472415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014472415.1. The GC content of the type genome is 58.88 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Pseudomonas conabentia sp. nov.

Candidatus Pseudomonas conabentia (NL. fem. n. *conabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902497795.1. The GC content of the type genome is 59.13 % and the genome length is 6.85 Mbp.

Description of *Candidatus* Pseudomonas conifica sp. nov.

Candidatus Pseudomonas conifica (NL. fem. n. *conifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001952855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001952855.1. The GC content of the type genome is 60.18 % and the genome length is 6.98 Mbp.

Description of *Candidatus* Pseudomonas coninatio sp. nov.

Candidatus Pseudomonas coninatio (NL. fem. n. *coninatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014268975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268955.1. The GC content of the type genome is 62.98 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Pseudomonas conipiforma sp. nov.

Candidatus Pseudomonas conipiforma (NL. fem. n. *conipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002836515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002836515.1. The GC content of the type genome is 59.7 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Pseudomonas corocedo sp. nov.

Candidatus Pseudomonas corocedo (NL. fem. n. *corocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002112885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002112965.1. The GC content of the type genome is 60.74 % and the genome length is 6.4 Mbp.

Description of *Candidatus* Pseudomonas cosigitoga sp. nov.

Candidatus Pseudomonas cosigitoga (NL. fem. n. *cosigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014268825*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268825.1. The GC content of the type genome is 62.5 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Pseudomonas coticatio sp. nov.

Candidatus Pseudomonas coticatio (NL. fem. n. *coticatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009908285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009908285.1. The GC content of the type genome is 61.51 % and the genome length is 7.33 Mbp.

Description of *Candidatus* Pseudomonas coturitia sp. nov.

Candidatus Pseudomonas coturitia (NL. fem. n. *coturitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900187615.1. The GC content of the type genome is 58.96 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Pseudomonas crastigena sp. nov.

Candidatus Pseudomonas crastigena (NL. fem. n. *crastigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002386445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002386445.1. The GC content of the type genome is 63.17 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Pseudomonas cruppicula sp. nov.

Candidatus Pseudomonas cruppicula (NL. fem. n. *cruppicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000282455.1. The GC content of the type genome is 60.12 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Pseudomonas daducisca sp. nov.

Candidatus Pseudomonas daducisca (NL. fem. n. *daducisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002304225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002304225.1. The GC content of the type genome is 62.31 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Pseudomonas decenimonas sp. nov.

Candidatus Pseudomonas decenimonas (NL. fem. n. *decenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013386825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013386785.1. The GC content of the type genome is 60.95 % and the genome length is 7.14 Mbp.

Description of *Candidatus* Pseudomonas deculastra sp. nov.

Candidatus Pseudomonas deculastra (NL. fem. n. *deculastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002979555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900576665.1. The GC content of the type genome is 60.76 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Pseudomonas decupimonas sp. nov.

Candidatus Pseudomonas decupimonas (NL. fem. n. *decupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900589395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900582365.1. The GC content of the type genome is 62.25 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Pseudomonas defalilega sp. nov.

Candidatus Pseudomonas defalilega (NL. fem. n. *defalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900601905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900601905.1. The GC content of the type genome is 58.95 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Pseudomonas defetibula sp. nov.

Candidatus Pseudomonas defetibula (NL. fem. n. *defetibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001429045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001427765.1. The GC content of the type genome is 59.99 % and the genome length is 6.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pseudomonas defetisca sp. nov.

Candidatus Pseudomonas defetisca (NL. fem. n. *defetisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudomonas_E sp004364435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004364435.1. The GC content of the type genome is 58.77 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Pseudomonas defuledo sp. nov.

Candidatus Pseudomonas defuledo (NL. fem. n. *defuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009866765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009866765.1. The GC content of the type genome is 60.06 % and the genome length is 6.61 Mbp.

Description of *Candidatus* Pseudomonas dehisatio sp. nov.

Candidatus Pseudomonas dehisatio (NL. fem. n. *dehisatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014164785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014164785.1. The GC content of the type genome is 63.25 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Pseudomonas dehisetta sp. nov.

Candidatus Pseudomonas dehisetta (NL. fem. n. *dehisetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp005502935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005502935.1. The GC content of the type genome is 62.48 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Pseudomonas dehonedo sp. nov.

Candidatus Pseudomonas dehonedo (NL. fem. n. *dehonedo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003851685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003851685.1. The GC content of the type genome is 60.63 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Pseudomonas delebitoga sp. nov.

Candidatus Pseudomonas delebitoga (NL. fem. n. *delebitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013359595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013359595.1. The GC content of the type genome is 60.86 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Pseudomonas delubousia sp. nov.

Candidatus Pseudomonas delubousia (NL. fem. n. *delubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003935425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003935425.1. The GC content of the type genome is 60.97 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Pseudomonas demagitas sp. nov.

Candidatus Pseudomonas demagitas (NL. fem. n. *demagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002438125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002438125.1. The GC

content of the type genome is 64.71 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Pseudomonas demulago sp. nov.

Candidatus Pseudomonas demulago (NL. fem. n. *demulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013359695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013359695.1. The GC content of the type genome is 59.7 % and the genome length is 6.84 Mbp.

Description of *Candidatus* Pseudomonas denecago sp. nov.

Candidatus Pseudomonas denecago (NL. fem. n. *denecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp007828215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007828175.1. The GC content of the type genome is 60.66 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Pseudomonas denixitica sp. nov.

Candidatus Pseudomonas denixitica (NL. fem. n. *denixitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900107395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900107395.1. The GC content of the type genome is 62.63 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Pseudomonas denorifica sp. nov.

Candidatus Pseudomonas denorifica (NL. fem. n. *denorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudomonas_E sp002356535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002356535.1. The GC content of the type genome is 59.75 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Pseudomonas depetousia sp. nov.

Candidatus Pseudomonas depetousia (NL. fem. n. *depetousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004803755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004803755.1. The GC content of the type genome is 58.74 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Pseudomonas depicousia sp. nov.

Candidatus Pseudomonas depicousia (NL. fem. n. *depicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001705835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001705995.2. The GC content of the type genome is 62.09 % and the genome length is 7.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sewage enriched with benzalkonium chloride".

Description of *Candidatus* Pseudomonas depupitrix sp. nov.

Candidatus Pseudomonas depupitrix (NL. fem. n. *depupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002699985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002699985.1. The GC content of the type genome is 56.96 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Pseudomonas derecatio sp. nov.

Candidatus Pseudomonas derecatio (NL. fem. n. *derecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002112505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002112505.1. The GC content of the type genome is 63.75 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Pseudomonas derecousia sp. nov.

Candidatus Pseudomonas derecousia (NL. fem. n. *derecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003605735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003605735.1. The GC content of the type genome is 59.13 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Pseudomonas derelentia sp. nov.

Candidatus Pseudomonas derelentia (NL. fem. n. *derelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp012935755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012935675.1. The GC content of the type genome is 59.6 % and the genome length is 7.11 Mbp.

Description of *Candidatus* Pseudomonas desomedo sp. nov.

Candidatus Pseudomonas desomedo (NL. fem. n. *desomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000263855*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000263855.1. The GC content of the type genome is 62.5 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Pseudomonas desomisca sp. nov.

Candidatus Pseudomonas desomisca (NL. fem. n. *desomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002113595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002112565.1. The GC content of the type genome is 64.79 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Pseudomonas desomitrix sp. nov.

Candidatus Pseudomonas desomitrix (NL. fem. n. *desomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900573885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900573885.1. The GC content of the type genome is 60.85 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Pseudomonas desucifica sp. nov.

Candidatus Pseudomonas desucifica (NL. fem. n. *desucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003290225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002742485.1. The GC content of the type genome is 59.31 % and the genome length is 6.54 Mbp.

Description of *Candidatus* Pseudomonas desucitrix sp. nov.

Candidatus Pseudomonas desucitrix (NL. fem. n. *desucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002204795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002204795.1. The GC content of the type genome is 60.4 % and the genome length is 6.64 Mbp.

Description of *Candidatus* Pseudomonas desupatio sp. nov.

Candidatus Pseudomonas desupatio (NL. fem. n. *desupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000512695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000512695.2. The GC content of the type genome is 58.71 % and the genome length is 6.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "permafrost soil".

Description of *Candidatus* Pseudomonas desurugo sp. nov.

Candidatus Pseudomonas desurugo (NL. fem. n. *desurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002434265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002434265.1. The GC content of the type genome is 64.2 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Pseudomonas detecessa sp. nov.

Candidatus Pseudomonas detecessa (NL. fem. n. *detecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_000282555.1. The GC content of the type genome is 58.96 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Pseudomonas detesigena sp. nov.

Candidatus Pseudomonas detesigena (NL. fem. n. *detesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001297015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002979955.1. The GC content of the type genome is 59.34 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Pseudomonas detesisca sp. nov.

Candidatus Pseudomonas detesisca (NL. fem. n. *detesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900109995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900109995.1. The GC content of the type genome is 61.41 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Pseudomonas detoticula sp. nov.

Candidatus Pseudomonas detoticula (NL. fem. n. *detoticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp904061905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_904061905.1. The GC content of the type genome is 65.97 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Pseudomonas detumibula sp. nov.

Candidatus Pseudomonas detumibula (NL. fem. n. *detumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009905435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009905435.1. The GC content of the type genome is 60.3 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Pseudomonas dicimitia sp. nov.

Candidatus Pseudomonas dicimitia (NL. fem. n. *dicimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002803095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004369025.1. The GC content of the type genome is 62.21 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Pseudomonas didacitio sp. nov.

Candidatus Pseudomonas didacitio (NL. fem. n. *didacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002843605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900589715.1. The GC content of the type genome is 60.78 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Pseudomonas dilecilenta sp. nov.

Candidatus Pseudomonas dilecilenta (NL. fem. n. *dilecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003053805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000802985.1. The GC content of the type genome is 59.14 % and the genome length is 6.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "copper contaminated soil from Hygum site".

Description of *Candidatus* Pseudomonas dilogimonia sp. nov.

Candidatus Pseudomonas dilogimonia (NL. fem. n. *dilogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004011755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902497605.1. The GC content of the type genome is 59.13 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Pseudomonas diminigena sp. nov.

Candidatus Pseudomonas diminigena (NL. fem. n. *diminigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013385985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013385985.1. The GC content of the type genome is 61.34 % and the genome length is 6.68 Mbp.

Description of *Candidatus* Pseudomonas dinupibula sp. nov.

Candidatus Pseudomonas dinupibula (NL. fem. n. *dinupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003852405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003852405.1. The GC content of the type genome is 60.94 % and the genome length is 6.52 Mbp.

Description of *Candidatus* Pseudomonas direcax sp. nov.

Candidatus Pseudomonas direcax (NL. fem. n. *direcax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900156465*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900119645.1. The GC content of the type genome is 62.03 % and the genome length is 5.95 Mbp.

Description of *Candidatus* Pseudomonas direpentia sp. nov.

Candidatus Pseudomonas direpentia (NL. fem. n. *direpentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002018875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002018875.1. The GC content of the type genome is 62.0 % and the genome length is 7.55 Mbp.

Description of *Candidatus* Pseudomonas disidugo sp. nov.

Candidatus Pseudomonas disidugo (NL. fem. n. *disidugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002483005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002483005.1. The GC content of the type genome is 66.61 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Pseudomonas domigicella sp. nov.

Candidatus Pseudomonas domigicella (NL. fem. n. *domigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014269185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014269185.1. The GC content of the type genome is 62.98 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Pseudomonas domipitica sp. nov.

Candidatus Pseudomonas domipitica (NL. fem. n. *domipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005502415.1. The GC content of the type genome is 59.03 % and the genome length is 6.57 Mbp.

Description of *Candidatus* Pseudomonas ecastitas sp. nov.

Candidatus Pseudomonas ecastitas (NL. fem. n. *ecastitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003595175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003595175.1. The GC content of the type genome is 64.52 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Pseudomonas echogigena sp. nov.

Candidatus Pseudomonas echogigena (NL. fem. n. *echogigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000282275.2. The GC content of the type genome is 60.28 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Pseudomonas elastitoga sp. nov.

Candidatus Pseudomonas elastitoga (NL. fem. n. *elastitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900590755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900590755.1. The GC content of the type genome is 58.48 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Pseudomonas encenigena sp. nov.

Candidatus Pseudomonas encenigena (NL. fem. n. *encenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003052585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003052585.1. The GC content of the type genome is 64.34 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Pseudomonas exhonigena sp. nov.

Candidatus Pseudomonas exhonigena (NL. fem. n. *exhonigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp011355085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011355085.1. The GC content of the type genome is 60.2 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Pseudomonas exsomilenta sp. nov.

Candidatus Pseudomonas exsomilenta (NL. fem. n. *exsomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900475325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900475325.1. The GC content of the type genome is 58.91 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Pseudomonas exsomitia sp. nov.

Candidatus Pseudomonas exsomitia (NL. fem. n. *exsomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001320245*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001320245.1. The GC content of the type genome is 62.39 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Pseudomonas fameledo sp. nov.

Candidatus Pseudomonas fameledo (NL. fem. n. *fameledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003052515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003057685.2. The GC content of the type genome is 60.11 % and the genome length is 5.92 Mbp.

Description of *Candidatus* Pseudomonas fatilisca sp. nov.

Candidatus Pseudomonas fatilisca (NL. fem. n. *fatilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014268745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268705.1. The GC content of the type genome is 61.16 % and the genome length is 6.62 Mbp.

Description of *Candidatus* Pseudomonas favonilenta sp. nov.

Candidatus Pseudomonas favonilenta (NL. fem. n. *favonilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp006227205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_006227205.1. The GC content of the type genome is 60.74 % and the genome length is 6.69 Mbp.

Description of *Candidatus* Pseudomonas fecunax sp. nov.

Candidatus Pseudomonas fecunax (NL. fem. n. *fecunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002163625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002163625.1. The GC content of the type genome is 54.27 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Pseudomonas feditibra sp. nov.

Candidatus Pseudomonas feditibra (NL. fem. n. *feditibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013179515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013179515.1. The GC content of the type genome is 62.72 % and the genome length is 5.93 Mbp.

Description of *Candidatus* Pseudomonas feficax sp. nov.

Candidatus Pseudomonas feficax (NL. fem. n. *feficax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900187605.1. The GC content of the type genome is 59.04 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Pseudomonas femelisca sp. nov.

Candidatus Pseudomonas femelisca (NL. fem. n. *femelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002754355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268485.1. The GC content of the type genome is 59.03 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Pseudomonas femelitio sp. nov.

Candidatus Pseudomonas femelitio (NL. fem. n. *femelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009834565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013385735.1. The GC content of the type genome is 60.32 % and the genome length is 6.63 Mbp.

Description of *Candidatus* Pseudomonas fetutax sp. nov.

Candidatus Pseudomonas fetutax (NL. fem. n. *fetutax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003208235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003208235.1. The GC content of the type genome is 59.42 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Pseudomonas fidenitudo sp. nov.

Candidatus Pseudomonas fidenitudo (NL. fem. n. *fidenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002303925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902498255.1. The GC content of the type genome is 59.83 % and the genome length is 6.29 Mbp.

Description of *Candidatus* Pseudomonas fiducigena sp. nov.

Candidatus Pseudomonas fiducigena (NL. fem. n. *fiducigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000416235*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000737235.1. The GC content of the type genome is 58.39 % and the genome length is 6.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biofilm on rocks in a stream".

Description of *Candidatus* Pseudomonas fuligimonia sp. nov.

Candidatus Pseudomonas fuligimonia (NL. fem. n. *fuligimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002753995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002753995.1. The GC content of the type genome is 59.88 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Pseudomonas fumifatio sp. nov.

Candidatus Pseudomonas fumifatio (NL. fem. n. *fumifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009391885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009391885.1. The GC content of the type genome is 62.91 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Pseudomonas fusifugo sp. nov.

Candidatus Pseudomonas fusifugo (NL. fem. n. *fusifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002000165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000967945.1. The GC content of the type genome is 58.94 % and the genome length is 6.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface soil".

Description of *Candidatus* Pseudomonas hemidisca sp. nov.

Candidatus Pseudomonas hemidisca (NL. fem. n. *hemidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014270125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268595.1. The GC content of the type genome is 60.03 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Pseudomonas hexapousia sp. nov.

Candidatus Pseudomonas hexapousia (NL. fem. n. *hexapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp008369295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008369295.1. The GC content of the type genome is 58.58 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Pseudomonas hirunitica sp. nov.

Candidatus Pseudomonas hirunitica (NL. fem. n. *hirunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002255865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014230445.1. The GC content of the type genome is 59.7 % and the genome length is 6.96 Mbp.

Description of *Candidatus* Pseudomonas homilentia sp. nov.

Candidatus Pseudomonas homilentia (NL. fem. n. *homilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282315*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004346485.1. The GC content of the type genome is 58.79 % and the genome length is 6.6 Mbp.

Description of *Candidatus* Pseudomonas homogivita sp. nov.

Candidatus Pseudomonas homogivita (NL. fem. n. *homogivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000282215.1. The GC content of the type genome is 58.46 % and the genome length is 6.61 Mbp.

Description of *Candidatus* Pseudomonas homolessa sp. nov.

Candidatus Pseudomonas homolessa (NL. fem. n. *homolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000242655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012935715.1. The GC content of the type genome is 60.95 % and the genome length is 7.3 Mbp.

Description of *Candidatus* Pseudomonas immacibra sp. nov.

Candidatus Pseudomonas immacibra (NL. fem. n. *immacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002277815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002277815.1. The GC content of the type genome is 58.4 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Pseudomonas impavifica sp. nov.

Candidatus Pseudomonas impavifica (NL. fem. n. *impavifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000631985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000631985.1. The GC content of the type genome is 60.04 % and the genome length is 6.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Willow (Salix sp.)".

Description of *Candidatus* Pseudomonas impiniforma sp. nov.

Candidatus Pseudomonas impiniforma (NL. fem. n. *impiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002080045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002080045.1. The GC content of the type genome is 59.55 % and the genome length is 7.04 Mbp.

Description of *Candidatus* Pseudomonas inabsicula sp. nov.

Candidatus Pseudomonas inabsicula (NL. fem. n. *inabsicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003208475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003208475.1. The GC content of the type genome is 58.86 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Pseudomonas indevastra sp. nov.

Candidatus Pseudomonas indevastra (NL. fem. n. *indevastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000761545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_000761545.1. The GC content of the type genome is 64.82 % and the genome length is 4.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "bottom water from the Huguangyan Maar Lake in southern China".

Description of *Candidatus* Pseudomonas indilibula sp. nov.

Candidatus Pseudomonas indilibula (NL. fem. n. *indilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001269805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001269805.1. The GC content of the type genome is 58.84 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Pseudomonas infabentia sp. nov.

Candidatus Pseudomonas infabentia (NL. fem. n. *infabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003205205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003205205.1. The GC content of the type genome is 62.12 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Pseudomonas infucentia sp. nov.

Candidatus Pseudomonas infucentia (NL. fem. n. *infucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001421885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001421885.1. The GC content of the type genome is 59.44 % and the genome length is 5.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pseudomonas inlacivita sp. nov.

Candidatus Pseudomonas inlacivita (NL. fem. n. *inlacivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004786035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004786035.1. The GC content of the type genome is 60.34 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Pseudomonas innasimonia sp. nov.

Candidatus Pseudomonas innasimonia (NL. fem. n. *innasimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013200955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013200955.2. The GC content of the type genome is 63.45 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Pseudomonas inpelugo sp. nov.

Candidatus Pseudomonas inpelugo (NL. fem. n. *inpelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp012844475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012844475.1. The GC content of the type genome is 60.75 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Pseudomonas inrecimonia sp. nov.

Candidatus Pseudomonas inrecimonia (NL. fem. n. *inrecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp010095445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010095445.1. The GC

content of the type genome is 58.54 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Pseudomonas inturimonas sp. nov.

Candidatus Pseudomonas inturimonas (NL. fem. n. *inturimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001297125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001297125.1. The GC content of the type genome is 59.1 % and the genome length is 7.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "internal stem tissue".

Description of *Candidatus* Pseudomonas invicedo sp. nov.

Candidatus Pseudomonas invicedo (NL. fem. n. *invicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000829415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000829415.1. The GC content of the type genome is 60.74 % and the genome length is 6.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pseudomonas invigimonia sp. nov.

Candidatus Pseudomonas invigimonia (NL. fem. n. *invigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003024385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003024385.1. The GC content of the type genome is 60.31 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Pseudomonas irraditoga sp. nov.

Candidatus Pseudomonas irraditoga (NL. fem. n. *irraditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002878485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002878485.1. The GC content of the type genome is 60.07 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Pseudomonas lacinitica sp. nov.

Candidatus Pseudomonas lacinitica (NL. fem. n. *lacinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000955815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000955815.1. The GC content of the type genome is 59.59 % and the genome length is 5.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Pseudomonas lavabessa sp. nov.

Candidatus Pseudomonas lavabessa (NL. fem. n. *lavabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002286815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014192635.1. The GC content of the type genome is 58.79 % and the genome length is 6.05 Mbp.

Description of *Candidatus* Pseudomonas levificella sp. nov.

Candidatus Pseudomonas levificella (NL. fem. n. *levificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp903970465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903970465.1. The GC

content of the type genome is 61.38 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Pseudomonas licenitia sp. nov.

Candidatus Pseudomonas licenitia (NL. fem. n. *licenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001830395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001830395.1. The GC content of the type genome is 59.54 % and the genome length is 3.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; 10% subassembly".

Description of *Candidatus* Pseudomonas locupilenta sp. nov.

Candidatus Pseudomonas locupilenta (NL. fem. n. *locupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000282475.1. The GC content of the type genome is 60.21 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Pseudomonas lorarax sp. nov.

Candidatus Pseudomonas lorarax (NL. fem. n. *lorarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp012975065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012975065.1. The GC content of the type genome is 63.28 % and the genome length is 5.68 Mbp.

Description of *Candidatus* Pseudomonas ludimisca sp. nov.

Candidatus Pseudomonas ludimisca (NL. fem. n. *ludimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900596015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900589655.1. The GC content of the type genome is 62.1 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Pseudomonas luticivita sp. nov.

Candidatus Pseudomonas luticivita (NL. fem. n. *luticivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900585905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900585905.1. The GC content of the type genome is 59.84 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Pseudomonas macilastra sp. nov.

Candidatus Pseudomonas macilastra (NL. fem. n. *macilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001259595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001259595.1. The GC content of the type genome is 64.7 % and the genome length is 5.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "minimium media from garden soil".

Description of *Candidatus* Pseudomonas mahemisca sp. nov.

Candidatus Pseudomonas mahemisca (NL. fem. n. *mahemisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002112385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002112365.1. The GC

content of the type genome is 60.28 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Pseudomonas mahemitudo sp. nov.

Candidatus Pseudomonas mahemitudo (NL. fem. n. *mahemitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003050925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003050925.1. The GC content of the type genome is 59.59 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Pseudomonas malogitura sp. nov.

Candidatus Pseudomonas malogitura (NL. fem. n. *malogitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002843585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902497645.1. The GC content of the type genome is 62.01 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Pseudomonas manubicula sp. nov.

Candidatus Pseudomonas manubicula (NL. fem. n. *manubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002354655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002354655.1. The GC content of the type genome is 62.25 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Pseudomonas manupilenta sp. nov.

Candidatus Pseudomonas manupilenta (NL. fem. n. *manupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudomonas_E sp002439135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002439245.1. The GC content of the type genome is 62.98 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Pseudomonas maxiligena sp. nov.

Candidatus Pseudomonas maxiligena (NL. fem. n. *maxiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002980155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000620245.1. The GC content of the type genome is 60.64 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Pseudomonas melilastra sp. nov.

Candidatus Pseudomonas melilastra (NL. fem. n. *melilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002113045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002113045.1. The GC content of the type genome is 60.44 % and the genome length is 6.23 Mbp.

Description of *Candidatus* Pseudomonas mimogitudo sp. nov.

Candidatus Pseudomonas mimogitudo (NL. fem. n. *mimogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004136015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004136015.1. The GC content of the type genome is 58.74 % and the genome length is 6.6 Mbp.

Description of *Candidatus* Pseudomonas minagedo sp. nov.

Candidatus Pseudomonas minagedo (NL. fem. n. *minagedo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp005233515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003936805.1. The GC content of the type genome is 60.03 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Pseudomonas momorilega sp. nov.

Candidatus Pseudomonas momorilega (NL. fem. n. *momorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003097075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003097075.1. The GC content of the type genome is 61.34 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Pseudomonas monocago sp. nov.

Candidatus Pseudomonas monocago (NL. fem. n. *monocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003053605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003391585.1. The GC content of the type genome is 58.5 % and the genome length is 7.69 Mbp.

Description of *Candidatus* Pseudomonas monogitura sp. nov.

Candidatus Pseudomonas monogitura (NL. fem. n. *monogitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002025205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002025205.1. The GC

content of the type genome is 61.73 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Pseudomonas murililenta sp. nov.

Candidatus Pseudomonas murililenta (NL. fem. n. *murililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013374995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009765425.1. The GC content of the type genome is 63.4 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Pseudomonas navicimonas sp. nov.

Candidatus Pseudomonas navicimonas (NL. fem. n. *navicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000282415.1. The GC content of the type genome is 59.59 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Pseudomonas necopivita sp. nov.

Candidatus Pseudomonas necopivita (NL. fem. n. *necopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900110765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000974525.1. The GC content of the type genome is 59.36 % and the genome length is 6.89 Mbp.

Description of *Candidatus* Pseudomonas necubivita sp. nov.

Candidatus Pseudomonas necubivita (NL. fem. n. *necubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudomonas_E sp900583165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900583155.1. The GC content of the type genome is 59.68 % and the genome length is 6.3 Mbp.

Description of *Candidatus* Pseudomonas nicotastra sp. nov.

Candidatus Pseudomonas nicotastra (NL. fem. n. *nicotastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013184545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013184545.1. The GC content of the type genome is 63.47 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Pseudomonas nidifilega sp. nov.

Candidatus Pseudomonas nidifilega (NL. fem. n. *nidifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp011752525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011752525.1. The GC content of the type genome is 64.51 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Pseudomonas nimirentia sp. nov.

Candidatus Pseudomonas nimirentia (NL. fem. n. *nimirentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp007713465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007713465.1. The GC content of the type genome is 58.84 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Pseudomonas noninifica sp. nov.

Candidatus Pseudomonas noninifica (NL. fem. n. *noninifica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp008369325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008369325.1. The GC content of the type genome is 58.57 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Pseudomonas noninigena sp. nov.

Candidatus Pseudomonas noninigena (NL. fem. n. *noninigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003253735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003253735.1. The GC content of the type genome is 63.15 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Pseudomonas notacitoga sp. nov.

Candidatus Pseudomonas notacitoga (NL. fem. n. *notacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003013355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003013355.1. The GC content of the type genome is 61.65 % and the genome length is 7.01 Mbp.

Description of *Candidatus* Pseudomonas nubecugo sp. nov.

Candidatus Pseudomonas nubecugo (NL. fem. n. *nubecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900187635.1. The GC

content of the type genome is 61.16 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Pseudomonas pacifatio sp. nov.

Candidatus Pseudomonas pacifatio (NL. fem. n. *pacifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001446935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001446935.1. The GC content of the type genome is 56.69 % and the genome length is 4.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces".

Description of *Candidatus* Pseudomonas panopivita sp. nov.

Candidatus Pseudomonas panopivita (NL. fem. n. *panopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900602065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900602065.1. The GC content of the type genome is 57.31 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Pseudomonas papilugo sp. nov.

Candidatus Pseudomonas papilugo (NL. fem. n. *papilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003852235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003852335.1. The GC content of the type genome is 60.39 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Pseudomonas paracigena sp. nov.

Candidatus Pseudomonas paracigena (NL. fem. n. *paracigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003596405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003596405.1. The GC content of the type genome is 60.64 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Pseudomonas paracilega sp. nov.

Candidatus Pseudomonas paracilega (NL. fem. n. *paracilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000282535.1. The GC content of the type genome is 63.15 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Pseudomonas paropilega sp. nov.

Candidatus Pseudomonas paropilega (NL. fem. n. *paropilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900581005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900581005.1. The GC content of the type genome is 60.94 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Pseudomonas pecunedo sp. nov.

Candidatus Pseudomonas pecunedo (NL. fem. n. *pecunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp902506495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902506495.1. The GC content of the type genome is 62.48 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Pseudomonas pedepimonia sp. nov.

Candidatus Pseudomonas pedepimonia (NL. fem. n. *pedepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001547895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003057655.1. The GC content of the type genome is 63.34 % and the genome length is 7.12 Mbp.

Description of *Candidatus* Pseudomonas penecatio sp. nov.

Candidatus Pseudomonas penecatio (NL. fem. n. *penecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp902506505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009799935.1. The GC content of the type genome is 65.82 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Pseudomonas peribimonas sp. nov.

Candidatus Pseudomonas peribimonas (NL. fem. n. *peribimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002113125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002113125.1. The GC content of the type genome is 60.5 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Pseudomonas pericigena sp. nov.

Candidatus Pseudomonas pericigena (NL. fem. n. *pericigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp005508865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_005508865.1. The GC content of the type genome is 65.61 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Pseudomonas peropigena sp. nov.

Candidatus Pseudomonas peropigena (NL. fem. n. *peropigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900585815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900585815.1. The GC content of the type genome is 60.59 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Pseudomonas peropitica sp. nov.

Candidatus Pseudomonas peropitica (NL. fem. n. *peropitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003014915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003590475.1. The GC content of the type genome is 60.5 % and the genome length is 6.71 Mbp.

Description of *Candidatus* Pseudomonas plascisca sp. nov.

Candidatus Pseudomonas plascisca (NL. fem. n. *plascisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001269775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001269775.1. The GC content of the type genome is 60.79 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Pseudomonas podagentia sp. nov.

Candidatus Pseudomonas podagentia (NL. fem. n. *podagentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002419965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002419965.1. The GC content of the type genome is 59.45 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Pseudomonas proscimonas sp. nov.

Candidatus Pseudomonas proscimonas (NL. fem. n. *proscimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000497835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000497835.1. The GC content of the type genome is 62.87 % and the genome length is 6.85 Mbp.

Description of *Candidatus* Pseudomonas prospibra sp. nov.

Candidatus Pseudomonas prospibra (NL. fem. n. *prospibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004124275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004124275.1. The GC content of the type genome is 59.46 % and the genome length is 6.27 Mbp.

Description of *Candidatus* Pseudomonas pudibigena sp. nov.

Candidatus Pseudomonas pudibigena (NL. fem. n. *pudibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000633255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000633255.1. The GC content of the type genome is 60.31 % and the genome length is 6.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Carnivorous Plant Phytotelma".

Description of *Candidatus* Pseudomonas recomitio sp. nov.

Candidatus Pseudomonas recomitio (NL. fem. n. *recomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900580675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900580675.1. The GC content of the type genome is 60.92 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Pseudomonas reduvilega sp. nov.

Candidatus Pseudomonas reduvilega (NL. fem. n. *reduvilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002282595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002282595.1. The GC content of the type genome is 61.97 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Pseudomonas reforibula sp. nov.

Candidatus Pseudomonas reforibula (NL. fem. n. *reforibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900187415.1. The GC content of the type genome is 60.4 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Pseudomonas regigifica sp. nov.

Candidatus Pseudomonas regigifica (NL. fem. n. *regigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001320525*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002296625.1. The GC content of the type genome is 62.24 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Pseudomonas relenitas sp. nov.

Candidatus Pseudomonas relenitas (NL. fem. n. *relenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900187575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900187575.1. The GC content of the type genome is 57.11 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Pseudomonas repagitas sp. nov.

Candidatus Pseudomonas repagitas (NL. fem. n. *repagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp008370045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008370045.1. The GC content of the type genome is 59.8 % and the genome length is 7.18 Mbp.

Description of *Candidatus* Pseudomonas repudatica sp. nov.

Candidatus Pseudomonas repudatica (NL. fem. n. *repudatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002113375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002113375.1. The GC content of the type genome is 60.11 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Pseudomonas resalatica sp. nov.

Candidatus Pseudomonas resalatica (NL. fem. n. *resalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000931465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000963835.1. The GC content of the type genome is 64.01 % and the genome length is 6.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "avocado roots".

Description of *Candidatus* Pseudomonas revulilega sp. nov.

Candidatus Pseudomonas revulilega (NL. fem. n. *revulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009764635.1. The GC content of the type genome is 59.21 % and the genome length is 6.72 Mbp.

Description of *Candidatus* Pseudomonas risibatica sp. nov.

Candidatus Pseudomonas risibatica (NL. fem. n. *risibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp012985665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012985665.1. The GC content of the type genome is 60.06 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Pseudomonas risibentia sp. nov.

Candidatus Pseudomonas risibentia (NL. fem. n. *risibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000952175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_900586845.1. The GC content of the type genome is 60.14 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Pseudomonas rorifousia sp. nov.

Candidatus Pseudomonas rorifousia (NL. fem. n. *rorifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002874965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002179905.1. The GC content of the type genome is 61.06 % and the genome length is 7.04 Mbp.

Description of *Candidatus* Pseudomonas rosacatica sp. nov.

Candidatus Pseudomonas rosacatica (NL. fem. n. *rosacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014268815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268815.1. The GC content of the type genome is 61.87 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Pseudomonas rosarentia sp. nov.

Candidatus Pseudomonas rosarentia (NL. fem. n. *rosarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002338065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002338065.1. The GC content of the type genome is 59.99 % and the genome length is 5.96 Mbp.

Description of *Candidatus* Pseudomonas rosarugo sp. nov.

Candidatus Pseudomonas rosarugo (NL. fem. n. *rosarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001984065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001984065.1. The GC content of the type genome is 60.78 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Pseudomonas rubecugo sp. nov.

Candidatus Pseudomonas rubecugo (NL. fem. n. *rubecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002113165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002113165.1. The GC content of the type genome is 63.03 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Pseudomonas rudicitas sp. nov.

Candidatus Pseudomonas rudicitas (NL. fem. n. *rudicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp011752565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011752565.1. The GC content of the type genome is 63.5 % and the genome length is 6.67 Mbp.

Description of *Candidatus* Pseudomonas ruricax sp. nov.

Candidatus Pseudomonas ruricax (NL. fem. n. *ruricax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000346225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009910445.1. The GC content of the type genome is 58.73 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Pseudomonas ruricifica sp. nov.

Candidatus Pseudomonas ruricifica (NL. fem. n. *ruricifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001511755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000514395.1. The GC content of the type genome is 59.06 % and the genome length is 6.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Pseudomonas sanabiforma sp. nov.

Candidatus Pseudomonas sanabiforma (NL. fem. n. *sanabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001308855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001280445.1. The GC content of the type genome is 59.49 % and the genome length is 7.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "agricultural soil".

Description of *Candidatus* Pseudomonas saxifentia sp. nov.

Candidatus Pseudomonas saxifentia (NL. fem. n. *saxifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001427125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004307665.1. The GC content of the type genome is 59.05 % and the genome length is 6.26 Mbp.

Description of *Candidatus* Pseudomonas saxifilega sp. nov.

Candidatus Pseudomonas saxifilega (NL. fem. n. *saxifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014268655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268645.1. The GC content of the type genome is 60.48 % and the genome length is 5.9 Mbp.

Description of *Candidatus* Pseudomonas semidax sp. nov.

Candidatus Pseudomonas semidax (NL. fem. n. *semidax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000282495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001625455.1. The GC content of the type genome is 58.84 % and the genome length is 6.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ground water".

Description of *Candidatus* Pseudomonas semiviforma sp. nov.

Candidatus Pseudomonas semiviforma (NL. fem. n. *semiviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001642705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001642705.1. The GC content of the type genome is 63.17 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Pseudomonas semivugo sp. nov.

Candidatus Pseudomonas semivugo (NL. fem. n. *semivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp012033695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012033695.1. The GC content of the type genome is 59.45 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Pseudomonas sicubimonas sp. nov.

Candidatus Pseudomonas sicubimonas (NL. fem. n. *sicubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002113025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003258965.1. The GC content of the type genome is 59.45 % and the genome length is 6.71 Mbp.

Description of *Candidatus* Pseudomonas sicunitrix sp. nov.

Candidatus Pseudomonas sicunitrix (NL. fem. n. *sicunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002113295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003062165.1. The GC content of the type genome is 63.02 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Pseudomonas subabitica sp. nov.

Candidatus Pseudomonas subabitica (NL. fem. n. *subabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003060885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003060885.1. The GC content of the type genome is 60.0 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Pseudomonas subadiforma sp. nov.

Candidatus Pseudomonas subadiforma (NL. fem. n. *subadiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014268885*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014268885.1. The GC content of the type genome is 64.29 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Pseudomonas subinitoga sp. nov.

Candidatus Pseudomonas subinitoga (NL. fem. n. *subinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002840155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002840155.1. The GC content of the type genome is 60.75 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Pseudomonas tabititura sp. nov.

Candidatus Pseudomonas tabititura (NL. fem. n. *tabititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp001945445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001945375.1. The GC content of the type genome is 63.15 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Pseudomonas taraxitio sp. nov.

Candidatus Pseudomonas taraxitio (NL. fem. n. *taraxitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002165135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002165135.1. The GC content of the type genome is 62.65 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Pseudomonas telegiforma sp. nov.

Candidatus Pseudomonas telegiforma (NL. fem. n. *telegiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014174475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014174475.1. The GC content of the type genome is 63.65 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Pseudomonas terebastra sp. nov.

Candidatus Pseudomonas terebastra (NL. fem. n. *terebastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002814235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013385535.1. The GC content of the type genome is 61.4 % and the genome length is 7.5 Mbp.

Description of *Candidatus* Pseudomonas terebigena sp. nov.

Candidatus Pseudomonas terebigena (NL. fem. n. *terebigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900580865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900580865.1. The GC content of the type genome is 59.07 % and the genome length is 6.77 Mbp.

Description of *Candidatus* Pseudomonas tirocitas sp. nov.

Candidatus Pseudomonas tirocitas (NL. fem. n. *tirocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp002379585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002379585.1. The GC content of the type genome is 62.09 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Pseudomonas tumefousia sp. nov.

Candidatus Pseudomonas tumefousia (NL. fem. n. *tumefousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900591205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900591205.1. The GC content of the type genome is 60.66 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Pseudomonas valeficella sp. nov.

Candidatus Pseudomonas valeficella (NL. fem. n. *valeficella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003428805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001320485.1. The GC content of the type genome is 62.85 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Pseudomonas valefivita sp. nov.

Candidatus Pseudomonas valefivita (NL. fem. n. *valefivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009764645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009764645.1. The GC content of the type genome is 59.41 % and the genome length is 6.05 Mbp.

Description of *Candidatus* Pseudomonas vehemilenta sp. nov.

Candidatus Pseudomonas vehemilenta (NL. fem. n. *vehemilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp902506535*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902506535.1. The GC content of the type genome is 60.86 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Pseudomonas venefigena sp. nov.

Candidatus Pseudomonas venefigena (NL. fem. n. *venefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003231275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003231275.1. The GC content of the type genome is 62.26 % and the genome length is 7.26 Mbp.

Description of *Candidatus* Pseudomonas venefitrix sp. nov.

Candidatus Pseudomonas venefitrix (NL. fem. n. *venefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp014235765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014235765.1. The GC content of the type genome is 62.48 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Pseudomonas venucatio sp. nov.

Candidatus Pseudomonas venucatio (NL. fem. n. *venucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000690905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000690905.1. The GC content of the type genome is 58.6 % and the genome length is 6.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "fuel-contaminated soil".

Description of *Candidatus* Pseudomonas veridastra sp. nov.

Candidatus Pseudomonas veridastra (NL. fem. n. *veridastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp000346755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000346755.1. The GC content of the type genome is 61.25 % and the genome length is 6.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water sample".

Description of *Candidatus* Pseudomonas vicecicella sp. nov.

Candidatus Pseudomonas vicecicella (NL. fem. n. *vicecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003445295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003445295.1. The GC content of the type genome is 61.61 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Pseudomonas vicecivita sp. nov.

Candidatus Pseudomonas vicecivita (NL. fem. n. *vicecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009932725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009932725.1. The GC content of the type genome is 62.83 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Pseudomonas vinoletta sp. nov.

Candidatus Pseudomonas vinoletta (NL. fem. n. *vinoletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp009905615*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009905615.1. The GC content of the type genome is 60.18 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Pseudomonas viripitudo sp. nov.

Candidatus Pseudomonas viripitudo (NL. fem. n. *viripitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003097235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003097235.1. The GC content of the type genome is 62.72 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Pseudomonas visibibra sp. nov.

Candidatus Pseudomonas visibibra (NL. fem. n. *visibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900113505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900113505.1. The GC content of the type genome is 60.25 % and the genome length is 6.16 Mbp.

Description of *Candidatus* Pseudomonas vitabessa sp. nov.

Candidatus Pseudomonas vitabessa (NL. fem. n. *vitabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900101695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003731745.1. The GC content of the type genome is 62.8 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Pseudomonas vocifetta sp. nov.

Candidatus Pseudomonas vocifetta (NL. fem. n. *vocifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp004519405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003731985.1. The GC content of the type genome is 60.05 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Pseudomonas volunatio sp. nov.

Candidatus Pseudomonas volunatio (NL. fem. n. *volunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp900582195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900582195.1. The GC content of the type genome is 59.25 % and the genome length is 6.44 Mbp.

Description of *Candidatus* Pseudomonas volunifica sp. nov.

Candidatus Pseudomonas volunifica (NL. fem. n. *volunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp013386585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013386585.1. The GC content of the type genome is 61.09 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Pseudomonas xeramiforma sp. nov.

Candidatus Pseudomonas xeramiforma (NL. fem. n. *xeramiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_E sp003331055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003331055.1. The GC content of the type genome is 63.82 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Pseudomonas grallibra sp. nov.

Candidatus Pseudomonas grallibra (NL. fem. n. *grallibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_F sp000949385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000949385.2. The GC content of the type genome is 64.29 % and the genome length is 5.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sugarcane soil".

Description of *Candidatus* Pseudomonas lanugimonas sp. nov.

Candidatus Pseudomonas lanugimonas (NL. fem. n. *lanugimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_F sp003626975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009662095.1. The GC content of the type genome is 62.86 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Pseudomonas ludibibra sp. nov.

Candidatus Pseudomonas ludibibra (NL. fem. n. *ludibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_F sp001708505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001708505.1. The GC content of the type genome is 63.22 % and the genome length is 6.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil sample".

Description of *Candidatus* Pseudomonas purulitrix sp. nov.

Candidatus Pseudomonas purulitrix (NL. fem. n. *purulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_F sp008807375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008807375.1. The GC content of the type genome is 64.24 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Pseudomonas resalentia sp. nov.

Candidatus Pseudomonas resalentia (NL. fem. n. *resalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_F sp003234055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003234055.1. The GC content of the type genome is 66.44 % and the genome length is 7.08 Mbp.

Description of *Candidatus* Pseudomonas menapentia sp. nov.

Candidatus Pseudomonas menapentia (NL. fem. n. *menapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_K sp004801855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004801855.1. The GC content of the type genome is 68.21 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Pseudomonas adsusifica sp. nov.

Candidatus Pseudomonas adsusifica (NL. fem. n. *adsusifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_M sp002286785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002286785.1. The GC content of the type genome is 63.62 % and the genome length is 6.05 Mbp.

Description of *Candidatus* Pseudomonas defanivita sp. nov.

Candidatus Pseudomonas defanivita (NL. fem. n. *defanivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_N sp003640395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003640395.1. The GC content of the type genome is 65.32 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Pseudomonas infiritudo sp. nov.

Candidatus Pseudomonas infiritudo (NL. fem. n. *infiritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_O sp002418465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002418465.1. The GC content of the type genome is 65.78 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Pseudomonas coturibula sp. nov.

Candidatus Pseudomonas coturibula (NL. fem. n. *coturibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_Q sp013395055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013395055.1. The GC content of the type genome is 62.34 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Pseudomonas artolentia sp. nov.

Candidatus Pseudomonas artolentia (NL. fem. n. *artolentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudomonas_R sp900766265*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900766265.1. The GC content of the type genome is 64.13 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Pseudonocardia adporastra sp. nov.

Candidatus Pseudonocardia adporastra (NL. fem. n. *adporastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp002262885*. The type genome for the species is the GenBank assembly RS_GCF_002262885.1. The GC content of the type genome is 72.64 % and the genome length is 10.18 Mbp.

Description of *Candidatus* Pseudonocardia alcibax sp. nov.

Candidatus Pseudonocardia alcibax (NL. fem. n. *alcibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp013155125*. The type genome for the species is the GenBank assembly RS_GCF_013155125.1. The GC content of the type genome is 74.45 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Pseudonocardia arrabitudo sp. nov.

Candidatus Pseudonocardia arrabitudo (NL. fem. n. *arrabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp013695005*. The type genome for the species is the GenBank assembly GCA_013695005.1. The GC content of the type genome is 70.35 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Pseudonocardia caravessa sp. nov.

Candidatus Pseudonocardia caravessa (NL. fem. n. *caravessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp001942415*. The type genome for the species is the GenBank assembly RS_GCF_001942415.1. The GC content of the type genome is 74.23 % and the genome length is 7.13 Mbp.

Description of *Candidatus* Pseudonocardia catapatica sp. nov.

Candidatus Pseudonocardia catapatica (NL. fem. n. *catapatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp001294645*. The type genome for the species is the GenBank assembly RS_GCF_001932405.1. The GC content of the type genome is 73.73 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Pseudonocardia cisalimonia sp. nov.

Candidatus Pseudonocardia cisalimonia (NL. fem. n. *cisalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp012911935*. The type genome for the species is the GenBank assembly RS_GCF_012911935.1. The GC content of the type genome is 72.39 % and the genome length is 7.16 Mbp.

Description of *Candidatus* Pseudonocardia inlepetta sp. nov.

Candidatus Pseudonocardia inlepetta (NL. fem. n. *inlepetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp014267175*. The type genome for the species is the GenBank assembly RS_GCF_014267175.1. The GC content of the type genome is 73.6 % and the genome length is 6.24 Mbp.

Description of *Candidatus* Pseudonocardia lapicibra sp. nov.

Candidatus Pseudonocardia lapicibra (NL. fem. n. *lapicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp001942185*. The type genome for the species is the GenBank assembly RS_GCF_001942185.1. The GC content of the type genome is 72.57 % and the genome length is 9.2 Mbp.

Description of *Candidatus* Pseudonocardia lorarugo sp. nov.

Candidatus Pseudonocardia lorarugo (NL. fem. n. *lorarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp001420995*. The type genome for the species is the GenBank assembly RS_GCF_001932355.1. The GC content of the type genome is 73.58 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Pseudonocardia maligitio sp. nov.

Candidatus Pseudonocardia maligitio (NL. fem. n. *maligitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp002583555*. The type genome for the species is the GenBank assembly RS_GCF_002583555.1. The GC content of the type genome is 72.51 % and the genome length is 6.54 Mbp.

Description of *Candidatus* Pseudonocardia murilibula sp. nov.

Candidatus Pseudonocardia murilibula (NL. fem. n. *murilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp001698125*. The type genome for the species is the GenBank assembly RS_GCF_001698125.1. The GC content of the type genome is 73.73 % and the genome length is 6.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "exoskeleton of ant".

Description of *Candidatus* Pseudonocardia pacifago sp. nov.

Candidatus Pseudonocardia pacifago (NL. fem. n. *pacifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp001899645*. The type genome for the species is the GenBank assembly GCA_001899645.1. The GC content of the type genome is 72.6 % and the genome length is 7.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Pseudonocardia vinolicula sp. nov.

Candidatus Pseudonocardia vinolicula (NL. fem. n. *vinolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp001725415*. The type genome for the species is the GenBank assembly GCA_001725415.1. The GC content of the type genome is 72.63 % and the genome length is 6.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate bioreactor".

Description of *Candidatus* Pseudonocardia vitupitrix sp. nov.

Candidatus Pseudonocardia vitupitrix (NL. fem. n. *vitupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudonocardia sp014235185*. The type genome for the species is the GenBank assembly RS_GCF_014235185.1. The GC content of the type genome is 74.04 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Pseudooceanicola arcubessa sp. nov.

Candidatus Pseudooceanicola arcubessa (NL. fem. n. *arcubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudooceanicola sp009827095*. The type genome for the species is the GenBank assembly RS_GCF_009827095.1. The GC content of the type genome is 67.35 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Pseudooceanicola assibibra sp. nov.

Candidatus Pseudooceanicola assibibra (NL. fem. n. *assibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudooceanicola sp002709085*. The type genome for the species is the GenBank assembly GCA_002709085.1. The GC content of the type genome is 61.03 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Pseudooceanicola effosessa sp. nov.

Candidatus Pseudooceanicola effosessa (NL. fem. n. *effosessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudooceanicola sp011806405*. The type genome for the species is

the GenBank assembly RS_GCF_011806405.1. The GC content of the type genome is 64.9 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Pseudooceanicola emortatica sp. nov.

Candidatus Pseudooceanicola emortatica (NL. fem. n. *emortatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudooceanicola sp009789075*. The type genome for the species is the GenBank assembly RS_GCF_009789075.1. The GC content of the type genome is 66.3 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Pseudooceanicola fibicessa sp. nov.

Candidatus Pseudooceanicola fibicessa (NL. fem. n. *fibicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudooceanicola sp010614805*. The type genome for the species is the GenBank assembly RS_GCF_010614805.1. The GC content of the type genome is 65.74 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Pseudooceanicola odollastra sp. nov.

Candidatus Pseudooceanicola odollastra (NL. fem. n. *odollastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudooceanicola sp002210105*. The type genome for the species is the GenBank assembly RS_GCF_002210105.1. The GC content of the type genome is 66.34 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Pseudooceanicola rubefimonas sp. nov.

Candidatus Pseudooceanicola rubefimonas (NL. fem. n. *rubefimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudooceanicola sp003590145*. The type genome for the species is the GenBank assembly RS_GCF_003590145.1. The GC content of the type genome is 64.05 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Pseudooceanicola sonabugo sp. nov.

Candidatus Pseudooceanicola sonabugo (NL. fem. n. *sonabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudooceanicola sp000220565*. The type genome for the species is the GenBank assembly RS_GCF_000220565.1. The GC content of the type genome is 67.31 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Pseudopelobacter altificula sp. nov.

Candidatus Pseudopelobacter altificula (NL. fem. n. *altificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp002298925*. The type genome for the species is the GenBank assembly GCA_002298925.1. The GC content of the type genome is 55.97 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Pseudopelobacter anarribula sp. nov.

Candidatus Pseudopelobacter anarribula (NL. fem. n. *anarribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp012556225*. The type genome for the species is the GenBank assembly RS_GCF_012556225.1. The GC content of the type genome is 58.0 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Pseudopelobacter bipenitio sp. nov.

Candidatus Pseudopelobacter bipenitio (NL. fem. n. *bipenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp013349405*. The type genome for the species is the GenBank assembly GCA_013349405.1. The GC content of the type genome is 51.5 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Pseudopelobacter cisoritio sp. nov.

Candidatus Pseudopelobacter cisoritio (NL. fem. n. *cisoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903852495*. The type genome for the species is the GenBank assembly GCA_903859945.1. The GC content of the type genome is 54.27 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Pseudopelobacter culigitica sp. nov.

Candidatus Pseudopelobacter culigitica (NL. fem. n. *culigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903845365*. The type genome for the species is the GenBank assembly GCA_903845365.1. The GC content of the type genome is 48.72 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Pseudopelobacter demagilega sp. nov.

Candidatus Pseudopelobacter demagilega (NL. fem. n. *demagilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp001802125*. The type genome for the species is the GenBank assembly GCA_001802165.1. The GC content of the type genome is 53.73 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Pseudopelobacter denixitas sp. nov.

Candidatus Pseudopelobacter denixitas (NL. fem. n. *denixitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903958085*. The type genome for the species is the GenBank assembly GCA_903958085.1. The GC content of the type genome is 45.11 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Pseudopelobacter divoretta sp. nov.

Candidatus Pseudopelobacter divoretta (NL. fem. n. *divoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudopelobacter sp903868145*. The type genome for the species is the GenBank assembly GCA_903868145.1. The GC content of the type genome is 52.87 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Pseudopelobacter doxolivita sp. nov.

Candidatus Pseudopelobacter doxolivita (NL. fem. n. *doxolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp003574895*. The type genome for the species is the GenBank assembly GCA_003574895.1. The GC content of the type genome is 54.15 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Pseudopelobacter duponifica sp. nov.

Candidatus Pseudopelobacter duponifica (NL. fem. n. *duponifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903939115*. The type genome for the species is the GenBank assembly GCA_903862795.1. The GC content of the type genome is 50.44 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Pseudopelobacter duponitica sp. nov.

Candidatus Pseudopelobacter duponitica (NL. fem. n. *duponitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903875605*. The type genome for the species is the GenBank assembly GCA_903879745.1. The GC content of the type genome is 46.07 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Pseudopelobacter feculimonas sp. nov.

Candidatus Pseudopelobacter feculimonas (NL. fem. n. *feculimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp013336525*. The type genome for the species is the GenBank assembly GCA_013334345.1. The GC content of the type genome is 49.37 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Pseudopelobacter figilicula sp. nov.

Candidatus Pseudopelobacter figilicula (NL. fem. n. *figilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903901875*. The type genome for the species is the GenBank assembly GCA_903901875.1. The GC content of the type genome is 51.04 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Pseudopelobacter forinisca sp. nov.

Candidatus Pseudopelobacter forinisca (NL. fem. n. *forinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903925005*. The type genome for the species is the GenBank assembly GCA_903883665.1. The GC content of the type genome is 50.32 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Pseudopelobacter homulicella sp. nov.

Candidatus Pseudopelobacter homulicella (NL. fem. n. *homulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp009886055*. The type genome for the species is the GenBank assembly GCA_009886055.1. The GC content of the type genome is 53.55 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Pseudopelobacter ignobifica sp. nov.

Candidatus Pseudopelobacter ignobifica (NL. fem. n. *ignobifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp001824455*. The type genome for the species is the GenBank assembly GCA_001824455.1. The GC content of the type genome is 53.47 % and the genome length is 1.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 2 / B; 5m depth; 0.2 filter".

Description of *Candidatus* Pseudopelobacter inpinitura sp. nov.

Candidatus Pseudopelobacter inpinitura (NL. fem. n. *inpinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903930585*. The type genome for the species is the GenBank assembly GCA_903930585.1. The GC content of the type genome is 50.66 % and the genome length is 5.89 Mbp.

Description of *Candidatus* Pseudopelobacter insubousia sp. nov.

Candidatus Pseudopelobacter insubousia (NL. fem. n. *insubousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp009885845*. The type genome for the species is the GenBank assembly GCA_009885845.1. The GC content of the type genome is 50.48 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Pseudopelobacter insusivita sp. nov.

Candidatus Pseudopelobacter insusivita (NL. fem. n. *insusivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp009684515*. The type genome for the species is the GenBank assembly GCA_009684515.1. The GC content of the type genome is 51.55 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Pseudopelobacter malagatica sp. nov.

Candidatus Pseudopelobacter malagatica (NL. fem. n. *malagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp008369015*. The type genome for the species is the GenBank assembly RS_GCF_008802355.1. The GC content of the type genome is 59.68 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Pseudopelobacter noninago sp. nov.

Candidatus Pseudopelobacter noninago (NL. fem. n. *noninago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903879825*. The type genome for the species is the GenBank assembly GCA_903879825.1. The GC content of the type genome is 49.23 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Pseudopelobacter nutamitica sp. nov.

Candidatus Pseudopelobacter nutamitica (NL. fem. n. *nutamitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903862245*. The type genome for the species is the GenBank assembly GCA_903845725.1. The GC content of the type genome is 53.83 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Pseudopelobacter ossicessa sp. nov.

Candidatus Pseudopelobacter ossicessa (NL. fem. n. *ossicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp903876875*. The type genome for the species is the GenBank assembly GCA_903876875.1. The GC content of the type genome is 51.78 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Pseudopelobacter papiligena sp. nov.

Candidatus Pseudopelobacter papiligena (NL. fem. n. *papiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp002322035*. The type genome for the species is the GenBank assembly GCA_002321915.1. The GC content of the type genome is 56.49 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Pseudopelobacter penicibula sp. nov.

Candidatus Pseudopelobacter penicibula (NL. fem. n. *penicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp013349325*. The type genome for the species is the GenBank assembly GCA_013349325.1. The GC content of the type genome is 52.01

% and the genome length is 3.58 Mbp.

Description of *Candidatus* Pseudopelobacter purulimonia sp. nov.

Candidatus Pseudopelobacter purulimonia (NL. fem. n. *purulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp014380135*. The type genome for the species is the GenBank assembly GCA_014380135.1. The GC content of the type genome is 55.17 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Pseudopelobacter rumifigena sp. nov.

Candidatus Pseudopelobacter rumifigena (NL. fem. n. *rumifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp002382705*. The type genome for the species is the GenBank assembly GCA_002382705.1. The GC content of the type genome is 50.85 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Pseudopelobacter sacopitas sp. nov.

Candidatus Pseudopelobacter sacopitas (NL. fem. n. *sacopitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp008330225*. The type genome for the species is the GenBank assembly RS_GCF_008330225.1. The GC content of the type genome is 61.13 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Pseudopelobacter scaccago sp. nov.

Candidatus Pseudopelobacter scaccago (NL. fem. n. *scaccago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp013377095*. The type genome for the species is the GenBank assembly GCA_013377095.1. The GC content of the type genome is 53.35 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Pseudopelobacter tabitugo sp. nov.

Candidatus Pseudopelobacter tabitugo (NL. fem. n. *tabitugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp001802645*. The type genome for the species is the GenBank assembly GCA_001802645.1. The GC content of the type genome is 53.0 % and the genome length is 4.28 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Pseudopelobacter visibivita sp. nov.

Candidatus Pseudopelobacter visibivita (NL. fem. n. *visibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudopelobacter sp003151775*. The type genome for the species is the GenBank assembly GCA_003151775.1. The GC content of the type genome is 56.96 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Pseudophaeobacter adnecitica sp. nov.

Candidatus Pseudophaeobacter adnecitica (NL. fem. n. *adnecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudophaeobacter sp001457775*. The type genome for the species is the GenBank assembly RS_GCF_001457775.1. The GC content of the type genome is 58.03 % and the genome length is 4.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oyster;cultured off Spanish mediterranean coast; Vinaroz".

Description of *Candidatus* Pseudophaeobacter catocibra sp. nov.

Candidatus Pseudophaeobacter catocibra (NL. fem. n. *catocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudophaeobacter sp000152965*. The type genome for the species is the GenBank assembly GCA_001874205.1. The GC content of the type genome is 57.21 % and the genome length is 4.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mediterranean seawater enriched with a specific particulate matter".

Description of *Candidatus* Pseudophaeobacter cimititica sp. nov.

Candidatus Pseudophaeobacter cimititica (NL. fem. n. *cimititica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudophaeobacter sp900313025*. The type genome for the species is the GenBank assembly RS_GCF_900313025.1. The GC content of the type genome is 57.75 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Pseudophaeobacter inregicella sp. nov.

Candidatus Pseudophaeobacter inregicella (NL. fem. n. *inregicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudophaeobacter sp000169455*. The type genome for the species is the GenBank assembly RS_GCF_000169455.1. The GC content of the type genome is 57.02 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Pseudophaeobacter metapitas sp. nov.

Candidatus Pseudophaeobacter metapitas (NL. fem. n. *metapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudophaeobacter sp001294455*. The type genome for the species is the GenBank assembly RS_GCF_001294455.1. The GC content of the type genome is 58.18 % and the genome length is 4.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Surface seawater".

Description of *Candidatus* Pseudoramibacter exhorago sp. nov.

Candidatus Pseudoramibacter exhorago (NL. fem. n. *exhorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoramibacter sp009696145*. The type genome for the species is the GenBank assembly RS_GCF_009696145.1. The GC content of the type genome is 49.87 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Pseudorhodobacter attorugo sp. nov.

Candidatus Pseudorhodobacter attorugo (NL. fem. n. *attorugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudorhodobacter sp005234135*. The type genome for the species is the GenBank assembly RS_GCF_005234135.1. The GC content of the type genome is 57.79 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Pseudorhodobacter depecitura sp. nov.

Candidatus Pseudorhodobacter depecitura (NL. fem. n. *depecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudorhodobacter sp003991405*. The type genome for the species is the GenBank assembly RS_GCF_003991405.1. The GC content of the type genome is 61.1 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Pseudorhodobacter orgetax sp. nov.

Candidatus Pseudorhodobacter orgetax (NL. fem. n. *orgetax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudorhodobacter_B sp000176015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000176015.1. The GC content of the type genome is 65.15 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Pseudorhodoferax effigitrix sp. nov.

Candidatus Pseudorhodoferax effigitrix (NL. fem. n. *effigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudorhodoferax sp001422445*. The type genome for the species is the GenBank assembly RS_GCF_001422445.1. The GC content of the type genome is 69.7 % and the genome length is 6.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pseudorhodoferax gemebetta sp. nov.

Candidatus Pseudorhodoferax gemebetta (NL. fem. n. *gemebetta* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudorhodoferax sp001422365*. The type genome for the species is the GenBank assembly RS_GCF_001422365.1. The GC content of the type genome is 69.11 % and the genome length is 7.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pseudorhodoferax secunimonia sp. nov.

Candidatus Pseudorhodoferax secunimonia (NL. fem. n. *secunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudorhodoferax sp001422405*. The type genome for the species is the GenBank assembly RS_GCF_001422405.1. The GC content of the type genome is 68.75 % and the genome length is 6.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Pseudorhodoplanes baropifica sp. nov.

Candidatus Pseudorhodoplanes baropifica (NL. fem. n. *baropifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudorhodoplanes sp008933495*. The type genome for the species is the GenBank assembly GCA_008933495.1. The GC content of the type genome is 64.99 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Pseudorhodoplanes ducilago sp. nov.

Candidatus Pseudorhodoplanes ducilago (NL. fem. n. *ducilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudorhodoplanes sp013388965*. The type genome for the species is the GenBank assembly GCA_013388965.1. The GC content of the type genome is 65.36 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Pseudoruminococcus epicritas sp. nov.

Candidatus Pseudoruminococcus epicritas (NL. fem. n. *epicritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoruminococcus sp902765855*. The type genome for the species is the GenBank assembly GCA_902765855.1. The GC content of the type genome is 36.5 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Pseudoscardovia affirax sp. nov.

Candidatus Pseudoscardovia affirax (NL. fem. n. *affirax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoscardovia sp002353815*. The type genome for the species is the GenBank assembly GCA_002353815.1. The GC content of the type genome is 63.39 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Pseudosphingobacterium adsecitura sp. nov.

Candidatus Pseudosphingobacterium adsecitura (NL. fem. n. *adsecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudosphingobacterium sp004368405*. The type genome for the species is the GenBank assembly RS_GCF_004368405.1. The GC content of the type genome is 43.29 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Pseudosphingobacterium forabitrix sp. nov.

Candidatus Pseudosphingobacterium forabitrix (NL. fem. n. *forabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudosphingobacterium sp014334135*. The type genome for the species is the GenBank assembly RS_GCF_014334135.1. The GC content of the type genome is 40.78 % and the genome length is 6.12 Mbp.

Description of *Candidatus* Pseudothermotoga dinupessa sp. nov.

Candidatus Pseudothermotoga dinupessa (NL. fem. n. *dinupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudothermotoga_A sp003510135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into

a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003510135.1. The GC content of the type genome is 49.72 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Pseudothermotoga divorago sp. nov.

Candidatus Pseudothermotoga divorago (NL. fem. n. *divorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudothermotoga_A sp011057685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011057685.1. The GC content of the type genome is 50.0 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Pseudovibrio advicago sp. nov.

Candidatus Pseudovibrio advicago (NL. fem. n. *advicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudovibrio sp001941685*. The type genome for the species is the GenBank assembly RS_GCF_001941685.1. The GC content of the type genome is 52.12 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Pseudovibrio baropentia sp. nov.

Candidatus Pseudovibrio baropentia (NL. fem. n. *baropentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudovibrio sp009711345*. The type genome for the species is the GenBank assembly RS_GCF_009711345.1. The GC content of the type genome is 52.6 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Pseudovibrio brasmitrix sp. nov.

Candidatus Pseudovibrio brasmitrix (NL. fem. n. *brasmitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudovibrio sp900104145*. The type genome for the species is the

GenBank assembly RS_GCF_900104145.1. The GC content of the type genome is 50.31 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Pseudovibrio caravitica sp. nov.

Candidatus Pseudovibrio caravitica (NL. fem. n. *caravitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudovibrio sp900143565*. The type genome for the species is the GenBank assembly RS_GCF_001623225.1. The GC content of the type genome is 51.32 % and the genome length is 6.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sponge".

Description of *Candidatus* Pseudovibrio dimadugo sp. nov.

Candidatus Pseudovibrio dimadugo (NL. fem. n. *dimadugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudovibrio sp001623075*. The type genome for the species is the GenBank assembly RS_GCF_001623075.1. The GC content of the type genome is 51.13 % and the genome length is 5.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sponge".

Description of *Candidatus* Pseudovibrio sonipimonia sp. nov.

Candidatus Pseudovibrio sonipimonia (NL. fem. n. *sonipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudovibrio sp001310715*. The type genome for the species is the GenBank assembly GCA_001310715.1. The GC content of the type genome is 52.29 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Pseudoxanthobacter everbicella sp. nov.

Candidatus Pseudoxanthobacter everbicella (NL. fem. n. *everbicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthobacter sp009600605*. The type genome for the species is the GenBank assembly RS_GCF_009600605.1. The GC content of the type genome is 68.28 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Pseudoxanthomonas bicapitudo sp. nov.

Candidatus Pseudoxanthomonas bicapitudo (NL. fem. n. *bicapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas sp000513995*. The type genome for the species is the GenBank assembly RS_GCF_000513995.1. The GC content of the type genome is 70.75 % and the genome length is 3.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Pseudoxanthomonas devecax sp. nov.

Candidatus Pseudoxanthomonas devecax (NL. fem. n. *devecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas sp000510725*. The type genome for the species is the GenBank assembly RS_GCF_000283075.1. The GC content of the type genome is 71.38 % and the genome length is 3.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Pseudoxanthomonas anarritudo sp. nov.

Candidatus Pseudoxanthomonas anarritudo (NL. fem. n. *anarritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp001427635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001427635.1. The GC content of the type genome is 67.56 % and the genome length is 3.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pseudoxanthomonas expecicula sp. nov.

Candidatus Pseudoxanthomonas expecicula (NL. fem. n. *expecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Pseudoxanthomonas_A sp900104255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900104255.1. The GC content of the type genome is 67.89 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Pseudoxanthomonas gemebitudo sp. nov.

Candidatus Pseudoxanthomonas gemebitudo (NL. fem. n. *gemebitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp900104085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900104085.1. The GC content of the type genome is 63.71 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Pseudoxanthomonas homolicella sp. nov.

Candidatus Pseudoxanthomonas homolicella (NL. fem. n. *homolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp900116385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900116385.1. The GC content of the type genome is 66.72 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Pseudoxanthomonas lorarimonas sp. nov.

Candidatus Pseudoxanthomonas lorarimonas (NL. fem. n. *lorarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp004284195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004294545.1. The GC content of the type genome is 69.14 % and the genome

length is 4.59 Mbp.

Description of *Candidatus* Pseudoxanthomonas obmurilega sp. nov.

Candidatus Pseudoxanthomonas obmurilega (NL. fem. n. *obmurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp001427585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001427585.1. The GC content of the type genome is 66.95 % and the genome length is 4.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Pseudoxanthomonas obmuritura sp. nov.

Candidatus Pseudoxanthomonas obmuritura (NL. fem. n. *obmuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp002863005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002863005.1. The GC content of the type genome is 67.25 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Pseudoxanthomonas optumax sp. nov.

Candidatus Pseudoxanthomonas optumax (NL. fem. n. *optumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp004173415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004173415.1. The GC content of the type genome is 67.93 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Pseudoxanthomonas peropitio sp. nov.

Candidatus Pseudoxanthomonas peropitio (NL. fem. n. *peropitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp006716465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_006716465.1. The GC content of the type genome is 66.24 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Pseudoxanthomonas umbilitura sp. nov.

Candidatus Pseudoxanthomonas umbilitura (NL. fem. n. *umbilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp900109775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900109775.1. The GC content of the type genome is 66.57 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Pseudoxanthomonas veriditoga sp. nov.

Candidatus Pseudoxanthomonas veriditoga (NL. fem. n. *veriditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudoxanthomonas_A sp006542425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_006542425.1. The GC content of the type genome is 67.08 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Pseudozobellia angipimonas sp. nov.

Candidatus Pseudozobellia angipimonas (NL. fem. n. *angipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pseudozobellia sp002813285*. The type genome for the species is the GenBank assembly RS_GCF_002813285.1. The GC content of the type genome is 39.17 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Psittacicella adnecimonas sp. nov.

Candidatus Psittacicella adnecimonas (NL. fem. n. *adnecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psittacicella sp003585885*. The type genome for the species is the GenBank assembly RS_GCF_003585885.1. The GC content of the type genome is 35.04 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Psychrilyobacter adsudifica sp. nov.

Candidatus Psychrilyobacter adsudifica (NL. fem. n. *adsudifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrilyobacter sp002084825*. The type genome for the species is the GenBank assembly GCA_002084825.1. The GC content of the type genome is 30.66 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Psychrilyobacter diritilenta sp. nov.

Candidatus Psychrilyobacter diritilenta (NL. fem. n. *diritilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrilyobacter sp002342785*. The type genome for the species is the GenBank assembly GCA_002342785.1. The GC content of the type genome is 27.93 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Psychrilyobacter haricitio sp. nov.

Candidatus Psychrilyobacter haricitio (NL. fem. n. *haricitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrilyobacter sp003973585*. The type genome for the species is the GenBank assembly GCA_003973585.1. The GC content of the type genome is 28.69 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Psychrilyobacter hemiticella sp. nov.

Candidatus Psychrilyobacter hemiticella (NL. fem. n. *hemiticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrilyobacter sp003391055*. The type genome for the species is the GenBank assembly RS_GCF_010078245.1. The GC content of the type genome is 33.83 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Psychrobacillus colepilega sp. nov.

Candidatus Psychrobacillus colepilega (NL. fem. n. *colepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacillus sp007676755*. The type genome for the species is the GenBank assembly RS_GCF_007676755.1. The GC content of the type genome is 36.72 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Psychrobacillus epitressa sp. nov.

Candidatus Psychrobacillus epitressa (NL. fem. n. *epitressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacillus sp900103605*. The type genome for the species is the GenBank assembly RS_GCF_900103605.1. The GC content of the type genome is 36.59 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Psychrobacillus inrecifica sp. nov.

Candidatus Psychrobacillus inrecifica (NL. fem. n. *inrecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacillus sp900111345*. The type genome for the species is the GenBank assembly RS_GCF_900111345.1. The GC content of the type genome is 37.02 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Psychrobacillus megalastra sp. nov.

Candidatus Psychrobacillus megalastra (NL. fem. n. *megalastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Psychrobacillus sp012843435*. The type genome for the species is the GenBank assembly RS_GCF_012843435.1. The GC content of the type genome is 37.3 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Psychrobacillus peridastra sp. nov.

Candidatus Psychrobacillus peridastra (NL. fem. n. *peridastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacillus sp008807035*. The type genome for the species is the GenBank assembly RS_GCF_008807035.1. The GC content of the type genome is 36.67 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Psychrobacillus velifilenta sp. nov.

Candidatus Psychrobacillus velifilenta (NL. fem. n. *velifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacillus sp001278755*. The type genome for the species is the GenBank assembly RS_GCF_001278755.1. The GC content of the type genome is 35.67 % and the genome length is 4.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Psychrobacter adlapibra sp. nov.

Candidatus Psychrobacter adlapibra (NL. fem. n. *adlapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002377905*. The type genome for the species is the GenBank assembly GCA_002377905.1. The GC content of the type genome is 43.46 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Psychrobacter apsuritura sp. nov.

Candidatus Psychrobacter apsuritura (NL. fem. n. *apsuritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002836735*. The type genome for the species is the GenBank assembly RS_GCF_002836735.1. The GC content of the type genome is 42.83 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Psychrobacter bigaritudo sp. nov.

Candidatus Psychrobacter bigaritudo (NL. fem. n. *bigaritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002810365*. The type genome for the species is the GenBank assembly RS_GCF_002810365.1. The GC content of the type genome is 47.21 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Psychrobacter cepulibra sp. nov.

Candidatus Psychrobacter cepulibra (NL. fem. n. *cepulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp900168255*. The type genome for the species is the GenBank assembly RS_GCF_002224105.1. The GC content of the type genome is 41.94 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Psychrobacter cepurilega sp. nov.

Candidatus Psychrobacter cepurilega (NL. fem. n. *cepurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp012270355*. The type genome for the species is the GenBank assembly GCA_012270355.1. The GC content of the type genome is 46.33 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Psychrobacter ciminago sp. nov.

Candidatus Psychrobacter ciminago (NL. fem. n. *ciminago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp900163785*. The type genome for the species is the GenBank assembly RS_GCF_900163785.1. The GC content of the type genome is 43.27 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Psychrobacter cocodibra sp. nov.

Candidatus Psychrobacter cocodibra (NL. fem. n. *cocodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002836715*. The type genome for the species is the GenBank assembly RS_GCF_002836715.1. The GC content of the type genome is 42.78 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Psychrobacter cohonitrix sp. nov.

Candidatus Psychrobacter cohonitrix (NL. fem. n. *cohonitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002385225*. The type genome for the species is the GenBank assembly GCA_002385225.1. The GC content of the type genome is 42.37 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Psychrobacter conubitoga sp. nov.

Candidatus Psychrobacter conubitoga (NL. fem. n. *conubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp013414195*. The type genome for the species is the GenBank assembly RS_GCF_013414195.1. The GC content of the type genome is 42.69 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Psychrobacter delebousia sp. nov.

Candidatus Psychrobacter delebousia (NL. fem. n. *delebousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002352555*. The type genome for the species is the GenBank assembly GCA_002352555.1. The GC content of the type genome is 43.14 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Psychrobacter denavibra sp. nov.

Candidatus Psychrobacter denavibra (NL. fem. n. *denavibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Psychrobacter sp001435295*. The type genome for the species is the GenBank assembly RS_GCF_001435295.1. The GC content of the type genome is 42.76 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Psychrobacter detumitas sp. nov.

Candidatus Psychrobacter detumitas (NL. fem. n. *detumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp001652315*. The type genome for the species is the GenBank assembly RS_GCF_001652315.1. The GC content of the type genome is 43.57 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "alkaline soil".

Description of *Candidatus* Psychrobacter direcitura sp. nov.

Candidatus Psychrobacter direcitura (NL. fem. n. *direcitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002377945*. The type genome for the species is the GenBank assembly GCA_002377945.1. The GC content of the type genome is 42.54 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Psychrobacter famelimonas sp. nov.

Candidatus Psychrobacter famelimonas (NL. fem. n. *famelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp000213615*. The type genome for the species is the GenBank assembly GCA_002415515.1. The GC content of the type genome is 41.43 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Psychrobacter feculetta sp. nov.

Candidatus Psychrobacter feculetta (NL. fem. n. *feculetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002366815*. The type genome for the species is the GenBank assembly GCA_002366815.1. The GC content of the type genome is 44.97 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Psychrobacter ficedousia sp. nov.

Candidatus Psychrobacter ficedousia (NL. fem. n. *ficedousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002453355*. The type genome for the species is the GenBank assembly GCA_002453355.1. The GC content of the type genome is 42.95 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Psychrobacter homogitoga sp. nov.

Candidatus Psychrobacter homogitoga (NL. fem. n. *homogitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp003542795*. The type genome for the species is the GenBank assembly GCA_003542795.1. The GC content of the type genome is 42.97 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Psychrobacter indubitoga sp. nov.

Candidatus Psychrobacter indubitoga (NL. fem. n. *indubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002414005*. The type genome for the species is the GenBank assembly GCA_002414005.1. The GC content of the type genome is 44.44 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Psychrobacter inreventia sp. nov.

Candidatus Psychrobacter inreventia (NL. fem. n. *inreventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp008369115*. The type genome for the species is the GenBank assembly RS_GCF_008369115.1. The GC content of the type genome is 42.8 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Psychrobacter insicicula sp. nov.

Candidatus Psychrobacter insicicula (NL. fem. n. *insicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp000586435*. The type genome for the species is the GenBank assembly GCA_000586435.1. The GC content of the type genome is 42.71 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Psychrobacter ludificella sp. nov.

Candidatus Psychrobacter ludificella (NL. fem. n. *ludificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002836505*. The type genome for the species is the GenBank assembly RS_GCF_002836505.1. The GC content of the type genome is 42.59 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Psychrobacter necopicula sp. nov.

Candidatus Psychrobacter necopicula (NL. fem. n. *necopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp000586455*. The type genome for the species is the GenBank assembly GCA_000586455.1. The GC content of the type genome is 42.87 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Psychrobacter obnupentia sp. nov.

Candidatus Psychrobacter obnupentia (NL. fem. n. *obnupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp003530515*. The type genome for the species is the GenBank assembly GCA_003530515.1. The GC content of the type genome is 42.76 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Psychrobacter pabilax sp. nov.

Candidatus Psychrobacter pabilax (NL. fem. n. *pabilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Psychrobacter sp001921745*. The type genome for the species is the GenBank assembly RS_GCF_001921745.1. The GC content of the type genome is 42.58 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Psychrobacter refocatica sp. nov.

Candidatus Psychrobacter refocatica (NL. fem. n. *refocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp000586415*. The type genome for the species is the GenBank assembly GCA_000586415.1. The GC content of the type genome is 42.74 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Psychrobacter rubecax sp. nov.

Candidatus Psychrobacter rubecax (NL. fem. n. *rubecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp001593285*. The type genome for the species is the GenBank assembly RS_GCF_001593285.1. The GC content of the type genome is 41.82 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Psychrobacter semunibra sp. nov.

Candidatus Psychrobacter semunibra (NL. fem. n. *semunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp000586475*. The type genome for the species is the GenBank assembly GCA_000586475.1. The GC content of the type genome is 42.67 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Psychrobacter sicinatica sp. nov.

Candidatus Psychrobacter sicinatica (NL. fem. n. *sicinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp001435845*. The type genome for the species is the GenBank assembly RS_GCF_001435845.1. The GC content of the type genome is 42.82 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Psychrobacter tenilitio sp. nov.

Candidatus Psychrobacter tenilitio (NL. fem. n. *tenilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp000511655*. The type genome for the species is the GenBank assembly RS_GCF_000511655.1. The GC content of the type genome is 44.77 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Psychrobacter turibimonia sp. nov.

Candidatus Psychrobacter turibimonia (NL. fem. n. *turibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp014119005*. The type genome for the species is the GenBank assembly RS_GCF_014119005.1. The GC content of the type genome is 41.68 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Psychrobacter vinulibula sp. nov.

Candidatus Psychrobacter vinulibula (NL. fem. n. *vinulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobacter sp002313155*. The type genome for the species is the GenBank assembly RS_GCF_002313155.2. The GC content of the type genome is 42.64 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Psychrobium ammurousia sp. nov.

Candidatus Psychrobium ammurousia (NL. fem. n. *ammurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobium sp013214905*. The type genome for the species is the GenBank assembly GCA_013214905.1. The GC content of the type genome is 41.8 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Psychrobium arcubitio sp. nov.

Candidatus Psychrobium arcubitio (NL. fem. n. *arcubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobium sp013214945*. The type genome for the species is the GenBank assembly GCA_013214945.1. The GC content of the type genome is 42.67 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Psychrobium biciniforma sp. nov.

Candidatus Psychrobium biciniforma (NL. fem. n. *biciniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobium sp013214885*. The type genome for the species is the GenBank assembly GCA_013214885.1. The GC content of the type genome is 41.67 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Psychrobium cotenatica sp. nov.

Candidatus Psychrobium cotenatica (NL. fem. n. *cotenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobium sp013214965*. The type genome for the species is the GenBank assembly GCA_013214965.1. The GC content of the type genome is 40.65 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Psychrobium episticella sp. nov.

Candidatus Psychrobium episticella (NL. fem. n. *episticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobium sp001874365*. The type genome for the species is the GenBank assembly GCA_001874365.1. The GC content of the type genome is 40.86 % and the genome length is 3.25 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mediterranean seawater enriched with a specific particulate matter".

Description of *Candidatus* Psychrobium monopibra sp. nov.

Candidatus Psychrobium monopibra (NL. fem. n. *monopibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrobium sp002835545*. The type genome for the species is the GenBank assembly RS_GCF_002835545.1. The GC content of the type genome is 41.03 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Psychroflexus arcitigena sp. nov.

Candidatus Psychroflexus arcitigena (NL. fem. n. *arcitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroflexus sp007116535*. The type genome for the species is the GenBank assembly GCA_007116535.1. The GC content of the type genome is 35.1 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Psychroflexus argimitudo sp. nov.

Candidatus Psychroflexus argimitudo (NL. fem. n. *argimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroflexus sp003931895*. The type genome for the species is the GenBank assembly RS_GCF_003931895.1. The GC content of the type genome is 34.08 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Psychroflexus casigilega sp. nov.

Candidatus Psychroflexus casigilega (NL. fem. n. *casigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroflexus sp010820555*. The type genome for the species is the GenBank assembly RS_GCF_010820555.1. The GC content of the type genome is 39.83 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Psychroflexus depelicula sp. nov.

Candidatus Psychroflexus depelicula (NL. fem. n. *depelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroflexus sp003565575*. The type genome for the species is the GenBank assembly GCA_003565575.1. The GC content of the type genome is 35.48 %

and the genome length is 2.6 Mbp.

Description of *Candidatus* Psychroflexus depopatica sp. nov.

Candidatus Psychroflexus depopatica (NL. fem. n. *depopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroflexus sp003564185*. The type genome for the species is the GenBank assembly GCA_003564185.1. The GC content of the type genome is 33.9 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Psychroflexus incoritia sp. nov.

Candidatus Psychroflexus incoritia (NL. fem. n. *incoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroflexus sp002836055*. The type genome for the species is the GenBank assembly RS_GCF_002836055.1. The GC content of the type genome is 34.54 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Psychroflexus vivifitio sp. nov.

Candidatus Psychroflexus vivifitio (NL. fem. n. *vivifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroflexus sp006120725*. The type genome for the species is the GenBank assembly GCA_009909115.1. The GC content of the type genome is 34.83 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Psychromonas betacitoga sp. nov.

Candidatus Psychromonas betacitoga (NL. fem. n. *betacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp003318165*. The type genome for the species is the GenBank assembly RS_GCF_003318165.1. The GC content of the type genome is 38.44 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Psychromonas brasmilega sp. nov.

Candidatus Psychromonas brasmilega (NL. fem. n. *brasmilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp013619145*. The type genome for the species is the GenBank assembly GCA_013619145.1. The GC content of the type genome is 39.97 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Psychromonas cerarigena sp. nov.

Candidatus Psychromonas cerarigena (NL. fem. n. *cerarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp004378355*. The type genome for the species is the GenBank assembly RS_GCF_004378355.1. The GC content of the type genome is 36.71 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Psychromonas dicabisca sp. nov.

Candidatus Psychromonas dicabisca (NL. fem. n. *dicabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp000470315*. The type genome for the species is the GenBank assembly RS_GCF_000470315.2. The GC content of the type genome is 36.43 % and the genome length is 4.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sandy beach".

Description of *Candidatus* Psychromonas genufitia sp. nov.

Candidatus Psychromonas genufitia (NL. fem. n. *genufitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp002239585*. The type genome for the species is the GenBank assembly RS_GCF_002239585.1. The GC content of the type genome is 36.86 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Psychromonas indubitia sp. nov.

Candidatus Psychromonas indubitia (NL. fem. n. *indubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp002836415*. The type genome for the species is the GenBank assembly RS_GCF_002836415.1. The GC content of the type genome is 40.79 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Psychromonas inlapisca sp. nov.

Candidatus Psychromonas inlapisca (NL. fem. n. *inlapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp011378715*. The type genome for the species is the GenBank assembly RS_GCF_011378715.1. The GC content of the type genome is 37.45 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Psychromonas inlecibula sp. nov.

Candidatus Psychromonas inlecibula (NL. fem. n. *inlecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp000153405*. The type genome for the species is the GenBank assembly RS_GCF_000153405.2. The GC content of the type genome is 38.62 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Psychromonas inresatio sp. nov.

Candidatus Psychromonas inresatio (NL. fem. n. *inresatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp009828855*. The type genome for the species is the GenBank assembly RS_GCF_009828855.1. The GC content of the type genome is 36.35 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Psychromonas insorax sp. nov.

Candidatus Psychromonas insorax (NL. fem. n. *insorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp004376845*. The type genome for the species is the GenBank assembly RS_GCF_004376845.1. The GC content of the type genome is 35.89

% and the genome length is 3.07 Mbp.

Description of *Candidatus* Psychromonas noviligena sp. nov.

Candidatus Psychromonas noviligena (NL. fem. n. *noviligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp002835995*. The type genome for the species is the GenBank assembly RS_GCF_002835995.1. The GC content of the type genome is 38.99 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Psychromonas subucimonia sp. nov.

Candidatus Psychromonas subucimonia (NL. fem. n. *subucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychromonas sp002835465*. The type genome for the species is the GenBank assembly RS_GCF_002835465.1. The GC content of the type genome is 39.35 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Psychroserpens affabibula sp. nov.

Candidatus Psychroserpens affabibula (NL. fem. n. *affabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroserpens sp014526325*. The type genome for the species is the GenBank assembly GCA_014526325.1. The GC content of the type genome is 34.14 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Psychroserpens apercilenta sp. nov.

Candidatus Psychroserpens apercilenta (NL. fem. n. *apercilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroserpens sp000799465*. The type genome for the species is the GenBank assembly RS_GCF_000799465.1. The GC content of the type genome is 34.06 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Psychroserpens cilibitio sp. nov.

Candidatus Psychroserpens cilibitio (NL. fem. n. *cilibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroserpens sp900104785*. The type genome for the species is the GenBank assembly RS_GCF_900104785.1. The GC content of the type genome is 34.91 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Psychroserpens viginitoga sp. nov.

Candidatus Psychroserpens viginitoga (NL. fem. n. *viginitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychroserpens sp002162685*. The type genome for the species is the GenBank assembly GCA_002162685.1. The GC content of the type genome is 32.07 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Psychrosphaera adremilega sp. nov.

Candidatus Psychrosphaera adremilega (NL. fem. n. *adremilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Psychrosphaera sp013373245*. The type genome for the species is the GenBank assembly GCA_013373245.1. The GC content of the type genome is 40.72 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Pudibaria fidenitio sp. nov.

Candidatus Pudibaria fidenitio (NL. fem. n. *fidenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJATL01 sp903944895*. The type genome for the species is the GenBank assembly GCA_903944895.1. The GC content of the type genome is 41.15 % and the genome length is 7.17 Mbp.

Description of *Candidatus* Pudibaria gen. nov.

Candidatus Pudibaria (NL. fem. n. *Pudibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJATL01*. The type species for the genus is *Candidatus* Pudibaria fidenitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-276*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicubosaceae.

Description of *Candidatus* Pudibella delecitica sp. nov.

Candidatus Pudibella delecitica (NL. fem. n. *delecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-826 sp000437235*. The type genome for the species is the GenBank assembly GCA_900542995.1. The GC content of the type genome is 34.0 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Pudibella gen. nov.

Candidatus Pudibella (NL. fem. n. *Pudibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-826*. The type species for the genus is *Candidatus* Pudibella delecitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Pudibellaceae fam. nov.

Candidatus Pudibellaceae (NL. fem. n. *Pudibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-826.* The type genus for the taxon is *Candidatus* Pudibella .

According to the original version of GTDB R06-RS202, this family belongs to the order *RFN20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cerofellales.

Description of *Candidatus* Pudibella selibibra sp. nov.

Candidatus Pudibella selibibra (NL. fem. n. *selibibra* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-826 sp002477825*. The type genome for the species is the GenBank assembly GCA_002477825.1. The GC content of the type genome is 33.7 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Pudibia democitica sp. nov.

Candidatus Pudibia democitica (NL. fem. n. *democitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7332 sp002471225*. The type genome for the species is the GenBank assembly GCA_002471225.1. The GC content of the type genome is 36.96 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Pudibia gen. nov.

Candidatus Pudibia (NL. fem. n. *Pudibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7332*. The type species for the genus is *Candidatus* Pudibia democitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7332*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibiaceae.

Description of *Candidatus* Pudibiaceae fam. nov.

Candidatus Pudibiaceae (NL. fem. n. *Pudibiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7332.* The type genus for the taxon is *Candidatus* Pudibia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Pudibida bipenisca sp. nov.

Candidatus Pudibida bipenisca (NL. fem. n. *bipenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-354 sp900553015*. The type genome for the species is the GenBank assembly RS_GCF_900752165.1. The GC content of the type genome is 27.79 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Pudibida gen. nov.

Candidatus Pudibida (NL. fem. n. *Pudibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-354*. The type species for the genus is *Candidatus* Pudibida bipenisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Pudibida carunitia sp. nov.

Candidatus Pudibida carunitia (NL. fem. n. *carunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-354 sp900555085*. The type genome for the species is the GenBank assembly RS_GCF_900765495.1. The GC content of the type genome is 27.19 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Pudibida colopibula sp. nov.

Candidatus Pudibida colopibula (NL. fem. n. *colopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-354 sp001915925*. The type genome for the species is the GenBank assembly GCA_000437455.1. The GC content of the type genome is 27.57 % and the genome length is 1.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Pudibida colopimonia sp. nov.

Candidatus Pudibida colopimonia (NL. fem. n. *colopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-354 sp900754085*. The type genome for the species is the GenBank assembly RS_GCF_900754085.1. The GC content of the type genome is 26.8 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Pudibida culilax sp. nov.

Candidatus Pudibida culilax (NL. fem. n. *culilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-354 sp900552655*. The type genome for the species is the GenBank assembly GCA_900552655.1. The GC content of the type genome is 27.06 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Pudibida deparitio sp. nov.

Candidatus Pudibida deparitio (NL. fem. n. *deparitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-354 sp900759015*. The type genome for the species is the GenBank assembly RS_GCF_900759015.1. The GC content of the type genome is 27.28 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Pudibosa arcebitica sp. nov.

Candidatus Pudibosa arcebitica (NL. fem. n. *arcebitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMI01 sp003150395*. The type genome for the species is the GenBank assembly GCA_003150395.1. The GC content of the type genome is 36.31 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Pudibosa gen. nov.

Candidatus Pudibosa (NL. fem. n. *Pudibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QAMI01*. The type species for the genus is *Candidatus* Pudibosa arcebitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pudibosa maligitoga sp. nov.

Candidatus Pudibosa maligitoga (NL. fem. n. *maligitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMI01 sp900551915*. The type genome for the species is the GenBank assembly GCA_900551915.1. The GC content of the type genome is 36.75 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Pudibosa tetenifica sp. nov.

Candidatus Pudibosa tetenifica (NL. fem. n. *tetenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QAMI01 sp900554095*. The type genome for the species is the GenBank assembly GCA_900554095.1. The GC content of the type genome is 36.67 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Pudibula ablepitas sp. nov.

Candidatus Pudibula ablepitas (NL. fem. n. *ablepitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWGR01 sp903873545*. The type genome for the species is the GenBank assembly GCA_903873545.1. The GC content of the type genome is 67.22 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Pudibula gen. nov.

Candidatus Pudibula (NL. fem. n. *Pudibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWGR01*. The type species for the genus is *Candidatus* Pudibula ablepitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *REDH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Debucariaceae.

Description of *Candidatus* Pudibula camilimonas sp. nov.

Candidatus Pudibula camilimonas (NL. fem. n. *camilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWGR01 sp013205435*. The type genome for the species is the GenBank assembly GCA_013205435.1. The GC content of the type genome is 66.77 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Pudibula divoliforma sp. nov.

Candidatus Pudibula divoliforma (NL. fem. n. *divoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWGR01 sp903912275*. The type genome for the species is the GenBank assembly GCA_903912275.1. The GC content of the type genome is 67.11 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Pueribacillus defacicella sp. nov.

Candidatus Pueribacillus defacicella (NL. fem. n. *defacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pueribacillus sp002453275*. The type genome for the species is the GenBank assembly GCA_002453275.1. The GC content of the type genome is 39.5 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Puia adtorilenta sp. nov.

Candidatus Puia adtorilenta (NL. fem. n. *adtorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp013288945*. The type genome for the species is the GenBank assembly GCA_013288945.1. The GC content of the type genome is 35.42 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Puia anastilega sp. nov.

Candidatus Puia anastilega (NL. fem. n. *anastilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp003151295*. The type genome for the species is the GenBank assembly GCA_003151295.1. The GC content of the type genome is 48.3 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Puia antiritoga sp. nov.

Candidatus Puia antiritoga (NL. fem. n. *antiritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp003167015*. The type genome for the species is the GenBank assembly GCA_003167015.1. The GC content of the type genome is 52.36 % and the genome length is 5.75 Mbp.

Description of *Candidatus* Puia catalatio sp. nov.

Candidatus Puia catalatio (NL. fem. n. *catalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp003135585*. The type genome for the species is the GenBank assembly GCA_003135585.1. The GC content of the type genome is 41.82 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Puia cohonitio sp. nov.

Candidatus Puia cohonitio (NL. fem. n. *cohonitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp003136915*. The type genome for the species is the GenBank assembly GCA_003136915.1. The GC content of the type genome is 44.46 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Puia conubetta sp. nov.

Candidatus Puia conubetta (NL. fem. n. *conubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Puia sp013287475*. The type genome for the species is the GenBank assembly GCA_013287475.1. The GC content of the type genome is 40.26 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Puia ecastentia sp. nov.

Candidatus Puia ecastentia (NL. fem. n. *ecastentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp001898505*. The type genome for the species is the GenBank assembly GCA_001898505.1. The GC content of the type genome is 50.31 % and the genome length is 7.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Puia locelimonia sp. nov.

Candidatus Puia locelimonia (NL. fem. n. *locelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp003168265*. The type genome for the species is the GenBank assembly GCA_003168265.1. The GC content of the type genome is 44.08 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Puia papilitas sp. nov.

Candidatus Puia papilitas (NL. fem. n. *papilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp003175695*. The type genome for the species is the GenBank assembly GCA_003175695.1. The GC content of the type genome is 42.69 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Puia pavimilenta sp. nov.

Candidatus Puia pavimilenta (NL. fem. n. *pavimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp903927975*. The type genome for the species is the GenBank assembly GCA_903900005.1. The GC content of the type genome is 37.78 % and the genome length is 5.01 Mbp.

Description of *Candidatus* Puia renavilenta sp. nov.

Candidatus Puia renavilenta (NL. fem. n. *renavilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp903906365*. The type genome for the species is the GenBank assembly GCA_903892725.1. The GC content of the type genome is 50.61 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Puia serotitura sp. nov.

Candidatus Puia serotitura (NL. fem. n. *serotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp013286315*. The type genome for the species is the GenBank assembly GCA_013286315.1. The GC content of the type genome is 42.44 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Puia sonabentia sp. nov.

Candidatus Puia sonabentia (NL. fem. n. *sonabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp002413325*. The type genome for the species is the GenBank assembly GCA_002413325.1. The GC content of the type genome is 46.03 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Puia videlimonas sp. nov.

Candidatus Puia videlimonas (NL. fem. n. *videlimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puia sp013289175*. The type genome for the species is the GenBank assembly GCA_013289175.1. The GC content of the type genome is 44.63 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Pulegana mahemibra sp. nov.

Candidatus Pulegana mahemibra (NL. fem. n. *mahemibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMTK01 sp013791585*. The type genome for the species is the GenBank assembly GCA_013791585.1. The GC content of the type genome is 37.64 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Pulegana gen. nov.

Candidatus Pulegana (NL. fem. n. *Pulegana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMTK01*. The type species for the genus is *Candidatus* Pulegana mahemibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VMTK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Puleganaceae.

Description of *Candidatus* Puleganaceae fam. nov.

Candidatus Puleganaceae (NL. fem. n. *Puleganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VMTK01.* The type genus for the taxon is *Candidatus* Pulegana .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM507*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolosales.

Description of *Candidatus* Pulegaria lucelastra sp. nov.

Candidatus Pulegaria lucelastra (NL. fem. n. *lucelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAEZ01 sp013388565*. The type genome for the species is the GenBank assembly GCA_013388565.1. The GC content of the type genome is 28.83 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Pulegaria gen. nov.

Candidatus Pulegaria (NL. fem. n. *Pulegaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAEZ01*. The type species for the genus is *Candidatus* Pulegaria lucelastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACAEZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pulegariaceae.

Description of *Candidatus* Pulegariaceae fam. nov.

Candidatus Pulegariaceae (NL. fem. n. *Pulegariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACAEZ01.* The type genus for the taxon is *Candidatus* Pulegaria .

According to GTDB R06-RS202, this family belongs to the order *Campylobacterales*.

Description of *Candidatus* Pulegella cosidicula sp. nov.

Candidatus Pulegella cosidicula (NL. fem. n. *cosidicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c8a sp000961575*. The type genome for the species is the GenBank assembly GCA_003512665.1. The GC content of the type genome is 48.41 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Pulegella gen. nov.

Candidatus Pulegella (NL. fem. n. *Pulegella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BRH-c8a*. The type species for the genus is *Candidatus* Pulegella cosidicula .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Pulegella forinatio sp. nov.

Candidatus Pulegella forinatio (NL. fem. n. *forinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c8a sp009781965*. The type genome for the species is the GenBank assembly GCA_009781965.1. The GC content of the type genome is 50.91 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Pulegia cimeligena sp. nov.

Candidatus Pulegia cimeligena (NL. fem. n. *cimeligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-66-22 sp001771285*. The type genome for the species is the GenBank assembly GCA_001771285.1. The GC content of the type genome is 66.06 % and the genome length is 4.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Pulegia gen. nov.

Candidatus Pulegia (NL. fem. n. *Pulegia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-66-22*. The type species for the genus is *Candidatus* Pulegia cimeligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-66-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pulegiaceae.

Description of *Candidatus* Pulegiaceae fam. nov.

Candidatus Pulegiaceae (NL. fem. n. *Pulegiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-66-22.* The type genus for the taxon is *Candidatus* Pulegia .

According to GTDB R06-RS202, this family belongs to the order *Methylomirabilales*.

Description of *Candidatus* Pulegia letifitia sp. nov.

Candidatus Pulegia letifitia (NL. fem. n. *letifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-66-22 sp011054645*. The type genome for the species is the GenBank assembly GCA_011054645.1. The GC content of the type genome is 65.6 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Pulegida obtenatio sp. nov.

Candidatus Pulegida obtenatio (NL. fem. n. *obtenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3086 sp002367305*. The type genome for the species is the GenBank assembly GCA_002367305.1. The GC content of the type genome is 60.8 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Pulegida gen. nov.

Candidatus Pulegida (NL. fem. n. *Pulegida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3086*. The type species for the genus is *Candidatus* Pulegida obtenatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3086*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pulegidaceae.

Description of *Candidatus* Pulegidaceae fam. nov.

Candidatus Pulegidaceae (NL. fem. n. *Pulegidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3086.* The type genus for the taxon is *Candidatus* Pulegida .

According to the original version of GTDB R06-RS202, this family belongs to the order *OPB41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cenodanales.

Description of *Candidatus* Pulegosa ignobitudo sp. nov.

Candidatus Pulegosa ignobitudo (NL. fem. n. *ignobitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-46-8 sp002791595*. The type genome for the species is the GenBank assembly GCA_002791595.1. The GC content of the type genome is 46.23 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Pulegosa gen. nov.

Candidatus Pulegosa (NL. fem. n. *Pulegosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-46-8*. The type species for the genus is *Candidatus* Pulegosa ignobitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-46-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pulegosaceae.

Description of *Candidatus* Pulegosaceae fam. nov.

Candidatus Pulegosaceae (NL. fem. n. *Pulegosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-46-8.* The type genus for the taxon is *Candidatus* Pulegosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UM-FILTER-46-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pulegosales.

Description of *Candidatus* Pulegosales ord. nov.

Candidatus Pulegosales (NL. fem. n. *Pulegosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-46-8.* The type genus for the taxon is *Candidatus* Pulegosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Loripellae.

Description of *Candidatus* Pulegula abinvivita sp. nov.

Candidatus Pulegula abinvivita (NL. fem. n. *abinvivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1491 sp900552265*. The type genome for the species is the GenBank assembly GCA_900552265.1. The GC content of the type genome is 32.94 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pulegula gen. nov.

Candidatus Pulegula (NL. fem. n. *Pulegula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1491*. The type species for the genus is *Candidatus* Pulegula abinvivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Pulegula defositoga sp. nov.

Candidatus Pulegula defositoga (NL. fem. n. *defositoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1491 sp900554775*. The type genome for the species is the GenBank assembly GCA_900554775.1. The GC content of the type genome is 38.2 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Pulegula dicabugo sp. nov.

Candidatus Pulegula dicabugo (NL. fem. n. *dicabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1491 sp900554335*. The type genome for the species is the GenBank assembly RS_GCF_900772125.1. The GC content of the type genome is 37.6 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Pulegula forinilenta sp. nov.

Candidatus Pulegula forinilenta (NL. fem. n. *forinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1491 sp900757335*. The type genome for the species is the GenBank assembly RS_GCF_900757335.1. The GC content of the type genome is 33.74 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Pulveribacter penecax sp. nov.

Candidatus Pulveribacter penecax (NL. fem. n. *penecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pulveribacter sp002434305*. The type genome for the species is the GenBank assembly GCA_002434305.1. The GC content of the type genome is 68.83 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Puniceibacterium assibessa sp. nov.

Candidatus Puniceibacterium assibessa (NL. fem. n. *assibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puniceibacterium sp001038505*. The type genome for the species is the GenBank assembly RS_GCF_001038505.1. The GC content of the type genome is 60.46 % and the genome length is 5.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Coastal seawater".

Description of *Candidatus* Puniceicoccus atlanago sp. nov.

Candidatus Puniceicoccus atlanago (NL. fem. n. *atlanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Puniceicoccus sp002388665*. The type genome for the species is the GenBank assembly GCA_002388665.1. The GC content of the type genome is 54.31 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Purulana masocicella sp. nov.

Candidatus Purulana masocicella (NL. fem. n. *masocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J132 sp003694635*. The type genome for the species is the GenBank assembly GCA_003694635.1. The GC content of the type genome is 47.21 % and the

genome length is 2.52 Mbp.

Description of *Candidatus* Purulana gen. nov.

Candidatus Purulana (NL. fem. n. *Purulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J132*. The type species for the genus is *Candidatus* Purulana masocicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J132*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Purulanaceae.

Description of *Candidatus* Purulanaceae fam. nov.

Candidatus Purulanaceae (NL. fem. n. *Purulanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J132.* The type genus for the taxon is *Candidatus* Purulana .

According to the original version of GTDB R06-RS202, this family belongs to the order *J132*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Purulanales.

Description of *Candidatus* Purulanales ord. nov.

Candidatus Purulanales (NL. fem. n. *Purulanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J132.* The type genus for the taxon is *Candidatus* Purulana .

According to the original version of GTDB R06-RS202, this family belongs to the class *J132*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Purulanae.

Description of *Candidatus* Purulanae class. nov.

Candidatus Purulanae (NL. fem. n. *c__Purulanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J132.* The type genus for the taxon is *Candidatus* Purulana .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Purularia venucousia sp. nov.

Candidatus Purularia venucousia (NL. fem. n. *venucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B15-G9 sp003645975*. The type genome for the species is the GenBank assembly GCA_003645975.1. The GC content of the type genome is 48.9 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Purularia gen. nov.

Candidatus Purularia (NL. fem. n. *Purularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B15-G9*. The type species for the genus is *Candidatus* Purularia venucousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B15-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Purulariaceae.

Description of *Candidatus* Purulariaceae fam. nov.

Candidatus Purulariaceae (NL. fem. n. *Purulariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B15-G9.* The type genus for the taxon is *Candidatus* Purularia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1063*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homicosales.

Description of *Candidatus* Purulella effigicula sp. nov.

Candidatus Purulella effigicula (NL. fem. n. *effigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0540 sp000466585*. The type genome for the species is the GenBank

assembly RS_GCF_000466585.1. The GC content of the type genome is 32.94 % and the genome length is 4.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oral cavity- mouth".

Description of *Candidatus* Purulella gen. nov.

Candidatus Purulella (NL. fem. n. *Purulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F0540*. The type species for the genus is *Candidatus* Purulella effigicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Purulella saburago sp. nov.

Candidatus Purulella saburago (NL. fem. n. *saburago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F0540 sp900167505*. The type genome for the species is the GenBank assembly RS_GCF_004011155.1. The GC content of the type genome is 27.71 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Purulida desulitica sp. nov.

Candidatus Purulida desulitica (NL. fem. n. *desulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-57-22 sp001798455*. The type genome for the species is the GenBank assembly GCA_001798455.1. The GC content of the type genome is 57.45 % and the genome length is 1.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Purulida gen. nov.

Candidatus Purulida (NL. fem. n. *Purulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-57-22*. The type species for the genus is *Candidatus* Purulida desulitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigosaceae.

Description of *Candidatus* Purulosa decitentia sp. nov.

Candidatus Purulosa decitentia (NL. fem. n. *decitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRGC01 sp009787385*. The type genome for the species is the GenBank assembly GCA_009787335.1. The GC content of the type genome is 32.83 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Purulosa gen. nov.

Candidatus Purulosa (NL. fem. n. *Purulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRGC01*. The type species for the genus is *Candidatus* Purulosa decitentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Purulula benivigena sp. nov.

Candidatus Purulula benivigena (NL. fem. n. *benivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002712045 sp002712045*. The type genome for the species is the GenBank assembly GCA_004213335.1. The GC content of the type genome is 37.77 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Purulula gen. nov.

Candidatus Purulula (NL. fem. n. *Purulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002712045*. The type species for the genus is *Candidatus* Purulula

benivigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Purulula rutabago sp. nov.

Candidatus Purulula rutabago (NL. fem. n. *rutabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002712045 sp002683355*. The type genome for the species is the GenBank assembly GCA_002683355.1. The GC content of the type genome is 37.5 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Pusillimonas ammodicella sp. nov.

Candidatus Pusillimonas ammodicella (NL. fem. n. *ammodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_A sp014237865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014237865.1. The GC content of the type genome is 57.36 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Pusillimonas epitrax sp. nov.

Candidatus Pusillimonas epitrax (NL. fem. n. *epitrax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_A sp011388195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011388195.1. The GC content of the type genome is 53.25 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Pusillimonas latibitio sp. nov.

Candidatus Pusillimonas latibitio (NL. fem. n. *latibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_A sp002384935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002384935.1. The GC content of the type genome is 54.3 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Pusillimonas nugacitudo sp. nov.

Candidatus Pusillimonas nugacitudo (NL. fem. n. *nugacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_A sp002694155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002694155.1. The GC content of the type genome is 47.99 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Pusillimonas solifitas sp. nov.

Candidatus Pusillimonas solifitas (NL. fem. n. *solifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_A sp012744285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012744285.1. The GC content of the type genome is 57.43 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Pusillimonas verecax sp. nov.

Candidatus Pusillimonas verecax (NL. fem. n. *verecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_A sp002236805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003788685.1. The GC content of the type genome is 56.25 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Pusillimonas subofitudo sp. nov.

Candidatus Pusillimonas subofitudo (NL. fem. n. *subofitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_B sp013416395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008369125.1. The GC content of the type genome is 54.85 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Pusillimonas vanitimonas sp. nov.

Candidatus Pusillimonas vanitimonas (NL. fem. n. *vanitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_B sp009857885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009857885.1. The GC content of the type genome is 61.08 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Pusillimonas dicibilenta sp. nov.

Candidatus Pusillimonas dicibilenta (NL. fem. n. *dicibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_C sp004022565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004022565.1. The GC content of the type genome is 59.34 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Pusillimonas inardilega sp. nov.

Candidatus Pusillimonas inardilega (NL. fem. n. *inardilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_C sp000209655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_000209655.1. The GC content of the type genome is 56.91 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Pusillimonas rorulousia sp. nov.

Candidatus Pusillimonas rorulousia (NL. fem. n. *rorulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pusillimonas_C sp013416405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013416405.1. The GC content of the type genome is 56.93 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Pygmaiobacter ecligimonas sp. nov.

Candidatus Pygmaiobacter ecligimonas (NL. fem. n. *ecligimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pygmaiobacter sp014287275*. The type genome for the species is the GenBank assembly RS_GCF_014287275.1. The GC content of the type genome is 61.65 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Pyramidobacter nugacago sp. nov.

Candidatus Pyramidobacter nugacago (NL. fem. n. *nugacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pyramidobacter sp009695745*. The type genome for the species is the GenBank assembly RS_GCF_009695745.1. The GC content of the type genome is 59.65 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Pyramidobacter solipetta sp. nov.

Candidatus Pyramidobacter solipetta (NL. fem. n. *solipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Pyramidobacter sp002007215*. The type genome for the species is the GenBank assembly RS_GCF_002007215.1. The GC content of the type genome is 60.28 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Quadrisphaera alsisimonia sp. nov.

Candidatus Quadrisphaera alsisimonia (NL. fem. n. *alsisimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Quadrisphaera sp900101335*. The type genome for the species is the GenBank assembly RS_GCF_900101335.1. The GC content of the type genome is 76.64 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Quadrisphaera epitritura sp. nov.

Candidatus Quadrisphaera epitritura (NL. fem. n. *epitritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Quadrisphaera sp014270065*. The type genome for the species is the GenBank assembly RS_GCF_014270065.1. The GC content of the type genome is 75.18 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Quadrisphaera lucelilenta sp. nov.

Candidatus Quadrisphaera lucelilenta (NL. fem. n. *lucelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Quadrisphaera sp902806005*. The type genome for the species is the GenBank assembly GCA_902806005.1. The GC content of the type genome is 76.14 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Quadrisphaera sanabitica sp. nov.

Candidatus Quadrisphaera sanabitica (NL. fem. n. *sanabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Quadrisphaera sp006335115*. The type genome for the species is the GenBank assembly RS_GCF_006335115.1. The GC content of the type genome is 74.93 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Quadrisphaera semivivita sp. nov.

Candidatus Quadrisphaera semivivita (NL. fem. n. *semivivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Quadrisphaera sp008041935*. The type genome for the species is the GenBank assembly RS_GCF_008041935.1. The GC content of the type genome is 74.79 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Rahnella adpacatica sp. nov.

Candidatus Rahnella adpacatica (NL. fem. n. *adpacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rahnella sp013457415*. The type genome for the species is the GenBank assembly GCA_013457415.1. The GC content of the type genome is 52.48 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Rahnella egritetta sp. nov.

Candidatus Rahnella egritetta (NL. fem. n. *egritetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rahnella sp002951615*. The type genome for the species is the GenBank assembly RS_GCF_002951615.1. The GC content of the type genome is 52.7 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Rahnella funebibula sp. nov.

Candidatus Rahnella funebibula (NL. fem. n. *funebibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rahnella sp002834385*. The type genome for the species is the GenBank assembly RS_GCF_002834385.1. The GC content of the type genome is 52.34 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Rahnella refocago sp. nov.

Candidatus Rahnella refocago (NL. fem. n. *refocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rahnella sp004195115*. The type genome for the species is the GenBank assembly RS_GCF_004195095.1. The GC content of the type genome is 51.6 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Rahnella refocivita sp. nov.

Candidatus Rahnella refocivita (NL. fem. n. *refocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rahnella sp001422575*. The type genome for the species is the GenBank assembly RS_GCF_004799335.1. The GC content of the type genome is 53.0 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Raineya capudicella sp. nov.

Candidatus Raineya capudicella (NL. fem. n. *capudicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Raineya sp001281695*. The type genome for the species is the GenBank assembly RS_GCF_001281695.1. The GC content of the type genome is 32.62 % and the genome length is 4.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "lake".

Description of *Candidatus* Raineyella inlacessa sp. nov.

Candidatus Raineyella inlacessa (NL. fem. n. *inlacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Raineyella sp009646095*. The type genome for the species is the GenBank assembly RS_GCF_009646095.1. The GC content of the type genome is 69.61 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Ralstonia arcelugo sp. nov.

Candidatus Ralstonia arcelugo (NL. fem. n. *arcelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ralstonia sp002298975*. The type genome for the species is the GenBank assembly GCA_002298975.1. The GC content of the type genome is 64.15 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Ralstonia bicalilega sp. nov.

Candidatus Ralstonia bicalilega (NL. fem. n. *bicalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ralstonia sp007997035*. The type genome for the species is the GenBank assembly RS_GCF_007997035.1. The GC content of the type genome is 64.47 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Ralstonia infinilega sp. nov.

Candidatus Ralstonia infinilega (NL. fem. n. *infinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ralstonia sp000801955*. The type genome for the species is the GenBank assembly RS_GCF_000801955.1. The GC content of the type genome is 63.47 % and the genome length is 6.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil".

Description of *Candidatus* Ralstonia lucerilega sp. nov.

Candidatus Ralstonia lucerilega (NL. fem. n. *lucerilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ralstonia sp001078575*. The type genome for the species is the GenBank assembly RS_GCF_005503115.1. The GC content of the type genome is 63.47 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Ralstonia occalitio sp. nov.

Candidatus Ralstonia occalitio (NL. fem. n. *occalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ralstonia sp000955795*. The type genome for the species is the GenBank assembly RS_GCF_000955795.1. The GC content of the type genome is 63.44 % and the genome length is 5.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Ralstonia paralilenta sp. nov.

Candidatus Ralstonia paralilenta (NL. fem. n. *paralilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ralstonia sp000620465*. The type genome for the species is the GenBank assembly RS_GCF_002849525.1. The GC content of the type genome is 64.43 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Ralstonia parocetta sp. nov.

Candidatus Ralstonia parocetta (NL. fem. n. *parocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ralstonia sp900115545*. The type genome for the species is the GenBank assembly RS_GCF_900115545.1. The GC content of the type genome is 63.77 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Ralstonia scammatica sp. nov.

Candidatus Ralstonia scammatica (NL. fem. n. *scammatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ralstonia sp003851545*. The type genome for the species is the GenBank assembly RS_GCF_003851545.1. The GC content of the type genome is 63.27 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Ramlibacter adpinitio sp. nov.

Candidatus Ramlibacter adpinitio (NL. fem. n. *adpinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp014297445*. The type genome for the species is the GenBank assembly RS_GCF_014297445.1. The GC content of the type genome is 67.87 % and the genome length is 6.15 Mbp.

Description of *Candidatus* Ramlibacter avoncilega sp. nov.

Candidatus Ramlibacter avoncilega (NL. fem. n. *avoncilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp000426125*. The type genome for the species is the GenBank assembly RS_GCF_000426125.1. The GC content of the type genome is 68.03 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Ramlibacter cenobibula sp. nov.

Candidatus Ramlibacter cenobibula (NL. fem. n. *cenobibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp007833165*. The type genome for the species is the GenBank assembly RS_GCF_007833165.1. The GC content of the type genome is 67.56 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Ramlibacter ceromimonas sp. nov.

Candidatus Ramlibacter ceromimonas (NL. fem. n. *ceromimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp013778345*. The type genome for the species is the GenBank assembly RS_GCF_013778345.1. The GC content of the type genome is 70.28 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Ramlibacter cunabibra sp. nov.

Candidatus Ramlibacter cunabibra (NL. fem. n. *cunabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp013155545*. The type genome for the species is the GenBank assembly RS_GCF_013155545.1. The GC content of the type genome is 65.1 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Ramlibacter desacastra sp. nov.

Candidatus Ramlibacter desacastra (NL. fem. n. *desacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp001044395*. The type genome for the species is the GenBank assembly RS_GCF_001044395.1. The GC content of the type genome is 63.39

% and the genome length is 4.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water of freshwater Swan Lake".

Description of *Candidatus* Ramlibacter dilecastra sp. nov.

Candidatus Ramlibacter dilecastra (NL. fem. n. *dilecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp012927085*. The type genome for the species is the GenBank assembly RS_GCF_012927085.1. The GC content of the type genome is 68.87 % and the genome length is 7.2 Mbp.

Description of *Candidatus* Ramlibacter dimadigena sp. nov.

Candidatus Ramlibacter dimadigena (NL. fem. n. *dimadigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp012274225*. The type genome for the species is the GenBank assembly GCA_012274225.1. The GC content of the type genome is 66.45 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Ramlibacter eccilentia sp. nov.

Candidatus Ramlibacter eccilentia (NL. fem. n. *eccilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp013087525*. The type genome for the species is the GenBank assembly RS_GCF_013087525.1. The GC content of the type genome is 69.34 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Ramlibacter excinentia sp. nov.

Candidatus Ramlibacter excinentia (NL. fem. n. *excinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp004681975*. The type genome for the species is the GenBank assembly RS_GCF_004681975.1. The GC content of the type genome is 68.9 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Ramlibacter fetifentia sp. nov.

Candidatus Ramlibacter fetifentia (NL. fem. n. *fetifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp004028785*. The type genome for the species is the GenBank assembly GCA_004028785.1. The GC content of the type genome is 70.57 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Ramlibacter gerunastra sp. nov.

Candidatus Ramlibacter gerunastra (NL. fem. n. *gerunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp014376915*. The type genome for the species is the GenBank assembly GCA_014376915.1. The GC content of the type genome is 66.93 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Ramlibacter inergimonas sp. nov.

Candidatus Ramlibacter inergimonas (NL. fem. n. *inergimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp013815685*. The type genome for the species is the GenBank assembly GCA_013815685.1. The GC content of the type genome is 65.16 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Ramlibacter invetimonia sp. nov.

Candidatus Ramlibacter invetimonia (NL. fem. n. *invetimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp004144865*. The type genome for the species is the GenBank assembly GCA_004144865.1. The GC content of the type genome is 69.49 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Ramlibacter nugigilenta sp. nov.

Candidatus Ramlibacter nugigilenta (NL. fem. n. *nugigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp001424545*. The type genome for the species is the GenBank assembly RS_GCF_001424545.1. The GC content of the type genome is 69.93 % and the genome length is 4.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Ramlibacter obtemimonia sp. nov.

Candidatus Ramlibacter obtemimonia (NL. fem. n. *obtemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp013697775*. The type genome for the species is the GenBank assembly GCA_013697775.1. The GC content of the type genome is 68.64 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Ramlibacter resalivita sp. nov.

Candidatus Ramlibacter resalivita (NL. fem. n. *resalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp003797765*. The type genome for the species is the GenBank assembly RS_GCF_003797765.1. The GC content of the type genome is 65.37 % and the genome length is 6.98 Mbp.

Description of *Candidatus* Ramlibacter tabifugo sp. nov.

Candidatus Ramlibacter tabifugo (NL. fem. n. *tabifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp014297465*. The type genome for the species is the GenBank assembly RS_GCF_014297465.1. The GC content of the type genome is 69.74 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Ramlibacter velifatio sp. nov.

Candidatus Ramlibacter velifatio (NL. fem. n. *velifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ramlibacter sp013127575*. The type genome for the species is the

GenBank assembly GCA_013127575.1. The GC content of the type genome is 69.39 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Ranunana vehemilega sp. nov.

Candidatus Ranunana vehemilega (NL. fem. n. *vehemilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-20-49-13 sp002796305*. The type genome for the species is the GenBank assembly GCA_002796305.1. The GC content of the type genome is 48.77 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Ranunana gen. nov.

Candidatus Ranunana (NL. fem. n. *Ranunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-20-49-13*. The type species for the genus is *Candidatus* Ranunana vehemilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-20-49-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ranunanaceae.

Description of *Candidatus* Ranunanaceae fam. nov.

Candidatus Ranunanaceae (NL. fem. n. *Ranunanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-20-49-13.* The type genus for the taxon is *Candidatus* Ranunana .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-002796325*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Taraxanales.

Description of *Candidatus* Ranunaria secunago sp. nov.

Candidatus Ranunaria secunago (NL. fem. n. *secunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1052 sp900548115*. The type genome for the species is the

GenBank assembly GCA_900548115.1. The GC content of the type genome is 52.11 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Ranunaria gen. nov.

Candidatus Ranunaria (NL. fem. n. *Ranunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1052*. The type species for the genus is *Candidatus* Ranunaria secunago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Ranunella domipentia sp. nov.

Candidatus Ranunella domipentia (NL. fem. n. *domipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11398 sp009699465*. The type genome for the species is the GenBank assembly GCA_009702825.1. The GC content of the type genome is 53.28 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Ranunella gen. nov.

Candidatus Ranunella (NL. fem. n. *Ranunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11398*. The type species for the genus is *Candidatus* Ranunella domipentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Ranunella infatitoga sp. nov.

Candidatus Ranunella infatitoga (NL. fem. n. *infatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA11398 sp003506065*. The type genome for the species is the GenBank assembly GCA_003506065.1. The GC content of the type genome is 60.8 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Ranunella munimiforma sp. nov.

Candidatus Ranunella munimiforma (NL. fem. n. *munimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11398 sp009699705*. The type genome for the species is the GenBank assembly GCA_009706035.1. The GC content of the type genome is 53.59 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Ranunia inpelitica sp. nov.

Candidatus Ranunia inpelitica (NL. fem. n. *inpelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-500 sp003252195*. The type genome for the species is the GenBank assembly GCA_003252195.1. The GC content of the type genome is 36.13 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Ranunia gen. nov.

Candidatus Ranunia (NL. fem. n. *Ranunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-500*. The type species for the genus is *Candidatus* Ranunia inpelitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ranuniaceae.

Description of *Candidatus* Ranuniaceae fam. nov.

Candidatus Ranuniaceae (NL. fem. n. *Ranuniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-500.* The type genus for the taxon is *Candidatus* Ranunia .

According to the original version of GTDB R06-RS202, this family belongs to the order

RF32. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resaculales.

Description of *Candidatus* Ranunida habacitoga sp. nov.

Candidatus Ranunida habacitoga (NL. fem. n. *habacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12108 sp001002415*. The type genome for the species is the GenBank assembly GCA_001000465.1. The GC content of the type genome is 46.46 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Ranunida gen. nov.

Candidatus Ranunida (NL. fem. n. *Ranunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12108*. The type species for the genus is *Candidatus* Ranunida habacitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12108*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ranunidaceae.

Description of *Candidatus* Ranunidaceae fam. nov.

Candidatus Ranunidaceae (NL. fem. n. *Ranunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12108.* The type genus for the taxon is *Candidatus* Ranunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Ranunosa cituvago sp. nov.

Candidatus Ranunosa cituvago (NL. fem. n. *cituvago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFNS01 sp009927055*. The type genome for the species is the GenBank assembly GCA_009927055.1. The GC content of the type genome is 51.85 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Ranunosa gen. nov.

Candidatus Ranunosa (NL. fem. n. *Ranunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFNS01*. The type species for the genus is *Candidatus* Ranunosa cituvago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RFNS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ranunosaceae.

Description of *Candidatus* Ranunosaceae fam. nov.

Candidatus Ranunosaceae (NL. fem. n. *Ranunosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RFNS01*. The type genus for the taxon is *Candidatus* Ranunosa .

According to GTDB R06-RS202, this family belongs to the order *Micavibrionales_A*.

Description of *Candidatus* Ranunula lameticula sp. nov.

Candidatus Ranunula lameticula (NL. fem. n. *lameticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-287 sp003251275*. The type genome for the species is the GenBank assembly GCA_003251275.1. The GC content of the type genome is 50.54 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Ranunula gen. nov.

Candidatus Ranunula (NL. fem. n. *Ranunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-287*. The type species for the genus is *Candidatus* Ranunula lameticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6906*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibellaceae.

Description of *Candidatus* Raoultella bigarago sp. nov.

Candidatus Raoultella bigarago (NL. fem. n. *bigarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Raoultella sp003752615*. The type genome for the species is the GenBank assembly RS_GCF_003752615.1. The GC content of the type genome is 56.02 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Raoultella desulisca sp. nov.

Candidatus Raoultella desulisca (NL. fem. n. *desulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Raoultella sp004342285*. The type genome for the species is the GenBank assembly RS_GCF_004342285.1. The GC content of the type genome is 56.57 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Raoultella fetulitia sp. nov.

Candidatus Raoultella fetulitia (NL. fem. n. *fetulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Raoultella sp002270295*. The type genome for the species is the GenBank assembly RS_GCF_009758445.1. The GC content of the type genome is 56.72 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Raoultella inlibibra sp. nov.

Candidatus Raoultella inlibibra (NL. fem. n. *inlibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Raoultella sp900759445*. The type genome for the species is the GenBank assembly GCA_900759445.1. The GC content of the type genome is 53.9 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Raoultibacter algebitia sp. nov.

Candidatus Raoultibacter algebitia (NL. fem. n. *algebitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Raoultibacter sp009782605*. The type genome for the species is the GenBank assembly GCA_009782605.1. The GC content of the type genome is 61.76 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Raoultibacter argumitas sp. nov.

Candidatus Raoultibacter argumitas (NL. fem. n. *argumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Raoultibacter sp901411515*. The type genome for the species is the GenBank assembly RS_GCF_901411515.1. The GC content of the type genome is 59.37 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Raoultibacter chalbiforma sp. nov.

Candidatus Raoultibacter chalbiforma (NL. fem. n. *chalbiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Raoultibacter sp009782615*. The type genome for the species is the GenBank assembly GCA_009782615.1. The GC content of the type genome is 49.71 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Rarefana absurimonia sp. nov.

Candidatus Rarefana absurimonia (NL. fem. n. *absurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA985 sp009937455*. The type genome for the species is the GenBank assembly GCA_009937455.1. The GC content of the type genome is 50.61 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Rarefana gen. nov.

Candidatus Rarefana (NL. fem. n. *Rarefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA985*. The type species for the genus is *Candidatus* Rarefana absurimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rarefana negotetta sp. nov.

Candidatus Rarefana negotetta (NL. fem. n. *negotetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA985 sp013041925*. The type genome for the species is the GenBank assembly GCA_013041925.1. The GC content of the type genome is 53.47 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Rarefana nehalatica sp. nov.

Candidatus Rarefana nehalatica (NL. fem. n. *nehalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA985 sp003527555*. The type genome for the species is the GenBank assembly GCA_003526985.1. The GC content of the type genome is 48.35 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Rarefana rorulentia sp. nov.

Candidatus Rarefana rorulentia (NL. fem. n. *rorulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA985 sp002292185*. The type genome for the species is the GenBank assembly GCA_002292185.1. The GC content of the type genome is 50.37 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Rarefana subacitia sp. nov.

Candidatus Rarefana subacitia (NL. fem. n. *subacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA985 sp013391475*. The type genome for the species is the GenBank assembly RS_GCF_013391475.1. The GC content of the type genome is 51.96 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Rarefella abambugo sp. nov.

Candidatus Rarefella abambugo (NL. fem. n. *abambugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902585605*. The type genome for the species is the GenBank assembly GCA_902585605.1. The GC content of the type genome is 29.02 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Rarefella gen. nov.

Candidatus Rarefella (NL. fem. n. *Rarefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-337-I02*. The type species for the genus is *Candidatus* Rarefella abambugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002718135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defululaceae.

Description of *Candidatus* Rarefella abrumugo sp. nov.

Candidatus Rarefella abrumugo (NL. fem. n. *abrumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902625365*. The type genome for the species is the GenBank assembly GCA_902625365.1. The GC content of the type genome is 29.2 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Rarefella aclasibra sp. nov.

Candidatus Rarefella aclasibra (NL. fem. n. *aclasibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp002718135*. The type genome for the species is the

GenBank assembly GCA_002718135.1. The GC content of the type genome is 33.32 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Rarefella adcelicula sp. nov.

Candidatus Rarefella adcelicula (NL. fem. n. *adcelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902517315*. The type genome for the species is the GenBank assembly GCA_902517315.1. The GC content of the type genome is 29.33 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Rarefella addivitudo sp. nov.

Candidatus Rarefella addivitudo (NL. fem. n. *addivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902597795*. The type genome for the species is the GenBank assembly GCA_902597795.1. The GC content of the type genome is 28.13 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Rarefella adlicitoga sp. nov.

Candidatus Rarefella adlicitoga (NL. fem. n. *adlicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902553945*. The type genome for the species is the GenBank assembly GCA_902553945.1. The GC content of the type genome is 27.59 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Rarefella adnunigena sp. nov.

Candidatus Rarefella adnunigena (NL. fem. n. *adnunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902630465*. The type genome for the species is the GenBank assembly GCA_902630465.1. The GC content of the type genome is 29.01 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Rarefella adperibula sp. nov.

Candidatus Rarefella adperibula (NL. fem. n. *adperibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902597015*. The type genome for the species is the GenBank assembly GCA_902597015.1. The GC content of the type genome is 28.99 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Rarefella adsocimonas sp. nov.

Candidatus Rarefella adsocimonas (NL. fem. n. *adsocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902512325*. The type genome for the species is the GenBank assembly GCA_902512325.1. The GC content of the type genome is 29.43 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Rarefella ampenitas sp. nov.

Candidatus Rarefella ampenitas (NL. fem. n. *ampenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902560725*. The type genome for the species is the GenBank assembly GCA_902560725.1. The GC content of the type genome is 28.14 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Rarefella apsegitura sp. nov.

Candidatus Rarefella apsegitura (NL. fem. n. *apsegitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902577945*. The type genome for the species is the GenBank assembly GCA_902577945.1. The GC content of the type genome is 28.62 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Rarefella arnacatica sp. nov.

Candidatus Rarefella arnacatica (NL. fem. n. *arnacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902522865*. The type genome for the species is the GenBank assembly GCA_902522865.1. The GC content of the type genome is 29.11 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Rarefella arnaciforma sp. nov.

Candidatus Rarefella arnaciforma (NL. fem. n. *arnaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902616545*. The type genome for the species is the GenBank assembly GCA_902616545.1. The GC content of the type genome is 29.32 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Rarefella artificula sp. nov.

Candidatus Rarefella artificula (NL. fem. n. *artificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902602845*. The type genome for the species is the GenBank assembly GCA_902602845.1. The GC content of the type genome is 29.12 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Rarefella attemetta sp. nov.

Candidatus Rarefella attemetta (NL. fem. n. *attemetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902589095*. The type genome for the species is the GenBank assembly GCA_902589095.1. The GC content of the type genome is 30.57 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Rarefella avuncitrix sp. nov.

Candidatus Rarefella avuncitrix (NL. fem. n. *avuncitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902614395*. The type genome for the species is the GenBank assembly GCA_902614395.1. The GC content of the type genome is 28.8 %

and the genome length is 1.35 Mbp.

Description of *Candidatus* Rarefella benevitura sp. nov.

Candidatus Rarefella benevitura (NL. fem. n. *benevitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902621165*. The type genome for the species is the GenBank assembly GCA_902621165.1. The GC content of the type genome is 29.0 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Rarefella benivilenta sp. nov.

Candidatus Rarefella benivilenta (NL. fem. n. *benivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902554185*. The type genome for the species is the GenBank assembly GCA_902560675.1. The GC content of the type genome is 28.49 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Rarefella bicinigena sp. nov.

Candidatus Rarefella bicinigena (NL. fem. n. *bicinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902577905*. The type genome for the species is the GenBank assembly GCA_902577905.1. The GC content of the type genome is 28.81 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Rarefella bicubedo sp. nov.

Candidatus Rarefella bicubedo (NL. fem. n. *bicubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902570155*. The type genome for the species is the GenBank assembly GCA_902576955.1. The GC content of the type genome is 28.64 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Rarefella bimetifica sp. nov.

Candidatus Rarefella bimetifica (NL. fem. n. *bimetifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902602885*. The type genome for the species is the GenBank assembly GCA_902602885.1. The GC content of the type genome is 28.96 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Rarefella bipalousia sp. nov.

Candidatus Rarefella bipalousia (NL. fem. n. *bipalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902614375*. The type genome for the species is the GenBank assembly GCA_902614375.1. The GC content of the type genome is 29.19 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Rarefella bipenugo sp. nov.

Candidatus Rarefella bipenugo (NL. fem. n. *bipenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902591485*. The type genome for the species is the GenBank assembly GCA_902556365.1. The GC content of the type genome is 30.66 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Rarefella biveredo sp. nov.

Candidatus Rarefella biveredo (NL. fem. n. *biveredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp014653715*. The type genome for the species is the GenBank assembly GCA_014653715.1. The GC content of the type genome is 29.68 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Rarefella buxifousia sp. nov.

Candidatus Rarefella buxifousia (NL. fem. n. *buxifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902571865*. The type genome for the species is the GenBank assembly GCA_902571865.1. The GC content of the type genome is 28.96 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Rarefella cadavibula sp. nov.

Candidatus Rarefella cadavibula (NL. fem. n. *cadavibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902616075*. The type genome for the species is the GenBank assembly GCA_902616075.1. The GC content of the type genome is 28.64 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Rarefella capucax sp. nov.

Candidatus Rarefella capucax (NL. fem. n. *capucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902519435*. The type genome for the species is the GenBank assembly GCA_902519435.1. The GC content of the type genome is 29.04 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Rarefella caravisca sp. nov.

Candidatus Rarefella caravisca (NL. fem. n. *caravisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902521325*. The type genome for the species is the GenBank assembly GCA_902521325.1. The GC content of the type genome is 29.31 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Rarefella caselessa sp. nov.

Candidatus Rarefella caselessa (NL. fem. n. *caselessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902623585*. The type genome for the species is the GenBank assembly GCA_902623585.1. The GC content of the type genome is 29.05 %

and the genome length is 1.11 Mbp.

Description of *Candidatus* Rarefella catocicula sp. nov.

Candidatus Rarefella catocicula (NL. fem. n. *catocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902522015*. The type genome for the species is the GenBank assembly GCA_902522015.1. The GC content of the type genome is 29.35 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Rarefella cenobitoga sp. nov.

Candidatus Rarefella cenobitoga (NL. fem. n. *cenobitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902595855*. The type genome for the species is the GenBank assembly GCA_902595855.1. The GC content of the type genome is 30.05 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Rarefella cerofitia sp. nov.

Candidatus Rarefella cerofitia (NL. fem. n. *cerofitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902622475*. The type genome for the species is the GenBank assembly GCA_902622475.1. The GC content of the type genome is 29.33 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Rarefella cibarago sp. nov.

Candidatus Rarefella cibarago (NL. fem. n. *cibarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902521315*. The type genome for the species is the GenBank assembly GCA_902521315.1. The GC content of the type genome is 28.88 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Rarefella cimelatica sp. nov.

Candidatus Rarefella cimelatica (NL. fem. n. *cimelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902620425*. The type genome for the species is the GenBank assembly GCA_902618385.1. The GC content of the type genome is 29.37 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Rarefella cimiticella sp. nov.

Candidatus Rarefella cimiticella (NL. fem. n. *cimiticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902524385*. The type genome for the species is the GenBank assembly GCA_902524385.1. The GC content of the type genome is 28.72 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Rarefella citivisca sp. nov.

Candidatus Rarefella citivisca (NL. fem. n. *citivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902538155*. The type genome for the species is the GenBank assembly GCA_902538155.1. The GC content of the type genome is 29.03 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Rarefella colapetta sp. nov.

Candidatus Rarefella colapetta (NL. fem. n. *colapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902620285*. The type genome for the species is the GenBank assembly GCA_902620285.1. The GC content of the type genome is 28.92 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Rarefella cotenicella sp. nov.

Candidatus Rarefella cotenicella (NL. fem. n. *cotenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902575815*. The type genome for the species is the GenBank assembly GCA_902575815.1. The GC content of the type genome is 29.79 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Rarefella cotenitas sp. nov.

Candidatus Rarefella cotenitas (NL. fem. n. *cotenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902619055*. The type genome for the species is the GenBank assembly GCA_902619055.1. The GC content of the type genome is 29.12 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Rarefella coturifica sp. nov.

Candidatus Rarefella coturifica (NL. fem. n. *coturifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902602135*. The type genome for the species is the GenBank assembly GCA_902602135.1. The GC content of the type genome is 29.42 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Rarefella debucitrix sp. nov.

Candidatus Rarefella debucitrix (NL. fem. n. *debucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902572735*. The type genome for the species is the GenBank assembly GCA_902572735.1. The GC content of the type genome is 28.63 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Rarefella defaritas sp. nov.

Candidatus Rarefella defaritas (NL. fem. n. *defaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902580765*. The type genome for the species is the GenBank assembly GCA_902580765.1. The GC content of the type genome is 29.36 %

and the genome length is 1.12 Mbp.

Description of *Candidatus* Rarefella defenibra sp. nov.

Candidatus Rarefella defenibra (NL. fem. n. *defenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902621725*. The type genome for the species is the GenBank assembly GCA_902621725.1. The GC content of the type genome is 28.9 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Rarefella demigitia sp. nov.

Candidatus Rarefella demigitia (NL. fem. n. *demigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902577865*. The type genome for the species is the GenBank assembly GCA_902577865.1. The GC content of the type genome is 29.17 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Rarefella demogedo sp. nov.

Candidatus Rarefella demogedo (NL. fem. n. *demogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902562275*. The type genome for the species is the GenBank assembly GCA_902562275.1. The GC content of the type genome is 29.31 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Rarefella denoricula sp. nov.

Candidatus Rarefella denoricula (NL. fem. n. *denoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902623255*. The type genome for the species is the GenBank assembly GCA_902623255.1. The GC content of the type genome is 28.77 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Rarefella detepentia sp. nov.

Candidatus Rarefella detepentia (NL. fem. n. *detepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902615745*. The type genome for the species is the GenBank assembly GCA_902532995.1. The GC content of the type genome is 28.65 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Rarefella duponilega sp. nov.

Candidatus Rarefella duponilega (NL. fem. n. *duponilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902593125*. The type genome for the species is the GenBank assembly GCA_902559055.1. The GC content of the type genome is 28.64 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Rarefella ectenatica sp. nov.

Candidatus Rarefella ectenatica (NL. fem. n. *ectenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902539825*. The type genome for the species is the GenBank assembly GCA_902539825.1. The GC content of the type genome is 29.17 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Rarefella enuntitia sp. nov.

Candidatus Rarefella enuntitia (NL. fem. n. *enuntitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902604905*. The type genome for the species is the GenBank assembly GCA_902604905.1. The GC content of the type genome is 29.33 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Rarefella episciforma sp. nov.

Candidatus Rarefella episciforma (NL. fem. n. *episciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902590695*. The type genome for the species is the GenBank assembly GCA_902590695.1. The GC content of the type genome is 29.56 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Rarefella estovicella sp. nov.

Candidatus Rarefella estovicella (NL. fem. n. *estovicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902512415*. The type genome for the species is the GenBank assembly GCA_902512415.1. The GC content of the type genome is 29.78 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Rarefella exentimonas sp. nov.

Candidatus Rarefella exentimonas (NL. fem. n. *exentimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902600225*. The type genome for the species is the GenBank assembly GCA_902600225.1. The GC content of the type genome is 28.79 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Rarefella exsolivita sp. nov.

Candidatus Rarefella exsolivita (NL. fem. n. *exsolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902628645*. The type genome for the species is the GenBank assembly GCA_902628645.1. The GC content of the type genome is 29.31 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Rarefella exsupitrix sp. nov.

Candidatus Rarefella exsupitrix (NL. fem. n. *exsupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902541215*. The type genome for the species is the GenBank assembly GCA_902541215.1. The GC content of the type genome is 28.88 %

and the genome length is 1.32 Mbp.

Description of *Candidatus* Rarefella fatiliforma sp. nov.

Candidatus Rarefella fatiliforma (NL. fem. n. *fatiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902595425*. The type genome for the species is the GenBank assembly GCA_902595425.1. The GC content of the type genome is 30.0 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Rarefella fetulimonas sp. nov.

Candidatus Rarefella fetulimonas (NL. fem. n. *fetulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902525035*. The type genome for the species is the GenBank assembly GCA_902525035.1. The GC content of the type genome is 28.82 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Rarefella filifilega sp. nov.

Candidatus Rarefella filifilega (NL. fem. n. *filifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902613275*. The type genome for the species is the GenBank assembly GCA_902613275.1. The GC content of the type genome is 29.13 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Rarefella futatentia sp. nov.

Candidatus Rarefella futatentia (NL. fem. n. *futatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902569865*. The type genome for the species is the GenBank assembly GCA_902570355.1. The GC content of the type genome is 29.31 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Rarefella hexagousia sp. nov.

Candidatus Rarefella hexagousia (NL. fem. n. *hexagousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902518705*. The type genome for the species is the GenBank assembly GCA_902590495.1. The GC content of the type genome is 29.3 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Rarefella holovitia sp. nov.

Candidatus Rarefella holovitia (NL. fem. n. *holovitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902602515*. The type genome for the species is the GenBank assembly GCA_902592095.1. The GC content of the type genome is 29.07 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Rarefella inculicula sp. nov.

Candidatus Rarefella inculicula (NL. fem. n. *inculicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902610845*. The type genome for the species is the GenBank assembly GCA_902610845.1. The GC content of the type genome is 28.71 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Rarefella indiritoga sp. nov.

Candidatus Rarefella indiritoga (NL. fem. n. *indiritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902605135*. The type genome for the species is the GenBank assembly GCA_902605135.1. The GC content of the type genome is 29.18 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Rarefella indubitudo sp. nov.

Candidatus Rarefella indubitudo (NL. fem. n. *indubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902530685*. The type genome for the species is the GenBank assembly GCA_902530685.1. The GC content of the type genome is 29.21 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Rarefella infinatio sp. nov.

Candidatus Rarefella infinatio (NL. fem. n. *infinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902596365*. The type genome for the species is the GenBank assembly GCA_902596365.1. The GC content of the type genome is 29.1 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Rarefella inhoniforma sp. nov.

Candidatus Rarefella inhoniforma (NL. fem. n. *inhoniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902518985*. The type genome for the species is the GenBank assembly GCA_902518985.1. The GC content of the type genome is 29.14 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Rarefella inlocago sp. nov.

Candidatus Rarefella inlocago (NL. fem. n. *inlocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902594815*. The type genome for the species is the GenBank assembly GCA_902594815.1. The GC content of the type genome is 30.75 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Rarefella inmutivita sp. nov.

Candidatus Rarefella inmutivita (NL. fem. n. *inmutivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902615845*. The type genome for the species is the GenBank assembly GCA_902615845.1. The GC content of the type genome is 28.86 %

and the genome length is 1.35 Mbp.

Description of *Candidatus* Rarefella inobsago sp. nov.

Candidatus Rarefella inobsago (NL. fem. n. *inobsago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902587565*. The type genome for the species is the GenBank assembly GCA_902587565.1. The GC content of the type genome is 29.49 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Rarefella inreditura sp. nov.

Candidatus Rarefella inreditura (NL. fem. n. *inreditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902543005*. The type genome for the species is the GenBank assembly GCA_902543005.1. The GC content of the type genome is 28.92 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Rarefella insufigena sp. nov.

Candidatus Rarefella insufigena (NL. fem. n. *insufigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902628835*. The type genome for the species is the GenBank assembly GCA_902628835.1. The GC content of the type genome is 28.97 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Rarefella intolifica sp. nov.

Candidatus Rarefella intolifica (NL. fem. n. *intolifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902573325*. The type genome for the species is the GenBank assembly GCA_902573325.1. The GC content of the type genome is 28.87 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Rarefella inurbitica sp. nov.

Candidatus Rarefella inurbitica (NL. fem. n. *inurbitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902588745*. The type genome for the species is the GenBank assembly GCA_902588745.1. The GC content of the type genome is 28.92 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Rarefella invesisca sp. nov.

Candidatus Rarefella invesisca (NL. fem. n. *invesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902586695*. The type genome for the species is the GenBank assembly GCA_902586695.1. The GC content of the type genome is 28.32 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Rarefella loraratica sp. nov.

Candidatus Rarefella loraratica (NL. fem. n. *loraratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902535885*. The type genome for the species is the GenBank assembly GCA_902535885.1. The GC content of the type genome is 29.24 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Rarefella mahelitura sp. nov.

Candidatus Rarefella mahelitura (NL. fem. n. *mahelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902627245*. The type genome for the species is the GenBank assembly GCA_902627245.1. The GC content of the type genome is 29.19 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Rarefella maligibra sp. nov.

Candidatus Rarefella maligibra (NL. fem. n. *maligibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902576125*. The type genome for the species is the GenBank assembly GCA_902576125.1. The GC content of the type genome is 29.4 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Rarefella malivigena sp. nov.

Candidatus Rarefella malivigena (NL. fem. n. *malivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902601455*. The type genome for the species is the GenBank assembly GCA_902601455.1. The GC content of the type genome is 29.68 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Rarefella maxilentia sp. nov.

Candidatus Rarefella maxilentia (NL. fem. n. *maxilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902623545*. The type genome for the species is the GenBank assembly GCA_902532825.1. The GC content of the type genome is 29.06 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Rarefella maxilousia sp. nov.

Candidatus Rarefella maxilousia (NL. fem. n. *maxilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902614085*. The type genome for the species is the GenBank assembly GCA_902614085.1. The GC content of the type genome is 28.89 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Rarefella megalago sp. nov.

Candidatus Rarefella megalago (NL. fem. n. *megalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902595805*. The type genome for the species is the GenBank assembly GCA_902595805.1. The GC content of the type genome is 28.98 %

and the genome length is 1.31 Mbp.

Description of *Candidatus* Rarefella milipitrix sp. nov.

Candidatus Rarefella milipitrix (NL. fem. n. *milipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902621855*. The type genome for the species is the GenBank assembly GCA_902621855.1. The GC content of the type genome is 28.76 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Rarefella modifitudo sp. nov.

Candidatus Rarefella modifitudo (NL. fem. n. *modifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902612805*. The type genome for the species is the GenBank assembly GCA_902612805.1. The GC content of the type genome is 29.08 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Rarefella monogicula sp. nov.

Candidatus Rarefella monogicula (NL. fem. n. *monogicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902582755*. The type genome for the species is the GenBank assembly GCA_902582755.1. The GC content of the type genome is 29.0 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Rarefella novilitia sp. nov.

Candidatus Rarefella novilitia (NL. fem. n. *novilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902575375*. The type genome for the species is the GenBank assembly GCA_902575375.1. The GC content of the type genome is 29.1 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Rarefella nubifibula sp. nov.

Candidatus Rarefella nubifibula (NL. fem. n. *nubifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902540265*. The type genome for the species is the GenBank assembly GCA_902540265.1. The GC content of the type genome is 29.22 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Rarefella nucifigena sp. nov.

Candidatus Rarefella nucifigena (NL. fem. n. *nucifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902537325*. The type genome for the species is the GenBank assembly GCA_902537325.1. The GC content of the type genome is 29.05 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Rarefella panopugo sp. nov.

Candidatus Rarefella panopugo (NL. fem. n. *panopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902603095*. The type genome for the species is the GenBank assembly GCA_902603095.1. The GC content of the type genome is 28.55 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Rarefella papavimonas sp. nov.

Candidatus Rarefella papavimonas (NL. fem. n. *papavimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902619045*. The type genome for the species is the GenBank assembly GCA_902619045.1. The GC content of the type genome is 29.23 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Rarefella periditrix sp. nov.

Candidatus Rarefella periditrix (NL. fem. n. *periditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902592345*. The type genome for the species is the GenBank assembly GCA_902592345.1. The GC content of the type genome is 29.42 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Rarefella pinifatica sp. nov.

Candidatus Rarefella pinifatica (NL. fem. n. *pinifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp002938205*. The type genome for the species is the GenBank assembly GCA_002938205.1. The GC content of the type genome is 28.33 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Rarefella refocibula sp. nov.

Candidatus Rarefella refocibula (NL. fem. n. *refocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp003215235*. The type genome for the species is the GenBank assembly GCA_902564835.1. The GC content of the type genome is 28.87 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Rarefella remededo sp. nov.

Candidatus Rarefella remededo (NL. fem. n. *remededo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp003282155*. The type genome for the species is the GenBank assembly GCA_003282155.1. The GC content of the type genome is 29.02 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Rarefella renavicella sp. nov.

Candidatus Rarefella renavicella (NL. fem. n. *renavicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902615625*. The type genome for the species is the GenBank assembly GCA_902615625.1. The GC content of the type genome is 28.51 %

and the genome length is 1.31 Mbp.

Description of *Candidatus* Rarefella rosacibula sp. nov.

Candidatus Rarefella rosacibula (NL. fem. n. *rosacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902561355*. The type genome for the species is the GenBank assembly GCA_902561355.1. The GC content of the type genome is 27.95 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Rarefella rubefibra sp. nov.

Candidatus Rarefella rubefibra (NL. fem. n. *rubefibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902541435*. The type genome for the species is the GenBank assembly GCA_902541435.1. The GC content of the type genome is 28.79 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Rarefella rubigicella sp. nov.

Candidatus Rarefella rubigicella (NL. fem. n. *rubigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902553005*. The type genome for the species is the GenBank assembly GCA_902553005.1. The GC content of the type genome is 29.52 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Rarefella salubibula sp. nov.

Candidatus Rarefella salubibula (NL. fem. n. *salubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902602695*. The type genome for the species is the GenBank assembly GCA_902602695.1. The GC content of the type genome is 29.3 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Rarefella selibiforma sp. nov.

Candidatus Rarefella selibiforma (NL. fem. n. *selibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902612825*. The type genome for the species is the GenBank assembly GCA_902612825.1. The GC content of the type genome is 28.82 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Rarefella solacitio sp. nov.

Candidatus Rarefella solacitio (NL. fem. n. *solacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902515745*. The type genome for the species is the GenBank assembly GCA_902515745.1. The GC content of the type genome is 28.81 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Rarefella solacousia sp. nov.

Candidatus Rarefella solacousia (NL. fem. n. *solacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902618015*. The type genome for the species is the GenBank assembly GCA_902618015.1. The GC content of the type genome is 29.05 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Rarefella solifentia sp. nov.

Candidatus Rarefella solifentia (NL. fem. n. *solifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902574475*. The type genome for the species is the GenBank assembly GCA_902574475.1. The GC content of the type genome is 28.98 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Rarefella solivax sp. nov.

Candidatus Rarefella solivax (NL. fem. n. *solivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902511405*. The type genome for the species is the GenBank assembly GCA_902511405.1. The GC content of the type genome is 29.6 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Rarefella subabedo sp. nov.

Candidatus Rarefella subabedo (NL. fem. n. *subabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902584805*. The type genome for the species is the GenBank assembly GCA_902568185.1. The GC content of the type genome is 28.89 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Rarefella tirocetta sp. nov.

Candidatus Rarefella tirocetta (NL. fem. n. *tirocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902621305*. The type genome for the species is the GenBank assembly GCA_902621305.1. The GC content of the type genome is 29.03 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Rarefella urbicicula sp. nov.

Candidatus Rarefella urbicicula (NL. fem. n. *urbicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902514875*. The type genome for the species is the GenBank assembly GCA_902514875.1. The GC content of the type genome is 29.39 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Rarefella venunitio sp. nov.

Candidatus Rarefella venunitio (NL. fem. n. *venunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902567135*. The type genome for the species is the GenBank assembly GCA_902567135.1. The GC content of the type genome is 29.37 %

and the genome length is 1.19 Mbp.

Description of *Candidatus* Rarefella vinulentia sp. nov.

Candidatus Rarefella vinulentia (NL. fem. n. *vinulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-337-I02 sp902518895*. The type genome for the species is the GenBank assembly GCA_902518895.1. The GC content of the type genome is 29.1 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Rarefida categousia sp. nov.

Candidatus Rarefida categousia (NL. fem. n. *categousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3012 sp009701305*. The type genome for the species is the GenBank assembly GCA_009701305.1. The GC content of the type genome is 43.43 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Rarefida gen. nov.

Candidatus Rarefida (NL. fem. n. *Rarefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3012*. The type species for the genus is *Candidatus* Rarefida categousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rarefida exadvitio sp. nov.

Candidatus Rarefida exadvitio (NL. fem. n. *exadvitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3012 sp014190175*. The type genome for the species is the GenBank assembly GCA_014190175.1. The GC content of the type genome is 43.63 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Rarefida exaspitia sp. nov.

Candidatus Rarefida exaspitia (NL. fem. n. *exaspitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3012 sp009694285*. The type genome for the species is the GenBank assembly GCA_009694285.1. The GC content of the type genome is 43.6 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Rarefida galacisca sp. nov.

Candidatus Rarefida galacisca (NL. fem. n. *galacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3012 sp010031635*. The type genome for the species is the GenBank assembly GCA_010031635.1. The GC content of the type genome is 43.5 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Rarefida mutabisca sp. nov.

Candidatus Rarefida mutabisca (NL. fem. n. *mutabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3012 sp903902965*. The type genome for the species is the GenBank assembly GCA_903859915.1. The GC content of the type genome is 43.59 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Rarefida rurigigena sp. nov.

Candidatus Rarefida rurigigena (NL. fem. n. *rurigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3012 sp002346305*. The type genome for the species is the GenBank assembly GCA_005786885.1. The GC content of the type genome is 43.63 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Rarefosa maleditia sp. nov.

Candidatus Rarefosa maleditia (NL. fem. n. *maleditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSQI01 sp011331825*. The type genome for the species is the GenBank assembly GCA_011331825.1. The GC content of the type genome is 47.92 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Rarefosa gen. nov.

Candidatus Rarefosa (NL. fem. n. *Rarefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSQI01*. The type species for the genus is *Candidatus* Rarefosa maleditia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSQI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rarefosaceae.

Description of *Candidatus* Rarefosaceae fam. nov.

Candidatus Rarefosaceae (NL. fem. n. *Rarefosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSQI01.* The type genus for the taxon is *Candidatus* Rarefosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Loripellales.

Description of *Candidatus* Rarefula cohonessa sp. nov.

Candidatus Rarefula cohonessa (NL. fem. n. *cohonessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM23-32 sp001303885*. The type genome for the species is the GenBank assembly GCA_001303885.1. The GC content of the type genome is 69.25 % and the genome length is 2.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-methane transisition zone estuary sediments 16-26 cm".

Description of *Candidatus* Rarefula gen. nov.

Candidatus Rarefula (NL. fem. n. *Rarefula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM23-32*. The type species for the genus is *Candidatus* Rarefula cohonessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rarefulaceae.

Description of *Candidatus* Rarefulaceae fam. nov.

Candidatus Rarefulaceae (NL. fem. n. *Rarefulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-32.* The type genus for the taxon is *Candidatus* Rarefula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM23-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rarefulales.

Description of *Candidatus* Rarefulales ord. nov.

Candidatus Rarefulales (NL. fem. n. *Rarefulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM23-32.* The type genus for the taxon is *Candidatus* Rarefula .

According to the GTDB R06-RS202, this order belongs to the class *Brocadiae*.

Description of *Candidatus* Rariglobus carecedo sp. nov.

Candidatus Rariglobus carecedo (NL. fem. n. *carecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rariglobus sp903876795*. The type genome for the species is the GenBank assembly GCA_903876795.1. The GC content of the type genome is 63.85 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Rariglobus desurisca sp. nov.

Candidatus Rariglobus desurisca (NL. fem. n. *desurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rariglobus sp002382525*. The type genome for the species is the GenBank assembly GCA_002382525.1. The GC content of the type genome is 63.52 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Rariglobus pomifessa sp. nov.

Candidatus Rariglobus pomifessa (NL. fem. n. *pomifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rariglobus sp903904685*. The type genome for the species is the GenBank assembly GCA_903904685.1. The GC content of the type genome is 60.49 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Rarobacter pinacilenta sp. nov.

Candidatus Rarobacter pinacilenta (NL. fem. n. *pinacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rarobacter sp900188465*. The type genome for the species is the GenBank assembly RS_GCF_900188465.1. The GC content of the type genome is 60.57 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Rathayibacter ablacitrix sp. nov.

Candidatus Rathayibacter ablacitrix (NL. fem. n. *ablacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp009834185*. The type genome for the species is the GenBank assembly RS_GCF_009834185.1. The GC content of the type genome is 72.07 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Rathayibacter advinibula sp. nov.

Candidatus Rathayibacter advinibula (NL. fem. n. *advinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rathayibacter sp013205085*. The type genome for the species is the GenBank assembly RS_GCF_013205085.1. The GC content of the type genome is 69.61 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Rathayibacter caselibra sp. nov.

Candidatus Rathayibacter caselibra (NL. fem. n. *caselibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp001423885*. The type genome for the species is the GenBank assembly RS_GCF_001423885.1. The GC content of the type genome is 71.19 % and the genome length is 4.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Rathayibacter desepitia sp. nov.

Candidatus Rathayibacter desepitia (NL. fem. n. *desepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp009807095*. The type genome for the species is the GenBank assembly RS_GCF_009807175.1. The GC content of the type genome is 71.3 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Rathayibacter dibucedo sp. nov.

Candidatus Rathayibacter dibucedo (NL. fem. n. *dibucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp013205025*. The type genome for the species is the GenBank assembly RS_GCF_013205025.1. The GC content of the type genome is 72.11 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Rathayibacter inperitoga sp. nov.

Candidatus Rathayibacter inperitoga (NL. fem. n. *inperitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp009834225*. The type genome for the species is the GenBank assembly RS_GCF_009834225.1. The GC content of the type genome is 71.58 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Rathayibacter lupanugo sp. nov.

Candidatus Rathayibacter lupanugo (NL. fem. n. *lupanugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp013205055*. The type genome for the species is the GenBank assembly RS_GCF_013205055.1. The GC content of the type genome is 72.47 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Rathayibacter semifitudo sp. nov.

Candidatus Rathayibacter semifitudo (NL. fem. n. *semifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp002930885*. The type genome for the species is the GenBank assembly RS_GCF_002931595.1. The GC content of the type genome is 72.52 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Rathayibacter subacessa sp. nov.

Candidatus Rathayibacter subacessa (NL. fem. n. *subacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp013204985*. The type genome for the species is the GenBank assembly RS_GCF_013204985.1. The GC content of the type genome is 68.32 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Rathayibacter tametigena sp. nov.

Candidatus Rathayibacter tametigena (NL. fem. n. *tametigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp009866655*. The type genome for the species is the GenBank assembly RS_GCF_013266705.1. The GC content of the type genome is 72.23 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Rathayibacter utraricula sp. nov.

Candidatus Rathayibacter utraricula (NL. fem. n. *utraricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rathayibacter sp001995175*. The type genome for the species is the GenBank assembly RS_GCF_001995175.1. The GC content of the type genome is 72.02 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Ratifana direpugo sp. nov.

Candidatus Ratifana direpugo (NL. fem. n. *direpugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAK01 sp014238395*. The type genome for the species is the GenBank assembly GCA_014238395.1. The GC content of the type genome is 32.56 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Ratifana gen. nov.

Candidatus Ratifana (NL. fem. n. *Ratifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABAAK01*. The type species for the genus is *Candidatus* Ratifana direpugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABAAK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ratifanaceae.

Description of *Candidatus* Ratifanaceae fam. nov.

Candidatus Ratifanaceae (NL. fem. n. *Ratifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABAAK01*. The type genus for the taxon is *Candidatus* Ratifana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Ratifana imbelatio sp. nov.

Candidatus Ratifana imbelatio (NL. fem. n. *imbelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAK01 sp014238475*. The type genome for the species is the GenBank assembly GCA_014238475.1. The GC content of the type genome is 31.72 % and the genome length is 0.31 Mbp.

Description of *Candidatus* Ratifana lanugicella sp. nov.

Candidatus Ratifana lanugicella (NL. fem. n. *lanugicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABAAK01 sp014238775*. The type genome for the species is the GenBank assembly GCA_014238775.1. The GC content of the type genome is 31.79 % and the genome length is 0.48 Mbp.

Description of *Candidatus* Ratifaria adpinedo sp. nov.

Candidatus Ratifaria adpinedo (NL. fem. n. *adpinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSOJ01 sp011046985*. The type genome for the species is the GenBank assembly GCA_011046985.1. The GC content of the type genome is 52.87 % and the genome length is 6.77 Mbp.

Description of *Candidatus* Ratifaria gen. nov.

Candidatus Ratifaria (NL. fem. n. *Ratifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSOJ01*. The type species for the genus is *Candidatus* Ratifaria adpinedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSOJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ratifariaceae.

Description of *Candidatus* Ratifariaceae fam. nov.

Candidatus Ratifariaceae (NL. fem. n. *Ratifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSOJ01*. The type genus for the taxon is *Candidatus* Ratifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7656*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Funamiales.

Description of *Candidatus* Ratifella fiducessa sp. nov.

Candidatus Ratifella fiducessa (NL. fem. n. *fiducessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10015 sp003522725*. The type genome for the species is the GenBank assembly GCA_003529035.1. The GC content of the type genome is 52.93 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Ratifella gen. nov.

Candidatus Ratifella (NL. fem. n. *Ratifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10015*. The type species for the genus is *Candidatus* Ratifella fiducessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Kpj58rc*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nefanellaceae.

Description of *Candidatus* Ratifellales ord. nov.

Candidatus Ratifellales (NL. fem. n. *Ratifellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10015*. The type genus for the taxon is *Candidatus* Ratifella .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Ratifella obtecilenta sp. nov.

Candidatus Ratifella obtecilenta (NL. fem. n. *obtecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10015 sp005239675*. The type genome for the species is the GenBank assembly GCA_005239675.1. The GC content of the type genome is 47.75 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Ratifella plascago sp. nov.

Candidatus Ratifella plascago (NL. fem. n. *plascago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10015 sp001805565*. The type genome for the species is the GenBank assembly GCA_001805565.1. The GC content of the type genome is 51.68 % and the genome length is 0.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Ratifida solipatica sp. nov.

Candidatus Ratifida solipatica (NL. fem. n. *solipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002727615 sp002715265*. The type genome for the species is the GenBank assembly GCA_002727615.1. The GC content of the type genome is 29.73 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Ratifida gen. nov.

Candidatus Ratifida (NL. fem. n. *Ratifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002727615*. The type species for the genus is *Candidatus* Ratifida solipatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubifariaceae.

Description of *Candidatus* Ratifosa gabinimonia sp. nov.

Candidatus Ratifosa gabinimonia (NL. fem. n. *gabinimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RSA7 sp002919195*. The type genome for the species is the GenBank assembly GCA_002919395.1. The GC content of the type genome is 62.68 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Ratifosa gen. nov.

Candidatus Ratifosa (NL. fem. n. *Ratifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RSA7*. The type species for the genus is *Candidatus* Ratifosa gabinimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RSA5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipinosaceae.

Description of *Candidatus* Ratifula cacalicella sp. nov.

Candidatus Ratifula cacalicella (NL. fem. n. *cacalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1820 sp900555375*. The type genome for the species is the GenBank assembly GCA_900555375.1. The GC content of the type genome is 44.68 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Ratifula gen. nov.

Candidatus Ratifula (NL. fem. n. *Ratifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1820*. The type species for the genus is *Candidatus* Ratifula cacalicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ratifula cacopentia sp. nov.

Candidatus Ratifula cacopentia (NL. fem. n. *cacopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1820 sp902760955*. The type genome for the species is the GenBank assembly GCA_902781475.1. The GC content of the type genome is 39.16 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Ratifula denicugo sp. nov.

Candidatus Ratifula denicugo (NL. fem. n. *denicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1820 sp902766745*. The type genome for the species is the GenBank assembly GCA_902766745.1. The GC content of the type genome is 44.68 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Ratifula enharicula sp. nov.

Candidatus Ratifula enharicula (NL. fem. n. *enharicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1820 sp902791425*. The type genome for the species is the GenBank assembly GCA_902791425.1. The GC content of the type genome is 39.76 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Ratifula fatiletta sp. nov.

Candidatus Ratifula fatiletta (NL. fem. n. *fatiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1820 sp902777435*. The type genome for the species is the GenBank assembly GCA_902777435.1. The GC content of the type genome is 39.7 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Ratifula incoritio sp. nov.

Candidatus Ratifula incoritio (NL. fem. n. *incoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UMGS1820 sp900769795*. The type genome for the species is the GenBank assembly RS_GCF_900769795.1. The GC content of the type genome is 41.54 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Ratifula sarabetta sp. nov.

Candidatus Ratifula sarabetta (NL. fem. n. *sarabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1820 sp902797885*. The type genome for the species is the GenBank assembly GCA_902797885.1. The GC content of the type genome is 42.4 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Ratifula vigenitrix sp. nov.

Candidatus Ratifula vigenitrix (NL. fem. n. *vigenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1820 sp900545865*. The type genome for the species is the GenBank assembly RS_GCF_900766545.1. The GC content of the type genome is 43.32 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Recocana furibatio sp. nov.

Candidatus Recocana furibatio (NL. fem. n. *furibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS124 sp900555105*. The type genome for the species is the GenBank assembly GCA_004559905.1. The GC content of the type genome is 61.98 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Recocana gen. nov.

Candidatus Recocana (NL. fem. n. *Recocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS124*. The type species for the genus is *Candidatus* Recocana furibatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS124*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Recocanaceae.

Description of *Candidatus* Recocanaceae fam. nov.

Candidatus Recocanaceae (NL. fem. n. *Recocanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS124.* The type genus for the taxon is *Candidatus* Recocana .

According to GTDB R06-RS202, this family belongs to the order *Coriobacteriales*.

Description of *Candidatus* Recocana inregessa sp. nov.

Candidatus Recocana inregessa (NL. fem. n. *inregessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS124 sp900539345*. The type genome for the species is the GenBank assembly GCA_900539345.1. The GC content of the type genome is 62.22 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Recocaria ambifitas sp. nov.

Candidatus Recocaria ambifitas (NL. fem. n. *ambifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6024 sp014380255*. The type genome for the species is the GenBank assembly GCA_014380255.1. The GC content of the type genome is 42.1 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Recocaria gen. nov.

Candidatus Recocaria (NL. fem. n. *Recocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6024*. The type species for the genus is *Candidatus* Recocaria ambifitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recocaria demulibula sp. nov.

Candidatus Recocaria demulibula (NL. fem. n. *demulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6024 sp002429385*. The type genome for the species is the GenBank assembly GCA_002427965.1. The GC content of the type genome is 40.83 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Recocaria depelitio sp. nov.

Candidatus Recocaria depelitio (NL. fem. n. *depelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6024 sp903865775*. The type genome for the species is the GenBank assembly GCA_903865775.1. The GC content of the type genome is 41.38 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Recocaria egritago sp. nov.

Candidatus Recocaria egritago (NL. fem. n. *egritago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6024 sp003457135*. The type genome for the species is the GenBank assembly GCA_003457135.1. The GC content of the type genome is 40.96 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Recocaria humecatica sp. nov.

Candidatus Recocaria humecatica (NL. fem. n. *humecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6024 sp013824715*. The type genome for the species is the GenBank assembly GCA_013824715.1. The GC content of the type genome is 41.09 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Recocaria obtemisca sp. nov.

Candidatus Recocaria obtemisca (NL. fem. n. *obtemisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6024 sp903834475*. The type genome for the species is the GenBank assembly GCA_903834475.1. The GC content of the type genome is 41.76 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Recocaria vinolilega sp. nov.

Candidatus Recocaria vinolilega (NL. fem. n. *vinolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6024 sp003537645*. The type genome for the species is the GenBank assembly GCA_001768245.1. The GC content of the type genome is 41.36 % and the genome length is 4.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 2 / B; 5m depth; 0.2 filter".

Description of *Candidatus* Recocia abrelitica sp. nov.

Candidatus Recocia abrelitica (NL. fem. n. *abrelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903847605*. The type genome for the species is the GenBank assembly GCA_903847605.1. The GC content of the type genome is 61.31 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Recocia gen. nov.

Candidatus Recocia (NL. fem. n. *Recocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *28-YEA-48*. The type species for the genus is *Candidatus* Recocia abrelitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recocia absuritudo sp. nov.

Candidatus Recocia absuritudo (NL. fem. n. *absuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903918155*. The type genome for the species is the GenBank assembly GCA_903918155.1. The GC content of the type genome is 66.95 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Recocia adnepentia sp. nov.

Candidatus Recocia adnepentia (NL. fem. n. *adnepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp900104955*. The type genome for the species is the GenBank assembly RS_GCF_900104955.1. The GC content of the type genome is 61.09 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Recocia alluvifica sp. nov.

Candidatus Recocia alluvifica (NL. fem. n. *alluvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903884435*. The type genome for the species is the GenBank assembly GCA_903884435.1. The GC content of the type genome is 66.1 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Recocia biparilenta sp. nov.

Candidatus Recocia biparilenta (NL. fem. n. *biparilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903916165*. The type genome for the species is the GenBank assembly GCA_903916165.1. The GC content of the type genome is 62.56 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Recocia brasmimonas sp. nov.

Candidatus Recocia brasmimonas (NL. fem. n. *brasmimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp900299065*. The type genome for the species is the GenBank assembly GCA_900299065.1. The GC content of the type genome is 52.7 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Recocia catobetta sp. nov.

Candidatus Recocia catobetta (NL. fem. n. *catobetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903902915*. The type genome for the species is the GenBank assembly GCA_903891535.1. The GC content of the type genome is 63.26 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Recocia cemeniforma sp. nov.

Candidatus Recocia cemeniforma (NL. fem. n. *cemeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903931945*. The type genome for the species is the GenBank assembly GCA_903881595.1. The GC content of the type genome is 59.75 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Recocia ceracivita sp. nov.

Candidatus Recocia ceracivita (NL. fem. n. *ceracivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903825465*. The type genome for the species is the GenBank assembly GCA_903888965.1. The GC content of the type genome is 65.13 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Recocia citociforma sp. nov.

Candidatus Recocia citociforma (NL. fem. n. *citociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903889985*. The type genome for the species is the GenBank assembly GCA_903826315.1. The GC content of the type genome is 61.69 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Recocia defesessa sp. nov.

Candidatus Recocia defesessa (NL. fem. n. *defesessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903897875*. The type genome for the species is the GenBank assembly GCA_903897875.1. The GC content of the type genome is 53.92 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Recocia desulousia sp. nov.

Candidatus Recocia desulousia (NL. fem. n. *desulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903851305*. The type genome for the species is the GenBank assembly GCA_903891775.1. The GC content of the type genome is 56.71 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Recocia epistago sp. nov.

Candidatus Recocia epistago (NL. fem. n. *epistago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903885755*. The type genome for the species is the GenBank assembly GCA_903885755.1. The GC content of the type genome is 63.31 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Recocia fatilicula sp. nov.

Candidatus Recocia fatilicula (NL. fem. n. *fatilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903861645*. The type genome for the species is the GenBank assembly GCA_903927565.1. The GC content of the type genome is 65.34 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Recocia inpenatio sp. nov.

Candidatus Recocia inpenatio (NL. fem. n. *inpenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *28-YEA-48 sp001898965*. The type genome for the species is the GenBank assembly GCA_001898965.1. The GC content of the type genome is 61.62 % and the genome length is 5.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Recocia prodredo sp. nov.

Candidatus Recocia prodredo (NL. fem. n. *prodredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903932565*. The type genome for the species is the GenBank assembly GCA_903932565.1. The GC content of the type genome is 58.92 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Recocia vecoratica sp. nov.

Candidatus Recocia vecoratica (NL. fem. n. *vecoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *28-YEA-48 sp903903935*. The type genome for the species is the GenBank assembly GCA_903903935.1. The GC content of the type genome is 53.79 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Recocosa viburitas sp. nov.

Candidatus Recocosa viburitas (NL. fem. n. *viburitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-12-FULL-44-13 sp001817765*. The type genome for the species is the GenBank assembly GCA_001817765.1. The GC content of the type genome is 44.23 % and the genome length is 0.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Recocosa gen. nov.

Candidatus Recocosa (NL. fem. n. *Recocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-12-FULL-44-13*. The type species for the genus is *Candidatus* Recocosa viburitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recocula duponago sp. nov.

Candidatus Recocula duponago (NL. fem. n. *duponago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-37-20 sp001784115*. The type genome for the species is the GenBank assembly GCA_001782205.1. The GC content of the type genome is 36.28 % and the genome length is 0.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Recocula gen. nov.

Candidatus Recocula (NL. fem. n. *Recocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-37-20*. The type species for the genus is *Candidatus* Recocula duponago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Recogana detorilega sp. nov.

Candidatus Recogana detorilega (NL. fem. n. *detorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-12-FULL-42-9 sp001777665*. The type genome for the species is the GenBank assembly GCA_001780055.1. The GC content of the type genome is 41.98 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Recogana gen. nov.

Candidatus Recogana (NL. fem. n. *Recogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-12-FULL-42-9*. The type species for the genus is *Candidatus* Recogana detorilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-02-FULL-48-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicariaceae.

Description of *Candidatus* Recogaria adnepatio sp. nov.

Candidatus Recogaria adnepatio (NL. fem. n. *adnepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718515 sp014381305*. The type genome for the species is the GenBank assembly GCA_014381305.1. The GC content of the type genome is 45.44 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Recogaria gen. nov.

Candidatus Recogaria (NL. fem. n. *Recogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002718515*. The type species for the genus is *Candidatus* Recogaria adnepatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Recogaria cocibilenta sp. nov.

Candidatus Recogaria cocibilenta (NL. fem. n. *cocibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718515 sp014381555*. The type genome for the species is the GenBank assembly GCA_014381555.1. The GC content of the type genome is 43.77 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Recogaria illepugo sp. nov.

Candidatus Recogaria illepugo (NL. fem. n. *illepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718515 sp014381385*. The type genome for the species is the GenBank assembly GCA_014381385.1. The GC content of the type genome is 45.66 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Recogaria impilifica sp. nov.

Candidatus Recogaria impilifica (NL. fem. n. *impilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718515 sp002718515*. The type genome for the species is the GenBank assembly GCA_002718515.1. The GC content of the type genome is 45.33 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Recogaria inmolicella sp. nov.

Candidatus Recogaria inmolicella (NL. fem. n. *inmolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718515 sp014238125*. The type genome for the species is the GenBank assembly GCA_014238125.1. The GC content of the type genome is 44.04 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Recogaria invinifica sp. nov.

Candidatus Recogaria invinifica (NL. fem. n. *invinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718515 sp014238785*. The type genome for the species is the GenBank assembly GCA_014238785.1. The GC content of the type genome is 45.11 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Recogaria resuredo sp. nov.

Candidatus Recogaria resuredo (NL. fem. n. *resuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-002718515 sp012965315*. The type genome for the species is the GenBank assembly GCA_012964395.1. The GC content of the type genome is 43.27 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Recogaria vilipentia sp. nov.

Candidatus Recogaria vilipentia (NL. fem. n. *vilipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002718515 sp002689385*. The type genome for the species is the GenBank assembly GCA_002689385.1. The GC content of the type genome is 45.1 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Recogella anxifentia sp. nov.

Candidatus Recogella anxifentia (NL. fem. n. *anxifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-32 sp003243445*. The type genome for the species is the GenBank assembly GCA_003243445.1. The GC content of the type genome is 45.59 % and the genome length is 7.34 Mbp.

Description of *Candidatus* Recogella gen. nov.

Candidatus Recogella (NL. fem. n. *Recogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *46-32*. The type species for the genus is *Candidatus* Recogella anxifentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recogella cunabitio sp. nov.

Candidatus Recogella cunabitio (NL. fem. n. *cunabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-32 sp004173355*. The type genome for the species is the GenBank assembly GCA_004173355.1. The GC content of the type genome is 50.64 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Recogella dehonousia sp. nov.

Candidatus Recogella dehonousia (NL. fem. n. *dehonousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-32 sp001898485*. The type genome for the species is the GenBank assembly GCA_001898485.1. The GC content of the type genome is 46.06 % and the genome length is 5.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock bioreactor".

Description of *Candidatus* Recogella facunilega sp. nov.

Candidatus Recogella facunilega (NL. fem. n. *facunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-32 sp001898405*. The type genome for the species is the GenBank assembly GCA_001898405.1. The GC content of the type genome is 44.15 % and the genome length is 5.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Recogella rubecitudo sp. nov.

Candidatus Recogella rubecitudo (NL. fem. n. *rubecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *46-32 sp004173255*. The type genome for the species is the GenBank assembly GCA_004173255.1. The GC content of the type genome is 49.83 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Recogia depacicella sp. nov.

Candidatus Recogia depacicella (NL. fem. n. *depacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1876 sp003446665*. The type genome for the species is the GenBank assembly GCA_003446665.1. The GC content of the type genome is 52.4 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Recogia gen. nov.

Candidatus Recogia (NL. fem. n. *Recogia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1876*. The type species for the genus is *Candidatus* Recogia depacicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recogosa decomatica sp. nov.

Candidatus Recogosa decomatica (NL. fem. n. *decomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSLN01 sp011048175*. The type genome for the species is the GenBank assembly GCA_011048175.1. The GC content of the type genome is 64.07 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Recogosa gen. nov.

Candidatus Recogosa (NL. fem. n. *Recogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSLN01*. The type species for the genus is *Candidatus* Recogosa decomatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSLN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recogosaceae.

Description of *Candidatus* Recogosaceae fam. nov.

Candidatus Recogosaceae (NL. fem. n. *Recogosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSLN01*. The type genus for the taxon is *Candidatus* Recogosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSLN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Recogosales.

Description of *Candidatus* Recogosales ord. nov.

Candidatus Recogosales (NL. fem. n. *Recogosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSLN01*. The type genus for the taxon is *Candidatus* Recogosa .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Recogosa doxolatica sp. nov.

Candidatus Recogosa doxolatica (NL. fem. n. *doxolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSLN01 sp902812335*. The type genome for the species is the GenBank assembly RS_GCF_902812335.1. The GC content of the type genome is 62.83 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Recogula catocibula sp. nov.

Candidatus Recogula catocibula (NL. fem. n. *catocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch27 sp013178165*. The type genome for the species is the GenBank assembly GCA_013178165.1. The GC content of the type genome is 62.82 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Recogula gen. nov.

Candidatus Recogula (NL. fem. n. *Recogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch27*. The type species for the genus is *Candidatus* Recogula catocibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recogulaceae.

Description of *Candidatus* Recogulaceae fam. nov.

Candidatus Recogulaceae (NL. fem. n. *Recogulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch27*. The type genus for the taxon is *Candidatus* Recogula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBR1031*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nocumellales.

Description of *Candidatus* Recomaria algebicula sp. nov.

Candidatus Recomaria algebicula (NL. fem. n. *algebicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-40-82 sp001819495*. The type genome for the species is the GenBank assembly GCA_001819495.1. The GC content of the type genome is 41.37 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Recomaria gen. nov.

Candidatus Recomaria (NL. fem. n. *Recomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-40-82*. The type species for the genus is *Candidatus* Recomaria algebicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-42-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Biveridaceae.

Description of *Candidatus* Recomaria novilisca sp. nov.

Candidatus Recomaria novilisca (NL. fem. n. *novilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-40-82 sp002774415*. The type genome for the species is the GenBank assembly GCA_002796005.1. The GC content of the type genome is 40.25 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Recomella semunifica sp. nov.

Candidatus Recomella semunifica (NL. fem. n. *semunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNZT01 sp003978455*. The type genome for the species is the GenBank assembly GCA_003978455.1. The GC content of the type genome is 46.25 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Recomella gen. nov.

Candidatus Recomella (NL. fem. n. *Recomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNZT01*. The type species for the genus is *Candidatus* Recomella semunifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QNZT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recomellaceae.

Description of *Candidatus* Recomellaceae fam. nov.

Candidatus Recomellaceae (NL. fem. n. *Recomellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNZT01.* The type genus for the taxon is *Candidatus* Recomella .

According to GTDB R06-RS202, this family belongs to the order *Campylobacterales*.

Description of *Candidatus* Recomia delucitudo sp. nov.

Candidatus Recomia delucitudo (NL. fem. n. *delucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZA01 sp007128275*. The type genome for the species is the GenBank assembly GCA_007128275.1. The GC content of the type genome is 59.29 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Recomia gen. nov.

Candidatus Recomia (NL. fem. n. *Recomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKZA01*. The type species for the genus is *Candidatus* Recomia delucitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reveculaceae.

Description of *Candidatus* Recomia manufitoga sp. nov.

Candidatus Recomia manufitoga (NL. fem. n. *manufitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZA01 sp007136425*. The type genome for the species is the GenBank assembly GCA_003560565.1. The GC content of the type genome is 57.92 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Recomia sicinago sp. nov.

Candidatus Recomia sicinago (NL. fem. n. *sicinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZA01 sp007127595*. The type genome for the species is the GenBank assembly GCA_007127595.1. The GC content of the type genome is 58.79 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Recomosa didacentia sp. nov.

Candidatus Recomosa didacentia (NL. fem. n. *didacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA164-E04 sp002690655*. The type genome for the species is the GenBank assembly GCA_003455095.1. The GC content of the type genome is 47.93 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Recomosa gen. nov.

Candidatus Recomosa (NL. fem. n. *Recomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AAA164-E04*. The type species for the genus is *Candidatus* Recomosa didacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AAA164-E04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recomosaceae.

Description of *Candidatus* Recomosaceae fam. nov.

Candidatus Recomosaceae (NL. fem. n. *Recomosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AAA164-E04.* The type genus for the taxon is *Candidatus* Recomosa .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Recomosa dilogedo sp. nov.

Candidatus Recomosa dilogedo (NL. fem. n. *dilogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA164-E04 sp000383715*. The type genome for the species is the GenBank assembly GCA_000383715.1. The GC content of the type genome is 47.7 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Recomula baditimonas sp. nov.

Candidatus Recomula baditimonas (NL. fem. n. *baditimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUG01 sp012517825*. The type genome for the species is the GenBank assembly GCA_011388975.1. The GC content of the type genome is 45.71 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Recomula gen. nov.

Candidatus Recomula (NL. fem. n. *Recomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUG01*. The type species for the genus is *Candidatus* Recomula

baditimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYUG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recomulaceae.

Description of *Candidatus* Recomulaceae fam. nov.

Candidatus Recomulaceae (NL. fem. n. *Recomulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYUG01.* The type genus for the taxon is *Candidatus* Recomula .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Recorana cilicicella sp. nov.

Candidatus Recorana cilicicella (NL. fem. n. *cilicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2166 sp012965905*. The type genome for the species is the GenBank assembly GCA_012965905.1. The GC content of the type genome is 52.33 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Recorana gen. nov.

Candidatus Recorana (NL. fem. n. *Recorana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2166*. The type species for the genus is *Candidatus* Recorana cilicicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2166*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recoranaceae.

Description of *Candidatus* Recoranaceae fam. nov.

Candidatus Recoranaceae (NL. fem. n. *Recoranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2166.* The type genus for the taxon is *Candidatus* Recorana .

According to GTDB R06-RS202, this family belongs to the order *Nitrospirales*.

Description of *Candidatus* Recorana inaspetta sp. nov.

Candidatus Recorana inaspetta (NL. fem. n. *inaspetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2166 sp002726235*. The type genome for the species is the GenBank assembly GCA_002726235.1. The GC content of the type genome is 49.1 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Recorana rubefilenta sp. nov.

Candidatus Recorana rubefilenta (NL. fem. n. *rubefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2166 sp002328825*. The type genome for the species is the GenBank assembly GCA_002328825.1. The GC content of the type genome is 45.99 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Recoraria intenastra sp. nov.

Candidatus Recoraria intenastra (NL. fem. n. *intenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9628 sp903881545*. The type genome for the species is the GenBank assembly GCA_903881545.1. The GC content of the type genome is 63.81 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Recoraria gen. nov.

Candidatus Recoraria (NL. fem. n. *Recoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9628*. The type species for the genus is *Candidatus* Recoraria intenastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9628*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recorariaceae.

Description of *Candidatus* Recorariaceae fam. nov.

Candidatus Recorariaceae (NL. fem. n. *Recorariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9628.* The type genus for the taxon is *Candidatus* Recoraria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Papiliales.

Description of *Candidatus* Recoraria monodicula sp. nov.

Candidatus Recoraria monodicula (NL. fem. n. *monodicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9628 sp903830945*. The type genome for the species is the GenBank assembly GCA_903911935.1. The GC content of the type genome is 62.03 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Recoraria negidetta sp. nov.

Candidatus Recoraria negidetta (NL. fem. n. *negidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9628 sp003452935*. The type genome for the species is the GenBank assembly GCA_003509925.1. The GC content of the type genome is 62.63 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Recorella bacifibra sp. nov.

Candidatus Recorella bacifibra (NL. fem. n. *bacifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-442 sp003235475*. The type genome for the species is the GenBank assembly GCA_003245435.1. The GC content of the type genome is 64.69 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Recorella gen. nov.

Candidatus Recorella (NL. fem. n. *Recorella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-442*. The type species for the genus is *Candidatus* Recorella bacifibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicellaceae.

Description of *Candidatus* Recoria ceromilega sp. nov.

Candidatus Recoria ceromilega (NL. fem. n. *ceromilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXFN01 sp903918755*. The type genome for the species is the GenBank assembly GCA_903881465.1. The GC content of the type genome is 60.54 % and the genome length is 7.22 Mbp.

Description of *Candidatus* Recoria gen. nov.

Candidatus Recoria (NL. fem. n. *Recoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXFN01*. The type species for the genus is *Candidatus* Recoria ceromilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recoria nehalitudo sp. nov.

Candidatus Recoria nehalitudo (NL. fem. n. *nehalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXFN01 sp903930565*. The type genome for the species is the GenBank assembly GCA_903930565.1. The GC content of the type genome is 64.0 % and the genome length is 6.62 Mbp.

Description of *Candidatus* Recorida abinditica sp. nov.

Candidatus Recorida abinditica (NL. fem. n. *abinditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753465 sp903861305*. The type genome for the species is the GenBank assembly GCA_903861305.1. The GC content of the type genome is 53.03 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Recorida gen. nov.

Candidatus Recorida (NL. fem. n. *Recorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2753465*. The type species for the genus is *Candidatus* Recorida abinditica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002753745*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosaculaceae.

Description of *Candidatus* Recorida catocugo sp. nov.

Candidatus Recorida catocugo (NL. fem. n. *catocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753465 sp903959815*. The type genome for the species is the GenBank assembly GCA_903959815.1. The GC content of the type genome is 47.8 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Recorida codifisca sp. nov.

Candidatus Recorida codifisca (NL. fem. n. *codifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753465 sp903901225*. The type genome for the species is the GenBank assembly GCA_903843755.1. The GC content of the type genome is 54.87 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Recorida homulilega sp. nov.

Candidatus Recorida homulilega (NL. fem. n. *homulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753465 sp903836515*. The type genome for the species is the GenBank assembly GCA_903884765.1. The GC content of the type genome is 54.03 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Recorida laculetta sp. nov.

Candidatus Recorida laculetta (NL. fem. n. *laculetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753465 sp002753465*. The type genome for the species is the GenBank assembly GCA_002753465.1. The GC content of the type genome is 49.49 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Recorida nocumitura sp. nov.

Candidatus Recorida nocumitura (NL. fem. n. *nocumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753465 sp903860135*. The type genome for the species is the GenBank assembly GCA_903860135.1. The GC content of the type genome is 50.78 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Recorosa adluvitia sp. nov.

Candidatus Recorosa adluvitia (NL. fem. n. *adluvitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA963 sp903915075*. The type genome for the species is the GenBank assembly GCA_903915075.1. The GC content of the type genome is 61.38 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Recorosa gen. nov.

Candidatus Recorosa (NL. fem. n. *Recorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA963*. The type species for the genus is *Candidatus* Recorosa adluvitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recorosa diludigena sp. nov.

Candidatus Recorosa diludigena (NL. fem. n. *diludigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA963 sp903857985*. The type genome for the species is the GenBank assembly GCA_903857985.1. The GC content of the type genome is 61.35 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Recorosa enigmibra sp. nov.

Candidatus Recorosa enigmibra (NL. fem. n. *enigmibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA963 sp009699665*. The type genome for the species is the GenBank assembly GCA_009699665.1. The GC content of the type genome is 60.15 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Recorosa notabiforma sp. nov.

Candidatus Recorosa notabiforma (NL. fem. n. *notabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA963 sp903907615*. The type genome for the species is the GenBank assembly GCA_903907615.1. The GC content of the type genome is 62.04 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Recorosa sarabessa sp. nov.

Candidatus Recorosa sarabessa (NL. fem. n. *sarabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA963 sp002292955*. The type genome for the species is the GenBank assembly GCA_000754435.1. The GC content of the type genome is 61.65 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water column of the freshwater reservoir Embalse de Amadorio in Spain".

Description of *Candidatus* Recorula sotulicella sp. nov.

Candidatus Recorula sotulicella (NL. fem. n. *sotulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-938 sp003164925*. The type genome for the species is the GenBank assembly GCA_003164925.1. The GC content of the type genome is 65.44 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Recorula gen. nov.

Candidatus Recorula (NL. fem. n. *Recorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BOG-938*. The type species for the genus is *Candidatus* Recorula sotulicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recorula vehemimonia sp. nov.

Candidatus Recorula vehemimonia (NL. fem. n. *vehemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BOG-938 sp903929535*. The type genome for the species is the GenBank assembly GCA_903873335.1. The GC content of the type genome is 67.25 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Rectinema adremimonia sp. nov.

Candidatus Rectinema adremimonia (NL. fem. n. *adremimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rectinema sp011368145*. The type genome for the species is the GenBank assembly GCA_011368145.1. The GC content of the type genome is 55.26 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Rectinema cibicimonas sp. nov.

Candidatus Rectinema cibicimonas (NL. fem. n. *cibicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rectinema sp002425765*. The type genome for the species is the GenBank assembly GCA_002425765.1. The GC content of the type genome is 55.06 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Rectinema enigmicula sp. nov.

Candidatus Rectinema enigmicula (NL. fem. n. *enigmicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rectinema sp002070755*. The type genome for the species is the GenBank assembly GCA_002070755.1. The GC content of the type genome is 44.99 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Rectinema gemebedo sp. nov.

Candidatus Rectinema gemebedo (NL. fem. n. *gemebedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rectinema sp003452735*. The type genome for the species is the GenBank assembly GCA_003452735.1. The GC content of the type genome is 44.46 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Rectinema peracitica sp. nov.

Candidatus Rectinema peracitica (NL. fem. n. *peracitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rectinema sp002441395*. The type genome for the species is the GenBank assembly GCA_900163975.1. The GC content of the type genome is 53.08 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Rectinema roraribra sp. nov.

Candidatus Rectinema roraribra (NL. fem. n. *roraribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rectinema sp002435985*. The type genome for the species is the GenBank assembly GCA_002435985.1. The GC content of the type genome is 54.89 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Rectinema ruricicula sp. nov.

Candidatus Rectinema ruricicula (NL. fem. n. *ruricicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rectinema sp012516755*. The type genome for the species is the GenBank assembly GCA_002071555.1. The GC content of the type genome is 45.94 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Recucana homolitrix sp. nov.

Candidatus Recucana homolitrix (NL. fem. n. *homolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFR01 sp011064985*. The type genome for the species is the GenBank assembly GCA_011064985.1. The GC content of the type genome is 47.21 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Recucana gen. nov.

Candidatus Recucana (NL. fem. n. *Recucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFR01*. The type species for the genus is *Candidatus* Recucana homolitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAKFR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recucanaceae.

Description of *Candidatus* Recucanaceae fam. nov.

Candidatus Recucanaceae (NL. fem. n. *Recucanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAKFR01.* The type genus for the taxon is *Candidatus* Recucana .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Recucaria cohoritoga sp. nov.

Candidatus Recucaria cohoritoga (NL. fem. n. *cohoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKXV01 sp903873475*. The type genome for the species is the GenBank assembly GCA_903873475.1. The GC content of the type genome is 68.13 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Recucaria gen. nov.

Candidatus Recucaria (NL. fem. n. *Recucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKXV01*. The type species for the genus is *Candidatus* Recucaria cohoritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIKXV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recucariaceae.

Description of *Candidatus* Recucariaceae fam. nov.

Candidatus Recucariaceae (NL. fem. n. *Recucariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIKXV01.* The type genus for the taxon is *Candidatus* Recucaria .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Recucaria dicanago sp. nov.

Candidatus Recucaria dicanago (NL. fem. n. *dicanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKXV01 sp903831455*. The type genome for the species is the GenBank assembly GCA_903924515.1. The GC content of the type genome is 71.13 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Recucaria pabilitura sp. nov.

Candidatus Recucaria pabilitura (NL. fem. n. *pabilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKXV01 sp014379045*. The type genome for the species is the GenBank assembly GCA_014379045.1. The GC content of the type genome is 66.27 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Recucella defulitudo sp. nov.

Candidatus Recucella defulitudo (NL. fem. n. *defulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GRL18 sp013139395*. The type genome for the species is the GenBank assembly GCA_013139395.1. The GC content of the type genome is 38.74 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Recucella gen. nov.

Candidatus Recucella (NL. fem. n. *Recucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GRL18*. The type species for the genus is *Candidatus* Recucella defulitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GRL18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recucellaceae.

Description of *Candidatus* Recucellaceae fam. nov.

Candidatus Recucellaceae (NL. fem. n. *Recucellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GRL18.* The type genus for the taxon is *Candidatus* Recucella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCF-002020875*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Valefariales.

Description of *Candidatus* Recucia remedax sp. nov.

Candidatus Recucia remedax (NL. fem. n. *remedax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2361 sp002343185*. The type genome for the species is the GenBank assembly GCA_002343185.1. The GC content of the type genome is 39.55 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Recucia gen. nov.

Candidatus Recucia (NL. fem. n. *Recucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2361*. The type species for the genus is *Candidatus* Recucia remedax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recuciaceae.

Description of *Candidatus* Recuciaceae fam. nov.

Candidatus Recuciaceae (NL. fem. n. *Recuciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2361.* The type genus for the taxon is *Candidatus* Recucia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Recuciales.

Description of *Candidatus* Recuciales ord. nov.

Candidatus Recuciales (NL. fem. n. *Recuciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2361.* The type genus for the taxon is *Candidatus* Recucia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2361*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Recuciae.

Description of *Candidatus* Recuciae class. nov.

Candidatus Recuciae (NL. fem. n. *c__Recuciae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2361*. The type genus for the taxon is *Candidatus* Recucia .

According to GTDB R06-RS202, this class belongs to the phylum *Bdellovibrionota_C*.

Description of *Candidatus* Recucida adhosimonas sp. nov.

Candidatus Recucida adhosimonas (NL. fem. n. *adhosimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-484 sp900554385*. The type genome for the species is the GenBank assembly GCA_900554385.1. The GC content of the type genome is 35.65 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Recucida gen. nov.

Candidatus Recucida (NL. fem. n. *Recucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-484*. The type species for the genus is *Candidatus* Recucida adhosimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recucida delubisca sp. nov.

Candidatus Recucida delubisca (NL. fem. n. *delubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-484 sp900321895*. The type genome for the species is the GenBank assembly GCA_902776125.1. The GC content of the type genome is 37.21 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Recucida detesitoga sp. nov.

Candidatus Recucida detesitoga (NL. fem. n. *detesitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-484 sp000431315*. The type genome for the species is the GenBank assembly GCA_900556565.1. The GC content of the type genome is 35.33 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Recucosa catocitoga sp. nov.

Candidatus Recucosa catocitoga (NL. fem. n. *catocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5508 sp002409745*. The type genome for the species is the GenBank assembly GCA_002399885.1. The GC content of the type genome is 44.43 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Recucosa gen. nov.

Candidatus Recucosa (NL. fem. n. *Recucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5508*. The type species for the genus is *Candidatus* Recucosa catocitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recucula demadetta sp. nov.

Candidatus Recucula demadetta (NL. fem. n. *demadetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1149 sp014382245*. The type genome for the species is the GenBank assembly GCA_014382245.1. The GC content of the type genome is 63.77 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Recucula gen. nov.

Candidatus Recucula (NL. fem. n. *Recucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1149*. The type species for the genus is *Candidatus* Recucula

demadetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1149*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recuculaceae.

Description of *Candidatus* Recuculaceae fam. nov.

Candidatus Recuculaceae (NL. fem. n. *Recuculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1149.* The type genus for the taxon is *Candidatus* Recucula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1149*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Recuculales.

Description of *Candidatus* Recuculales ord. nov.

Candidatus Recuculales (NL. fem. n. *Recuculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1149.* The type genus for the taxon is *Candidatus* Recucula .

According to the GTDB R06-RS202, this order belongs to the class *Binatia*.

Description of *Candidatus* Recucula subofitas sp. nov.

Candidatus Recucula subofitas (NL. fem. n. *subofitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1149 sp012960245*. The type genome for the species is the GenBank assembly GCA_012960245.1. The GC content of the type genome is 63.36 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Recucula vecoritio sp. nov.

Candidatus Recucula vecoritio (NL. fem. n. *vecoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1149 sp002311335*. The type genome for the species is the

GenBank assembly GCA_013216095.1. The GC content of the type genome is 64.02 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Recumana innasivita sp. nov.

Candidatus Recumana innasivita (NL. fem. n. *innasivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WHSQ01 sp009380005*. The type genome for the species is the GenBank assembly GCA_009380005.1. The GC content of the type genome is 65.61 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Recumana gen. nov.

Candidatus Recumana (NL. fem. n. *Recumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WHSQ01*. The type species for the genus is *Candidatus* Recumana innasivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHSQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recumanaceae.

Description of *Candidatus* Recumanaceae fam. nov.

Candidatus Recumanaceae (NL. fem. n. *Recumanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WHSQ01.* The type genus for the taxon is *Candidatus* Recumana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CADDZG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curacanales.

Description of *Candidatus* Recumella carucitia sp. nov.

Candidatus Recumella carucitia (NL. fem. n. *carucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12393 sp001002765*. The type genome for the species is the

GenBank assembly GCA_001002565.1. The GC content of the type genome is 45.77 % and the genome length is 1.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Recumella gen. nov.

Candidatus Recumella (NL. fem. n. *Recumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12393*. The type species for the genus is *Candidatus* Recumella carucitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Recumia bipatatio sp. nov.

Candidatus Recumia bipatatio (NL. fem. n. *bipatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU033 sp012839705*. The type genome for the species is the GenBank assembly GCA_012839705.1. The GC content of the type genome is 46.97 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Recumia gen. nov.

Candidatus Recumia (NL. fem. n. *Recumia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU033*. The type species for the genus is *Candidatus* Recumia bipatatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Recumia cenobatica sp. nov.

Candidatus Recumia cenobatica (NL. fem. n. *cenobatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU033 sp001513365*. The type genome for the species is the

GenBank assembly GCA_012521925.1. The GC content of the type genome is 52.1 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Recumia mutabastra sp. nov.

Candidatus Recumia mutabastra (NL. fem. n. *mutabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU033 sp003519645*. The type genome for the species is the GenBank assembly GCA_003519645.1. The GC content of the type genome is 44.57 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Recumia obtesitudo sp. nov.

Candidatus Recumia obtesitudo (NL. fem. n. *obtesitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU033 sp012522615*. The type genome for the species is the GenBank assembly GCA_012522615.1. The GC content of the type genome is 48.86 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Recumia repecimonia sp. nov.

Candidatus Recumia repecimonia (NL. fem. n. *repecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU033 sp002409375*. The type genome for the species is the GenBank assembly GCA_002409375.1. The GC content of the type genome is 42.83 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Recumia tibicessa sp. nov.

Candidatus Recumia tibicessa (NL. fem. n. *tibicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU033 sp002410715*. The type genome for the species is the GenBank assembly GCA_002410715.1. The GC content of the type genome is 44.97 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Recumida nugivilega sp. nov.

Candidatus Recumida nugivilega (NL. fem. n. *nugivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXRJ01 sp009838525*. The type genome for the species is the GenBank assembly GCA_009837385.1. The GC content of the type genome is 67.52 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Recumida gen. nov.

Candidatus Recumida (NL. fem. n. *Recumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXRJ01*. The type species for the genus is *Candidatus* Recumida nugivilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8438*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citiposaceae.

Description of *Candidatus* Recumosa rarefibula sp. nov.

Candidatus Recumosa rarefibula (NL. fem. n. *rarefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKUG01 sp007122215*. The type genome for the species is the GenBank assembly GCA_007122215.1. The GC content of the type genome is 71.26 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Recumosa gen. nov.

Candidatus Recumosa (NL. fem. n. *Recumosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKUG01*. The type species for the genus is *Candidatus* Recumosa rarefibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKUG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recumosaceae.

Description of *Candidatus* Recumosaceae fam. nov.

Candidatus Recumosaceae (NL. fem. n. *Recumosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKUG01*. The type genus for the taxon is *Candidatus* Recumosa .

According to GTDB R06-RS202, this family belongs to the order *Gaiellales*.

Description of *Candidatus* Recumula detenitas sp. nov.

Candidatus Recumula detenitas (NL. fem. n. *detenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC1-47-15 sp001001375*. The type genome for the species is the GenBank assembly GCA_001001375.1. The GC content of the type genome is 47.21 % and the genome length is 0.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Recumula gen. nov.

Candidatus Recumula (NL. fem. n. *Recumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC1-47-15*. The type species for the genus is *Candidatus* Recumula detenitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Redacana acustax sp. nov.

Candidatus Redacana acustax (NL. fem. n. *acustax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3085 sp002366545*. The type genome for the species is the GenBank assembly GCA_002366545.1. The GC content of the type genome is 40.13 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Redacana gen. nov.

Candidatus Redacana (NL. fem. n. *Redacana* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3085*. The type species for the genus is *Candidatus* Redacana acustax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3085*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redacanaceae.

Description of *Candidatus* Redacanaceae fam. nov.

Candidatus Redacanaceae (NL. fem. n. *Redacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3085.* The type genus for the taxon is *Candidatus* Redacana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monocellales.

Description of *Candidatus* Redacella delacigena sp. nov.

Candidatus Redacella delacigena (NL. fem. n. *delacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10138 sp000995845*. The type genome for the species is the GenBank assembly GCA_003520685.1. The GC content of the type genome is 42.4 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Redacella gen. nov.

Candidatus Redacella (NL. fem. n. *Redacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10138*. The type species for the genus is *Candidatus* Redacella delacigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redacellaceae.

Description of *Candidatus* Redacellaceae fam. nov.

Candidatus Redacellaceae (NL. fem. n. *Redacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10138.* The type genus for the taxon is *Candidatus* Redacella .

According to GTDB R06-RS202, this family belongs to the order *Veblenbacterales*.

Description of *Candidatus* Redacia dehisessa sp. nov.

Candidatus Redacia dehisessa (NL. fem. n. *dehisessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA003-L08 sp002701525*. The type genome for the species is the GenBank assembly GCA_002696525.1. The GC content of the type genome is 30.99 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Redacia gen. nov.

Candidatus Redacia (NL. fem. n. *Redacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCGC-AAA003-L08*. The type species for the genus is *Candidatus* Redacia dehisessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redaciaceae.

Description of *Candidatus* Redaciaceae fam. nov.

Candidatus Redaciaceae (NL. fem. n. *Redaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCGC-AAA003-L08.* The type genus for the taxon is *Candidatus* Redacia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Redaciales ord. nov.

Candidatus Redaciales (NL. fem. n. *Redaciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCGC-AAA003-L08.* The type genus for the taxon is *Candidatus* Redacia .

According to the GTDB R06-RS202, this order belongs to the class *Marinisomatia*.

Description of *Candidatus* Redacia inobritia sp. nov.

Candidatus Redacia inobritia (NL. fem. n. *inobritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCGC-AAA003-L08 sp000405805*. The type genome for the species is the GenBank assembly GCA_000405805.1. The GC content of the type genome is 30.29 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Redacida adtenitoga sp. nov.

Candidatus Redacida adtenitoga (NL. fem. n. *adtenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-64-16 sp001871755*. The type genome for the species is the GenBank assembly GCA_001871755.1. The GC content of the type genome is 63.75 % and the genome length is 3.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Redacida gen. nov.

Candidatus Redacida (NL. fem. n. *Redacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-64-16*. The type species for the genus is *Candidatus* Redacida adtenitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-64-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redacidaceae.

Description of *Candidatus* Redacidaceae fam. nov.

Candidatus Redacidaceae (NL. fem. n. *Redacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-64-16.* The type genus for the taxon is *Candidatus* Redacida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-64-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redacidales.

Description of *Candidatus* Redacidales ord. nov.

Candidatus Redacidales (NL. fem. n. *Redacidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-64-16.* The type genus for the taxon is *Candidatus* Redacida .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Redacida argitimonia sp. nov.

Candidatus Redacida argitimonia (NL. fem. n. *argitimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-64-16 sp002842085*. The type genome for the species is the GenBank assembly GCA_002842085.1. The GC content of the type genome is 62.9 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Redacosa hecatitrix sp. nov.

Candidatus Redacosa hecatitrix (NL. fem. n. *hecatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-40-39 sp001820095*. The type genome for the species is the GenBank assembly GCA_001820275.1. The GC content of the type genome is 39.45 % and the genome length is 0.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Redacosa gen. nov.

Candidatus Redacosa (NL. fem. n. *Redacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-40-39*. The type species for the genus is *Candidatus* Redacosa hecatitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Redunana abpatago sp. nov.

Candidatus Redunana abpatago (NL. fem. n. *abpatago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B111-G9 sp011042035*. The type genome for the species is the GenBank assembly GCA_011042035.1. The GC content of the type genome is 48.29 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Redunana gen. nov.

Candidatus Redunana (NL. fem. n. *Redunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B111-G9*. The type species for the genus is *Candidatus* Redunana abpatago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Redunana adpelugo sp. nov.

Candidatus Redunana adpelugo (NL. fem. n. *adpelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B111-G9 sp003646995*. The type genome for the species is the GenBank assembly GCA_003646995.1. The GC content of the type genome is 47.56 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Redunana ludibentia sp. nov.

Candidatus Redunana ludibentia (NL. fem. n. *ludibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B111-G9 sp003646865*. The type genome for the species is the GenBank assembly GCA_003646865.1. The GC content of the type genome is 48.37 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Redunaria casigatio sp. nov.

Candidatus Redunaria casigatio (NL. fem. n. *casigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYF01 sp009692985*. The type genome for the species is the GenBank assembly GCA_009692985.1. The GC content of the type genome is 59.12 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Redunaria gen. nov.

Candidatus Redunaria (NL. fem. n. *Redunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYF01*. The type species for the genus is *Candidatus* Redunaria casigatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHYF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redunariaceae.

Description of *Candidatus* Redunariaceae fam. nov.

Candidatus Redunariaceae (NL. fem. n. *Redunariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHYF01*. The type genus for the taxon is *Candidatus* Redunaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6952*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Baditariales.

Description of *Candidatus* Redunella denicicula sp. nov.

Candidatus Redunella denicicula (NL. fem. n. *denicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG023 sp900315435*. The type genome for the species is the GenBank assembly GCA_002371395.1. The GC content of the type genome is 56.87 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Redunella gen. nov.

Candidatus Redunella (NL. fem. n. *Redunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG023*. The type species for the genus is *Candidatus* Redunella denicicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Redunia denoritudo sp. nov.

Candidatus Redunia denoritudo (NL. fem. n. *denoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6345 sp002437945*. The type genome for the species is the GenBank assembly GCA_002296745.1. The GC content of the type genome is 30.29 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Redunia gen. nov.

Candidatus Redunia (NL. fem. n. *Redunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6345*. The type species for the genus is *Candidatus* Redunia denoritudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Redunida inhabitura sp. nov.

Candidatus Redunida inhabitura (NL. fem. n. *inhabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACZQA01 sp900758075*. The type genome for the species is the GenBank assembly RS_GCF_900758075.1. The GC content of the type genome is 61.98 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Redunida gen. nov.

Candidatus Redunida (NL. fem. n. *Redunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACZQA01*. The type species for the genus is *Candidatus* Redunida inhabitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QAMH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decuniaceae.

Description of *Candidatus* Redunida paracitia sp. nov.

Candidatus Redunida paracitia (NL. fem. n. *paracitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACZQA01 sp902783175*. The type genome for the species is the GenBank assembly GCA_902783175.1. The GC content of the type genome is 63.25 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Redunosa metucessa sp. nov.

Candidatus Redunosa metucessa (NL. fem. n. *metucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin11 sp013150915*. The type genome for the species is the GenBank assembly GCA_013150915.1. The GC content of the type genome is 47.8 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Redunosa gen. nov.

Candidatus Redunosa (NL. fem. n. *Redunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3Bbin11*. The type species for the genus is *Candidatus* Redunosa

metucessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3Bbin11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redunosaceae.

Description of *Candidatus* Redunosaceae fam. nov.

Candidatus Redunosaceae (NL. fem. n. *Redunosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3Bbin11.* The type genus for the taxon is *Candidatus* Redunosa .

According to GTDB R06-RS202, this family belongs to the order *Arenicellales*.

Description of *Candidatus* Redunosa refulilenta sp. nov.

Candidatus Redunosa refulilenta (NL. fem. n. *refulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3Bbin11 sp002897635*. The type genome for the species is the GenBank assembly GCA_011051025.1. The GC content of the type genome is 47.04 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Redunula nefarivita sp. nov.

Candidatus Redunula nefarivita (NL. fem. n. *nefarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOF01 sp012839015*. The type genome for the species is the GenBank assembly GCA_012839015.1. The GC content of the type genome is 32.85 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Redunula gen. nov.

Candidatus Redunula (NL. fem. n. *Redunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUOF01*. The type species for the genus is *Candidatus* Redunula nefarivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUOF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Redunulaceae.

Description of *Candidatus* Redunulaceae fam. nov.

Candidatus Redunulaceae (NL. fem. n. *Redunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUOF01*. The type genus for the taxon is *Candidatus* Redunula .

According to the original version of GTDB R06-RS202, this family belongs to the order *RFN20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cerofellales.

Description of *Candidatus* Reduvana curacetta sp. nov.

Candidatus Reduvana curacetta (NL. fem. n. *curacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-57-35 sp001804865*. The type genome for the species is the GenBank assembly GCA_003489865.1. The GC content of the type genome is 57.26 % and the genome length is 5.22 Mbp.

Description of *Candidatus* Reduvana gen. nov.

Candidatus Reduvana (NL. fem. n. *Reduvana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-57-35*. The type species for the genus is *Candidatus* Reduvana curacetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-57-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvanaceae.

Description of *Candidatus* Reduvanaceae fam. nov.

Candidatus Reduvanaceae (NL. fem. n. *Reduvanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *GWF2-57-35*. The type genus for the taxon is *Candidatus* Reduvana .

According to the original version of GTDB R06-RS202, this family belongs to the order *LD1-PB3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delacariales.

Description of *Candidatus* Reduvaria adnilousia sp. nov.

Candidatus Reduvaria adnilousia (NL. fem. n. *adnilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012511185*. The type genome for the species is the GenBank assembly GCA_012511185.1. The GC content of the type genome is 54.82 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Reduvaria gen. nov.

Candidatus Reduvaria (NL. fem. n. *Reduvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4923*. The type species for the genus is *Candidatus* Reduvaria adnilousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decunariaceae.

Description of *Candidatus* Reduvaria algifitia sp. nov.

Candidatus Reduvaria algifitia (NL. fem. n. *algifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012800135*. The type genome for the species is the GenBank assembly GCA_012800135.1. The GC content of the type genome is 47.52 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Reduvaria angipago sp. nov.

Candidatus Reduvaria angipago (NL. fem. n. *angipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012511175*. The type genome for the species is the GenBank assembly GCA_012511175.1. The GC content of the type genome is 54.94 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Reduvaria epistedo sp. nov.

Candidatus Reduvaria epistedo (NL. fem. n. *epistedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012799825*. The type genome for the species is the GenBank assembly GCA_012799825.1. The GC content of the type genome is 47.12 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Reduvaria ineffitrix sp. nov.

Candidatus Reduvaria ineffitrix (NL. fem. n. *ineffitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012841255*. The type genome for the species is the GenBank assembly GCA_012841255.1. The GC content of the type genome is 57.86 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Reduvaria letifilega sp. nov.

Candidatus Reduvaria letifilega (NL. fem. n. *letifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp002427535*. The type genome for the species is the GenBank assembly GCA_012515675.1. The GC content of the type genome is 52.44 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Reduvaria locelago sp. nov.

Candidatus Reduvaria locelago (NL. fem. n. *locelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp001512945*. The type genome for the species is the GenBank assembly GCA_012510955.1. The GC content of the type genome is 49.09 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Reduvaria luticicula sp. nov.

Candidatus Reduvaria luticicula (NL. fem. n. *luticicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012841015*. The type genome for the species is the GenBank assembly GCA_012841015.1. The GC content of the type genome is 47.92 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Reduvaria mahelentia sp. nov.

Candidatus Reduvaria mahelentia (NL. fem. n. *mahelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012800435*. The type genome for the species is the GenBank assembly GCA_012800435.1. The GC content of the type genome is 47.49 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Reduvaria ossucicella sp. nov.

Candidatus Reduvaria ossucicella (NL. fem. n. *ossucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012841145*. The type genome for the species is the GenBank assembly GCA_012841145.1. The GC content of the type genome is 51.0 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Reduvaria semifago sp. nov.

Candidatus Reduvaria semifago (NL. fem. n. *semifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012511735*. The type genome for the species is the GenBank assembly GCA_012511735.1. The GC content of the type genome is 55.35 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Reduvaria sicinastra sp. nov.

Candidatus Reduvaria sicinastra (NL. fem. n. *sicinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012799695*. The type genome for the species is the GenBank assembly GCA_012799695.1. The GC content of the type genome is 50.52 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Reduvaria subofifica sp. nov.

Candidatus Reduvaria subofifica (NL. fem. n. *subofifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4923 sp012798865*. The type genome for the species is the GenBank assembly GCA_012798865.1. The GC content of the type genome is 50.02 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Reduvella lavacousia sp. nov.

Candidatus Reduvella lavacousia (NL. fem. n. *lavacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-611 sp000434175*. The type genome for the species is the GenBank assembly GCA_000434175.1. The GC content of the type genome is 24.15 % and the genome length is 0.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Reduvella gen. nov.

Candidatus Reduvella (NL. fem. n. *Reduvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-611*. The type species for the genus is *Candidatus* Reduvella lavacousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Reduvella recucivita sp. nov.

Candidatus Reduvella recucivita (NL. fem. n. *recucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-611 sp900552235*. The type genome for the species is the GenBank assembly GCA_900552235.1. The GC content of the type genome is 24.33 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Reduvida adsicilenta sp. nov.

Candidatus Reduvida adsicilenta (NL. fem. n. *adsicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp903889965*. The type genome for the species is the GenBank assembly GCA_903889965.1. The GC content of the type genome is 58.77 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Reduvida gen. nov.

Candidatus Reduvida (NL. fem. n. *Reduvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9959*. The type species for the genus is *Candidatus* Reduvida adsicilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9959*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvidaceae.

Description of *Candidatus* Reduvidaceae fam. nov.

Candidatus Reduvidaceae (NL. fem. n. *Reduvidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9959.* The type genus for the taxon is *Candidatus* Reduvida .

According to GTDB R06-RS202, this family belongs to the order *Elusimicrobiales*.

Description of *Candidatus* Reduvida apharedo sp. nov.

Candidatus Reduvida apharedo (NL. fem. n. *apharedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001799795*. The type genome for the species is the GenBank assembly GCA_001799795.1. The GC content of the type genome is 60.69 % and the genome length is 1.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Reduvida butubitura sp. nov.

Candidatus Reduvida butubitura (NL. fem. n. *butubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001799995*. The type genome for the species is the GenBank assembly GCA_001799995.1. The GC content of the type genome is 61.67 % and the genome length is 2.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Reduvida catagitio sp. nov.

Candidatus Reduvida catagitio (NL. fem. n. *catagitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp003482905*. The type genome for the species is the GenBank assembly GCA_003482905.1. The GC content of the type genome is 59.44 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Reduvida cibicatica sp. nov.

Candidatus Reduvida cibicatica (NL. fem. n. *cibicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001799895*. The type genome for the species is the GenBank assembly GCA_001799895.1. The GC content of the type genome is 62.9 % and the genome length is 3.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 4 / D; 5m depth; 0.2 filter".

Description of *Candidatus* Reduvida cilicisca sp. nov.

Candidatus Reduvida cilicisca (NL. fem. n. *cilicisca* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001871115*. The type genome for the species is the GenBank assembly GCA_001871115.1. The GC content of the type genome is 56.3 % and the genome length is 2.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Reduvida defunitoga sp. nov.

Candidatus Reduvida defunitoga (NL. fem. n. *defunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001799715*. The type genome for the species is the GenBank assembly GCA_003452415.1. The GC content of the type genome is 64.36 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Reduvida desoredo sp. nov.

Candidatus Reduvida desoredo (NL. fem. n. *desoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp002840355*. The type genome for the species is the GenBank assembly GCA_002840355.1. The GC content of the type genome is 63.76 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Reduvida detepitrix sp. nov.

Candidatus Reduvida detepitrix (NL. fem. n. *detepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001799735*. The type genome for the species is the GenBank assembly GCA_001799735.1. The GC content of the type genome is 62.48 % and the genome length is 3.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 2 / B; 5m depth; 0.2 filter".

Description of *Candidatus* Reduvida duponatica sp. nov.

Candidatus Reduvida duponatica (NL. fem. n. *duponatica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp002779045*. The type genome for the species is the GenBank assembly GCA_002779045.1. The GC content of the type genome is 59.48 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Reduvida lanifilenta sp. nov.

Candidatus Reduvida lanifilenta (NL. fem. n. *lanifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp903879915*. The type genome for the species is the GenBank assembly GCA_903827195.1. The GC content of the type genome is 61.27 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Reduvida metapitica sp. nov.

Candidatus Reduvida metapitica (NL. fem. n. *metapitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001799845*. The type genome for the species is the GenBank assembly GCA_001799845.1. The GC content of the type genome is 64.45 % and the genome length is 3.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Reduvida offiribra sp. nov.

Candidatus Reduvida offiribra (NL. fem. n. *offiribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp903873295*. The type genome for the species is the GenBank assembly GCA_903873295.1. The GC content of the type genome is 59.11 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Reduvida pociletta sp. nov.

Candidatus Reduvida pociletta (NL. fem. n. *pociletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001800275*. The type genome for the species is the GenBank assembly GCA_001800395.1. The GC content of the type genome is 57.35 % and the genome length is 2.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Reduvida semapitrix sp. nov.

Candidatus Reduvida semapitrix (NL. fem. n. *semapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001799635*. The type genome for the species is the GenBank assembly GCA_001799635.1. The GC content of the type genome is 62.37 % and the genome length is 2.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Reduvida valefilenta sp. nov.

Candidatus Reduvida valefilenta (NL. fem. n. *valefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp903917735*. The type genome for the species is the GenBank assembly GCA_903917735.1. The GC content of the type genome is 57.85 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Reduvida xeropiforma sp. nov.

Candidatus Reduvida xeropiforma (NL. fem. n. *xeropiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9959 sp001799615*. The type genome for the species is the GenBank assembly GCA_001799815.1. The GC content of the type genome is 61.56 % and the genome length is 2.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Reduvosa necubax sp. nov.

Candidatus Reduvosa necubax (NL. fem. n. *necubax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-35-48 sp001769125*. The type genome for the species is the GenBank assembly GCA_001769745.1. The GC content of the type genome is 34.9 % and the genome length is 3.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Reduvosa gen. nov.

Candidatus Reduvosa (NL. fem. n. *Reduvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-35-48*. The type species for the genus is *Candidatus* Reduvosa necubax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-35-48*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvosaceae.

Description of *Candidatus* Reduvosaceae fam. nov.

Candidatus Reduvosaceae (NL. fem. n. *Reduvosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-35-48.* The type genus for the taxon is *Candidatus* Reduvosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Reduvula vinacago sp. nov.

Candidatus Reduvula vinacago (NL. fem. n. *vinacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2721365 sp002721365*. The type genome for the species is the GenBank assembly GCA_002721365.1. The GC content of the type genome is 65.32 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Reduvula gen. nov.

Candidatus Reduvula (NL. fem. n. *Reduvula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2721365*. The type species for the genus is *Candidatus* Reduvula vinacago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2721365*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reduvulaceae.

Description of *Candidatus* Reduvulaceae fam. nov.

Candidatus Reduvulaceae (NL. fem. n. *Reduvulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2721365.* The type genus for the taxon is *Candidatus* Reduvula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7887*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Demulariales.

Description of *Candidatus* Refacana lupanitia sp. nov.

Candidatus Refacana lupanitia (NL. fem. n. *lupanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLCH01 sp003566995*. The type genome for the species is the GenBank assembly GCA_003566995.1. The GC content of the type genome is 55.34 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Refacana gen. nov.

Candidatus Refacana (NL. fem. n. *Refacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLCH01*. The type species for the genus is *Candidatus* Refacana lupanitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refacana metapitrix sp. nov.

Candidatus Refacana metapitrix (NL. fem. n. *metapitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLCH01 sp007125915*. The type genome for the species is the GenBank assembly GCA_003561075.1. The GC content of the type genome is 54.58 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Refacaria diluvilenta sp. nov.

Candidatus Refacaria diluvilenta (NL. fem. n. *diluvilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-54 sp005881025*. The type genome for the species is the GenBank assembly GCA_005880745.1. The GC content of the type genome is 66.06 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Refacaria gen. nov.

Candidatus Refacaria (NL. fem. n. *Refacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-54*. The type species for the genus is *Candidatus* Refacaria diluvilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refacella admuledo sp. nov.

Candidatus Refacella admuledo (NL. fem. n. *admuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2013 sp003978185*. The type genome for the species is the GenBank assembly GCA_003978185.1. The GC content of the type genome is 39.49 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Refacella gen. nov.

Candidatus Refacella (NL. fem. n. *Refacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA2013*. The type species for the genus is *Candidatus* Refacella admuledo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refacella cocoliforma sp. nov.

Candidatus Refacella cocoliforma (NL. fem. n. *cocoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2013 sp002335045*. The type genome for the species is the GenBank assembly GCA_002335045.1. The GC content of the type genome is 39.36 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Refacella denavousia sp. nov.

Candidatus Refacella denavousia (NL. fem. n. *denavousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2013 sp003978285*. The type genome for the species is the GenBank assembly GCA_003978285.1. The GC content of the type genome is 39.36 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Refacella tegimugo sp. nov.

Candidatus Refacella tegimugo (NL. fem. n. *tegimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2013 sp003489145*. The type genome for the species is the GenBank assembly GCA_003489945.1. The GC content of the type genome is 39.88 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Refacia cohuretta sp. nov.

Candidatus Refacia cohuretta (NL. fem. n. *cohuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11654 sp002691305*. The type genome for the species is the GenBank assembly GCA_014239385.1. The GC content of the type genome is 39.4 %

and the genome length is 1.37 Mbp.

Description of *Candidatus* Refacia gen. nov.

Candidatus Refacia (NL. fem. n. *Refacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11654*. The type species for the genus is *Candidatus* Refacia cohuretta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11654*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refaciaceae.

Description of *Candidatus* Refaciaceae fam. nov.

Candidatus Refaciaceae (NL. fem. n. *Refaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11654.* The type genus for the taxon is *Candidatus* Refacia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11654*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Refaciales.

Description of *Candidatus* Refaciales ord. nov.

Candidatus Refaciales (NL. fem. n. *Refaciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11654.* The type genus for the taxon is *Candidatus* Refacia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Refacia excomitrix sp. nov.

Candidatus Refacia excomitrix (NL. fem. n. *excomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11654 sp002717445*. The type genome for the species is the GenBank assembly GCA_002717445.1. The GC content of the type genome is 39.84 %

and the genome length is 1.51 Mbp.

Description of *Candidatus* Refacia feculatio sp. nov.

Candidatus Refacia feculatio (NL. fem. n. *feculatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11654 sp902553145*. The type genome for the species is the GenBank assembly GCA_902586565.1. The GC content of the type genome is 39.14 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Refacia inhumitudo sp. nov.

Candidatus Refacia inhumitudo (NL. fem. n. *inhumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11654 sp003449795*. The type genome for the species is the GenBank assembly GCA_003449795.1. The GC content of the type genome is 38.34 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Refacia tegumilega sp. nov.

Candidatus Refacia tegumilega (NL. fem. n. *tegumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11654 sp002718375*. The type genome for the species is the GenBank assembly GCA_002718375.1. The GC content of the type genome is 38.34 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Refacia vehicitia sp. nov.

Candidatus Refacia vehicitia (NL. fem. n. *vehicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11654 sp001629325*. The type genome for the species is the GenBank assembly GCA_902577505.1. The GC content of the type genome is 38.45 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Refacia viripibula sp. nov.

Candidatus Refacia viripibula (NL. fem. n. *viripibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11654 sp002691465*. The type genome for the species is the GenBank assembly GCA_002691465.1. The GC content of the type genome is 38.62 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Refacosa anastisca sp. nov.

Candidatus Refacosa anastisca (NL. fem. n. *anastisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6249 sp002441245*. The type genome for the species is the GenBank assembly GCA_002441245.1. The GC content of the type genome is 41.29 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Refacosa gen. nov.

Candidatus Refacosa (NL. fem. n. *Refacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6249*. The type species for the genus is *Candidatus* Refacosa anastisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Refacosaceae fam. nov.

Candidatus Refacosaceae (NL. fem. n. *Refacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6249.* The type genus for the taxon is *Candidatus* Refacosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GIF10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decamellales.

Description of *Candidatus* Refacosa esculilega sp. nov.

Candidatus Refacosa esculilega (NL. fem. n. *esculilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6249 sp002796135*. The type genome for the species is the GenBank assembly GCA_002796135.1. The GC content of the type genome is 41.0 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Refacosa homilifica sp. nov.

Candidatus Refacosa homilifica (NL. fem. n. *homilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6249 sp903907475*. The type genome for the species is the GenBank assembly GCA_903907475.1. The GC content of the type genome is 39.97 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Refacosa negiditia sp. nov.

Candidatus Refacosa negiditia (NL. fem. n. *negiditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6249 sp004298075*. The type genome for the species is the GenBank assembly GCA_004298075.1. The GC content of the type genome is 46.17 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Refacosa solacitoga sp. nov.

Candidatus Refacosa solacitoga (NL. fem. n. *solacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6249 sp903852325*. The type genome for the species is the GenBank assembly GCA_903874485.1. The GC content of the type genome is 48.1 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Refacosa venabedo sp. nov.

Candidatus Refacosa venabedo (NL. fem. n. *venabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6249 sp002441305*. The type genome for the species is the GenBank assembly GCA_002441305.1. The GC content of the type genome is 48.06 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Refacula decenax sp. nov.

Candidatus Refacula decenax (NL. fem. n. *decenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1338 sp900550805*. The type genome for the species is the GenBank assembly GCA_900550805.1. The GC content of the type genome is 52.16 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Refacula gen. nov.

Candidatus Refacula (NL. fem. n. *Refacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1338*. The type species for the genus is *Candidatus* Refacula decenax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QALW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lanugariaceae.

Description of *Candidatus* Refinana exaggibra sp. nov.

Candidatus Refinana exaggibra (NL. fem. n. *exaggibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737125 sp002737125*. The type genome for the species is the GenBank assembly GCA_002737125.1. The GC content of the type genome is 56.93 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Refinana gen. nov.

Candidatus Refinana (NL. fem. n. *Refinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *GCA-2737125*. The type species for the genus is *Candidatus* Refinana exaggibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Refinana excalatio sp. nov.

Candidatus Refinana excalatio (NL. fem. n. *excalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737125 sp009694585*. The type genome for the species is the GenBank assembly GCA_009694585.1. The GC content of the type genome is 57.33 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Refinana hecatessa sp. nov.

Candidatus Refinana hecatessa (NL. fem. n. *hecatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737125 sp009702725*. The type genome for the species is the GenBank assembly GCA_009698095.1. The GC content of the type genome is 56.33 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Refinana infatentia sp. nov.

Candidatus Refinana infatentia (NL. fem. n. *infatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737125 sp009700485*. The type genome for the species is the GenBank assembly GCA_009700485.1. The GC content of the type genome is 56.89 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Refinana legifimonas sp. nov.

Candidatus Refinana legifimonas (NL. fem. n. *legifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2737125 sp903960135*. The type genome for the species is the GenBank assembly GCA_903935455.1. The GC content of the type genome is 59.48 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Refinana necopilega sp. nov.

Candidatus Refinana necopilega (NL. fem. n. *necopilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737125 sp005798555*. The type genome for the species is the GenBank assembly GCA_005789765.1. The GC content of the type genome is 60.18 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Refinana opporifica sp. nov.

Candidatus Refinana opporifica (NL. fem. n. *opporifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737125 sp014190275*. The type genome for the species is the GenBank assembly GCA_014190275.1. The GC content of the type genome is 58.91 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Refinella cacomibra sp. nov.

Candidatus Refinella cacomibra (NL. fem. n. *cacomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zgenome-0027 sp003854995*. The type genome for the species is the GenBank assembly GCA_003854995.1. The GC content of the type genome is 52.65 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Refinella gen. nov.

Candidatus Refinella (NL. fem. n. *Refinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Zgenome-0027*. The type species for the genus is *Candidatus* Refinella cacomibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Zgenome-0027*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Refinellaceae.

Description of *Candidatus* Refinellaceae fam. nov.

Candidatus Refinellaceae (NL. fem. n. *Refinellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Zgenome-0027.* The type genus for the taxon is *Candidatus* Refinella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Renavosales.

Description of *Candidatus* Refinella inbelitica sp. nov.

Candidatus Refinella inbelitica (NL. fem. n. *inbelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zgenome-0027 sp003854975*. The type genome for the species is the GenBank assembly GCA_003854975.1. The GC content of the type genome is 46.83 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Refinia catapitoga sp. nov.

Candidatus Refinia catapitoga (NL. fem. n. *catapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-30 sp001773855*. The type genome for the species is the GenBank assembly GCA_001773855.1. The GC content of the type genome is 63.73 % and the genome length is 1.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Refinia gen. nov.

Candidatus Refinia (NL. fem. n. *Refinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-66-30*. The type species for the genus is *Candidatus* Refinia catapitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-66-30*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refiniaceae.

Description of *Candidatus* Refiniaceae fam. nov.

Candidatus Refiniaceae (NL. fem. n. *Refiniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-66-30.* The type genus for the taxon is *Candidatus* Refinia .

According to GTDB R06-RS202, this family belongs to the order *Aminicenantales*.

Description of *Candidatus* Refinia detesivita sp. nov.

Candidatus Refinia detesivita (NL. fem. n. *detesivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-30 sp011048485*. The type genome for the species is the GenBank assembly GCA_011048485.1. The GC content of the type genome is 66.47 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Refinia effemicula sp. nov.

Candidatus Refinia effemicula (NL. fem. n. *effemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-30 sp012516875*. The type genome for the species is the GenBank assembly GCA_012516875.1. The GC content of the type genome is 63.82 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Refinia fedititio sp. nov.

Candidatus Refinia fedititio (NL. fem. n. *fedititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-30 sp001775755*. The type genome for the species is the GenBank assembly GCA_001775755.1. The GC content of the type genome is 64.05 % and the genome length is 2.45 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle background sediment; well D04 at 19ft depth".

Description of *Candidatus* Refinia protrivita sp. nov.

Candidatus Refinia protrivita (NL. fem. n. *protrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-66-30 sp001775715*. The type genome for the species is the GenBank assembly GCA_001775715.1. The GC content of the type genome is 65.98 % and the genome length is 2.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Refinida cilibitoga sp. nov.

Candidatus Refinida cilibitoga (NL. fem. n. *cilibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCL01 sp013360295*. The type genome for the species is the GenBank assembly GCA_013360295.1. The GC content of the type genome is 43.03 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Refinida gen. nov.

Candidatus Refinida (NL. fem. n. *Refinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCL01*. The type species for the genus is *Candidatus* Refinida cilibitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refinida holisousia sp. nov.

Candidatus Refinida holisousia (NL. fem. n. *holisousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCL01 sp903843135*. The type genome for the species is the GenBank assembly GCA_903871165.1. The GC content of the type genome is 43.67 %

and the genome length is 3.93 Mbp.

Description of *Candidatus* Refinosa abluvimonas sp. nov.

Candidatus Refinosa abluvimonas (NL. fem. n. *abluvimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGL01 sp011525365*. The type genome for the species is the GenBank assembly GCA_011525365.1. The GC content of the type genome is 68.47 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Refinosa gen. nov.

Candidatus Refinosa (NL. fem. n. *Refinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WTGL01*. The type species for the genus is *Candidatus* Refinosa abluvimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QQVD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cululidaceae.

Description of *Candidatus* Refinosa cerucitio sp. nov.

Candidatus Refinosa cerucitio (NL. fem. n. *cerucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGL01 sp009837885*. The type genome for the species is the GenBank assembly GCA_009842435.1. The GC content of the type genome is 68.46 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Refinosa desonilenta sp. nov.

Candidatus Refinosa desonilenta (NL. fem. n. *desonilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGL01 sp009843505*. The type genome for the species is the GenBank assembly GCA_009843505.1. The GC content of the type genome is 68.31 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Refinosa detotatio sp. nov.

Candidatus Refinosa detotatio (NL. fem. n. *detotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGL01 sp009837085*. The type genome for the species is the GenBank assembly GCA_009837085.1. The GC content of the type genome is 68.32 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Refinosa lucericella sp. nov.

Candidatus Refinosa lucericella (NL. fem. n. *lucericella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGL01 sp012270995*. The type genome for the species is the GenBank assembly GCA_012270995.1. The GC content of the type genome is 68.27 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Refinosa malogicella sp. nov.

Candidatus Refinosa malogicella (NL. fem. n. *malogicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGL01 sp009845425*. The type genome for the species is the GenBank assembly GCA_009838785.1. The GC content of the type genome is 68.32 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Refinosa refunifica sp. nov.

Candidatus Refinosa refunifica (NL. fem. n. *refunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGL01 sp011523565*. The type genome for the species is the GenBank assembly GCA_011523565.1. The GC content of the type genome is 68.09 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Refinosa rurigousia sp. nov.

Candidatus Refinosa rurigousia (NL. fem. n. *rurigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WTGL01 sp009836625*. The type genome for the species is the GenBank assembly GCA_009844385.1. The GC content of the type genome is 68.43 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Refinula bucoliforma sp. nov.

Candidatus Refinula bucoliforma (NL. fem. n. *bucoliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-37-8 sp903872785*. The type genome for the species is the GenBank assembly GCA_903827285.1. The GC content of the type genome is 35.79 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Refinula gen. nov.

Candidatus Refinula (NL. fem. n. *Refinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-37-8*. The type species for the genus is *Candidatus* Refinula bucoliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Refinula dececiforma sp. nov.

Candidatus Refinula dececiforma (NL. fem. n. *dececiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-37-8 sp001782645*. The type genome for the species is the GenBank assembly GCA_000992095.1. The GC content of the type genome is 36.75 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Refinula melopimonia sp. nov.

Candidatus Refinula melopimonia (NL. fem. n. *melopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-37-8 sp001783805*. The type genome for the species is the GenBank assembly GCA_001782335.1. The GC content of the type genome is 38.56 % and the genome length is 0.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Refocana adgesisca sp. nov.

Candidatus Refocana adgesisca (NL. fem. n. *adgesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-3-55-5 sp001914815*. The type genome for the species is the GenBank assembly GCA_001914815.1. The GC content of the type genome is 55.37 % and the genome length is 2.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 2; 20cm depth; 6 days after first rain event (27mm)".

Description of *Candidatus* Refocana gen. nov.

Candidatus Refocana (NL. fem. n. *Refocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40CM-3-55-5*. The type species for the genus is *Candidatus* Refocana adgesisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refocana exhonax sp. nov.

Candidatus Refocana exhonax (NL. fem. n. *exhonax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-3-55-5 sp003224935*. The type genome for the species is the GenBank assembly GCA_003224935.1. The GC content of the type genome is 55.16 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Refocana minagugo sp. nov.

Candidatus Refocana minagugo (NL. fem. n. *minagugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-3-55-5 sp001918935*. The type genome for the species is the GenBank assembly GCA_001917495.1. The GC content of the type genome is 55.22 % and the genome length is 1.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 2; 20cm depth; 2 days after second rain event (91mm)".

Description of *Candidatus* Refocaria maligitia sp. nov.

Candidatus Refocaria maligitia (NL. fem. n. *maligitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXNJ01 sp009840625*. The type genome for the species is the GenBank assembly GCA_009840625.1. The GC content of the type genome is 64.84 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Refocaria gen. nov.

Candidatus Refocaria (NL. fem. n. *Refocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXNJ01*. The type species for the genus is *Candidatus* Refocaria maligitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VXNJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refocariaceae.

Description of *Candidatus* Refocariaceae fam. nov.

Candidatus Refocariaceae (NL. fem. n. *Refocariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VXNJ01.* The type genus for the taxon is *Candidatus* Refocaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11872*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rosacidales.

Description of *Candidatus* Refocella acculax sp. nov.

Candidatus Refocella acculax (NL. fem. n. *acculax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin18 sp004376575*. The type genome for the species is the GenBank assembly GCA_004376575.1. The GC content of the type genome is 50.21 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Refocella gen. nov.

Candidatus Refocella (NL. fem. n. *Refocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin18*. The type species for the genus is *Candidatus* Refocella acculax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refocellaceae.

Description of *Candidatus* Refocellaceae fam. nov.

Candidatus Refocellaceae (NL. fem. n. *Refocellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin18.* The type genus for the taxon is *Candidatus* Refocella .

According to the original version of GTDB R06-RS202, this family belongs to the order *E44-bin18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Refocellales.

Description of *Candidatus* Refocellales ord. nov.

Candidatus Refocellales (NL. fem. n. *Refocellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin18.* The type genus for the taxon is *Candidatus* Refocella .

According to the original version of GTDB R06-RS202, this family belongs to the class *DG-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cacopellae.

Description of *Candidatus* Refocia infucastra sp. nov.

Candidatus Refocia infucastra (NL. fem. n. *infucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACXFL01 sp902766925*. The type genome for the species is the GenBank assembly GCA_902766925.1. The GC content of the type genome is 31.42 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Refocia gen. nov.

Candidatus Refocia (NL. fem. n. *Refocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACXFL01*. The type species for the genus is *Candidatus* Refocia infucastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACXFL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refociaceae.

Description of *Candidatus* Refociaceae fam. nov.

Candidatus Refociaceae (NL. fem. n. *Refociaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACXFL01.* The type genus for the taxon is *Candidatus* Refocia .

According to GTDB R06-RS202, this family belongs to the order *Oligoflexales*.

Description of *Candidatus* Refocida cibicitoga sp. nov.

Candidatus Refocida cibicitoga (NL. fem. n. *cibicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJKW01 sp903821355*. The type genome for the species is the GenBank assembly GCA_903821355.1. The GC content of the type genome is 37.18 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Refocida gen. nov.

Candidatus Refocida (NL. fem. n. *Refocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJKW01*. The type species for the genus is *Candidatus* Refocida cibicitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIZLB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicapariaceae.

Description of *Candidatus* Refocida inmoritica sp. nov.

Candidatus Refocida inmoritica (NL. fem. n. *inmoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJKW01 sp903864515*. The type genome for the species is the GenBank assembly GCA_903864515.1. The GC content of the type genome is 35.81 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Refocida nocenivita sp. nov.

Candidatus Refocida nocenivita (NL. fem. n. *nocenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJKW01 sp903848795*. The type genome for the species is the GenBank assembly GCA_903900915.1. The GC content of the type genome is 36.95 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Refocida solacigena sp. nov.

Candidatus Refocida solacigena (NL. fem. n. *solacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJKW01 sp903952785*. The type genome for the species is the GenBank assembly GCA_903952785.1. The GC content of the type genome is 37.33 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Refocida supelibra sp. nov.

Candidatus Refocida supelibra (NL. fem. n. *supelibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJKW01 sp903936565*. The type genome for the species is the GenBank assembly GCA_903936565.1. The GC content of the type genome is 37.49 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Refocosa rutabibra sp. nov.

Candidatus Refocosa rutabibra (NL. fem. n. *rutabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-39-24 sp001789445*. The type genome for the species is the GenBank assembly GCA_001789955.1. The GC content of the type genome is 38.78 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Refocosa gen. nov.

Candidatus Refocosa (NL. fem. n. *Refocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-39-24*. The type species for the genus is *Candidatus* Refocosa rutabibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-37-13b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifidaceae.

Description of *Candidatus* Refocula baropibula sp. nov.

Candidatus Refocula baropibula (NL. fem. n. *baropibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG727 sp902797005*. The type genome for the species is the GenBank assembly GCA_902797005.1. The GC content of the type genome is 28.85 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Refocula gen. nov.

Candidatus Refocula (NL. fem. n. *Refocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG727*. The type species for the genus is *Candidatus* Refocula baropibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Refocula genocitio sp. nov.

Candidatus Refocula genocitio (NL. fem. n. *genocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG727 sp900321795*. The type genome for the species is the GenBank assembly GCA_900321795.1. The GC content of the type genome is 28.37 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Reforana addivitoga sp. nov.

Candidatus Reforana addivitoga (NL. fem. n. *addivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG440 sp902772085*. The type genome for the species is the GenBank assembly GCA_902772085.1. The GC content of the type genome is 59.12 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Reforana gen. nov.

Candidatus Reforana (NL. fem. n. *Reforana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG440*. The type species for the genus is *Candidatus* Reforana addivitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Reforana adgesibula sp. nov.

Candidatus Reforana adgesibula (NL. fem. n. *adgesibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG440 sp902793465*. The type genome for the species is the GenBank assembly GCA_902793465.1. The GC content of the type genome is 57.43 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Reforana amnenitoga sp. nov.

Candidatus Reforana amnenitoga (NL. fem. n. *amnenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG440 sp902786015*. The type genome for the species is the GenBank assembly GCA_902786015.1. The GC content of the type genome is 57.72 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Reforana antomitio sp. nov.

Candidatus Reforana antomitio (NL. fem. n. *antomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG440 sp902793195*. The type genome for the species is the GenBank assembly GCA_902793195.1. The GC content of the type genome is 61.56 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Reforana assicatio sp. nov.

Candidatus Reforana assicatio (NL. fem. n. *assicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG440 sp902798915*. The type genome for the species is the GenBank assembly GCA_902798915.1. The GC content of the type genome is 60.61 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Reforana decitilega sp. nov.

Candidatus Reforana decitilega (NL. fem. n. *decitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG440 sp902766445*. The type genome for the species is the GenBank assembly GCA_902766445.1. The GC content of the type genome is 58.9 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Reforana estovisca sp. nov.

Candidatus Reforana estovisca (NL. fem. n. *estovisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG440 sp902803315*. The type genome for the species is the GenBank assembly GCA_902803315.1. The GC content of the type genome is 58.41 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Reforana semigicella sp. nov.

Candidatus Reforana semigicella (NL. fem. n. *semigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG440 sp902780305*. The type genome for the species is the GenBank assembly GCA_902780305.1. The GC content of the type genome is 61.67 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Reforana semimisca sp. nov.

Candidatus Reforana semimisca (NL. fem. n. *semimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG440 sp900318935*. The type genome for the species is the GenBank assembly GCA_902759715.1. The GC content of the type genome is 59.31 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Reforaria adnulugo sp. nov.

Candidatus Reforaria adnulugo (NL. fem. n. *adnulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUMD01 sp003551215*. The type genome for the species is the GenBank assembly GCA_003551215.1. The GC content of the type genome is 56.17 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Reforaria gen. nov.

Candidatus Reforaria (NL. fem. n. *Reforaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUMD01*. The type species for the genus is *Candidatus* Reforaria adnulugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUMD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reforariaceae.

Description of *Candidatus* Reforariaceae fam. nov.

Candidatus Reforariaceae (NL. fem. n. *Reforariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PUMD01*. The type genus for the taxon is *Candidatus* Reforaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLMV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Revecidales.

Description of *Candidatus* Reforella obfenastra sp. nov.

Candidatus Reforella obfenastra (NL. fem. n. *obfenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS3-K002 sp011774835*. The type genome for the species is the GenBank assembly GCA_011774835.1. The GC content of the type genome is 66.75 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Reforella gen. nov.

Candidatus Reforella (NL. fem. n. *Reforella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KS3-K002*. The type species for the genus is *Candidatus* Reforella obfenastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *KS3-K002*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Reforellaceae.

Description of *Candidatus* Reforellaceae fam. nov.

Candidatus Reforellaceae (NL. fem. n. *Reforellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *KS3-K002.* The type genus for the taxon is *Candidatus* Reforella .

According to the original version of GTDB R06-RS202, this family belongs to the order *KS3-K002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Reforellales.

Description of *Candidatus* Reforellales ord. nov.

Candidatus Reforellales (NL. fem. n. *Reforellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *KS3-K002.* The type genus for the taxon is *Candidatus* Reforella .

According to the GTDB R06-RS202, this order belongs to the class *Gemmatimonadetes*.

Description of *Candidatus* Reforia curacastra sp. nov.

Candidatus Reforia curacastra (NL. fem. n. *curacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHUY01 sp009694435*. The type genome for the species is the GenBank assembly GCA_009697865.1. The GC content of the type genome is 53.26 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Reforia gen. nov.

Candidatus Reforia (NL. fem. n. *Reforia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHUY01*. The type species for the genus is *Candidatus* Reforia curacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-555*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pocilulaceae.

Description of *Candidatus* Reforida bimotastra sp. nov.

Candidatus Reforida bimotastra (NL. fem. n. *bimotastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-53-26 sp001795035*. The type genome for the species is the GenBank assembly GCA_001795035.1. The GC content of the type genome is 53.7 % and the genome length is 1.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Reforida gen. nov.

Candidatus Reforida (NL. fem. n. *Reforida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-53-26*. The type species for the genus is *Candidatus* Reforida bimotastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-53-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reforidaceae.

Description of *Candidatus* Reforidaceae fam. nov.

Candidatus Reforidaceae (NL. fem. n. *Reforidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-53-26.* The type genus for the taxon is *Candidatus* Reforida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2777*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Horomanales.

Description of *Candidatus* Reforosa bipeniforma sp. nov.

Candidatus Reforosa bipeniforma (NL. fem. n. *bipeniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903905335*. The type genome for the species is the GenBank assembly GCA_903932495.1. The GC content of the type genome is 40.34 % and the

genome length is 2.87 Mbp.

Description of *Candidatus* Reforosa gen. nov.

Candidatus Reforosa (NL. fem. n. *Reforosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KS41*. The type species for the genus is *Candidatus* Reforosa bipeniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Reforosa canacetta sp. nov.

Candidatus Reforosa canacetta (NL. fem. n. *canacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp003584865*. The type genome for the species is the GenBank assembly GCA_003584865.1. The GC content of the type genome is 41.67 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Reforosa cenotibula sp. nov.

Candidatus Reforosa cenotibula (NL. fem. n. *cenotibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903903765*. The type genome for the species is the GenBank assembly GCA_903903765.1. The GC content of the type genome is 38.28 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Reforosa cenotimonia sp. nov.

Candidatus Reforosa cenotimonia (NL. fem. n. *cenotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903873165*. The type genome for the species is the GenBank assembly GCA_903873165.1. The GC content of the type genome is 39.43 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Reforosa cepulicella sp. nov.

Candidatus Reforosa cepulicella (NL. fem. n. *cepulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903939355*. The type genome for the species is the GenBank assembly GCA_903933495.1. The GC content of the type genome is 39.24 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Reforosa coninivita sp. nov.

Candidatus Reforosa coninivita (NL. fem. n. *coninivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903908165*. The type genome for the species is the GenBank assembly GCA_903830715.1. The GC content of the type genome is 38.41 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Reforosa decupitio sp. nov.

Candidatus Reforosa decupitio (NL. fem. n. *decupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903934035*. The type genome for the species is the GenBank assembly GCA_903934035.1. The GC content of the type genome is 39.73 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Reforosa defanifica sp. nov.

Candidatus Reforosa defanifica (NL. fem. n. *defanifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903859415*. The type genome for the species is the GenBank assembly GCA_903857775.1. The GC content of the type genome is 41.73 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Reforosa deparax sp. nov.

Candidatus Reforosa deparax (NL. fem. n. *deparax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903873045*. The type genome for the species is the GenBank assembly GCA_903873045.1. The GC content of the type genome is 43.61 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Reforosa derecessa sp. nov.

Candidatus Reforosa derecessa (NL. fem. n. *derecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903938485*. The type genome for the species is the GenBank assembly GCA_903844515.1. The GC content of the type genome is 38.12 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Reforosa detesibula sp. nov.

Candidatus Reforosa detesibula (NL. fem. n. *detesibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903910205*. The type genome for the species is the GenBank assembly GCA_903885955.1. The GC content of the type genome is 41.29 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Reforosa dicabilega sp. nov.

Candidatus Reforosa dicabilega (NL. fem. n. *dicabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp002862125*. The type genome for the species is the GenBank assembly GCA_002862125.1. The GC content of the type genome is 46.8 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Reforosa hegumitoga sp. nov.

Candidatus Reforosa hegumitoga (NL. fem. n. *hegumitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903839855*. The type genome for the species is the GenBank assembly GCA_903913685.1. The GC content of the type genome is 41.1 % and the

genome length is 3.42 Mbp.

Description of *Candidatus* Reforosa hirunugo sp. nov.

Candidatus Reforosa hirunugo (NL. fem. n. *hirunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp002256705*. The type genome for the species is the GenBank assembly GCA_002256705.1. The GC content of the type genome is 44.82 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Reforosa homunibula sp. nov.

Candidatus Reforosa homunibula (NL. fem. n. *homunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903917345*. The type genome for the species is the GenBank assembly GCA_903864705.1. The GC content of the type genome is 39.99 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Reforosa impacitudo sp. nov.

Candidatus Reforosa impacitudo (NL. fem. n. *impacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp003158415*. The type genome for the species is the GenBank assembly GCA_003158415.1. The GC content of the type genome is 48.2 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Reforosa indubitas sp. nov.

Candidatus Reforosa indubitas (NL. fem. n. *indubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903839795*. The type genome for the species is the GenBank assembly GCA_903839795.1. The GC content of the type genome is 43.83 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Reforosa inornigena sp. nov.

Candidatus Reforosa inornigena (NL. fem. n. *inornigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903903365*. The type genome for the species is the GenBank assembly GCA_903903365.1. The GC content of the type genome is 44.47 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Reforosa luxuritio sp. nov.

Candidatus Reforosa luxuritio (NL. fem. n. *luxuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903866825*. The type genome for the species is the GenBank assembly GCA_903866825.1. The GC content of the type genome is 41.52 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Reforosa oblucimonia sp. nov.

Candidatus Reforosa oblucimonia (NL. fem. n. *oblucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp013140465*. The type genome for the species is the GenBank assembly GCA_013140465.1. The GC content of the type genome is 49.16 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Reforosa omnivitura sp. nov.

Candidatus Reforosa omnivitura (NL. fem. n. *omnivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp002256465*. The type genome for the species is the GenBank assembly GCA_002256465.1. The GC content of the type genome is 44.25 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Reforosa rinocicella sp. nov.

Candidatus Reforosa rinocicella (NL. fem. n. *rinocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903918335*. The type genome for the species is the GenBank assembly GCA_903821065.1. The GC content of the type genome is 38.55 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Reforosa sanabugo sp. nov.

Candidatus Reforosa sanabugo (NL. fem. n. *sanabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp003584875*. The type genome for the species is the GenBank assembly GCA_903851585.1. The GC content of the type genome is 39.98 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Reforosa tegumiforma sp. nov.

Candidatus Reforosa tegumiforma (NL. fem. n. *tegumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp903863905*. The type genome for the species is the GenBank assembly GCA_903880255.1. The GC content of the type genome is 40.67 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Reforosa tubicentia sp. nov.

Candidatus Reforosa tubicentia (NL. fem. n. *tubicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS41 sp003584895*. The type genome for the species is the GenBank assembly GCA_903914745.1. The GC content of the type genome is 40.67 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Reforula expisessa sp. nov.

Candidatus Reforula expisessa (NL. fem. n. *expisessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYPW01 sp012519615*. The type genome for the species is the GenBank assembly GCA_012519615.1. The GC content of the type genome is 26.05 %

and the genome length is 1.8 Mbp.

Description of *Candidatus* Reforula gen. nov.

Candidatus Reforula (NL. fem. n. *Reforula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYPW01*. The type species for the genus is *Candidatus* Reforula expisessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYPW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reforulaceae.

Description of *Candidatus* Reforulaceae fam. nov.

Candidatus Reforulaceae (NL. fem. n. *Reforulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYPW01.* The type genus for the taxon is *Candidatus* Reforula .

According to GTDB R06-RS202, this family belongs to the order *Fusobacteriales*.

Description of *Candidatus* Refulana velivousia sp. nov.

Candidatus Refulana velivousia (NL. fem. n. *velivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFDB01 sp004558825*. The type genome for the species is the GenBank assembly GCA_900540695.1. The GC content of the type genome is 51.0 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Refulana gen. nov.

Candidatus Refulana (NL. fem. n. *Refulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFDB01*. The type species for the genus is *Candidatus* Refulana velivousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Selecellaceae.

Description of *Candidatus* Refulella detenimonia sp. nov.

Candidatus Refulella detenimonia (NL. fem. n. *detenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11623 sp902770965*. The type genome for the species is the GenBank assembly GCA_902768865.1. The GC content of the type genome is 50.56 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Refulella gen. nov.

Candidatus Refulella (NL. fem. n. *Refulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11623*. The type species for the genus is *Candidatus* Refulella detenimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refulia antacisca sp. nov.

Candidatus Refulia antacisca (NL. fem. n. *antacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-35-9 sp001783275*. The type genome for the species is the GenBank assembly GCA_001783275.1. The GC content of the type genome is 34.53 % and the genome length is 2.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Refulia gen. nov.

Candidatus Refulia (NL. fem. n. *Refulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-35-9*. The type species for the genus is *Candidatus* Refulia antacisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GWF2-35-9. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refuliaceae.

Description of *Candidatus* Refuliaceae fam. nov.

Candidatus Refuliaceae (NL. fem. n. *Refuliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-35-9.* The type genus for the taxon is *Candidatus* Refulia .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWF2-35-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Refuliales.

Description of *Candidatus* Refuliales ord. nov.

Candidatus Refuliales (NL. fem. n. *Refuliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWF2-35-9.* The type genus for the taxon is *Candidatus* Refulia .

According to the GTDB R06-RS202, this order belongs to the class *Riflemargulisbacteria*.

Description of *Candidatus* Refulida adalgibula sp. nov.

Candidatus Refulida adalgibula (NL. fem. n. *adalgibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14156 sp902796305*. The type genome for the species is the GenBank assembly GCA_902796305.1. The GC content of the type genome is 32.46 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Refulida gen. nov.

Candidatus Refulida (NL. fem. n. *Refulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14156*. The type species for the genus is *Candidatus* Refulida adalgibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

RUG14156. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refulidaceae.

Description of *Candidatus* Refulidaceae fam. nov.

Candidatus Refulidaceae (NL. fem. n. *Refulidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG14156.* The type genus for the taxon is *Candidatus* Refulida .

According to GTDB R06-RS202, this family belongs to the order *Gastranaerophilales*.

Description of *Candidatus* Refulida inresitudo sp. nov.

Candidatus Refulida inresitudo (NL. fem. n. *inresitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14156 sp902796515*. The type genome for the species is the GenBank assembly GCA_902796515.1. The GC content of the type genome is 33.16 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Refulosa alluvitrix sp. nov.

Candidatus Refulosa alluvitrix (NL. fem. n. *alluvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NMUJ01 sp002256535*. The type genome for the species is the GenBank assembly GCA_002256535.1. The GC content of the type genome is 44.84 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Refulosa gen. nov.

Candidatus Refulosa (NL. fem. n. *Refulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NMUJ01*. The type species for the genus is *Candidatus* Refulosa alluvitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NMUJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refulosaceae.

Description of *Candidatus* Refulosaceae fam. nov.

Candidatus Refulosaceae (NL. fem. n. *Refulosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NMUJ01*. The type genus for the taxon is *Candidatus* Refulosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *NMUJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Refulosales.

Description of *Candidatus* Refulosales ord. nov.

Candidatus Refulosales (NL. fem. n. *Refulosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NMUJ01*. The type genus for the taxon is *Candidatus* Refulosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA3073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Morigosae.

Description of *Candidatus* Refulula ensifitas sp. nov.

Candidatus Refulula ensifitas (NL. fem. n. *ensifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *13-1-40CM-64-14 sp001917855*. The type genome for the species is the GenBank assembly GCA_001917855.1. The GC content of the type genome is 64.09 % and the genome length is 2.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; pre rain".

Description of *Candidatus* Refulula gen. nov.

Candidatus Refulula (NL. fem. n. *Refulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *13-1-40CM-64-14*. The type species for the genus is *Candidatus* Refulula ensifitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family

13-1-40CM-64-14. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refululaceae.

Description of *Candidatus* Refululaceae fam. nov.

Candidatus Refululaceae (NL. fem. n. *Refululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *13-1-40CM-64-14.* The type genus for the taxon is *Candidatus* Refulula .

According to the original version of GTDB R06-RS202, this family belongs to the order *CSP1-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Minagiales.

Description of *Candidatus* Refunana defasitio sp. nov.

Candidatus Refunana defasitio (NL. fem. n. *defasitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-87 sp007116105*. The type genome for the species is the GenBank assembly GCA_007116105.1. The GC content of the type genome is 45.68 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Refunana gen. nov.

Candidatus Refunana (NL. fem. n. *Refunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBR16-87*. The type species for the genus is *Candidatus* Refunana defasitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refunana enimvicula sp. nov.

Candidatus Refunana enimvicula (NL. fem. n. *enimvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-87 sp007123535*. The type genome for the species is the

GenBank assembly GCA_007123535.1. The GC content of the type genome is 43.98 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Refunana rutabitudo sp. nov.

Candidatus Refunana rutabitudo (NL. fem. n. *rutabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBR16-87 sp007117565*. The type genome for the species is the GenBank assembly GCA_007117565.1. The GC content of the type genome is 43.77 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Refunaria corocessa sp. nov.

Candidatus Refunaria corocessa (NL. fem. n. *corocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJANQ01 sp903930035*. The type genome for the species is the GenBank assembly GCA_903930035.1. The GC content of the type genome is 73.33 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Refunaria gen. nov.

Candidatus Refunaria (NL. fem. n. *Refunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJANQ01*. The type species for the genus is *Candidatus* Refunaria corocessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refunaria lanifisca sp. nov.

Candidatus Refunaria lanifisca (NL. fem. n. *lanifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJANQ01 sp903941145*. The type genome for the species is the GenBank assembly GCA_903941145.1. The GC content of the type genome is 71.26 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Refunella citocetta sp. nov.

Candidatus Refunella citocetta (NL. fem. n. *citocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4064 sp002382065*. The type genome for the species is the GenBank assembly GCA_002424785.1. The GC content of the type genome is 50.42 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Refunella gen. nov.

Candidatus Refunella (NL. fem. n. *Refunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4064*. The type species for the genus is *Candidatus* Refunella citocetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refunia adsigatica sp. nov.

Candidatus Refunia adsigatica (NL. fem. n. *adsigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIBE01 sp009695265*. The type genome for the species is the GenBank assembly GCA_009695265.1. The GC content of the type genome is 55.04 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Refunia gen. nov.

Candidatus Refunia (NL. fem. n. *Refunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIBE01*. The type species for the genus is *Candidatus* Refunia adsigatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SIBE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refuniaceae.

Description of *Candidatus* Refuniaceae fam. nov.

Candidatus Refuniaceae (NL. fem. n. *Refuniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SIBE01.* The type genus for the taxon is *Candidatus* Refunia .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Refunida delapago sp. nov.

Candidatus Refunida delapago (NL. fem. n. *delapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12223 sp002937495*. The type genome for the species is the GenBank assembly GCA_002937495.1. The GC content of the type genome is 31.2 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Refunida gen. nov.

Candidatus Refunida (NL. fem. n. *Refunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12223*. The type species for the genus is *Candidatus* Refunida delapago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12223*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refunidaceae.

Description of *Candidatus* Refunidaceae fam. nov.

Candidatus Refunidaceae (NL. fem. n. *Refunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12223.* The type genus for the taxon is *Candidatus* Refunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1280*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redacariales.

Description of *Candidatus* Refunida vicecigena sp. nov.

Candidatus Refunida vicecigena (NL. fem. n. *vicecigena* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12223 sp003450915*. The type genome for the species is the GenBank assembly GCA_003450915.1. The GC content of the type genome is 32.04 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Refunosa cenobessa sp. nov.

Candidatus Refunosa cenobessa (NL. fem. n. *cenobessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG626 sp900317385*. The type genome for the species is the GenBank assembly GCA_900317385.1. The GC content of the type genome is 54.93 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Refunosa gen. nov.

Candidatus Refunosa (NL. fem. n. *Refunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG626*. The type species for the genus is *Candidatus* Refunosa cenobessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Refunosa femelitoga sp. nov.

Candidatus Refunosa femelitoga (NL. fem. n. *femelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG626 sp900320765*. The type genome for the species is the GenBank assembly GCA_900320765.1. The GC content of the type genome is 55.04 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Refunula subofitura sp. nov.

Candidatus Refunula subofitura (NL. fem. n. *subofitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-33-17 sp001786995*. The type genome for the species is the GenBank assembly GCA_001785485.1. The GC content of the type genome is 32.68 % and the genome length is 0.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Refunula gen. nov.

Candidatus Refunula (NL. fem. n. *Refunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-33-17*. The type species for the genus is *Candidatus* Refunula subofitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relaposaceae.

Description of *Candidatus* Regifana fumacivita sp. nov.

Candidatus Regifana fumacivita (NL. fem. n. *fumacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GAS474 sp900105685*. The type genome for the species is the GenBank assembly RS_GCF_900105685.1. The GC content of the type genome is 65.76 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Regifana gen. nov.

Candidatus Regifana (NL. fem. n. *Regifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GAS474*. The type species for the genus is *Candidatus* Regifana fumacivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GAS474*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Regifanaceae.

Description of *Candidatus* Regifanaceae fam. nov.

Candidatus Regifanaceae (NL. fem. n. *Regifanaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GAS474.* The type genus for the taxon is *Candidatus* Regifana .

According to GTDB R06-RS202, this family belongs to the order *Methylacidiphilales*.

Description of *Candidatus* Regifana tegumigena sp. nov.

Candidatus Regifana tegumigena (NL. fem. n. *tegumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GAS474 sp903889845*. The type genome for the species is the GenBank assembly GCA_903889845.1. The GC content of the type genome is 65.58 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Regifaria cinipessa sp. nov.

Candidatus Regifaria cinipessa (NL. fem. n. *cinipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ATZT02 sp005789325*. The type genome for the species is the GenBank assembly GCA_005789325.1. The GC content of the type genome is 38.85 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Regifaria gen. nov.

Candidatus Regifaria (NL. fem. n. *Regifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ATZT02*. The type species for the genus is *Candidatus* Regifaria cinipessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AcAMD-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mimogosaceae.

Description of *Candidatus* Regifaria hirunitudo sp. nov.

Candidatus Regifaria hirunitudo (NL. fem. n. *hirunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ATZT02 sp000428345*. The type genome for the species is the GenBank assembly GCA_000428345.2. The GC content of the type genome is 38.7 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Regifaria prospax sp. nov.

Candidatus Regifaria prospax (NL. fem. n. *prospax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ATZT02 sp014190035*. The type genome for the species is the GenBank assembly GCA_014190035.1. The GC content of the type genome is 38.55 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Regifella semifetta sp. nov.

Candidatus Regifella semifetta (NL. fem. n. *semifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSED10-335 sp003557585*. The type genome for the species is the GenBank assembly GCA_003557585.1. The GC content of the type genome is 40.62 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Regifella gen. nov.

Candidatus Regifella (NL. fem. n. *Regifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSED10-335*. The type species for the genus is *Candidatus* Regifella semifetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSSED10-335*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Regifellaceae.

Description of *Candidatus* Regifellaceae fam. nov.

Candidatus Regifellaceae (NL. fem. n. *Regifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CSSED10-335*. The type genus for the taxon is *Candidatus* Regifella .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Regifia dimadilenta sp. nov.

Candidatus Regifia dimadilenta (NL. fem. n. *dimadilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7330 sp002471275*. The type genome for the species is the GenBank assembly GCA_002336125.1. The GC content of the type genome is 42.69 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Regifia gen. nov.

Candidatus Regifia (NL. fem. n. *Regifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7330*. The type species for the genus is *Candidatus* Regifia dimadilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Regifida bisacitica sp. nov.

Candidatus Regifida bisacitica (NL. fem. n. *bisacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1668 sp900768105*. The type genome for the species is the GenBank assembly RS_GCF_900768105.1. The GC content of the type genome is 47.6 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Regifida gen. nov.

Candidatus Regifida (NL. fem. n. *Regifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1668*. The type species for the genus is *Candidatus* Regifida bisacitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Regifida denigimonia sp. nov.

Candidatus Regifida denigimonia (NL. fem. n. *denigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1668 sp004556975*. The type genome for the species is the GenBank assembly GCA_004561885.1. The GC content of the type genome is 49.78 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Regifida sarabicella sp. nov.

Candidatus Regifida sarabicella (NL. fem. n. *sarabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1668 sp900553955*. The type genome for the species is the GenBank assembly RS_GCF_900768555.1. The GC content of the type genome is 50.7 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Regifosa adsusitica sp. nov.

Candidatus Regifosa adsusitica (NL. fem. n. *adsusitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B28-G17 sp003645735*. The type genome for the species is the GenBank assembly GCA_003645735.1. The GC content of the type genome is 59.93 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Regifosa gen. nov.

Candidatus Regifosa (NL. fem. n. *Regifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B28-G17*. The type species for the genus is *Candidatus* Regifosa adsusitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B28-G17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Regifosaceae.

Description of *Candidatus* Regifosaceae fam. nov.

Candidatus Regifosaceae (NL. fem. n. *Regifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B28-G17.* The type genus for the taxon is *Candidatus* Regifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *B28-G17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Regifosales.

Description of *Candidatus* Regifosales ord. nov.

Candidatus Regifosales (NL. fem. n. *Regifosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B28-G17.* The type genus for the taxon is *Candidatus* Regifosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *WGA-4E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Demociae.

Description of *Candidatus* Regifula debucigena sp. nov.

Candidatus Regifula debucigena (NL. fem. n. *debucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1889 sp900556055*. The type genome for the species is the GenBank assembly RS_GCF_900766405.1. The GC content of the type genome is 46.3 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Regifula gen. nov.

Candidatus Regifula (NL. fem. n. *Regifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1889*. The type species for the genus is *Candidatus* Regifula debucigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Regigaria citocousia sp. nov.

Candidatus Regigaria citocousia (NL. fem. n. *citocousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3402 sp003478355*. The type genome for the species is the GenBank assembly GCA_900545695.1. The GC content of the type genome is 46.34 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Regigaria gen. nov.

Candidatus Regigaria (NL. fem. n. *Regigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3402*. The type species for the genus is *Candidatus* Regigaria citocousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Regigaria scellimonia sp. nov.

Candidatus Regigaria scellimonia (NL. fem. n. *scellimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3402 sp002358555*. The type genome for the species is the GenBank assembly GCA_002358555.1. The GC content of the type genome is 38.84 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Regigella salubatio sp. nov.

Candidatus Regigella salubatio (NL. fem. n. *salubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-46-10 sp001817635*. The type genome for the species is the GenBank assembly GCA_001002165.1. The GC content of the type genome is 46.14 % and the genome length is 0.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Regigella gen. nov.

Candidatus Regigella (NL. fem. n. *Regigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-46-10*. The type species for the genus is *Candidatus* Regigella salubatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Regigia denigitura sp. nov.

Candidatus Regigia denigitura (NL. fem. n. *denigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10656 sp002085445*. The type genome for the species is the GenBank assembly GCA_002085445.1. The GC content of the type genome is 42.85 % and the genome length is 8.45 Mbp.

Description of *Candidatus* Regigia gen. nov.

Candidatus Regigia (NL. fem. n. *Regigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10656*. The type species for the genus is *Candidatus* Regigia denigitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Regigia resacax sp. nov.

Candidatus Regigia resacax (NL. fem. n. *resacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10656 sp003645185*. The type genome for the species is the GenBank assembly GCA_003645245.1. The GC content of the type genome is 40.91 % and the genome length is 8.21 Mbp.

Description of *Candidatus* Regigida rurigessa sp. nov.

Candidatus Regigida rurigessa (NL. fem. n. *rurigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVPM01 sp903907815*. The type genome for the species is the

GenBank assembly GCA_903907815.1. The GC content of the type genome is 35.21 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Regigida gen. nov.

Candidatus Regigida (NL. fem. n. *Regigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVPM01*. The type species for the genus is *Candidatus* Regigida rurigessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Regigosa adlubitas sp. nov.

Candidatus Regigosa adlubitas (NL. fem. n. *adlubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2146 sp002311975*. The type genome for the species is the GenBank assembly GCA_002311975.1. The GC content of the type genome is 50.95 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Regigosa gen. nov.

Candidatus Regigosa (NL. fem. n. *Regigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2146*. The type species for the genus is *Candidatus* Regigosa adlubitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S15-B10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minagulaceae.

Description of *Candidatus* Regigosa volunilenta sp. nov.

Candidatus Regigosa volunilenta (NL. fem. n. *volunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2146 sp002471705*. The type genome for the species is the GenBank assembly GCA_002471705.1. The GC content of the type genome is 50.17 %

and the genome length is 1.84 Mbp.

Description of *Candidatus* Regigula demogitoga sp. nov.

Candidatus Regigula demogitoga (NL. fem. n. *demogitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-105 sp003167495*. The type genome for the species is the GenBank assembly GCA_003167495.1. The GC content of the type genome is 55.98 % and the genome length is 9.39 Mbp.

Description of *Candidatus* Regigula gen. nov.

Candidatus Regigula (NL. fem. n. *Regigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-105*. The type species for the genus is *Candidatus* Regigula demogitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Regigula divorentia sp. nov.

Candidatus Regigula divorentia (NL. fem. n. *divorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-105 sp003163855*. The type genome for the species is the GenBank assembly GCA_003163855.1. The GC content of the type genome is 56.23 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Regigula rurigastra sp. nov.

Candidatus Regigula rurigastra (NL. fem. n. *rurigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-105 sp003169195*. The type genome for the species is the GenBank assembly GCA_003169195.1. The GC content of the type genome is 55.37 % and the genome length is 7.82 Mbp.

Description of *Candidatus* Reichenbachiella curotifica sp. nov.

Candidatus Reichenbachiella curotifica (NL. fem. n. *curotifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reichenbachiella sp002742335*. The type genome for the species is the GenBank assembly RS_GCF_002742335.1. The GC content of the type genome is 45.14 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Reinekea spastitrix sp. nov.

Candidatus Reinekea spastitrix (NL. fem. n. *spastitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reinekea sp008041945*. The type genome for the species is the GenBank assembly RS_GCF_008041945.1. The GC content of the type genome is 45.51 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Relapana caravivita sp. nov.

Candidatus Relapana caravivita (NL. fem. n. *caravivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVKH01 sp903906425*. The type genome for the species is the GenBank assembly GCA_903906425.1. The GC content of the type genome is 59.18 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Relapana gen. nov.

Candidatus Relapana (NL. fem. n. *Relapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVKH01*. The type species for the genus is *Candidatus* Relapana caravivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIVKH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapanaceae.

Description of *Candidatus* Relapanaceae fam. nov.

Candidatus Relapanaceae (NL. fem. n. *Relapanaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIVKH01*. The type genus for the taxon is *Candidatus* Relapana .

According to the original version of GTDB R06-RS202, this family belongs to the order *LD1-PB3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delacariales.

Description of *Candidatus* Relaparia momoribula sp. nov.

Candidatus Relaparia momoribula (NL. fem. n. *momoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-45-28 sp001819395*. The type genome for the species is the GenBank assembly GCA_001819455.1. The GC content of the type genome is 45.54 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaparia gen. nov.

Candidatus Relaparia (NL. fem. n. *Relaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-45-28*. The type species for the genus is *Candidatus* Relaparia momoribula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *H02-45-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Supelanaceae.

Description of *Candidatus* Relapella cosigentia sp. nov.

Candidatus Relapella cosigentia (NL. fem. n. *cosigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3ABIN14 sp002897695*. The type genome for the species is the GenBank assembly GCA_002897695.1. The GC content of the type genome is 55.37 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Relapella gen. nov.

Candidatus Relapella (NL. fem. n. *Relapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BMS3ABIN14*. The type species for the genus is *Candidatus* Relapella cosigentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BMS3Abin14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapellaceae.

Description of *Candidatus* Relapellaceae fam. nov.

Candidatus Relapellaceae (NL. fem. n. *Relapellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3Abin14.* The type genus for the taxon is *Candidatus* Relapella .

According to the original version of GTDB R06-RS202, this family belongs to the order *BMS3Abin14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Relapellales.

Description of *Candidatus* Relapellales ord. nov.

Candidatus Relapellales (NL. fem. n. *Relapellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3Abin14.* The type genus for the taxon is *Candidatus* Relapella .

According to the original version of GTDB R06-RS202, this family belongs to the class *BMS3Abin14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Relapellae.

Description of *Candidatus* Relapellae class. nov.

Candidatus Relapellae (NL. fem. n. *c__Relapellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3Abin14.* The type genus for the taxon is *Candidatus* Relapella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *BMS3Abin14*. According to the renamed version of GTDB R06-RS202, this

taxon belongs to the phylum *Candidatus* Relapellota.

Description of *Candidatus* Relapellota phyl. nov.

Candidatus Relapellota (NL. fem. n. *Relapellota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BMS3Abin14.* The type genus for the taxon is *Candidatus* Relapella .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Relapella metucitio sp. nov.

Candidatus Relapella metucitio (NL. fem. n. *metucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BMS3ABIN14 sp013151915*. The type genome for the species is the GenBank assembly GCA_013151915.1. The GC content of the type genome is 54.97 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Relapia ammigugo sp. nov.

Candidatus Relapia ammigugo (NL. fem. n. *ammigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4427 sp002719955*. The type genome for the species is the GenBank assembly GCA_002719955.1. The GC content of the type genome is 63.33 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Relapia gen. nov.

Candidatus Relapia (NL. fem. n. *Relapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4427*. The type species for the genus is *Candidatus* Relapia ammigugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4427*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapiaceae.

Description of *Candidatus* Relapiaceae fam. nov.

Candidatus Relapiaceae (NL. fem. n. *Relapiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4427*. The type genus for the taxon is *Candidatus* Relapia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxifiales.

Description of *Candidatus* Relapia emancitudo sp. nov.

Candidatus Relapia emancitudo (NL. fem. n. *emancitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4427 sp011051925*. The type genome for the species is the GenBank assembly GCA_011051925.1. The GC content of the type genome is 65.99 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Relapia hibisibula sp. nov.

Candidatus Relapia hibisibula (NL. fem. n. *hibisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4427 sp002390675*. The type genome for the species is the GenBank assembly GCA_002390675.1. The GC content of the type genome is 59.19 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Relapia lavabitura sp. nov.

Candidatus Relapia lavabitura (NL. fem. n. *lavabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4427 sp012959805*. The type genome for the species is the GenBank assembly GCA_012959805.1. The GC content of the type genome is 59.05 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Relapia nicotimonia sp. nov.

Candidatus Relapia nicotimonia (NL. fem. n. *nicotimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4427 sp002709835*. The type genome for the species is the GenBank assembly GCA_002709835.1. The GC content of the type genome is 66.75 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Relapida defacimonia sp. nov.

Candidatus Relapida defacimonia (NL. fem. n. *defacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOVX01 sp903894145*. The type genome for the species is the GenBank assembly GCA_903894145.1. The GC content of the type genome is 49.16 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Relapida gen. nov.

Candidatus Relapida (NL. fem. n. *Relapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOVX01*. The type species for the genus is *Candidatus* Relapida defacimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIOVX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapidaceae.

Description of *Candidatus* Relapidaceae fam. nov.

Candidatus Relapidaceae (NL. fem. n. *Relapidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIOVX01.* The type genus for the taxon is *Candidatus* Relapida .

According to the original version of GTDB R06-RS202, this family belongs to the order *D2-FULL-39-29*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lapilanales.

Description of *Candidatus* Relapida nutamitas sp. nov.

Candidatus Relapida nutamitas (NL. fem. n. *nutamitas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOVX01 sp903915125*. The type genome for the species is the GenBank assembly GCA_903915125.1. The GC content of the type genome is 48.82 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Relapida subabitudo sp. nov.

Candidatus Relapida subabitudo (NL. fem. n. *subabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOVX01 sp903916325*. The type genome for the species is the GenBank assembly GCA_903853605.1. The GC content of the type genome is 48.78 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Relapida valefugo sp. nov.

Candidatus Relapida valefugo (NL. fem. n. *valefugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOVX01 sp903861835*. The type genome for the species is the GenBank assembly GCA_903871455.1. The GC content of the type genome is 48.57 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Relaposa ambecibula sp. nov.

Candidatus Relaposa ambecibula (NL. fem. n. *ambecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp903825255*. The type genome for the species is the GenBank assembly GCA_903825255.1. The GC content of the type genome is 32.35 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Relaposa gen. nov.

Candidatus Relaposa (NL. fem. n. *Relaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA9973*. The type species for the genus is *Candidatus* Relaposa ambecibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relaposaceae.

Description of *Candidatus* Relaposaceae fam. nov.

Candidatus Relaposaceae (NL. fem. n. *Relaposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9973.* The type genus for the taxon is *Candidatus* Relaposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Relaposa benivicella sp. nov.

Candidatus Relaposa benivicella (NL. fem. n. *benivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp000999465*. The type genome for the species is the GenBank assembly GCA_003539105.1. The GC content of the type genome is 42.93 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Relaposa bimotessa sp. nov.

Candidatus Relaposa bimotessa (NL. fem. n. *bimotessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp000991415*. The type genome for the species is the GenBank assembly GCA_000990415.1. The GC content of the type genome is 34.72 % and the genome length is 0.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Relaposa bugilitas sp. nov.

Candidatus Relaposa bugilitas (NL. fem. n. *bugilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp903869825*. The type genome for the species is the GenBank assembly GCA_903869825.1. The GC content of the type genome is 36.42 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Relaposa buxifugo sp. nov.

Candidatus Relaposa buxifugo (NL. fem. n. *buxifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001786765*. The type genome for the species is the GenBank assembly GCA_001786875.1. The GC content of the type genome is 36.17 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Relaposa cenacilega sp. nov.

Candidatus Relaposa cenacilega (NL. fem. n. *cenacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001787035*. The type genome for the species is the GenBank assembly GCA_001785285.1. The GC content of the type genome is 40.25 % and the genome length is 0.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaposa cituvilega sp. nov.

Candidatus Relaposa cituvilega (NL. fem. n. *cituvilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp000990145*. The type genome for the species is the GenBank assembly GCA_000992225.1. The GC content of the type genome is 36.94 % and the genome length is 0.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Relaposa conabicula sp. nov.

Candidatus Relaposa conabicula (NL. fem. n. *conabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001785445*. The type genome for the species is the GenBank assembly GCA_000993455.1. The GC content of the type genome is 39.24 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Relaposa conubilenta sp. nov.

Candidatus Relaposa conubilenta (NL. fem. n. *conubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp903904195*. The type genome for the species is the GenBank assembly GCA_903904195.1. The GC content of the type genome is 36.97 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Relaposa denavessa sp. nov.

Candidatus Relaposa denavessa (NL. fem. n. *denavessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp903895055*. The type genome for the species is the GenBank assembly GCA_903895055.1. The GC content of the type genome is 38.1 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Relaposa dilemilega sp. nov.

Candidatus Relaposa dilemilega (NL. fem. n. *dilemilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001785615*. The type genome for the species is the GenBank assembly GCA_001785615.1. The GC content of the type genome is 41.84 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Relaposa echogimonas sp. nov.

Candidatus Relaposa echogimonas (NL. fem. n. *echogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp009695015*. The type genome for the species is the GenBank assembly GCA_009695015.1. The GC content of the type genome is 36.44 % and the genome length is 0.44 Mbp.

Description of *Candidatus* Relaposa exhonessa sp. nov.

Candidatus Relaposa exhonessa (NL. fem. n. *exhonessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp003157195*. The type genome for the species is the GenBank assembly GCA_003157195.1. The GC content of the type genome is 39.7 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Relaposa exsufousia sp. nov.

Candidatus Relaposa exsufousia (NL. fem. n. *exsufousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001786015*. The type genome for the species is the GenBank assembly GCA_001786015.1. The GC content of the type genome is 46.24 % and the genome length is 0.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaposa exsurifica sp. nov.

Candidatus Relaposa exsurifica (NL. fem. n. *exsurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001787005*. The type genome for the species is the GenBank assembly GCA_001787005.1. The GC content of the type genome is 39.58 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaposa frigdicula sp. nov.

Candidatus Relaposa frigdicula (NL. fem. n. *frigdicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp000994705*. The type genome for the species is the GenBank assembly GCA_000994705.1. The GC content of the type genome is 39.82 % and the genome length is 0.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Relaposa genocatio sp. nov.

Candidatus Relaposa genocatio (NL. fem. n. *genocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001786195*. The type genome for the species is the GenBank assembly GCA_001786045.1. The GC content of the type genome is 40.56 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Relaposa impacilenta sp. nov.

Candidatus Relaposa impacilenta (NL. fem. n. *impacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp903838985*. The type genome for the species is the GenBank assembly GCA_903838985.1. The GC content of the type genome is 32.07 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Relaposa impudifica sp. nov.

Candidatus Relaposa impudifica (NL. fem. n. *impudifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001785985*. The type genome for the species is the GenBank assembly GCA_001785985.1. The GC content of the type genome is 40.68 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaposa innabisca sp. nov.

Candidatus Relaposa innabisca (NL. fem. n. *innabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001785805*. The type genome for the species is the GenBank assembly GCA_001785805.1. The GC content of the type genome is 39.0 % and the genome length is 0.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaposa luculatio sp. nov.

Candidatus Relaposa luculatio (NL. fem. n. *luculatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp000989515*. The type genome for the species is the GenBank assembly GCA_000989515.1. The GC content of the type genome is 30.79 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Relaposa mahelitica sp. nov.

Candidatus Relaposa mahelitica (NL. fem. n. *mahelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001785355*. The type genome for the species is the GenBank assembly GCA_001785595.1. The GC content of the type genome is 41.33 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Relaposa metabilenta sp. nov.

Candidatus Relaposa metabilenta (NL. fem. n. *metabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001787125*. The type genome for the species is the GenBank assembly GCA_001787125.1. The GC content of the type genome is 44.14 % and the genome length is 0.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Relaposa omnifilega sp. nov.

Candidatus Relaposa omnifilega (NL. fem. n. *omnifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001785515*. The type genome for the species is the GenBank assembly GCA_001785515.1. The GC content of the type genome is 34.91 % and the genome length is 0.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Relaposa pabilatio sp. nov.

Candidatus Relaposa pabilatio (NL. fem. n. *pabilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001786805*. The type genome for the species is the GenBank assembly GCA_001786805.1. The GC content of the type genome is 39.54 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaposa pericatica sp. nov.

Candidatus Relaposa pericatica (NL. fem. n. *pericatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp903894955*. The type genome for the species is the GenBank assembly GCA_903894955.1. The GC content of the type genome is 34.94 % and the genome length is 0.63 Mbp.

Description of *Candidatus* Relaposa recumivita sp. nov.

Candidatus Relaposa recumivita (NL. fem. n. *recumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001786365*. The type genome for the species is the GenBank assembly GCA_001786295.1. The GC content of the type genome is 35.49 % and the genome length is 0.68 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Relaposa relapitas sp. nov.

Candidatus Relaposa relapitas (NL. fem. n. *relapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp002792755*. The type genome for the species is the GenBank assembly GCA_002792755.1. The GC content of the type genome is 30.32 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Relaposa rosacastra sp. nov.

Candidatus Relaposa rosacastra (NL. fem. n. *rosacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001786745*. The type genome for the species is the GenBank assembly GCA_001786745.1. The GC content of the type genome is 36.38 % and the genome length is 0.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaposa sarabilega sp. nov.

Candidatus Relaposa sarabilega (NL. fem. n. *sarabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp000993955*. The type genome for the species is the GenBank assembly GCA_000993955.1. The GC content of the type genome is 36.12 % and the genome length is 0.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Relaposa sotuletta sp. nov.

Candidatus Relaposa sotuletta (NL. fem. n. *sotuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp903888625*. The type genome for the species is the GenBank assembly GCA_903888625.1. The GC content of the type genome is 33.13 %

and the genome length is 0.9 Mbp.

Description of *Candidatus* Relaposa tibicitudo sp. nov.

Candidatus Relaposa tibicitudo (NL. fem. n. *tibicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001785675*. The type genome for the species is the GenBank assembly GCA_001786175.1. The GC content of the type genome is 37.07 % and the genome length is 0.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Relaposa tumefessa sp. nov.

Candidatus Relaposa tumefessa (NL. fem. n. *tumefessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp002788475*. The type genome for the species is the GenBank assembly GCA_002786695.1. The GC content of the type genome is 31.76 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Relaposa utraressa sp. nov.

Candidatus Relaposa utraressa (NL. fem. n. *utraressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp903907175*. The type genome for the species is the GenBank assembly GCA_903907175.1. The GC content of the type genome is 33.37 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Relaposa utrinicula sp. nov.

Candidatus Relaposa utrinicula (NL. fem. n. *utrinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001000035*. The type genome for the species is the GenBank assembly GCA_001000035.1. The GC content of the type genome is 42.87 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Relaposa vehemousia sp. nov.

Candidatus Relaposa vehemousia (NL. fem. n. *vehemousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001785865*. The type genome for the species is the GenBank assembly GCA_001785865.1. The GC content of the type genome is 40.75 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaposa velifatica sp. nov.

Candidatus Relaposa velifatica (NL. fem. n. *velifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001786835*. The type genome for the species is the GenBank assembly GCA_001786835.1. The GC content of the type genome is 40.2 % and the genome length is 0.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Relaposa vinacivita sp. nov.

Candidatus Relaposa vinacivita (NL. fem. n. *vinacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001787205*. The type genome for the species is the GenBank assembly GCA_001787245.1. The GC content of the type genome is 39.07 % and the genome length is 0.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Relaposa virecitrix sp. nov.

Candidatus Relaposa virecitrix (NL. fem. n. *virecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001786225*. The type genome for the species is the

GenBank assembly GCA_001786225.1. The GC content of the type genome is 46.16 % and the genome length is 0.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Relaposa virecugo sp. nov.

Candidatus Relaposa virecugo (NL. fem. n. *virecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9973 sp001786955*. The type genome for the species is the GenBank assembly GCA_000997645.1. The GC content of the type genome is 41.25 % and the genome length is 0.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Relapula cisaligena sp. nov.

Candidatus Relapula cisaligena (NL. fem. n. *cisaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-64-396 sp001872725*. The type genome for the species is the GenBank assembly GCA_002793495.1. The GC content of the type genome is 62.77 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Relapula gen. nov.

Candidatus Relapula (NL. fem. n. *Relapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-64-396*. The type species for the genus is *Candidatus* Relapula cisaligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-64-396*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relapulaceae.

Description of *Candidatus* Relapulaceae fam. nov.

Candidatus Relapulaceae (NL. fem. n. *Relapulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CG1-02-64-396.* The type genus for the taxon is *Candidatus* Relapula .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG1-02-64-396*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Relapulales.

Description of *Candidatus* Relapulales ord. nov.

Candidatus Relapulales (NL. fem. n. *Relapulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG1-02-64-396.* The type genus for the taxon is *Candidatus* Relapula .

According to the GTDB R06-RS202, this order belongs to the class *Zetaproteobacteria*.

Description of *Candidatus* Relecana allacitas sp. nov.

Candidatus Relecana allacitas (NL. fem. n. *allacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-661 sp003131945*. The type genome for the species is the GenBank assembly GCA_003131945.1. The GC content of the type genome is 66.83 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Relecana gen. nov.

Candidatus Relecana (NL. fem. n. *Relecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-661*. The type species for the genus is *Candidatus* Relecana allacitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegosaceae.

Description of *Candidatus* Relecana nubigitia sp. nov.

Candidatus Relecana nubigitia (NL. fem. n. *nubigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Palsa-661 sp003151475*. The type genome for the species is the GenBank assembly GCA_003167615.1. The GC content of the type genome is 66.57 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Relecaria cohurifica sp. nov.

Candidatus Relecaria cohurifica (NL. fem. n. *cohurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA995 sp003517845*. The type genome for the species is the GenBank assembly GCA_003517845.1. The GC content of the type genome is 66.63 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Relecaria gen. nov.

Candidatus Relecaria (NL. fem. n. *Relecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA995*. The type species for the genus is *Candidatus* Relecaria cohurifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA995*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relecariaceae.

Description of *Candidatus* Relecariaceae fam. nov.

Candidatus Relecariaceae (NL. fem. n. *Relecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA995.* The type genus for the taxon is *Candidatus* Relecaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA995*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Relecariales.

Description of *Candidatus* Relecariales ord. nov.

Candidatus Relecariales (NL. fem. n. *Relecariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA995.* The type genus for the taxon is *Candidatus* Relecaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetariae.

Description of *Candidatus* Relecaria recoressa sp. nov.

Candidatus Relecaria recoressa (NL. fem. n. *recoressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA995 sp002291985*. The type genome for the species is the GenBank assembly GCA_002291985.1. The GC content of the type genome is 65.58 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Relecella renavibra sp. nov.

Candidatus Relecella renavibra (NL. fem. n. *renavibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZCTH02-B6 sp002159155*. The type genome for the species is the GenBank assembly GCA_002159155.1. The GC content of the type genome is 65.53 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Relecella gen. nov.

Candidatus Relecella (NL. fem. n. *Relecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZCTH02-B6*. The type species for the genus is *Candidatus* Relecella renavibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ZCTH02-B6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relecellaceae.

Description of *Candidatus* Relecellaceae fam. nov.

Candidatus Relecellaceae (NL. fem. n. *Relecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ZCTH02-B6.* The type genus for the taxon is *Candidatus* Relecella .

According to GTDB R06-RS202, this family belongs to the order *Limnochordales_A*.

Description of *Candidatus* Relecia cepulentia sp. nov.

Candidatus Relecia cepulentia (NL. fem. n. *cepulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11963 sp902795675*. The type genome for the species is the GenBank assembly GCA_902795675.1. The GC content of the type genome is 28.1 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Relecia gen. nov.

Candidatus Relecia (NL. fem. n. *Relecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11963*. The type species for the genus is *Candidatus* Relecia cepulentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Relecia colopivita sp. nov.

Candidatus Relecia colopivita (NL. fem. n. *colopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11963 sp002362595*. The type genome for the species is the GenBank assembly GCA_002362595.1. The GC content of the type genome is 26.75 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Relecia maxumivita sp. nov.

Candidatus Relecia maxumivita (NL. fem. n. *maxumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11963 sp902800945*. The type genome for the species is the GenBank assembly GCA_902800945.1. The GC content of the type genome is 30.05 %

and the genome length is 1.42 Mbp.

Description of *Candidatus* Relecia pulegentia sp. nov.

Candidatus Relecia pulegentia (NL. fem. n. *pulegentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11963 sp900552975*. The type genome for the species is the GenBank assembly GCA_900552975.1. The GC content of the type genome is 27.19 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Relecida chancimonas sp. nov.

Candidatus Relecida chancimonas (NL. fem. n. *chancimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5232 sp012797935*. The type genome for the species is the GenBank assembly GCA_012797935.1. The GC content of the type genome is 33.02 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Relecida gen. nov.

Candidatus Relecida (NL. fem. n. *Relecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5232*. The type species for the genus is *Candidatus* Relecida chancimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Relecida epiclousia sp. nov.

Candidatus Relecida epiclousia (NL. fem. n. *epiclousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5232 sp012513575*. The type genome for the species is the GenBank assembly GCA_012513575.1. The GC content of the type genome is 35.17 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Relecida luculimonas sp. nov.

Candidatus Relecida luculimonas (NL. fem. n. *luculimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5232 sp002409215*. The type genome for the species is the GenBank assembly GCA_002409215.1. The GC content of the type genome is 35.16 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Relecida obnoximonas sp. nov.

Candidatus Relecida obnoximonas (NL. fem. n. *obnoximonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5232 sp012842045*. The type genome for the species is the GenBank assembly GCA_012842045.1. The GC content of the type genome is 34.17 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Relecida tirunitio sp. nov.

Candidatus Relecida tirunitio (NL. fem. n. *tirunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5232 sp903840015*. The type genome for the species is the GenBank assembly GCA_903875565.1. The GC content of the type genome is 36.43 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Relecosa decenivita sp. nov.

Candidatus Relecosa decenivita (NL. fem. n. *decenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXXJ01 sp013334545*. The type genome for the species is the GenBank assembly GCA_013334545.1. The GC content of the type genome is 58.78 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Relecosa gen. nov.

Candidatus Relecosa (NL. fem. n. *Relecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXXJ01*. The type species for the genus is *Candidatus* Relecosa decenivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9217*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volucosaceae.

Description of *Candidatus* Relecula refulivita sp. nov.

Candidatus Relecula refulivita (NL. fem. n. *refulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-892 sp003135415*. The type genome for the species is the GenBank assembly GCA_003140335.1. The GC content of the type genome is 61.54 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Relecula gen. nov.

Candidatus Relecula (NL. fem. n. *Relecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-892*. The type species for the genus is *Candidatus* Relecula refulivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Relenana ensigousia sp. nov.

Candidatus Relenana ensigousia (NL. fem. n. *ensigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11705 sp002773615*. The type genome for the species is the GenBank assembly GCA_002773615.1. The GC content of the type genome is 39.27 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Relenana gen. nov.

Candidatus Relenana (NL. fem. n. *Relenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11705*. The type species for the genus is *Candidatus* Relenana ensigousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11705*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenanaceae.

Description of *Candidatus* Relenanaceae fam. nov.

Candidatus Relenanaceae (NL. fem. n. *Relenanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11705.* The type genus for the taxon is *Candidatus* Relenana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11705*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Relenanales.

Description of *Candidatus* Relenanales ord. nov.

Candidatus Relenanales (NL. fem. n. *Relenanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11705.* The type genus for the taxon is *Candidatus* Relenana .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Relenana obsigago sp. nov.

Candidatus Relenana obsigago (NL. fem. n. *obsigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11705 sp003518055*. The type genome for the species is the GenBank assembly GCA_003518055.1. The GC content of the type genome is 43.63 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Relenella arremibra sp. nov.

Candidatus Relenella arremibra (NL. fem. n. *arremibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1782 sp002315475*. The type genome for the species is the GenBank assembly GCA_002315475.1. The GC content of the type genome is 45.74 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Relenella gen. nov.

Candidatus Relenella (NL. fem. n. *Relenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-1782*. The type species for the genus is *Candidatus* Relenella arremibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecariaceae.

Description of *Candidatus* Relenella cacopitoga sp. nov.

Candidatus Relenella cacopitoga (NL. fem. n. *cacopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1782 sp902766325*. The type genome for the species is the GenBank assembly GCA_902766325.1. The GC content of the type genome is 48.8 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Relenella camilitas sp. nov.

Candidatus Relenella camilitas (NL. fem. n. *camilitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1782 sp002439705*. The type genome for the species is the GenBank assembly GCA_002439705.1. The GC content of the type genome is 45.26 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Relenella niteligena sp. nov.

Candidatus Relenella niteligena (NL. fem. n. *niteligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1782 sp002349735*. The type genome for the species is the GenBank assembly GCA_002349735.1. The GC content of the type genome is 45.31 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Relenella umbilitica sp. nov.

Candidatus Relenella umbilitica (NL. fem. n. *umbilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1782 sp012520515*. The type genome for the species is the GenBank assembly GCA_012520515.1. The GC content of the type genome is 36.94 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Relenia rudicimonas sp. nov.

Candidatus Relenia rudicimonas (NL. fem. n. *rudicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7937 sp002366595*. The type genome for the species is the GenBank assembly GCA_002366595.1. The GC content of the type genome is 56.29 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Relenia gen. nov.

Candidatus Relenia (NL. fem. n. *Relenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7937*. The type species for the genus is *Candidatus* Relenia rudicimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7937*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Releniaceae.

Description of *Candidatus* Releniaceae fam. nov.

Candidatus Releniaceae (NL. fem. n. *Releniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA7937*. The type genus for the taxon is *Candidatus* Relenia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7937*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Releniales.

Description of *Candidatus* Releniales ord. nov.

Candidatus Releniales (NL. fem. n. *Releniales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7937*. The type genus for the taxon is *Candidatus* Relenia .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Relenia tegumicella sp. nov.

Candidatus Relenia tegumicella (NL. fem. n. *tegumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7937 sp003453555*. The type genome for the species is the GenBank assembly GCA_003453555.1. The GC content of the type genome is 57.18 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Relenida celamicula sp. nov.

Candidatus Relenida celamicula (NL. fem. n. *celamicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4855 sp002438785*. The type genome for the species is the GenBank assembly GCA_002298615.1. The GC content of the type genome is 26.15 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Relenida gen. nov.

Candidatus Relenida (NL. fem. n. *Relenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4855*. The type species for the genus is *Candidatus* Relenida celamicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Relenida echidisca sp. nov.

Candidatus Relenida echidisca (NL. fem. n. *echidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4855 sp900545015*. The type genome for the species is the GenBank assembly GCA_900545015.1. The GC content of the type genome is 28.83 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Relenida feculibula sp. nov.

Candidatus Relenida feculibula (NL. fem. n. *feculibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4855 sp900540395*. The type genome for the species is the GenBank assembly RS_GCF_900754135.1. The GC content of the type genome is 29.98 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Relenida hegumicula sp. nov.

Candidatus Relenida hegumicula (NL. fem. n. *hegumicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4855 sp002451465*. The type genome for the species is the GenBank assembly GCA_002477835.1. The GC content of the type genome is 28.32 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Relenida semifimonas sp. nov.

Candidatus Relenida semifimonas (NL. fem. n. *semifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4855 sp002399785*. The type genome for the species is the GenBank assembly GCA_002399785.1. The GC content of the type genome is 30.21 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Relenida venefitudo sp. nov.

Candidatus Relenida venefitudo (NL. fem. n. *venefitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4855 sp900540365*. The type genome for the species is the GenBank assembly GCA_900540365.1. The GC content of the type genome is 26.99 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Relenosa benevax sp. nov.

Candidatus Relenosa benevax (NL. fem. n. *benevax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SM1-40 sp001303705*. The type genome for the species is the GenBank assembly GCA_001302835.1. The GC content of the type genome is 60.62 % and the genome length is 2.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Methane-rich estuary sediments 52-54 cm".

Description of *Candidatus* Relenosa gen. nov.

Candidatus Relenosa (NL. fem. n. *Relenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SM1-40*. The type species for the genus is *Candidatus* Relenosa benevax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1-40*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenosaceae.

Description of *Candidatus* Relenosaceae fam. nov.

Candidatus Relenosaceae (NL. fem. n. *Relenosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM1-40.* The type genus for the taxon is *Candidatus* Relenosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SM1-40*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Relenosales.

Description of *Candidatus* Relenosales ord. nov.

Candidatus Relenosales (NL. fem. n. *Relenosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SM1-40.* The type genus for the taxon is *Candidatus* Relenosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *DG-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cacopellae.

Description of *Candidatus* Remedana homogitas sp. nov.

Candidatus Remedana homogitas (NL. fem. n. *homogitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin80 sp004375785*. The type genome for the species is the GenBank assembly GCA_004375785.1. The GC content of the type genome is 38.06 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Remedana gen. nov.

Candidatus Remedana (NL. fem. n. *Remedana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin80*. The type species for the genus is *Candidatus* Remedana homogitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *E44-bin80*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Remedanaceae.

Description of *Candidatus* Remedanaceae fam. nov.

Candidatus Remedanaceae (NL. fem. n. *Remedanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin80.* The type genus for the taxon is *Candidatus* Remedana .

According to the original version of GTDB R06-RS202, this family belongs to the order *E44-bin80*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Remedanales.

Description of *Candidatus* Remedanales ord. nov.

Candidatus Remedanales (NL. fem. n. *Remedanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin80.* The type genus for the taxon is *Candidatus* Remedana .

According to the original version of GTDB R06-RS202, this family belongs to the class *E44-bin80*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Remedanae.

Description of *Candidatus* Remedanae class. nov.

Candidatus Remedanae (NL. fem. n. *c__Remedanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *E44-bin80.* The type genus for the taxon is *Candidatus* Remedana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *WOR-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Tigurariota.

Description of *Candidatus* Remedida aggesatica sp. nov.

Candidatus Remedida aggesatica (NL. fem. n. *aggesatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002401385 sp002401385*. The type genome for the species is the GenBank assembly GCA_002401385.1. The GC content of the type genome is 34.09 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Remedida gen. nov.

Candidatus Remedida (NL. fem. n. *Remedida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002401385*. The type species for the genus is *Candidatus* Remedida aggesatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Remedida carecatica sp. nov.

Candidatus Remedida carecatica (NL. fem. n. *carecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002401385 sp002401105*. The type genome for the species is the GenBank assembly GCA_002401105.1. The GC content of the type genome is 34.52 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Remedida satacessa sp. nov.

Candidatus Remedida satacessa (NL. fem. n. *satacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002401385 sp002400885*. The type genome for the species is the GenBank assembly GCA_002400885.1. The GC content of the type genome is 35.09 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Remedosa alsuletta sp. nov.

Candidatus Remedosa alsuletta (NL. fem. n. *alsuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRJF01 sp011052375*. The type genome for the species is the GenBank assembly GCA_011052375.1. The GC content of the type genome is 60.43 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Remedosa gen. nov.

Candidatus Remedosa (NL. fem. n. *Remedosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRJF01*. The type species for the genus is *Candidatus* Remedosa alsuletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRJF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Remedosaceae.

Description of *Candidatus* Remedosaceae fam. nov.

Candidatus Remedosaceae (NL. fem. n. *Remedosaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRJF01*. The type genus for the taxon is *Candidatus* Remedosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-16-55-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vicecosales.

Description of *Candidatus* Remedula navifetta sp. nov.

Candidatus Remedula navifetta (NL. fem. n. *navifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED198 sp002170735*. The type genome for the species is the GenBank assembly GCA_002170735.1. The GC content of the type genome is 34.25 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Remedula gen. nov.

Candidatus Remedula (NL. fem. n. *Remedula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED198*. The type species for the genus is *Candidatus* Remedula navifetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED198*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Remedulaceae.

Description of *Candidatus* Remedulaceae fam. nov.

Candidatus Remedulaceae (NL. fem. n. *Remedulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED198*. The type genus for the taxon is *Candidatus* Remedula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Remulana domabitoga sp. nov.

Candidatus Remulana domabitoga (NL. fem. n. *domabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7862 sp009929275*. The type genome for the species is the GenBank assembly GCA_009929275.1. The GC content of the type genome is 34.3 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Remulana gen. nov.

Candidatus Remulana (NL. fem. n. *Remulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7862*. The type species for the genus is *Candidatus* Remulana domabitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Remulana subucitas sp. nov.

Candidatus Remulana subucitas (NL. fem. n. *subucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7862 sp002500135*. The type genome for the species is the GenBank assembly GCA_002437645.1. The GC content of the type genome is 37.72 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Remularia nocenilenta sp. nov.

Candidatus Remularia nocenilenta (NL. fem. n. *nocenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADDD01 sp013154095*. The type genome for the species is the GenBank assembly GCA_013154095.1. The GC content of the type genome is 45.66 % and the genome length is 0.54 Mbp.

Description of *Candidatus* Remularia gen. nov.

Candidatus Remularia (NL. fem. n. *Remularia* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADDD01*. The type species for the genus is *Candidatus* Remularia nocenilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADDD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Remulariaceae.

Description of *Candidatus* Remulariaceae fam. nov.

Candidatus Remulariaceae (NL. fem. n. *Remulariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADDD01*. The type genus for the taxon is *Candidatus* Remularia .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales_B*.

Description of *Candidatus* Remulella siminessa sp. nov.

Candidatus Remulella siminessa (NL. fem. n. *siminessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6215 sp002421665*. The type genome for the species is the GenBank assembly GCA_002421665.1. The GC content of the type genome is 49.98 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Remulella gen. nov.

Candidatus Remulella (NL. fem. n. *Remulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6215*. The type species for the genus is *Candidatus* Remulella siminessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6215*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Remulellaceae.

Description of *Candidatus* Remulellaceae fam. nov.

Candidatus Remulellaceae (NL. fem. n. *Remulellaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6215*. The type genus for the taxon is *Candidatus* Remulella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6215*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Remulellales.

Description of *Candidatus* Remulellales ord. nov.

Candidatus Remulellales (NL. fem. n. *Remulellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6215*. The type genus for the taxon is *Candidatus* Remulella .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Remulia cicarago sp. nov.

Candidatus Remulia cicarago (NL. fem. n. *cicarago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *51-20 sp902795665*. The type genome for the species is the GenBank assembly GCA_902795665.1. The GC content of the type genome is 40.05 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Remulia gen. nov.

Candidatus Remulia (NL. fem. n. *Remulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *51-20*. The type species for the genus is *Candidatus* Remulia cicarago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-239*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobosaceae.

Description of *Candidatus* Remulia cituviforma sp. nov.

Candidatus Remulia cituviforma (NL. fem. n. *cituviforma* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *51-20 sp900762565*. The type genome for the species is the GenBank assembly RS_GCF_900762565.1. The GC content of the type genome is 46.09 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Remulia colepastra sp. nov.

Candidatus Remulia colepastra (NL. fem. n. *colepastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *51-20 sp900542055*. The type genome for the species is the GenBank assembly GCA_900542055.1. The GC content of the type genome is 38.61 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Remulia obfusax sp. nov.

Candidatus Remulia obfusax (NL. fem. n. *obfusax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *51-20 sp902761715*. The type genome for the species is the GenBank assembly GCA_902761715.1. The GC content of the type genome is 41.14 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Remulia susicilenta sp. nov.

Candidatus Remulia susicilenta (NL. fem. n. *susicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *51-20 sp001917175*. The type genome for the species is the GenBank assembly GCA_001917175.1. The GC content of the type genome is 50.74 % and the genome length is 1.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Remulia venabax sp. nov.

Candidatus Remulia venabax (NL. fem. n. *venabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *51-20 sp900539605*. The type genome for the species is the GenBank assembly GCA_900539605.1. The GC content of the type genome is 46.83 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Remulida capabivita sp. nov.

Candidatus Remulida capabivita (NL. fem. n. *capabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HCH-1 sp002753305*. The type genome for the species is the GenBank assembly GCA_002753305.1. The GC content of the type genome is 47.78 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Remulida gen. nov.

Candidatus Remulida (NL. fem. n. *Remulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HCH-1*. The type species for the genus is *Candidatus* Remulida capabivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Remulida forinivita sp. nov.

Candidatus Remulida forinivita (NL. fem. n. *forinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HCH-1 sp001541255*. The type genome for the species is the GenBank assembly RS_GCF_001541255.1. The GC content of the type genome is 45.37 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Remulosa conifessa sp. nov.

Candidatus Remulosa conifessa (NL. fem. n. *conifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKPS01 sp007119395*. The type genome for the species is the

GenBank assembly GCA_007119395.1. The GC content of the type genome is 49.11 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Remulosa gen. nov.

Candidatus Remulosa (NL. fem. n. *Remulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKPS01*. The type species for the genus is *Candidatus* Remulosa conifessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWNQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sotuliaceae.

Description of *Candidatus* Remulula nubifimonas sp. nov.

Candidatus Remulula nubifimonas (NL. fem. n. *nubifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNNF01 sp013824085*. The type genome for the species is the GenBank assembly GCA_013824085.1. The GC content of the type genome is 32.91 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Remulula gen. nov.

Candidatus Remulula (NL. fem. n. *Remulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNNF01*. The type species for the genus is *Candidatus* Remulula nubifimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Renavana depubitrix sp. nov.

Candidatus Renavana depubitrix (NL. fem. n. *depubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2125 sp002311275*. The type genome for the species is the GenBank assembly GCA_012963675.1. The GC content of the type genome is 46.73 %

and the genome length is 2.2 Mbp.

Description of *Candidatus* Renavana gen. nov.

Candidatus Renavana (NL. fem. n. *Renavana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2125*. The type species for the genus is *Candidatus* Renavana depubitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S15-B10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Minagulaceae.

Description of *Candidatus* Renavana excorifica sp. nov.

Candidatus Renavana excorifica (NL. fem. n. *excorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2125 sp004124465*. The type genome for the species is the GenBank assembly RS_GCF_004124465.1. The GC content of the type genome is 46.15 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Renavana genufessa sp. nov.

Candidatus Renavana genufessa (NL. fem. n. *genufessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2125 sp002329125*. The type genome for the species is the GenBank assembly GCA_002329125.1. The GC content of the type genome is 45.95 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Renavaria docibilega sp. nov.

Candidatus Renavaria docibilega (NL. fem. n. *docibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS905 sp900540085*. The type genome for the species is the GenBank assembly RS_GCF_900755385.1. The GC content of the type genome is 35.8 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Renavaria gen. nov.

Candidatus Renavaria (NL. fem. n. *Renavaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS905*. The type species for the genus is *Candidatus* Renavaria docibilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Renavaria levifitica sp. nov.

Candidatus Renavaria levifitica (NL. fem. n. *levifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS905 sp900546735*. The type genome for the species is the GenBank assembly GCA_014465935.1. The GC content of the type genome is 53.03 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Renavella depecastra sp. nov.

Candidatus Renavella depecastra (NL. fem. n. *depecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXYL01 sp009839405*. The type genome for the species is the GenBank assembly GCA_009839405.1. The GC content of the type genome is 65.99 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Renavella gen. nov.

Candidatus Renavella (NL. fem. n. *Renavella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXYL01*. The type species for the genus is *Candidatus* Renavella depecastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Renavella inhumitas sp. nov.

Candidatus Renavella inhumitas (NL. fem. n. *inhumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXYL01 sp009839505*. The type genome for the species is the GenBank assembly GCA_009839505.1. The GC content of the type genome is 65.17 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Renavella molecitio sp. nov.

Candidatus Renavella molecitio (NL. fem. n. *molecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXYL01 sp009837725*. The type genome for the species is the GenBank assembly GCA_009837725.1. The GC content of the type genome is 65.51 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Renavella tumefentia sp. nov.

Candidatus Renavella tumefentia (NL. fem. n. *tumefentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXYL01 sp009846005*. The type genome for the species is the GenBank assembly GCA_009843225.1. The GC content of the type genome is 64.75 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Renavia cemenicula sp. nov.

Candidatus Renavia cemenicula (NL. fem. n. *cemenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B18-G4 sp003648575*. The type genome for the species is the GenBank assembly GCA_003648575.1. The GC content of the type genome is 44.53 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Renavia gen. nov.

Candidatus Renavia (NL. fem. n. *Renavia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B18-G4*. The type species for the genus is *Candidatus* Renavia cemenicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B18-G4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Renaviaceae.

Description of *Candidatus* Renaviaceae fam. nov.

Candidatus Renaviaceae (NL. fem. n. *Renaviaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B18-G4.* The type genus for the taxon is *Candidatus* Renavia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Renavia immacetta sp. nov.

Candidatus Renavia immacetta (NL. fem. n. *immacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B18-G4 sp013202965*. The type genome for the species is the GenBank assembly GCA_013202965.1. The GC content of the type genome is 42.22 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Renavida denicedo sp. nov.

Candidatus Renavida denicedo (NL. fem. n. *denicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1441 sp002329255*. The type genome for the species is the GenBank assembly GCA_002329255.1. The GC content of the type genome is 41.36 % and the genome length is 0.41 Mbp.

Description of *Candidatus* Renavida gen. nov.

Candidatus Renavida (NL. fem. n. *Renavida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1441*. The type species for the genus is *Candidatus* Renavida

denicedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1441*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Renavidaceae.

Description of *Candidatus* Renavidaceae fam. nov.

Candidatus Renavidaceae (NL. fem. n. *Renavidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1441*. The type genus for the taxon is *Candidatus* Renavida .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Renavosa ammurisca sp. nov.

Candidatus Renavosa ammurisca (NL. fem. n. *ammurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2214 sp002327255*. The type genome for the species is the GenBank assembly GCA_002327255.1. The GC content of the type genome is 56.34 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Renavosa gen. nov.

Candidatus Renavosa (NL. fem. n. *Renavosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2214*. The type species for the genus is *Candidatus* Renavosa ammurisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Renavosaceae.

Description of *Candidatus* Renavosaceae fam. nov.

Candidatus Renavosaceae (NL. fem. n. *Renavosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2214*. The type genus for the taxon is *Candidatus* Renavosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Renavosales.

Description of *Candidatus* Renavosales ord. nov.

Candidatus Renavosales (NL. fem. n. *Renavosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2214.* The type genus for the taxon is *Candidatus* Renavosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Renavosae.

Description of *Candidatus* Renavosae class. nov.

Candidatus Renavosae (NL. fem. n. *c__Renavosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2214.* The type genus for the taxon is *Candidatus* Renavosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *KSB1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Locupulota.

Description of *Candidatus* Renavula decamatica sp. nov.

Candidatus Renavula decamatica (NL. fem. n. *decamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMEY01 sp903840165*. The type genome for the species is the GenBank assembly GCA_903864385.1. The GC content of the type genome is 61.07 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Renavula gen. nov.

Candidatus Renavula (NL. fem. n. *Renavula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMEY01*. The type species for the genus is *Candidatus* Renavula

decamatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubigariaceae.

Description of *Candidatus* Renibacterium rutabitura sp. nov.

Candidatus Renibacterium rutabitura (NL. fem. n. *rutabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Renibacterium sp005809195*. The type genome for the species is the GenBank assembly GCA_903875395.1. The GC content of the type genome is 64.57 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Repagana adcumimonia sp. nov.

Candidatus Repagana adcumimonia (NL. fem. n. *adcumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN16 sp011359015*. The type genome for the species is the GenBank assembly GCA_011359015.1. The GC content of the type genome is 59.61 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Repagana gen. nov.

Candidatus Repagana (NL. fem. n. *Repagana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN16*. The type species for the genus is *Candidatus* Repagana adcumimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repaganaceae.

Description of *Candidatus* Repaganaceae fam. nov.

Candidatus Repaganaceae (NL. fem. n. *Repaganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *HRBIN16.* The type genus for the taxon is *Candidatus* Repagana .

According to the original version of GTDB R06-RS202, this family belongs to the order *HRBIN16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repaganales.

Description of *Candidatus* Repaganales ord. nov.

Candidatus Repaganales (NL. fem. n. *Repaganales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN16.* The type genus for the taxon is *Candidatus* Repagana .

According to the original version of GTDB R06-RS202, this family belongs to the class *HRBIN16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Repaganae.

Description of *Candidatus* Repaganae class. nov.

Candidatus Repaganae (NL. fem. n. *c__Repaganae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN16.* The type genus for the taxon is *Candidatus* Repagana .

According to GTDB R06-RS202, this class belongs to the phylum *Armatimonadota*.

Description of *Candidatus* Repagana coturicula sp. nov.

Candidatus Repagana coturicula (NL. fem. n. *coturicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN16 sp002898895*. The type genome for the species is the GenBank assembly GCA_011051345.1. The GC content of the type genome is 58.94 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Repagana figililega sp. nov.

Candidatus Repagana figililega (NL. fem. n. *figililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN16 sp013314755*. The type genome for the species is the

GenBank assembly GCA_013314755.1. The GC content of the type genome is 59.8 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Repagana homilessa sp. nov.

Candidatus Repagana homilessa (NL. fem. n. *homilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN16 sp011053695*. The type genome for the species is the GenBank assembly GCA_011048065.1. The GC content of the type genome is 59.54 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Repagaria dilacilega sp. nov.

Candidatus Repagaria dilacilega (NL. fem. n. *dilacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-40-12 sp001824375*. The type genome for the species is the GenBank assembly GCA_001824375.1. The GC content of the type genome is 39.5 % and the genome length is 0.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Repagaria gen. nov.

Candidatus Repagaria (NL. fem. n. *Repagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-40-12*. The type species for the genus is *Candidatus* Repagaria dilacilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-40-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repagariaceae.

Description of *Candidatus* Repagariaceae fam. nov.

Candidatus Repagariaceae (NL. fem. n. *Repagariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-40-12.* The type genus for the taxon is *Candidatus*

Repagaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-40-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repagariales.

Description of *Candidatus* Repagariales ord. nov.

Candidatus Repagariales (NL. fem. n. *Repagariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-40-12.* The type genus for the taxon is *Candidatus* Repagaria .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Repagaria impilibula sp. nov.

Candidatus Repagaria impilibula (NL. fem. n. *impilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-40-12 sp007376425*. The type genome for the species is the GenBank assembly GCA_007376425.1. The GC content of the type genome is 40.12 % and the genome length is 0.55 Mbp.

Description of *Candidatus* Repagella denomiforma sp. nov.

Candidatus Repagella denomiforma (NL. fem. n. *denomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTER01 sp014360995*. The type genome for the species is the GenBank assembly GCA_014360995.1. The GC content of the type genome is 60.05 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Repagella gen. nov.

Candidatus Repagella (NL. fem. n. *Repagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTER01*. The type species for the genus is *Candidatus* Repagella denomiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Repagella fidenessa sp. nov.

Candidatus Repagella fidenessa (NL. fem. n. *fidenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTER01 sp011371555*. The type genome for the species is the GenBank assembly GCA_011371555.1. The GC content of the type genome is 58.22 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Repagella paracimonas sp. nov.

Candidatus Repagella paracimonas (NL. fem. n. *paracimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTER01 sp014360945*. The type genome for the species is the GenBank assembly GCA_014360945.1. The GC content of the type genome is 56.77 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Repagia cicarentia sp. nov.

Candidatus Repagia cicarentia (NL. fem. n. *cicarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IGN2 sp013388525*. The type genome for the species is the GenBank assembly GCA_013388525.1. The GC content of the type genome is 35.47 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Repagia gen. nov.

Candidatus Repagia (NL. fem. n. *Repagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IGN2*. The type species for the genus is *Candidatus* Repagia cicarentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Repagia recucigena sp. nov.

Candidatus Repagia recucigena (NL. fem. n. *recucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IGN2 sp013042995*. The type genome for the species is the GenBank assembly GCA_013042995.1. The GC content of the type genome is 34.7 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Repagia venucigena sp. nov.

Candidatus Repagia venucigena (NL. fem. n. *venucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IGN2 sp013285405*. The type genome for the species is the GenBank assembly GCA_013359325.1. The GC content of the type genome is 34.72 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Repagida ascalago sp. nov.

Candidatus Repagida ascalago (NL. fem. n. *ascalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOGM01 sp903857795*. The type genome for the species is the GenBank assembly GCA_903857795.1. The GC content of the type genome is 59.52 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Repagida gen. nov.

Candidatus Repagida (NL. fem. n. *Repagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOGM01*. The type species for the genus is *Candidatus* Repagida ascalago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIOGM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repagidaceae.

Description of *Candidatus* Repagidaceae fam. nov.

Candidatus Repagidaceae (NL. fem. n. *Repagidaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIOGM01.* The type genus for the taxon is *Candidatus* Repagida .

According to GTDB R06-RS202, this family belongs to the order *Geobacterales*.

Description of *Candidatus* Repagida bifisibra sp. nov.

Candidatus Repagida bifisibra (NL. fem. n. *bifisibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOGM01 sp903902345*. The type genome for the species is the GenBank assembly GCA_903902345.1. The GC content of the type genome is 56.58 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Repagida pepenilenta sp. nov.

Candidatus Repagida pepenilenta (NL. fem. n. *pepenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOGM01 sp903902855*. The type genome for the species is the GenBank assembly GCA_903932025.1. The GC content of the type genome is 56.44 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Repagida siminitia sp. nov.

Candidatus Repagida siminitia (NL. fem. n. *siminitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOGM01 sp903929485*. The type genome for the species is the GenBank assembly GCA_903844075.1. The GC content of the type genome is 55.74 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Repagosa fumacibula sp. nov.

Candidatus Repagosa fumacibula (NL. fem. n. *fumacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *2-01-FULL-41-22 sp001789805*. The type genome for the species is the GenBank assembly GCA_001789995.1. The GC content of the type genome is 40.41 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Repagosa gen. nov.

Candidatus Repagosa (NL. fem. n. *Repagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-41-22*. The type species for the genus is *Candidatus* Repagosa fumacibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Repecana laxitastra sp. nov.

Candidatus Repecana laxitastra (NL. fem. n. *laxitastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFDP01 sp004558185*. The type genome for the species is the GenBank assembly RS_GCF_900770755.1. The GC content of the type genome is 44.14 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Repecana gen. nov.

Candidatus Repecana (NL. fem. n. *Repecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFDP01*. The type species for the genus is *Candidatus* Repecana laxitastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Repecana recomitia sp. nov.

Candidatus Repecana recomitia (NL. fem. n. *recomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFDP01 sp900770785*. The type genome for the species is the GenBank assembly RS_GCF_900770785.1. The GC content of the type genome is 43.74 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Repecaria depetetta sp. nov.

Candidatus Repecaria depetetta (NL. fem. n. *depetetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFDW01 sp002793835*. The type genome for the species is the GenBank assembly GCA_002793835.1. The GC content of the type genome is 35.94 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Repecaria gen. nov.

Candidatus Repecaria (NL. fem. n. *Repecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PFDW01*. The type species for the genus is *Candidatus* Repecaria depetetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PFDW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repecariaceae.

Description of *Candidatus* Repecariaceae fam. nov.

Candidatus Repecariaceae (NL. fem. n. *Repecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PFDW01.* The type genus for the taxon is *Candidatus* Repecaria .

According to GTDB R06-RS202, this family belongs to the order *Portnoybacterales*.

Description of *Candidatus* Repecella fidenibra sp. nov.

Candidatus Repecella fidenibra (NL. fem. n. *fidenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-66 sp003556585*. The type genome for the species is the

GenBank assembly GCA_003561415.1. The GC content of the type genome is 66.85 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Repecella gen. nov.

Candidatus Repecella (NL. fem. n. *Repecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3Sed10-66*. The type species for the genus is *Candidatus* Repecella fidenibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Repecella peradessa sp. nov.

Candidatus Repecella peradessa (NL. fem. n. *peradessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-66 sp003564555*. The type genome for the species is the GenBank assembly GCA_007695225.1. The GC content of the type genome is 67.86 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Repecia hibisentia sp. nov.

Candidatus Repecia hibisentia (NL. fem. n. *hibisentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LS-SOB sp001543005*. The type genome for the species is the GenBank assembly GCA_001543005.1. The GC content of the type genome is 47.47 % and the genome length is 2.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "glass sponge collected from seamount of South China Sea".

Description of *Candidatus* Repecia gen. nov.

Candidatus Repecia (NL. fem. n. *Repecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LS-SOB*. The type species for the genus is *Candidatus* Repecia

hibisentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LS-SOB*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repeciaceae.

Description of *Candidatus* Repeciaceae fam. nov.

Candidatus Repeciaceae (NL. fem. n. *Repeciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *LS-SOB*. The type genus for the taxon is *Candidatus* Repecia .

According to GTDB R06-RS202, this family belongs to the order *Arenicellales*.

Description of *Candidatus* Repecida genufilega sp. nov.

Candidatus Repecida genufilega (NL. fem. n. *genufilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZRG01 sp903935335*. The type genome for the species is the GenBank assembly GCA_903893035.1. The GC content of the type genome is 40.3 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Repecida gen. nov.

Candidatus Repecida (NL. fem. n. *Repecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZRG01*. The type species for the genus is *Candidatus* Repecida genufilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Repecosa cepulousia sp. nov.

Candidatus Repecosa cepulousia (NL. fem. n. *cepulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *HRBIN30 sp011054845*. The type genome for the species is the GenBank assembly GCA_011054845.1. The GC content of the type genome is 61.63 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Repecosa gen. nov.

Candidatus Repecosa (NL. fem. n. *Repecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN30*. The type species for the genus is *Candidatus* Repecosa cepulousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN30*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repecosaceae.

Description of *Candidatus* Repecosaceae fam. nov.

Candidatus Repecosaceae (NL. fem. n. *Repecosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN30.* The type genus for the taxon is *Candidatus* Repecosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *HRBIN30*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repecosales.

Description of *Candidatus* Repecosales ord. nov.

Candidatus Repecosales (NL. fem. n. *Repecosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN30.* The type genus for the taxon is *Candidatus* Repecosa .

According to the GTDB R06-RS202, this order belongs to the class *Binatia*.

Description of *Candidatus* Repecosa ingigitas sp. nov.

Candidatus Repecosa ingigitas (NL. fem. n. *ingigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN30 sp002898795*. The type genome for the species is the

GenBank assembly GCA_002898795.1. The GC content of the type genome is 60.32 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Repecula colimatio sp. nov.

Candidatus Repecula colimatio (NL. fem. n. *colimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVXJ01 sp011773575*. The type genome for the species is the GenBank assembly GCA_011773575.1. The GC content of the type genome is 56.82 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Repecula gen. nov.

Candidatus Repecula (NL. fem. n. *Repecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVXJ01*. The type species for the genus is *Candidatus* Repecula colimatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WVXJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repeculaceae.

Description of *Candidatus* Repeculaceae fam. nov.

Candidatus Repeculaceae (NL. fem. n. *Repeculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WVXJ01*. The type genus for the taxon is *Candidatus* Repecula .

According to the original version of GTDB R06-RS202, this family belongs to the order *WVXJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repeculales.

Description of *Candidatus* Repeculales ord. nov.

Candidatus Repeculales (NL. fem. n. *Repeculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WVXJ01*. The type genus for the taxon is *Candidatus* Repecula .

According to the original version of GTDB R06-RS202, this family belongs to the class *CAIYQO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Nocumidae.

Description of *Candidatus* Repepana siticitia sp. nov.

Candidatus Repepana siticitia (NL. fem. n. *siticitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4572 sp002387725*. The type genome for the species is the GenBank assembly GCA_002454995.1. The GC content of the type genome is 58.4 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Repepana gen. nov.

Candidatus Repepana (NL. fem. n. *Repepana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4572*. The type species for the genus is *Candidatus* Repepana siticitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Repeparia canacicella sp. nov.

Candidatus Repeparia canacicella (NL. fem. n. *canacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-TA06 sp005223075*. The type genome for the species is the GenBank assembly GCA_005223075.1. The GC content of the type genome is 52.55 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Repeparia gen. nov.

Candidatus Repeparia (NL. fem. n. *Repeparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B3-TA06*. The type species for the genus is *Candidatus* Repeparia canacicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family

B3-TA06. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repepariaceae.

Description of *Candidatus* Repepariaceae fam. nov.

Candidatus Repepariaceae (NL. fem. n. *Repepariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-TA06.* The type genus for the taxon is *Candidatus* Repeparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *B3-TA06*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repepariales.

Description of *Candidatus* Repepariales ord. nov.

Candidatus Repepariales (NL. fem. n. *Repepariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-TA06.* The type genus for the taxon is *Candidatus* Repeparia .

According to the original version of GTDB R06-RS202, this family belongs to the class *WOR-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Tigurariae.

Description of *Candidatus* Repeparia fatilentia sp. nov.

Candidatus Repeparia fatilentia (NL. fem. n. *fatilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-TA06 sp004375895*. The type genome for the species is the GenBank assembly GCA_004375895.1. The GC content of the type genome is 52.87 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Repeparia videlitudo sp. nov.

Candidatus Repeparia videlitudo (NL. fem. n. *videlitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-TA06 sp012517375*. The type genome for the species is the

GenBank assembly GCA_012517375.1. The GC content of the type genome is 48.75 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Repepella buxifedo sp. nov.

Candidatus Repepella buxifedo (NL. fem. n. *buxifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLPH01 sp007132095*. The type genome for the species is the GenBank assembly GCA_007123165.1. The GC content of the type genome is 50.82 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Repepella gen. nov.

Candidatus Repepella (NL. fem. n. *Repepella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLPH01*. The type species for the genus is *Candidatus* Repepella buxifedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Repepia antacitura sp. nov.

Candidatus Repepia antacitura (NL. fem. n. *antacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2716585 sp002716585*. The type genome for the species is the GenBank assembly GCA_002716585.1. The GC content of the type genome is 68.58 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Repepia gen. nov.

Candidatus Repepia (NL. fem. n. *Repepia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2716585*. The type species for the genus is *Candidatus* Repepia antacitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GCA-2716585. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repepiaceae.

Description of *Candidatus* Repepiaceae fam. nov.

Candidatus Repepiaceae (NL. fem. n. *Repepiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2716585.* The type genus for the taxon is *Candidatus* Repepia .

According to GTDB R06-RS202, this family belongs to the order *Bradymonadales*.

Description of *Candidatus* Repepida depopicella sp. nov.

Candidatus Repepida depopicella (NL. fem. n. *depopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-40-63 sp002840905*. The type genome for the species is the GenBank assembly GCA_002840905.1. The GC content of the type genome is 39.81 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Repepida gen. nov.

Candidatus Repepida (NL. fem. n. *Repepida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE2-40-63*. The type species for the genus is *Candidatus* Repepida depopicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-534*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomogariaceae.

Description of *Candidatus* Repepida mahemugo sp. nov.

Candidatus Repepida mahemugo (NL. fem. n. *mahemugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-40-63 sp003512955*. The type genome for the species is the GenBank assembly GCA_001769865.1. The GC content of the type genome is 40.03 %

and the genome length is 5.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Repeposa demogisca sp. nov.

Candidatus Repeposa demogisca (NL. fem. n. *demogisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED26 sp003280605*. The type genome for the species is the GenBank assembly GCA_002690685.1. The GC content of the type genome is 55.1 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Repeposa gen. nov.

Candidatus Repeposa (NL. fem. n. *Repeposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED26*. The type species for the genus is *Candidatus* Repeposa demogisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repeposaceae.

Description of *Candidatus* Repeposaceae fam. nov.

Candidatus Repeposaceae (NL. fem. n. *Repeposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED26.* The type genus for the taxon is *Candidatus* Repeposa .

According to GTDB R06-RS202, this family belongs to the order *Thalassobaculales*.

Description of *Candidatus* Repeposa fumacitio sp. nov.

Candidatus Repeposa fumacitio (NL. fem. n. *fumacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED26 sp002694075*. The type genome for the species is the GenBank assembly GCA_002694075.1. The GC content of the type genome is 64.03 %

and the genome length is 2.1 Mbp.

Description of *Candidatus* Repepula defetetta sp. nov.

Candidatus Repepula defetetta (NL. fem. n. *defetetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINFC01 sp903847975*. The type genome for the species is the GenBank assembly GCA_903919995.1. The GC content of the type genome is 60.01 % and the genome length is 8.04 Mbp.

Description of *Candidatus* Repepula gen. nov.

Candidatus Repepula (NL. fem. n. *Repepula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINFC01*. The type species for the genus is *Candidatus* Repepula defetetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAINFC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repepulaceae.

Description of *Candidatus* Repepulaceae fam. nov.

Candidatus Repepulaceae (NL. fem. n. *Repepulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAINFC01.* The type genus for the taxon is *Candidatus* Repepula .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAINFC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repepulales.

Description of *Candidatus* Repepulales ord. nov.

Candidatus Repepulales (NL. fem. n. *Repepulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAINFC01.* The type genus for the taxon is *Candidatus* Repepula .

According to the original version of GTDB R06-RS202, this family belongs to the class

UBA6911. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Decomulae.

Description of *Candidatus* Repudana cenacetta sp. nov.

Candidatus Repudana cenacetta (NL. fem. n. *cenacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEVN01 sp001772985*. The type genome for the species is the GenBank assembly GCA_001772985.1. The GC content of the type genome is 35.48 % and the genome length is 0.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Repudana gen. nov.

Candidatus Repudana (NL. fem. n. *Repudana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MEVN01*. The type species for the genus is *Candidatus* Repudana cenacetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Repudaria lametibra sp. nov.

Candidatus Repudaria lametibra (NL. fem. n. *lametibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSSU01 sp011330975*. The type genome for the species is the GenBank assembly GCA_011330975.1. The GC content of the type genome is 52.24 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Repudaria gen. nov.

Candidatus Repudaria (NL. fem. n. *Repudaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DSSU01*. The type species for the genus is *Candidatus* Repudaria lametibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSSU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repudariaceae.

Description of *Candidatus* Repudariaceae fam. nov.

Candidatus Repudariaceae (NL. fem. n. *Repudariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSSU01*. The type genus for the taxon is *Candidatus* Repudaria .

According to GTDB R06-RS202, this family belongs to the order *Moduliflexales*.

Description of *Candidatus* Repudella pimenitudo sp. nov.

Candidatus Repudella pimenitudo (NL. fem. n. *pimenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMGU01 sp007376745*. The type genome for the species is the GenBank assembly GCA_007376615.1. The GC content of the type genome is 38.98 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Repudella gen. nov.

Candidatus Repudella (NL. fem. n. *Repudella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMGU01*. The type species for the genus is *Candidatus* Repudella pimenitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *02-FULL-45-10c*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delubariaceae.

Description of *Candidatus* Repudida faticitudo sp. nov.

Candidatus Repudida faticitudo (NL. fem. n. *faticitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6901 sp002451085*. The type genome for the species is the GenBank assembly GCA_002451085.1. The GC content of the type genome is 60.07 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Repudida gen. nov.

Candidatus Repudida (NL. fem. n. *Repudida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6901*. The type species for the genus is *Candidatus* Repudida faticitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Repudosa acustilenta sp. nov.

Candidatus Repudosa acustilenta (NL. fem. n. *acustilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LS-NOB sp001542995*. The type genome for the species is the GenBank assembly GCA_001542995.1. The GC content of the type genome is 46.85 % and the genome length is 2.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "glass sponge collected from seamount of South China Sea".

Description of *Candidatus* Repudosa gen. nov.

Candidatus Repudosa (NL. fem. n. *Repudosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LS-NOB*. The type species for the genus is *Candidatus* Repudosa acustilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Repudosa adhorastra sp. nov.

Candidatus Repudosa adhorastra (NL. fem. n. *adhorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *LS-NOB sp002786505*. The type genome for the species is the GenBank assembly GCA_002786505.1. The GC content of the type genome is 46.9 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Repudosa ancipivita sp. nov.

Candidatus Repudosa ancipivita (NL. fem. n. *ancipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LS-NOB sp002705185*. The type genome for the species is the GenBank assembly GCA_002705185.1. The GC content of the type genome is 39.82 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Repudosa apsurigena sp. nov.

Candidatus Repudosa apsurigena (NL. fem. n. *apsurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LS-NOB sp014382285*. The type genome for the species is the GenBank assembly GCA_014382285.1. The GC content of the type genome is 46.08 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Repudosa halucetta sp. nov.

Candidatus Repudosa halucetta (NL. fem. n. *halucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LS-NOB sp002454045*. The type genome for the species is the GenBank assembly GCA_002453875.1. The GC content of the type genome is 50.74 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Repudosa refacimonas sp. nov.

Candidatus Repudosa refacimonas (NL. fem. n. *refacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LS-NOB sp012961055*. The type genome for the species is the GenBank assembly GCA_012961055.1. The GC content of the type genome is 43.28 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Repudosa semigitura sp. nov.

Candidatus Repudosa semigitura (NL. fem. n. *semigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LS-NOB sp009873635*. The type genome for the species is the GenBank assembly GCA_009874485.1. The GC content of the type genome is 42.88 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Repudosa timefivita sp. nov.

Candidatus Repudosa timefivita (NL. fem. n. *timefivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LS-NOB sp003545625*. The type genome for the species is the GenBank assembly GCA_003545625.1. The GC content of the type genome is 46.78 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Repudula seposilenta sp. nov.

Candidatus Repudula seposilenta (NL. fem. n. *seposilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B32-G15 sp003644445*. The type genome for the species is the GenBank assembly GCA_003644445.1. The GC content of the type genome is 35.43 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Repudula gen. nov.

Candidatus Repudula (NL. fem. n. *Repudula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B32-G15*. The type species for the genus is *Candidatus* Repudula seposilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B32-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repudulaceae.

Description of *Candidatus* Repudulaceae fam. nov.

Candidatus Repudulaceae (NL. fem. n. *Repudulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B32-G15.* The type genus for the taxon is *Candidatus* Repudula .

According to the original version of GTDB R06-RS202, this family belongs to the order *4484-171*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Homoliales.

Description of *Candidatus* Repurana recucitio sp. nov.

Candidatus Repurana recucitio (NL. fem. n. *recucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-62-27 sp001784175*. The type genome for the species is the GenBank assembly GCA_001782795.1. The GC content of the type genome is 61.56 % and the genome length is 3.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Repurana gen. nov.

Candidatus Repurana (NL. fem. n. *Repurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-62-27*. The type species for the genus is *Candidatus* Repurana recucitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-62-27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repuranaceae.

Description of *Candidatus* Repuranaceae fam. nov.

Candidatus Repuranaceae (NL. fem. n. *Repuranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-62-27.* The type genus for the taxon is *Candidatus* Repurana .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-12-FULL-62-27*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the order *Candidatus* Repuranales.

Description of *Candidatus* Repuranales ord. nov.

Candidatus Repuranales (NL. fem. n. *Repuranales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-62-27.* The type genus for the taxon is *Candidatus* Repurana .

According to the original version of GTDB R06-RS202, this family belongs to the class *2-12-FULL-62-27*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Repuranae.

Description of *Candidatus* Repuranae class. nov.

Candidatus Repuranae (NL. fem. n. *c__Repuranae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-62-27.* The type genus for the taxon is *Candidatus* Repurana .

According to GTDB R06-RS202, this class belongs to the phylum *Lindowbacteria*.

Description of *Candidatus* Repuraria canacibra sp. nov.

Candidatus Repuraria canacibra (NL. fem. n. *canacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-37-29 sp001873215*. The type genome for the species is the GenBank assembly GCA_002793055.1. The GC content of the type genome is 36.17 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Repuraria gen. nov.

Candidatus Repuraria (NL. fem. n. *Repuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-37-29*. The type species for the genus is *Candidatus* Repuraria canacibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GWA1-39-11. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefellaceae.

Description of *Candidatus* Repurella depocetta sp. nov.

Candidatus Repurella depocetta (NL. fem. n. *depocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBN01 sp009784515*. The type genome for the species is the GenBank assembly GCA_009784515.1. The GC content of the type genome is 40.95 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Repurella gen. nov.

Candidatus Repurella (NL. fem. n. *Repurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBN01*. The type species for the genus is *Candidatus* Repurella depocetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repurellaceae.

Description of *Candidatus* Repurellaceae fam. nov.

Candidatus Repurellaceae (NL. fem. n. *Repurellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRBN01.* The type genus for the taxon is *Candidatus* Repurella .

According to the original version of GTDB R06-RS202, this family belongs to the order *WRBN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repurellales.

Description of *Candidatus* Repurellales ord. nov.

Candidatus Repurellales (NL. fem. n. *Repurellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRBN01.* The type genus for the taxon is *Candidatus* Repurella .

According to the GTDB R06-RS202, this order belongs to the class *Spirochaetia*.

Description of *Candidatus* Repuria attolifica sp. nov.

Candidatus Repuria attolifica (NL. fem. n. *attolifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B22-G15 sp003648245*. The type genome for the species is the GenBank assembly GCA_003648245.1. The GC content of the type genome is 35.91 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Repuria gen. nov.

Candidatus Repuria (NL. fem. n. *Repuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B22-G15*. The type species for the genus is *Candidatus* Repuria attolifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B22-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repuriaceae.

Description of *Candidatus* Repuriaceae fam. nov.

Candidatus Repuriaceae (NL. fem. n. *Repuriaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B22-G15.* The type genus for the taxon is *Candidatus* Repuria .

According to the original version of GTDB R06-RS202, this family belongs to the order *B22-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repuriales.

Description of *Candidatus* Repuriales ord. nov.

Candidatus Repuriales (NL. fem. n. *Repuriales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B22-G15.* The type genus for the taxon is *Candidatus* Repuria .

According to the GTDB R06-RS202, this order belongs to the class *Caldisericia*.

Description of *Candidatus* Repurida ammodago sp. nov.

Candidatus Repurida ammodago (NL. fem. n. *ammodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1268 sp007280275*. The type genome for the species is the GenBank assembly GCA_007280275.1. The GC content of the type genome is 52.87 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Repurida gen. nov.

Candidatus Repurida (NL. fem. n. *Repurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1268*. The type species for the genus is *Candidatus* Repurida ammodago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabanaceae.

Description of *Candidatus* Repurida cohoratica sp. nov.

Candidatus Repurida cohoratica (NL. fem. n. *cohoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1268 sp003170475*. The type genome for the species is the GenBank assembly GCA_003155535.1. The GC content of the type genome is 52.24 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Repurosa insopisca sp. nov.

Candidatus Repurosa insopisca (NL. fem. n. *insopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B21-G15 sp003650255*. The type genome for the species is the GenBank assembly GCA_003650255.1. The GC content of the type genome is 33.39 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Repurosa gen. nov.

Candidatus Repurosa (NL. fem. n. *Repurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B21-G15*. The type species for the genus is *Candidatus* Repurosa insopisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B21-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repurosaceae.

Description of *Candidatus* Repurosaceae fam. nov.

Candidatus Repurosaceae (NL. fem. n. *Repurosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B21-G15.* The type genus for the taxon is *Candidatus* Repurosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *B21-G15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repurosales.

Description of *Candidatus* Repurosales ord. nov.

Candidatus Repurosales (NL. fem. n. *Repurosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B21-G15.* The type genus for the taxon is *Candidatus* Repurosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *CG03*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Laxitanae.

Description of *Candidatus* Repurula protritoga sp. nov.

Candidatus Repurula protritoga (NL. fem. n. *protritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRBM01 sp009784525*. The type genome for the species is the GenBank assembly GCA_009784525.1. The GC content of the type genome is 32.68 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Repurula gen. nov.

Candidatus Repurula (NL. fem. n. *Repurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRBM01*. The type species for the genus is *Candidatus* Repurula protritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repurulaceae.

Description of *Candidatus* Repurulaceae fam. nov.

Candidatus Repurulaceae (NL. fem. n. *Repurulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRBM01*. The type genus for the taxon is *Candidatus* Repurula .

According to GTDB R06-RS202, this family belongs to the order *Acholeplasmatales*.

Description of *Candidatus* Resacana bicalousia sp. nov.

Candidatus Resacana bicalousia (NL. fem. n. *bicalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWKO01 sp903858655*. The type genome for the species is the GenBank assembly GCA_903858655.1. The GC content of the type genome is 39.9 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Resacana gen. nov.

Candidatus Resacana (NL. fem. n. *Resacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWKO01*. The type species for the genus is *Candidatus* Resacana bicalousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIWKO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resacanaceae.

Description of *Candidatus* Resacanaceae fam. nov.

Candidatus Resacanaceae (NL. fem. n. *Resacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIWKO01.* The type genus for the taxon is *Candidatus* Resacana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Resacana mavorifica sp. nov.

Candidatus Resacana mavorifica (NL. fem. n. *mavorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWKO01 sp903916135*. The type genome for the species is the GenBank assembly GCA_903916135.1. The GC content of the type genome is 38.17 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Resacana sitelago sp. nov.

Candidatus Resacana sitelago (NL. fem. n. *sitelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWKO01 sp903913285*. The type genome for the species is the GenBank assembly GCA_903829715.1. The GC content of the type genome is 38.86 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Resacana siticax sp. nov.

Candidatus Resacana siticax (NL. fem. n. *siticax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWKO01 sp903862465*. The type genome for the species is the GenBank assembly GCA_903862465.1. The GC content of the type genome is 39.56 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Resacaria salubessa sp. nov.

Candidatus Resacaria salubessa (NL. fem. n. *salubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-449 sp000432895*. The type genome for the species is the GenBank assembly GCA_900546855.1. The GC content of the type genome is 26.3 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Resacaria gen. nov.

Candidatus Resacaria (NL. fem. n. *Resacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-449*. The type species for the genus is *Candidatus* Resacaria salubessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-449*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resacariaceae.

Description of *Candidatus* Resacariaceae fam. nov.

Candidatus Resacariaceae (NL. fem. n. *Resacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-449.* The type genus for the taxon is *Candidatus* Resacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *RFN20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cerofellales.

Description of *Candidatus* Resacaria suboditrix sp. nov.

Candidatus Resacaria suboditrix (NL. fem. n. *suboditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-449 sp900551385*. The type genome for the species is the GenBank assembly GCA_900551385.1. The GC content of the type genome is 25.57 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Resacella biparisca sp. nov.

Candidatus Resacella biparisca (NL. fem. n. *biparisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWEM01 sp002071085*. The type genome for the species is the GenBank assembly GCA_002071085.1. The GC content of the type genome is 51.76 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Resacella gen. nov.

Candidatus Resacella (NL. fem. n. *Resacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWEM01*. The type species for the genus is *Candidatus* Resacella biparisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MWEM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resacellaceae.

Description of *Candidatus* Resacellaceae fam. nov.

Candidatus Resacellaceae (NL. fem. n. *Resacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWEM01.* The type genus for the taxon is *Candidatus* Resacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *MWEM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resacellales.

Description of *Candidatus* Resacellales ord. nov.

Candidatus Resacellales (NL. fem. n. *Resacellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWEM01.* The type genus for the taxon is *Candidatus* Resacella .

According to the GTDB R06-RS202, this order belongs to the class *Thermotogae*.

Description of *Candidatus* Resacella rurigicella sp. nov.

Candidatus Resacella rurigicella (NL. fem. n. *rurigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWEM01 sp012744415*. The type genome for the species is the GenBank assembly GCA_012744415.1. The GC content of the type genome is 49.33 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Resacia obteciforma sp. nov.

Candidatus Resacia obteciforma (NL. fem. n. *obteciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRDZ01 sp009779595*. The type genome for the species is the GenBank assembly GCA_009779595.1. The GC content of the type genome is 56.32 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Resacia gen. nov.

Candidatus Resacia (NL. fem. n. *Resacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRDZ01*. The type species for the genus is *Candidatus* Resacia obteciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRDZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resaciaceae.

Description of *Candidatus* Resaciaceae fam. nov.

Candidatus Resaciaceae (NL. fem. n. *Resaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRDZ01.* The type genus for the taxon is *Candidatus* Resacia .

According to the original version of GTDB R06-RS202, this family belongs to the order *RF32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resaculales.

Description of *Candidatus* Resacida reforiforma sp. nov.

Candidatus Resacida reforiforma (NL. fem. n. *reforiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1222 sp002309415*. The type genome for the species is the GenBank assembly GCA_002309415.1. The GC content of the type genome is 46.13 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Resacida gen. nov.

Candidatus Resacida (NL. fem. n. *Resacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1222*. The type species for the genus is *Candidatus* Resacida reforiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1222*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resacidaceae.

Description of *Candidatus* Resacidaceae fam. nov.

Candidatus Resacidaceae (NL. fem. n. *Resacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1222.* The type genus for the taxon is *Candidatus* Resacida .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Resacosa solipatio sp. nov.

Candidatus Resacosa solipatio (NL. fem. n. *solipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-50-28 sp001816585*. The type genome for the species is the GenBank assembly GCA_001816955.1. The GC content of the type genome is 49.82 % and the genome length is 1.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Resacosa gen. nov.

Candidatus Resacosa (NL. fem. n. *Resacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *2-01-FULL-50-28*. The type species for the genus is *Candidatus* Resacosa solipatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resalana pocilibula sp. nov.

Candidatus Resalana pocilibula (NL. fem. n. *pocilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEB-25 sp003105035*. The type genome for the species is the GenBank assembly GCA_003105035.1. The GC content of the type genome is 51.23 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Resalana gen. nov.

Candidatus Resalana (NL. fem. n. *Resalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEB-25*. The type species for the genus is *Candidatus* Resalana pocilibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Resalaria cerimatio sp. nov.

Candidatus Resalaria cerimatio (NL. fem. n. *cerimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1298 sp003142475*. The type genome for the species is the GenBank assembly GCA_003142715.1. The GC content of the type genome is 41.5 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Resalaria gen. nov.

Candidatus Resalaria (NL. fem. n. *Resalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1298*. The type species for the genus is *Candidatus* Resalaria

cerimatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabanaceae.

Description of *Candidatus* Resalaria sotulitura sp. nov.

Candidatus Resalaria sotulitura (NL. fem. n. *sotulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1298 sp003155495*. The type genome for the species is the GenBank assembly GCA_003155495.1. The GC content of the type genome is 42.9 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Resalaria subodibra sp. nov.

Candidatus Resalaria subodibra (NL. fem. n. *subodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1298 sp003819715*. The type genome for the species is the GenBank assembly GCA_003819715.1. The GC content of the type genome is 47.72 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Resalaria terebivita sp. nov.

Candidatus Resalaria terebivita (NL. fem. n. *terebivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1298 sp003142575*. The type genome for the species is the GenBank assembly GCA_003171115.1. The GC content of the type genome is 44.04 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Resalia ceraratica sp. nov.

Candidatus Resalia ceraratica (NL. fem. n. *ceraratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKOM01 sp003562535*. The type genome for the species is the

GenBank assembly GCA_007135185.1. The GC content of the type genome is 54.05 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Resalia gen. nov.

Candidatus Resalia (NL. fem. n. *Resalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKOM01*. The type species for the genus is *Candidatus* Resalia ceraratica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKOM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resaliaceae.

Description of *Candidatus* Resaliaceae fam. nov.

Candidatus Resaliaceae (NL. fem. n. *Resaliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKOM01.* The type genus for the taxon is *Candidatus* Resalia .

According to GTDB R06-RS202, this family belongs to the order *Competibacterales*.

Description of *Candidatus* Resalia dibucitio sp. nov.

Candidatus Resalia dibucitio (NL. fem. n. *dibucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKOM01 sp007120095*. The type genome for the species is the GenBank assembly GCA_003564175.1. The GC content of the type genome is 54.84 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Resalida bicorigena sp. nov.

Candidatus Resalida bicorigena (NL. fem. n. *bicorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXZ01 sp004294005*. The type genome for the species is the GenBank assembly GCA_004294005.1. The GC content of the type genome is 30.05 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Resalida gen. nov.

Candidatus Resalida (NL. fem. n. *Resalida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDXZ01*. The type species for the genus is *Candidatus* Resalida bicorigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resalida binocastra sp. nov.

Candidatus Resalida binocastra (NL. fem. n. *binocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXZ01 sp004293265*. The type genome for the species is the GenBank assembly GCA_004293265.1. The GC content of the type genome is 30.22 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Resalida rorifitoga sp. nov.

Candidatus Resalida rorifitoga (NL. fem. n. *rorifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDXZ01 sp013298075*. The type genome for the species is the GenBank assembly GCA_013298075.1. The GC content of the type genome is 29.67 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Resalosa adnecessa sp. nov.

Candidatus Resalosa adnecessa (NL. fem. n. *adnecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBr16-58 sp007116495*. The type genome for the species is the GenBank assembly GCA_007116495.1. The GC content of the type genome is 43.92 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Resalosa gen. nov.

Candidatus Resalosa (NL. fem. n. *Resalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSBr16-58*. The type species for the genus is *Candidatus* Resalosa adnecessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resalosa catilastra sp. nov.

Candidatus Resalosa catilastra (NL. fem. n. *catilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSBr16-58 sp003566715*. The type genome for the species is the GenBank assembly GCA_003566715.1. The GC content of the type genome is 44.97 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Resalula adbeletta sp. nov.

Candidatus Resalula adbeletta (NL. fem. n. *adbeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10988 sp002409445*. The type genome for the species is the GenBank assembly GCA_002409445.1. The GC content of the type genome is 70.14 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Resalula gen. nov.

Candidatus Resalula (NL. fem. n. *Resalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10988*. The type species for the genus is *Candidatus* Resalula adbeletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10988*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resalulaceae.

Description of *Candidatus* Resalulaceae fam. nov.

Candidatus Resalulaceae (NL. fem. n. *Resalulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10988.* The type genus for the taxon is *Candidatus* Resalula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10988*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resalulales.

Description of *Candidatus* Resalulales ord. nov.

Candidatus Resalulales (NL. fem. n. *Resalulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10988.* The type genus for the taxon is *Candidatus* Resalula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10988*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalulae.

Description of *Candidatus* Resalulae class. nov.

Candidatus Resalulae (NL. fem. n. *c__Resalulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10988.* The type genus for the taxon is *Candidatus* Resalula .

According to GTDB R06-RS202, this class belongs to the phylum *Armatimonadota*.

Description of *Candidatus* Resulana selibigena sp. nov.

Candidatus Resulana selibigena (NL. fem. n. *selibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG240 sp900316875*. The type genome for the species is the GenBank assembly GCA_900316875.1. The GC content of the type genome is 30.96 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Resulana gen. nov.

Candidatus Resulana (NL. fem. n. *Resulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG240*. The type species for the genus is *Candidatus* Resulana

selibigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resularia aggubax sp. nov.

Candidatus Resularia aggubax (NL. fem. n. *aggubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG41 sp003220905*. The type genome for the species is the GenBank assembly GCA_003220905.1. The GC content of the type genome is 69.25 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Resularia gen. nov.

Candidatus Resularia (NL. fem. n. *Resularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG41*. The type species for the genus is *Candidatus* Resularia aggubax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Resularia baropetta sp. nov.

Candidatus Resularia baropetta (NL. fem. n. *baropetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG41 sp003222035*. The type genome for the species is the GenBank assembly GCA_003222035.1. The GC content of the type genome is 68.19 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Resularia colipiforma sp. nov.

Candidatus Resularia colipiforma (NL. fem. n. *colipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG41 sp003221045*. The type genome for the species is the GenBank assembly GCA_003221045.1. The GC content of the type genome is 68.21 % and the

genome length is 2.81 Mbp.

Description of *Candidatus* Resularia docibitrix sp. nov.

Candidatus Resularia docibitrix (NL. fem. n. *docibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG41 sp003220975*. The type genome for the species is the GenBank assembly GCA_003220975.1. The GC content of the type genome is 70.06 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Resularia exherifica sp. nov.

Candidatus Resularia exherifica (NL. fem. n. *exherifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG41 sp003220855*. The type genome for the species is the GenBank assembly GCA_003220855.1. The GC content of the type genome is 69.39 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Resularia illepigena sp. nov.

Candidatus Resularia illepigena (NL. fem. n. *illepigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG41 sp003222155*. The type genome for the species is the GenBank assembly GCA_003222155.1. The GC content of the type genome is 69.59 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Resularia inpinitio sp. nov.

Candidatus Resularia inpinitio (NL. fem. n. *inpinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG41 sp003222055*. The type genome for the species is the GenBank assembly GCA_003222055.1. The GC content of the type genome is 69.31 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Resularia mahematica sp. nov.

Candidatus Resularia mahematica (NL. fem. n. *mahematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG41 sp003221085*. The type genome for the species is the GenBank assembly GCA_003221085.1. The GC content of the type genome is 68.45 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Resularia vavasitio sp. nov.

Candidatus Resularia vavasitio (NL. fem. n. *vavasitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG41 sp003222085*. The type genome for the species is the GenBank assembly GCA_003221875.1. The GC content of the type genome is 68.86 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Resulia imbeciforma sp. nov.

Candidatus Resulia imbeciforma (NL. fem. n. *imbeciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-66-14 sp001774505*. The type genome for the species is the GenBank assembly GCA_001774505.1. The GC content of the type genome is 65.8 % and the genome length is 2.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Resulia gen. nov.

Candidatus Resulia (NL. fem. n. *Resulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-66-14*. The type species for the genus is *Candidatus* Resulia imbeciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-66-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resuliaceae.

Description of *Candidatus* Resuliaceae fam. nov.

Candidatus Resuliaceae (NL. fem. n. *Resuliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-66-14.* The type genus for the taxon is *Candidatus* Resulia .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-13-66-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resuliales.

Description of *Candidatus* Resuliales ord. nov.

Candidatus Resuliales (NL. fem. n. *Resuliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-66-14.* The type genus for the taxon is *Candidatus* Resulia .

According to the original version of GTDB R06-RS202, this family belongs to the class *RBG-13-66-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resuliae.

Description of *Candidatus* Resuliae class. nov.

Candidatus Resuliae (NL. fem. n. *c__Resuliae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-66-14.* The type genus for the taxon is *Candidatus* Resulia .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *RBG-13-66-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Resuliota.

Description of *Candidatus* Resuliota phyl. nov.

Candidatus Resuliota (NL. fem. n. *Resuliota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-66-14.* The type genus for the taxon is *Candidatus* Resulia .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Resulida giganitica sp. nov.

Candidatus Resulida giganitica (NL. fem. n. *giganitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFIG01 sp013298595*. The type genome for the species is the GenBank assembly GCA_013298595.1. The GC content of the type genome is 45.24 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Resulida gen. nov.

Candidatus Resulida (NL. fem. n. *Resulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFIG01*. The type species for the genus is *Candidatus* Resulida giganitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAFIG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resulidaceae.

Description of *Candidatus* Resulidaceae fam. nov.

Candidatus Resulidaceae (NL. fem. n. *Resulidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAFIG01*. The type genus for the taxon is *Candidatus* Resulida .

According to GTDB R06-RS202, this family belongs to the order *Deinococcales*.

Description of *Candidatus* Resulida peracitudo sp. nov.

Candidatus Resulida peracitudo (NL. fem. n. *peracitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFIG01 sp013298185*. The type genome for the species is the GenBank assembly GCA_013298185.1. The GC content of the type genome is 49.7 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Resulosa intemastra sp. nov.

Candidatus Resulosa intemastra (NL. fem. n. *intemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Firm-18 sp001604215*. The type genome for the species is the GenBank assembly GCA_001604215.1. The GC content of the type genome is 41.43 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Resulosa gen. nov.

Candidatus Resulosa (NL. fem. n. *Resulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Firm-18*. The type species for the genus is *Candidatus* Resulosa intemastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Firm-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resulosaceae.

Description of *Candidatus* Resulosaceae fam. nov.

Candidatus Resulosaceae (NL. fem. n. *Resulosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Firm-18.* The type genus for the taxon is *Candidatus* Resulosa .

According to GTDB R06-RS202, this family belongs to the order *Monoglobales*.

Description of *Candidatus* Resulula perabitoga sp. nov.

Candidatus Resulula perabitoga (NL. fem. n. *perabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDMI01 sp013001575*. The type genome for the species is the GenBank assembly GCA_013043715.1. The GC content of the type genome is 47.06 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Resulula gen. nov.

Candidatus Resulula (NL. fem. n. *Resulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDMI01*. The type species for the genus is *Candidatus* Resulula perabitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDMI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resululaceae.

Description of *Candidatus* Resululaceae fam. nov.

Candidatus Resululaceae (NL. fem. n. *Resululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDMI01.* The type genus for the taxon is *Candidatus* Resulula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABDMI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resululales.

Description of *Candidatus* Resululales ord. nov.

Candidatus Resululales (NL. fem. n. *Resululales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDMI01.* The type genus for the taxon is *Candidatus* Resulula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Resupana detotugo sp. nov.

Candidatus Resupana detotugo (NL. fem. n. *detotugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDZH01 sp004293935*. The type genome for the species is the GenBank assembly GCA_004293245.1. The GC content of the type genome is 46.15 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Resupana gen. nov.

Candidatus Resupana (NL. fem. n. *Resupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDZH01*. The type species for the genus is *Candidatus* Resupana detotugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA998*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifariaceae.

Description of *Candidatus* Resupana plostitas sp. nov.

Candidatus Resupana plostitas (NL. fem. n. *plostitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDZH01 sp004292675*. The type genome for the species is the GenBank assembly GCA_004292675.1. The GC content of the type genome is 45.69 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Resuparia delucugo sp. nov.

Candidatus Resuparia delucugo (NL. fem. n. *delucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4132 sp002380945*. The type genome for the species is the GenBank assembly GCA_002415885.1. The GC content of the type genome is 42.15 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Resuparia gen. nov.

Candidatus Resuparia (NL. fem. n. *Resuparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4132*. The type species for the genus is *Candidatus* Resuparia delucugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resuparia gerunitas sp. nov.

Candidatus Resuparia gerunitas (NL. fem. n. *gerunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4132 sp002256685*. The type genome for the species is the GenBank assembly GCA_002256685.1. The GC content of the type genome is 42.81 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Resuparia negidentia sp. nov.

Candidatus Resuparia negidentia (NL. fem. n. *negidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4132 sp009692395*. The type genome for the species is the GenBank assembly GCA_009692395.1. The GC content of the type genome is 42.98 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Resuparia solacimonas sp. nov.

Candidatus Resuparia solacimonas (NL. fem. n. *solacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4132 sp903902705*. The type genome for the species is the GenBank assembly GCA_903848195.1. The GC content of the type genome is 41.62 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Resuparia sonipetta sp. nov.

Candidatus Resuparia sonipetta (NL. fem. n. *sonipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4132 sp002134785*. The type genome for the species is the GenBank assembly GCA_002134785.1. The GC content of the type genome is 42.18 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Resupia telegibra sp. nov.

Candidatus Resupia telegibra (NL. fem. n. *telegibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBMM01 sp903954185*. The type genome for the species is the GenBank assembly GCA_903897595.1. The GC content of the type genome is 38.99 %

and the genome length is 0.98 Mbp.

Description of *Candidatus* Resupia gen. nov.

Candidatus Resupia (NL. fem. n. *Resupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBMM01*. The type species for the genus is *Candidatus* Resupia telegibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBMM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resupiaceae.

Description of *Candidatus* Resupiaceae fam. nov.

Candidatus Resupiaceae (NL. fem. n. *Resupiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAJBMM01.* The type genus for the taxon is *Candidatus* Resupia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAJBMM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resupiales.

Description of *Candidatus* Resupiales ord. nov.

Candidatus Resupiales (NL. fem. n. *Resupiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAJBMM01.* The type genus for the taxon is *Candidatus* Resupia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Panifidae.

Description of *Candidatus* Resupida abhinibra sp. nov.

Candidatus Resupida abhinibra (NL. fem. n. *abhinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902788345*. The type genome for the species is the

GenBank assembly GCA_902788345.1. The GC content of the type genome is 33.37 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Resupida gen. nov.

Candidatus Resupida (NL. fem. n. *Resupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2813*. The type species for the genus is *Candidatus* Resupida abhinibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resupida anatritura sp. nov.

Candidatus Resupida anatritura (NL. fem. n. *anatritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902794035*. The type genome for the species is the GenBank assembly GCA_902794035.1. The GC content of the type genome is 32.73 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Resupida defalibra sp. nov.

Candidatus Resupida defalibra (NL. fem. n. *defalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp900314375*. The type genome for the species is the GenBank assembly GCA_902773945.1. The GC content of the type genome is 33.32 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Resupida defasitica sp. nov.

Candidatus Resupida defasitica (NL. fem. n. *defasitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902792085*. The type genome for the species is the GenBank assembly GCA_902792085.1. The GC content of the type genome is 33.69 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Resupida denunitica sp. nov.

Candidatus Resupida denunitica (NL. fem. n. *denunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902774905*. The type genome for the species is the GenBank assembly GCA_902774905.1. The GC content of the type genome is 33.8 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Resupida detumugo sp. nov.

Candidatus Resupida detumugo (NL. fem. n. *detumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902766975*. The type genome for the species is the GenBank assembly GCA_902768215.1. The GC content of the type genome is 33.74 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Resupida effulivita sp. nov.

Candidatus Resupida effulivita (NL. fem. n. *effulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902765655*. The type genome for the species is the GenBank assembly GCA_902765655.1. The GC content of the type genome is 34.02 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Resupida extoritas sp. nov.

Candidatus Resupida extoritas (NL. fem. n. *extoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902801985*. The type genome for the species is the GenBank assembly GCA_902801985.1. The GC content of the type genome is 33.07 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Resupida lutulicula sp. nov.

Candidatus Resupida lutulicula (NL. fem. n. *lutulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902777855*. The type genome for the species is the GenBank assembly GCA_902777855.1. The GC content of the type genome is 34.51 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Resupida necopastra sp. nov.

Candidatus Resupida necopastra (NL. fem. n. *necopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902796825*. The type genome for the species is the GenBank assembly GCA_902796825.1. The GC content of the type genome is 34.19 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Resupida nicotax sp. nov.

Candidatus Resupida nicotax (NL. fem. n. *nicotax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp900319365*. The type genome for the species is the GenBank assembly GCA_002350285.1. The GC content of the type genome is 35.26 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Resupida peradilenta sp. nov.

Candidatus Resupida peradilenta (NL. fem. n. *peradilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902802825*. The type genome for the species is the GenBank assembly GCA_902802825.1. The GC content of the type genome is 34.02 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Resupida refocimonas sp. nov.

Candidatus Resupida refocimonas (NL. fem. n. *refocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2813 sp902766395*. The type genome for the species is the GenBank assembly GCA_902766395.1. The GC content of the type genome is 32.37 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Resupida relecibula sp. nov.

Candidatus Resupida relecibula (NL. fem. n. *relecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp002361485*. The type genome for the species is the GenBank assembly GCA_902801915.1. The GC content of the type genome is 33.79 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Resupida rubeficula sp. nov.

Candidatus Resupida rubeficula (NL. fem. n. *rubeficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2813 sp902791985*. The type genome for the species is the GenBank assembly GCA_902791985.1. The GC content of the type genome is 33.63 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Resuposa vilipimonas sp. nov.

Candidatus Resuposa vilipimonas (NL. fem. n. *vilipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-57-12 sp001801365*. The type genome for the species is the GenBank assembly GCA_001801365.1. The GC content of the type genome is 58.0 % and the genome length is 1.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Resuposa gen. nov.

Candidatus Resuposa (NL. fem. n. *Resuposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-57-12*. The type species for the genus is *Candidatus* Resuposa vilipimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-57-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resuposaceae.

Description of *Candidatus* Resuposaceae fam. nov.

Candidatus Resuposaceae (NL. fem. n. *Resuposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-57-12.* The type genus for the taxon is *Candidatus* Resuposa .

According to GTDB R06-RS202, this family belongs to the order *Thiohalomonadales_A*.

Description of *Candidatus* Resupula verecentia sp. nov.

Candidatus Resupula verecentia (NL. fem. n. *verecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIAJ01 sp009691845*. The type genome for the species is the GenBank assembly GCA_009885865.1. The GC content of the type genome is 58.35 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Resupula gen. nov.

Candidatus Resupula (NL. fem. n. *Resupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIAJ01*. The type species for the genus is *Candidatus* Resupula verecentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resurana adselatio sp. nov.

Candidatus Resurana adselatio (NL. fem. n. *adselatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFNO01 sp009927165*. The type genome for the species is the GenBank assembly GCA_009927165.1. The GC content of the type genome is 44.28 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Resurana gen. nov.

Candidatus Resurana (NL. fem. n. *Resurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RFNO01*. The type species for the genus is *Candidatus* Resurana adselatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2466*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feditosaceae.

Description of *Candidatus* Resurana funivisca sp. nov.

Candidatus Resurana funivisca (NL. fem. n. *funivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFNO01 sp009927045*. The type genome for the species is the GenBank assembly GCA_009927045.1. The GC content of the type genome is 46.04 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Resurana vilipigena sp. nov.

Candidatus Resurana vilipigena (NL. fem. n. *vilipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RFNO01 sp009927005*. The type genome for the species is the GenBank assembly GCA_009927005.1. The GC content of the type genome is 44.35 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Resuraria defenitia sp. nov.

Candidatus Resuraria defenitia (NL. fem. n. *defenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMT01 sp009840965*. The type genome for the species is the GenBank assembly GCA_009836955.1. The GC content of the type genome is 71.51 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Resuraria gen. nov.

Candidatus Resuraria (NL. fem. n. *Resuraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXMT01*. The type species for the genus is *Candidatus* Resuraria defenitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Resuraria energitrix sp. nov.

Candidatus Resuraria energitrix (NL. fem. n. *energitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMT01 sp009839925*. The type genome for the species is the GenBank assembly GCA_009839925.1. The GC content of the type genome is 71.11 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Resuraria hemitetta sp. nov.

Candidatus Resuraria hemitetta (NL. fem. n. *hemitetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMT01 sp009840945*. The type genome for the species is the GenBank assembly GCA_009840945.1. The GC content of the type genome is 71.01 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Resuraria refulitica sp. nov.

Candidatus Resuraria refulitica (NL. fem. n. *refulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXMT01 sp009837285*. The type genome for the species is the GenBank assembly GCA_009839875.1. The GC content of the type genome is 70.14 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Resurella detosigena sp. nov.

Candidatus Resurella detosigena (NL. fem. n. *detosigena* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1585 sp900553205*. The type genome for the species is the GenBank assembly GCA_900553205.1. The GC content of the type genome is 32.47 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Resurella gen. nov.

Candidatus Resurella (NL. fem. n. *Resurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1585*. The type species for the genus is *Candidatus* Resurella detosigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resurella solivatio sp. nov.

Candidatus Resurella solivatio (NL. fem. n. *solivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1585 sp900766355*. The type genome for the species is the GenBank assembly RS_GCF_900766355.1. The GC content of the type genome is 31.39 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Resuria indirilenta sp. nov.

Candidatus Resuria indirilenta (NL. fem. n. *indirilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-36-15 sp001819145*. The type genome for the species is the GenBank assembly GCA_001819145.1. The GC content of the type genome is 35.65 % and the genome length is 0.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Resuria gen. nov.

Candidatus Resuria (NL. fem. n. *Resuria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-36-15*. The type species for the genus is *Candidatus* Resuria indirilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-36-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resuriaceae.

Description of *Candidatus* Resuriaceae fam. nov.

Candidatus Resuriaceae (NL. fem. n. *Resuriaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-36-15.* The type genus for the taxon is *Candidatus* Resuria .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Resuria nidifousia sp. nov.

Candidatus Resuria nidifousia (NL. fem. n. *nidifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-36-15 sp011050465*. The type genome for the species is the GenBank assembly GCA_011049515.1. The GC content of the type genome is 37.16 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Resurida bimetibula sp. nov.

Candidatus Resurida bimetibula (NL. fem. n. *bimetibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJCBL01 sp903960515*. The type genome for the species is the GenBank assembly GCA_903834575.1. The GC content of the type genome is 64.52 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Resurida gen. nov.

Candidatus Resurida (NL. fem. n. *Resurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CAJCBL01*. The type species for the genus is *Candidatus* Resurida bimetibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resurosa fibicitrix sp. nov.

Candidatus Resurosa fibicitrix (NL. fem. n. *fibicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OM182 sp001438145*. The type genome for the species is the GenBank assembly GCA_002469635.1. The GC content of the type genome is 52.97 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Resurosa gen. nov.

Candidatus Resurosa (NL. fem. n. *Resurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OM182*. The type species for the genus is *Candidatus* Resurosa fibicitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Resurosa hexamilega sp. nov.

Candidatus Resurosa hexamilega (NL. fem. n. *hexamilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OM182 sp003482475*. The type genome for the species is the GenBank assembly GCA_003482475.1. The GC content of the type genome is 51.92 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Resurosa octipisca sp. nov.

Candidatus Resurosa octipisca (NL. fem. n. *octipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OM182 sp002700775*. The type genome for the species is the GenBank assembly GCA_002700775.1. The GC content of the type genome is 43.76 % and the

genome length is 2.17 Mbp.

Description of *Candidatus* Resurula argumatio sp. nov.

Candidatus Resurula argumatio (NL. fem. n. *argumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2716485 sp002716485*. The type genome for the species is the GenBank assembly GCA_002716485.1. The GC content of the type genome is 42.19 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Resurula gen. nov.

Candidatus Resurula (NL. fem. n. *Resurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2716485*. The type species for the genus is *Candidatus* Resurula argumatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2716485*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resurulaceae.

Description of *Candidatus* Resurulaceae fam. nov.

Candidatus Resurulaceae (NL. fem. n. *Resurulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2716485.* The type genus for the taxon is *Candidatus* Resurula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2716485*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resurulales.

Description of *Candidatus* Resurulales ord. nov.

Candidatus Resurulales (NL. fem. n. *Resurulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2716485.* The type genus for the taxon is *Candidatus* Resurula .

According to the GTDB R06-RS202, this order belongs to the class

Marinamargulisbacteria.

Description of *Candidatus* Retecana delecatica sp. nov.

Candidatus Retecana delecatica (NL. fem. n. *delecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG147 sp900315495*. The type genome for the species is the GenBank assembly GCA_900315495.1. The GC content of the type genome is 56.45 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Retecana gen. nov.

Candidatus Retecana (NL. fem. n. *Retecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG147*. The type species for the genus is *Candidatus* Retecana delecatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Retecaria abindisca sp. nov.

Candidatus Retecaria abindisca (NL. fem. n. *abindisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp009928265*. The type genome for the species is the GenBank assembly GCA_009928265.1. The GC content of the type genome is 58.02 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Retecaria gen. nov.

Candidatus Retecaria (NL. fem. n. *Retecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6821*. The type species for the genus is *Candidatus* Retecaria abindisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6821*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Retecariaceae.

Description of *Candidatus* Retecariaceae fam. nov.

Candidatus Retecariaceae (NL. fem. n. *Retecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6821.* The type genus for the taxon is *Candidatus* Retecaria .

According to GTDB R06-RS202, this family belongs to the order *Chthoniobacterales*.

Description of *Candidatus* Retecaria aneclimonia sp. nov.

Candidatus Retecaria aneclimonia (NL. fem. n. *aneclimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp003136515*. The type genome for the species is the GenBank assembly GCA_003136515.1. The GC content of the type genome is 53.17 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Retecaria cepulitura sp. nov.

Candidatus Retecaria cepulitura (NL. fem. n. *cepulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp903823215*. The type genome for the species is the GenBank assembly GCA_903823215.1. The GC content of the type genome is 53.28 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Retecaria cepuretta sp. nov.

Candidatus Retecaria cepuretta (NL. fem. n. *cepuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp008933015*. The type genome for the species is the GenBank assembly GCA_008933015.1. The GC content of the type genome is 54.51 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Retecaria conificella sp. nov.

Candidatus Retecaria conificella (NL. fem. n. *conificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp002452515*. The type genome for the species is the GenBank assembly GCA_002452515.1. The GC content of the type genome is 54.02 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Retecaria coturiforma sp. nov.

Candidatus Retecaria coturiforma (NL. fem. n. *coturiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp903933015*. The type genome for the species is the GenBank assembly GCA_903933015.1. The GC content of the type genome is 56.69 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Retecaria curabatica sp. nov.

Candidatus Retecaria curabatica (NL. fem. n. *curabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp903858595*. The type genome for the species is the GenBank assembly GCA_903858595.1. The GC content of the type genome is 55.92 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Retecaria docibastra sp. nov.

Candidatus Retecaria docibastra (NL. fem. n. *docibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp903847935*. The type genome for the species is the GenBank assembly GCA_903825975.1. The GC content of the type genome is 54.59 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Retecaria duponibra sp. nov.

Candidatus Retecaria duponibra (NL. fem. n. *duponibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp903826635*. The type genome for the species is the GenBank assembly GCA_903911745.1. The GC content of the type genome is 54.39 %

and the genome length is 2.04 Mbp.

Description of *Candidatus* Retecaria indivetta sp. nov.

Candidatus Retecaria indivetta (NL. fem. n. *indivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp903919105*. The type genome for the species is the GenBank assembly GCA_903919105.1. The GC content of the type genome is 56.25 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Retecaria inrefimonia sp. nov.

Candidatus Retecaria inrefimonia (NL. fem. n. *inrefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp903831635*. The type genome for the species is the GenBank assembly GCA_903831635.1. The GC content of the type genome is 54.66 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Retecaria vanitilenta sp. nov.

Candidatus Retecaria vanitilenta (NL. fem. n. *vanitilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6821 sp903868795*. The type genome for the species is the GenBank assembly GCA_903907545.1. The GC content of the type genome is 55.5 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Retecella bulapugo sp. nov.

Candidatus Retecella bulapugo (NL. fem. n. *bulapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed11-197 sp003563865*. The type genome for the species is the GenBank assembly GCA_003563865.1. The GC content of the type genome is 45.72 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Retecella gen. nov.

Candidatus Retecella (NL. fem. n. *Retecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSed11-197*. The type species for the genus is *Candidatus* Retecella bulapugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSSed11-197*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Retecellaceae.

Description of *Candidatus* Retecellaceae fam. nov.

Candidatus Retecellaceae (NL. fem. n. *Retecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CSSed11-197.* The type genus for the taxon is *Candidatus* Retecella .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Retecella pulegifica sp. nov.

Candidatus Retecella pulegifica (NL. fem. n. *pulegifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed11-197 sp003552785*. The type genome for the species is the GenBank assembly GCA_003552785.1. The GC content of the type genome is 46.47 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Retecia docibivita sp. nov.

Candidatus Retecia docibivita (NL. fem. n. *docibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-473 sp003160635*. The type genome for the species is the GenBank assembly GCA_003160635.1. The GC content of the type genome is 64.49 % and the genome length is 6.93 Mbp.

Description of *Candidatus* Retecia gen. nov.

Candidatus Retecia (NL. fem. n. *Retecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-473*. The type species for the genus is *Candidatus* Retecia docibivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Retecia inmenitoga sp. nov.

Candidatus Retecia inmenitoga (NL. fem. n. *inmenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-473 sp003133545*. The type genome for the species is the GenBank assembly GCA_003133545.1. The GC content of the type genome is 67.1 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Retecia peracigena sp. nov.

Candidatus Retecia peracigena (NL. fem. n. *peracigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-473 sp003169675*. The type genome for the species is the GenBank assembly GCA_003169675.1. The GC content of the type genome is 65.69 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Retecia rumifago sp. nov.

Candidatus Retecia rumifago (NL. fem. n. *rumifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-473 sp003169235*. The type genome for the species is the GenBank assembly GCA_003165735.1. The GC content of the type genome is 69.82 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Retecosa canacitudo sp. nov.

Candidatus Retecosa canacitudo (NL. fem. n. *canacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NML-160184 sp002250475*. The type genome for the species is the GenBank assembly RS_GCF_002250475.1. The GC content of the type genome is 68.06 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Retecosa gen. nov.

Candidatus Retecosa (NL. fem. n. *Retecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NML-160184*. The type species for the genus is *Candidatus* Retecosa canacitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Retecula addubitoga sp. nov.

Candidatus Retecula addubitoga (NL. fem. n. *addubitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8525 sp002839355*. The type genome for the species is the GenBank assembly GCA_002839355.1. The GC content of the type genome is 51.61 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Retecula gen. nov.

Candidatus Retecula (NL. fem. n. *Retecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8525*. The type species for the genus is *Candidatus* Retecula addubitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Retecula notabentia sp. nov.

Candidatus Retecula notabentia (NL. fem. n. *notabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8525 sp002839335*. The type genome for the species is the

GenBank assembly GCA_003522045.1. The GC content of the type genome is 52.04 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Retunana colutitrix sp. nov.

Candidatus Retunana colutitrix (NL. fem. n. *colutitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-776 sp000438195*. The type genome for the species is the GenBank assembly GCA_900551255.1. The GC content of the type genome is 27.53 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Retunana gen. nov.

Candidatus Retunana (NL. fem. n. *Retunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-776*. The type species for the genus is *Candidatus* Retunana colutitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Retunana obnuniforma sp. nov.

Candidatus Retunana obnuniforma (NL. fem. n. *obnuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-776 sp900758895*. The type genome for the species is the GenBank assembly RS_GCF_900758895.1. The GC content of the type genome is 29.6 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Retunana subacitas sp. nov.

Candidatus Retunana subacitas (NL. fem. n. *subacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-776 sp900549285*. The type genome for the species is the GenBank assembly RS_GCF_900752875.1. The GC content of the type genome is 27.16

% and the genome length is 1.3 Mbp.

Description of *Candidatus* Retunaria galacousia sp. nov.

Candidatus Retunaria galacousia (NL. fem. n. *galacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-48-16 sp007376285*. The type genome for the species is the GenBank assembly GCA_007376285.1. The GC content of the type genome is 48.46 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Retunaria gen. nov.

Candidatus Retunaria (NL. fem. n. *Retunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-48-16*. The type species for the genus is *Candidatus* Retunaria galacousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Retunaria satacicella sp. nov.

Candidatus Retunaria satacicella (NL. fem. n. *satacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-48-16 sp001821135*. The type genome for the species is the GenBank assembly GCA_001821305.1. The GC content of the type genome is 47.53 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Retunella lucubitio sp. nov.

Candidatus Retunella lucubitio (NL. fem. n. *lucubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKXZ01 sp003561145*. The type genome for the species is the

GenBank assembly GCA_003561145.1. The GC content of the type genome is 49.61 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Retunella gen. nov.

Candidatus Retunella (NL. fem. n. *Retunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKXZ01*. The type species for the genus is *Candidatus* Retunella lucubitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8910*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monogiaceae.

Description of *Candidatus* Retunella vehemitoga sp. nov.

Candidatus Retunella vehemitoga (NL. fem. n. *vehemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKXZ01 sp007128145*. The type genome for the species is the GenBank assembly GCA_007119915.1. The GC content of the type genome is 47.76 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Retunia innumetta sp. nov.

Candidatus Retunia innumetta (NL. fem. n. *innumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B70-G9 sp003641465*. The type genome for the species is the GenBank assembly GCA_003641465.1. The GC content of the type genome is 59.84 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Retunia gen. nov.

Candidatus Retunia (NL. fem. n. *Retunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B70-G9*. The type species for the genus is *Candidatus* Retunia innumetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family

B70-G9. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Retuniaceae.

Description of *Candidatus* Retuniaceae fam. nov.

Candidatus Retuniaceae (NL. fem. n. *Retuniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B70-G9.* The type genus for the taxon is *Candidatus* Retunia .

According to the original version of GTDB R06-RS202, this family belongs to the order *B70-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Retuniales.

Description of *Candidatus* Retuniales ord. nov.

Candidatus Retuniales (NL. fem. n. *Retuniales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B70-G9.* The type genus for the taxon is *Candidatus* Retunia .

According to the GTDB R06-RS202, this order belongs to the class *Kiritimatiellae*.

Description of *Candidatus* Retunia proscitas sp. nov.

Candidatus Retunia proscitas (NL. fem. n. *proscitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B70-G9 sp012961745*. The type genome for the species is the GenBank assembly GCA_012961745.1. The GC content of the type genome is 62.05 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Retunida forabifica sp. nov.

Candidatus Retunida forabifica (NL. fem. n. *forabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4716 sp002438865*. The type genome for the species is the GenBank assembly GCA_002404425.1. The GC content of the type genome is 43.7 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Retunida gen. nov.

Candidatus Retunida (NL. fem. n. *Retunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4716*. The type species for the genus is *Candidatus* Retunida forabifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1381*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Melilosaceae.

Description of *Candidatus* Retunida nubecifica sp. nov.

Candidatus Retunida nubecifica (NL. fem. n. *nubecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4716 sp900556575*. The type genome for the species is the GenBank assembly GCA_900556575.1. The GC content of the type genome is 38.53 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Retunosa antimitica sp. nov.

Candidatus Retunosa antimitica (NL. fem. n. *antimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-605 sp003250835*. The type genome for the species is the GenBank assembly GCA_003250835.1. The GC content of the type genome is 35.42 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Retunosa gen. nov.

Candidatus Retunosa (NL. fem. n. *Retunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-605*. The type species for the genus is *Candidatus* Retunosa antimitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-605*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Retunosaceae.

Description of *Candidatus* Retunosaceae fam. nov.

Candidatus Retunosaceae (NL. fem. n. *Retunosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-605.* The type genus for the taxon is *Candidatus* Retunosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *Rs-D84*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delapiales.

Description of *Candidatus* Retunula albogibula sp. nov.

Candidatus Retunula albogibula (NL. fem. n. *albogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1479 sp002696205*. The type genome for the species is the GenBank assembly GCA_002696205.1. The GC content of the type genome is 63.55 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Retunula gen. nov.

Candidatus Retunula (NL. fem. n. *Retunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1479*. The type species for the genus is *Candidatus* Retunula albogibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Casp-alpha2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noninidaceae.

Description of *Candidatus* Retunula baditilenta sp. nov.

Candidatus Retunula baditilenta (NL. fem. n. *baditilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1479 sp002781745*. The type genome for the species is the GenBank assembly GCA_002781745.1. The GC content of the type genome is 66.23 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Retunula incomigena sp. nov.

Candidatus Retunula incomigena (NL. fem. n. *incomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1479 sp002433335*. The type genome for the species is the GenBank assembly GCA_002433335.1. The GC content of the type genome is 62.52 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Retunula navifigena sp. nov.

Candidatus Retunula navifigena (NL. fem. n. *navifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1479 sp002325375*. The type genome for the species is the GenBank assembly GCA_002709445.1. The GC content of the type genome is 63.44 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Retunula vanitigena sp. nov.

Candidatus Retunula vanitigena (NL. fem. n. *vanitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1479 sp002706405*. The type genome for the species is the GenBank assembly GCA_002695715.1. The GC content of the type genome is 63.09 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Revecana denoritia sp. nov.

Candidatus Revecana denoritia (NL. fem. n. *denoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin80 sp009838195*. The type genome for the species is the GenBank assembly GCA_009838195.1. The GC content of the type genome is 50.59 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Revecana gen. nov.

Candidatus Revecana (NL. fem. n. *Revecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin80*. The type species for the genus is *Candidatus* Revecana denoritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin80*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecanaceae.

Description of *Candidatus* Revecanaceae fam. nov.

Candidatus Revecanaceae (NL. fem. n. *Revecanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin80.* The type genus for the taxon is *Candidatus* Revecana .

According to GTDB R06-RS202, this family belongs to the order *Rhodothermales*.

Description of *Candidatus* Revecana pericibra sp. nov.

Candidatus Revecana pericibra (NL. fem. n. *pericibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin80 sp009841335*. The type genome for the species is the GenBank assembly GCA_009844335.1. The GC content of the type genome is 51.5 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Revecana repurilenta sp. nov.

Candidatus Revecana repurilenta (NL. fem. n. *repurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin80 sp002238805*. The type genome for the species is the GenBank assembly GCA_002238805.1. The GC content of the type genome is 50.96 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Revecaria artifitia sp. nov.

Candidatus Revecaria artifitia (NL. fem. n. *artifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4055 sp002382735*. The type genome for the species is the GenBank assembly GCA_002382735.1. The GC content of the type genome is 41.82 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Revecaria gen. nov.

Candidatus Revecaria (NL. fem. n. *Revecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4055*. The type species for the genus is *Candidatus* Revecaria artifitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4055*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecariaceae.

Description of *Candidatus* Revecariaceae fam. nov.

Candidatus Revecariaceae (NL. fem. n. *Revecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4055.* The type genus for the taxon is *Candidatus* Revecaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4055*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Revecariales.

Description of *Candidatus* Revecariales ord. nov.

Candidatus Revecariales (NL. fem. n. *Revecariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4055.* The type genus for the taxon is *Candidatus* Revecaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4055*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Revecariae.

Description of *Candidatus* Revecariae class. nov.

Candidatus Revecariae (NL. fem. n. *c__Revecariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4055*. The type genus for the taxon is *Candidatus* Revecaria .

According to GTDB R06-RS202, this class belongs to the phylum *Delongbacteria*.

Description of *Candidatus* Revecaria holovax sp. nov.

Candidatus Revecaria holovax (NL. fem. n. *holovax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4055 sp003252515*. The type genome for the species is the GenBank assembly GCA_003252515.1. The GC content of the type genome is 42.58 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Revecella apogribra sp. nov.

Candidatus Revecella apogribra (NL. fem. n. *apogribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp902802755*. The type genome for the species is the GenBank assembly GCA_902802755.1. The GC content of the type genome is 44.21 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Revecella gen. nov.

Candidatus Revecella (NL. fem. n. *Revecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F23-D06*. The type species for the genus is *Candidatus* Revecella apogribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turibosaceae.

Description of *Candidatus* Revecella binocibula sp. nov.

Candidatus Revecella binocibula (NL. fem. n. *binocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *F23-D06 sp002311645*. The type genome for the species is the GenBank assembly GCA_002367095.1. The GC content of the type genome is 51.55 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Revecella cocodimonia sp. nov.

Candidatus Revecella cocodimonia (NL. fem. n. *cocodimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp902786595*. The type genome for the species is the GenBank assembly GCA_902786595.1. The GC content of the type genome is 49.23 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Revecella dimiditrix sp. nov.

Candidatus Revecella dimiditrix (NL. fem. n. *dimiditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp900316305*. The type genome for the species is the GenBank assembly GCA_900316305.1. The GC content of the type genome is 49.89 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Revecella fidenitrix sp. nov.

Candidatus Revecella fidenitrix (NL. fem. n. *fidenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp900319925*. The type genome for the species is the GenBank assembly GCA_900319925.1. The GC content of the type genome is 53.19 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Revecella invicibra sp. nov.

Candidatus Revecella invicibra (NL. fem. n. *invicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp902797625*. The type genome for the species is the GenBank assembly GCA_902797625.1. The GC content of the type genome is 35.11 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Revecella menapicella sp. nov.

Candidatus Revecella menapicella (NL. fem. n. *menapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp900317715*. The type genome for the species is the GenBank assembly GCA_902758435.1. The GC content of the type genome is 48.76 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Revecella meriditura sp. nov.

Candidatus Revecella meriditura (NL. fem. n. *meriditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp902771655*. The type genome for the species is the GenBank assembly GCA_902772535.1. The GC content of the type genome is 44.67 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Revecella nubigibra sp. nov.

Candidatus Revecella nubigibra (NL. fem. n. *nubigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp002392325*. The type genome for the species is the GenBank assembly GCA_002392325.1. The GC content of the type genome is 48.34 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Revecella nubigousia sp. nov.

Candidatus Revecella nubigousia (NL. fem. n. *nubigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp902770735*. The type genome for the species is the GenBank assembly GCA_902768555.1. The GC content of the type genome is 52.6 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Revecella opercitio sp. nov.

Candidatus Revecella opercitio (NL. fem. n. *opercitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp902796805*. The type genome for the species is the GenBank assembly GCA_902796805.1. The GC content of the type genome is 50.81 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Revecella sotulilega sp. nov.

Candidatus Revecella sotulilega (NL. fem. n. *sotulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp900315705*. The type genome for the species is the GenBank assembly GCA_900315705.1. The GC content of the type genome is 52.14 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Revecella vitupibula sp. nov.

Candidatus Revecella vitupibula (NL. fem. n. *vitupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-D06 sp900315245*. The type genome for the species is the GenBank assembly GCA_900315245.1. The GC content of the type genome is 48.82 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Revecia selecitia sp. nov.

Candidatus Revecia selecitia (NL. fem. n. *selecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002782225 sp002787295*. The type genome for the species is the GenBank assembly GCA_002782225.1. The GC content of the type genome is 37.13 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Revecia gen. nov.

Candidatus Revecia (NL. fem. n. *Revecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002782225*. The type species for the genus is *Candidatus* Revecia

selecitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002782225*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reveciaceae.

Description of *Candidatus* Reveciaceae fam. nov.

Candidatus Reveciaceae (NL. fem. n. *Reveciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002782225.* The type genus for the taxon is *Candidatus* Revecia .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Revecida desacitia sp. nov.

Candidatus Revecida desacitia (NL. fem. n. *desacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMV01 sp007133365*. The type genome for the species is the GenBank assembly GCA_007133365.1. The GC content of the type genome is 53.75 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Revecida gen. nov.

Candidatus Revecida (NL. fem. n. *Revecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLMV01*. The type species for the genus is *Candidatus* Revecida desacitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLMV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecidaceae.

Description of *Candidatus* Revecidaceae fam. nov.

Candidatus Revecidaceae (NL. fem. n. *Revecidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLMV01.* The type genus for the taxon is *Candidatus* Revecida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLMV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Revecidales.

Description of *Candidatus* Revecidales ord. nov.

Candidatus Revecidales (NL. fem. n. *Revecidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLMV01.* The type genus for the taxon is *Candidatus* Revecida .

According to the original version of GTDB R06-RS202, this family belongs to the class *SLMV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Revecidae.

Description of *Candidatus* Revecidae class. nov.

Candidatus Revecidae (NL. fem. n. *c__Revecidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLMV01.* The type genus for the taxon is *Candidatus* Revecida .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_E*.

Description of *Candidatus* Revecosa recumicula sp. nov.

Candidatus Revecosa recumicula (NL. fem. n. *recumicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMGI01 sp903840505*. The type genome for the species is the GenBank assembly GCA_903862275.1. The GC content of the type genome is 35.67 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Revecosa gen. nov.

Candidatus Revecosa (NL. fem. n. *Revecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMGI01*. The type species for the genus is *Candidatus* Revecosa recumicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA4408. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vavasanaceae.

Description of *Candidatus* Revecula aprarastra sp. nov.

Candidatus Revecula aprarastra (NL. fem. n. *aprarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAD01 sp007126995*. The type genome for the species is the GenBank assembly GCA_007126995.1. The GC content of the type genome is 57.97 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Revecula gen. nov.

Candidatus Revecula (NL. fem. n. *Revecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLAD01*. The type species for the genus is *Candidatus* Revecula aprarastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reveculaceae.

Description of *Candidatus* Reveculaceae fam. nov.

Candidatus Reveculaceae (NL. fem. n. *Reveculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLAD01.* The type genus for the taxon is *Candidatus* Revecula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLAD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Reveculales.

Description of *Candidatus* Reveculales ord. nov.

Candidatus Reveculales (NL. fem. n. *Reveculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLAD01.* The type genus for the taxon is *Candidatus* Revecula .

According to the GTDB R06-RS202, this order belongs to the class *Kiritimatiellae*.

Description of *Candidatus* Revecula celumisca sp. nov.

Candidatus Revecula celumisca (NL. fem. n. *celumisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAD01 sp007125875*. The type genome for the species is the GenBank assembly GCA_007136625.1. The GC content of the type genome is 55.54 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Revecula docibatica sp. nov.

Candidatus Revecula docibatica (NL. fem. n. *docibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAD01 sp007123265*. The type genome for the species is the GenBank assembly GCA_003562305.1. The GC content of the type genome is 58.31 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Revecula inoffax sp. nov.

Candidatus Revecula inoffax (NL. fem. n. *inoffax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAD01 sp007126515*. The type genome for the species is the GenBank assembly GCA_007126515.1. The GC content of the type genome is 53.97 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Revulana adrenax sp. nov.

Candidatus Revulana adrenax (NL. fem. n. *adrenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8752 sp902535565*. The type genome for the species is the GenBank assembly GCA_902535565.1. The GC content of the type genome is 54.95 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Revulana gen. nov.

Candidatus Revulana (NL. fem. n. *Revulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8752*. The type species for the genus is *Candidatus* Revulana adrenax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UA16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilosaceae.

Description of *Candidatus* Revulana avuncimonia sp. nov.

Candidatus Revulana avuncimonia (NL. fem. n. *avuncimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8752 sp002720375*. The type genome for the species is the GenBank assembly GCA_002720375.1. The GC content of the type genome is 54.34 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Revulana detesentia sp. nov.

Candidatus Revulana detesentia (NL. fem. n. *detesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8752 sp011522855*. The type genome for the species is the GenBank assembly GCA_011522855.1. The GC content of the type genome is 63.77 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Revulana dibapisca sp. nov.

Candidatus Revulana dibapisca (NL. fem. n. *dibapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8752 sp002389295*. The type genome for the species is the GenBank assembly GCA_002390645.1. The GC content of the type genome is 58.77 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Revulana dilacetta sp. nov.

Candidatus Revulana dilacetta (NL. fem. n. *dilacetta* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8752 sp002336475*. The type genome for the species is the GenBank assembly GCA_002336475.1. The GC content of the type genome is 55.65 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Revulana exhilibula sp. nov.

Candidatus Revulana exhilibula (NL. fem. n. *exhilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8752 sp002862785*. The type genome for the species is the GenBank assembly GCA_002862785.1. The GC content of the type genome is 62.28 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Revulana inexpivita sp. nov.

Candidatus Revulana inexpivita (NL. fem. n. *inexpivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8752 sp002683735*. The type genome for the species is the GenBank assembly GCA_002683735.1. The GC content of the type genome is 60.08 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Revulana melopitudo sp. nov.

Candidatus Revulana melopitudo (NL. fem. n. *melopitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8752 sp002172485*. The type genome for the species is the GenBank assembly GCA_002172485.2. The GC content of the type genome is 61.02 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Revularia maleditrix sp. nov.

Candidatus Revularia maleditrix (NL. fem. n. *maleditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKQS01 sp007118895*. The type genome for the species is the GenBank assembly GCA_007118895.1. The GC content of the type genome is 62.76 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Revularia gen. nov.

Candidatus Revularia (NL. fem. n. *Revularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKQS01*. The type species for the genus is *Candidatus* Revularia maleditrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Revulella catabessa sp. nov.

Candidatus Revulella catabessa (NL. fem. n. *catabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737725 sp009693785*. The type genome for the species is the GenBank assembly GCA_009693785.1. The GC content of the type genome is 57.6 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Revulella gen. nov.

Candidatus Revulella (NL. fem. n. *Revulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2737725*. The type species for the genus is *Candidatus* Revulella catabessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Revulella senipivita sp. nov.

Candidatus Revulella senipivita (NL. fem. n. *senipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2737725 sp002737725*. The type genome for the species is the GenBank assembly GCA_009693805.1. The GC content of the type genome is 55.72 %

and the genome length is 2.53 Mbp.

Description of *Candidatus* Revulia ancipetta sp. nov.

Candidatus Revulia ancipetta (NL. fem. n. *ancipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZBM01 sp012513815*. The type genome for the species is the GenBank assembly GCA_012513815.1. The GC content of the type genome is 50.74 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Revulia gen. nov.

Candidatus Revulia (NL. fem. n. *Revulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZBM01*. The type species for the genus is *Candidatus* Revulia ancipetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZBM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revuliaceae.

Description of *Candidatus* Revuliaceae fam. nov.

Candidatus Revuliaceae (NL. fem. n. *Revuliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZBM01.* The type genus for the taxon is *Candidatus* Revulia .

According to GTDB R06-RS202, this family belongs to the order *Sumerlaeales*.

Description of *Candidatus* Revulida turifugo sp. nov.

Candidatus Revulida turifugo (NL. fem. n. *turifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-44-23 sp002773475*. The type genome for the species is the GenBank assembly GCA_002773475.1. The GC content of the type genome is 44.17 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Revulida gen. nov.

Candidatus Revulida (NL. fem. n. *Revulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-44-23*. The type species for the genus is *Candidatus* Revulida turifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-10-44-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revulidaceae.

Description of *Candidatus* Revulidaceae fam. nov.

Candidatus Revulidaceae (NL. fem. n. *Revulidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-0-10-44-23.* The type genus for the taxon is *Candidatus* Revulida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Revulosa affamibra sp. nov.

Candidatus Revulosa affamibra (NL. fem. n. *affamibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902591045*. The type genome for the species is the GenBank assembly GCA_902591045.1. The GC content of the type genome is 30.01 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Revulosa gen. nov.

Candidatus Revulosa (NL. fem. n. *Revulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2704625*. The type species for the genus is *Candidatus* Revulosa affamibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Revulosa agratifica sp. nov.

Candidatus Revulosa agratifica (NL. fem. n. *agratifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp002171925*. The type genome for the species is the GenBank assembly GCA_002171925.1. The GC content of the type genome is 29.15 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Revulosa ambidimonia sp. nov.

Candidatus Revulosa ambidimonia (NL. fem. n. *ambidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902567495*. The type genome for the species is the GenBank assembly GCA_902567495.1. The GC content of the type genome is 29.64 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Revulosa aplesibra sp. nov.

Candidatus Revulosa aplesibra (NL. fem. n. *aplesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902581795*. The type genome for the species is the GenBank assembly GCA_902581795.1. The GC content of the type genome is 30.05 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Revulosa appugitia sp. nov.

Candidatus Revulosa appugitia (NL. fem. n. *appugitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902587085*. The type genome for the species is the GenBank assembly GCA_902587085.1. The GC content of the type genome is 30.28 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Revulosa assifax sp. nov.

Candidatus Revulosa assifax (NL. fem. n. *assifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902552845*. The type genome for the species is the GenBank assembly GCA_902552845.1. The GC content of the type genome is 29.67 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Revulosa benivugo sp. nov.

Candidatus Revulosa benivugo (NL. fem. n. *benivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902554135*. The type genome for the species is the GenBank assembly GCA_902554135.1. The GC content of the type genome is 30.99 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Revulosa bucelilenta sp. nov.

Candidatus Revulosa bucelilenta (NL. fem. n. *bucelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902571095*. The type genome for the species is the GenBank assembly GCA_902571095.1. The GC content of the type genome is 29.67 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Revulosa cadurimonas sp. nov.

Candidatus Revulosa cadurimonas (NL. fem. n. *cadurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902583785*. The type genome for the species is the GenBank assembly GCA_902583785.1. The GC content of the type genome is 30.49 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Revulosa carunimonas sp. nov.

Candidatus Revulosa carunimonas (NL. fem. n. *carunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2704625 sp902579585*. The type genome for the species is the GenBank assembly GCA_902579585.1. The GC content of the type genome is 29.65 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Revulosa catocigena sp. nov.

Candidatus Revulosa catocigena (NL. fem. n. *catocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902570785*. The type genome for the species is the GenBank assembly GCA_902570785.1. The GC content of the type genome is 29.76 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Revulosa celumitas sp. nov.

Candidatus Revulosa celumitas (NL. fem. n. *celumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902579285*. The type genome for the species is the GenBank assembly GCA_902613655.1. The GC content of the type genome is 29.65 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Revulosa cnesticula sp. nov.

Candidatus Revulosa cnesticula (NL. fem. n. *cnesticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902609645*. The type genome for the species is the GenBank assembly GCA_902609645.1. The GC content of the type genome is 29.59 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Revulosa curotentia sp. nov.

Candidatus Revulosa curotentia (NL. fem. n. *curotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902582475*. The type genome for the species is the GenBank assembly GCA_902582475.1. The GC content of the type genome is 30.21 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Revulosa detecilega sp. nov.

Candidatus Revulosa detecilega (NL. fem. n. *detecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902583685*. The type genome for the species is the GenBank assembly GCA_902583685.1. The GC content of the type genome is 29.64 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Revulosa detunigena sp. nov.

Candidatus Revulosa detunigena (NL. fem. n. *detunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902634325*. The type genome for the species is the GenBank assembly GCA_902634325.1. The GC content of the type genome is 30.61 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Revulosa dicibousia sp. nov.

Candidatus Revulosa dicibousia (NL. fem. n. *dicibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp002704625*. The type genome for the species is the GenBank assembly GCA_002704625.1. The GC content of the type genome is 28.68 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Revulosa dinupastra sp. nov.

Candidatus Revulosa dinupastra (NL. fem. n. *dinupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902578115*. The type genome for the species is the GenBank assembly GCA_902566975.1. The GC content of the type genome is 29.82 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Revulosa ducilibra sp. nov.

Candidatus Revulosa ducilibra (NL. fem. n. *ducilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902614835*. The type genome for the species is the GenBank assembly GCA_902569925.1. The GC content of the type genome is 30.55 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Revulosa exhonicula sp. nov.

Candidatus Revulosa exhonicula (NL. fem. n. *exhonicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902623915*. The type genome for the species is the GenBank assembly GCA_902623915.1. The GC content of the type genome is 29.6 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Revulosa gabinessa sp. nov.

Candidatus Revulosa gabinessa (NL. fem. n. *gabinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902519465*. The type genome for the species is the GenBank assembly GCA_902519465.1. The GC content of the type genome is 30.15 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Revulosa indepimonia sp. nov.

Candidatus Revulosa indepimonia (NL. fem. n. *indepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902599805*. The type genome for the species is the GenBank assembly GCA_902599805.1. The GC content of the type genome is 30.14 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Revulosa mahemedo sp. nov.

Candidatus Revulosa mahemedo (NL. fem. n. *mahemedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2704625 sp003209895*. The type genome for the species is the GenBank assembly GCA_003209895.1. The GC content of the type genome is 30.04 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Revulosa metucivita sp. nov.

Candidatus Revulosa metucivita (NL. fem. n. *metucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902587295*. The type genome for the species is the GenBank assembly GCA_902586325.1. The GC content of the type genome is 29.57 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Revulosa miracetta sp. nov.

Candidatus Revulosa miracetta (NL. fem. n. *miracetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902566925*. The type genome for the species is the GenBank assembly GCA_902566925.1. The GC content of the type genome is 32.42 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Revulosa ossifisca sp. nov.

Candidatus Revulosa ossifisca (NL. fem. n. *ossifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902573425*. The type genome for the species is the GenBank assembly GCA_902573425.1. The GC content of the type genome is 29.9 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Revulosa paralugo sp. nov.

Candidatus Revulosa paralugo (NL. fem. n. *paralugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902569185*. The type genome for the species is the GenBank assembly GCA_902569185.1. The GC content of the type genome is 30.0 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Revulosa pluscessa sp. nov.

Candidatus Revulosa pluscessa (NL. fem. n. *pluscessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902530635*. The type genome for the species is the GenBank assembly GCA_902530635.1. The GC content of the type genome is 29.58 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Revulosa rurigimonia sp. nov.

Candidatus Revulosa rurigimonia (NL. fem. n. *rurigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902578935*. The type genome for the species is the GenBank assembly GCA_902570375.1. The GC content of the type genome is 30.93 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Revulosa saburimonas sp. nov.

Candidatus Revulosa saburimonas (NL. fem. n. *saburimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902588585*. The type genome for the species is the GenBank assembly GCA_902588585.1. The GC content of the type genome is 30.28 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Revulosa semipastra sp. nov.

Candidatus Revulosa semipastra (NL. fem. n. *semipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902568425*. The type genome for the species is the GenBank assembly GCA_902568425.1. The GC content of the type genome is 30.22 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Revulosa triscentia sp. nov.

Candidatus Revulosa triscentia (NL. fem. n. *triscentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp002171275*. The type genome for the species is the GenBank assembly GCA_002171275.2. The GC content of the type genome is 28.39 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Revulosa ulcisessa sp. nov.

Candidatus Revulosa ulcisessa (NL. fem. n. *ulcisessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902573065*. The type genome for the species is the GenBank assembly GCA_902573065.1. The GC content of the type genome is 29.84 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Revulosa veneficula sp. nov.

Candidatus Revulosa veneficula (NL. fem. n. *veneficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902580445*. The type genome for the species is the GenBank assembly GCA_902580445.1. The GC content of the type genome is 29.76 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Revulosa vicecibra sp. nov.

Candidatus Revulosa vicecibra (NL. fem. n. *vicecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2704625 sp902539745*. The type genome for the species is the GenBank assembly GCA_902539745.1. The GC content of the type genome is 29.7 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Revulosa vocifitia sp. nov.

Candidatus Revulosa vocifitia (NL. fem. n. *vocifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-2704625 sp003213135*. The type genome for the species is the GenBank assembly GCA_902577615.1. The GC content of the type genome is 30.06 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Revulula alembitudo sp. nov.

Candidatus Revulula alembitudo (NL. fem. n. *alembitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FW305-bin1 sp004297305*. The type genome for the species is the GenBank assembly GCA_004297305.1. The GC content of the type genome is 70.88 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Revulula gen. nov.

Candidatus Revulula (NL. fem. n. *Revulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FW305-bin1*. The type species for the genus is *Candidatus* Revulula alembitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FW305-bin1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revululaceae.

Description of *Candidatus* Revululaceae fam. nov.

Candidatus Revululaceae (NL. fem. n. *Revululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FW305-bin1.* The type genus for the taxon is *Candidatus* Revulula .

According to GTDB R06-RS202, this family belongs to the order *Nanopelagicales*.

Description of *Candidatus* Reyranella acculitudo sp. nov.

Candidatus Reyranella acculitudo (NL. fem. n. *acculitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp013290035*. The type genome for the species is the GenBank assembly GCA_013290035.1. The GC content of the type genome is 66.97 %

and the genome length is 4.45 Mbp.

Description of *Candidatus* Reyranella adsusitudo sp. nov.

Candidatus Reyranella adsusitudo (NL. fem. n. *adsusitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp004297405*. The type genome for the species is the GenBank assembly GCA_004297405.1. The GC content of the type genome is 64.24 % and the genome length is 6.46 Mbp.

Description of *Candidatus* Reyranella anarrilenta sp. nov.

Candidatus Reyranella anarrilenta (NL. fem. n. *anarrilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp001767945*. The type genome for the species is the GenBank assembly GCA_001767945.1. The GC content of the type genome is 66.42 % and the genome length is 4.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Reyranella appagisca sp. nov.

Candidatus Reyranella appagisca (NL. fem. n. *appagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp009377525*. The type genome for the species is the GenBank assembly GCA_009377525.1. The GC content of the type genome is 66.18 % and the genome length is 7.35 Mbp.

Description of *Candidatus* Reyranella ardifitia sp. nov.

Candidatus Reyranella ardifitia (NL. fem. n. *ardifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp001897995*. The type genome for the species is the GenBank assembly GCA_001897995.1. The GC content of the type genome is 65.77 % and the genome length is 7.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Reyranella bicoritica sp. nov.

Candidatus Reyranella bicoritica (NL. fem. n. *bicoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp001557035*. The type genome for the species is the GenBank assembly RS_GCF_001557035.1. The GC content of the type genome is 66.23 % and the genome length is 5.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Reyranella catocicella sp. nov.

Candidatus Reyranella catocicella (NL. fem. n. *catocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp900110395*. The type genome for the species is the GenBank assembly RS_GCF_900110395.1. The GC content of the type genome is 66.25 % and the genome length is 8.18 Mbp.

Description of *Candidatus* Reyranella excorimonia sp. nov.

Candidatus Reyranella excorimonia (NL. fem. n. *excorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp004296935*. The type genome for the species is the GenBank assembly GCA_004296935.1. The GC content of the type genome is 66.28 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Reyranella expanicula sp. nov.

Candidatus Reyranella expanicula (NL. fem. n. *expanicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp010032545*. The type genome for the species is the GenBank assembly GCA_010032545.1. The GC content of the type genome is 65.87 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Reyranella gasomisca sp. nov.

Candidatus Reyranella gasomisca (NL. fem. n. *gasomisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp009772935*. The type genome for the species is the GenBank assembly GCA_009772935.1. The GC content of the type genome is 66.27 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Reyranella laculimonas sp. nov.

Candidatus Reyranella laculimonas (NL. fem. n. *laculimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp002281855*. The type genome for the species is the GenBank assembly GCA_002281325.1. The GC content of the type genome is 66.22 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Reyranella mahemastra sp. nov.

Candidatus Reyranella mahemastra (NL. fem. n. *mahemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp004297265*. The type genome for the species is the GenBank assembly GCA_004297265.1. The GC content of the type genome is 66.34 % and the genome length is 6.02 Mbp.

Description of *Candidatus* Reyranella ornitessa sp. nov.

Candidatus Reyranella ornitessa (NL. fem. n. *ornitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp013205335*. The type genome for the species is the GenBank assembly GCA_013205335.1. The GC content of the type genome is 65.79 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Reyranella pluscicella sp. nov.

Candidatus Reyranella pluscicella (NL. fem. n. *pluscicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp005884705*. The type genome for the species is the GenBank assembly GCA_005884705.1. The GC content of the type genome is 67.65 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Reyranella redacugo sp. nov.

Candidatus Reyranella redacugo (NL. fem. n. *redacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp003153415*. The type genome for the species is the GenBank assembly GCA_003153415.1. The GC content of the type genome is 65.09 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Reyranella tetenimonia sp. nov.

Candidatus Reyranella tetenimonia (NL. fem. n. *tetenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp004296815*. The type genome for the species is the GenBank assembly GCA_004296815.1. The GC content of the type genome is 67.78 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Reyranella veridicella sp. nov.

Candidatus Reyranella veridicella (NL. fem. n. *veridicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Reyranella sp902825855*. The type genome for the species is the GenBank assembly GCA_902825855.1. The GC content of the type genome is 64.93 % and the genome length is 7.79 Mbp.

Description of *Candidatus* Rhabdaerophilum ascenitudo sp. nov.

Candidatus Rhabdaerophilum ascenitudo (NL. fem. n. *ascenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhabdaerophilum sp009846685*. The type genome for the species is the GenBank assembly RS_GCF_009846685.1. The GC content of the type genome is 63.03 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Rhabdaerophilum chalbicella sp. nov.

Candidatus Rhabdaerophilum chalbicella (NL. fem. n. *chalbicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhabdaerophilum sp002928875*. The type genome for the species is the GenBank assembly GCA_002928875.1. The GC content of the type genome is 65.82 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Rhabdaerophilum haricilega sp. nov.

Candidatus Rhabdaerophilum haricilega (NL. fem. n. *haricilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhabdaerophilum sp009773635*. The type genome for the species is the GenBank assembly GCA_009773635.1. The GC content of the type genome is 63.01 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Rhabdaerophilum terebentia sp. nov.

Candidatus Rhabdaerophilum terebentia (NL. fem. n. *terebentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhabdaerophilum sp002256205*. The type genome for the species is the GenBank assembly GCA_002256205.1. The GC content of the type genome is 61.36 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Rhabdochlamydia aggubago sp. nov.

Candidatus Rhabdochlamydia aggubago (NL. fem. n. *aggubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhabdochlamydia sp003176115*. The type genome for the species is the GenBank assembly GCA_003176115.1. The GC content of the type genome is 36.58 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Rhabdochlamydia dilibiforma sp. nov.

Candidatus Rhabdochlamydia dilibiforma (NL. fem. n. *dilibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhabdochlamydia sp901000775*. The type genome for the species is the GenBank assembly RS_GCF_901000775.1. The GC content of the type genome is 36.16 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Rheinheimera agrapicula sp. nov.

Candidatus Rheinheimera agrapicula (NL. fem. n. *agrapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rheinheimera sp002840125*. The type genome for the species is the GenBank assembly GCA_002840125.1. The GC content of the type genome is 49.41 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Rheinheimera hirunedo sp. nov.

Candidatus Rheinheimera hirunedo (NL. fem. n. *hirunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rheinheimera sp013283795*. The type genome for the species is the GenBank assembly RS_GCF_013283795.1. The GC content of the type genome is 50.02 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Rheinheimera purulatica sp. nov.

Candidatus Rheinheimera purulatica (NL. fem. n. *purulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rheinheimera sp004345025*. The type genome for the species is the GenBank assembly RS_GCF_004345025.1. The GC content of the type genome is 44.4 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Rheinheimera verecibula sp. nov.

Candidatus Rheinheimera verecibula (NL. fem. n. *verecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rheinheimera sp001513785*. The type genome for the species is the GenBank assembly RS_GCF_001513785.1. The GC content of the type genome is 49.3 % and the genome length is 4.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "rhizospheric soil".

Description of *Candidatus* Rhizobacter adnumicella sp. nov.

Candidatus Rhizobacter adnumicella (NL. fem. n. *adnumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp014379885*. The type genome for the species is the GenBank assembly GCA_014379885.1. The GC content of the type genome is 64.71 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Rhizobacter adtilatica sp. nov.

Candidatus Rhizobacter adtilatica (NL. fem. n. *adtilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp903643055*. The type genome for the species is the GenBank assembly RS_GCF_903643055.1. The GC content of the type genome is 63.31 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Rhizobacter arunditoga sp. nov.

Candidatus Rhizobacter arunditoga (NL. fem. n. *arunditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp001464195*. The type genome for the species is the GenBank assembly GCA_001464195.1. The GC content of the type genome is 65.25 % and the genome length is 2.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Rhizobacter betacivita sp. nov.

Candidatus Rhizobacter betacivita (NL. fem. n. *betacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp903830565*. The type genome for the species is the

GenBank assembly GCA_903830565.1. The GC content of the type genome is 67.5 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Rhizobacter delapiforma sp. nov.

Candidatus Rhizobacter delapiforma (NL. fem. n. *delapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp005882155*. The type genome for the species is the GenBank assembly GCA_005881815.1. The GC content of the type genome is 66.52 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Rhizobacter dilibedo sp. nov.

Candidatus Rhizobacter dilibedo (NL. fem. n. *dilibedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp000799305*. The type genome for the species is the GenBank assembly RS_GCF_000799305.1. The GC content of the type genome is 65.68 % and the genome length is 6.84 Mbp.

Description of *Candidatus* Rhizobacter divulicula sp. nov.

Candidatus Rhizobacter divulicula (NL. fem. n. *divulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp001425785*. The type genome for the species is the GenBank assembly RS_GCF_001425785.1. The GC content of the type genome is 67.8 % and the genome length is 6.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Rhizobacter facunifica sp. nov.

Candidatus Rhizobacter facunifica (NL. fem. n. *facunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp002281415*. The type genome for the species is the GenBank assembly GCA_002281415.1. The GC content of the type genome is 66.62 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Rhizobacter immoditoga sp. nov.

Candidatus Rhizobacter immoditoga (NL. fem. n. *immoditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp013366375*. The type genome for the species is the GenBank assembly RS_GCF_013366375.1. The GC content of the type genome is 69.85 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Rhizobacter inmoritudo sp. nov.

Candidatus Rhizobacter inmoritudo (NL. fem. n. *inmoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp000799605*. The type genome for the species is the GenBank assembly RS_GCF_000799605.1. The GC content of the type genome is 69.04 % and the genome length is 6.85 Mbp.

Description of *Candidatus* Rhizobacter ludifitrix sp. nov.

Candidatus Rhizobacter ludifitrix (NL. fem. n. *ludifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp014380155*. The type genome for the species is the GenBank assembly GCA_014380155.1. The GC content of the type genome is 65.84 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Rhizobacter noninugo sp. nov.

Candidatus Rhizobacter noninugo (NL. fem. n. *noninugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp012932665*. The type genome for the species is the GenBank assembly RS_GCF_012932665.1. The GC content of the type genome is 69.87 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Rhizobacter oblanisca sp. nov.

Candidatus Rhizobacter oblanisca (NL. fem. n. *oblanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp000800095*. The type genome for the species is the GenBank assembly RS_GCF_000800095.1. The GC content of the type genome is 69.19 % and the genome length is 6.74 Mbp.

Description of *Candidatus* Rhizobacter oscilitudo sp. nov.

Candidatus Rhizobacter oscilitudo (NL. fem. n. *oscilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp001263235*. The type genome for the species is the GenBank assembly GCA_001263235.1. The GC content of the type genome is 67.93 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Rhizobacter pericousia sp. nov.

Candidatus Rhizobacter pericousia (NL. fem. n. *pericousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp012275445*. The type genome for the species is the GenBank assembly RS_GCF_012275445.1. The GC content of the type genome is 69.28 % and the genome length is 6.51 Mbp.

Description of *Candidatus* Rhizobacter refinisca sp. nov.

Candidatus Rhizobacter refinisca (NL. fem. n. *refinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp903905475*. The type genome for the species is the GenBank assembly GCA_903958725.1. The GC content of the type genome is 67.21 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Rhizobacter ridibitas sp. nov.

Candidatus Rhizobacter ridibitas (NL. fem. n. *ridibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhizobacter sp002255905*. The type genome for the species is the GenBank assembly GCA_002255905.1. The GC content of the type genome is 65.63 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Rhizobacter risibimonia sp. nov.

Candidatus Rhizobacter risibimonia (NL. fem. n. *risibimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp001425825*. The type genome for the species is the GenBank assembly RS_GCF_001425825.1. The GC content of the type genome is 69.06 % and the genome length is 6.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Rhizobacter tametedo sp. nov.

Candidatus Rhizobacter tametedo (NL. fem. n. *tametedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp900142965*. The type genome for the species is the GenBank assembly RS_GCF_900142965.1. The GC content of the type genome is 68.65 % and the genome length is 6.9 Mbp.

Description of *Candidatus* Rhizobacter turifatica sp. nov.

Candidatus Rhizobacter turifatica (NL. fem. n. *turifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp003152055*. The type genome for the species is the GenBank assembly GCA_003152055.1. The GC content of the type genome is 66.66 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Rhizobacter xenopigena sp. nov.

Candidatus Rhizobacter xenopigena (NL. fem. n. *xenopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobacter sp001425865*. The type genome for the species is the GenBank assembly RS_GCF_001425865.1. The GC content of the type genome is 68.64 % and the genome length is 5.27 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "root".

Description of *Candidatus* Rhizobium acrocousia sp. nov.

Candidatus Rhizobium acrocousia (NL. fem. n. *acrocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp001426265*. The type genome for the species is the GenBank assembly RS_GCF_001426265.1. The GC content of the type genome is 59.64 % and the genome length is 5.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Rhizobium adleniforma sp. nov.

Candidatus Rhizobium adleniforma (NL. fem. n. *adleniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp000292525*. The type genome for the species is the GenBank assembly RS_GCF_000292525.1. The GC content of the type genome is 60.82 % and the genome length is 6.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "nodules".

Description of *Candidatus* Rhizobium advoritura sp. nov.

Candidatus Rhizobium advoritura (NL. fem. n. *advoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002211285*. The type genome for the species is the GenBank assembly RS_GCF_002211285.1. The GC content of the type genome is 61.79 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Rhizobium allubimonas sp. nov.

Candidatus Rhizobium allubimonas (NL. fem. n. *allubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp001429725*. The type genome for the species is the GenBank assembly RS_GCF_001429725.1. The GC content of the type genome is 60.28 % and the genome length is 6.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Rhizobium amfititas sp. nov.

Candidatus Rhizobium amfititas (NL. fem. n. *amfititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900472625*. The type genome for the species is the GenBank assembly GCA_900472625.1. The GC content of the type genome is 60.4 % and the genome length is 6.86 Mbp.

Description of *Candidatus* Rhizobium bucelitia sp. nov.

Candidatus Rhizobium bucelitia (NL. fem. n. *bucelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900468685*. The type genome for the species is the GenBank assembly RS_GCF_900473375.1. The GC content of the type genome is 61.49 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Rhizobium bugilitrix sp. nov.

Candidatus Rhizobium bugilitrix (NL. fem. n. *bugilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002211305*. The type genome for the species is the GenBank assembly RS_GCF_002211395.1. The GC content of the type genome is 61.59 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Rhizobium catalilega sp. nov.

Candidatus Rhizobium catalilega (NL. fem. n. *catalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002117485*. The type genome for the species is the GenBank assembly RS_GCF_014193135.1. The GC content of the type genome is 61.11 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Rhizobium categugo sp. nov.

Candidatus Rhizobium categugo (NL. fem. n. *categugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp012641435*. The type genome for the species is the GenBank assembly RS_GCF_012641435.1. The GC content of the type genome is 59.06 % and the genome length is 7.06 Mbp.

Description of *Candidatus* Rhizobium cerebitura sp. nov.

Candidatus Rhizobium cerebitura (NL. fem. n. *cerebitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900467885*. The type genome for the species is the GenBank assembly RS_GCF_014193565.1. The GC content of the type genome is 59.89 % and the genome length is 6.61 Mbp.

Description of *Candidatus* Rhizobium cerucastra sp. nov.

Candidatus Rhizobium cerucastra (NL. fem. n. *cerucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900466605*. The type genome for the species is the GenBank assembly RS_GCF_900466605.1. The GC content of the type genome is 58.9 % and the genome length is 6.59 Mbp.

Description of *Candidatus* Rhizobium cicaressa sp. nov.

Candidatus Rhizobium cicaressa (NL. fem. n. *cicaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002531905*. The type genome for the species is the GenBank assembly RS_GCF_002531905.1. The GC content of the type genome is 61.04 % and the genome length is 7.24 Mbp.

Description of *Candidatus* Rhizobium cicatilenta sp. nov.

Candidatus Rhizobium cicatilenta (NL. fem. n. *cicatilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhizobium sp007000325*. The type genome for the species is the GenBank assembly RS_GCF_007000305.1. The GC content of the type genome is 60.0 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Rhizobium cocibitoga sp. nov.

Candidatus Rhizobium cocibitoga (NL. fem. n. *cocibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp001424945*. The type genome for the species is the GenBank assembly RS_GCF_900473815.1. The GC content of the type genome is 60.35 % and the genome length is 6.16 Mbp.

Description of *Candidatus* Rhizobium conubicula sp. nov.

Candidatus Rhizobium conubicula (NL. fem. n. *conubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900469475*. The type genome for the species is the GenBank assembly RS_GCF_900467535.1. The GC content of the type genome is 59.42 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Rhizobium defaritura sp. nov.

Candidatus Rhizobium defaritura (NL. fem. n. *defaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900472485*. The type genome for the species is the GenBank assembly RS_GCF_900472485.1. The GC content of the type genome is 59.62 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Rhizobium defesigena sp. nov.

Candidatus Rhizobium defesigena (NL. fem. n. *defesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900467745*. The type genome for the species is the GenBank assembly RS_GCF_900467745.1. The GC content of the type genome is 60.57 % and the genome length is 6.83 Mbp.

Description of *Candidatus* Rhizobium delecifica sp. nov.

Candidatus Rhizobium delecifica (NL. fem. n. *delecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900468625*. The type genome for the species is the GenBank assembly RS_GCF_900465865.1. The GC content of the type genome is 59.73 % and the genome length is 6.56 Mbp.

Description of *Candidatus* Rhizobium delubitas sp. nov.

Candidatus Rhizobium delubitas (NL. fem. n. *delubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp000799775*. The type genome for the species is the GenBank assembly RS_GCF_900467675.1. The GC content of the type genome is 61.13 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Rhizobium denixetta sp. nov.

Candidatus Rhizobium denixetta (NL. fem. n. *denixetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp000746385*. The type genome for the species is the GenBank assembly RS_GCF_000746385.1. The GC content of the type genome is 61.76 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Rhizobium desurentia sp. nov.

Candidatus Rhizobium desurentia (NL. fem. n. *desurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp001657485*. The type genome for the species is the GenBank assembly RS_GCF_014198365.1. The GC content of the type genome is 60.68 % and the genome length is 7.66 Mbp.

Description of *Candidatus* Rhizobium detenentia sp. nov.

Candidatus Rhizobium detenentia (NL. fem. n. *detenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900468535*. The type genome for the species is the GenBank assembly RS_GCF_900468535.1. The GC content of the type genome is 60.07 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Rhizobium detepitica sp. nov.

Candidatus Rhizobium detepitica (NL. fem. n. *detepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp004345245*. The type genome for the species is the GenBank assembly RS_GCF_004345245.1. The GC content of the type genome is 61.53 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Rhizobium detesitrix sp. nov.

Candidatus Rhizobium detesitrix (NL. fem. n. *detesitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp004362445*. The type genome for the species is the GenBank assembly RS_GCF_004362445.1. The GC content of the type genome is 59.36 % and the genome length is 8.01 Mbp.

Description of *Candidatus* Rhizobium detesugo sp. nov.

Candidatus Rhizobium detesugo (NL. fem. n. *detesugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900489925*. The type genome for the species is the GenBank assembly RS_GCF_001692185.1. The GC content of the type genome is 60.35 % and the genome length is 6.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "plant".

Description of *Candidatus* Rhizobium detotentia sp. nov.

Candidatus Rhizobium detotentia (NL. fem. n. *detotentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp004341625*. The type genome for the species is the GenBank assembly RS_GCF_008365395.1. The GC content of the type genome is 59.52 % and the genome length is 7.53 Mbp.

Description of *Candidatus* Rhizobium devecilega sp. nov.

Candidatus Rhizobium devecilega (NL. fem. n. *devecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp014193695*. The type genome for the species is the GenBank assembly RS_GCF_014193555.1. The GC content of the type genome is 60.31 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Rhizobium dibapessa sp. nov.

Candidatus Rhizobium dibapessa (NL. fem. n. *dibapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp003024605*. The type genome for the species is the GenBank assembly RS_GCF_003024605.1. The GC content of the type genome is 60.16 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Rhizobium dibucax sp. nov.

Candidatus Rhizobium dibucax (NL. fem. n. *dibucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900466475*. The type genome for the species is the GenBank assembly RS_GCF_900465885.1. The GC content of the type genome is 60.06 % and the genome length is 7.34 Mbp.

Description of *Candidatus* Rhizobium divuledo sp. nov.

Candidatus Rhizobium divuledo (NL. fem. n. *divuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp003627795*. The type genome for the species is the GenBank assembly RS_GCF_003627775.1. The GC content of the type genome is 60.0 % and the genome length is 6.92 Mbp.

Description of *Candidatus* Rhizobium domigiforma sp. nov.

Candidatus Rhizobium domigiforma (NL. fem. n. *domigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp014194695*. The type genome for the species is the GenBank assembly RS_GCF_014193945.1. The GC content of the type genome is 59.67 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Rhizobium duricetta sp. nov.

Candidatus Rhizobium duricetta (NL. fem. n. *duricetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900472605*. The type genome for the species is the GenBank assembly RS_GCF_004345965.1. The GC content of the type genome is 60.32 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Rhizobium duricitudo sp. nov.

Candidatus Rhizobium duricitudo (NL. fem. n. *duricitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp902706285*. The type genome for the species is the GenBank assembly RS_GCF_902706285.1. The GC content of the type genome is 60.87 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Rhizobium exturatio sp. nov.

Candidatus Rhizobium exturatio (NL. fem. n. *exturatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900470965*. The type genome for the species is the GenBank assembly RS_GCF_900470965.1. The GC content of the type genome is 60.04 % and the genome length is 7.5 Mbp.

Description of *Candidatus* Rhizobium feditentia sp. nov.

Candidatus Rhizobium feditentia (NL. fem. n. *feditentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp001664485*. The type genome for the species is the GenBank assembly RS_GCF_002245285.1. The GC content of the type genome is 61.44 % and the genome length is 6.93 Mbp.

Description of *Candidatus* Rhizobium filifago sp. nov.

Candidatus Rhizobium filifago (NL. fem. n. *filifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900471925*. The type genome for the species is the GenBank assembly RS_GCF_900471925.1. The GC content of the type genome is 60.13 % and the genome length is 7.16 Mbp.

Description of *Candidatus* Rhizobium fuligax sp. nov.

Candidatus Rhizobium fuligax (NL. fem. n. *fuligax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002277895*. The type genome for the species is the GenBank assembly RS_GCF_002277895.1. The GC content of the type genome is 59.43 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Rhizobium hexagicella sp. nov.

Candidatus Rhizobium hexagicella (NL. fem. n. *hexagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp000799845*. The type genome for the species is the GenBank assembly RS_GCF_000799845.1. The GC content of the type genome is 59.93 % and the genome length is 6.82 Mbp.

Description of *Candidatus* Rhizobium holisifica sp. nov.

Candidatus Rhizobium holisifica (NL. fem. n. *holisifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhizobium sp004341105*. The type genome for the species is the GenBank assembly RS_GCF_004341105.1. The GC content of the type genome is 59.68 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Rhizobium homogifica sp. nov.

Candidatus Rhizobium homogifica (NL. fem. n. *homogifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002944315*. The type genome for the species is the GenBank assembly RS_GCF_002944315.1. The GC content of the type genome is 59.33 % and the genome length is 7.3 Mbp.

Description of *Candidatus* Rhizobium impudastra sp. nov.

Candidatus Rhizobium impudastra (NL. fem. n. *impudastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp014195325*. The type genome for the species is the GenBank assembly RS_GCF_014195325.1. The GC content of the type genome is 59.58 % and the genome length is 6.4 Mbp.

Description of *Candidatus* Rhizobium mahemitio sp. nov.

Candidatus Rhizobium mahemitio (NL. fem. n. *mahemitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp000746265*. The type genome for the species is the GenBank assembly RS_GCF_000746265.1. The GC content of the type genome is 59.13 % and the genome length is 6.63 Mbp.

Description of *Candidatus* Rhizobium notabibra sp. nov.

Candidatus Rhizobium notabibra (NL. fem. n. *notabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900471515*. The type genome for the species is the GenBank assembly RS_GCF_900473435.1. The GC content of the type genome is 62.12 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Rhizobium nutamastra sp. nov.

Candidatus Rhizobium nutamastra (NL. fem. n. *nutamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp014193255*. The type genome for the species is the GenBank assembly RS_GCF_014193935.1. The GC content of the type genome is 59.95 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Rhizobium obsurivita sp. nov.

Candidatus Rhizobium obsurivita (NL. fem. n. *obsurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002531725*. The type genome for the species is the GenBank assembly RS_GCF_002531725.1. The GC content of the type genome is 61.22 % and the genome length is 7.12 Mbp.

Description of *Candidatus* Rhizobium offirigena sp. nov.

Candidatus Rhizobium offirigena (NL. fem. n. *offirigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp009498525*. The type genome for the species is the GenBank assembly RS_GCF_009498525.1. The GC content of the type genome is 60.29 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Rhizobium palifessa sp. nov.

Candidatus Rhizobium palifessa (NL. fem. n. *palifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp014193025*. The type genome for the species is the GenBank assembly RS_GCF_014193025.1. The GC content of the type genome is 60.81 % and the genome length is 7.31 Mbp.

Description of *Candidatus* Rhizobium papilifica sp. nov.

Candidatus Rhizobium papilifica (NL. fem. n. *papilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp000377565*. The type genome for the species is the GenBank assembly RS_GCF_000377565.1. The GC content of the type genome is 61.07 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Rhizobium papilimonas sp. nov.

Candidatus Rhizobium papilimonas (NL. fem. n. *papilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002531825*. The type genome for the species is the GenBank assembly RS_GCF_002531825.1. The GC content of the type genome is 61.72 % and the genome length is 6.67 Mbp.

Description of *Candidatus* Rhizobium patibatio sp. nov.

Candidatus Rhizobium patibatio (NL. fem. n. *patibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900469175*. The type genome for the species is the GenBank assembly RS_GCF_007828395.1. The GC content of the type genome is 59.57 % and the genome length is 7.13 Mbp.

Description of *Candidatus* Rhizobium penicitas sp. nov.

Candidatus Rhizobium penicitas (NL. fem. n. *penicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900465675*. The type genome for the species is the GenBank assembly GCA_900467465.1. The GC content of the type genome is 60.66 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Rhizobium recocisca sp. nov.

Candidatus Rhizobium recocisca (NL. fem. n. *recocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhizobium sp002531935*. The type genome for the species is the GenBank assembly RS_GCF_002531935.1. The GC content of the type genome is 61.38 % and the genome length is 6.88 Mbp.

Description of *Candidatus* Rhizobium regigatica sp. nov.

Candidatus Rhizobium regigatica (NL. fem. n. *regigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900468805*. The type genome for the species is the GenBank assembly RS_GCF_900471665.1. The GC content of the type genome is 60.02 % and the genome length is 7.38 Mbp.

Description of *Candidatus* Rhizobium resacisca sp. nov.

Candidatus Rhizobium resacisca (NL. fem. n. *resacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp001692325*. The type genome for the species is the GenBank assembly RS_GCF_013320965.1. The GC content of the type genome is 59.85 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Rhizobium sicinentia sp. nov.

Candidatus Rhizobium sicinentia (NL. fem. n. *sicinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002531955*. The type genome for the species is the GenBank assembly RS_GCF_002531805.1. The GC content of the type genome is 61.56 % and the genome length is 6.78 Mbp.

Description of *Candidatus* Rhizobium solipentia sp. nov.

Candidatus Rhizobium solipentia (NL. fem. n. *solipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp000282035*. The type genome for the species is the GenBank assembly RS_GCF_004345405.1. The GC content of the type genome is 59.83 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Rhizobium sonabitrix sp. nov.

Candidatus Rhizobium sonabitrix (NL. fem. n. *sonabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp012641395*. The type genome for the species is the GenBank assembly RS_GCF_012641395.1. The GC content of the type genome is 60.06 % and the genome length is 7.19 Mbp.

Description of *Candidatus* Rhizobium tenebimonia sp. nov.

Candidatus Rhizobium tenebimonia (NL. fem. n. *tenebimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp002211365*. The type genome for the species is the GenBank assembly RS_GCF_002211385.1. The GC content of the type genome is 59.63 % and the genome length is 5.8 Mbp.

Description of *Candidatus* Rhizobium tetenatica sp. nov.

Candidatus Rhizobium tetenatica (NL. fem. n. *tetenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp012641405*. The type genome for the species is the GenBank assembly RS_GCF_012641385.1. The GC content of the type genome is 59.83 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Rhizobium tirocimonia sp. nov.

Candidatus Rhizobium tirocimonia (NL. fem. n. *tirocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900465665*. The type genome for the species is the GenBank assembly RS_GCF_900465665.1. The GC content of the type genome is 60.68 % and the genome length is 6.35 Mbp.

Description of *Candidatus* Rhizobium tirunago sp. nov.

Candidatus Rhizobium tirunago (NL. fem. n. *tirunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900470805*. The type genome for the species is the GenBank assembly GCA_900470805.1. The GC content of the type genome is 60.53 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Rhizobium tomogatica sp. nov.

Candidatus Rhizobium tomogatica (NL. fem. n. *tomogatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp000172795*. The type genome for the species is the GenBank assembly RS_GCF_000172795.2. The GC content of the type genome is 61.12 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Rhizobium utricax sp. nov.

Candidatus Rhizobium utricax (NL. fem. n. *utricax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp014195095*. The type genome for the species is the GenBank assembly RS_GCF_014195095.1. The GC content of the type genome is 61.87 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Rhizobium vitabivita sp. nov.

Candidatus Rhizobium vitabivita (NL. fem. n. *vitabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium sp900469615*. The type genome for the species is the GenBank assembly RS_GCF_900466595.1. The GC content of the type genome is 61.01 % and the genome length is 7.12 Mbp.

Description of *Candidatus* Rhizobium homulitica sp. nov.

Candidatus Rhizobium homulitica (NL. fem. n. *homulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhizobium_A sp005222845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005222845.1. The GC content of the type genome is 59.98 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Rhizobium inaccimonia sp. nov.

Candidatus Rhizobium inaccimonia (NL. fem. n. *inaccimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizobium_A sp005222835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005222835.1. The GC content of the type genome is 57.42 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Rhizomicrobium accenentia sp. nov.

Candidatus Rhizomicrobium accenentia (NL. fem. n. *accenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp002307725*. The type genome for the species is the GenBank assembly GCA_002307725.1. The GC content of the type genome is 61.08 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Rhizomicrobium adtemifica sp. nov.

Candidatus Rhizomicrobium adtemifica (NL. fem. n. *adtemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp001896865*. The type genome for the species is the GenBank assembly GCA_001896865.1. The GC content of the type genome is 64.43 % and the genome length is 2.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Rhizomicrobium colepicula sp. nov.

Candidatus Rhizomicrobium colepicula (NL. fem. n. *colepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp003131925*. The type genome for the species is the GenBank assembly GCA_003131925.1. The GC content of the type genome is 61.45 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Rhizomicrobium colutousia sp. nov.

Candidatus Rhizomicrobium colutousia (NL. fem. n. *colutousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp013697055*. The type genome for the species is the GenBank assembly GCA_013697055.1. The GC content of the type genome is 62.78 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Rhizomicrobium cuticilenta sp. nov.

Candidatus Rhizomicrobium cuticilenta (NL. fem. n. *cuticilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp903897605*. The type genome for the species is the GenBank assembly GCA_903897605.1. The GC content of the type genome is 61.44 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Rhizomicrobium deforastra sp. nov.

Candidatus Rhizomicrobium deforastra (NL. fem. n. *deforastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp902825865*. The type genome for the species is the GenBank assembly GCA_902825865.1. The GC content of the type genome is 61.69 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Rhizomicrobium ecnepilega sp. nov.

Candidatus Rhizomicrobium ecnepilega (NL. fem. n. *ecnepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp002307315*. The type genome for the species is the GenBank assembly GCA_002307315.1. The GC content of the type genome is 60.74 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Rhizomicrobium exhiledo sp. nov.

Candidatus Rhizomicrobium exhiledo (NL. fem. n. *exhiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp001898015*. The type genome for the species is the GenBank assembly GCA_001898015.1. The GC content of the type genome is 61.81 % and the genome length is 2.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Rhizomicrobium expopiforma sp. nov.

Candidatus Rhizomicrobium expopiforma (NL. fem. n. *expopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp903922545*. The type genome for the species is the GenBank assembly GCA_903922545.1. The GC content of the type genome is 61.48 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Rhizomicrobium fiducitica sp. nov.

Candidatus Rhizomicrobium fiducitica (NL. fem. n. *fiducitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp003139615*. The type genome for the species is the GenBank assembly GCA_003167975.1. The GC content of the type genome is 60.92 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Rhizomicrobium filifivita sp. nov.

Candidatus Rhizomicrobium filifivita (NL. fem. n. *filifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp903902075*. The type genome for the species is the GenBank assembly GCA_903845815.1. The GC content of the type genome is 63.74 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Rhizomicrobium fragmimonia sp. nov.

Candidatus Rhizomicrobium fragmimonia (NL. fem. n. *fragmimonia* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp003158585*. The type genome for the species is the GenBank assembly GCA_003158585.1. The GC content of the type genome is 62.89 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Rhizomicrobium impudilenta sp. nov.

Candidatus Rhizomicrobium impudilenta (NL. fem. n. *impudilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp013149165*. The type genome for the species is the GenBank assembly RS_GCF_013149165.1. The GC content of the type genome is 59.57 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Rhizomicrobium prognitudo sp. nov.

Candidatus Rhizomicrobium prognitudo (NL. fem. n. *prognitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp903837555*. The type genome for the species is the GenBank assembly GCA_903837555.1. The GC content of the type genome is 63.55 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Rhizomicrobium turilax sp. nov.

Candidatus Rhizomicrobium turilax (NL. fem. n. *turilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp002429315*. The type genome for the species is the GenBank assembly GCA_002429315.1. The GC content of the type genome is 63.13 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Rhizomicrobium xeropigena sp. nov.

Candidatus Rhizomicrobium xeropigena (NL. fem. n. *xeropigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizomicrobium sp903857685*. The type genome for the species is the GenBank assembly GCA_903925765.1. The GC content of the type genome is 62.95 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Rhizorhabdus apsorentia sp. nov.

Candidatus Rhizorhabdus apsorentia (NL. fem. n. *apsorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizorhabdus sp000971055*. The type genome for the species is the GenBank assembly RS_GCF_000971055.1. The GC content of the type genome is 63.92 % and the genome length is 4.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Isoproturon-treated agricultural soil".

Description of *Candidatus* Rhizorhabdus ardifugo sp. nov.

Candidatus Rhizorhabdus ardifugo (NL. fem. n. *ardifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizorhabdus sp004297635*. The type genome for the species is the GenBank assembly GCA_004297635.1. The GC content of the type genome is 65.86 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Rhizorhabdus cimelastra sp. nov.

Candidatus Rhizorhabdus cimelastra (NL. fem. n. *cimelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizorhabdus sp004005865*. The type genome for the species is the GenBank assembly RS_GCF_004005865.1. The GC content of the type genome is 64.54 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Rhizorhabdus incenicella sp. nov.

Candidatus Rhizorhabdus incenicella (NL. fem. n. *incenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizorhabdus sp001015195*. The type genome for the species is the GenBank assembly RS_GCF_001015195.1. The GC content of the type genome is 65.97

% and the genome length is 5.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Rhizorhabdus nivomifica sp. nov.

Candidatus Rhizorhabdus nivomifica (NL. fem. n. *nivomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizorhabdus sp900101455*. The type genome for the species is the GenBank assembly RS_GCF_900101455.1. The GC content of the type genome is 62.91 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Rhizorhabdus pacifax sp. nov.

Candidatus Rhizorhabdus pacifax (NL. fem. n. *pacifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizorhabdus sp011044255*. The type genome for the species is the GenBank assembly RS_GCF_011044255.1. The GC content of the type genome is 65.5 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Rhizorhabdus repepimonia sp. nov.

Candidatus Rhizorhabdus repepimonia (NL. fem. n. *repepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizorhabdus sp001428605*. The type genome for the species is the GenBank assembly RS_GCF_001426825.1. The GC content of the type genome is 66.61 % and the genome length is 5.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Rhizorhabdus sarabugo sp. nov.

Candidatus Rhizorhabdus sarabugo (NL. fem. n. *sarabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhizorhabdus sp001429065*. The type genome for the species is the GenBank assembly RS_GCF_001429065.1. The GC content of the type genome is 64.46 % and the genome length is 4.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Rhodanobacter adfamigena sp. nov.

Candidatus Rhodanobacter adfamigena (NL. fem. n. *adfamigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp903827735*. The type genome for the species is the GenBank assembly GCA_903827735.1. The GC content of the type genome is 62.14 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Rhodanobacter ammuritia sp. nov.

Candidatus Rhodanobacter ammuritia (NL. fem. n. *ammuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp002413455*. The type genome for the species is the GenBank assembly GCA_002413455.1. The GC content of the type genome is 64.92 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Rhodanobacter aterrivita sp. nov.

Candidatus Rhodanobacter aterrivita (NL. fem. n. *aterrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp002001175*. The type genome for the species is the GenBank assembly RS_GCF_002001175.1. The GC content of the type genome is 63.11 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Rhodanobacter benifigena sp. nov.

Candidatus Rhodanobacter benifigena (NL. fem. n. *benifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp001426645*. The type genome for the species is the GenBank assembly RS_GCF_001427835.1. The GC content of the type genome is 65.52 % and the genome length is 3.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Rhodanobacter betacitura sp. nov.

Candidatus Rhodanobacter betacitura (NL. fem. n. *betacitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp002749725*. The type genome for the species is the GenBank assembly RS_GCF_004366255.1. The GC content of the type genome is 64.18 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Rhodanobacter catapitudo sp. nov.

Candidatus Rhodanobacter catapitudo (NL. fem. n. *catapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp014205795*. The type genome for the species is the GenBank assembly RS_GCF_014205795.1. The GC content of the type genome is 61.64 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Rhodanobacter cenobitura sp. nov.

Candidatus Rhodanobacter cenobitura (NL. fem. n. *cenobitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp004298505*. The type genome for the species is the GenBank assembly GCA_004298705.1. The GC content of the type genome is 64.36 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Rhodanobacter cerimago sp. nov.

Candidatus Rhodanobacter cerimago (NL. fem. n. *cerimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp009765755*. The type genome for the species is the GenBank assembly RS_GCF_009765755.1. The GC content of the type genome is 61.58 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Rhodanobacter cicarax sp. nov.

Candidatus Rhodanobacter cicarax (NL. fem. n. *cicarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp001617365*. The type genome for the species is the GenBank assembly RS_GCF_001617375.1. The GC content of the type genome is 67.89 % and the genome length is 3.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "shallow subsurface groundwater".

Description of *Candidatus* Rhodanobacter cisoredo sp. nov.

Candidatus Rhodanobacter cisoredo (NL. fem. n. *cisoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp001899565*. The type genome for the species is the GenBank assembly GCA_001899565.1. The GC content of the type genome is 68.51 % and the genome length is 4.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Rhodanobacter cuferitio sp. nov.

Candidatus Rhodanobacter cuferitio (NL. fem. n. *cuferitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp004298045*. The type genome for the species is the GenBank assembly GCA_004297905.1. The GC content of the type genome is 66.92 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Rhodanobacter curotitura sp. nov.

Candidatus Rhodanobacter curotitura (NL. fem. n. *curotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp000427505*. The type genome for the species is the GenBank assembly GCA_004299745.1. The GC content of the type genome is 67.62 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Rhodanobacter daducitudo sp. nov.

Candidatus Rhodanobacter daducitudo (NL. fem. n. *daducitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp014207185*. The type genome for the species is the

GenBank assembly RS_GCF_014207185.1. The GC content of the type genome is 59.93 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Rhodanobacter denavimonas sp. nov.

Candidatus Rhodanobacter denavimonas (NL. fem. n. *denavimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp012270595*. The type genome for the species is the GenBank assembly GCA_012270595.1. The GC content of the type genome is 53.65 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Rhodanobacter denunugo sp. nov.

Candidatus Rhodanobacter denunugo (NL. fem. n. *denunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp009766065*. The type genome for the species is the GenBank assembly RS_GCF_009766065.1. The GC content of the type genome is 62.06 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Rhodanobacter desacicella sp. nov.

Candidatus Rhodanobacter desacicella (NL. fem. n. *desacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp001427365*. The type genome for the species is the GenBank assembly RS_GCF_001428465.1. The GC content of the type genome is 66.53 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Rhodanobacter documitrix sp. nov.

Candidatus Rhodanobacter documitrix (NL. fem. n. *documitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp004322005*. The type genome for the species is the GenBank assembly GCA_004322005.1. The GC content of the type genome is 65.37 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Rhodanobacter expanatica sp. nov.

Candidatus Rhodanobacter expanatica (NL. fem. n. *expanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp002001125*. The type genome for the species is the GenBank assembly RS_GCF_002001125.1. The GC content of the type genome is 64.34 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Rhodanobacter exsomigena sp. nov.

Candidatus Rhodanobacter exsomigena (NL. fem. n. *exsomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp002001105*. The type genome for the species is the GenBank assembly RS_GCF_002001105.1. The GC content of the type genome is 67.89 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Rhodanobacter exsorisca sp. nov.

Candidatus Rhodanobacter exsorisca (NL. fem. n. *exsorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp008329435*. The type genome for the species is the GenBank assembly RS_GCF_008329435.1. The GC content of the type genome is 65.1 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Rhodanobacter ignosiforma sp. nov.

Candidatus Rhodanobacter ignosiforma (NL. fem. n. *ignosiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp002001045*. The type genome for the species is the GenBank assembly RS_GCF_002001045.1. The GC content of the type genome is 63.02 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Rhodanobacter inobrilega sp. nov.

Candidatus Rhodanobacter inobrilega (NL. fem. n. *inobrilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp002001085*. The type genome for the species is the GenBank assembly RS_GCF_002001085.1. The GC content of the type genome is 65.43 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Rhodanobacter locupax sp. nov.

Candidatus Rhodanobacter locupax (NL. fem. n. *locupax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp004298015*. The type genome for the species is the GenBank assembly GCA_004298015.1. The GC content of the type genome is 63.11 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Rhodanobacter lupanigena sp. nov.

Candidatus Rhodanobacter lupanigena (NL. fem. n. *lupanigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp001898415*. The type genome for the species is the GenBank assembly GCA_001724655.1. The GC content of the type genome is 67.2 % and the genome length is 4.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Rhodanobacter mimogifica sp. nov.

Candidatus Rhodanobacter mimogifica (NL. fem. n. *mimogifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp002001165*. The type genome for the species is the GenBank assembly RS_GCF_002001165.1. The GC content of the type genome is 62.32 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Rhodanobacter nivomugo sp. nov.

Candidatus Rhodanobacter nivomugo (NL. fem. n. *nivomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp001428385*. The type genome for the species is the GenBank assembly RS_GCF_001428385.1. The GC content of the type genome is 66.69 % and the genome length is 3.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Rhodanobacter peradastra sp. nov.

Candidatus Rhodanobacter peradastra (NL. fem. n. *peradastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp900142825*. The type genome for the species is the GenBank assembly RS_GCF_900142825.1. The GC content of the type genome is 63.84 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Rhodanobacter rosacicula sp. nov.

Candidatus Rhodanobacter rosacicula (NL. fem. n. *rosacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodanobacter sp014200755*. The type genome for the species is the GenBank assembly RS_GCF_014200755.1. The GC content of the type genome is 62.1 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Rhodobacter fetulitura sp. nov.

Candidatus Rhodobacter fetulitura (NL. fem. n. *fetulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodobacter_B sp002701395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002701395.1. The GC content of the type genome is 65.54 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Rhodobacter scintitoga sp. nov.

Candidatus Rhodobacter scintitoga (NL. fem. n. *scintitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhodobacter_B sp013184805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013184805.1. The GC content of the type genome is 63.34 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Rhodobacter exurrentia sp. nov.

Candidatus Rhodobacter exurrentia (NL. fem. n. *exurrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodobacter_F sp013297695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013297695.1. The GC content of the type genome is 66.76 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Rhodobium affirastra sp. nov.

Candidatus Rhodobium affirastra (NL. fem. n. *affirastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodobium sp002869065*. The type genome for the species is the GenBank assembly GCA_002869065.1. The GC content of the type genome is 63.59 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Rhodoblastus fatilitudo sp. nov.

Candidatus Rhodoblastus fatilitudo (NL. fem. n. *fatilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoblastus sp903903185*. The type genome for the species is the GenBank assembly GCA_903903185.1. The GC content of the type genome is 62.45 % and the genome length is 4.96 Mbp.

Description of *Candidatus* Rhodocista sicunousia sp. nov.

Candidatus Rhodocista sicunousia (NL. fem. n. *sicunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhodocista sp001939945*. The type genome for the species is the GenBank assembly RS_GCF_012913305.1. The GC content of the type genome is 69.26 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Rhodococcus acustifica sp. nov.

Candidatus Rhodococcus acustifica (NL. fem. n. *acustifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp001312645*. The type genome for the species is the GenBank assembly GCA_001312645.1. The GC content of the type genome is 65.29 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Rhodococcus albogentia sp. nov.

Candidatus Rhodococcus albogentia (NL. fem. n. *albogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp001767395*. The type genome for the species is the GenBank assembly RS_GCF_001767395.1. The GC content of the type genome is 64.08 % and the genome length is 4.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sponge from waters off Florida keys".

Description of *Candidatus* Rhodococcus assubicula sp. nov.

Candidatus Rhodococcus assubicula (NL. fem. n. *assubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp004328705*. The type genome for the species is the GenBank assembly RS_GCF_004328705.1. The GC content of the type genome is 66.42 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Rhodococcus avoncessa sp. nov.

Candidatus Rhodococcus avoncessa (NL. fem. n. *avoncessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp004345605*. The type genome for the species is the GenBank assembly RS_GCF_004345605.1. The GC content of the type genome is 65.68 % and the genome length is 6.23 Mbp.

Description of *Candidatus* Rhodococcus decamousia sp. nov.

Candidatus Rhodococcus decamousia (NL. fem. n. *decamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp003350365*. The type genome for the species is the GenBank assembly RS_GCF_013348805.1. The GC content of the type genome is 68.13 % and the genome length is 5.71 Mbp.

Description of *Candidatus* Rhodococcus demadousia sp. nov.

Candidatus Rhodococcus demadousia (NL. fem. n. *demadousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp006704125*. The type genome for the species is the GenBank assembly RS_GCF_006704125.1. The GC content of the type genome is 69.17 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Rhodococcus denecousia sp. nov.

Candidatus Rhodococcus denecousia (NL. fem. n. *denecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp005484805*. The type genome for the species is the GenBank assembly RS_GCF_005484805.1. The GC content of the type genome is 69.71 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Rhodococcus endivatio sp. nov.

Candidatus Rhodococcus endivatio (NL. fem. n. *endivatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp013602415*. The type genome for the species is the GenBank assembly GCA_013602415.1. The GC content of the type genome is 67.24 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Rhodococcus forabimonas sp. nov.

Candidatus Rhodococcus forabimonas (NL. fem. n. *forabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp001040705*. The type genome for the species is the GenBank assembly RS_GCF_001040705.1. The GC content of the type genome is 68.43 % and the genome length is 5.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "estuary sediments".

Description of *Candidatus* Rhodococcus gasifastra sp. nov.

Candidatus Rhodococcus gasifastra (NL. fem. n. *gasifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp003051005*. The type genome for the species is the GenBank assembly RS_GCF_003051005.1. The GC content of the type genome is 67.82 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Rhodococcus invicatica sp. nov.

Candidatus Rhodococcus invicatica (NL. fem. n. *invicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp012726205*. The type genome for the species is the GenBank assembly RS_GCF_012726205.1. The GC content of the type genome is 69.25 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Rhodococcus latibicella sp. nov.

Candidatus Rhodococcus latibicella (NL. fem. n. *latibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp003130705*. The type genome for the species is the GenBank assembly RS_GCF_009859915.1. The GC content of the type genome is 65.67 % and the genome length is 8.44 Mbp.

Description of *Candidatus* Rhodococcus macilisca sp. nov.

Candidatus Rhodococcus macilisca (NL. fem. n. *macilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp004011825*. The type genome for the species is the GenBank assembly RS_GCF_004011825.1. The GC content of the type genome is 66.5 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Rhodococcus nocumimonas sp. nov.

Candidatus Rhodococcus nocumimonas (NL. fem. n. *nocumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp002245895*. The type genome for the species is the GenBank assembly RS_GCF_002245895.1. The GC content of the type genome is 61.3 % and the genome length is 6.79 Mbp.

Description of *Candidatus* Rhodococcus nugacilega sp. nov.

Candidatus Rhodococcus nugacilega (NL. fem. n. *nugacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp002165735*. The type genome for the species is the GenBank assembly RS_GCF_009872365.1. The GC content of the type genome is 67.01 % and the genome length is 10.69 Mbp.

Description of *Candidatus* Rhodococcus ocissitrix sp. nov.

Candidatus Rhodococcus ocissitrix (NL. fem. n. *ocissitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp005938745*. The type genome for the species is the GenBank assembly RS_GCF_005938745.2. The GC content of the type genome is 61.62 % and the genome length is 7.25 Mbp.

Description of *Candidatus* Rhodococcus pinacitura sp. nov.

Candidatus Rhodococcus pinacitura (NL. fem. n. *pinacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp012514505*. The type genome for the species is the GenBank assembly GCA_012514505.1. The GC content of the type genome is 64.61 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Rhodococcus rumifatica sp. nov.

Candidatus Rhodococcus rumifatica (NL. fem. n. *rumifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp012515885*. The type genome for the species is the GenBank assembly GCA_012515885.1. The GC content of the type genome is 62.57 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Rhodococcus scombilenta sp. nov.

Candidatus Rhodococcus scombilenta (NL. fem. n. *scombilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp012729135*. The type genome for the species is the GenBank assembly GCA_012729135.1. The GC content of the type genome is 68.82 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Rhodococcus telegax sp. nov.

Candidatus Rhodococcus telegax (NL. fem. n. *telegax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp012726195*. The type genome for the species is the GenBank assembly RS_GCF_012726195.1. The GC content of the type genome is 65.54 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Rhodococcus tirunedo sp. nov.

Candidatus Rhodococcus tirunedo (NL. fem. n. *tirunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp004011835*. The type genome for the species is the GenBank assembly RS_GCF_004011835.1. The GC content of the type genome is 66.5 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Rhodococcus viginilega sp. nov.

Candidatus Rhodococcus viginilega (NL. fem. n. *viginilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus sp012844225*. The type genome for the species is the GenBank assembly RS_GCF_012844225.1. The GC content of the type genome is 67.27 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Rhodococcus aclasousia sp. nov.

Candidatus Rhodococcus aclasousia (NL. fem. n. *aclasousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp003641205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003641205.1. The GC content of the type genome is 63.19 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Rhodococcus alsulitica sp. nov.

Candidatus Rhodococcus alsulitica (NL. fem. n. *alsulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp000333955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000333955.1. The GC content of the type genome is 64.12 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Rhodococcus bipatastra sp. nov.

Candidatus Rhodococcus bipatastra (NL. fem. n. *bipatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp000954115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002258515.1. The GC content of the type genome is 64.75 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Rhodococcus codifitia sp. nov.

Candidatus Rhodococcus codifitia (NL. fem. n. *codifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp002258785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002258785.1. The GC content of the type genome is 64.26 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Rhodococcus cosigifica sp. nov.

Candidatus Rhodococcus cosigifica (NL. fem. n. *cosigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp004795915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004795875.1. The GC content of the type genome is 62.07 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Rhodococcus dilicitio sp. nov.

Candidatus Rhodococcus dilicitio (NL. fem. n. *dilicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp000813105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000813105.1. The GC content of the type genome is 64.44 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Rhodococcus domabimonas sp. nov.

Candidatus Rhodococcus domabimonas (NL. fem. n. *domabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp014281965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_014281965.1. The GC content of the type genome is 62.16 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Rhodococcus ermeliforma sp. nov.

Candidatus Rhodococcus ermeliforma (NL. fem. n. *ermeliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp001426085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001426085.1. The GC content of the type genome is 64.09 % and the genome length is 5.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Rhodococcus femelibra sp. nov.

Candidatus Rhodococcus femelibra (NL. fem. n. *femelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp002091985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002091985.1. The GC content of the type genome is 62.32 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Rhodococcus insomilega sp. nov.

Candidatus Rhodococcus insomilega (NL. fem. n. *insomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp003386655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003386655.1. The GC content of the type genome is 63.18 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Rhodococcus labecisca sp. nov.

Candidatus Rhodococcus labecisca (NL. fem. n. *labecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp002258315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002258315.1. The GC content of the type genome is 64.7 % and the genome length is 5.76 Mbp.

Description of *Candidatus* Rhodococcus luculicula sp. nov.

Candidatus Rhodococcus luculicula (NL. fem. n. *luculicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp001942265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001942265.1. The GC content of the type genome is 63.89 % and the genome length is 5.8 Mbp.

Description of *Candidatus* Rhodococcus minagicella sp. nov.

Candidatus Rhodococcus minagicella (NL. fem. n. *minagicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp002259405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002259405.1. The GC content of the type genome is 64.57 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Rhodococcus mutabousia sp. nov.

Candidatus Rhodococcus mutabousia (NL. fem. n. *mutabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp001647195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001647195.1. The GC content of the type genome is 63.47 % and the genome length is 5.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as

"seawater".

Description of *Candidatus* Rhodococcus omninax sp. nov.

Candidatus Rhodococcus omninax (NL. fem. n. *omninax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp002091955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002091955.1. The GC content of the type genome is 62.06 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Rhodococcus relenitoga sp. nov.

Candidatus Rhodococcus relenitoga (NL. fem. n. *relenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp002259335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000760685.1. The GC content of the type genome is 64.28 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Rhodococcus repuratio sp. nov.

Candidatus Rhodococcus repuratio (NL. fem. n. *repuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_B sp002259415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002259415.1. The GC content of the type genome is 64.38 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Rhodococcus salubago sp. nov.

Candidatus Rhodococcus salubago (NL. fem. n. *salubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhodococcus_B sp002259485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002259485.1. The GC content of the type genome is 64.74 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Rhodococcus baropitudo sp. nov.

Candidatus Rhodococcus baropitudo (NL. fem. n. *baropitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_C sp001426185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000834565.1. The GC content of the type genome is 67.04 % and the genome length is 4.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Rhodococcus documigena sp. nov.

Candidatus Rhodococcus documigena (NL. fem. n. *documigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodococcus_C sp000686025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001426145.1. The GC content of the type genome is 68.36 % and the genome length is 4.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Rhodoferax accerugo sp. nov.

Candidatus Rhodoferax accerugo (NL. fem. n. *accerugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903948045*. The type genome for the species is the GenBank assembly GCA_903948045.1. The GC content of the type genome is 62.75 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Rhodoferax acusticula sp. nov.

Candidatus Rhodoferax acusticula (NL. fem. n. *acusticula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903869595*. The type genome for the species is the GenBank assembly GCA_903869595.1. The GC content of the type genome is 58.59 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Rhodoferax adaggitia sp. nov.

Candidatus Rhodoferax adaggitia (NL. fem. n. *adaggitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp011391645*. The type genome for the species is the GenBank assembly GCA_011391645.1. The GC content of the type genome is 60.82 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Rhodoferax adlocivita sp. nov.

Candidatus Rhodoferax adlocivita (NL. fem. n. *adlocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903914985*. The type genome for the species is the GenBank assembly GCA_903914985.1. The GC content of the type genome is 60.2 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Rhodoferax andabedo sp. nov.

Candidatus Rhodoferax andabedo (NL. fem. n. *andabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903930255*. The type genome for the species is the GenBank assembly GCA_903930255.1. The GC content of the type genome is 54.49 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Rhodoferax annecisca sp. nov.

Candidatus Rhodoferax annecisca (NL. fem. n. *annecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903840825*. The type genome for the species is the GenBank assembly GCA_903840825.1. The GC content of the type genome is 56.22 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Rhodoferax antepessa sp. nov.

Candidatus Rhodoferax antepessa (NL. fem. n. *antepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002842265*. The type genome for the species is the GenBank assembly GCA_002842265.1. The GC content of the type genome is 59.19 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Rhodoferax appugetta sp. nov.

Candidatus Rhodoferax appugetta (NL. fem. n. *appugetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002943465*. The type genome for the species is the GenBank assembly RS_GCF_002943465.1. The GC content of the type genome is 61.95 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Rhodoferax arnacedo sp. nov.

Candidatus Rhodoferax arnacedo (NL. fem. n. *arnacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002256115*. The type genome for the species is the GenBank assembly GCA_002256115.1. The GC content of the type genome is 58.96 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Rhodoferax aterritura sp. nov.

Candidatus Rhodoferax aterritura (NL. fem. n. *aterritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp013791765*. The type genome for the species is the GenBank assembly GCA_013791765.1. The GC content of the type genome is 60.02 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Rhodoferax beniventia sp. nov.

Candidatus Rhodoferax beniventia (NL. fem. n. *beniventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp009924455*. The type genome for the species is the GenBank assembly GCA_009924455.1. The GC content of the type genome is 61.88 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Rhodoferax bicalivita sp. nov.

Candidatus Rhodoferax bicalivita (NL. fem. n. *bicalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903859265*. The type genome for the species is the GenBank assembly GCA_903953435.1. The GC content of the type genome is 58.62 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Rhodoferax caduritrix sp. nov.

Candidatus Rhodoferax caduritrix (NL. fem. n. *caduritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002789915*. The type genome for the species is the GenBank assembly GCA_002784775.1. The GC content of the type genome is 59.71 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Rhodoferax capudilega sp. nov.

Candidatus Rhodoferax capudilega (NL. fem. n. *capudilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903920405*. The type genome for the species is the GenBank assembly GCA_903920405.1. The GC content of the type genome is 51.27 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Rhodoferax catocetta sp. nov.

Candidatus Rhodoferax catocetta (NL. fem. n. *catocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002413825*. The type genome for the species is the GenBank assembly GCA_002413825.1. The GC content of the type genome is 60.46 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Rhodoferax celamitrix sp. nov.

Candidatus Rhodoferax celamitrix (NL. fem. n. *celamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp005793295*. The type genome for the species is the GenBank assembly GCA_005793295.1. The GC content of the type genome is 53.21 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Rhodoferax cerarilenta sp. nov.

Candidatus Rhodoferax cerarilenta (NL. fem. n. *cerarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp001871515*. The type genome for the species is the GenBank assembly GCA_009994125.1. The GC content of the type genome is 57.25 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Rhodoferax chalbitica sp. nov.

Candidatus Rhodoferax chalbitica (NL. fem. n. *chalbitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp014190675*. The type genome for the species is the GenBank assembly GCA_014190675.1. The GC content of the type genome is 61.59 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Rhodoferax cimelicula sp. nov.

Candidatus Rhodoferax cimelicula (NL. fem. n. *cimelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhodoferax sp903845935*. The type genome for the species is the GenBank assembly GCA_903889535.1. The GC content of the type genome is 61.43 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Rhodoferax cituvicula sp. nov.

Candidatus Rhodoferax cituvicula (NL. fem. n. *cituvicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903928635*. The type genome for the species is the GenBank assembly GCA_903877625.1. The GC content of the type genome is 60.22 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Rhodoferax cocibugo sp. nov.

Candidatus Rhodoferax cocibugo (NL. fem. n. *cocibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903905735*. The type genome for the species is the GenBank assembly GCA_903905735.1. The GC content of the type genome is 58.72 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Rhodoferax codifitica sp. nov.

Candidatus Rhodoferax codifitica (NL. fem. n. *codifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp008015235*. The type genome for the species is the GenBank assembly GCA_008015235.1. The GC content of the type genome is 62.24 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Rhodoferax colutigena sp. nov.

Candidatus Rhodoferax colutigena (NL. fem. n. *colutigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903906695*. The type genome for the species is the GenBank assembly GCA_903906695.1. The GC content of the type genome is 59.24 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Rhodoferax conaratio sp. nov.

Candidatus Rhodoferax conaratio (NL. fem. n. *conaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903897005*. The type genome for the species is the GenBank assembly GCA_903897005.1. The GC content of the type genome is 60.64 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Rhodoferax conifedo sp. nov.

Candidatus Rhodoferax conifedo (NL. fem. n. *conifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903951445*. The type genome for the species is the GenBank assembly GCA_903951445.1. The GC content of the type genome is 58.62 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Rhodoferax culigitura sp. nov.

Candidatus Rhodoferax culigitura (NL. fem. n. *culigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903864505*. The type genome for the species is the GenBank assembly GCA_903864505.1. The GC content of the type genome is 58.16 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Rhodoferax cululiforma sp. nov.

Candidatus Rhodoferax cululiforma (NL. fem. n. *cululiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903839085*. The type genome for the species is the GenBank assembly GCA_903902555.1. The GC content of the type genome is 63.29 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Rhodoferax cululitura sp. nov.

Candidatus Rhodoferax cululitura (NL. fem. n. *cululitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903920695*. The type genome for the species is the GenBank assembly GCA_903920695.1. The GC content of the type genome is 60.8 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Rhodoferax curotigena sp. nov.

Candidatus Rhodoferax curotigena (NL. fem. n. *curotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903828665*. The type genome for the species is the GenBank assembly GCA_903864095.1. The GC content of the type genome is 63.6 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Rhodoferax decamibula sp. nov.

Candidatus Rhodoferax decamibula (NL. fem. n. *decamibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp012927445*. The type genome for the species is the GenBank assembly GCA_012927445.1. The GC content of the type genome is 58.92 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Rhodoferax defasentia sp. nov.

Candidatus Rhodoferax defasentia (NL. fem. n. *defasentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903954045*. The type genome for the species is the GenBank assembly GCA_903952765.1. The GC content of the type genome is 56.89 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Rhodoferax defasousia sp. nov.

Candidatus Rhodoferax defasousia (NL. fem. n. *defasousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhodoferax sp903928325*. The type genome for the species is the GenBank assembly GCA_903928325.1. The GC content of the type genome is 61.31 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Rhodoferax defesatio sp. nov.

Candidatus Rhodoferax defesatio (NL. fem. n. *defesatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903870065*. The type genome for the species is the GenBank assembly GCA_903870065.1. The GC content of the type genome is 56.86 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Rhodoferax delacago sp. nov.

Candidatus Rhodoferax delacago (NL. fem. n. *delacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp001771065*. The type genome for the species is the GenBank assembly GCA_001771065.1. The GC content of the type genome is 59.05 % and the genome length is 4.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point D".

Description of *Candidatus* Rhodoferax demagibula sp. nov.

Candidatus Rhodoferax demagibula (NL. fem. n. *demagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903925725*. The type genome for the species is the GenBank assembly GCA_903925725.1. The GC content of the type genome is 58.76 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Rhodoferax depasatio sp. nov.

Candidatus Rhodoferax depasatio (NL. fem. n. *depasatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903863395*. The type genome for the species is the GenBank assembly GCA_903880205.1. The GC content of the type genome is 62.86 %

and the genome length is 2.97 Mbp.

Description of *Candidatus* Rhodoferax direpicella sp. nov.

Candidatus Rhodoferax direpicella (NL. fem. n. *direpicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903873485*. The type genome for the species is the GenBank assembly GCA_903950205.1. The GC content of the type genome is 57.77 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Rhodoferax disiditura sp. nov.

Candidatus Rhodoferax disiditura (NL. fem. n. *disiditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903929815*. The type genome for the species is the GenBank assembly GCA_903929815.1. The GC content of the type genome is 50.91 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Rhodoferax divolitoga sp. nov.

Candidatus Rhodoferax divolitoga (NL. fem. n. *divolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002381045*. The type genome for the species is the GenBank assembly GCA_002381045.1. The GC content of the type genome is 57.22 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Rhodoferax domipimonas sp. nov.

Candidatus Rhodoferax domipimonas (NL. fem. n. *domipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002784245*. The type genome for the species is the GenBank assembly GCA_002781645.1. The GC content of the type genome is 59.74 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Rhodoferax duricax sp. nov.

Candidatus Rhodoferax duricax (NL. fem. n. *duricax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903870955*. The type genome for the species is the GenBank assembly GCA_903870955.1. The GC content of the type genome is 58.53 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Rhodoferax exhonitas sp. nov.

Candidatus Rhodoferax exhonitas (NL. fem. n. *exhonitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903861575*. The type genome for the species is the GenBank assembly GCA_903861575.1. The GC content of the type genome is 60.66 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Rhodoferax expenentia sp. nov.

Candidatus Rhodoferax expenentia (NL. fem. n. *expenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp010365055*. The type genome for the species is the GenBank assembly GCA_010365055.1. The GC content of the type genome is 60.33 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Rhodoferax exsufilega sp. nov.

Candidatus Rhodoferax exsufilega (NL. fem. n. *exsufilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903938955*. The type genome for the species is the GenBank assembly GCA_903938955.1. The GC content of the type genome is 59.77 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Rhodoferax faticigena sp. nov.

Candidatus Rhodoferax faticigena (NL. fem. n. *faticigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903914175*. The type genome for the species is the GenBank assembly GCA_903924915.1. The GC content of the type genome is 60.96 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Rhodoferax feculitas sp. nov.

Candidatus Rhodoferax feculitas (NL. fem. n. *feculitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903924955*. The type genome for the species is the GenBank assembly GCA_903924955.1. The GC content of the type genome is 58.02 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Rhodoferax gemebatio sp. nov.

Candidatus Rhodoferax gemebatio (NL. fem. n. *gemebatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903958915*. The type genome for the species is the GenBank assembly GCA_903958915.1. The GC content of the type genome is 58.93 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Rhodoferax gemebilenta sp. nov.

Candidatus Rhodoferax gemebilenta (NL. fem. n. *gemebilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903897925*. The type genome for the species is the GenBank assembly GCA_903897925.1. The GC content of the type genome is 61.58 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Rhodoferax homuligena sp. nov.

Candidatus Rhodoferax homuligena (NL. fem. n. *homuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp001795455*. The type genome for the species is the GenBank assembly GCA_003537935.1. The GC content of the type genome is 62.35 %

and the genome length is 3.85 Mbp.

Description of *Candidatus* Rhodoferax imbelugo sp. nov.

Candidatus Rhodoferax imbelugo (NL. fem. n. *imbelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002251855*. The type genome for the species is the GenBank assembly RS_GCF_002251855.1. The GC content of the type genome is 61.39 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Rhodoferax immurago sp. nov.

Candidatus Rhodoferax immurago (NL. fem. n. *immurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp013416775*. The type genome for the species is the GenBank assembly RS_GCF_013416775.1. The GC content of the type genome is 59.73 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Rhodoferax impugigena sp. nov.

Candidatus Rhodoferax impugigena (NL. fem. n. *impugigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp004293725*. The type genome for the species is the GenBank assembly GCA_004293725.1. The GC content of the type genome is 58.38 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Rhodoferax inambicella sp. nov.

Candidatus Rhodoferax inambicella (NL. fem. n. *inambicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp006974105*. The type genome for the species is the GenBank assembly RS_GCF_006974105.1. The GC content of the type genome is 57.43 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Rhodoferax incunatica sp. nov.

Candidatus Rhodoferax incunatica (NL. fem. n. *incunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp007279715*. The type genome for the species is the GenBank assembly GCA_007279715.1. The GC content of the type genome is 52.78 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Rhodoferax inregugo sp. nov.

Candidatus Rhodoferax inregugo (NL. fem. n. *inregugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp003415675*. The type genome for the species is the GenBank assembly RS_GCF_003415675.1. The GC content of the type genome is 62.3 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Rhodoferax legifitrix sp. nov.

Candidatus Rhodoferax legifitrix (NL. fem. n. *legifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp009925925*. The type genome for the species is the GenBank assembly GCA_009925925.1. The GC content of the type genome is 59.57 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Rhodoferax lenimatica sp. nov.

Candidatus Rhodoferax lenimatica (NL. fem. n. *lenimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903886275*. The type genome for the species is the GenBank assembly GCA_903823595.1. The GC content of the type genome is 61.31 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Rhodoferax lenimitio sp. nov.

Candidatus Rhodoferax lenimitio (NL. fem. n. *lenimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903823025*. The type genome for the species is the GenBank assembly GCA_903827005.1. The GC content of the type genome is 55.22 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Rhodoferax levifousia sp. nov.

Candidatus Rhodoferax levifousia (NL. fem. n. *levifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp009693325*. The type genome for the species is the GenBank assembly GCA_009693325.1. The GC content of the type genome is 61.86 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Rhodoferax licenitudo sp. nov.

Candidatus Rhodoferax licenitudo (NL. fem. n. *licenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903876735*. The type genome for the species is the GenBank assembly GCA_903900925.1. The GC content of the type genome is 61.8 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Rhodoferax miracitia sp. nov.

Candidatus Rhodoferax miracitia (NL. fem. n. *miracitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002390825*. The type genome for the species is the GenBank assembly GCA_002390825.1. The GC content of the type genome is 60.08 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Rhodoferax nicomentia sp. nov.

Candidatus Rhodoferax nicomentia (NL. fem. n. *nicomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp007280205*. The type genome for the species is the GenBank assembly GCA_007280205.1. The GC content of the type genome is 59.86 %

and the genome length is 4.19 Mbp.

Description of *Candidatus* Rhodoferax nimiratio sp. nov.

Candidatus Rhodoferax nimiratio (NL. fem. n. *nimiratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903944555*. The type genome for the species is the GenBank assembly GCA_903944555.1. The GC content of the type genome is 58.8 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Rhodoferax nocumimonia sp. nov.

Candidatus Rhodoferax nocumimonia (NL. fem. n. *nocumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903927295*. The type genome for the species is the GenBank assembly GCA_903929605.1. The GC content of the type genome is 58.64 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Rhodoferax nugacitia sp. nov.

Candidatus Rhodoferax nugacitia (NL. fem. n. *nugacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903960915*. The type genome for the species is the GenBank assembly GCA_903960915.1. The GC content of the type genome is 59.55 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Rhodoferax nutamedo sp. nov.

Candidatus Rhodoferax nutamedo (NL. fem. n. *nutamedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903853895*. The type genome for the species is the GenBank assembly GCA_903853895.1. The GC content of the type genome is 60.27 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Rhodoferax panifilenta sp. nov.

Candidatus Rhodoferax panifilenta (NL. fem. n. *panifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903886165*. The type genome for the species is the GenBank assembly GCA_903899835.1. The GC content of the type genome is 58.57 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Rhodoferax parocax sp. nov.

Candidatus Rhodoferax parocax (NL. fem. n. *parocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp008080595*. The type genome for the species is the GenBank assembly GCA_008080595.1. The GC content of the type genome is 57.72 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Rhodoferax pericitio sp. nov.

Candidatus Rhodoferax pericitio (NL. fem. n. *pericitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp011391545*. The type genome for the species is the GenBank assembly GCA_011391545.1. The GC content of the type genome is 61.78 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Rhodoferax peripitura sp. nov.

Candidatus Rhodoferax peripitura (NL. fem. n. *peripitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp003347515*. The type genome for the species is the GenBank assembly RS_GCF_003347515.1. The GC content of the type genome is 60.71 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Rhodoferax peropatio sp. nov.

Candidatus Rhodoferax peropatio (NL. fem. n. *peropatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp003133245*. The type genome for the species is the GenBank assembly GCA_003133245.1. The GC content of the type genome is 57.93 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Rhodoferax refocitas sp. nov.

Candidatus Rhodoferax refocitas (NL. fem. n. *refocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903822205*. The type genome for the species is the GenBank assembly GCA_903821215.1. The GC content of the type genome is 55.18 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Rhodoferax reforitas sp. nov.

Candidatus Rhodoferax reforitas (NL. fem. n. *reforitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp009922295*. The type genome for the species is the GenBank assembly GCA_009922295.1. The GC content of the type genome is 61.13 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Rhodoferax repecastra sp. nov.

Candidatus Rhodoferax repecastra (NL. fem. n. *repecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp001770935*. The type genome for the species is the GenBank assembly GCA_001770935.1. The GC content of the type genome is 60.33 % and the genome length is 4.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Rhodoferax repurax sp. nov.

Candidatus Rhodoferax repurax (NL. fem. n. *repurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhodoferax sp903894475*. The type genome for the species is the GenBank assembly GCA_903889125.1. The GC content of the type genome is 59.56 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Rhodoferax sanabago sp. nov.

Candidatus Rhodoferax sanabago (NL. fem. n. *sanabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903876045*. The type genome for the species is the GenBank assembly GCA_903876045.1. The GC content of the type genome is 57.79 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Rhodoferax saxopivita sp. nov.

Candidatus Rhodoferax saxopivita (NL. fem. n. *saxopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002786915*. The type genome for the species is the GenBank assembly GCA_002786915.1. The GC content of the type genome is 58.88 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Rhodoferax sicarentia sp. nov.

Candidatus Rhodoferax sicarentia (NL. fem. n. *sicarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903945325*. The type genome for the species is the GenBank assembly GCA_903950335.1. The GC content of the type genome is 58.88 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Rhodoferax sonipibra sp. nov.

Candidatus Rhodoferax sonipibra (NL. fem. n. *sonipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903875275*. The type genome for the species is the GenBank assembly GCA_903914805.1. The GC content of the type genome is 60.22 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Rhodoferax tolutitica sp. nov.

Candidatus Rhodoferax tolutitica (NL. fem. n. *tolutitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002163715*. The type genome for the species is the GenBank assembly RS_GCF_002163715.1. The GC content of the type genome is 58.95 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Rhodoferax tubicicula sp. nov.

Candidatus Rhodoferax tubicicula (NL. fem. n. *tubicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp002422455*. The type genome for the species is the GenBank assembly GCA_002422455.1. The GC content of the type genome is 62.7 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Rhodoferax venucitica sp. nov.

Candidatus Rhodoferax venucitica (NL. fem. n. *venucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903896425*. The type genome for the species is the GenBank assembly GCA_903854145.1. The GC content of the type genome is 60.63 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Rhodoferax verifibra sp. nov.

Candidatus Rhodoferax verifibra (NL. fem. n. *verifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp903856025*. The type genome for the species is the GenBank assembly GCA_903919085.1. The GC content of the type genome is 56.2 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Rhodoferax volubax sp. nov.

Candidatus Rhodoferax volubax (NL. fem. n. *volubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax sp013297935*. The type genome for the species is the GenBank assembly GCA_013297935.1. The GC content of the type genome is 60.28 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Rhodoferax adlenibula sp. nov.

Candidatus Rhodoferax adlenibula (NL. fem. n. *adlenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax_A sp002002705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002002705.1. The GC content of the type genome is 64.35 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Rhodoferax culigatio sp. nov.

Candidatus Rhodoferax culigatio (NL. fem. n. *culigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax_A sp004322085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004322085.1. The GC content of the type genome is 63.6 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Rhodoferax nutamago sp. nov.

Candidatus Rhodoferax nutamago (NL. fem. n. *nutamago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax_A sp004323695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004323695.1. The GC content of the type genome is 64.07 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Rhodoferax antipitura sp. nov.

Candidatus Rhodoferax antipitura (NL. fem. n. *antipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax_B sp003097105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003097105.1. The GC content of the type genome is 63.47 % and the genome length is 5.63 Mbp.

Description of *Candidatus* Rhodoferax homunivita sp. nov.

Candidatus Rhodoferax homunivita (NL. fem. n. *homunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoferax_B sp900104385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900104385.1. The GC content of the type genome is 63.33 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Rhodoglobus adremessa sp. nov.

Candidatus Rhodoglobus adremessa (NL. fem. n. *adremessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoglobus sp013410945*. The type genome for the species is the GenBank assembly RS_GCF_013410945.1. The GC content of the type genome is 66.81 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Rhodoglobus cocodibula sp. nov.

Candidatus Rhodoglobus cocodibula (NL. fem. n. *cocodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoglobus sp001725325*. The type genome for the species is the GenBank assembly GCA_001725325.1. The GC content of the type genome is 70.37 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate bioreactor".

Description of *Candidatus* Rhodoglobus futatitio sp. nov.

Candidatus Rhodoglobus futatitio (NL. fem. n. *futatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoglobus sp004297555*. The type genome for the species is the GenBank assembly GCA_004297555.1. The GC content of the type genome is 64.68 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Rhodoglobus infenimonas sp. nov.

Candidatus Rhodoglobus infenimonas (NL. fem. n. *infenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoglobus sp000153145*. The type genome for the species is the GenBank assembly RS_GCF_000153145.1. The GC content of the type genome is 59.09 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Rhodoglobus oppanigena sp. nov.

Candidatus Rhodoglobus oppanigena (NL. fem. n. *oppanigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoglobus sp000247645*. The type genome for the species is the GenBank assembly RS_GCF_000247645.1. The GC content of the type genome is 60.11 % and the genome length is 3.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Rhodoglobus penurax sp. nov.

Candidatus Rhodoglobus penurax (NL. fem. n. *penurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoglobus sp903920435*. The type genome for the species is the GenBank assembly GCA_903886575.1. The GC content of the type genome is 68.9 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Rhodoglobus thessessa sp. nov.

Candidatus Rhodoglobus thessessa (NL. fem. n. *thessessa* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoglobus sp004118935*. The type genome for the species is the GenBank assembly RS_GCF_004118935.1. The GC content of the type genome is 61.46 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Rhodohalobacter adpositudo sp. nov.

Candidatus Rhodohalobacter adpositudo (NL. fem. n. *adpositudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodohalobacter sp001564065*. The type genome for the species is the GenBank assembly GCA_001564065.1. The GC content of the type genome is 42.36 % and the genome length is 4.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sample T5-Br; brine of Lake Tanatar-5".

Description of *Candidatus* Rhodoligotrophos octinibula sp. nov.

Candidatus Rhodoligotrophos octinibula (NL. fem. n. *octinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoligotrophos sp005281615*. The type genome for the species is the GenBank assembly RS_GCF_005281615.1. The GC content of the type genome is 64.41 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Rhodoluna agricilega sp. nov.

Candidatus Rhodoluna agricilega (NL. fem. n. *agricilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903866485*. The type genome for the species is the GenBank assembly GCA_903866485.1. The GC content of the type genome is 55.4 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Rhodoluna benifibra sp. nov.

Candidatus Rhodoluna benifibra (NL. fem. n. *benifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903887175*. The type genome for the species is the GenBank assembly GCA_903922585.1. The GC content of the type genome is 52.97 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Rhodoluna casigimonas sp. nov.

Candidatus Rhodoluna casigimonas (NL. fem. n. *casigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009702645*. The type genome for the species is the GenBank assembly GCA_009702645.1. The GC content of the type genome is 50.17 % and the genome length is 0.7 Mbp.

Description of *Candidatus* Rhodoluna cilicitrix sp. nov.

Candidatus Rhodoluna cilicitrix (NL. fem. n. *cilicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903824455*. The type genome for the species is the GenBank assembly GCA_903824205.1. The GC content of the type genome is 52.92 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Rhodoluna curabicella sp. nov.

Candidatus Rhodoluna curabicella (NL. fem. n. *curabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp002342255*. The type genome for the species is the GenBank assembly GCA_002359595.1. The GC content of the type genome is 46.21 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Rhodoluna direpetta sp. nov.

Candidatus Rhodoluna direpetta (NL. fem. n. *direpetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903935175*. The type genome for the species is the GenBank assembly GCA_903935175.1. The GC content of the type genome is 56.08 %

and the genome length is 1.5 Mbp.

Description of *Candidatus* Rhodoluna diritifica sp. nov.

Candidatus Rhodoluna diritifica (NL. fem. n. *diritifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903831585*. The type genome for the species is the GenBank assembly GCA_903831585.1. The GC content of the type genome is 53.9 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Rhodoluna domipitia sp. nov.

Candidatus Rhodoluna domipitia (NL. fem. n. *domipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903834635*. The type genome for the species is the GenBank assembly GCA_903923335.1. The GC content of the type genome is 54.59 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Rhodoluna habacicella sp. nov.

Candidatus Rhodoluna habacicella (NL. fem. n. *habacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009703455*. The type genome for the species is the GenBank assembly GCA_009703455.1. The GC content of the type genome is 50.18 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Rhodoluna hexagitudo sp. nov.

Candidatus Rhodoluna hexagitudo (NL. fem. n. *hexagitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009704605*. The type genome for the species is the GenBank assembly GCA_009699975.1. The GC content of the type genome is 49.5 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Rhodoluna impirimonia sp. nov.

Candidatus Rhodoluna impirimonia (NL. fem. n. *impirimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009703845*. The type genome for the species is the GenBank assembly GCA_009703845.1. The GC content of the type genome is 55.87 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Rhodoluna inbecitoga sp. nov.

Candidatus Rhodoluna inbecitoga (NL. fem. n. *inbecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009703635*. The type genome for the species is the GenBank assembly GCA_009703635.1. The GC content of the type genome is 50.13 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Rhodoluna metapitura sp. nov.

Candidatus Rhodoluna metapitura (NL. fem. n. *metapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903820955*. The type genome for the species is the GenBank assembly GCA_903888245.1. The GC content of the type genome is 56.54 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Rhodoluna nefarimonia sp. nov.

Candidatus Rhodoluna nefarimonia (NL. fem. n. *nefarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903922825*. The type genome for the species is the GenBank assembly GCA_903922825.1. The GC content of the type genome is 45.62 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Rhodoluna negotimonia sp. nov.

Candidatus Rhodoluna negotimonia (NL. fem. n. *negotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903880095*. The type genome for the species is the GenBank assembly GCA_903880095.1. The GC content of the type genome is 54.91 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Rhodoluna occalibra sp. nov.

Candidatus Rhodoluna occalibra (NL. fem. n. *occalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009703445*. The type genome for the species is the GenBank assembly GCA_009703445.1. The GC content of the type genome is 55.87 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Rhodoluna panopax sp. nov.

Candidatus Rhodoluna panopax (NL. fem. n. *panopax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903909605*. The type genome for the species is the GenBank assembly GCA_903909605.1. The GC content of the type genome is 57.65 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Rhodoluna pedifatica sp. nov.

Candidatus Rhodoluna pedifatica (NL. fem. n. *pedifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009698805*. The type genome for the species is the GenBank assembly GCA_009698805.1. The GC content of the type genome is 56.77 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Rhodoluna peridousia sp. nov.

Candidatus Rhodoluna peridousia (NL. fem. n. *peridousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009921165*. The type genome for the species is the GenBank assembly GCA_009928145.1. The GC content of the type genome is 46.24 %

and the genome length is 1.34 Mbp.

Description of *Candidatus* Rhodoluna redacilega sp. nov.

Candidatus Rhodoluna redacilega (NL. fem. n. *redacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp010028615*. The type genome for the species is the GenBank assembly GCA_010028615.1. The GC content of the type genome is 47.66 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Rhodoluna relapilega sp. nov.

Candidatus Rhodoluna relapilega (NL. fem. n. *relapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009702455*. The type genome for the species is the GenBank assembly GCA_009702455.1. The GC content of the type genome is 54.63 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Rhodoluna repudivita sp. nov.

Candidatus Rhodoluna repudivita (NL. fem. n. *repudivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903832875*. The type genome for the species is the GenBank assembly GCA_903853695.1. The GC content of the type genome is 45.86 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Rhodoluna semidedo sp. nov.

Candidatus Rhodoluna semidedo (NL. fem. n. *semidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009703465*. The type genome for the species is the GenBank assembly GCA_009703465.1. The GC content of the type genome is 48.53 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Rhodoluna semimitura sp. nov.

Candidatus Rhodoluna semimitura (NL. fem. n. *semimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903853515*. The type genome for the species is the GenBank assembly GCA_903853515.1. The GC content of the type genome is 52.54 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Rhodoluna sifunisca sp. nov.

Candidatus Rhodoluna sifunisca (NL. fem. n. *sifunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903929105*. The type genome for the species is the GenBank assembly GCA_903929105.1. The GC content of the type genome is 53.4 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Rhodoluna tametago sp. nov.

Candidatus Rhodoluna tametago (NL. fem. n. *tametago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009927245*. The type genome for the species is the GenBank assembly GCA_009923085.1. The GC content of the type genome is 47.07 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Rhodoluna taxilicella sp. nov.

Candidatus Rhodoluna taxilicella (NL. fem. n. *taxilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903893675*. The type genome for the species is the GenBank assembly GCA_903893675.1. The GC content of the type genome is 57.99 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Rhodoluna timefimonas sp. nov.

Candidatus Rhodoluna timefimonas (NL. fem. n. *timefimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp009702405*. The type genome for the species is the GenBank assembly GCA_009702405.1. The GC content of the type genome is 45.75 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Rhodoluna utputastra sp. nov.

Candidatus Rhodoluna utputastra (NL. fem. n. *utputastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoluna sp903927775*. The type genome for the species is the GenBank assembly GCA_903927775.1. The GC content of the type genome is 55.15 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Rhodophyticola amfitilenta sp. nov.

Candidatus Rhodophyticola amfitilenta (NL. fem. n. *amfitilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodophyticola sp014323785*. The type genome for the species is the GenBank assembly GCA_014323785.1. The GC content of the type genome is 60.34 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Rhodophyticola cinefastra sp. nov.

Candidatus Rhodophyticola cinefastra (NL. fem. n. *cinefastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodophyticola sp007827395*. The type genome for the species is the GenBank assembly RS_GCF_013106915.1. The GC content of the type genome is 60.23 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Rhodophyticola depariforma sp. nov.

Candidatus Rhodophyticola depariforma (NL. fem. n. *depariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodophyticola sp004751985*. The type genome for the species is the GenBank assembly RS_GCF_004751985.1. The GC content of the type genome is 60.5

% and the genome length is 3.86 Mbp.

Description of *Candidatus* Rhodopila aggesilega sp. nov.

Candidatus Rhodopila aggesilega (NL. fem. n. *aggesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopila sp003506895*. The type genome for the species is the GenBank assembly GCA_003506895.1. The GC content of the type genome is 63.38 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Rhodopila effosiforma sp. nov.

Candidatus Rhodopila effosiforma (NL. fem. n. *effosiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopila sp009765975*. The type genome for the species is the GenBank assembly RS_GCF_009765975.1. The GC content of the type genome is 63.54 % and the genome length is 8.37 Mbp.

Description of *Candidatus* Rhodopila retecigena sp. nov.

Candidatus Rhodopila retecigena (NL. fem. n. *retecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopila sp903851415*. The type genome for the species is the GenBank assembly GCA_903851415.1. The GC content of the type genome is 65.89 % and the genome length is 7.09 Mbp.

Description of *Candidatus* Rhodopila sicaritura sp. nov.

Candidatus Rhodopila sicaritura (NL. fem. n. *sicaritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopila sp903915725*. The type genome for the species is the GenBank assembly GCA_903936615.1. The GC content of the type genome is 64.94 % and the genome length is 6.57 Mbp.

Description of *Candidatus* Rhodopila supelastra sp. nov.

Candidatus Rhodopila supelastra (NL. fem. n. *supelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopila sp903932145*. The type genome for the species is the GenBank assembly GCA_903904345.1. The GC content of the type genome is 62.42 % and the genome length is 6.63 Mbp.

Description of *Candidatus* Rhodopila xeropilega sp. nov.

Candidatus Rhodopila xeropilega (NL. fem. n. *xeropilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopila sp903944925*. The type genome for the species is the GenBank assembly GCA_903944925.1. The GC content of the type genome is 65.08 % and the genome length is 7.0 Mbp.

Description of *Candidatus* Rhodopirellula inhabessa sp. nov.

Candidatus Rhodopirellula inhabessa (NL. fem. n. *inhabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula sp007860105*. The type genome for the species is the GenBank assembly RS_GCF_007860105.1. The GC content of the type genome is 56.54 % and the genome length is 7.18 Mbp.

Description of *Candidatus* Rhodopirellula totidilega sp. nov.

Candidatus Rhodopirellula totidilega (NL. fem. n. *totidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula sp007859915*. The type genome for the species is the GenBank assembly RS_GCF_007859915.1. The GC content of the type genome is 55.85 % and the genome length is 8.5 Mbp.

Description of *Candidatus* Rhodopirellula antiritia sp. nov.

Candidatus Rhodopirellula antiritia (NL. fem. n. *antiritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_A sp007859835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007859835.1. The GC content of the type genome is 52.75 % and the genome length is 9.52 Mbp.

Description of *Candidatus* Rhodopirellula laxititio sp. nov.

Candidatus Rhodopirellula laxititio (NL. fem. n. *laxititio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_A sp007860185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007860185.1. The GC content of the type genome is 52.9 % and the genome length is 7.27 Mbp.

Description of *Candidatus* Rhodopirellula nicotetta sp. nov.

Candidatus Rhodopirellula nicotetta (NL. fem. n. *nicotetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_A sp007860095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007860095.1. The GC content of the type genome is 55.81 % and the genome length is 7.4 Mbp.

Description of *Candidatus* Rhodopirellula obmuritio sp. nov.

Candidatus Rhodopirellula obmuritio (NL. fem. n. *obmuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_A sp007860135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly RS_GCF_007860135.1. The GC content of the type genome is 55.28 % and the genome length is 9.2 Mbp.

Description of *Candidatus* Rhodopirellula acrimessa sp. nov.

Candidatus Rhodopirellula acrimessa (NL. fem. n. *acrimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_B sp002289565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002289565.1. The GC content of the type genome is 58.96 % and the genome length is 9.8 Mbp.

Description of *Candidatus* Rhodopirellula buxanatica sp. nov.

Candidatus Rhodopirellula buxanatica (NL. fem. n. *buxanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_B sp008035925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008035925.1. The GC content of the type genome is 59.26 % and the genome length is 9.89 Mbp.

Description of *Candidatus* Rhodopirellula capucitio sp. nov.

Candidatus Rhodopirellula capucitio (NL. fem. n. *capucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_B sp002167455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007745635.1. The GC content of the type genome is 55.3 % and the genome length is 7.11 Mbp.

Description of *Candidatus* Rhodopirellula depacousia sp. nov.

Candidatus Rhodopirellula depacousia (NL. fem. n. *depacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_B sp007860045*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007860045.1. The GC content of the type genome is 56.01 % and the genome length is 9.59 Mbp.

Description of *Candidatus* Rhodopirellula immeditas sp. nov.

Candidatus Rhodopirellula immeditas (NL. fem. n. *immeditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_B sp008629675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008629675.1. The GC content of the type genome is 59.96 % and the genome length is 8.2 Mbp.

Description of *Candidatus* Rhodopirellula irrecitica sp. nov.

Candidatus Rhodopirellula irrecitica (NL. fem. n. *irrecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_B sp007754155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007754155.1. The GC content of the type genome is 58.88 % and the genome length is 10.98 Mbp.

Description of *Candidatus* Rhodopirellula murilousia sp. nov.

Candidatus Rhodopirellula murilousia (NL. fem. n. *murilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rhodopirellula_B sp007753675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007753675.1. The GC content of the type genome is 58.52 % and the genome length is 10.77 Mbp.

Description of *Candidatus* Rhodopirellula ruricimonia sp. nov.

Candidatus Rhodopirellula ruricimonia (NL. fem. n. *ruricimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_B sp014154935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014154935.1. The GC content of the type genome is 59.47 % and the genome length is 9.56 Mbp.

Description of *Candidatus* Rhodopirellula siminimonia sp. nov.

Candidatus Rhodopirellula siminimonia (NL. fem. n. *siminimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopirellula_B sp008312935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010367485.1. The GC content of the type genome is 55.14 % and the genome length is 7.91 Mbp.

Description of *Candidatus* Rhodoplanes delubitrix sp. nov.

Candidatus Rhodoplanes delubitrix (NL. fem. n. *delubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoplanes sp000293785*. The type genome for the species is the GenBank assembly RS_GCF_000293785.1. The GC content of the type genome is 69.28 % and the genome length is 4.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Rhodoplanes obvolicula sp. nov.

Candidatus Rhodoplanes obvolicula (NL. fem. n. *obvolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodoplanes sp013377085*. The type genome for the species is the GenBank assembly GCA_013377085.1. The GC content of the type genome is 68.82 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Rhodopseudomonas excinitoga sp. nov.

Candidatus Rhodopseudomonas excinitoga (NL. fem. n. *excinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopseudomonas sp001295845*. The type genome for the species is the GenBank assembly RS_GCF_001295845.1. The GC content of the type genome is 65.66 % and the genome length is 6.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Rhodopseudomonas ossaribra sp. nov.

Candidatus Rhodopseudomonas ossaribra (NL. fem. n. *ossaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopseudomonas sp010907035*. The type genome for the species is the GenBank assembly RS_GCF_010907035.1. The GC content of the type genome is 65.2 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Rhodopseudomonas pragmedo sp. nov.

Candidatus Rhodopseudomonas pragmedo (NL. fem. n. *pragmedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopseudomonas sp013377015*. The type genome for the species is the GenBank assembly GCA_013377015.1. The GC content of the type genome is 64.37 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Rhodopseudomonas sifunigena sp. nov.

Candidatus Rhodopseudomonas sifunigena (NL. fem. n. *sifunigena* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodopseudomonas sp000333455*. The type genome for the species is the GenBank assembly RS_GCF_000333455.1. The GC content of the type genome is 64.96 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Rhodosalinus vicecitas sp. nov.

Candidatus Rhodosalinus vicecitas (NL. fem. n. *vicecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodosalinus sp003298775*. The type genome for the species is the GenBank assembly RS_GCF_003298775.1. The GC content of the type genome is 69.79 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Rhodothermus pedepilega sp. nov.

Candidatus Rhodothermus pedepilega (NL. fem. n. *pedepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodothermus sp002898335*. The type genome for the species is the GenBank assembly GCA_011047975.1. The GC content of the type genome is 56.15 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Rhodovarius luticessa sp. nov.

Candidatus Rhodovarius luticessa (NL. fem. n. *luticessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodovarius sp004005855*. The type genome for the species is the GenBank assembly RS_GCF_004005855.1. The GC content of the type genome is 69.33 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Rhodovarius rubigax sp. nov.

Candidatus Rhodovarius rubigax (NL. fem. n. *rubigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodovarius sp013298245*. The type genome for the species is the GenBank assembly GCA_013298245.1. The GC content of the type genome is 67.79 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Rhodovarius televousia sp. nov.

Candidatus Rhodovarius televousia (NL. fem. n. *televousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodovarius sp014376425*. The type genome for the species is the GenBank assembly GCA_014376425.1. The GC content of the type genome is 69.21 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Rhodovulum almitentia sp. nov.

Candidatus Rhodovulum almitentia (NL. fem. n. *almitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodovulum sp002073975*. The type genome for the species is the GenBank assembly RS_GCF_002073975.1. The GC content of the type genome is 67.07 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Rhodovulum fecunedo sp. nov.

Candidatus Rhodovulum fecunedo (NL. fem. n. *fecunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodovulum sp011048875*. The type genome for the species is the GenBank assembly GCA_011048875.1. The GC content of the type genome is 67.59 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Rhodovulum insalatica sp. nov.

Candidatus Rhodovulum insalatica (NL. fem. n. *insalatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodovulum sp002079305*. The type genome for the species is the GenBank assembly RS_GCF_002079305.1. The GC content of the type genome is 64.64 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Rhodovulum macilitudo sp. nov.

Candidatus Rhodovulum macilitudo (NL. fem. n. *macilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rhodovulum sp900142935*. The type genome for the species is the GenBank assembly RS_GCF_900142935.1. The GC content of the type genome is 68.13 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Rickettsia terebitudo sp. nov.

Candidatus Rickettsia terebitudo (NL. fem. n. *terebitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rickettsia sp002285905*. The type genome for the species is the GenBank assembly RS_GCF_001707805.1. The GC content of the type genome is 32.22 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Rickettsiella fragmifica sp. nov.

Candidatus Rickettsiella fragmifica (NL. fem. n. *fragmifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rickettsiella_A sp005877695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_005877695.1. The GC content of the type genome is 36.34 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Rickettsiella homicifica sp. nov.

Candidatus Rickettsiella homicifica (NL. fem. n. *homicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rickettsiella_A sp002290645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903834455.1. The GC content of the type genome is 39.29 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Rickettsiella bipatitrix sp. nov.

Candidatus Rickettsiella bipatitrix (NL. fem. n. *bipatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rickettsiella_B sp013288455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013288455.1. The GC content of the type genome is 41.81 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Ridibana manufatica sp. nov.

Candidatus Ridibana manufatica (NL. fem. n. *manufatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *21-14-all-36-13 sp002771585*. The type genome for the species is the GenBank assembly GCA_002771585.1. The GC content of the type genome is 36.03 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Ridibana gen. nov.

Candidatus Ridibana (NL. fem. n. *Ridibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *21-14-all-36-13*. The type species for the genus is *Candidatus* Ridibana manufatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *21-14-all-36-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ridibanaceae.

Description of *Candidatus* Ridibanaceae fam. nov.

Candidatus Ridibanaceae (NL. fem. n. *Ridibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *21-14-all-36-13.* The type genus for the taxon is *Candidatus* Ridibana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Ridibaria absuressa sp. nov.

Candidatus Ridibaria absuressa (NL. fem. n. *absuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEB-7 sp011391275*. The type genome for the species is the GenBank assembly GCA_011391275.1. The GC content of the type genome is 70.15 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Ridibaria gen. nov.

Candidatus Ridibaria (NL. fem. n. *Ridibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEB-7*. The type species for the genus is *Candidatus* Ridibaria absuressa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UKL13-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diponellaceae.

Description of *Candidatus* Ridibaria direcimonas sp. nov.

Candidatus Ridibaria direcimonas (NL. fem. n. *direcimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEB-7 sp003105245*. The type genome for the species is the GenBank assembly GCA_003105245.1. The GC content of the type genome is 70.61 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Ridibella halucilenta sp. nov.

Candidatus Ridibella halucilenta (NL. fem. n. *halucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1439 sp002329605*. The type genome for the species is the GenBank assembly GCA_002329605.1. The GC content of the type genome is 68.79 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Ridibella gen. nov.

Candidatus Ridibella (NL. fem. n. *Ridibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1439*. The type species for the genus is *Candidatus* Ridibella halucilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ridibellaceae.

Description of *Candidatus* Ridibellaceae fam. nov.

Candidatus Ridibellaceae (NL. fem. n. *Ridibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1439.* The type genus for the taxon is *Candidatus* Ridibella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ridibellales.

Description of *Candidatus* Ridibellales ord. nov.

Candidatus Ridibellales (NL. fem. n. *Ridibellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1439.* The type genus for the taxon is *Candidatus* Ridibella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1439*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ridibellae.

Description of *Candidatus* Ridibellae class. nov.

Candidatus Ridibellae (NL. fem. n. *c__Ridibellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1439.* The type genus for the taxon is *Candidatus* Ridibella .

According to GTDB R06-RS202, this class belongs to the phylum *Aureabacteria_A*.

Description of *Candidatus* Ridibia cocolessa sp. nov.

Candidatus Ridibia cocolessa (NL. fem. n. *cocolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED27 sp002687495*. The type genome for the species is the GenBank assembly GCA_002687495.1. The GC content of the type genome is 43.56 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Ridibia gen. nov.

Candidatus Ridibia (NL. fem. n. *Ridibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED27*. The type species for the genus is *Candidatus* Ridibia cocolessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ridibia nefanastra sp. nov.

Candidatus Ridibia nefanastra (NL. fem. n. *nefanastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED27 sp002167715*. The type genome for the species is the GenBank assembly GCA_002167715.1. The GC content of the type genome is 42.55 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Ridibida cimitibra sp. nov.

Candidatus Ridibida cimitibra (NL. fem. n. *cimitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002722245 sp002722245*. The type genome for the species is the GenBank assembly GCA_002722245.1. The GC content of the type genome is 34.72 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Ridibida gen. nov.

Candidatus Ridibida (NL. fem. n. *Ridibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002722245*. The type species for the genus is *Candidatus* Ridibida cimitibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002722245*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ridibidaceae.

Description of *Candidatus* Ridibidaceae fam. nov.

Candidatus Ridibidaceae (NL. fem. n. *Ridibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002722245.* The type genus for the taxon is *Candidatus* Ridibida .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Ridibida inpinimonas sp. nov.

Candidatus Ridibida inpinimonas (NL. fem. n. *inpinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002722245 sp002720635*. The type genome for the species is the GenBank assembly GCA_002720635.1. The GC content of the type genome is 33.92 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Ridibida nivomibra sp. nov.

Candidatus Ridibida nivomibra (NL. fem. n. *nivomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002722245 sp002717515*. The type genome for the species is the GenBank assembly GCA_002717515.1. The GC content of the type genome is 33.93 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Ridibosa ceromitura sp. nov.

Candidatus Ridibosa ceromitura (NL. fem. n. *ceromitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-302 sp001916775*. The type genome for the species is the GenBank assembly GCA_000437695.1. The GC content of the type genome is 26.13 % and the genome length is 1.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Ridibosa gen. nov.

Candidatus Ridibosa (NL. fem. n. *Ridibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-302*. The type species for the genus is *Candidatus* Ridibosa ceromitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Ridibosa demadessa sp. nov.

Candidatus Ridibosa demadessa (NL. fem. n. *demadessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-302 sp900543825*. The type genome for the species is the GenBank assembly RS_GCF_900759195.1. The GC content of the type genome is 26.67 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Ridibosa docibago sp. nov.

Candidatus Ridibosa docibago (NL. fem. n. *docibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-302 sp900549325*. The type genome for the species is the GenBank assembly RS_GCF_900772355.1. The GC content of the type genome is 27.15 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Ridibosa nefanibula sp. nov.

Candidatus Ridibosa nefanibula (NL. fem. n. *nefanibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-302 sp900548425*. The type genome for the species is the GenBank assembly RS_GCF_900758615.1. The GC content of the type genome is 26.49 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Ridibosa rarefousia sp. nov.

Candidatus Ridibosa rarefousia (NL. fem. n. *rarefousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-302 sp002375205*. The type genome for the species is the GenBank assembly GCA_002375205.1. The GC content of the type genome is 26.71 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Ridibosa sacopifica sp. nov.

Candidatus Ridibosa sacopifica (NL. fem. n. *sacopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-302 sp900554615*. The type genome for the species is the GenBank assembly RS_GCF_900772265.1. The GC content of the type genome is 26.87 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Ridibosa tegumitia sp. nov.

Candidatus Ridibosa tegumitia (NL. fem. n. *tegumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-302 sp000431795*. The type genome for the species is the GenBank assembly GCA_900543855.1. The GC content of the type genome is 26.81 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Ridibula dehinax sp. nov.

Candidatus Ridibula dehinax (NL. fem. n. *dehinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFTJ01 sp004557385*. The type genome for the species is the GenBank assembly GCA_004557385.1. The GC content of the type genome is 49.52 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Ridibula gen. nov.

Candidatus Ridibula (NL. fem. n. *Ridibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFTJ01*. The type species for the genus is *Candidatus* Ridibula dehinax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ridibula excocigena sp. nov.

Candidatus Ridibula excocigena (NL. fem. n. *excocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFTJ01 sp900769345*. The type genome for the species is the GenBank assembly RS_GCF_900769345.1. The GC content of the type genome is 47.23 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Ridibula opuscitoga sp. nov.

Candidatus Ridibula opuscitoga (NL. fem. n. *opuscitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFTJ01 sp004563195*. The type genome for the species is the GenBank assembly GCA_004563195.1. The GC content of the type genome is 47.51 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Riesia inornatio sp. nov.

Candidatus Riesia inornatio (NL. fem. n. *inornatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Riesia sp002074035*. The type genome for the species is the GenBank assembly GCA_002074035.1. The GC content of the type genome is 25.07 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Rifleibacterium epogditia sp. nov.

Candidatus Rifleibacterium epogditia (NL. fem. n. *epogditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rifleibacterium sp009928855*. The type genome for the species is the GenBank assembly GCA_009928855.1. The GC content of the type genome is 45.8 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Rifleibacterium impiribula sp. nov.

Candidatus Rifleibacterium impiribula (NL. fem. n. *impiribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rifleibacterium sp001787855*. The type genome for the species is the GenBank assembly GCA_001787855.1. The GC content of the type genome is 49.58 % and the genome length is 4.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Rifleibacterium ratifago sp. nov.

Candidatus Rifleibacterium ratifago (NL. fem. n. *ratifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rifleibacterium sp002839435*. The type genome for the species is the GenBank assembly GCA_002839435.1. The GC content of the type genome is 50.1 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Rifleibacterium repudimonas sp. nov.

Candidatus Rifleibacterium repudimonas (NL. fem. n. *repudimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rifleibacterium sp002839445*. The type genome for the species is the GenBank assembly GCA_002839445.1. The GC content of the type genome is 49.88 % and the genome length is 5.68 Mbp.

Description of *Candidatus* Rinocana manupetta sp. nov.

Candidatus Rinocana manupetta (NL. fem. n. *manupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SZUA-182 sp003230635*. The type genome for the species is the GenBank assembly GCA_003230635.1. The GC content of the type genome is 50.46 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Rinocana gen. nov.

Candidatus Rinocana (NL. fem. n. *Rinocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-182*. The type species for the genus is *Candidatus* Rinocana manupetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-182*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rinocanaceae.

Description of *Candidatus* Rinocanaceae fam. nov.

Candidatus Rinocanaceae (NL. fem. n. *Rinocanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-182.* The type genus for the taxon is *Candidatus* Rinocana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-182*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rinocanales.

Description of *Candidatus* Rinocanales ord. nov.

Candidatus Rinocanales (NL. fem. n. *Rinocanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-182.* The type genus for the taxon is *Candidatus* Rinocana .

According to the original version of GTDB R06-RS202, this family belongs to the class *SZUA-182*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rinocanae.

Description of *Candidatus* Rinocanae class. nov.

Candidatus Rinocanae (NL. fem. n. *c__Rinocanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *SZUA-182*. The type genus for the taxon is *Candidatus* Rinocana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *SZUA-182*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Rinocanota.

Description of *Candidatus* Rinocanota phyl. nov.

Candidatus Rinocanota (NL. fem. n. *Rinocanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-182*. The type genus for the taxon is *Candidatus* Rinocana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Rinocaria vitifilenta sp. nov.

Candidatus Rinocaria vitifilenta (NL. fem. n. *vitifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZPG01 sp012797375*. The type genome for the species is the GenBank assembly GCA_012797375.1. The GC content of the type genome is 62.92 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Rinocaria gen. nov.

Candidatus Rinocaria (NL. fem. n. *Rinocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZPG01*. The type species for the genus is *Candidatus* Rinocaria vitifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4085*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomacellaceae.

Description of *Candidatus* Rinocella mimogitrix sp. nov.

Candidatus Rinocella mimogitrix (NL. fem. n. *mimogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JABCPO02 sp013333105*. The type genome for the species is the GenBank assembly GCA_013333105.2. The GC content of the type genome is 24.66 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Rinocella gen. nov.

Candidatus Rinocella (NL. fem. n. *Rinocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCPO02*. The type species for the genus is *Candidatus* Rinocella mimogitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Rinocia bicoditrix sp. nov.

Candidatus Rinocia bicoditrix (NL. fem. n. *bicoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp002439755*. The type genome for the species is the GenBank assembly GCA_002439755.1. The GC content of the type genome is 47.38 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Rinocia gen. nov.

Candidatus Rinocia (NL. fem. n. *Rinocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6382*. The type species for the genus is *Candidatus* Rinocia bicoditrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rinocia bugilitoga sp. nov.

Candidatus Rinocia bugilitoga (NL. fem. n. *bugilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp900316315*. The type genome for the species is the

GenBank assembly GCA_900316315.1. The GC content of the type genome is 52.0 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Rinocia casabisca sp. nov.

Candidatus Rinocia casabisca (NL. fem. n. *casabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp902792555*. The type genome for the species is the GenBank assembly GCA_902792555.1. The GC content of the type genome is 53.3 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Rinocia coninousia sp. nov.

Candidatus Rinocia coninousia (NL. fem. n. *coninousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp002372095*. The type genome for the species is the GenBank assembly GCA_902766625.1. The GC content of the type genome is 44.77 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Rinocia daducimonas sp. nov.

Candidatus Rinocia daducimonas (NL. fem. n. *daducimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp900557555*. The type genome for the species is the GenBank assembly GCA_900557555.1. The GC content of the type genome is 47.0 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Rinocia defalax sp. nov.

Candidatus Rinocia defalax (NL. fem. n. *defalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp002315195*. The type genome for the species is the GenBank assembly GCA_002315195.1. The GC content of the type genome is 45.7 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Rinocia denigitia sp. nov.

Candidatus Rinocia denigitia (NL. fem. n. *denigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp900318305*. The type genome for the species is the GenBank assembly GCA_902759935.1. The GC content of the type genome is 44.53 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Rinocia futatitia sp. nov.

Candidatus Rinocia futatitia (NL. fem. n. *futatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp902788275*. The type genome for the species is the GenBank assembly GCA_902788275.1. The GC content of the type genome is 51.89 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Rinocia halucigena sp. nov.

Candidatus Rinocia halucigena (NL. fem. n. *halucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp003446955*. The type genome for the species is the GenBank assembly GCA_003446955.1. The GC content of the type genome is 44.28 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Rinocia vecorago sp. nov.

Candidatus Rinocia vecorago (NL. fem. n. *vecorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6382 sp902773055*. The type genome for the species is the GenBank assembly GCA_902773055.1. The GC content of the type genome is 45.39 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Rinocida negotastra sp. nov.

Candidatus Rinocida negotastra (NL. fem. n. *negotastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-8 sp001917905*. The type genome for the species is the GenBank assembly GCA_001920805.1. The GC content of the type genome is 64.95 % and the genome length is 4.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 20cm depth; 4 days after first rain event (27mm)".

Description of *Candidatus* Rinocida gen. nov.

Candidatus Rinocida (NL. fem. n. *Rinocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40CM-4-65-8*. The type species for the genus is *Candidatus* Rinocida negotastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Rinocosa adfanimonas sp. nov.

Candidatus Rinocosa adfanimonas (NL. fem. n. *adfanimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA721 sp012965455*. The type genome for the species is the GenBank assembly GCA_012965455.1. The GC content of the type genome is 48.88 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Rinocosa gen. nov.

Candidatus Rinocosa (NL. fem. n. *Rinocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA721*. The type species for the genus is *Candidatus* Rinocosa adfanimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rinocosa arvecibra sp. nov.

Candidatus Rinocosa arvecibra (NL. fem. n. *arvecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA721 sp002705165*. The type genome for the species is the GenBank assembly GCA_002705165.1. The GC content of the type genome is 48.09 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Rinocosa bigaratica sp. nov.

Candidatus Rinocosa bigaratica (NL. fem. n. *bigaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA721 sp002709045*. The type genome for the species is the GenBank assembly GCA_002709045.1. The GC content of the type genome is 46.53 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Rinocosa cucuritudo sp. nov.

Candidatus Rinocosa cucuritudo (NL. fem. n. *cucuritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA721 sp002348315*. The type genome for the species is the GenBank assembly GCA_002348315.1. The GC content of the type genome is 49.07 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Rinocosa decunitura sp. nov.

Candidatus Rinocosa decunitura (NL. fem. n. *decunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA721 sp002701385*. The type genome for the species is the GenBank assembly GCA_002480325.1. The GC content of the type genome is 48.37 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Rinocosa defarugo sp. nov.

Candidatus Rinocosa defarugo (NL. fem. n. *defarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA721 sp002698965*. The type genome for the species is the GenBank assembly GCA_002698965.1. The GC content of the type genome is 46.52 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Rinocosa expuriforma sp. nov.

Candidatus Rinocosa expuriforma (NL. fem. n. *expuriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA721 sp002717145*. The type genome for the species is the GenBank assembly GCA_002717145.1. The GC content of the type genome is 47.85 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Rinocula cucuritica sp. nov.

Candidatus Rinocula cucuritica (NL. fem. n. *cucuritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4744 sp002403855*. The type genome for the species is the GenBank assembly GCA_002403855.1. The GC content of the type genome is 63.97 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Rinocula gen. nov.

Candidatus Rinocula (NL. fem. n. *Rinocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4744*. The type species for the genus is *Candidatus* Rinocula cucuritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4744*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rinoculaceae.

Description of *Candidatus* Rinoculaceae fam. nov.

Candidatus Rinoculaceae (NL. fem. n. *Rinoculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4744.* The type genus for the taxon is *Candidatus* Rinocula .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA5794. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rudicellales.

Description of *Candidatus* Rippkaea admuribula sp. nov.

Candidatus Rippkaea admuribula (NL. fem. n. *admuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rippkaea sp002110465*. The type genome for the species is the GenBank assembly RS_GCF_002110465.1. The GC content of the type genome is 38.67 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Rippkaea ignifentia sp. nov.

Candidatus Rippkaea ignifentia (NL. fem. n. *ignifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rippkaea sp000829235*. The type genome for the species is the GenBank assembly RS_GCF_000829235.1. The GC content of the type genome is 33.41 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Rippkaea munimatio sp. nov.

Candidatus Rippkaea munimatio (NL. fem. n. *munimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rippkaea sp003448685*. The type genome for the species is the GenBank assembly GCA_003448685.1. The GC content of the type genome is 37.34 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Rippkaea smegmiforma sp. nov.

Candidatus Rippkaea smegmiforma (NL. fem. n. *smegmiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rippkaea sp003574135*. The type genome for the species is the GenBank assembly RS_GCF_003574135.1. The GC content of the type genome is 33.93 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Risibana conopatica sp. nov.

Candidatus Risibana conopatica (NL. fem. n. *conopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-45-22 sp001803565*. The type genome for the species is the GenBank assembly GCA_001803565.1. The GC content of the type genome is 45.15 % and the genome length is 3.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Risibana gen. nov.

Candidatus Risibana (NL. fem. n. *Risibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-45-22*. The type species for the genus is *Candidatus* Risibana conopatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-45-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Risibanaceae.

Description of *Candidatus* Risibanaceae fam. nov.

Candidatus Risibanaceae (NL. fem. n. *Risibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-45-22.* The type genus for the taxon is *Candidatus* Risibana .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-12-FULL-45-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Risibanales.

Description of *Candidatus* Risibanales ord. nov.

Candidatus Risibanales (NL. fem. n. *Risibanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-45-22.* The type genus for the taxon is *Candidatus* Risibana .

According to the original version of GTDB R06-RS202, this family belongs to the class *2-12-FULL-45-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Risibanae.

Description of *Candidatus* Risibanae class. nov.

Candidatus Risibanae (NL. fem. n. *c__Risibanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-45-22.* The type genus for the taxon is *Candidatus* Risibana .

According to GTDB R06-RS202, this class belongs to the phylum *Nitrospinota_B*.

Description of *Candidatus* Risibaria acistitrix sp. nov.

Candidatus Risibaria acistitrix (NL. fem. n. *acistitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFXC01 sp013361745*. The type genome for the species is the GenBank assembly GCA_013361745.1. The GC content of the type genome is 69.53 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Risibaria gen. nov.

Candidatus Risibaria (NL. fem. n. *Risibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFXC01*. The type species for the genus is *Candidatus* Risibaria acistitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Risibaria ludifitoga sp. nov.

Candidatus Risibaria ludifitoga (NL. fem. n. *ludifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFXC01 sp013361935*. The type genome for the species is the GenBank assembly GCA_013362655.1. The GC content of the type genome is 70.19 %

and the genome length is 3.68 Mbp.

Description of *Candidatus* Risibella pinifigena sp. nov.

Candidatus Risibella pinifigena (NL. fem. n. *pinifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5123 sp002414225*. The type genome for the species is the GenBank assembly GCA_002414225.1. The GC content of the type genome is 63.19 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Risibella gen. nov.

Candidatus Risibella (NL. fem. n. *Risibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5123*. The type species for the genus is *Candidatus* Risibella pinifigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Risibella tolutitoga sp. nov.

Candidatus Risibella tolutitoga (NL. fem. n. *tolutitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5123 sp002415465*. The type genome for the species is the GenBank assembly GCA_002415465.1. The GC content of the type genome is 61.01 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Risibida bipenessa sp. nov.

Candidatus Risibida bipenessa (NL. fem. n. *bipenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZHN01 sp012510695*. The type genome for the species is the GenBank assembly GCA_012510695.1. The GC content of the type genome is 27.83 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Risibida gen. nov.

Candidatus Risibida (NL. fem. n. *Risibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZHN01*. The type species for the genus is *Candidatus* Risibida bipenessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Risibosa nimirisca sp. nov.

Candidatus Risibosa nimirisca (NL. fem. n. *nimirisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKBL01 sp903825645*. The type genome for the species is the GenBank assembly GCA_903912675.1. The GC content of the type genome is 57.7 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Risibosa gen. nov.

Candidatus Risibosa (NL. fem. n. *Risibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKBL01*. The type species for the genus is *Candidatus* Risibosa nimirisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077536*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Delebidaceae.

Description of *Candidatus* Risibosa sacopibra sp. nov.

Candidatus Risibosa sacopibra (NL. fem. n. *sacopibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKBL01 sp009692265*. The type genome for the species is the GenBank assembly GCA_009692265.1. The GC content of the type genome is 57.09 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Risibula regigitio sp. nov.

Candidatus Risibula regigitio (NL. fem. n. *regigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDYQ01 sp902810725*. The type genome for the species is the GenBank assembly RS_GCF_902810725.1. The GC content of the type genome is 55.18 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Risibula gen. nov.

Candidatus Risibula (NL. fem. n. *Risibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDYQ01*. The type species for the genus is *Candidatus* Risibula regigitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rivicola lanigilenta sp. nov.

Candidatus Rivicola lanigilenta (NL. fem. n. *lanigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rivicola sp002002905*. The type genome for the species is the GenBank assembly RS_GCF_002002905.1. The GC content of the type genome is 61.58 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Rivularia conabilenta sp. nov.

Candidatus Rivularia conabilenta (NL. fem. n. *conabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rivularia sp002361335*. The type genome for the species is the GenBank assembly GCA_002385345.1. The GC content of the type genome is 37.21 % and the genome length is 8.06 Mbp.

Description of *Candidatus* Rivularia deciticula sp. nov.

Candidatus Rivularia deciticula (NL. fem. n. *deciticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rivularia sp012033205*. The type genome for the species is the GenBank assembly GCA_012032385.1. The GC content of the type genome is 37.42 % and the genome length is 9.61 Mbp.

Description of *Candidatus* Rivularia vagabitio sp. nov.

Candidatus Rivularia vagabitio (NL. fem. n. *vagabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rivularia sp000316665*. The type genome for the species is the GenBank assembly RS_GCF_000316665.1. The GC content of the type genome is 37.53 % and the genome length is 8.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "unialgal culture in marine water".

Description of *Candidatus* Robbsia homoledo sp. nov.

Candidatus Robbsia homoledo (NL. fem. n. *homoledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robbsia sp900095735*. The type genome for the species is the GenBank assembly RS_GCF_900095735.1. The GC content of the type genome is 66.24 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Robertmurraya infisimonia sp. nov.

Candidatus Robertmurraya infisimonia (NL. fem. n. *infisimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robertmurraya sp003586445*. The type genome for the species is the GenBank assembly RS_GCF_003586445.1. The GC content of the type genome is 38.49 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Robertmurraya inmoricella sp. nov.

Candidatus Robertmurraya inmoricella (NL. fem. n. *inmoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robertmurraya sp002480735*. The type genome for the species is the GenBank assembly GCA_002480735.1. The GC content of the type genome is 40.58 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Robertmurraya nugivisca sp. nov.

Candidatus Robertmurraya nugivisca (NL. fem. n. *nugivisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robertmurraya sp009917645*. The type genome for the species is the GenBank assembly RS_GCF_009917645.1. The GC content of the type genome is 37.95 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Robertmurraya vepaligena sp. nov.

Candidatus Robertmurraya vepaligena (NL. fem. n. *vepaligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robertmurraya sp011524525*. The type genome for the species is the GenBank assembly GCA_011524525.1. The GC content of the type genome is 38.83 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Robigana blactitia sp. nov.

Candidatus Robigana blactitia (NL. fem. n. *blactitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZDN01 sp012512595*. The type genome for the species is the GenBank assembly GCA_012512595.1. The GC content of the type genome is 32.28 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Robigana gen. nov.

Candidatus Robigana (NL. fem. n. *Robigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZDN01*. The type species for the genus is *Candidatus* Robigana blactitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Robigana maligimonia sp. nov.

Candidatus Robigana maligimonia (NL. fem. n. *maligimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZDN01 sp012512805*. The type genome for the species is the GenBank assembly GCA_012512805.1. The GC content of the type genome is 35.3 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Robigana perabitio sp. nov.

Candidatus Robigana perabitio (NL. fem. n. *perabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZDN01 sp012735275*. The type genome for the species is the GenBank assembly GCA_012735275.1. The GC content of the type genome is 33.34 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Robigaria satacibra sp. nov.

Candidatus Robigaria satacibra (NL. fem. n. *satacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSR01 sp007130365*. The type genome for the species is the GenBank assembly GCA_007130365.1. The GC content of the type genome is 61.05 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Robigaria gen. nov.

Candidatus Robigaria (NL. fem. n. *Robigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLSR01*. The type species for the genus is *Candidatus* Robigaria satacibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUNB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desepellaceae.

Description of *Candidatus* Robigella foriniforma sp. nov.

Candidatus Robigella foriniforma (NL. fem. n. *foriniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG705 sp902788975*. The type genome for the species is the GenBank assembly GCA_902788975.1. The GC content of the type genome is 26.63 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Robigella gen. nov.

Candidatus Robigella (NL. fem. n. *Robigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG705*. The type species for the genus is *Candidatus* Robigella foriniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Robigella ratifastra sp. nov.

Candidatus Robigella ratifastra (NL. fem. n. *ratifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG705 sp900759875*. The type genome for the species is the GenBank assembly RS_GCF_900759875.1. The GC content of the type genome is 27.77 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Robigella semibentia sp. nov.

Candidatus Robigella semibentia (NL. fem. n. *semibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG705 sp900321645*. The type genome for the species is the GenBank assembly GCA_900321645.1. The GC content of the type genome is 29.09 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Robigella vitifitudo sp. nov.

Candidatus Robigella vitifitudo (NL. fem. n. *vitifitudo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG705 sp900551455*. The type genome for the species is the GenBank assembly GCA_900551455.1. The GC content of the type genome is 28.05 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Robigia fidenimonia sp. nov.

Candidatus Robigia fidenimonia (NL. fem. n. *fidenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMPC01 sp903843285*. The type genome for the species is the GenBank assembly GCA_903899255.1. The GC content of the type genome is 45.61 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Robigia gen. nov.

Candidatus Robigia (NL. fem. n. *Robigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMPC01*. The type species for the genus is *Candidatus* Robigia fidenimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-45-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxanulaceae.

Description of *Candidatus* Robiginitalea dilogetta sp. nov.

Candidatus Robiginitalea dilogetta (NL. fem. n. *dilogetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitalea sp006227965*. The type genome for the species is the GenBank assembly GCA_006227965.1. The GC content of the type genome is 51.6 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Robiginitalea regifitio sp. nov.

Candidatus Robiginitalea regifitio (NL. fem. n. *regifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitalea sp014243345*. The type genome for the species is the GenBank assembly RS_GCF_014243345.1. The GC content of the type genome is 55.3 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Robiginitomaculum arancitas sp. nov.

Candidatus Robiginitomaculum arancitas (NL. fem. n. *arancitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitomaculum_A sp002732685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002732685.1. The GC content of the type genome is 47.48 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Robiginitomaculum feditritrix sp. nov.

Candidatus Robiginitomaculum feditritrix (NL. fem. n. *feditritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitomaculum_A sp002733605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002733605.1. The GC content of the type genome is 50.01 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Robiginitomaculum musuliforma sp. nov.

Candidatus Robiginitomaculum musuliforma (NL. fem. n. *musuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitomaculum_A sp002733385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002733385.1. The GC content of the type genome is 49.88 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Robiginitomaculum obvoletta sp. nov.

Candidatus Robiginitomaculum obvoletta (NL. fem. n. *obvoletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitomaculum_A sp002733905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002733905.1. The GC content of the type genome is 45.12 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Robiginitomaculum pedifitura sp. nov.

Candidatus Robiginitomaculum pedifitura (NL. fem. n. *pedifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitomaculum_A sp002732905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002732905.1. The GC content of the type genome is 47.57 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Robiginitomaculum solacetta sp. nov.

Candidatus Robiginitomaculum solacetta (NL. fem. n. *solacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitomaculum_A sp004283035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004283035.1. The GC content of the type genome is 49.85 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Robiginitomaculum abagmentia sp. nov.

Candidatus Robiginitomaculum abagmentia (NL. fem. n. *abagmentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitomaculum_B sp002733805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_002733805.1. The GC content of the type genome is 51.54 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Robiginitomaculum eclecifica sp. nov.

Candidatus Robiginitomaculum eclecifica (NL. fem. n. *eclecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitomaculum_B sp002733495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002733495.1. The GC content of the type genome is 52.53 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Robiginitomaculum medimimonas sp. nov.

Candidatus Robiginitomaculum medimimonas (NL. fem. n. *medimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robiginitomaculum_B sp002733485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002733485.1. The GC content of the type genome is 53.89 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Robigosa pulegastra sp. nov.

Candidatus Robigosa pulegastra (NL. fem. n. *pulegastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-42-11 sp001797495*. The type genome for the species is the GenBank assembly GCA_003532155.1. The GC content of the type genome is 42.1 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Robigosa gen. nov.

Candidatus Robigosa (NL. fem. n. *Robigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-42-11*. The type species for the genus is *Candidatus* Robigosa pulegastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-42-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Robigosaceae.

Description of *Candidatus* Robigosaceae fam. nov.

Candidatus Robigosaceae (NL. fem. n. *Robigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-42-11.* The type genus for the taxon is *Candidatus* Robigosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabifellales.

Description of *Candidatus* Robigula figilivita sp. nov.

Candidatus Robigula figilivita (NL. fem. n. *figilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *50-218 sp001508855*. The type genome for the species is the GenBank assembly GCA_001508855.1. The GC content of the type genome is 50.39 % and the genome length is 1.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample K3".

Description of *Candidatus* Robigula gen. nov.

Candidatus Robigula (NL. fem. n. *Robigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *50-218*. The type species for the genus is *Candidatus* Robigula figilivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Robinsoniella daducitio sp. nov.

Candidatus Robinsoniella daducitio (NL. fem. n. *daducitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Robinsoniella sp900555455*. The type genome for the species is the GenBank assembly GCA_900555455.1. The GC content of the type genome is 42.12 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Robinsoniella forabitoga sp. nov.

Candidatus Robinsoniella forabitoga (NL. fem. n. *forabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robinsoniella sp900540475*. The type genome for the species is the GenBank assembly GCA_900755125.1. The GC content of the type genome is 41.82 % and the genome length is 7.64 Mbp.

Description of *Candidatus* Robinsoniella lucelago sp. nov.

Candidatus Robinsoniella lucelago (NL. fem. n. *lucelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Robinsoniella sp900539655*. The type genome for the species is the GenBank assembly GCA_900755165.1. The GC content of the type genome is 41.7 % and the genome length is 7.47 Mbp.

Description of *Candidatus* Rodentibacter coturitrix sp. nov.

Candidatus Rodentibacter coturitrix (NL. fem. n. *coturitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rodentibacter sp901420285*. The type genome for the species is the GenBank assembly GCA_901420285.1. The GC content of the type genome is 44.22 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Rodentibacter monodibula sp. nov.

Candidatus Rodentibacter monodibula (NL. fem. n. *monodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rodentibacter sp001999425*. The type genome for the species is the GenBank assembly RS_GCF_001999425.1. The GC content of the type genome is 39.84 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Rodentibacter solivitas sp. nov.

Candidatus Rodentibacter solivitas (NL. fem. n. *solivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rodentibacter sp001999335*. The type genome for the species is the GenBank assembly RS_GCF_001999335.1. The GC content of the type genome is 40.16 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Rodentibacter vocamitica sp. nov.

Candidatus Rodentibacter vocamitica (NL. fem. n. *vocamitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rodentibacter sp001999285*. The type genome for the species is the GenBank assembly RS_GCF_001999285.1. The GC content of the type genome is 39.99 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Romboutsia ignifigena sp. nov.

Candidatus Romboutsia ignifigena (NL. fem. n. *ignifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Romboutsia sp000686145*. The type genome for the species is the GenBank assembly RS_GCF_000686145.1. The GC content of the type genome is 28.63 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Rorarana recomugo sp. nov.

Candidatus Rorarana recomugo (NL. fem. n. *recomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0112 sp006227085*. The type genome for the species is the GenBank assembly GCA_006227085.1. The GC content of the type genome is 57.82 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Rorarana gen. nov.

Candidatus Rorarana (NL. fem. n. *Rorarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M0112*. The type species for the genus is *Candidatus* Rorarana recomugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *M0112*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Roraranaceae.

Description of *Candidatus* Roraranaceae fam. nov.

Candidatus Roraranaceae (NL. fem. n. *Roraranaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *M0112.* The type genus for the taxon is *Candidatus* Rorarana .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Rorararia adfulax sp. nov.

Candidatus Rorararia adfulax (NL. fem. n. *adfulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACPI01 sp009995545*. The type genome for the species is the GenBank assembly GCA_009995545.1. The GC content of the type genome is 34.69 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Rorararia gen. nov.

Candidatus Rorararia (NL. fem. n. *Rorararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACPI01*. The type species for the genus is *Candidatus* Rorararia adfulax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACPI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorararia ceae.

Description of *Candidatus* Rorararia ceae fam. nov.

Candidatus Rorararia ceae (NL. fem. n. *Rorararia ceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAACPI01*. The type genus for the taxon is *Candidatus* Rorararia .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-01-FULL-39-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domiculales.

Description of *Candidatus* Rorarella benifastra sp. nov.

Candidatus Rorarella benifastra (NL. fem. n. *benifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYMJ01 sp012521455*. The type genome for the species is the GenBank assembly GCA_012521455.1. The GC content of the type genome is 41.22 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Rorarella gen. nov.

Candidatus Rorarella (NL. fem. n. *Rorarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYMJ01*. The type species for the genus is *Candidatus* Rorarella benifastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYMJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorarellaceae.

Description of *Candidatus* Rorarellaceae fam. nov.

Candidatus Rorarellaceae (NL. fem. n. *Rorarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYMJ01*. The type genus for the taxon is *Candidatus* Rorarella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UMGS1883*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defasiales.

Description of *Candidatus* Roraria abinditoga sp. nov.

Candidatus Roraria abinditoga (NL. fem. n. *abinditoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902783595*. The type genome for the species is the GenBank assembly GCA_902783595.1. The GC content of the type genome is 54.08 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Roraria gen. nov.

Candidatus Roraria (NL. fem. n. *Roraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1711*. The type species for the genus is *Candidatus* Roraria abinditoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucosaceae.

Description of *Candidatus* Roraria abrepago sp. nov.

Candidatus Roraria abrepago (NL. fem. n. *abrepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp002368955*. The type genome for the species is the GenBank assembly GCA_002368955.1. The GC content of the type genome is 52.13 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Roraria acertitas sp. nov.

Candidatus Roraria acertitas (NL. fem. n. *acertitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp001543385*. The type genome for the species is the GenBank assembly GCA_001543385.1. The GC content of the type genome is 52.5 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rumen fluid".

Description of *Candidatus* Roraria acricibula sp. nov.

Candidatus Roraria acricibula (NL. fem. n. *acricibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp002317325*. The type genome for the species is the GenBank assembly GCA_002317325.1. The GC content of the type genome is 57.88 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Roraria admoriforma sp. nov.

Candidatus Roraria admoriforma (NL. fem. n. *admoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp002392965*. The type genome for the species is the GenBank assembly GCA_002392965.1. The GC content of the type genome is 54.16 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Roraria arbavetta sp. nov.

Candidatus Roraria arbavetta (NL. fem. n. *arbavetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp002373995*. The type genome for the species is the GenBank assembly GCA_002373995.1. The GC content of the type genome is 56.15 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Roraria assubifica sp. nov.

Candidatus Roraria assubifica (NL. fem. n. *assubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902774395*. The type genome for the species is the GenBank assembly GCA_902774395.1. The GC content of the type genome is 54.73 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Roraria bipaticula sp. nov.

Candidatus Roraria bipaticula (NL. fem. n. *bipaticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902791695*. The type genome for the species is the GenBank assembly GCA_902791695.1. The GC content of the type genome is 54.85 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Roraria cacopedo sp. nov.

Candidatus Roraria cacopedo (NL. fem. n. *cacopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902771735*. The type genome for the species is the GenBank assembly GCA_902769615.1. The GC content of the type genome is 54.1 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Roraria catapibra sp. nov.

Candidatus Roraria catapibra (NL. fem. n. *catapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900314925*. The type genome for the species is the GenBank assembly GCA_900314925.1. The GC content of the type genome is 56.87 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Roraria cibaritica sp. nov.

Candidatus Roraria cibaritica (NL. fem. n. *cibaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900317125*. The type genome for the species is the GenBank assembly GCA_902759065.1. The GC content of the type genome is 52.75 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Roraria colubilega sp. nov.

Candidatus Roraria colubilega (NL. fem. n. *colubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900318665*. The type genome for the species is the GenBank assembly GCA_900318665.1. The GC content of the type genome is 50.18 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Roraria crasticella sp. nov.

Candidatus Roraria crasticella (NL. fem. n. *crasticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp002394185*. The type genome for the species is the GenBank assembly GCA_002394185.1. The GC content of the type genome is 57.41 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Roraria detecedo sp. nov.

Candidatus Roraria detecedo (NL. fem. n. *detecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902803395*. The type genome for the species is the GenBank assembly GCA_902803395.1. The GC content of the type genome is 53.18 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Roraria divolivita sp. nov.

Candidatus Roraria divolivita (NL. fem. n. *divolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900316515*. The type genome for the species is the GenBank assembly GCA_900316515.1. The GC content of the type genome is 53.87 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Roraria ermelivita sp. nov.

Candidatus Roraria ermelivita (NL. fem. n. *ermelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902800395*. The type genome for the species is the GenBank assembly GCA_902800395.1. The GC content of the type genome is 53.21 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Roraria fameliforma sp. nov.

Candidatus Roraria fameliforma (NL. fem. n. *fameliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900321975*. The type genome for the species is the GenBank assembly GCA_900321975.1. The GC content of the type genome is 54.7 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Roraria fetifugo sp. nov.

Candidatus Roraria fetifugo (NL. fem. n. *fetifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp002354035*. The type genome for the species is the GenBank assembly GCA_002353375.1. The GC content of the type genome is 54.61 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Roraria forinessa sp. nov.

Candidatus Roraria forinessa (NL. fem. n. *forinessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900319865*. The type genome for the species is the GenBank assembly GCA_902787205.1. The GC content of the type genome is 49.37 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Roraria halucifica sp. nov.

Candidatus Roraria halucifica (NL. fem. n. *halucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900318275*. The type genome for the species is the GenBank assembly GCA_902761505.1. The GC content of the type genome is 56.85 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Roraria hexamedo sp. nov.

Candidatus Roraria hexamedo (NL. fem. n. *hexamedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1711 sp902776365*. The type genome for the species is the GenBank assembly GCA_902773575.1. The GC content of the type genome is 54.38 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Roraria homagatica sp. nov.

Candidatus Roraria homagatica (NL. fem. n. *homagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900320975*. The type genome for the species is the GenBank assembly GCA_902779835.1. The GC content of the type genome is 54.77 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Roraria homolicula sp. nov.

Candidatus Roraria homolicula (NL. fem. n. *homolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902777005*. The type genome for the species is the GenBank assembly GCA_902777005.1. The GC content of the type genome is 54.12 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Roraria inmobivita sp. nov.

Candidatus Roraria inmobivita (NL. fem. n. *inmobivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp002309955*. The type genome for the species is the GenBank assembly GCA_002309955.1. The GC content of the type genome is 49.43 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Roraria ludimibula sp. nov.

Candidatus Roraria ludimibula (NL. fem. n. *ludimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902762805*. The type genome for the species is the GenBank assembly GCA_902762805.1. The GC content of the type genome is 58.23 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Roraria macilitoga sp. nov.

Candidatus Roraria macilitoga (NL. fem. n. *macilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900316235*. The type genome for the species is the GenBank assembly GCA_900316235.1. The GC content of the type genome is 52.83 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Roraria metapitudo sp. nov.

Candidatus Roraria metapitudo (NL. fem. n. *metapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902790215*. The type genome for the species is the GenBank assembly GCA_902782425.1. The GC content of the type genome is 52.09 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Roraria monimibra sp. nov.

Candidatus Roraria monimibra (NL. fem. n. *monimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900771365*. The type genome for the species is the GenBank assembly RS_GCF_900771365.1. The GC content of the type genome is 52.01 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Roraria murelatio sp. nov.

Candidatus Roraria murelatio (NL. fem. n. *murelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900317285*. The type genome for the species is the GenBank assembly GCA_900317285.1. The GC content of the type genome is 54.43 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Roraria pimenessa sp. nov.

Candidatus Roraria pimenessa (NL. fem. n. *pimenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900317955*. The type genome for the species is the GenBank assembly GCA_900317955.1. The GC content of the type genome is 49.45 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Roraria pinacitudo sp. nov.

Candidatus Roraria pinacitudo (NL. fem. n. *pinacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp002349055*. The type genome for the species is the GenBank assembly GCA_002349055.1. The GC content of the type genome is 54.49 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Roraria proprastra sp. nov.

Candidatus Roraria proprastra (NL. fem. n. *proprastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902774845*. The type genome for the species is the GenBank assembly GCA_902774845.1. The GC content of the type genome is 50.75 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Roraria ranunugo sp. nov.

Candidatus Roraria ranunugo (NL. fem. n. *ranunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900318835*. The type genome for the species is the GenBank assembly GCA_900318835.1. The GC content of the type genome is 52.32 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Roraria rubecibula sp. nov.

Candidatus Roraria rubecibula (NL. fem. n. *rubecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1711 sp902778925*. The type genome for the species is the GenBank assembly GCA_902778925.1. The GC content of the type genome is 56.87 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Roraria selecetta sp. nov.

Candidatus Roraria selecetta (NL. fem. n. *selecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902784865*. The type genome for the species is the GenBank assembly GCA_902777525.1. The GC content of the type genome is 58.36 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Roraria semilicula sp. nov.

Candidatus Roraria semilicula (NL. fem. n. *semilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp002372855*. The type genome for the species is the GenBank assembly GCA_902798215.1. The GC content of the type genome is 57.48 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Roraria tenilitoga sp. nov.

Candidatus Roraria tenilitoga (NL. fem. n. *tenilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902782185*. The type genome for the species is the GenBank assembly GCA_902782185.1. The GC content of the type genome is 57.32 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Roraria tiguredo sp. nov.

Candidatus Roraria tiguredo (NL. fem. n. *tiguredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900318175*. The type genome for the species is the GenBank assembly GCA_900318175.1. The GC content of the type genome is 52.76 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Roraria utpotitudo sp. nov.

Candidatus Roraria utpotitudo (NL. fem. n. *utpotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp902775135*. The type genome for the species is the GenBank assembly GCA_902775135.1. The GC content of the type genome is 55.41 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Roraria vinolatica sp. nov.

Candidatus Roraria vinolatica (NL. fem. n. *vinolatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900315935*. The type genome for the species is the GenBank assembly GCA_902788295.1. The GC content of the type genome is 57.99 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Roraria viripax sp. nov.

Candidatus Roraria viripax (NL. fem. n. *viripax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1711 sp900316055*. The type genome for the species is the GenBank assembly GCA_900316055.1. The GC content of the type genome is 51.65 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Rorarida benifivita sp. nov.

Candidatus Rorarida benifivita (NL. fem. n. *benifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-881 sp903870555*. The type genome for the species is the GenBank assembly GCA_903839265.1. The GC content of the type genome is 67.51 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Rorarida gen. nov.

Candidatus Rorarida (NL. fem. n. *Rorarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-881*. The type species for the genus is *Candidatus* Rorarida benifivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rorarida bipenastra sp. nov.

Candidatus Rorarida bipenastra (NL. fem. n. *bipenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-881 sp903923135*. The type genome for the species is the GenBank assembly GCA_903923135.1. The GC content of the type genome is 68.83 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Rorarida cepuritio sp. nov.

Candidatus Rorarida cepuritio (NL. fem. n. *cepuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-881 sp013815405*. The type genome for the species is the GenBank assembly GCA_013815405.1. The GC content of the type genome is 68.56 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Rorarida dimidedo sp. nov.

Candidatus Rorarida dimidedo (NL. fem. n. *dimidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-881 sp003136615*. The type genome for the species is the GenBank assembly GCA_003136615.1. The GC content of the type genome is 65.37 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Rorarida irregastra sp. nov.

Candidatus Rorarida irregastra (NL. fem. n. *irregastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Palsa-881 sp003161535*. The type genome for the species is the GenBank assembly GCA_003161535.1. The GC content of the type genome is 67.25 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Rorarida subadetta sp. nov.

Candidatus Rorarida subadetta (NL. fem. n. *subadetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-881 sp903872075*. The type genome for the species is the GenBank assembly GCA_903841115.1. The GC content of the type genome is 67.41 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Rorarosa malifitio sp. nov.

Candidatus Rorarosa malifitio (NL. fem. n. *malifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-49-34 sp001781205*. The type genome for the species is the GenBank assembly GCA_001781205.1. The GC content of the type genome is 48.41 % and the genome length is 0.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Rorarosa gen. nov.

Candidatus Rorarosa (NL. fem. n. *Rorarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-49-34*. The type species for the genus is *Candidatus* Rorarosa malifitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Rorarosa telefugo sp. nov.

Candidatus Rorarosa telefugo (NL. fem. n. *telefugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-49-34 sp001783515*. The type genome for the species is the GenBank assembly GCA_001781255.1. The GC content of the type genome is 50.42 % and the genome length is 0.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Rorarula lanigatica sp. nov.

Candidatus Rorarula lanigatica (NL. fem. n. *lanigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10122 sp001817215*. The type genome for the species is the GenBank assembly GCA_001817195.1. The GC content of the type genome is 40.94 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Rorarula gen. nov.

Candidatus Rorarula (NL. fem. n. *Rorarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10122*. The type species for the genus is *Candidatus* Rorarula lanigatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rorarula paropitrix sp. nov.

Candidatus Rorarula paropitrix (NL. fem. n. *paropitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10122 sp001001185*. The type genome for the species is the GenBank assembly GCA_001002095.1. The GC content of the type genome is 45.13 % and the genome length is 0.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Rorifana nugivugo sp. nov.

Candidatus Rorifana nugivugo (NL. fem. n. *nugivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6502 sp002436415*. The type genome for the species is the GenBank assembly GCA_002500395.1. The GC content of the type genome is 37.75 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Rorifana gen. nov.

Candidatus Rorifana (NL. fem. n. *Rorifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6502*. The type species for the genus is *Candidatus* Rorifana nugivugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA840*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hemidanaceae.

Description of *Candidatus* Rorifaria rorarentia sp. nov.

Candidatus Rorifaria rorarentia (NL. fem. n. *rorarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ASF356 sp000364165*. The type genome for the species is the GenBank assembly RS_GCF_010206345.1. The GC content of the type genome is 30.66 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Rorifaria gen. nov.

Candidatus Rorifaria (NL. fem. n. *Rorifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ASF356*. The type species for the genus is *Candidatus* Rorifaria rorarentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rorifella venefivita sp. nov.

Candidatus Rorifella venefivita (NL. fem. n. *venefivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVZM01 sp903910385*. The type genome for the species is the GenBank assembly GCA_903882635.1. The GC content of the type genome is 54.39 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Rorifella gen. nov.

Candidatus Rorifella (NL. fem. n. *Rorifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVZM01*. The type species for the genus is *Candidatus* Rorifella venefivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rorifia figilax sp. nov.

Candidatus Rorifia figilax (NL. fem. n. *figilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1519 sp900552585*. The type genome for the species is the GenBank assembly GCA_900552585.1. The GC content of the type genome is 60.9 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Rorifia gen. nov.

Candidatus Rorifia (NL. fem. n. *Rorifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1519*. The type species for the genus is *Candidatus* Rorifia figilax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rorifida venabivita sp. nov.

Candidatus Rorifida venabivita (NL. fem. n. *venabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M10-OD1-4 sp003056085*. The type genome for the species is the GenBank assembly GCA_003056185.1. The GC content of the type genome is 32.79 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Rorifida gen. nov.

Candidatus Rorifida (NL. fem. n. *Rorifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M10-OD1-4*. The type species for the genus is *Candidatus* Rorifida venabivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *M10-OD1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorifidaceae.

Description of *Candidatus* Rorifidaceae fam. nov.

Candidatus Rorifidaceae (NL. fem. n. *Rorifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *M10-OD1-4.* The type genus for the taxon is *Candidatus* Rorifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWC2-36-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Turicariales.

Description of *Candidatus* Rorifosa adfanivita sp. nov.

Candidatus Rorifosa adfanivita (NL. fem. n. *adfanivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-45-19 sp001803415*. The type genome for the species is the GenBank assembly GCA_001803415.1. The GC content of the type genome is 47.71 % and the genome length is 1.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Rorifosa gen. nov.

Candidatus Rorifosa (NL. fem. n. *Rorifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-45-19*. The type species for the genus is *Candidatus* Rorifosa adfanivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-45-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorifosaceae.

Description of *Candidatus* Rorifosaceae fam. nov.

Candidatus Rorifosaceae (NL. fem. n. *Rorifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-45-19.* The type genus for the taxon is *Candidatus* Rorifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Rorifula camilicella sp. nov.

Candidatus Rorifula camilicella (NL. fem. n. *camilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1328 sp002306815*. The type genome for the species is the GenBank assembly GCA_002724375.1. The GC content of the type genome is 52.03 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Rorifula gen. nov.

Candidatus Rorifula (NL. fem. n. *Rorifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1328*. The type species for the genus is *Candidatus* Rorifula camilicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucelanaceae.

Description of *Candidatus* Rorifula detunicella sp. nov.

Candidatus Rorifula detunicella (NL. fem. n. *detunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1328 sp012959765*. The type genome for the species is the GenBank assembly GCA_012959765.1. The GC content of the type genome is 54.11 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Rorifula feditita sp. nov.

Candidatus Rorifula feditita (NL. fem. n. *feditita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1328 sp002501045*. The type genome for the species is the GenBank assembly GCA_002726035.1. The GC content of the type genome is 53.91 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Rorifula nehalifica sp. nov.

Candidatus Rorifula nehalifica (NL. fem. n. *nehalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1328 sp002306745*. The type genome for the species is the GenBank assembly GCA_002348235.1. The GC content of the type genome is 45.1 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Rorifula vitabisca sp. nov.

Candidatus Rorifula vitabisca (NL. fem. n. *vitabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1328 sp013204545*. The type genome for the species is the GenBank assembly GCA_013204545.1. The GC content of the type genome is 50.46 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Rorulana octodivita sp. nov.

Candidatus Rorulana octodivita (NL. fem. n. *octodivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B8-G9 sp003647765*. The type genome for the species is the GenBank assembly GCA_003647765.1. The GC content of the type genome is 32.25 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Rorulana gen. nov.

Candidatus Rorulana (NL. fem. n. *Rorulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B8-G9*. The type species for the genus is *Candidatus* Rorulana octodivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B8-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulanaceae.

Description of *Candidatus* Rorulanaceae fam. nov.

Candidatus Rorulanaceae (NL. fem. n. *Rorulanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B8-G9.* The type genus for the taxon is *Candidatus* Rorulana .

According to the original version of GTDB R06-RS202, this family belongs to the order *JGIOTU-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bimetanales.

Description of *Candidatus* Rorularia incomiforma sp. nov.

Candidatus Rorularia incomiforma (NL. fem. n. *incomiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRQE01 sp011371515*. The type genome for the species is the GenBank assembly GCA_011371515.1. The GC content of the type genome is 49.01 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Rorularia gen. nov.

Candidatus Rorularia (NL. fem. n. *Rorularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRQE01*. The type species for the genus is *Candidatus* Rorularia incomiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRQE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Rorulariaceae.

Description of *Candidatus* Rorulariaceae fam. nov.

Candidatus Rorulariaceae (NL. fem. n. *Rorulariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRQE01.* The type genus for the taxon is *Candidatus* Rorularia .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabifellales.

Description of *Candidatus* Rorulella attemimonas sp. nov.

Candidatus Rorulella attemimonas (NL. fem. n. *attemimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-36 sp014238945*. The type genome for the species is the GenBank assembly GCA_014238945.1. The GC content of the type genome is 52.68 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Rorulella gen. nov.

Candidatus Rorulella (NL. fem. n. *Rorulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-36*. The type species for the genus is *Candidatus* Rorulella attemimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-36*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulellaceae.

Description of *Candidatus* Rorulellaceae fam. nov.

Candidatus Rorulellaceae (NL. fem. n. *Rorulellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-36.* The type genus for the taxon is *Candidatus* Rorulella .

According to GTDB R06-RS202, this family belongs to the order *Xanthomonadales*.

Description of *Candidatus* Rorulella conarentia sp. nov.

Candidatus Rorulella conarentia (NL. fem. n. *conarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-36 sp003233115*. The type genome for the species is the GenBank assembly GCA_003233115.1. The GC content of the type genome is 54.32 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Rorulella offulugo sp. nov.

Candidatus Rorulella offulugo (NL. fem. n. *offulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-36 sp013042835*. The type genome for the species is the GenBank assembly GCA_013042835.1. The GC content of the type genome is 55.61 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Rorulia demagitica sp. nov.

Candidatus Rorulia demagitica (NL. fem. n. *demagitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718715 sp002718715*. The type genome for the species is the GenBank assembly GCA_002718715.1. The GC content of the type genome is 28.23 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Rorulia gen. nov.

Candidatus Rorulia (NL. fem. n. *Rorulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2718715*. The type species for the genus is *Candidatus* Rorulia demagitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2718715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Roruliaceae.

Description of *Candidatus* Roruliaceae fam. nov.

Candidatus Roruliaceae (NL. fem. n. *Roruliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2718715.* The type genus for the taxon is *Candidatus* Rorulia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Rorulida caravimonia sp. nov.

Candidatus Rorulida caravimonia (NL. fem. n. *caravimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2720935 sp002720935*. The type genome for the species is the GenBank assembly GCA_002720935.1. The GC content of the type genome is 38.99 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Rorulida gen. nov.

Candidatus Rorulida (NL. fem. n. *Rorulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2720935*. The type species for the genus is *Candidatus* Rorulida caravimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2720935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulidaceae.

Description of *Candidatus* Rorulidaceae fam. nov.

Candidatus Rorulidaceae (NL. fem. n. *Rorulidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2720935.* The type genus for the taxon is *Candidatus* Rorulida .

According to GTDB R06-RS202, this family belongs to the order *Micavibrionales*.

Description of *Candidatus* Rorulosa exsorimonas sp. nov.

Candidatus Rorulosa exsorimonas (NL. fem. n. *exsorimonas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DG-23 sp001302825*. The type genome for the species is the GenBank assembly GCA_001302825.1. The GC content of the type genome is 52.39 % and the genome length is 2.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Methane-rich estuary sediments 52-54 cm".

Description of *Candidatus* Rorulosa gen. nov.

Candidatus Rorulosa (NL. fem. n. *Rorulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DG-23*. The type species for the genus is *Candidatus* Rorulosa exsorimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DG-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rorulosaceae.

Description of *Candidatus* Rorulosaceae fam. nov.

Candidatus Rorulosaceae (NL. fem. n. *Rorulosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DG-23.* The type genus for the taxon is *Candidatus* Rorulosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DG-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rorulosales.

Description of *Candidatus* Rorulosales ord. nov.

Candidatus Rorulosales (NL. fem. n. *Rorulosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DG-23.* The type genus for the taxon is *Candidatus* Rorulosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *DG-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rorulosae.

Description of *Candidatus* Rorulosae class. nov.

Candidatus Rorulosae (NL. fem. n. *c__Rorulosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DG-23.* The type genus for the taxon is *Candidatus* Rorulosa .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Rorulula buxanax sp. nov.

Candidatus Rorulula buxanax (NL. fem. n. *buxanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Cx-87 sp014529995*. The type genome for the species is the GenBank assembly RS_GCF_014530025.1. The GC content of the type genome is 66.62 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Rorulula gen. nov.

Candidatus Rorulula (NL. fem. n. *Rorulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Cx-87*. The type species for the genus is *Candidatus* Rorulula buxanax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rosacana citipitrix sp. nov.

Candidatus Rosacana citipitrix (NL. fem. n. *citipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7434 sp002339085*. The type genome for the species is the GenBank assembly GCA_002339085.1. The GC content of the type genome is 43.84 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Rosacana gen. nov.

Candidatus Rosacana (NL. fem. n. *Rosacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7434*. The type species for the genus is *Candidatus* Rosacana citipitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7434*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosacanaceae.

Description of *Candidatus* Rosacanaceae fam. nov.

Candidatus Rosacanaceae (NL. fem. n. *Rosacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7434.* The type genus for the taxon is *Candidatus* Rosacana .

According to GTDB R06-RS202, this family belongs to the order *Pseudomonadales*.

Description of *Candidatus* Rosacana deforitio sp. nov.

Candidatus Rosacana deforitio (NL. fem. n. *deforitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7434 sp002726445*. The type genome for the species is the GenBank assembly GCA_003521865.1. The GC content of the type genome is 45.73 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Rosacana diluditrix sp. nov.

Candidatus Rosacana diluditrix (NL. fem. n. *diluditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7434 sp002336035*. The type genome for the species is the GenBank assembly GCA_002336035.1. The GC content of the type genome is 43.9 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Rosacana expasicula sp. nov.

Candidatus Rosacana expasicula (NL. fem. n. *expasicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA7434 sp003492055*. The type genome for the species is the GenBank assembly GCA_003492055.1. The GC content of the type genome is 42.99 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Rosacana megalitudo sp. nov.

Candidatus Rosacana megalitudo (NL. fem. n. *megalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7434 sp002480045*. The type genome for the species is the GenBank assembly GCA_002387705.1. The GC content of the type genome is 47.98 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Rosacana nutabax sp. nov.

Candidatus Rosacana nutabax (NL. fem. n. *nutabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7434 sp004283095*. The type genome for the species is the GenBank assembly GCA_004283095.1. The GC content of the type genome is 53.52 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Rosacaria armipivita sp. nov.

Candidatus Rosacaria armipivita (NL. fem. n. *armipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NSJ-53 sp014384795*. The type genome for the species is the GenBank assembly GCA_014384795.1. The GC content of the type genome is 56.48 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Rosacaria gen. nov.

Candidatus Rosacaria (NL. fem. n. *Rosacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NSJ-53*. The type species for the genus is *Candidatus* Rosacaria armipivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NSJ-53*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Rosacariaceae.

Description of *Candidatus* Rosacariaceae fam. nov.

Candidatus Rosacariaceae (NL. fem. n. *Rosacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *NSJ-53*. The type genus for the taxon is *Candidatus* Rosacaria .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Rosacia adpenastra sp. nov.

Candidatus Rosacia adpenastra (NL. fem. n. *adpenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp902797515*. The type genome for the species is the GenBank assembly GCA_902797515.1. The GC content of the type genome is 47.55 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Rosacia gen. nov.

Candidatus Rosacia (NL. fem. n. *Rosacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10281*. The type species for the genus is *Candidatus* Rosacia adpenastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rosacia bisacicella sp. nov.

Candidatus Rosacia bisacicella (NL. fem. n. *bisacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp000437515*. The type genome for the species is the GenBank assembly GCA_000437515.1. The GC content of the type genome is 45.44 % and the genome length is 1.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Rosacia butubitudo sp. nov.

Candidatus Rosacia butubitudo (NL. fem. n. *butubitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp900548285*. The type genome for the species is the GenBank assembly GCA_900548285.1. The GC content of the type genome is 46.48 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Rosacia ectenibra sp. nov.

Candidatus Rosacia ectenibra (NL. fem. n. *ectenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp902766475*. The type genome for the species is the GenBank assembly GCA_902766475.1. The GC content of the type genome is 45.61 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Rosacia effulilenta sp. nov.

Candidatus Rosacia effulilenta (NL. fem. n. *effulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp900767885*. The type genome for the species is the GenBank assembly RS_GCF_900767885.1. The GC content of the type genome is 45.56 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Rosacia inlapibula sp. nov.

Candidatus Rosacia inlapibula (NL. fem. n. *inlapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp900764105*. The type genome for the species is the GenBank assembly RS_GCF_900764105.1. The GC content of the type genome is 44.55 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Rosacia lavacedo sp. nov.

Candidatus Rosacia lavacedo (NL. fem. n. *lavacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp900767815*. The type genome for the species is the GenBank assembly GCA_902797545.1. The GC content of the type genome is 44.28 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Rosacia obfiressa sp. nov.

Candidatus Rosacia obfiressa (NL. fem. n. *obfiressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp900767495*. The type genome for the species is the GenBank assembly RS_GCF_900767495.1. The GC content of the type genome is 46.06 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Rosacia petulivita sp. nov.

Candidatus Rosacia petulivita (NL. fem. n. *petulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp900554485*. The type genome for the species is the GenBank assembly RS_GCF_900766465.1. The GC content of the type genome is 46.12 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Rosacia refulicella sp. nov.

Candidatus Rosacia refulicella (NL. fem. n. *refulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10281 sp902797945*. The type genome for the species is the GenBank assembly GCA_902797945.1. The GC content of the type genome is 41.05 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Rosacia urbicitica sp. nov.

Candidatus Rosacia urbicitica (NL. fem. n. *urbicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA10281 sp900556195*. The type genome for the species is the GenBank assembly GCA_900556195.1. The GC content of the type genome is 45.84 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Rosacida defuligena sp. nov.

Candidatus Rosacida defuligena (NL. fem. n. *defuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11872 sp009839425*. The type genome for the species is the GenBank assembly GCA_009839425.1. The GC content of the type genome is 66.04 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Rosacida gen. nov.

Candidatus Rosacida (NL. fem. n. *Rosacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11872*. The type species for the genus is *Candidatus* Rosacida defuligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11872*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosacidaceae.

Description of *Candidatus* Rosacidaceae fam. nov.

Candidatus Rosacidaceae (NL. fem. n. *Rosacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11872.* The type genus for the taxon is *Candidatus* Rosacida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11872*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rosacidales.

Description of *Candidatus* Rosacidales ord. nov.

Candidatus Rosacidales (NL. fem. n. *Rosacidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11872.* The type genus for the taxon is *Candidatus* Rosacida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA11872*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rosacidae.

Description of *Candidatus* Rosacidae class. nov.

Candidatus Rosacidae (NL. fem. n. *c__Rosacidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11872.* The type genus for the taxon is *Candidatus* Rosacida .

According to GTDB R06-RS202, this class belongs to the phylum *Chloroflexota*.

Description of *Candidatus* Rosacida utputilega sp. nov.

Candidatus Rosacida utputilega (NL. fem. n. *utputilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11872 sp011523785*. The type genome for the species is the GenBank assembly GCA_011523785.1. The GC content of the type genome is 66.1 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Rosacida viginugo sp. nov.

Candidatus Rosacida viginugo (NL. fem. n. *viginugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11872 sp002433065*. The type genome for the species is the GenBank assembly GCA_002433065.1. The GC content of the type genome is 53.93 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Rosarana latibago sp. nov.

Candidatus Rosarana latibago (NL. fem. n. *latibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12574 sp002712305*. The type genome for the species is the GenBank assembly GCA_002718795.1. The GC content of the type genome is 59.62 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Rosarana gen. nov.

Candidatus Rosarana (NL. fem. n. *Rosarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12574*. The type species for the genus is *Candidatus* Rosarana latibago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8231*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cicatosaceae.

Description of *Candidatus* Rosararia denigicula sp. nov.

Candidatus Rosararia denigicula (NL. fem. n. *denigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10806 sp003520965*. The type genome for the species is the GenBank assembly GCA_003489885.1. The GC content of the type genome is 46.97 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Rosararia gen. nov.

Candidatus Rosararia (NL. fem. n. *Rosararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10806*. The type species for the genus is *Candidatus* Rosararia denigicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10806*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosararia ceae.

Description of *Candidatus* Rosararia ceae fam. nov.

Candidatus Rosararia ceae (NL. fem. n. *Rosararia ceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10806.* The type genus for the taxon is *Candidatus* Rosararia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10806*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Rosarariales.

Description of *Candidatus* Rosarariales ord. nov.

Candidatus Rosarariales (NL. fem. n. *Rosarariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10806.* The type genus for the taxon is *Candidatus* Rosararia .

According to the original version of GTDB R06-RS202, this family belongs to the class *MSB-5A5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Loripellae.

Description of *Candidatus* Rosararia rorarugo sp. nov.

Candidatus Rosararia rorarugo (NL. fem. n. *rorarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10806 sp001775395*. The type genome for the species is the GenBank assembly GCA_001775395.1. The GC content of the type genome is 53.25 % and the genome length is 3.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Rosarella conubibula sp. nov.

Candidatus Rosarella conubibula (NL. fem. n. *conubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26256 sp001023575*. The type genome for the species is the GenBank assembly GCA_009698865.1. The GC content of the type genome is 55.26 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Rosarella gen. nov.

Candidatus Rosarella (NL. fem. n. *Rosarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *IMCC26256*. The type species for the genus is *Candidatus* Rosarella conubibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *IMCC26256*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rosarellaceae.

Description of *Candidatus* Rosarellaceae fam. nov.

Candidatus Rosarellaceae (NL. fem. n. *Rosarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *IMCC26256.* The type genus for the taxon is *Candidatus* Rosarella .

According to the original version of GTDB R06-RS202, this family belongs to the order *IMCC26256*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rosarellales.

Description of *Candidatus* Rosarellales ord. nov.

Candidatus Rosarellales (NL. fem. n. *Rosarellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *IMCC26256.* The type genus for the taxon is *Candidatus* Rosarella .

According to the GTDB R06-RS202, this order belongs to the class *Acidimicrobiia*.

Description of *Candidatus* Rosarella desonimonas sp. nov.

Candidatus Rosarella desonimonas (NL. fem. n. *desonimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *IMCC26256 sp009702955*. The type genome for the species is the GenBank assembly GCA_009698145.1. The GC content of the type genome is 55.89 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Rosarida risibago sp. nov.

Candidatus Rosarida risibago (NL. fem. n. *risibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-12-FULL-27-8 sp001796155*. The type genome for the species is the GenBank assembly GCA_001796155.1. The GC content of the type genome is 27.43

% and the genome length is 0.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Rosarida gen. nov.

Candidatus Rosarida (NL. fem. n. *Rosarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-12-FULL-27-8*. The type species for the genus is *Candidatus* Rosarida risibago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Rosarosa curabax sp. nov.

Candidatus Rosarosa curabax (NL. fem. n. *curabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXEA01 sp903877125*. The type genome for the species is the GenBank assembly GCA_903877125.1. The GC content of the type genome is 64.51 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Rosarosa gen. nov.

Candidatus Rosarosa (NL. fem. n. *Rosarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXEA01*. The type species for the genus is *Candidatus* Rosarosa curabax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rosarosa debucatio sp. nov.

Candidatus Rosarosa debucatio (NL. fem. n. *debucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXEA01 sp903924985*. The type genome for the species is the

GenBank assembly GCA_903890565.1. The GC content of the type genome is 64.62 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Rosarosa desupugo sp. nov.

Candidatus Rosarosa desupugo (NL. fem. n. *desupugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXEA01 sp903918315*. The type genome for the species is the GenBank assembly GCA_903885225.1. The GC content of the type genome is 64.67 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Rosarosa luticiforma sp. nov.

Candidatus Rosarosa luticiforma (NL. fem. n. *luticiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXEA01 sp903900905*. The type genome for the species is the GenBank assembly GCA_903900905.1. The GC content of the type genome is 64.9 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Rosarosa solipastra sp. nov.

Candidatus Rosarosa solipastra (NL. fem. n. *solipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXEA01 sp903895595*. The type genome for the species is the GenBank assembly GCA_903843765.1. The GC content of the type genome is 64.66 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Rosarula bipatitas sp. nov.

Candidatus Rosarula bipatitas (NL. fem. n. *bipatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1Sed10-166 sp003552665*. The type genome for the species is the GenBank assembly GCA_003552665.1. The GC content of the type genome is 61.05 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Rosarula gen. nov.

Candidatus Rosarula (NL. fem. n. *Rosarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1Sed10-166*. The type species for the genus is *Candidatus* Rosarula bipatitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLAA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicidaceae.

Description of *Candidatus* Rosarula casigastra sp. nov.

Candidatus Rosarula casigastra (NL. fem. n. *casigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1Sed10-166 sp007126415*. The type genome for the species is the GenBank assembly GCA_007122715.1. The GC content of the type genome is 61.22 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Rosarula occumigena sp. nov.

Candidatus Rosarula occumigena (NL. fem. n. *occumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1Sed10-166 sp003552985*. The type genome for the species is the GenBank assembly GCA_003552985.1. The GC content of the type genome is 60.72 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Rosarula pragmax sp. nov.

Candidatus Rosarula pragmax (NL. fem. n. *pragmax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1Sed10-166 sp003552185*. The type genome for the species is the GenBank assembly GCA_003552185.1. The GC content of the type genome is 61.37 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Rosarula velifetta sp. nov.

Candidatus Rosarula velifetta (NL. fem. n. *velifetta* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1Sed10-166 sp003556605*. The type genome for the species is the GenBank assembly GCA_003562055.1. The GC content of the type genome is 58.47 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Roseateles pepenedo sp. nov.

Candidatus Roseateles pepenedo (NL. fem. n. *pepenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseateles sp900109745*. The type genome for the species is the GenBank assembly RS_GCF_900109745.1. The GC content of the type genome is 65.9 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Roseburia amatrugo sp. nov.

Candidatus Roseburia amatrugo (NL. fem. n. *amatrugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp900753715*. The type genome for the species is the GenBank assembly GCA_900753715.1. The GC content of the type genome is 43.83 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Roseburia apporitrix sp. nov.

Candidatus Roseburia apporitrix (NL. fem. n. *apporitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp001940165*. The type genome for the species is the GenBank assembly RS_GCF_001940165.1. The GC content of the type genome is 40.68 % and the genome length is 3.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces".

Description of *Candidatus* Roseburia deculitas sp. nov.

Candidatus Roseburia deculitas (NL. fem. n. *deculitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp003470905*. The type genome for the species is the GenBank assembly GCA_900539515.1. The GC content of the type genome is 41.56 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Roseburia defalitudo sp. nov.

Candidatus Roseburia defalitudo (NL. fem. n. *defalitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp900542495*. The type genome for the species is the GenBank assembly GCA_900542495.1. The GC content of the type genome is 41.18 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Roseburia defasilenta sp. nov.

Candidatus Roseburia defasilenta (NL. fem. n. *defasilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp900548205*. The type genome for the species is the GenBank assembly GCA_900548205.1. The GC content of the type genome is 48.24 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Roseburia invinastra sp. nov.

Candidatus Roseburia invinastra (NL. fem. n. *invinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp004562005*. The type genome for the species is the GenBank assembly GCA_004562005.1. The GC content of the type genome is 41.92 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Roseburia nimiribra sp. nov.

Candidatus Roseburia nimiribra (NL. fem. n. *nimiribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp003483745*. The type genome for the species is the GenBank assembly GCA_900552595.1. The GC content of the type genome is 42.55 %

and the genome length is 2.56 Mbp.

Description of *Candidatus* Roseburia pulegetta sp. nov.

Candidatus Roseburia pulegetta (NL. fem. n. *pulegetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp900552665*. The type genome for the species is the GenBank assembly RS_GCF_003458815.1. The GC content of the type genome is 41.45 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Roseburia rubefatica sp. nov.

Candidatus Roseburia rubefatica (NL. fem. n. *rubefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp900756925*. The type genome for the species is the GenBank assembly GCA_900756925.1. The GC content of the type genome is 46.57 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Roseburia vigenedo sp. nov.

Candidatus Roseburia vigenedo (NL. fem. n. *vigenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseburia sp900550935*. The type genome for the species is the GenBank assembly GCA_900550935.1. The GC content of the type genome is 44.18 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Roseiarcus nubifitrix sp. nov.

Candidatus Roseiarcus nubifitrix (NL. fem. n. *nubifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseiarcus sp004799435*. The type genome for the species is the GenBank assembly GCA_004799435.1. The GC content of the type genome is 65.24 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Roseiarcus pavimago sp. nov.

Candidatus Roseiarcus pavimago (NL. fem. n. *pavimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseiarcus sp903932535*. The type genome for the species is the GenBank assembly GCA_903932535.1. The GC content of the type genome is 67.41 % and the genome length is 6.94 Mbp.

Description of *Candidatus* Roseiarcus pinacitio sp. nov.

Candidatus Roseiarcus pinacitio (NL. fem. n. *pinacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseiarcus sp009765995*. The type genome for the species is the GenBank assembly RS_GCF_009765995.1. The GC content of the type genome is 62.72 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Roseiarcus rubefessa sp. nov.

Candidatus Roseiarcus rubefessa (NL. fem. n. *rubefessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseiarcus sp003164825*. The type genome for the species is the GenBank assembly GCA_003131995.1. The GC content of the type genome is 65.15 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Roseiarcus seposicella sp. nov.

Candidatus Roseiarcus seposicella (NL. fem. n. *seposicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseiarcus sp003164915*. The type genome for the species is the GenBank assembly GCA_003155095.1. The GC content of the type genome is 67.46 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Roseibaca demaditrix sp. nov.

Candidatus Roseibaca demaditrix (NL. fem. n. *demaditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibaca sp009908405*. The type genome for the species is the GenBank assembly GCA_009908405.1. The GC content of the type genome is 64.12 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Roseibacillus abrumitrix sp. nov.

Candidatus Roseibacillus abrumitrix (NL. fem. n. *abrumitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002721695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002721695.1. The GC content of the type genome is 60.79 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Roseibacillus adnunitura sp. nov.

Candidatus Roseibacillus adnunitura (NL. fem. n. *adnunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp003483645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003483645.1. The GC content of the type genome is 60.54 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Roseibacillus cisoritas sp. nov.

Candidatus Roseibacillus cisoritas (NL. fem. n. *cisoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002380675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002380675.1. The GC content of the type genome is 54.79 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Roseibacillus decupugo sp. nov.

Candidatus Roseibacillus decupugo (NL. fem. n. *decupugo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002715825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002291645.1. The GC content of the type genome is 54.2 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Roseibacillus feculatica sp. nov.

Candidatus Roseibacillus feculatica (NL. fem. n. *feculatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002729275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003503375.1. The GC content of the type genome is 54.92 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Roseibacillus forinugo sp. nov.

Candidatus Roseibacillus forinugo (NL. fem. n. *forinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002709915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002709915.1. The GC content of the type genome is 53.91 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Roseibacillus manufilenta sp. nov.

Candidatus Roseibacillus manufilenta (NL. fem. n. *manufilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002686085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002323615.1. The GC

content of the type genome is 54.47 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Roseibacillus mirifedo sp. nov.

Candidatus Roseibacillus mirifedo (NL. fem. n. *mirifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002501065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002501065.1. The GC content of the type genome is 60.32 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Roseibacillus monopibula sp. nov.

Candidatus Roseibacillus monopibula (NL. fem. n. *monopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002420305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002709205.1. The GC content of the type genome is 53.66 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Roseibacillus morigimonas sp. nov.

Candidatus Roseibacillus morigimonas (NL. fem. n. *morigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002723015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002336445.1. The GC content of the type genome is 56.23 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Roseibacillus petulessa sp. nov.

Candidatus Roseibacillus petulessa (NL. fem. n. *petulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Roseibacillus_B sp013001695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013001695.1. The GC content of the type genome is 67.28 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Roseibacillus sitelitura sp. nov.

Candidatus Roseibacillus sitelitura (NL. fem. n. *sitelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp014240355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014240355.1. The GC content of the type genome is 60.26 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Roseibacillus tumefitura sp. nov.

Candidatus Roseibacillus tumefitura (NL. fem. n. *tumefitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibacillus_B sp002709395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002699035.1. The GC content of the type genome is 57.35 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Roseibium adtenastra sp. nov.

Candidatus Roseibium adtenastra (NL. fem. n. *adtenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp001624695*. The type genome for the species is the GenBank assembly RS_GCF_001624695.1. The GC content of the type genome is 59.41 % and the genome length is 6.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "coastal seawater".

Description of *Candidatus* Roseibium armicimonia sp. nov.

Candidatus Roseibium armicimonia (NL. fem. n. *armicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp008477545*. The type genome for the species is the GenBank assembly RS_GCF_008477545.1. The GC content of the type genome is 64.76 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Roseibium artocitas sp. nov.

Candidatus Roseibium artocitas (NL. fem. n. *artocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp013373445*. The type genome for the species is the GenBank assembly GCA_013373445.1. The GC content of the type genome is 54.08 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Roseibium camilitio sp. nov.

Candidatus Roseibium camilitio (NL. fem. n. *camilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp006517275*. The type genome for the species is the GenBank assembly RS_GCF_006517275.1. The GC content of the type genome is 55.02 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Roseibium deparitas sp. nov.

Candidatus Roseibium deparitas (NL. fem. n. *deparitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp002237595*. The type genome for the species is the GenBank assembly RS_GCF_002237595.1. The GC content of the type genome is 59.89 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Roseibium domicetta sp. nov.

Candidatus Roseibium domicetta (NL. fem. n. *domicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Roseibium sp001890945*. The type genome for the species is the GenBank assembly GCA_001890945.1. The GC content of the type genome is 56.41 % and the genome length is 5.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "non-axenic enrichment culture inoculated from diseased coral".

Description of *Candidatus* Roseibium indecugo sp. nov.

Candidatus Roseibium indecugo (NL. fem. n. *indecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp009363435*. The type genome for the species is the GenBank assembly RS_GCF_009363435.1. The GC content of the type genome is 54.99 % and the genome length is 6.4 Mbp.

Description of *Candidatus* Roseibium nidifivita sp. nov.

Candidatus Roseibium nidifivita (NL. fem. n. *nidifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp008107755*. The type genome for the species is the GenBank assembly RS_GCF_008107755.1. The GC content of the type genome is 60.49 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Roseibium octipibula sp. nov.

Candidatus Roseibium octipibula (NL. fem. n. *octipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp000148725*. The type genome for the species is the GenBank assembly RS_GCF_000148725.1. The GC content of the type genome is 53.88 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Roseibium onocritrix sp. nov.

Candidatus Roseibium onocritrix (NL. fem. n. *onocritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp009650605*. The type genome for the species is the GenBank assembly RS_GCF_009650605.1. The GC content of the type genome is 57.15

% and the genome length is 4.74 Mbp.

Description of *Candidatus* Roseibium pedififica sp. nov.

Candidatus Roseibium pedififica (NL. fem. n. *pedififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp000521215*. The type genome for the species is the GenBank assembly RS_GCF_000521215.1. The GC content of the type genome is 56.25 % and the genome length is 7.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "laboratory algal culture of the dinoflagellate Scrippsiella trochoidea CCAP 1134/1".

Description of *Candidatus* Roseibium tubicitura sp. nov.

Candidatus Roseibium tubicitura (NL. fem. n. *tubicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp008107695*. The type genome for the species is the GenBank assembly RS_GCF_008107695.1. The GC content of the type genome is 59.04 % and the genome length is 6.44 Mbp.

Description of *Candidatus* Roseibium ulcisitrix sp. nov.

Candidatus Roseibium ulcisitrix (NL. fem. n. *ulcisitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseibium sp003075075*. The type genome for the species is the GenBank assembly RS_GCF_003075075.1. The GC content of the type genome is 61.55 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Roseicyclus catobentia sp. nov.

Candidatus Roseicyclus catobentia (NL. fem. n. *catobentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseicyclus sp000013565*. The type genome for the species is the GenBank assembly RS_GCF_000013565.1. The GC content of the type genome is 62.24 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Roseicyclus offulimonia sp. nov.

Candidatus Roseicyclus offulimonia (NL. fem. n. *offulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseicyclus sp012395815*. The type genome for the species is the GenBank assembly RS_GCF_012395815.1. The GC content of the type genome is 70.78 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Roseicyclus oppugitura sp. nov.

Candidatus Roseicyclus oppugitura (NL. fem. n. *oppugitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseicyclus sp001314805*. The type genome for the species is the GenBank assembly GCA_001314805.1. The GC content of the type genome is 67.07 % and the genome length is 3.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment culture HLUCC-O from microbial mat sample; contains cyanobacterium Phormidium OSCR and associated heterotrophs".

Description of *Candidatus* Roseicyclus optumitura sp. nov.

Candidatus Roseicyclus optumitura (NL. fem. n. *optumitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseicyclus sp001650845*. The type genome for the species is the GenBank assembly RS_GCF_001650845.1. The GC content of the type genome is 62.69 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Roseiflexus arcipitoga sp. nov.

Candidatus Roseiflexus arcipitoga (NL. fem. n. *arcipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseiflexus sp000016665*. The type genome for the species is the GenBank assembly RS_GCF_000016665.1. The GC content of the type genome is 60.39 % and the genome length is 5.8 Mbp.

Description of *Candidatus* Roseilinea munimitudo sp. nov.

Candidatus Roseilinea munimitudo (NL. fem. n. *munimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseilinea sp003696945*. The type genome for the species is the GenBank assembly GCA_003696945.1. The GC content of the type genome is 63.7 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Roseimaritima arancivita sp. nov.

Candidatus Roseimaritima arancivita (NL. fem. n. *arancivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseimaritima sp007741495*. The type genome for the species is the GenBank assembly RS_GCF_007741495.1. The GC content of the type genome is 54.53 % and the genome length is 7.22 Mbp.

Description of *Candidatus* Roseimaritima invesibra sp. nov.

Candidatus Roseimaritima invesibra (NL. fem. n. *invesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseimaritima sp009618275*. The type genome for the species is the GenBank assembly RS_GCF_009618275.1. The GC content of the type genome is 62.36 % and the genome length is 6.25 Mbp.

Description of *Candidatus* Roseimaritima monacibula sp. nov.

Candidatus Roseimaritima monacibula (NL. fem. n. *monacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseimaritima sp007124075*. The type genome for the species is the GenBank assembly GCA_007124075.1. The GC content of the type genome is 56.19 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Roseimicrobium penurentia sp. nov.

Candidatus Roseimicrobium penurentia (NL. fem. n. *penurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseimicrobium sp011044495*. The type genome for the species is the GenBank assembly RS_GCF_011044495.1. The GC content of the type genome is 59.87 % and the genome length is 7.96 Mbp.

Description of *Candidatus* Roseinatronobacter affulibula sp. nov.

Candidatus Roseinatronobacter affulibula (NL. fem. n. *affulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007692585*. The type genome for the species is the GenBank assembly GCA_007692585.1. The GC content of the type genome is 62.47 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Roseinatronobacter artocivita sp. nov.

Candidatus Roseinatronobacter artocivita (NL. fem. n. *artocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007695345*. The type genome for the species is the GenBank assembly GCA_007695345.1. The GC content of the type genome is 64.23 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Roseinatronobacter cacomax sp. nov.

Candidatus Roseinatronobacter cacomax (NL. fem. n. *cacomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007123015*. The type genome for the species is the GenBank assembly GCA_007123015.1. The GC content of the type genome is 61.14 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Roseinatronobacter cibaressa sp. nov.

Candidatus Roseinatronobacter cibaressa (NL. fem. n. *cibaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007118295*. The type genome for the species is the GenBank assembly GCA_007118295.1. The GC content of the type genome is 62.59

% and the genome length is 3.46 Mbp.

Description of *Candidatus* Roseinatronobacter culigicula sp. nov.

Candidatus Roseinatronobacter culigicula (NL. fem. n. *culigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp003561595*. The type genome for the species is the GenBank assembly GCA_003552445.1. The GC content of the type genome is 64.03 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Roseinatronobacter defosetta sp. nov.

Candidatus Roseinatronobacter defosetta (NL. fem. n. *defosetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007118445*. The type genome for the species is the GenBank assembly GCA_007118445.1. The GC content of the type genome is 63.17 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Roseinatronobacter denixatica sp. nov.

Candidatus Roseinatronobacter denixatica (NL. fem. n. *denixatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007125005*. The type genome for the species is the GenBank assembly GCA_007131995.1. The GC content of the type genome is 59.35 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Roseinatronobacter derunatica sp. nov.

Candidatus Roseinatronobacter derunatica (NL. fem. n. *derunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp003567315*. The type genome for the species is the GenBank assembly GCA_003567315.1. The GC content of the type genome is 63.48 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Roseinatronobacter detesax sp. nov.

Candidatus Roseinatronobacter detesax (NL. fem. n. *detesax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007116445*. The type genome for the species is the GenBank assembly GCA_007116445.1. The GC content of the type genome is 62.09 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Roseinatronobacter exinditura sp. nov.

Candidatus Roseinatronobacter exinditura (NL. fem. n. *exinditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp003564655*. The type genome for the species is the GenBank assembly GCA_003564655.1. The GC content of the type genome is 66.45 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Roseinatronobacter impolimonia sp. nov.

Candidatus Roseinatronobacter impolimonia (NL. fem. n. *impolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007117255*. The type genome for the species is the GenBank assembly GCA_007117255.1. The GC content of the type genome is 59.59 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Roseinatronobacter inmitousia sp. nov.

Candidatus Roseinatronobacter inmitousia (NL. fem. n. *inmitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007131465*. The type genome for the species is the GenBank assembly GCA_007131465.1. The GC content of the type genome is 62.72 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Roseinatronobacter lapicedo sp. nov.

Candidatus Roseinatronobacter lapicedo (NL. fem. n. *lapicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp003567295*. The type genome for the species is the GenBank assembly GCA_003567295.1. The GC content of the type genome is 65.55 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Roseinatronobacter laxitessa sp. nov.

Candidatus Roseinatronobacter laxitessa (NL. fem. n. *laxitessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007134805*. The type genome for the species is the GenBank assembly GCA_007134805.1. The GC content of the type genome is 65.06 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Roseinatronobacter lucifatica sp. nov.

Candidatus Roseinatronobacter lucifatica (NL. fem. n. *lucifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007694945*. The type genome for the species is the GenBank assembly GCA_007694945.1. The GC content of the type genome is 62.63 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Roseinatronobacter navicitrix sp. nov.

Candidatus Roseinatronobacter navicitrix (NL. fem. n. *navicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007126715*. The type genome for the species is the GenBank assembly GCA_007126715.1. The GC content of the type genome is 58.75 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Roseinatronobacter nocumibula sp. nov.

Candidatus Roseinatronobacter nocumibula (NL. fem. n. *nocumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007116575*. The type genome for the species is the GenBank assembly GCA_007116575.1. The GC content of the type genome is 63.92

% and the genome length is 2.65 Mbp.

Description of *Candidatus* Roseinatronobacter reduvifica sp. nov.

Candidatus Roseinatronobacter reduvifica (NL. fem. n. *reduvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp003565055*. The type genome for the species is the GenBank assembly GCA_003565055.1. The GC content of the type genome is 62.3 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Roseinatronobacter sonivax sp. nov.

Candidatus Roseinatronobacter sonivax (NL. fem. n. *sonivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007134865*. The type genome for the species is the GenBank assembly GCA_007123845.1. The GC content of the type genome is 63.05 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Roseinatronobacter televitia sp. nov.

Candidatus Roseinatronobacter televitia (NL. fem. n. *televitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007128995*. The type genome for the species is the GenBank assembly GCA_007128995.1. The GC content of the type genome is 59.59 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Roseinatronobacter vecoritoga sp. nov.

Candidatus Roseinatronobacter vecoritoga (NL. fem. n. *vecoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseinatronobacter sp007128135*. The type genome for the species is the GenBank assembly GCA_007128135.1. The GC content of the type genome is 64.87 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Roseivirga demogilega sp. nov.

Candidatus Roseivirga demogilega (NL. fem. n. *demogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseivirga sp002786855*. The type genome for the species is the GenBank assembly GCA_002786855.1. The GC content of the type genome is 40.31 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Roseivirga monumessa sp. nov.

Candidatus Roseivirga monumessa (NL. fem. n. *monumessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseivirga sp002427745*. The type genome for the species is the GenBank assembly GCA_002427745.1. The GC content of the type genome is 45.98 % and the genome length is 8.18 Mbp.

Description of *Candidatus* Roseivivax meriditia sp. nov.

Candidatus Roseivivax meriditia (NL. fem. n. *meriditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseivivax sp009363255*. The type genome for the species is the GenBank assembly RS_GCF_009363495.1. The GC content of the type genome is 63.81 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Rosenbergiella avuncilenta sp. nov.

Candidatus Rosenbergiella avuncilenta (NL. fem. n. *avuncilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rosenbergiella sp009762255*. The type genome for the species is the GenBank assembly RS_GCF_009762255.1. The GC content of the type genome is 48.56 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Rosenbergiella cenotimonas sp. nov.

Candidatus Rosenbergiella cenotimonas (NL. fem. n. *cenotimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rosenbergiella sp002752555*. The type genome for the species is the GenBank assembly GCA_001602535.1. The GC content of the type genome is 47.93 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Roseobacter elastivita sp. nov.

Candidatus Roseobacter elastivita (NL. fem. n. *elastivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseobacter sp009811755*. The type genome for the species is the GenBank assembly RS_GCF_009811755.1. The GC content of the type genome is 61.04 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Roseococcus bulapago sp. nov.

Candidatus Roseococcus bulapago (NL. fem. n. *bulapago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseococcus sp007129145*. The type genome for the species is the GenBank assembly GCA_007129145.1. The GC content of the type genome is 70.6 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Roseococcus excinax sp. nov.

Candidatus Roseococcus excinax (NL. fem. n. *excinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseococcus sp004336745*. The type genome for the species is the GenBank assembly RS_GCF_004336745.1. The GC content of the type genome is 70.58 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Roseofilum bipalisca sp. nov.

Candidatus Roseofilum bipalisca (NL. fem. n. *bipalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseofilum sp002340255*. The type genome for the species is the GenBank assembly GCA_002429095.1. The GC content of the type genome is 44.95 %

and the genome length is 5.4 Mbp.

Description of *Candidatus* Roseomonas alsiditio sp. nov.

Candidatus Roseomonas alsiditio (NL. fem. n. *alsiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas sp902706185*. The type genome for the species is the GenBank assembly RS_GCF_902706185.1. The GC content of the type genome is 71.14 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Roseomonas benepibula sp. nov.

Candidatus Roseomonas benepibula (NL. fem. n. *benepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas sp003696345*. The type genome for the species is the GenBank assembly RS_GCF_003611975.1. The GC content of the type genome is 68.59 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Roseomonas exindousia sp. nov.

Candidatus Roseomonas exindousia (NL. fem. n. *exindousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas sp009829925*. The type genome for the species is the GenBank assembly RS_GCF_009829925.1. The GC content of the type genome is 70.95 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Roseomonas vepalitica sp. nov.

Candidatus Roseomonas vepalitica (NL. fem. n. *vepalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas sp000245075*. The type genome for the species is the GenBank assembly RS_GCF_000245075.1. The GC content of the type genome is 66.99 % and the genome length is 5.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "skin".

Description of *Candidatus* Roseomonas cinefitura sp. nov.

Candidatus Roseomonas cinefitura (NL. fem. n. *cinefitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas_A sp003173615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003173615.1. The GC content of the type genome is 71.49 % and the genome length is 5.94 Mbp.

Description of *Candidatus* Roseomonas defenicella sp. nov.

Candidatus Roseomonas defenicella (NL. fem. n. *defenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas_A sp005222815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005222815.1. The GC content of the type genome is 70.87 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Roseomonas inturilega sp. nov.

Candidatus Roseomonas inturilega (NL. fem. n. *inturilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas_A sp012103215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012103215.1. The GC content of the type genome is 71.74 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Roseomonas opercitrix sp. nov.

Candidatus Roseomonas opercitrix (NL. fem. n. *opercitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas_A sp011040385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_011040385.1. The GC content of the type genome is 71.01 % and the genome length is 6.56 Mbp.

Description of *Candidatus* Roseomonas adpagatica sp. nov.

Candidatus Roseomonas adpagatica (NL. fem. n. *adpagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas_B sp903927465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903927465.1. The GC content of the type genome is 61.28 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Roseomonas anaplicula sp. nov.

Candidatus Roseomonas anaplicula (NL. fem. n. *anaplicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas_B sp012927745*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012927745.1. The GC content of the type genome is 70.93 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Roseomonas insibibra sp. nov.

Candidatus Roseomonas insibibra (NL. fem. n. *insibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas_B sp903844785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903844785.1. The GC content of the type genome is 61.34 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Roseomonas rubefimonia sp. nov.

Candidatus Roseomonas rubefimonia (NL. fem. n. *rubefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas_B sp001464375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001464375.1. The GC content of the type genome is 71.04 % and the genome length is 4.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Roseomonas tubicatica sp. nov.

Candidatus Roseomonas tubicatica (NL. fem. n. *tubicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseomonas_B sp005222755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005222755.1. The GC content of the type genome is 71.89 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Roseovarius absuratio sp. nov.

Candidatus Roseovarius absuratio (NL. fem. n. *absuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp002166865*. The type genome for the species is the GenBank assembly RS_GCF_002166865.1. The GC content of the type genome is 67.54 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Roseovarius admorimonas sp. nov.

Candidatus Roseovarius admorimonas (NL. fem. n. *admorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp014359765*. The type genome for the species is the GenBank assembly GCA_014359765.1. The GC content of the type genome is 67.98 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Roseovarius adoscitio sp. nov.

Candidatus Roseovarius adoscitio (NL. fem. n. *adoscitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp002366775*. The type genome for the species is the GenBank assembly GCA_002366775.1. The GC content of the type genome is 57.0 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Roseovarius adtolax sp. nov.

Candidatus Roseovarius adtolax (NL. fem. n. *adtolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp009363715*. The type genome for the species is the GenBank assembly RS_GCF_009363715.1. The GC content of the type genome is 62.88 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Roseovarius apogritica sp. nov.

Candidatus Roseovarius apogritica (NL. fem. n. *apogritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp009762325*. The type genome for the species is the GenBank assembly RS_GCF_009762325.1. The GC content of the type genome is 62.49 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Roseovarius biparigena sp. nov.

Candidatus Roseovarius biparigena (NL. fem. n. *biparigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp003260265*. The type genome for the species is the GenBank assembly RS_GCF_003260265.1. The GC content of the type genome is 64.11 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Roseovarius cetaritudo sp. nov.

Candidatus Roseovarius cetaritudo (NL. fem. n. *cetaritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Roseovarius sp009363655*. The type genome for the species is the GenBank assembly RS_GCF_009363655.1. The GC content of the type genome is 64.18 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Roseovarius citipastra sp. nov.

Candidatus Roseovarius citipastra (NL. fem. n. *citipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp002428225*. The type genome for the species is the GenBank assembly GCA_014359815.1. The GC content of the type genome is 67.07 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Roseovarius conopibula sp. nov.

Candidatus Roseovarius conopibula (NL. fem. n. *conopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp002783205*. The type genome for the species is the GenBank assembly GCA_002783205.1. The GC content of the type genome is 62.62 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Roseovarius encepisca sp. nov.

Candidatus Roseovarius encepisca (NL. fem. n. *encepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp003122245*. The type genome for the species is the GenBank assembly RS_GCF_003122245.1. The GC content of the type genome is 60.98 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Roseovarius epiclitia sp. nov.

Candidatus Roseovarius epiclitia (NL. fem. n. *epiclitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp002842985*. The type genome for the species is the GenBank assembly GCA_002842985.1. The GC content of the type genome is 64.72 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Roseovarius impavitas sp. nov.

Candidatus Roseovarius impavitas (NL. fem. n. *impavitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp003298505*. The type genome for the species is the GenBank assembly RS_GCF_003298505.1. The GC content of the type genome is 63.31 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Roseovarius impinigena sp. nov.

Candidatus Roseovarius impinigena (NL. fem. n. *impinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp000744325*. The type genome for the species is the GenBank assembly RS_GCF_000744325.1. The GC content of the type genome is 60.75 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Roseovarius impiritoga sp. nov.

Candidatus Roseovarius impiritoga (NL. fem. n. *impiritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp002421985*. The type genome for the species is the GenBank assembly GCA_002421985.1. The GC content of the type genome is 65.53 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Roseovarius oscilax sp. nov.

Candidatus Roseovarius oscilax (NL. fem. n. *oscilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp900313005*. The type genome for the species is the GenBank assembly RS_GCF_900313005.1. The GC content of the type genome is 57.32 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Roseovarius pepenitio sp. nov.

Candidatus Roseovarius pepenitio (NL. fem. n. *pepenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp900327775*. The type genome for the species is the GenBank assembly RS_GCF_900327775.1. The GC content of the type genome is 53.34 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Roseovarius ridibitudo sp. nov.

Candidatus Roseovarius ridibitudo (NL. fem. n. *ridibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp000152845*. The type genome for the species is the GenBank assembly RS_GCF_000152845.1. The GC content of the type genome is 60.81 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Roseovarius robigimonia sp. nov.

Candidatus Roseovarius robigimonia (NL. fem. n. *robigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp007125415*. The type genome for the species is the GenBank assembly GCA_007123305.1. The GC content of the type genome is 62.87 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Roseovarius rumifax sp. nov.

Candidatus Roseovarius rumifax (NL. fem. n. *rumifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Roseovarius sp002072155*. The type genome for the species is the GenBank assembly RS_GCF_002072155.1. The GC content of the type genome is 62.83 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Roseovarius venefax sp. nov.

Candidatus Roseovarius venefax (NL. fem. n. *venefax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Roseovarius sp002720475*. The type genome for the species is the GenBank assembly GCA_002720475.1. The GC content of the type genome is 67.03 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Rossellomorea advinicella sp. nov.

Candidatus Rossellomorea advinicella (NL. fem. n. *advinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rossellomorea sp008364765*. The type genome for the species is the GenBank assembly RS_GCF_008364765.1. The GC content of the type genome is 40.75 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Rossellomorea cerimivita sp. nov.

Candidatus Rossellomorea cerimivita (NL. fem. n. *cerimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rossellomorea sp002561455*. The type genome for the species is the GenBank assembly RS_GCF_002561455.1. The GC content of the type genome is 44.06 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Rossellomorea cicarilega sp. nov.

Candidatus Rossellomorea cicarilega (NL. fem. n. *cicarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rossellomorea sp011398925*. The type genome for the species is the GenBank assembly RS_GCF_011398925.1. The GC content of the type genome is 44.84 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Rossellomorea cicilitica sp. nov.

Candidatus Rossellomorea cicilitica (NL. fem. n. *cicilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rossellomorea sp006715245*. The type genome for the species is the GenBank assembly RS_GCF_006715245.1. The GC content of the type genome is 48.14 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Rossellomorea domicitia sp. nov.

Candidatus Rossellomorea domicitia (NL. fem. n. *domicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rossellomorea sp005938125*. The type genome for the species is the GenBank assembly RS_GCF_005938125.1. The GC content of the type genome is 41.03 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Rossellomorea exsanisca sp. nov.

Candidatus Rossellomorea exsanisca (NL. fem. n. *exsanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rossellomorea sp012911895*. The type genome for the species is the GenBank assembly RS_GCF_012911895.1. The GC content of the type genome is 42.81 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Rossellomorea incunitio sp. nov.

Candidatus Rossellomorea incunitio (NL. fem. n. *incunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rossellomorea sp903645295*. The type genome for the species is the GenBank assembly RS_GCF_903645295.1. The GC content of the type genome is 43.32 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Rossellomorea plascax sp. nov.

Candidatus Rossellomorea plascax (NL. fem. n. *plascax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rossellomorea sp002563655*. The type genome for the species is the GenBank assembly RS_GCF_002563655.1. The GC content of the type genome is 43.74 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Rothia actarimonia sp. nov.

Candidatus Rothia actarimonia (NL. fem. n. *actarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rothia sp000710345*. The type genome for the species is the GenBank assembly RS_GCF_000710345.2. The GC content of the type genome is 65.07 % and the genome length is 2.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaves".

Description of *Candidatus* Rothia casigitoga sp. nov.

Candidatus Rothia casigitoga (NL. fem. n. *casigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rothia sp004137765*. The type genome for the species is the GenBank assembly RS_GCF_004137765.1. The GC content of the type genome is 61.05 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Rothia depelimonas sp. nov.

Candidatus Rothia depelimonas (NL. fem. n. *depelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rothia sp004136585*. The type genome for the species is the GenBank assembly RS_GCF_004136585.1. The GC content of the type genome is 60.76 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Rothia depicigena sp. nov.

Candidatus Rothia depicigena (NL. fem. n. *depicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rothia sp002492045*. The type genome for the species is the GenBank assembly GCA_002492045.1. The GC content of the type genome is 59.39 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Rothia fetutitudo sp. nov.

Candidatus Rothia fetutitudo (NL. fem. n. *fetutitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rothia sp001683935*. The type genome for the species is the GenBank assembly RS_GCF_007666515.1. The GC content of the type genome is 52.18 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Rothia fuligitoga sp. nov.

Candidatus Rothia fuligitoga (NL. fem. n. *fuligitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rothia sp002418375*. The type genome for the species is the GenBank assembly GCA_002418375.1. The GC content of the type genome is 56.13 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Rothia luxurugo sp. nov.

Candidatus Rothia luxurugo (NL. fem. n. *luxurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rothia sp902373285*. The type genome for the species is the GenBank assembly GCA_900755465.1. The GC content of the type genome is 60.17 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Rothia manupigena sp. nov.

Candidatus Rothia manupigena (NL. fem. n. *manupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rothia sp001808955*. The type genome for the species is the GenBank assembly RS_GCF_000011025.1. The GC content of the type genome is 59.62 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Rouxiella apsenifica sp. nov.

Candidatus Rouxiella apsenifica (NL. fem. n. *apsenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rouxiella sp012933545*. The type genome for the species is the GenBank assembly RS_GCF_012933545.1. The GC content of the type genome is 51.35 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Rouxiella apsimitio sp. nov.

Candidatus Rouxiella apsimitio (NL. fem. n. *apsimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rouxiella sp000257645*. The type genome for the species is the GenBank assembly RS_GCF_000257645.1. The GC content of the type genome is 50.09 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Rouxiella atricax sp. nov.

Candidatus Rouxiella atricax (NL. fem. n. *atricax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rouxiella sp009208105*. The type genome for the species is the GenBank assembly RS_GCF_009208105.1. The GC content of the type genome is 50.88 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Ruania gemebiforma sp. nov.

Candidatus Ruania gemebiforma (NL. fem. n. *gemebiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruania sp008000995*. The type genome for the species is the GenBank assembly RS_GCF_008000995.1. The GC content of the type genome is 69.08 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Rubecana ficedivita sp. nov.

Candidatus Rubecana ficedivita (NL. fem. n. *ficedivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8110 sp002707655*. The type genome for the species is the GenBank assembly GCA_002313905.1. The GC content of the type genome is 57.13 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Rubecana gen. nov.

Candidatus Rubecana (NL. fem. n. *Rubecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8110*. The type species for the genus is *Candidatus* Rubecana ficedivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NAC60-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peripidaceae.

Description of *Candidatus* Rubecana hirunilenta sp. nov.

Candidatus Rubecana hirunilenta (NL. fem. n. *hirunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8110 sp002726945*. The type genome for the species is the GenBank assembly GCA_002726945.1. The GC content of the type genome is 57.38 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Rubecaria domipax sp. nov.

Candidatus Rubecaria domipax (NL. fem. n. *domipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6539 sp002687175*. The type genome for the species is the GenBank assembly GCA_002687175.1. The GC content of the type genome is 36.69 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Rubecaria gen. nov.

Candidatus Rubecaria (NL. fem. n. *Rubecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6539*. The type species for the genus is *Candidatus* Rubecaria domipax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecariaceae.

Description of *Candidatus* Rubecariaceae fam. nov.

Candidatus Rubecariaceae (NL. fem. n. *Rubecariaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6539.* The type genus for the taxon is *Candidatus* Rubecaria .

According to GTDB R06-RS202, this family belongs to the order *Buchananbacterales*.

Description of *Candidatus* Rubecella benevilenta sp. nov.

Candidatus Rubecella benevilenta (NL. fem. n. *benevilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKLP01 sp903838995*. The type genome for the species is the GenBank assembly GCA_903838995.1. The GC content of the type genome is 34.94 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Rubecella gen. nov.

Candidatus Rubecella (NL. fem. n. *Rubecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKLP01*. The type species for the genus is *Candidatus* Rubecella benevilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIKLP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecellaceae.

Description of *Candidatus* Rubecellaceae fam. nov.

Candidatus Rubecellaceae (NL. fem. n. *Rubecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIKLP01.* The type genus for the taxon is *Candidatus* Rubecella .

According to GTDB R06-RS202, this family belongs to the order *Sphingobacteriales*.

Description of *Candidatus* Rubecella desonitia sp. nov.

Candidatus Rubecella desonitia (NL. fem. n. *desonitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKLP01 sp903951325*. The type genome for the species is the GenBank assembly GCA_903951325.1. The GC content of the type genome is 35.02 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Rubecella regifitica sp. nov.

Candidatus Rubecella regifitica (NL. fem. n. *regifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKLP01 sp903828245*. The type genome for the species is the GenBank assembly GCA_903828245.1. The GC content of the type genome is 35.16 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Rubecia bimetousia sp. nov.

Candidatus Rubecia bimetousia (NL. fem. n. *bimetousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA629 sp900317915*. The type genome for the species is the GenBank assembly GCA_002393885.1. The GC content of the type genome is 43.98 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Rubecia gen. nov.

Candidatus Rubecia (NL. fem. n. *Rubecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA629*. The type species for the genus is *Candidatus* Rubecia bimetousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rubecia furibisca sp. nov.

Candidatus Rubecia furibisca (NL. fem. n. *furibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA629 sp900316625*. The type genome for the species is the

GenBank assembly GCA_900315415.1. The GC content of the type genome is 46.16 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Rubecia ludimitrix sp. nov.

Candidatus Rubecia ludimitrix (NL. fem. n. *ludimitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA629 sp900316665*. The type genome for the species is the GenBank assembly GCA_900316665.1. The GC content of the type genome is 43.91 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Rubecia tubicimonia sp. nov.

Candidatus Rubecia tubicimonia (NL. fem. n. *tubicimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA629 sp005465875*. The type genome for the species is the GenBank assembly GCA_009771085.1. The GC content of the type genome is 31.54 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Rubecida genufimonas sp. nov.

Candidatus Rubecida genufimonas (NL. fem. n. *genufimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5389 sp002409965*. The type genome for the species is the GenBank assembly GCA_002409965.1. The GC content of the type genome is 59.9 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Rubecida gen. nov.

Candidatus Rubecida (NL. fem. n. *Rubecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5389*. The type species for the genus is *Candidatus* Rubecida genufimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemanaceae.

Description of *Candidatus* Rubecosa arancitura sp. nov.

Candidatus Rubecosa arancitura (NL. fem. n. *arancitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5500 sp012727835*. The type genome for the species is the GenBank assembly GCA_012727835.1. The GC content of the type genome is 51.65 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Rubecosa gen. nov.

Candidatus Rubecosa (NL. fem. n. *Rubecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5500*. The type species for the genus is *Candidatus* Rubecosa arancitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubecosaceae.

Description of *Candidatus* Rubecosaceae fam. nov.

Candidatus Rubecosaceae (NL. fem. n. *Rubecosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5500.* The type genus for the taxon is *Candidatus* Rubecosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA994*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dehonellales.

Description of *Candidatus* Rubecosa armipigena sp. nov.

Candidatus Rubecosa armipigena (NL. fem. n. *armipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5500 sp002427055*. The type genome for the species is the GenBank assembly GCA_002427055.1. The GC content of the type genome is 49.05 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Rubefana monogiforma sp. nov.

Candidatus Rubefana monogiforma (NL. fem. n. *monogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-000787395 sp000787395*. The type genome for the species is the GenBank assembly GCA_002021265.1. The GC content of the type genome is 50.85 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Rubefana gen. nov.

Candidatus Rubefana (NL. fem. n. *Rubefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCF-000787395*. The type species for the genus is *Candidatus* Rubefana monogiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rubefana pepenifica sp. nov.

Candidatus Rubefana pepenifica (NL. fem. n. *pepenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCF-000787395 sp002021095*. The type genome for the species is the GenBank assembly RS_GCF_002021095.1. The GC content of the type genome is 50.79 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Rubefaria adfabessa sp. nov.

Candidatus Rubefaria adfabessa (NL. fem. n. *adfabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9664 sp002710775*. The type genome for the species is the GenBank assembly GCA_002710775.1. The GC content of the type genome is 44.96 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Rubefaria gen. nov.

Candidatus Rubefaria (NL. fem. n. *Rubefaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9664*. The type species for the genus is *Candidatus* Rubefaria adfabessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rubefaria celumitia sp. nov.

Candidatus Rubefaria celumitia (NL. fem. n. *celumitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9664 sp002699085*. The type genome for the species is the GenBank assembly GCA_002699085.1. The GC content of the type genome is 41.69 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Rubefella corocicella sp. nov.

Candidatus Rubefella corocicella (NL. fem. n. *corocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6191 sp002422125*. The type genome for the species is the GenBank assembly GCA_002422125.1. The GC content of the type genome is 44.44 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Rubefella gen. nov.

Candidatus Rubefella (NL. fem. n. *Rubefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6191*. The type species for the genus is *Candidatus* Rubefella corocicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6191*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubefellaceae.

Description of *Candidatus* Rubefellaceae fam. nov.

Candidatus Rubefellaceae (NL. fem. n. *Rubefellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6191.* The type genus for the taxon is *Candidatus* Rubefella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6191*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rubefellales.

Description of *Candidatus* Rubefellales ord. nov.

Candidatus Rubefellales (NL. fem. n. *Rubefellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6191.* The type genus for the taxon is *Candidatus* Rubefella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6191*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubefellae.

Description of *Candidatus* Rubefellae class. nov.

Candidatus Rubefellae (NL. fem. n. *c__Rubefellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6191.* The type genus for the taxon is *Candidatus* Rubefella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBP17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Demuliota.

Description of *Candidatus* Rubefia anagnitica sp. nov.

Candidatus Rubefia anagnitica (NL. fem. n. *anagnitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYZQ01 sp012514775*. The type genome for the species is the GenBank assembly GCA_012514775.1. The GC content of the type genome is 66.69 % and the genome length is 6.18 Mbp.

Description of *Candidatus* Rubefia gen. nov.

Candidatus Rubefia (NL. fem. n. *Rubefia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYZQ01*. The type species for the genus is *Candidatus* Rubefia anagnitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYZQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubefiaceae.

Description of *Candidatus* Rubefiaceae fam. nov.

Candidatus Rubefiaceae (NL. fem. n. *Rubefiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYZQ01.* The type genus for the taxon is *Candidatus* Rubefia .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAYZQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rubefiales.

Description of *Candidatus* Rubefiales ord. nov.

Candidatus Rubefiales (NL. fem. n. *Rubefiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYZQ01.* The type genus for the taxon is *Candidatus* Rubefia .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Rubefida faticimonas sp. nov.

Candidatus Rubefida faticimonas (NL. fem. n. *faticimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJQ01 sp013002425*. The type genome for the species is the GenBank assembly GCA_013002425.1. The GC content of the type genome is 63.24 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Rubefida gen. nov.

Candidatus Rubefida (NL. fem. n. *Rubefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JABDJQ01*. The type species for the genus is *Candidatus* Rubefida faticimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDJQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubefidaceae.

Description of *Candidatus* Rubefidaceae fam. nov.

Candidatus Rubefidaceae (NL. fem. n. *Rubefidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDJQ01.* The type genus for the taxon is *Candidatus* Rubefida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABDJQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rubefidales.

Description of *Candidatus* Rubefidales ord. nov.

Candidatus Rubefidales (NL. fem. n. *Rubefidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDJQ01.* The type genus for the taxon is *Candidatus* Rubefida .

According to the original version of GTDB R06-RS202, this family belongs to the class *JABDJQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubefidae.

Description of *Candidatus* Rubefidae class. nov.

Candidatus Rubefidae (NL. fem. n. *c__Rubefidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDJQ01.* The type genus for the taxon is *Candidatus* Rubefida .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *JABDJQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Rubefidota.

Description of *Candidatus* Rubefidota phyl. nov.

Candidatus Rubefidota (NL. fem. n. *Rubefidota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDJQ01*. The type genus for the taxon is *Candidatus* Rubefida .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Rubefosa catalitrix sp. nov.

Candidatus Rubefosa catalitrix (NL. fem. n. *catalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-448 sp000433415*. The type genome for the species is the GenBank assembly GCA_000433415.1. The GC content of the type genome is 52.59 % and the genome length is 2.28 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Rubefosa gen. nov.

Candidatus Rubefosa (NL. fem. n. *Rubefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-448*. The type species for the genus is *Candidatus* Rubefosa catalitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Rubefosa renavitica sp. nov.

Candidatus Rubefosa renavitica (NL. fem. n. *renavitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-448 sp003150135*. The type genome for the species is the GenBank assembly GCA_900545385.1. The GC content of the type genome is 60.46 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Rubefula divulicella sp. nov.

Candidatus Rubefula divulicella (NL. fem. n. *divulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN29 sp002898215*. The type genome for the species is the GenBank assembly GCA_002898215.1. The GC content of the type genome is 69.28 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Rubefula gen. nov.

Candidatus Rubefula (NL. fem. n. *Rubefula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN29*. The type species for the genus is *Candidatus* Rubefula divulicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2991*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifariaceae.

Description of *Candidatus* Rubefula vicatetta sp. nov.

Candidatus Rubefula vicatetta (NL. fem. n. *vicatetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN29 sp011048275*. The type genome for the species is the GenBank assembly GCA_011054735.1. The GC content of the type genome is 69.13 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Rubellimicrobium adlubitura sp. nov.

Candidatus Rubellimicrobium adlubitura (NL. fem. n. *adlubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubellimicrobium sp009904055*. The type genome for the species is the GenBank assembly RS_GCF_009904055.1. The GC content of the type genome is 71.98 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Rubellimicrobium exaggigena sp. nov.

Candidatus Rubellimicrobium exaggigena (NL. fem. n. *exaggigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubellimicrobium sp902805995*. The type genome for the species is the GenBank assembly GCA_902805995.1. The GC content of the type genome is 68.85 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Rubicana bipinitudo sp. nov.

Candidatus Rubicana bipinitudo (NL. fem. n. *bipinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12059 sp001829185*. The type genome for the species is the GenBank assembly GCA_003498145.1. The GC content of the type genome is 61.39 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Rubicana gen. nov.

Candidatus Rubicana (NL. fem. n. *Rubicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12059*. The type species for the genus is *Candidatus* Rubicana bipinitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12059*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubicanaceae.

Description of *Candidatus* Rubicanaceae fam. nov.

Candidatus Rubicanaceae (NL. fem. n. *Rubicanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12059.* The type genus for the taxon is *Candidatus* Rubicana .

According to GTDB R06-RS202, this family belongs to the order *Treponematales*.

Description of *Candidatus* Rubicaria ammulitas sp. nov.

Candidatus Rubicaria ammulitas (NL. fem. n. *ammulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7398 sp014190155*. The type genome for the species is the

GenBank assembly GCA_014190155.1. The GC content of the type genome is 44.04 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Rubicaria gen. nov.

Candidatus Rubicaria (NL. fem. n. *Rubicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7398*. The type species for the genus is *Candidatus* Rubicaria ammulitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rubicaria decupago sp. nov.

Candidatus Rubicaria decupago (NL. fem. n. *decupago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7398 sp009927575*. The type genome for the species is the GenBank assembly GCA_009927575.1. The GC content of the type genome is 46.09 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Rubicaria depecilenta sp. nov.

Candidatus Rubicaria depecilenta (NL. fem. n. *depecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7398 sp002470135*. The type genome for the species is the GenBank assembly GCA_009927605.1. The GC content of the type genome is 44.09 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Rubicaria homicedo sp. nov.

Candidatus Rubicaria homicedo (NL. fem. n. *homicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7398 sp903878415*. The type genome for the species is the GenBank assembly GCA_009697665.1. The GC content of the type genome is 43.77 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Rubicaria monodugo sp. nov.

Candidatus Rubicaria monodugo (NL. fem. n. *monodugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7398 sp013205455*. The type genome for the species is the GenBank assembly GCA_013205455.1. The GC content of the type genome is 44.23 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Rubicella viripicella sp. nov.

Candidatus Rubicella viripicella (NL. fem. n. *viripicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2160 sp002328865*. The type genome for the species is the GenBank assembly GCA_002686145.1. The GC content of the type genome is 60.89 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Rubicella gen. nov.

Candidatus Rubicella (NL. fem. n. *Rubicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2160*. The type species for the genus is *Candidatus* Rubicella viripicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resupellaceae.

Description of *Candidatus* Rubicida bifisitura sp. nov.

Candidatus Rubicida bifisitura (NL. fem. n. *bifisitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-44-10 sp001794755*. The type genome for the species is the GenBank assembly GCA_001795875.1. The GC content of the type genome is 43.68 % and the genome length is 0.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Rubicida gen. nov.

Candidatus Rubicida (NL. fem. n. *Rubicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-44-10*. The type species for the genus is *Candidatus* Rubicida bifisitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Rubicosa negidigena sp. nov.

Candidatus Rubicosa negidigena (NL. fem. n. *negidigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWJC01 sp003560165*. The type genome for the species is the GenBank assembly GCA_007134595.1. The GC content of the type genome is 54.19 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Rubicosa gen. nov.

Candidatus Rubicosa (NL. fem. n. *Rubicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWJC01*. The type species for the genus is *Candidatus* Rubicosa negidigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Rubicula bicorilenta sp. nov.

Candidatus Rubicula bicorilenta (NL. fem. n. *bicorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNFE01 sp003645455*. The type genome for the species is the GenBank assembly GCA_003645455.1. The GC content of the type genome is 33.17 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Rubicula gen. nov.

Candidatus Rubicula (NL. fem. n. *Rubicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNFE01*. The type species for the genus is *Candidatus* Rubicula bicorilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QNFE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubiculaceae.

Description of *Candidatus* Rubiculaceae fam. nov.

Candidatus Rubiculaceae (NL. fem. n. *Rubiculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNFE01.* The type genus for the taxon is *Candidatus* Rubicula .

According to the original version of GTDB R06-RS202, this family belongs to the order *QNFE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rubiculales.

Description of *Candidatus* Rubiculales ord. nov.

Candidatus Rubiculales (NL. fem. n. *Rubiculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNFE01.* The type genus for the taxon is *Candidatus* Rubicula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Rubigana sitelatio sp. nov.

Candidatus Rubigana sitelatio (NL. fem. n. *sitelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10027 sp001003725*. The type genome for the species is the GenBank assembly GCA_003523165.1. The GC content of the type genome is 47.65 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Rubigana gen. nov.

Candidatus Rubigana (NL. fem. n. *Rubigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10027*. The type species for the genus is *Candidatus* Rubigana sitelatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rubigaria depacago sp. nov.

Candidatus Rubigaria depacago (NL. fem. n. *depacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9042 sp002726535*. The type genome for the species is the GenBank assembly GCA_003452515.1. The GC content of the type genome is 56.75 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Rubigaria gen. nov.

Candidatus Rubigaria (NL. fem. n. *Rubigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9042*. The type species for the genus is *Candidatus* Rubigaria depacago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubigariaceae.

Description of *Candidatus* Rubigariaceae fam. nov.

Candidatus Rubigariaceae (NL. fem. n. *Rubigariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9042.* The type genus for the taxon is *Candidatus* Rubigaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rubigariales.

Description of *Candidatus* Rubigariales ord. nov.

Candidatus Rubigariales (NL. fem. n. *Rubigariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9042.* The type genus for the taxon is *Candidatus* Rubigaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubigariae.

Description of *Candidatus* Rubigariae class. nov.

Candidatus Rubigariae (NL. fem. n. *c__Rubigariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9042.* The type genus for the taxon is *Candidatus* Rubigaria .

According to GTDB R06-RS202, this class belongs to the phylum *Myxococcota*.

Description of *Candidatus* Rubigella semibifica sp. nov.

Candidatus Rubigella semibifica (NL. fem. n. *semibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1648 sp900553765*. The type genome for the species is the GenBank assembly GCA_900553765.1. The GC content of the type genome is 34.34 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Rubigella gen. nov.

Candidatus Rubigella (NL. fem. n. *Rubigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1648*. The type species for the genus is *Candidatus* Rubigella semibifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Rubigia relapitoga sp. nov.

Candidatus Rubigia relapitoga (NL. fem. n. *relapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2329 sp002344975*. The type genome for the species is the GenBank assembly GCA_002344975.1. The GC content of the type genome is 52.56 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Rubigia gen. nov.

Candidatus Rubigia (NL. fem. n. *Rubigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2329*. The type species for the genus is *Candidatus* Rubigia relapitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rubigida buxifitudo sp. nov.

Candidatus Rubigida buxifitudo (NL. fem. n. *buxifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1426 sp012719215*. The type genome for the species is the GenBank assembly GCA_012719215.1. The GC content of the type genome is 46.48 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Rubigida gen. nov.

Candidatus Rubigida (NL. fem. n. *Rubigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1426*. The type species for the genus is *Candidatus* Rubigida buxifitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rubigida curabedo sp. nov.

Candidatus Rubigida curabedo (NL. fem. n. *curabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1426 sp002385825*. The type genome for the species is the GenBank assembly GCA_003445605.1. The GC content of the type genome is 47.23 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Rubigida inregilenta sp. nov.

Candidatus Rubigida inregilenta (NL. fem. n. *inregilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1426 sp002329675*. The type genome for the species is the GenBank assembly GCA_002329675.1. The GC content of the type genome is 46.49 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Rubigosa adsocigena sp. nov.

Candidatus Rubigosa adsocigena (NL. fem. n. *adsocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMZ01 sp003559065*. The type genome for the species is the GenBank assembly GCA_003559065.1. The GC content of the type genome is 33.77 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Rubigosa gen. nov.

Candidatus Rubigosa (NL. fem. n. *Rubigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWMZ01*. The type species for the genus is *Candidatus* Rubigosa adsocigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWMZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubigosaceae.

Description of *Candidatus* Rubigosaceae fam. nov.

Candidatus Rubigosaceae (NL. fem. n. *Rubigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *PWMZ01*. The type genus for the taxon is *Candidatus* Rubigosa .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Rubigosa nefanentia sp. nov.

Candidatus Rubigosa nefanentia (NL. fem. n. *nefanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWMZ01 sp003556925*. The type genome for the species is the GenBank assembly GCA_003556925.1. The GC content of the type genome is 35.85 % and the genome length is 0.34 Mbp.

Description of *Candidatus* Rubinisphaera detositrix sp. nov.

Candidatus Rubinisphaera detositrix (NL. fem. n. *detositrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubinisphaera sp014584345*. The type genome for the species is the GenBank assembly GCA_014584345.1. The GC content of the type genome is 57.88 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Rubinisphaera rarefago sp. nov.

Candidatus Rubinisphaera rarefago (NL. fem. n. *rarefago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubinisphaera sp002359185*. The type genome for the species is the GenBank assembly GCA_002731545.1. The GC content of the type genome is 48.66 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Rubneribacter adsesilega sp. nov.

Candidatus Rubneribacter adsesilega (NL. fem. n. *adsesilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubneribacter sp002159915*. The type genome for the species is the GenBank assembly RS_GCF_002159915.1. The GC content of the type genome is 64.15 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Rubricoccus adcucousia sp. nov.

Candidatus Rubricoccus adcucousia (NL. fem. n. *adcucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubricoccus sp012960515*. The type genome for the species is the GenBank assembly GCA_012960515.1. The GC content of the type genome is 71.25 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Rubrimentiphilum catapigena sp. nov.

Candidatus Rubrimentiphilum catapigena (NL. fem. n. *catapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrimentiphilum sp013036095*. The type genome for the species is the GenBank assembly RS_GCF_013036095.1. The GC content of the type genome is 60.7 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Rubrimentiphilum infesibra sp. nov.

Candidatus Rubrimentiphilum infesibra (NL. fem. n. *infesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrimentiphilum sp013036315*. The type genome for the species is the GenBank assembly RS_GCF_013036315.1. The GC content of the type genome is 60.66 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Rubrimentiphilum nefanibra sp. nov.

Candidatus Rubrimentiphilum nefanibra (NL. fem. n. *nefanibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrimentiphilum sp003136355*. The type genome for the species is the GenBank assembly GCA_003131905.1. The GC content of the type genome is 60.96 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Rubrimentiphilum odollitura sp. nov.

Candidatus Rubrimentiphilum odollitura (NL. fem. n. *odollitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrimentiphilum sp003140855*. The type genome for the species is the GenBank assembly GCA_003140855.1. The GC content of the type genome is 60.37 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Rubrimentiphilum tigurisca sp. nov.

Candidatus Rubrimentiphilum tigurisca (NL. fem. n. *tigurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrimentiphilum sp003151115*. The type genome for the species is the GenBank assembly GCA_003151115.1. The GC content of the type genome is 60.93 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Rubrimentiphilum videlessa sp. nov.

Candidatus Rubrimentiphilum videlessa (NL. fem. n. *videlessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrimentiphilum sp013036105*. The type genome for the species is the GenBank assembly RS_GCF_013036105.1. The GC content of the type genome is 61.04 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Rubrimonas linigitio sp. nov.

Candidatus Rubrimonas linigitio (NL. fem. n. *linigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrimonas sp007693835*. The type genome for the species is the GenBank assembly GCA_007693835.1. The GC content of the type genome is 72.04 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Rubripirellula assifimonia sp. nov.

Candidatus Rubripirellula assifimonia (NL. fem. n. *assifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rubripirellula sp002862205*. The type genome for the species is the GenBank assembly GCA_002862205.1. The GC content of the type genome is 52.58 % and the genome length is 7.77 Mbp.

Description of *Candidatus* Rubripirellula intabibula sp. nov.

Candidatus Rubripirellula intabibula (NL. fem. n. *intabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubripirellula sp007741535*. The type genome for the species is the GenBank assembly RS_GCF_007741535.1. The GC content of the type genome is 57.35 % and the genome length is 8.54 Mbp.

Description of *Candidatus* Rubripirellula obsigitas sp. nov.

Candidatus Rubripirellula obsigitas (NL. fem. n. *obsigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubripirellula sp002690925*. The type genome for the species is the GenBank assembly GCA_002690925.1. The GC content of the type genome is 51.76 % and the genome length is 7.78 Mbp.

Description of *Candidatus* Rubripirellula rosaretta sp. nov.

Candidatus Rubripirellula rosaretta (NL. fem. n. *rosaretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubripirellula sp002712845*. The type genome for the species is the GenBank assembly GCA_002712845.1. The GC content of the type genome is 51.95 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Rubripirellula rubicicula sp. nov.

Candidatus Rubripirellula rubicicula (NL. fem. n. *rubicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubripirellula sp003513555*. The type genome for the species is the GenBank assembly GCA_003513555.1. The GC content of the type genome is 51.78 % and the genome length is 6.97 Mbp.

Description of *Candidatus* Rubripirellula sicaritudo sp. nov.

Candidatus Rubripirellula sicaritudo (NL. fem. n. *sicaritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubripirellula sp012270385*. The type genome for the species is the GenBank assembly GCA_012270385.1. The GC content of the type genome is 49.84 % and the genome length is 5.11 Mbp.

Description of *Candidatus* Rubripirellula tomogitas sp. nov.

Candidatus Rubripirellula tomogitas (NL. fem. n. *tomogitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubripirellula sp002689655*. The type genome for the species is the GenBank assembly GCA_002689655.1. The GC content of the type genome is 51.86 % and the genome length is 7.09 Mbp.

Description of *Candidatus* Rubripirellula vitifibula sp. nov.

Candidatus Rubripirellula vitifibula (NL. fem. n. *vitifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubripirellula sp012270065*. The type genome for the species is the GenBank assembly GCA_012270065.1. The GC content of the type genome is 52.43 % and the genome length is 6.99 Mbp.

Description of *Candidatus* Rubrivirga humecibula sp. nov.

Candidatus Rubrivirga humecibula (NL. fem. n. *humecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivirga sp002283555*. The type genome for the species is the GenBank assembly GCA_002711615.1. The GC content of the type genome is 71.29 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Rubrivirga lubenimonas sp. nov.

Candidatus Rubrivirga lubenimonas (NL. fem. n. *lubenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivirga sp012269805*. The type genome for the species is the GenBank assembly GCA_012269805.1. The GC content of the type genome is 72.04 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Rubrivivax adlocatio sp. nov.

Candidatus Rubrivivax adlocatio (NL. fem. n. *adlocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp903885585*. The type genome for the species is the GenBank assembly GCA_903885585.1. The GC content of the type genome is 66.69 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Rubrivivax altipilenta sp. nov.

Candidatus Rubrivivax altipilenta (NL. fem. n. *altipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp011391855*. The type genome for the species is the GenBank assembly GCA_011391855.1. The GC content of the type genome is 69.07 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Rubrivivax bigarivita sp. nov.

Candidatus Rubrivivax bigarivita (NL. fem. n. *bigarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp903914615*. The type genome for the species is the GenBank assembly GCA_903914615.1. The GC content of the type genome is 70.12 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Rubrivivax clancitas sp. nov.

Candidatus Rubrivivax clancitas (NL. fem. n. *clancitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Rubrivivax sp013822265*. The type genome for the species is the GenBank assembly GCA_013822265.1. The GC content of the type genome is 70.25 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Rubrivivax desupifica sp. nov.

Candidatus Rubrivivax desupifica (NL. fem. n. *desupifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp903938815*. The type genome for the species is the GenBank assembly GCA_903951765.1. The GC content of the type genome is 69.29 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Rubrivivax fusifessa sp. nov.

Candidatus Rubrivivax fusifessa (NL. fem. n. *fusifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp903828235*. The type genome for the species is the GenBank assembly GCA_903927695.1. The GC content of the type genome is 71.94 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Rubrivivax incomibra sp. nov.

Candidatus Rubrivivax incomibra (NL. fem. n. *incomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp001724995*. The type genome for the species is the GenBank assembly GCA_001724995.1. The GC content of the type genome is 70.78 % and the genome length is 3.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Rubrivivax indevilenta sp. nov.

Candidatus Rubrivivax indevilenta (NL. fem. n. *indevilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp001725505*. The type genome for the species is the GenBank assembly GCA_001725505.1. The GC content of the type genome is 70.47 % and the genome length is 4.03 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Thiocyanate bioreactor".

Description of *Candidatus* Rubrivivax lapicago sp. nov.

Candidatus Rubrivivax lapicago (NL. fem. n. *lapicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp001295865*. The type genome for the species is the GenBank assembly RS_GCF_001295865.1. The GC content of the type genome is 69.58 % and the genome length is 4.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Rubrivivax lapilibra sp. nov.

Candidatus Rubrivivax lapilibra (NL. fem. n. *lapilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp001295905*. The type genome for the species is the GenBank assembly RS_GCF_001295905.1. The GC content of the type genome is 69.71 % and the genome length is 5.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "freshwater lake".

Description of *Candidatus* Rubrivivax latibentia sp. nov.

Candidatus Rubrivivax latibentia (NL. fem. n. *latibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp004016505*. The type genome for the species is the GenBank assembly RS_GCF_004016505.1. The GC content of the type genome is 70.05 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Rubrivivax metabicula sp. nov.

Candidatus Rubrivivax metabicula (NL. fem. n. *metabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp903876715*. The type genome for the species is the GenBank assembly GCA_903876715.1. The GC content of the type genome is 70.06 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Rubrivivax notabibula sp. nov.

Candidatus Rubrivivax notabibula (NL. fem. n. *notabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp001464055*. The type genome for the species is the GenBank assembly GCA_001464055.1. The GC content of the type genome is 68.29 % and the genome length is 5.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Rubrivivax nutabago sp. nov.

Candidatus Rubrivivax nutabago (NL. fem. n. *nutabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp011525985*. The type genome for the species is the GenBank assembly GCA_011525985.1. The GC content of the type genome is 72.56 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Rubrivivax oppanimonas sp. nov.

Candidatus Rubrivivax oppanimonas (NL. fem. n. *oppanimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp903822435*. The type genome for the species is the GenBank assembly GCA_903822435.1. The GC content of the type genome is 68.73 % and the genome length is 6.07 Mbp.

Description of *Candidatus* Rubrivivax pericitudo sp. nov.

Candidatus Rubrivivax pericitudo (NL. fem. n. *pericitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp903834645*. The type genome for the species is the GenBank assembly GCA_903834645.1. The GC content of the type genome is 70.49 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Rubrivivax utraledo sp. nov.

Candidatus Rubrivivax utraledo (NL. fem. n. *utraledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrivivax sp009923895*. The type genome for the species is the GenBank assembly GCA_009923895.1. The GC content of the type genome is 61.51 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Rubrobacter petulitoga sp. nov.

Candidatus Rubrobacter petulitoga (NL. fem. n. *petulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rubrobacter_A sp013695915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013695915.1. The GC content of the type genome is 67.39 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Rudaea algifessa sp. nov.

Candidatus Rudaea algifessa (NL. fem. n. *algifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rudaea sp005503555*. The type genome for the species is the GenBank assembly RS_GCF_005503555.1. The GC content of the type genome is 63.82 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Rudaea pecuniforma sp. nov.

Candidatus Rudaea pecuniforma (NL. fem. n. *pecuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rudaea sp005877675*. The type genome for the species is the GenBank assembly GCA_005877675.1. The GC content of the type genome is 62.45 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Rudanella semimilenta sp. nov.

Candidatus Rudanella semimilenta (NL. fem. n. *semimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rudanella sp004292855*. The type genome for the species is the GenBank assembly GCA_013297945.1. The GC content of the type genome is 53.65 % and the genome length is 7.02 Mbp.

Description of *Candidatus* Rudecana susicitura sp. nov.

Candidatus Rudecana susicitura (NL. fem. n. *susicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSWA01 sp011327745*. The type genome for the species is the GenBank assembly GCA_011327745.1. The GC content of the type genome is 69.91 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Rudecana gen. nov.

Candidatus Rudecana (NL. fem. n. *Rudecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSWA01*. The type species for the genus is *Candidatus* Rudecana susicitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSWA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudecanaceae.

Description of *Candidatus* Rudecanaceae fam. nov.

Candidatus Rudecanaceae (NL. fem. n. *Rudecanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSWA01.* The type genus for the taxon is *Candidatus* Rudecana .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSWA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rudecanales.

Description of *Candidatus* Rudecanales ord. nov.

Candidatus Rudecanales (NL. fem. n. *Rudecanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSWA01.* The type genus for the taxon is *Candidatus* Rudecana .

According to the original version of GTDB R06-RS202, this family belongs to the class *MHYJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Fetifosae.

Description of *Candidatus* Rudecaria fefelitudo sp. nov.

Candidatus Rudecaria fefelitudo (NL. fem. n. *fefelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6522 sp002434915*. The type genome for the species is the GenBank assembly GCA_002434915.1. The GC content of the type genome is 42.81 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Rudecaria gen. nov.

Candidatus Rudecaria (NL. fem. n. *Rudecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6522*. The type species for the genus is *Candidatus* Rudecaria fefelitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6522*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudecariaceae.

Description of *Candidatus* Rudecariaceae fam. nov.

Candidatus Rudecariaceae (NL. fem. n. *Rudecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6522.* The type genus for the taxon is *Candidatus* Rudecaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6522*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rudecariales.

Description of *Candidatus* Rudecariales ord. nov.

Candidatus Rudecariales (NL. fem. n. *Rudecariales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6522.* The type genus for the taxon is *Candidatus* Rudecaria .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Rudecaria noninilenta sp. nov.

Candidatus Rudecaria noninilenta (NL. fem. n. *noninilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6522 sp002718345*. The type genome for the species is the GenBank assembly GCA_002718345.1. The GC content of the type genome is 42.05 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Rudecaria nubecigena sp. nov.

Candidatus Rudecaria nubecigena (NL. fem. n. *nubecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6522 sp002311835*. The type genome for the species is the GenBank assembly GCA_002311835.1. The GC content of the type genome is 50.44 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Rudecella famelitia sp. nov.

Candidatus Rudecella famelitia (NL. fem. n. *famelitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin36 sp002238565*. The type genome for the species is the GenBank assembly GCA_002238565.1. The GC content of the type genome is 58.04 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Rudecella gen. nov.

Candidatus Rudecella (NL. fem. n. *Rudecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *Bin36*. The type species for the genus is *Candidatus* Rudecella famelitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rudecia adlocentia sp. nov.

Candidatus Rudecia adlocentia (NL. fem. n. *adlocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6055 sp011523515*. The type genome for the species is the GenBank assembly GCA_011523515.1. The GC content of the type genome is 59.64 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Rudecia gen. nov.

Candidatus Rudecia (NL. fem. n. *Rudecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6055*. The type species for the genus is *Candidatus* Rudecia adlocentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *A4b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegiaceae.

Description of *Candidatus* Rudecia antacigena sp. nov.

Candidatus Rudecia antacigena (NL. fem. n. *antacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6055 sp012270545*. The type genome for the species is the GenBank assembly GCA_012270545.1. The GC content of the type genome is 58.38 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Rudecia argimitoga sp. nov.

Candidatus Rudecia argimitoga (NL. fem. n. *argimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA6055 sp011525385*. The type genome for the species is the GenBank assembly GCA_011525385.1. The GC content of the type genome is 56.63 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Rudecia caselitoga sp. nov.

Candidatus Rudecia caselitoga (NL. fem. n. *caselitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6055 sp009841405*. The type genome for the species is the GenBank assembly GCA_009841405.1. The GC content of the type genome is 61.23 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Rudecia nucificella sp. nov.

Candidatus Rudecia nucificella (NL. fem. n. *nucificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6055 sp011523545*. The type genome for the species is the GenBank assembly GCA_011523545.1. The GC content of the type genome is 60.02 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Rudecia pudibugo sp. nov.

Candidatus Rudecia pudibugo (NL. fem. n. *pudibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6055 sp009840575*. The type genome for the species is the GenBank assembly GCA_009838095.1. The GC content of the type genome is 59.85 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Rudecia recucousia sp. nov.

Candidatus Rudecia recucousia (NL. fem. n. *recucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6055 sp002428985*. The type genome for the species is the GenBank assembly GCA_002428985.1. The GC content of the type genome is 43.16 % and the genome length is 8.51 Mbp.

Description of *Candidatus* Rudecia reduvugo sp. nov.

Candidatus Rudecia reduvugo (NL. fem. n. *reduvugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6055 sp011523735*. The type genome for the species is the GenBank assembly GCA_011523735.1. The GC content of the type genome is 57.28 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Rudecia roraretta sp. nov.

Candidatus Rudecia roraretta (NL. fem. n. *roraretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6055 sp002238485*. The type genome for the species is the GenBank assembly GCA_002238485.1. The GC content of the type genome is 59.31 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Rudecia satacitio sp. nov.

Candidatus Rudecia satacitio (NL. fem. n. *satacitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6055 sp011523705*. The type genome for the species is the GenBank assembly GCA_011523705.1. The GC content of the type genome is 58.92 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Rudecida conubatica sp. nov.

Candidatus Rudecida conubatica (NL. fem. n. *conubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B9-G15 sp003650185*. The type genome for the species is the GenBank assembly GCA_003650225.1. The GC content of the type genome is 59.28 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Rudecida gen. nov.

Candidatus Rudecida (NL. fem. n. *Rudecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B9-G15*. The type species for the genus is *Candidatus* Rudecida conubatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-53-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reforidaceae.

Description of *Candidatus* Rudecosa defanugo sp. nov.

Candidatus Rudecosa defanugo (NL. fem. n. *defanugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-999 sp003157035*. The type genome for the species is the GenBank assembly GCA_003157035.1. The GC content of the type genome is 62.29 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Rudecosa gen. nov.

Candidatus Rudecosa (NL. fem. n. *Rudecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-999*. The type species for the genus is *Candidatus* Rudecosa defanugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rudecosa ellebugo sp. nov.

Candidatus Rudecosa ellebugo (NL. fem. n. *ellebugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-999 sp003158255*. The type genome for the species is the GenBank assembly GCA_003158255.1. The GC content of the type genome is 62.02 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Rudecula absocitica sp. nov.

Candidatus Rudecula absocitica (NL. fem. n. *absocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA877 sp903873975*. The type genome for the species is the GenBank assembly GCA_903873975.1. The GC content of the type genome is 54.75 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Rudecula gen. nov.

Candidatus Rudecula (NL. fem. n. *Rudecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA877*. The type species for the genus is *Candidatus* Rudecula absocitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Rudecula defosivita sp. nov.

Candidatus Rudecula defosivita (NL. fem. n. *defosivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA877 sp903884265*. The type genome for the species is the GenBank assembly GCA_903884265.1. The GC content of the type genome is 53.49 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Rudecula embamousia sp. nov.

Candidatus Rudecula embamousia (NL. fem. n. *embamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA877 sp002294405*. The type genome for the species is the GenBank assembly GCA_002294405.1. The GC content of the type genome is 49.76 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Rudecula mahelitoga sp. nov.

Candidatus Rudecula mahelitoga (NL. fem. n. *mahelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA877 sp009772985*. The type genome for the species is the GenBank assembly GCA_009772985.1. The GC content of the type genome is 61.22 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Rudecula velivitica sp. nov.

Candidatus Rudecula velivitica (NL. fem. n. *velivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA877 sp903829085*. The type genome for the species is the GenBank assembly GCA_903829085.1. The GC content of the type genome is 54.73 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Rudicana cenobousia sp. nov.

Candidatus Rudicana cenobousia (NL. fem. n. *cenobousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-150 sp003228915*. The type genome for the species is the GenBank assembly GCA_003228915.1. The GC content of the type genome is 45.84 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Rudicana gen. nov.

Candidatus Rudicana (NL. fem. n. *Rudicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-150*. The type species for the genus is *Candidatus* Rudicana cenobousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-150*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicanaceae.

Description of *Candidatus* Rudicanaceae fam. nov.

Candidatus Rudicanaceae (NL. fem. n. *Rudicanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-150.* The type genus for the taxon is *Candidatus* Rudicana .

According to GTDB R06-RS202, this family belongs to the order *Acidiferrobacterales*.

Description of *Candidatus* Rudicaria tabitibra sp. nov.

Candidatus Rudicaria tabitibra (NL. fem. n. *tabitibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2718815 sp002726515*. The type genome for the species is the GenBank assembly GCA_002718815.1. The GC content of the type genome is 55.25 % and the genome length is 6.38 Mbp.

Description of *Candidatus* Rudicaria gen. nov.

Candidatus Rudicaria (NL. fem. n. *Rudicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2718815*. The type species for the genus is *Candidatus* Rudicaria tabitibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rudicella divulilega sp. nov.

Candidatus Rudicella divulilega (NL. fem. n. *divulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5794 sp002418265*. The type genome for the species is the GenBank assembly GCA_002418265.1. The GC content of the type genome is 59.25 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Rudicella gen. nov.

Candidatus Rudicella (NL. fem. n. *Rudicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5794*. The type species for the genus is *Candidatus* Rudicella divulilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudicellaceae.

Description of *Candidatus* Rudicellaceae fam. nov.

Candidatus Rudicellaceae (NL. fem. n. *Rudicellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5794.* The type genus for the taxon is *Candidatus* Rudicella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rudicellales.

Description of *Candidatus* Rudicellales ord. nov.

Candidatus Rudicellales (NL. fem. n. *Rudicellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5794.* The type genus for the taxon is *Candidatus* Rudicella .

According to the GTDB R06-RS202, this order belongs to the class *Acidimicrobiia*.

Description of *Candidatus* Rudicella vanititudo sp. nov.

Candidatus Rudicella vanititudo (NL. fem. n. *vanititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5794 sp008501565*. The type genome for the species is the GenBank assembly GCA_008501565.1. The GC content of the type genome is 60.28 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Rudicia hexagedo sp. nov.

Candidatus Rudicia hexagedo (NL. fem. n. *hexagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNC01 sp007120745*. The type genome for the species is the GenBank assembly GCA_007120745.1. The GC content of the type genome is 45.87 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Rudicia gen. nov.

Candidatus Rudicia (NL. fem. n. *Rudicia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKNC01*. The type species for the genus is *Candidatus* Rudicia hexagedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudiciaceae.

Description of *Candidatus* Rudiciaceae fam. nov.

Candidatus Rudiciaceae (NL. fem. n. *Rudiciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKNC01.* The type genus for the taxon is *Candidatus* Rudicia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SKNC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rudiciales.

Description of *Candidatus* Rudiciales ord. nov.

Candidatus Rudiciales (NL. fem. n. *Rudiciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SKNC01.* The type genus for the taxon is *Candidatus* Rudicia .

According to the GTDB R06-RS202, this order belongs to the class *Dethiobacteria*.

Description of *Candidatus* Rudicia occenitia sp. nov.

Candidatus Rudicia occenitia (NL. fem. n. *occenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKNC01 sp003560915*. The type genome for the species is the GenBank assembly GCA_003560915.1. The GC content of the type genome is 44.29 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Rudicida defasitudo sp. nov.

Candidatus Rudicida defasitudo (NL. fem. n. *defasitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED13 sp902595755*. The type genome for the species is the GenBank assembly GCA_902595755.1. The GC content of the type genome is 29.62 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Rudicida gen. nov.

Candidatus Rudicida (NL. fem. n. *Rudicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED13*. The type species for the genus is *Candidatus* Rudicida defasitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Rudicida sicinigena sp. nov.

Candidatus Rudicida sicinigena (NL. fem. n. *sicinigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED13 sp002167825*. The type genome for the species is the GenBank assembly GCA_002167825.1. The GC content of the type genome is 29.85 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Rudicosa camilitia sp. nov.

Candidatus Rudicosa camilitia (NL. fem. n. *camilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-303 sp000437755*. The type genome for the species is the GenBank assembly GCA_000437755.1. The GC content of the type genome is 40.93 % and the genome length is 2.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Rudicosa gen. nov.

Candidatus Rudicosa (NL. fem. n. *Rudicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-303*. The type species for the genus is *Candidatus* Rudicosa camilitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rudicosa cisorigena sp. nov.

Candidatus Rudicosa cisorigena (NL. fem. n. *cisorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-303 sp902797675*. The type genome for the species is the GenBank assembly GCA_902797675.1. The GC content of the type genome is 44.16 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Rudicosa cocibitia sp. nov.

Candidatus Rudicosa cocibitia (NL. fem. n. *cocibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-303 sp012520815*. The type genome for the species is the GenBank assembly GCA_012520815.1. The GC content of the type genome is 34.44 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Rudicosa fatilibula sp. nov.

Candidatus Rudicosa fatilibula (NL. fem. n. *fatilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-303 sp900539455*. The type genome for the species is the GenBank assembly GCA_900539455.1. The GC content of the type genome is 34.02 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Ruegeria apsenedo sp. nov.

Candidatus Ruegeria apsenedo (NL. fem. n. *apsenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Ruegeria sp001238295*. The type genome for the species is the GenBank assembly RS_GCF_001238295.1. The GC content of the type genome is 56.79 % and the genome length is 4.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Surface seawater".

Description of *Candidatus* Ruegeria conamibula sp. nov.

Candidatus Ruegeria conamibula (NL. fem. n. *conamibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp013112245*. The type genome for the species is the GenBank assembly RS_GCF_013031175.1. The GC content of the type genome is 56.74 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Ruegeria defetiforma sp. nov.

Candidatus Ruegeria defetiforma (NL. fem. n. *defetiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp903914075*. The type genome for the species is the GenBank assembly RS_GCF_903914075.1. The GC content of the type genome is 57.28 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Ruegeria faticilega sp. nov.

Candidatus Ruegeria faticilega (NL. fem. n. *faticilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp013031405*. The type genome for the species is the GenBank assembly RS_GCF_013031405.1. The GC content of the type genome is 61.03 % and the genome length is 6.08 Mbp.

Description of *Candidatus* Ruegeria homogibra sp. nov.

Candidatus Ruegeria homogibra (NL. fem. n. *homogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp013377785*. The type genome for the species is the GenBank assembly RS_GCF_013377785.1. The GC content of the type genome is 56.61 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Ruegeria ignosessa sp. nov.

Candidatus Ruegeria ignosessa (NL. fem. n. *ignosessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp003318255*. The type genome for the species is the GenBank assembly RS_GCF_003318255.1. The GC content of the type genome is 56.88 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Ruegeria illapessa sp. nov.

Candidatus Ruegeria illapessa (NL. fem. n. *illapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp000814005*. The type genome for the species is the GenBank assembly RS_GCF_000814005.1. The GC content of the type genome is 57.26 % and the genome length is 4.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "accessory nidamental gland".

Description of *Candidatus* Ruegeria inabsastra sp. nov.

Candidatus Ruegeria inabsastra (NL. fem. n. *inabsastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp003443535*. The type genome for the species is the GenBank assembly RS_GCF_003443535.1. The GC content of the type genome is 56.99 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Ruegeria insinax sp. nov.

Candidatus Ruegeria insinax (NL. fem. n. *insinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp900143525*. The type genome for the species is the GenBank assembly RS_GCF_900143525.1. The GC content of the type genome is 56.53 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Ruegeria melopax sp. nov.

Candidatus Ruegeria melopax (NL. fem. n. *melopax* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp013111185*. The type genome for the species is the GenBank assembly RS_GCF_013111185.1. The GC content of the type genome is 56.36 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Ruegeria odollimonia sp. nov.

Candidatus Ruegeria odollimonia (NL. fem. n. *odollimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp000158135*. The type genome for the species is the GenBank assembly RS_GCF_000158135.1. The GC content of the type genome is 57.67 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Ruegeria recocugo sp. nov.

Candidatus Ruegeria recocugo (NL. fem. n. *recocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp000813985*. The type genome for the species is the GenBank assembly RS_GCF_000813985.1. The GC content of the type genome is 57.52 % and the genome length is 4.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "accessory nidamental gland".

Description of *Candidatus* Ruegeria redacivita sp. nov.

Candidatus Ruegeria redacivita (NL. fem. n. *redacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp900313035*. The type genome for the species is the GenBank assembly RS_GCF_900313035.1. The GC content of the type genome is 56.15 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Ruegeria semimimonia sp. nov.

Candidatus Ruegeria semimimonia (NL. fem. n. *semimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp009363615*. The type genome for the species is the GenBank assembly RS_GCF_013033705.1. The GC content of the type genome is 58.02 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Ruegeria vinulitia sp. nov.

Candidatus Ruegeria vinulitia (NL. fem. n. *vinulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria sp013033515*. The type genome for the species is the GenBank assembly RS_GCF_013035825.1. The GC content of the type genome is 57.17 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Ruegeria sicinousia sp. nov.

Candidatus Ruegeria sicinousia (NL. fem. n. *sicinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria_B sp010500245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010500245.1. The GC content of the type genome is 62.79 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Ruegeria vinulitio sp. nov.

Candidatus Ruegeria vinulitio (NL. fem. n. *vinulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruegeria_E sp900537075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900537075.1. The GC content of the type genome is 57.78 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Rufibacter cicililega sp. nov.

Candidatus Rufibacter cicililega (NL. fem. n. *cicililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rufibacter sp008271695*. The type genome for the species is the GenBank assembly RS_GCF_008271695.1. The GC content of the type genome is 51.34 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Rufibacter devecetta sp. nov.

Candidatus Rufibacter devecetta (NL. fem. n. *devecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rufibacter sp003721515*. The type genome for the species is the GenBank assembly RS_GCF_003721515.1. The GC content of the type genome is 50.23 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Rufibacter intecivita sp. nov.

Candidatus Rufibacter intecivita (NL. fem. n. *intecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rufibacter sp013623775*. The type genome for the species is the GenBank assembly RS_GCF_013623775.1. The GC content of the type genome is 50.61 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Rufibacter pacifousia sp. nov.

Candidatus Rufibacter pacifousia (NL. fem. n. *pacifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rufibacter sp001078055*. The type genome for the species is the GenBank assembly RS_GCF_001078055.1. The GC content of the type genome is 51.35 % and the genome length is 4.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Rufibacter solivimonia sp. nov.

Candidatus Rufibacter solivimonia (NL. fem. n. *solivimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rufibacter sp014269285*. The type genome for the species is the

GenBank assembly RS_GCF_014269285.1. The GC content of the type genome is 52.08 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Rugamonas virecicella sp. nov.

Candidatus Rugamonas virecicella (NL. fem. n. *virecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rugamonas sp013284265*. The type genome for the species is the GenBank assembly RS_GCF_013284265.1. The GC content of the type genome is 63.19 % and the genome length is 6.94 Mbp.

Description of *Candidatus* Rugosibacter adpenicella sp. nov.

Candidatus Rugosibacter adpenicella (NL. fem. n. *adpenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rugosibacter sp002842395*. The type genome for the species is the GenBank assembly GCA_002842395.1. The GC content of the type genome is 62.68 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Rugosibacter bimetitio sp. nov.

Candidatus Rugosibacter bimetitio (NL. fem. n. *bimetitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rugosibacter sp002424865*. The type genome for the species is the GenBank assembly GCA_002422445.1. The GC content of the type genome is 56.87 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Rugosibacter denicigena sp. nov.

Candidatus Rugosibacter denicigena (NL. fem. n. *denicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rugosibacter sp002422995*. The type genome for the species is the GenBank assembly GCA_002422995.1. The GC content of the type genome is 51.76 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Rugosibacter regigitia sp. nov.

Candidatus Rugosibacter regigitia (NL. fem. n. *regigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rugosibacter sp011620215*. The type genome for the species is the GenBank assembly GCA_011620215.1. The GC content of the type genome is 54.03 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Rugosibacter taraxigena sp. nov.

Candidatus Rugosibacter taraxigena (NL. fem. n. *taraxigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rugosibacter sp004322535*. The type genome for the species is the GenBank assembly GCA_004322535.1. The GC content of the type genome is 54.04 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Rumifana conamicella sp. nov.

Candidatus Rumifana conamicella (NL. fem. n. *conamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHYG01 sp009692925*. The type genome for the species is the GenBank assembly GCA_009692925.1. The GC content of the type genome is 64.29 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Rumifana gen. nov.

Candidatus Rumifana (NL. fem. n. *Rumifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHYG01*. The type species for the genus is *Candidatus* Rumifana conamicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicipellaceae.

Description of *Candidatus* Rumifaria detunitica sp. nov.

Candidatus Rumifaria detunitica (NL. fem. n. *detunitica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *V9D3004 sp002349525*. The type genome for the species is the GenBank assembly GCA_002349525.1. The GC content of the type genome is 37.26 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Rumifaria gen. nov.

Candidatus Rumifaria (NL. fem. n. *Rumifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *V9D3004*. The type species for the genus is *Candidatus* Rumifaria detunitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rumifaria expasentia sp. nov.

Candidatus Rumifaria expasentia (NL. fem. n. *expasentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *V9D3004 sp900760345*. The type genome for the species is the GenBank assembly RS_GCF_900760345.1. The GC content of the type genome is 37.91 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Rumifaria pavicicella sp. nov.

Candidatus Rumifaria pavicicella (NL. fem. n. *pavicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *V9D3004 sp000621985*. The type genome for the species is the GenBank assembly RS_GCF_000621985.1. The GC content of the type genome is 40.63 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Rumifella culilivita sp. nov.

Candidatus Rumifella culilivita (NL. fem. n. *culilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIOZ-UU100 sp013349825*. The type genome for the species is the GenBank assembly GCA_013349855.1. The GC content of the type genome is 49.09 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Rumifella gen. nov.

Candidatus Rumifella (NL. fem. n. *Rumifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NIOZ-UU100*. The type species for the genus is *Candidatus* Rumifella culilivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCF-002020875*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Valefariaceae.

Description of *Candidatus* Rumifella retecitura sp. nov.

Candidatus Rumifella retecitura (NL. fem. n. *retecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIOZ-UU100 sp014384675*. The type genome for the species is the GenBank assembly GCA_014384675.1. The GC content of the type genome is 49.18 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Rumifia cenotugo sp. nov.

Candidatus Rumifia cenotugo (NL. fem. n. *cenotugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HK1 sp000583135*. The type genome for the species is the GenBank assembly GCA_002296665.1. The GC content of the type genome is 58.28 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Rumifia gen. nov.

Candidatus Rumifia (NL. fem. n. *Rumifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HK1*. The type species for the genus is *Candidatus* Rumifia cenotugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HK1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rumifiaceae.

Description of *Candidatus* Rumifiaceae fam. nov.

Candidatus Rumifiaceae (NL. fem. n. *Rumifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HK1*. The type genus for the taxon is *Candidatus* Rumifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *HK1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rumifiales.

Description of *Candidatus* Rumifiales ord. nov.

Candidatus Rumifiales (NL. fem. n. *Rumifiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HK1*. The type genus for the taxon is *Candidatus* Rumifia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Rumifida lugubimonia sp. nov.

Candidatus Rumifida lugubimonia (NL. fem. n. *lugubimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDOU01 sp013043085*. The type genome for the species is the GenBank assembly GCA_013001065.1. The GC content of the type genome is 59.64 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Rumifida gen. nov.

Candidatus Rumifida (NL. fem. n. *Rumifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDOU01*. The type species for the genus is *Candidatus* Rumifida lugubimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHLN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilariaceae.

Description of *Candidatus* Rumifosa bipatedo sp. nov.

Candidatus Rumifosa bipatedo (NL. fem. n. *bipatedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1858 sp002338385*. The type genome for the species is the GenBank assembly GCA_003332345.1. The GC content of the type genome is 47.1 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Rumifosa gen. nov.

Candidatus Rumifosa (NL. fem. n. *Rumifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1858*. The type species for the genus is *Candidatus* Rumifosa bipatedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Paraciaceae.

Description of *Candidatus* Rumifula tomacitia sp. nov.

Candidatus Rumifula tomacitia (NL. fem. n. *tomacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4765 sp002365175*. The type genome for the species is the GenBank assembly GCA_002365175.1. The GC content of the type genome is 60.96 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Rumifula gen. nov.

Candidatus Rumifula (NL. fem. n. *Rumifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4765*. The type species for the genus is *Candidatus* Rumifula

tomacitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4765*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rumifulaceae.

Description of *Candidatus* Rumifulaceae fam. nov.

Candidatus Rumifulaceae (NL. fem. n. *Rumifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4765.* The type genus for the taxon is *Candidatus* Rumifula .

According to GTDB R06-RS202, this family belongs to the order *Rhizobiales*.

Description of *Candidatus* Ruminiclostridium altipibra sp. nov.

Candidatus Ruminiclostridium altipibra (NL. fem. n. *altipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium sp005473905*. The type genome for the species is the GenBank assembly RS_GCF_005473905.1. The GC content of the type genome is 33.02 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Ruminiclostridium ammuritoga sp. nov.

Candidatus Ruminiclostridium ammuritoga (NL. fem. n. *ammuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium sp000244875*. The type genome for the species is the GenBank assembly RS_GCF_000244875.1. The GC content of the type genome is 37.26 % and the genome length is 4.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Ruminiclostridium xeramatica sp. nov.

Candidatus Ruminiclostridium xeramatica (NL. fem. n. *xeramatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Ruminiclostridium_D sp002306975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002306975.1. The GC content of the type genome is 44.13 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Ruminiclostridium accogago sp. nov.

Candidatus Ruminiclostridium accogago (NL. fem. n. *accogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp003508605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003508605.1. The GC content of the type genome is 44.54 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Ruminiclostridium acertentia sp. nov.

Candidatus Ruminiclostridium acertentia (NL. fem. n. *acertentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009784825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009784825.1. The GC content of the type genome is 43.09 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Ruminiclostridium acrimitura sp. nov.

Candidatus Ruminiclostridium acrimitura (NL. fem. n. *acrimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009782265*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009782265.1. The GC content of the type genome is 43.43 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Ruminiclostridium adfulastra sp. nov.

Candidatus Ruminiclostridium adfulastra (NL. fem. n. *adfulastra* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009783205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009783205.1. The GC content of the type genome is 43.9 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Ruminiclostridium adlecitura sp. nov.

Candidatus Ruminiclostridium adlecitura (NL. fem. n. *adlecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009783695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009783695.1. The GC content of the type genome is 47.45 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Ruminiclostridium astipivita sp. nov.

Candidatus Ruminiclostridium astipivita (NL. fem. n. *astipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009786985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009786985.1. The GC content of the type genome is 40.47 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Ruminiclostridium attoribula sp. nov.

Candidatus Ruminiclostridium attoribula (NL. fem. n. *attoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp902780695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902780695.1.

The GC content of the type genome is 49.28 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Ruminiclostridium betacibula sp. nov.

Candidatus Ruminiclostridium betacibula (NL. fem. n. *betacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp002363155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003508215.1. The GC content of the type genome is 49.06 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Ruminiclostridium bifariforma sp. nov.

Candidatus Ruminiclostridium bifariforma (NL. fem. n. *bifariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009778605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009778605.1. The GC content of the type genome is 49.37 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Ruminiclostridium bulapisca sp. nov.

Candidatus Ruminiclostridium bulapisca (NL. fem. n. *bulapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009776305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009776305.1. The GC content of the type genome is 44.29 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Ruminiclostridium cituvitoga sp. nov.

Candidatus Ruminiclostridium cituvitoga (NL. fem. n. *cituvitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Ruminiclostridium_E sp009784765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009784765.1. The GC content of the type genome is 50.09 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Ruminiclostridium cruppimonia sp. nov.

Candidatus Ruminiclostridium cruppimonia (NL. fem. n. *cruppimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009777445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009777445.1. The GC content of the type genome is 43.06 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Ruminiclostridium dibapousia sp. nov.

Candidatus Ruminiclostridium dibapousia (NL. fem. n. *dibapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp900768675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900768675.1. The GC content of the type genome is 46.81 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Ruminiclostridium documatio sp. nov.

Candidatus Ruminiclostridium documatio (NL. fem. n. *documatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009777415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009777415.1. The GC content of the type genome is 45.16 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Ruminiclostridium extipessa sp. nov.

Candidatus Ruminiclostridium extipessa (NL. fem. n. *extipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp900768735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900768735.1. The GC content of the type genome is 47.64 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Ruminiclostridium lenocedo sp. nov.

Candidatus Ruminiclostridium lenocedo (NL. fem. n. *lenocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009781425*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009781425.1. The GC content of the type genome is 45.88 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Ruminiclostridium miracilenta sp. nov.

Candidatus Ruminiclostridium miracilenta (NL. fem. n. *miracilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp002437415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002451735.1. The GC content of the type genome is 45.71 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Ruminiclostridium nucifetta sp. nov.

Candidatus Ruminiclostridium nucifetta (NL. fem. n. *nucifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009778065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into

a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009778065.1. The GC content of the type genome is 42.98 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Ruminiclostridium opporilega sp. nov.

Candidatus Ruminiclostridium opporilega (NL. fem. n. *opporilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009777835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009777835.1. The GC content of the type genome is 46.98 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Ruminiclostridium turibago sp. nov.

Candidatus Ruminiclostridium turibago (NL. fem. n. *turibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp900556525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900772545.1. The GC content of the type genome is 47.49 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Ruminiclostridium turifilenta sp. nov.

Candidatus Ruminiclostridium turifilenta (NL. fem. n. *turifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp003512525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900758115.1. The GC content of the type genome is 45.09 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Ruminiclostridium vehemicula sp. nov.

Candidatus Ruminiclostridium vehemicula (NL. fem. n. *vehemicula* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp009777155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009777155.1. The GC content of the type genome is 48.91 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Ruminiclostridium vilititia sp. nov.

Candidatus Ruminiclostridium vilititia (NL. fem. n. *vilititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminiclostridium_E sp900539195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900758745.1. The GC content of the type genome is 44.86 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Ruminobacter locelitio sp. nov.

Candidatus Ruminobacter locelitio (NL. fem. n. *locelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminobacter sp900315145*. The type genome for the species is the GenBank assembly GCA_900315145.1. The GC content of the type genome is 40.77 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Ruminobacter milipiforma sp. nov.

Candidatus Ruminobacter milipiforma (NL. fem. n. *milipiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminobacter sp002309455*. The type genome for the species is the GenBank assembly GCA_002309455.1. The GC content of the type genome is 44.62 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Ruminococcus adfulimonia sp. nov.

Candidatus Ruminococcus adfulimonia (NL. fem. n. *adfulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp002362175*. The type genome for the species is the GenBank assembly GCA_002362175.1. The GC content of the type genome is 38.73 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Ruminococcus allubitura sp. nov.

Candidatus Ruminococcus allubitura (NL. fem. n. *allubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp009177225*. The type genome for the species is the GenBank assembly GCA_009177225.1. The GC content of the type genome is 38.66 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Ruminococcus anastitura sp. nov.

Candidatus Ruminococcus anastitura (NL. fem. n. *anastitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp900752785*. The type genome for the species is the GenBank assembly GCA_900752785.1. The GC content of the type genome is 41.6 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Ruminococcus biverax sp. nov.

Candidatus Ruminococcus biverax (NL. fem. n. *biverax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp012718885*. The type genome for the species is the GenBank assembly GCA_012718885.1. The GC content of the type genome is 45.86 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Ruminococcus citocitoga sp. nov.

Candidatus Ruminococcus citocitoga (NL. fem. n. *citocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp900545125*. The type genome for the species is the GenBank assembly GCA_900545125.1. The GC content of the type genome is 43.31 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Ruminococcus cosigicula sp. nov.

Candidatus Ruminococcus cosigicula (NL. fem. n. *cosigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp002438605*. The type genome for the species is the GenBank assembly GCA_002438605.1. The GC content of the type genome is 37.24 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Ruminococcus deforago sp. nov.

Candidatus Ruminococcus deforago (NL. fem. n. *deforago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp900318825*. The type genome for the species is the GenBank assembly GCA_900318825.1. The GC content of the type genome is 49.15 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Ruminococcus diritilega sp. nov.

Candidatus Ruminococcus diritilega (NL. fem. n. *diritilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp900315755*. The type genome for the species is the GenBank assembly RS_GCF_902762695.1. The GC content of the type genome is 44.73 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Ruminococcus ducilimonas sp. nov.

Candidatus Ruminococcus ducilimonas (NL. fem. n. *ducilimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp002362135*. The type genome for the species is the GenBank assembly GCA_002362135.1. The GC content of the type genome is 44.29 %

and the genome length is 1.94 Mbp.

Description of *Candidatus* Ruminococcus inergetta sp. nov.

Candidatus Ruminococcus inergetta (NL. fem. n. *inergetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp900761275*. The type genome for the species is the GenBank assembly GCA_900761275.1. The GC content of the type genome is 41.21 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Ruminococcus lanugilega sp. nov.

Candidatus Ruminococcus lanugilega (NL. fem. n. *lanugilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp003488415*. The type genome for the species is the GenBank assembly GCA_003488415.1. The GC content of the type genome is 49.6 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Ruminococcus lavacugo sp. nov.

Candidatus Ruminococcus lavacugo (NL. fem. n. *lavacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp900319195*. The type genome for the species is the GenBank assembly GCA_900319195.1. The GC content of the type genome is 49.18 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Ruminococcus penecigena sp. nov.

Candidatus Ruminococcus penecigena (NL. fem. n. *penecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp900315975*. The type genome for the species is the GenBank assembly RS_GCF_902792235.1. The GC content of the type genome is 46.12 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Ruminococcus relapentia sp. nov.

Candidatus Ruminococcus relapentia (NL. fem. n. *relapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp900321885*. The type genome for the species is the GenBank assembly GCA_900321885.1. The GC content of the type genome is 51.21 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Ruminococcus resulimonas sp. nov.

Candidatus Ruminococcus resulimonas (NL. fem. n. *resulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp002389995*. The type genome for the species is the GenBank assembly GCA_003446395.1. The GC content of the type genome is 40.08 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Ruminococcus semifentia sp. nov.

Candidatus Ruminococcus semifentia (NL. fem. n. *semifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp900540005*. The type genome for the species is the GenBank assembly GCA_900540005.1. The GC content of the type genome is 46.23 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Ruminococcus tabificula sp. nov.

Candidatus Ruminococcus tabificula (NL. fem. n. *tabificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp001604035*. The type genome for the species is the GenBank assembly GCA_001604035.1. The GC content of the type genome is 45.72 % and the genome length is 2.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Ruminococcus vepalentia sp. nov.

Candidatus Ruminococcus vepalentia (NL. fem. n. *vepalentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp002394695*. The type genome for the species is the GenBank assembly RS_GCF_902760805.1. The GC content of the type genome is 52.01 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Ruminococcus viripetta sp. nov.

Candidatus Ruminococcus viripetta (NL. fem. n. *viripetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus sp002414125*. The type genome for the species is the GenBank assembly GCA_002414125.1. The GC content of the type genome is 47.47 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Ruminococcus culigiforma sp. nov.

Candidatus Ruminococcus culigiforma (NL. fem. n. *culigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_A sp003011855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009696065.1. The GC content of the type genome is 44.07 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Ruminococcus derecitura sp. nov.

Candidatus Ruminococcus derecitura (NL. fem. n. *derecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_A sp000432335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900549115.1. The GC content of the type genome is 43.63 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Ruminococcus illepicula sp. nov.

Candidatus Ruminococcus illepicula (NL. fem. n. *illepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_A sp004562915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004562915.1. The GC content of the type genome is 41.77 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Ruminococcus invetax sp. nov.

Candidatus Ruminococcus invetax (NL. fem. n. *invetax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_A sp004556655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004556655.1. The GC content of the type genome is 41.25 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Ruminococcus refinitrix sp. nov.

Candidatus Ruminococcus refinitrix (NL. fem. n. *refinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_A sp002361775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002361885.1. The GC content of the type genome is 41.32 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Ruminococcus vepalilega sp. nov.

Candidatus Ruminococcus vepalilega (NL. fem. n. *vepalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_A sp009929525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009929895.1. The GC content of the type genome is 42.44 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Ruminococcus bisacicula sp. nov.

Candidatus Ruminococcus bisacicula (NL. fem. n. *bisacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_B sp900544395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900544395.1. The GC content of the type genome is 43.61 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Ruminococcus encomessa sp. nov.

Candidatus Ruminococcus encomessa (NL. fem. n. *encomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_C sp900765125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900765125.1. The GC content of the type genome is 39.65 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Ruminococcus fatifatio sp. nov.

Candidatus Ruminococcus fatifatio (NL. fem. n. *fatifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_C sp000433635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000980235.1. The GC content of the type genome is 46.96 % and the genome length is 2.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "stool sample from 84 year old male with stage 3 colorectal cancer".

Description of *Candidatus* Ruminococcus gasomilega sp. nov.

Candidatus Ruminococcus gasomilega (NL. fem. n. *gasomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_C sp900545285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900545285.1. The GC content of the type genome is 49.28 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Ruminococcus negotitas sp. nov.

Candidatus Ruminococcus negotitas (NL. fem. n. *negotitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_C sp000437175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000437175.1. The GC content of the type genome is 52.41 % and the genome length is 2.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Ruminococcus nugivousia sp. nov.

Candidatus Ruminococcus nugivousia (NL. fem. n. *nugivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_C sp000980705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_008667655.1. The GC content of the type genome is 53.22 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Ruminococcus rubecibra sp. nov.

Candidatus Ruminococcus rubecibra (NL. fem. n. *rubecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_C sp900770195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900770195.1. The GC content of the type genome is 34.59 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Ruminococcus socagicula sp. nov.

Candidatus Ruminococcus socagicula (NL. fem. n. *socagicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_C sp000437255*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000437255.1. The GC content of the type genome is 45.65 % and the genome length is 2.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Ruminococcus acrolitudo sp. nov.

Candidatus Ruminococcus acrolitudo (NL. fem. n. *acrolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902767035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902767035.1. The GC content of the type genome is 48.13 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Ruminococcus adpinimonas sp. nov.

Candidatus Ruminococcus adpinimonas (NL. fem. n. *adpinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902781565*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902781565.1. The GC content of the type genome is 53.59 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Ruminococcus affanetta sp. nov.

Candidatus Ruminococcus affanetta (NL. fem. n. *affanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902787365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902787365.1. The GC content of the type genome is 47.14 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Ruminococcus alsidilega sp. nov.

Candidatus Ruminococcus alsidilega (NL. fem. n. *alsidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp000686125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000686125.1. The GC content of the type genome is 46.94 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Ruminococcus ambusilenta sp. nov.

Candidatus Ruminococcus ambusilenta (NL. fem. n. *ambusilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902766335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902766335.1. The GC content of the type genome is 52.15 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Ruminococcus aphorifica sp. nov.

Candidatus Ruminococcus aphorifica (NL. fem. n. *aphorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902788785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902788785.1. The GC content of the type genome is 46.68 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Ruminococcus atlanessa sp. nov.

Candidatus Ruminococcus atlanessa (NL. fem. n. *atlanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900604945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900604945.1. The GC content of the type genome is 44.49 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Ruminococcus bacifentia sp. nov.

Candidatus Ruminococcus bacifentia (NL. fem. n. *bacifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902762735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902762735.1. The GC content of the type genome is 47.93 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Ruminococcus bigarimonas sp. nov.

Candidatus Ruminococcus bigarimonas (NL. fem. n. *bigarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp002371625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002361395.1. The GC content of the type genome is 47.03 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Ruminococcus bipalitura sp. nov.

Candidatus Ruminococcus bipalitura (NL. fem. n. *bipalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp002391065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_002391065.1. The GC content of the type genome is 45.71 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Ruminococcus catecessa sp. nov.

Candidatus Ruminococcus catecessa (NL. fem. n. *catecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900539095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900757345.1. The GC content of the type genome is 43.89 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Ruminococcus cerimibra sp. nov.

Candidatus Ruminococcus cerimibra (NL. fem. n. *cerimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp000434695*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000434695.1. The GC content of the type genome is 49.94 % and the genome length is 2.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Ruminococcus colopedo sp. nov.

Candidatus Ruminococcus colopedo (NL. fem. n. *colopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp002358895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002358895.1. The GC content of the type genome is 40.5 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Ruminococcus corocitrix sp. nov.

Candidatus Ruminococcus corocitrix (NL. fem. n. *corocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900119155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900103235.1. The GC content of the type genome is 51.0 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Ruminococcus cucurago sp. nov.

Candidatus Ruminococcus cucurago (NL. fem. n. *cucurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902797535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797535.1. The GC content of the type genome is 46.24 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Ruminococcus culiliforma sp. nov.

Candidatus Ruminococcus culiliforma (NL. fem. n. *culiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902786975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902786975.1. The GC content of the type genome is 48.52 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Ruminococcus curotilenta sp. nov.

Candidatus Ruminococcus curotilenta (NL. fem. n. *curotilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900319075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902792055.1. The GC content of the type genome is 45.56 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Ruminococcus daducitrix sp. nov.

Candidatus Ruminococcus daducitrix (NL. fem. n. *daducitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900104495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900104495.1. The GC content of the type genome is 51.1 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Ruminococcus effulitrix sp. nov.

Candidatus Ruminococcus effulitrix (NL. fem. n. *effulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902797485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797485.1. The GC content of the type genome is 49.83 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Ruminococcus ephipisca sp. nov.

Candidatus Ruminococcus ephipisca (NL. fem. n. *ephipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902787825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902787825.1. The GC content of the type genome is 45.68 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Ruminococcus exaspibula sp. nov.

Candidatus Ruminococcus exaspibula (NL. fem. n. *exaspibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900752625*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900752625.1. The GC content of the type genome is 43.64 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Ruminococcus fediticula sp. nov.

Candidatus Ruminococcus fediticula (NL. fem. n. *fediticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900543145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900543145.1. The GC content of the type genome is 42.61 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Ruminococcus hirunimonas sp. nov.

Candidatus Ruminococcus hirunimonas (NL. fem. n. *hirunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902800795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902800795.1. The GC content of the type genome is 48.63 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Ruminococcus intabentia sp. nov.

Candidatus Ruminococcus intabentia (NL. fem. n. *intabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902776945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902776945.1. The GC content of the type genome is 49.99 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Ruminococcus ludibugo sp. nov.

Candidatus Ruminococcus ludibugo (NL. fem. n. *ludibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900539835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900539835.1. The GC content of the type genome is 37.16 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Ruminococcus momoretta sp. nov.

Candidatus Ruminococcus momoretta (NL. fem. n. *momoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902780505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902780505.1. The GC content of the type genome is 44.48 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Ruminococcus nutamitia sp. nov.

Candidatus Ruminococcus nutamitia (NL. fem. n. *nutamitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900770285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900770285.1. The GC content of the type genome is 38.03 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Ruminococcus palifax sp. nov.

Candidatus Ruminococcus palifax (NL. fem. n. *palifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp902786965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902786965.1. The GC content of the type genome is 47.91 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Ruminococcus paracitrix sp. nov.

Candidatus Ruminococcus paracitrix (NL. fem. n. *paracitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900318545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902762995.1. The GC content of the type genome is 46.62 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Ruminococcus recucitudo sp. nov.

Candidatus Ruminococcus recucitudo (NL. fem. n. *recucitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp002368715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002368715.1. The GC content of the type genome is 49.13 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Ruminococcus rudicicella sp. nov.

Candidatus Ruminococcus rudicicella (NL. fem. n. *rudicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp000621805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000621805.1. The GC content of the type genome is 45.87 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Ruminococcus solifax sp. nov.

Candidatus Ruminococcus solifax (NL. fem. n. *solifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_D sp900314975*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902756975.1. The GC content of the type genome is 47.1 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Ruminococcus absocugo sp. nov.

Candidatus Ruminococcus absocugo (NL. fem. n. *absocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902790475*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902790475.1. The GC content of the type genome is 48.8 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Ruminococcus accomessa sp. nov.

Candidatus Ruminococcus accomessa (NL. fem. n. *accomessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902797655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797655.1. The GC content of the type genome is 47.59 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Ruminococcus acculivita sp. nov.

Candidatus Ruminococcus acculivita (NL. fem. n. *acculivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902764715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902764715.1. The GC content of the type genome is 52.72 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Ruminococcus adorditrix sp. nov.

Candidatus Ruminococcus adorditrix (NL. fem. n. *adorditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902777275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902777275.1. The GC content of the type genome is 48.64 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Ruminococcus adpanitia sp. nov.

Candidatus Ruminococcus adpanitia (NL. fem. n. *adpanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902796225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902796225.1. The GC content of the type genome is 52.74 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Ruminococcus adtenedo sp. nov.

Candidatus Ruminococcus adtenedo (NL. fem. n. *adtenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900755995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900755995.1. The GC content of the type genome is 40.8 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Ruminococcus arrugilega sp. nov.

Candidatus Ruminococcus arrugilega (NL. fem. n. *arrugilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902773635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902773635.1. The GC content of the type genome is 55.84 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Ruminococcus benepitoga sp. nov.

Candidatus Ruminococcus benepitoga (NL. fem. n. *benepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902798755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902798755.1. The GC content of the type genome is 51.57 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Ruminococcus betacitas sp. nov.

Candidatus Ruminococcus betacitas (NL. fem. n. *betacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902794395*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902794395.1. The GC content of the type genome is 53.64 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Ruminococcus bifaredo sp. nov.

Candidatus Ruminococcus bifaredo (NL. fem. n. *bifaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902797225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797225.1. The GC content of the type genome is 44.17 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Ruminococcus capucicula sp. nov.

Candidatus Ruminococcus capucicula (NL. fem. n. *capucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp002350765*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902763765.1. The GC content of the type genome is 42.69 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Ruminococcus carucicella sp. nov.

Candidatus Ruminococcus carucicella (NL. fem. n. *carucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902793125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902793125.1. The GC content of the type genome is 41.05 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Ruminococcus catocitia sp. nov.

Candidatus Ruminococcus catocitia (NL. fem. n. *catocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902765625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902770485.1. The GC content of the type genome is 52.05 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Ruminococcus celamentia sp. nov.

Candidatus Ruminococcus celamentia (NL. fem. n. *celamentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902799325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902799325.1. The GC content of the type genome is 54.14 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Ruminococcus cicatiforma sp. nov.

Candidatus Ruminococcus cicatiforma (NL. fem. n. *cicatiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902771755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902771755.1. The GC content of the type genome is 41.03 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Ruminococcus cimelimonas sp. nov.

Candidatus Ruminococcus cimelimonas (NL. fem. n. *cimelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900315195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900315195.1. The GC content of the type genome is 47.67 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Ruminococcus cisalastra sp. nov.

Candidatus Ruminococcus cisalastra (NL. fem. n. *cisalastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900320995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900320995.1. The GC content of the type genome is 52.71 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Ruminococcus cisorifica sp. nov.

Candidatus Ruminococcus cisorifica (NL. fem. n. *cisorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900319615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902776815.1. The GC content of the type genome is 53.42 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Ruminococcus citipessa sp. nov.

Candidatus Ruminococcus citipessa (NL. fem. n. *citipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900318495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902757735.1. The GC content of the type genome is 46.77 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Ruminococcus colimisca sp. nov.

Candidatus Ruminococcus colimisca (NL. fem. n. *colimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902787145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902787145.1. The GC content of the type genome is 46.01 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Ruminococcus coninatica sp. nov.

Candidatus Ruminococcus coninatica (NL. fem. n. *coninatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900317875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902775265.1. The GC content of the type genome is 50.96 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Ruminococcus dilemastra sp. nov.

Candidatus Ruminococcus dilemastra (NL. fem. n. *dilemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902785365*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902785365.1. The GC content of the type genome is 44.15 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Ruminococcus diponax sp. nov.

Candidatus Ruminococcus diponax (NL. fem. n. *diponax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902779225*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902782215.1. The GC content of the type genome is 52.59 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Ruminococcus direcatio sp. nov.

Candidatus Ruminococcus direcatio (NL. fem. n. *direcatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902766775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902766775.1. The GC content of the type genome is 40.68 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Ruminococcus doxolicula sp. nov.

Candidatus Ruminococcus doxolicula (NL. fem. n. *doxolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp003526955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003452635.1. The GC content of the type genome is 38.99 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Ruminococcus ecciligena sp. nov.

Candidatus Ruminococcus ecciligena (NL. fem. n. *ecciligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp002491825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002491825.1. The GC content of the type genome is 42.82 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Ruminococcus encepitas sp. nov.

Candidatus Ruminococcus encepitas (NL. fem. n. *encepitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902776375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902776375.1. The GC content of the type genome is 50.31 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Ruminococcus enharatio sp. nov.

Candidatus Ruminococcus enharatio (NL. fem. n. *enharatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902776185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902776185.1. The GC content of the type genome is 52.57 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Ruminococcus enuclousia sp. nov.

Candidatus Ruminococcus enuclousia (NL. fem. n. *enuclousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902784855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902784855.1. The GC content of the type genome is 57.2 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Ruminococcus ephemitrix sp. nov.

Candidatus Ruminococcus ephemitrix (NL. fem. n. *ephemitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp003521625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003521625.1. The GC content of the type genome is 41.66 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Ruminococcus episcitio sp. nov.

Candidatus Ruminococcus episcitio (NL. fem. n. *episcitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902761375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902761375.1. The GC content of the type genome is 55.56 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Ruminococcus facuniforma sp. nov.

Candidatus Ruminococcus facuniforma (NL. fem. n. *facuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp002493635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003503955.1. The GC content of the type genome is 38.73 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Ruminococcus fumifedo sp. nov.

Candidatus Ruminococcus fumifedo (NL. fem. n. *fumifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900314705*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_000437975.1. The GC content of the type genome is 33.87 % and the genome length is 1.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Ruminococcus hexapitudo sp. nov.

Candidatus Ruminococcus hexapitudo (NL. fem. n. *hexapitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902776975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902767485.1. The GC content of the type genome is 50.27 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Ruminococcus hirunicula sp. nov.

Candidatus Ruminococcus hirunicula (NL. fem. n. *hirunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902767845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902761305.1. The GC content of the type genome is 51.72 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Ruminococcus homolimonia sp. nov.

Candidatus Ruminococcus homolimonia (NL. fem. n. *homolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902774325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902774325.1. The GC content of the type genome is 52.78 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Ruminococcus homunitrix sp. nov.

Candidatus Ruminococcus homunitrix (NL. fem. n. *homunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900314795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902768385.1. The GC content of the type genome is 51.69 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Ruminococcus infesitrix sp. nov.

Candidatus Ruminococcus infesitrix (NL. fem. n. *infesitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp002353935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002353935.1. The GC content of the type genome is 37.48 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Ruminococcus inlibifica sp. nov.

Candidatus Ruminococcus inlibifica (NL. fem. n. *inlibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp004560275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004560275.1. The GC content of the type genome is 41.33 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Ruminococcus insufago sp. nov.

Candidatus Ruminococcus insufago (NL. fem. n. *insufago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp003499325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_003499325.1. The GC content of the type genome is 53.68 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Ruminococcus lucubitica sp. nov.

Candidatus Ruminococcus lucubitica (NL. fem. n. *lucubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900543095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900772465.1. The GC content of the type genome is 42.74 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Ruminococcus ludibitas sp. nov.

Candidatus Ruminococcus ludibitas (NL. fem. n. *ludibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900319655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902761485.1. The GC content of the type genome is 47.79 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Ruminococcus mahemitica sp. nov.

Candidatus Ruminococcus mahemitica (NL. fem. n. *mahemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902790985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902790985.1. The GC content of the type genome is 52.85 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Ruminococcus malogiforma sp. nov.

Candidatus Ruminococcus malogiforma (NL. fem. n. *malogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900318905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902764265.1. The GC content of the type genome is 49.03 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Ruminococcus manibigena sp. nov.

Candidatus Ruminococcus manibigena (NL. fem. n. *manibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902785355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902785355.1. The GC content of the type genome is 52.54 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Ruminococcus maxumedo sp. nov.

Candidatus Ruminococcus maxumedo (NL. fem. n. *maxumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900317595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902758015.1. The GC content of the type genome is 54.39 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Ruminococcus munimilenta sp. nov.

Candidatus Ruminococcus munimilenta (NL. fem. n. *munimilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900316555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902759365.1. The GC content of the type genome is 52.26 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Ruminococcus musulitas sp. nov.

Candidatus Ruminococcus musulitas (NL. fem. n. *musulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900316815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900316815.1. The GC content of the type genome is 54.96 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Ruminococcus nefarilega sp. nov.

Candidatus Ruminococcus nefarilega (NL. fem. n. *nefarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902767325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902767325.1. The GC content of the type genome is 50.27 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Ruminococcus nidifax sp. nov.

Candidatus Ruminococcus nidifax (NL. fem. n. *nidifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900316385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902785965.1. The GC content of the type genome is 49.24 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Ruminococcus nitelago sp. nov.

Candidatus Ruminococcus nitelago (NL. fem. n. *nitelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902798605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_902798605.1. The GC content of the type genome is 47.02 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Ruminococcus notabimonas sp. nov.

Candidatus Ruminococcus notabimonas (NL. fem. n. *notabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900315785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900315785.1. The GC content of the type genome is 49.35 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Ruminococcus oblanentia sp. nov.

Candidatus Ruminococcus oblanentia (NL. fem. n. *oblanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp002493005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002493005.1. The GC content of the type genome is 40.21 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Ruminococcus papavitrix sp. nov.

Candidatus Ruminococcus papavitrix (NL. fem. n. *papavitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900315605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900318135.1. The GC content of the type genome is 46.86 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Ruminococcus paviciforma sp. nov.

Candidatus Ruminococcus paviciforma (NL. fem. n. *paviciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp002394725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902790005.1. The GC content of the type genome is 52.25 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Ruminococcus peripimonia sp. nov.

Candidatus Ruminococcus peripimonia (NL. fem. n. *peripimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900320415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900320415.1. The GC content of the type genome is 54.65 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Ruminococcus proclago sp. nov.

Candidatus Ruminococcus proclago (NL. fem. n. *proclago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp003520555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003520555.1. The GC content of the type genome is 47.3 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Ruminococcus ranunivita sp. nov.

Candidatus Ruminococcus ranunivita (NL. fem. n. *ranunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902766885*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902766885.1. The GC content of the type genome is 41.77 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Ruminococcus ratifugo sp. nov.

Candidatus Ruminococcus ratifugo (NL. fem. n. *ratifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902798365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902798365.1. The GC content of the type genome is 51.54 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Ruminococcus recogax sp. nov.

Candidatus Ruminococcus recogax (NL. fem. n. *recogax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900317315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900321025.1. The GC content of the type genome is 55.29 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Ruminococcus relecitica sp. nov.

Candidatus Ruminococcus relecitica (NL. fem. n. *relecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900313895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902780445.1. The GC content of the type genome is 52.43 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Ruminococcus retecessa sp. nov.

Candidatus Ruminococcus retecessa (NL. fem. n. *retecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp003438075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_902385565.1. The GC content of the type genome is 39.2 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Ruminococcus rorarilega sp. nov.

Candidatus Ruminococcus rorarilega (NL. fem. n. *rorarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900100595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902758345.1. The GC content of the type genome is 54.17 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Ruminococcus rorificula sp. nov.

Candidatus Ruminococcus rorificula (NL. fem. n. *rorificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900313865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900313865.1. The GC content of the type genome is 54.05 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Ruminococcus rorulitia sp. nov.

Candidatus Ruminococcus rorulitia (NL. fem. n. *rorulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900315085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902801315.1. The GC content of the type genome is 47.18 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Ruminococcus saburugo sp. nov.

Candidatus Ruminococcus saburugo (NL. fem. n. *saburugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902773035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902773035.1. The GC content of the type genome is 48.26 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Ruminococcus semodatio sp. nov.

Candidatus Ruminococcus semodatio (NL. fem. n. *semodatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902797525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797525.1. The GC content of the type genome is 52.14 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Ruminococcus semunatio sp. nov.

Candidatus Ruminococcus semunatio (NL. fem. n. *semunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902772755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902772755.1. The GC content of the type genome is 45.36 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Ruminococcus senacilenta sp. nov.

Candidatus Ruminococcus senacilenta (NL. fem. n. *senacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902773155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902773155.1. The GC content of the type genome is 48.6 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Ruminococcus sicubiforma sp. nov.

Candidatus Ruminococcus sicubiforma (NL. fem. n. *sicubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900316435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900316435.1. The GC content of the type genome is 47.71 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Ruminococcus verecigena sp. nov.

Candidatus Ruminococcus verecigena (NL. fem. n. *verecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902792105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902792105.1. The GC content of the type genome is 46.59 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Ruminococcus vicecicula sp. nov.

Candidatus Ruminococcus vicecicula (NL. fem. n. *vicecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp902763855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902763855.1. The GC content of the type genome is 51.87 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Ruminococcus viripicula sp. nov.

Candidatus Ruminococcus viripicula (NL. fem. n. *viripicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_E sp900315815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_900315815.1. The GC content of the type genome is 54.96 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Ruminococcus decatax sp. nov.

Candidatus Ruminococcus decatax (NL. fem. n. *decatax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruminococcus_F sp004558835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004558835.1. The GC content of the type genome is 55.3 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Rummeliibacillus melopilenta sp. nov.

Candidatus Rummeliibacillus melopilenta (NL. fem. n. *melopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Rummeliibacillus sp003576525*. The type genome for the species is the GenBank assembly RS_GCF_003576525.1. The GC content of the type genome is 34.52 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Runella allubedo sp. nov.

Candidatus Runella allubedo (NL. fem. n. *allubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Runella sp009905605*. The type genome for the species is the GenBank assembly RS_GCF_009905605.1. The GC content of the type genome is 44.83 % and the genome length is 7.14 Mbp.

Description of *Candidatus* Runella bucolibula sp. nov.

Candidatus Runella bucolibula (NL. fem. n. *bucolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Runella sp003325355*. The type genome for the species is the GenBank assembly RS_GCF_003325355.1. The GC content of the type genome is 44.66 % and the genome length is 7.16 Mbp.

Description of *Candidatus* Runella decinimonia sp. nov.

Candidatus Runella decinimonia (NL. fem. n. *decinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Runella sp003711225*. The type genome for the species is the GenBank assembly RS_GCF_003711225.1. The GC content of the type genome is 44.44 % and the genome length is 7.61 Mbp.

Description of *Candidatus* Runella siticicella sp. nov.

Candidatus Runella siticicella (NL. fem. n. *siticicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Runella sp003339505*. The type genome for the species is the GenBank assembly RS_GCF_003339505.1. The GC content of the type genome is 44.79 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Ruricana xeropentia sp. nov.

Candidatus Ruricana xeropentia (NL. fem. n. *xeropentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB2-55-19 sp001797465*. The type genome for the species is the GenBank assembly GCA_001797505.1. The GC content of the type genome is 56.38 % and the genome length is 1.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Ruricana gen. nov.

Candidatus Ruricana (NL. fem. n. *Ruricana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB2-55-19*. The type species for the genus is *Candidatus* Ruricana xeropentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifellaceae.

Description of *Candidatus* Ruricaria exsanetta sp. nov.

Candidatus Ruricaria exsanetta (NL. fem. n. *exsanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-43-11 sp002792495*. The type genome for the species is the GenBank assembly GCA_002792495.1. The GC content of the type genome is 43.04 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Ruricaria gen. nov.

Candidatus Ruricaria (NL. fem. n. *Ruricaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-43-11*. The type species for the genus is *Candidatus* Ruricaria exsanetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-43-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ruricariaceae.

Description of *Candidatus* Ruricariaceae fam. nov.

Candidatus Ruricariaceae (NL. fem. n. *Ruricariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-43-11*. The type genus for the taxon is *Candidatus* Ruricaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UM-FILTER-43-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ruricariales.

Description of *Candidatus* Ruricariales ord. nov.

Candidatus Ruricariales (NL. fem. n. *Ruricariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-43-11*. The type genus for the taxon is *Candidatus* Ruricaria .

According to the GTDB R06-RS202, this order belongs to the class *Gracilibacteria*.

Description of *Candidatus* Ruricella ficulitudo sp. nov.

Candidatus Ruricella ficulitudo (NL. fem. n. *ficulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED6 sp014239355*. The type genome for the species is the GenBank assembly GCA_014239355.1. The GC content of the type genome is 27.89 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Ruricella gen. nov.

Candidatus Ruricella (NL. fem. n. *Ruricella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED6*. The type species for the genus is *Candidatus* Ruricella ficulitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ruricellaceae.

Description of *Candidatus* Ruricellaceae fam. nov.

Candidatus Ruricellaceae (NL. fem. n. *Ruricellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED6.* The type genus for the taxon is *Candidatus* Ruricella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Ruricella inaccitudo sp. nov.

Candidatus Ruricella inaccitudo (NL. fem. n. *inaccitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED6 sp002701185*. The type genome for the species is the GenBank assembly GCA_002701185.1. The GC content of the type genome is 28.75 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Ruricella lenimatio sp. nov.

Candidatus Ruricella lenimatio (NL. fem. n. *lenimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED6 sp002710085*. The type genome for the species is the GenBank assembly GCA_002710085.1. The GC content of the type genome is 28.61 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Ruricella rubicatio sp. nov.

Candidatus Ruricella rubicatio (NL. fem. n. *rubicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED6 sp002167465*. The type genome for the species is the GenBank assembly GCA_002167465.1. The GC content of the type genome is 28.48 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Ruricella xeramifica sp. nov.

Candidatus Ruricella xeramifica (NL. fem. n. *xeramifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED6 sp002711465*. The type genome for the species is the GenBank assembly GCA_002711465.1. The GC content of the type genome is 28.46 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Ruricia redunugo sp. nov.

Candidatus Ruricia redunugo (NL. fem. n. *redunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJAQL01 sp903944135*. The type genome for the species is the GenBank assembly GCA_903944135.1. The GC content of the type genome is 50.09 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Ruricia gen. nov.

Candidatus Ruricia (NL. fem. n. *Ruricia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJAQL01*. The type species for the genus is *Candidatus* Ruricia redunugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-56-20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagosaceae.

Description of *Candidatus* Ruricida depicugo sp. nov.

Candidatus Ruricida depicugo (NL. fem. n. *depicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2197 sp002424625*. The type genome for the species is the GenBank assembly GCA_002327325.1. The GC content of the type genome is 56.73 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Ruricida gen. nov.

Candidatus Ruricida (NL. fem. n. *Ruricida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2197*. The type species for the genus is *Candidatus* Ruricida depicugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ruricida invicitica sp. nov.

Candidatus Ruricida invicitica (NL. fem. n. *invicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2197 sp002841765*. The type genome for the species is the GenBank assembly GCA_002841765.1. The GC content of the type genome is 55.77 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Ruricosa defaricula sp. nov.

Candidatus Ruricosa defaricula (NL. fem. n. *defaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEB-35 sp003105225*. The type genome for the species is the GenBank assembly GCA_003105225.1. The GC content of the type genome is 65.26 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Ruricosa gen. nov.

Candidatus Ruricosa (NL. fem. n. *Ruricosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEB-35*. The type species for the genus is *Candidatus* Ruricosa defaricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MBNT15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenulaceae.

Description of *Candidatus* Ruricula detosimonia sp. nov.

Candidatus Ruricula detosimonia (NL. fem. n. *detosimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8530 sp003503675*. The type genome for the species is the GenBank assembly GCA_002083785.1. The GC content of the type genome is 59.36 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Ruricula gen. nov.

Candidatus Ruricula (NL. fem. n. *Ruricula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8530*. The type species for the genus is *Candidatus* Ruricula detosimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8530*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ruriculaceae.

Description of *Candidatus* Ruriculaceae fam. nov.

Candidatus Ruriculaceae (NL. fem. n. *Ruriculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8530.* The type genus for the taxon is *Candidatus* Ruricula .

According to the original version of GTDB R06-RS202, this family belongs to the order *S15B-MN24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Recumariales.

Description of *Candidatus* Rurigana agrapitoga sp. nov.

Candidatus Rurigana agrapitoga (NL. fem. n. *agrapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c0 sp000961645*. The type genome for the species is the GenBank assembly GCA_000961645.1. The GC content of the type genome is 57.39 % and the genome length is 3.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Rurigana gen. nov.

Candidatus Rurigana (NL. fem. n. *Rurigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BRH-c0*. The type species for the genus is *Candidatus* Rurigana agrapitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rurigana avoncousia sp. nov.

Candidatus Rurigana avoncousia (NL. fem. n. *avoncousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c0 sp002388905*. The type genome for the species is the GenBank assembly GCA_002388905.1. The GC content of the type genome is 61.04 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Rurigana cocodugo sp. nov.

Candidatus Rurigana cocodugo (NL. fem. n. *cocodugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRH-c0 sp002702725*. The type genome for the species is the GenBank assembly GCA_002702725.1. The GC content of the type genome is 57.68 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Rurigaria bicalitica sp. nov.

Candidatus Rurigaria bicalitica (NL. fem. n. *bicalitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2699025 sp002699025*. The type genome for the species is the GenBank assembly GCA_002720945.1. The GC content of the type genome is 73.82 % and the genome length is 7.54 Mbp.

Description of *Candidatus* Rurigaria gen. nov.

Candidatus Rurigaria (NL. fem. n. *Rurigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2699025*. The type species for the genus is *Candidatus* Rurigaria bicalitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benivosaceae.

Description of *Candidatus* Rurigella cosidisca sp. nov.

Candidatus Rurigella cosidisca (NL. fem. n. *cosidisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8401 sp903958625*. The type genome for the species is the GenBank assembly GCA_903958625.1. The GC content of the type genome is 45.87 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Rurigella gen. nov.

Candidatus Rurigella (NL. fem. n. *Rurigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8401*. The type species for the genus is *Candidatus* Rurigella cosidisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8401*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rurigellaceae.

Description of *Candidatus* Rurigellaceae fam. nov.

Candidatus Rurigellaceae (NL. fem. n. *Rurigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8401.* The type genus for the taxon is *Candidatus* Rurigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vagabanales.

Description of *Candidatus* Rurigella devecitrix sp. nov.

Candidatus Rurigella devecitrix (NL. fem. n. *devecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8401 sp903861125*. The type genome for the species is the GenBank assembly GCA_903855825.1. The GC content of the type genome is 44.65 % and the genome length is 4.36 Mbp.

Description of *Candidatus* Rurigella ficulifica sp. nov.

Candidatus Rurigella ficulifica (NL. fem. n. *ficulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8401 sp003456055*. The type genome for the species is the GenBank assembly GCA_003456055.1. The GC content of the type genome is 40.3 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Rurigella genufibra sp. nov.

Candidatus Rurigella genufibra (NL. fem. n. *genufibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8401 sp013361065*. The type genome for the species is the GenBank assembly GCA_013361065.1. The GC content of the type genome is 57.14 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Rurigella vanidatio sp. nov.

Candidatus Rurigella vanidatio (NL. fem. n. *vanidatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8401 sp903907305*. The type genome for the species is the GenBank assembly GCA_903907305.1. The GC content of the type genome is 47.59 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Rurigia turifentia sp. nov.

Candidatus Rurigia turifentia (NL. fem. n. *turifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12247 sp003477185*. The type genome for the species is the GenBank assembly GCA_003477185.1. The GC content of the type genome is 58.36 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Rurigia gen. nov.

Candidatus Rurigia (NL. fem. n. *Rurigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12247*. The type species for the genus is *Candidatus* Rurigia turifentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12247*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rurigiaceae.

Description of *Candidatus* Rurigiaceae fam. nov.

Candidatus Rurigiaceae (NL. fem. n. *Rurigiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA12247*. The type genus for the taxon is *Candidatus* Rurigia .

According to GTDB R06-RS202, this family belongs to the order *Lentisphaerales*.

Description of *Candidatus* Rurigida adrotedo sp. nov.

Candidatus Rurigida adrotedo (NL. fem. n. *adrotedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED80 sp002169695*. The type genome for the species is the GenBank assembly GCA_002169695.1. The GC content of the type genome is 32.54 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Rurigida gen. nov.

Candidatus Rurigida (NL. fem. n. *Rurigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED80*. The type species for the genus is *Candidatus* Rurigida adrotedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1611*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilariaceae.

Description of *Candidatus* Rurigida hemitatio sp. nov.

Candidatus Rurigida hemitatio (NL. fem. n. *hemitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED80 sp002170405*. The type genome for the species is the GenBank assembly GCA_004321745.1. The GC content of the type genome is 33.17 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Rurigida ingurilega sp. nov.

Candidatus Rurigida ingurilega (NL. fem. n. *ingurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED80 sp002713885*. The type genome for the species is the

GenBank assembly GCA_002713885.1. The GC content of the type genome is 35.5 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Rurigida vagabigena sp. nov.

Candidatus Rurigida vagabigena (NL. fem. n. *vagabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED80 sp902559415*. The type genome for the species is the GenBank assembly GCA_902559415.1. The GC content of the type genome is 32.92 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Rurigosa catagugo sp. nov.

Candidatus Rurigosa catagugo (NL. fem. n. *catagugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMSA01 sp013202185*. The type genome for the species is the GenBank assembly GCA_013202185.1. The GC content of the type genome is 60.27 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Rurigosa gen. nov.

Candidatus Rurigosa (NL. fem. n. *Rurigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMSA01*. The type species for the genus is *Candidatus* Rurigosa catagugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABMSA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rurigosaceae.

Description of *Candidatus* Rurigosaceae fam. nov.

Candidatus Rurigosaceae (NL. fem. n. *Rurigosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMSA01.* The type genus for the taxon is *Candidatus* Rurigosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABMSA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Rurigosales.

Description of *Candidatus* Rurigosales ord. nov.

Candidatus Rurigosales (NL. fem. n. *Rurigosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABMSA01.* The type genus for the taxon is *Candidatus* Rurigosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *PUPC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Siteliae.

Description of *Candidatus* Rurigula acrimigena sp. nov.

Candidatus Rurigula acrimigena (NL. fem. n. *acrimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp001823575*. The type genome for the species is the GenBank assembly GCA_001823575.1. The GC content of the type genome is 46.72 % and the genome length is 0.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Rurigula gen. nov.

Candidatus Rurigula (NL. fem. n. *Rurigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1550*. The type species for the genus is *Candidatus* Rurigula acrimigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramellaceae.

Description of *Candidatus* Rurigula agravousia sp. nov.

Candidatus Rurigula agravousia (NL. fem. n. *agravousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp000996605*. The type genome for the species is the GenBank assembly GCA_000996605.1. The GC content of the type genome is 47.07 % and the genome length is 0.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Rurigula ambusisca sp. nov.

Candidatus Rurigula ambusisca (NL. fem. n. *ambusisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp003483855*. The type genome for the species is the GenBank assembly GCA_003483855.1. The GC content of the type genome is 43.63 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Rurigula capucisca sp. nov.

Candidatus Rurigula capucisca (NL. fem. n. *capucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp001825115*. The type genome for the species is the GenBank assembly GCA_001825115.1. The GC content of the type genome is 46.14 % and the genome length is 0.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Rurigula decupilega sp. nov.

Candidatus Rurigula decupilega (NL. fem. n. *decupilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp003489395*. The type genome for the species is the GenBank assembly GCA_001000355.1. The GC content of the type genome is 43.95 % and the genome length is 0.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Rurigula depelibra sp. nov.

Candidatus Rurigula depelibra (NL. fem. n. *depelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp001871765*. The type genome for the species is the GenBank assembly GCA_002323665.1. The GC content of the type genome is 43.05 % and the genome length is 0.67 Mbp.

Description of *Candidatus* Rurigula monogitia sp. nov.

Candidatus Rurigula monogitia (NL. fem. n. *monogitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp000998425*. The type genome for the species is the GenBank assembly GCA_003508085.1. The GC content of the type genome is 42.33 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Rurigula pedepilenta sp. nov.

Candidatus Rurigula pedepilenta (NL. fem. n. *pedepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp001823535*. The type genome for the species is the GenBank assembly GCA_001823535.1. The GC content of the type genome is 44.2 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Rurigula purulitio sp. nov.

Candidatus Rurigula purulitio (NL. fem. n. *purulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp001823545*. The type genome for the species is the GenBank assembly GCA_001823545.1. The GC content of the type genome is 43.08 % and the genome length is 0.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Rurigula sacomitas sp. nov.

Candidatus Rurigula sacomitas (NL. fem. n. *sacomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1550 sp002771015*. The type genome for the species is the GenBank assembly GCA_002771115.1. The GC content of the type genome is 43.02 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Rutabana eccisitudo sp. nov.

Candidatus Rutabana eccisitudo (NL. fem. n. *eccisitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SICM01 sp009694805*. The type genome for the species is the GenBank assembly GCA_009694805.1. The GC content of the type genome is 64.52 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Rutabana gen. nov.

Candidatus Rutabana (NL. fem. n. *Rutabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SICM01*. The type species for the genus is *Candidatus* Rutabana eccisitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SICM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rutabanaceae.

Description of *Candidatus* Rutabanaceae fam. nov.

Candidatus Rutabanaceae (NL. fem. n. *Rutabanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SICM01.* The type genus for the taxon is *Candidatus* Rutabana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SICM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rutabanales.

Description of *Candidatus* Rutabanales ord. nov.

Candidatus Rutabanales (NL. fem. n. *Rutabanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *SICM01*. The type genus for the taxon is *Candidatus* Rutabana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2968*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Medimellae.

Description of *Candidatus* Rutabaria dupunisca sp. nov.

Candidatus Rutabaria dupunisca (NL. fem. n. *dupunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADFL01 sp013152945*. The type genome for the species is the GenBank assembly GCA_013152945.1. The GC content of the type genome is 51.4 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Rutabaria gen. nov.

Candidatus Rutabaria (NL. fem. n. *Rutabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADFL01*. The type species for the genus is *Candidatus* Rutabaria dupunisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADFL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rutabariaceae.

Description of *Candidatus* Rutabariaceae fam. nov.

Candidatus Rutabariaceae (NL. fem. n. *Rutabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADFL01*. The type genus for the taxon is *Candidatus* Rutabaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAADFL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rutabariales.

Description of *Candidatus* Rutabariales ord. nov.

Candidatus Rutabariales (NL. fem. n. *Rutabariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADFL01.* The type genus for the taxon is *Candidatus* Rutabaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *JAADFL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rutabariae.

Description of *Candidatus* Rutabariae class. nov.

Candidatus Rutabariae (NL. fem. n. *c__Rutabariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADFL01.* The type genus for the taxon is *Candidatus* Rutabaria .

According to GTDB R06-RS202, this class belongs to the phylum *Myxococcota*.

Description of *Candidatus* Rutabella cilotetta sp. nov.

Candidatus Rutabella cilotetta (NL. fem. n. *cilotetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPMZ01 sp903866285*. The type genome for the species is the GenBank assembly GCA_903908655.1. The GC content of the type genome is 39.13 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Rutabella gen. nov.

Candidatus Rutabella (NL. fem. n. *Rutabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPMZ01*. The type species for the genus is *Candidatus* Rutabella cilotetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Camilariaceae.

Description of *Candidatus* Rutabella colapimonas sp. nov.

Candidatus Rutabella colapimonas (NL. fem. n. *colapimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPMZ01 sp903861715*. The type genome for the species is the GenBank assembly GCA_903926225.1. The GC content of the type genome is 39.87 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Rutabella cululetta sp. nov.

Candidatus Rutabella cululetta (NL. fem. n. *cululetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPMZ01 sp903885965*. The type genome for the species is the GenBank assembly GCA_903885965.1. The GC content of the type genome is 37.9 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Rutabella dilacifica sp. nov.

Candidatus Rutabella dilacifica (NL. fem. n. *dilacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPMZ01 sp903824515*. The type genome for the species is the GenBank assembly GCA_903891745.1. The GC content of the type genome is 38.32 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Rutabella fusifitas sp. nov.

Candidatus Rutabella fusifitas (NL. fem. n. *fusifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPMZ01 sp903837175*. The type genome for the species is the GenBank assembly GCA_903837175.1. The GC content of the type genome is 38.21 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Rutabella monocisca sp. nov.

Candidatus Rutabella monocisca (NL. fem. n. *monocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPMZ01 sp903851135*. The type genome for the species is the GenBank assembly GCA_903885875.1. The GC content of the type genome is 38.54 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Rutabia adtolugo sp. nov.

Candidatus Rutabia adtolugo (NL. fem. n. *adtolugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900754515*. The type genome for the species is the GenBank assembly GCA_900754515.1. The GC content of the type genome is 52.34 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Rutabia gen. nov.

Candidatus Rutabia (NL. fem. n. *Rutabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1777*. The type species for the genus is *Candidatus* Rutabia adtolugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Rutabia alcalilenta sp. nov.

Candidatus Rutabia alcalilenta (NL. fem. n. *alcalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900316205*. The type genome for the species is the GenBank assembly GCA_900316205.1. The GC content of the type genome is 59.45 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Rutabia annifugo sp. nov.

Candidatus Rutabia annifugo (NL. fem. n. *annifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp002350825*. The type genome for the species is the GenBank assembly GCA_002350825.1. The GC content of the type genome is 60.91 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Rutabia assibitrix sp. nov.

Candidatus Rutabia assibitrix (NL. fem. n. *assibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900320595*. The type genome for the species is the GenBank assembly GCA_900320595.1. The GC content of the type genome is 58.95 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Rutabia bipinago sp. nov.

Candidatus Rutabia bipinago (NL. fem. n. *bipinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp004560305*. The type genome for the species is the GenBank assembly GCA_004560305.1. The GC content of the type genome is 58.88 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Rutabia cenacitudo sp. nov.

Candidatus Rutabia cenacitudo (NL. fem. n. *cenacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900547315*. The type genome for the species is the GenBank assembly GCA_900759035.1. The GC content of the type genome is 57.26 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Rutabia cisoribra sp. nov.

Candidatus Rutabia cisoribra (NL. fem. n. *cisoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900319835*. The type genome for the species is the GenBank assembly GCA_900319835.1. The GC content of the type genome is 60.17 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Rutabia colutago sp. nov.

Candidatus Rutabia colutago (NL. fem. n. *colutago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1777 sp900321275*. The type genome for the species is the GenBank assembly GCA_900321275.1. The GC content of the type genome is 58.4 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Rutabia culigigena sp. nov.

Candidatus Rutabia culigigena (NL. fem. n. *culigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900319275*. The type genome for the species is the GenBank assembly GCA_900319275.1. The GC content of the type genome is 57.95 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Rutabia dececitio sp. nov.

Candidatus Rutabia dececitio (NL. fem. n. *dececitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900549645*. The type genome for the species is the GenBank assembly GCA_004562585.1. The GC content of the type genome is 57.63 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Rutabia defacastra sp. nov.

Candidatus Rutabia defacastra (NL. fem. n. *defacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900317375*. The type genome for the species is the GenBank assembly GCA_900319665.1. The GC content of the type genome is 58.7 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Rutabia desomilega sp. nov.

Candidatus Rutabia desomilega (NL. fem. n. *desomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900546515*. The type genome for the species is the GenBank assembly GCA_900546515.1. The GC content of the type genome is 54.59 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Rutabia desucivita sp. nov.

Candidatus Rutabia desucivita (NL. fem. n. *desucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900319935*. The type genome for the species is the GenBank assembly GCA_900319935.1. The GC content of the type genome is 62.16 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Rutabia detoricula sp. nov.

Candidatus Rutabia detoricula (NL. fem. n. *detoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp002320035*. The type genome for the species is the GenBank assembly GCA_002320035.1. The GC content of the type genome is 55.26 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Rutabia ficulilega sp. nov.

Candidatus Rutabia ficulilega (NL. fem. n. *ficulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900549485*. The type genome for the species is the GenBank assembly GCA_900772205.1. The GC content of the type genome is 52.59 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Rutabia funamibula sp. nov.

Candidatus Rutabia funamibula (NL. fem. n. *funamibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900319635*. The type genome for the species is the GenBank assembly GCA_900319635.1. The GC content of the type genome is 61.02 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Rutabia galacessa sp. nov.

Candidatus Rutabia galacessa (NL. fem. n. *galacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp002493305*. The type genome for the species is the GenBank assembly GCA_002493305.1. The GC content of the type genome is 54.32 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Rutabia habacetta sp. nov.

Candidatus Rutabia habacetta (NL. fem. n. *habacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900549865*. The type genome for the species is the GenBank assembly GCA_900549865.1. The GC content of the type genome is 58.08 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Rutabia inargigena sp. nov.

Candidatus Rutabia inargigena (NL. fem. n. *inargigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900320465*. The type genome for the species is the GenBank assembly GCA_900320465.1. The GC content of the type genome is 60.6 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Rutabia indipugo sp. nov.

Candidatus Rutabia indipugo (NL. fem. n. *indipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900319695*. The type genome for the species is the GenBank assembly GCA_900319695.1. The GC content of the type genome is 59.56 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Rutabia intesisca sp. nov.

Candidatus Rutabia intesisca (NL. fem. n. *intesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1777 sp900316255*. The type genome for the species is the GenBank assembly GCA_900316255.1. The GC content of the type genome is 60.33 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Rutabia lametimonia sp. nov.

Candidatus Rutabia lametimonia (NL. fem. n. *lametimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900319465*. The type genome for the species is the GenBank assembly GCA_900319465.1. The GC content of the type genome is 62.36 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Rutabia melopentia sp. nov.

Candidatus Rutabia melopentia (NL. fem. n. *melopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp003150355*. The type genome for the species is the GenBank assembly GCA_900549255.1. The GC content of the type genome is 56.21 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Rutabia peradicula sp. nov.

Candidatus Rutabia peradicula (NL. fem. n. *peradicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp002371675*. The type genome for the species is the GenBank assembly GCA_002363595.1. The GC content of the type genome is 61.25 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Rutabia recogifica sp. nov.

Candidatus Rutabia recogifica (NL. fem. n. *recogifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp002450075*. The type genome for the species is the GenBank assembly GCA_002449835.1. The GC content of the type genome is 60.59 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Rutabia vatilitudo sp. nov.

Candidatus Rutabia vatilitudo (NL. fem. n. *vatilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp900549545*. The type genome for the species is the GenBank assembly GCA_900549545.1. The GC content of the type genome is 55.33 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Rutabia vicatousia sp. nov.

Candidatus Rutabia vicatousia (NL. fem. n. *vicatousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp002431965*. The type genome for the species is the GenBank assembly GCA_002313745.1. The GC content of the type genome is 57.78 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Rutabia virecessa sp. nov.

Candidatus Rutabia virecessa (NL. fem. n. *virecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1777 sp002315275*. The type genome for the species is the GenBank assembly GCA_002315275.1. The GC content of the type genome is 53.44 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Rutabida cerebetta sp. nov.

Candidatus Rutabida cerebetta (NL. fem. n. *cerebetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10166 sp001799695*. The type genome for the species is the GenBank assembly GCA_003505215.1. The GC content of the type genome is 68.17 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Rutabida gen. nov.

Candidatus Rutabida (NL. fem. n. *Rutabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10166*. The type species for the genus is *Candidatus* Rutabida cerebetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1565*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Papiliaceae.

Description of *Candidatus* Rutabosa episticula sp. nov.

Candidatus Rutabosa episticula (NL. fem. n. *episticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-40-14 sp001788215*. The type genome for the species is the GenBank assembly GCA_001788215.1. The GC content of the type genome is 40.38 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Rutabosa gen. nov.

Candidatus Rutabosa (NL. fem. n. *Rutabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-40-14*. The type species for the genus is *Candidatus* Rutabosa episticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-40-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rutabosaceae.

Description of *Candidatus* Rutabosaceae fam. nov.

Candidatus Rutabosaceae (NL. fem. n. *Rutabosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-40-14.* The type genus for the taxon is *Candidatus* Rutabosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-001788215*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vocifosales.

Description of *Candidatus* Ruthenibacterium artilicula sp. nov.

Candidatus Ruthenibacterium artilicula (NL. fem. n. *artilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruthenibacterium sp003149955*. The type genome for the species is the GenBank assembly GCA_003149955.1. The GC content of the type genome is 58.19 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Ruthenibacterium calipisca sp. nov.

Candidatus Ruthenibacterium calipisca (NL. fem. n. *calipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruthenibacterium sp002315015*. The type genome for the species is the GenBank assembly GCA_002315015.1. The GC content of the type genome is 50.74 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Ruthenibacterium cilicitoga sp. nov.

Candidatus Ruthenibacterium cilicitoga (NL. fem. n. *cilicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruthenibacterium sp013316265*. The type genome for the species is the GenBank assembly GCA_013316265.1. The GC content of the type genome is 58.85 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Ruthenibacterium masocago sp. nov.

Candidatus Ruthenibacterium masocago (NL. fem. n. *masocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruthenibacterium sp009929695*. The type genome for the species is the GenBank assembly GCA_009929695.1. The GC content of the type genome is 49.63 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Ruthenibacterium nidifibula sp. nov.

Candidatus Ruthenibacterium nidifibula (NL. fem. n. *nidifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruthenibacterium sp900546885*. The type genome for the species is the GenBank assembly RS_GCF_900763405.1. The GC content of the type genome is 59.43 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Ruthenibacterium turilugo sp. nov.

Candidatus Ruthenibacterium turilugo (NL. fem. n. *turilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ruthenibacterium sp900759375*. The type genome for the species is the GenBank assembly GCA_900550665.1. The GC content of the type genome is 59.16 % and the genome length is 2.33 Mbp.

Description of *Candidatus* SDB manufiforma sp. nov.

Candidatus SDB manufiforma (NL. fem. n. *manufiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *SDB sp001412425*. The type genome for the species is the GenBank assembly GCA_001412425.1. The GC content of the type genome is 37.27 % and the genome length is 2.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "methanogenic consortium capable of long-chain paraffin degradation (SDB culture) enriched from contaminated sediments of San Diego Bay; California; degrades n-alkanes from C25 to C50".

Description of *Candidatus* Sabulitectum diludibula sp. nov.

Candidatus Sabulitectum diludibula (NL. fem. n. *diludibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sabulitectum sp002748705*. The type genome for the species is the GenBank assembly GCA_002748705.1. The GC content of the type genome is 48.1 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Sabulitectum meridicula sp. nov.

Candidatus Sabulitectum meridicula (NL. fem. n. *meridicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sabulitectum sp003646025*. The type genome for the species is the GenBank assembly GCA_003646025.1. The GC content of the type genome is 48.79 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Saburana agravigena sp. nov.

Candidatus Saburana agravigena (NL. fem. n. *agravigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8950 sp002840685*. The type genome for the species is the GenBank assembly GCA_002840685.1. The GC content of the type genome is 54.24 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Saburana gen. nov.

Candidatus Saburana (NL. fem. n. *Saburana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8950*. The type species for the genus is *Candidatus* Saburana agravigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Saburana demogibra sp. nov.

Candidatus Saburana demogibra (NL. fem. n. *demogibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8950 sp001872455*. The type genome for the species is the GenBank assembly GCA_002789715.1. The GC content of the type genome is 56.62 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Saburaria levifilenta sp. nov.

Candidatus Saburaria levifilenta (NL. fem. n. *levifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJMI01 sp903821745*. The type genome for the species is the GenBank assembly GCA_903894245.1. The GC content of the type genome is 40.57 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Saburaria gen. nov.

Candidatus Saburaria (NL. fem. n. *Saburaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJMI01*. The type species for the genus is *Candidatus* Saburaria levifilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA927*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Casigellaceae.

Description of *Candidatus* Saburella alismedo sp. nov.

Candidatus Saburella alismedo (NL. fem. n. *alismedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11663 sp002683345*. The type genome for the species is the GenBank assembly GCA_002683345.1. The GC content of the type genome is 58.56 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Saburella gen. nov.

Candidatus Saburella (NL. fem. n. *Saburella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11663*. The type species for the genus is *Candidatus* Saburella alismedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UA16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilosaceae.

Description of *Candidatus* Saburella infenatio sp. nov.

Candidatus Saburella infenatio (NL. fem. n. *infenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11663 sp002469765*. The type genome for the species is the GenBank assembly GCA_002469765.1. The GC content of the type genome is 57.53 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Saburella minurago sp. nov.

Candidatus Saburella minurago (NL. fem. n. *minurago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11663 sp002863145*. The type genome for the species is the GenBank assembly GCA_002167585.1. The GC content of the type genome is 53.52 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Saburella miracentia sp. nov.

Candidatus Saburella miracentia (NL. fem. n. *miracentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11663 sp002729115*. The type genome for the species is the GenBank assembly GCA_002729115.1. The GC content of the type genome is 59.95 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Saburella regifigena sp. nov.

Candidatus Saburella regifigena (NL. fem. n. *regifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11663 sp011524845*. The type genome for the species is the GenBank assembly GCA_011524845.1. The GC content of the type genome is 59.54 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Saburella repurimonas sp. nov.

Candidatus Saburella repurimonas (NL. fem. n. *repurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11663 sp002313415*. The type genome for the species is the GenBank assembly GCA_902523505.1. The GC content of the type genome is 50.97 %

and the genome length is 1.35 Mbp.

Description of *Candidatus* Saburia dicabicella sp. nov.

Candidatus Saburia dicabicella (NL. fem. n. *dicabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9644 sp003519445*. The type genome for the species is the GenBank assembly GCA_001779835.1. The GC content of the type genome is 38.07 % and the genome length is 1.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Saburia gen. nov.

Candidatus Saburia (NL. fem. n. *Saburia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9644*. The type species for the genus is *Candidatus* Saburia dicabicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Saburosa denecitia sp. nov.

Candidatus Saburosa denecitia (NL. fem. n. *denecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BCD18 sp013112545*. The type genome for the species is the GenBank assembly GCA_013112545.1. The GC content of the type genome is 34.0 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Saburosa gen. nov.

Candidatus Saburosa (NL. fem. n. *Saburosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BCD18*. The type species for the genus is *Candidatus* Saburosa denecitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Saburula attubicella sp. nov.

Candidatus Saburula attubicella (NL. fem. n. *attubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-140-MAGs086 sp005792205*. The type genome for the species is the GenBank assembly GCA_005792205.1. The GC content of the type genome is 28.32 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Saburula gen. nov.

Candidatus Saburula (NL. fem. n. *Saburula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-140-MAGs086*. The type species for the genus is *Candidatus* Saburula attubicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F1-140-MAGs086*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saburulaceae.

Description of *Candidatus* Saburulaceae fam. nov.

Candidatus Saburulaceae (NL. fem. n. *Saburulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *F1-140-MAGs086.* The type genus for the taxon is *Candidatus* Saburula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vagabanales.

Description of *Candidatus* Saccharibacillus abmatitoga sp. nov.

Candidatus Saccharibacillus abmatitoga (NL. fem. n. *abmatitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Saccharibacillus sp002205895*. The type genome for the species is the GenBank assembly RS_GCF_002205895.1. The GC content of the type genome is 56.96 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Saccharibacillus amnenivita sp. nov.

Candidatus Saccharibacillus amnenivita (NL. fem. n. *amnenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharibacillus sp002189105*. The type genome for the species is the GenBank assembly GCA_002189105.1. The GC content of the type genome is 53.36 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Saccharibacillus robigibra sp. nov.

Candidatus Saccharibacillus robigibra (NL. fem. n. *robigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharibacillus sp011090185*. The type genome for the species is the GenBank assembly RS_GCF_011090185.1. The GC content of the type genome is 57.9 % and the genome length is 5.39 Mbp.

Description of *Candidatus* Saccharibacter domigitas sp. nov.

Candidatus Saccharibacter domigitas (NL. fem. n. *domigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharibacter sp009834805*. The type genome for the species is the GenBank assembly RS_GCF_009834805.1. The GC content of the type genome is 48.61 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Saccharibacter sarabimonas sp. nov.

Candidatus Saccharibacter sarabimonas (NL. fem. n. *sarabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharibacter sp009834765*. The type genome for the species is the GenBank assembly RS_GCF_009834795.1. The GC content of the type genome is 51.47 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Saccharicenans adsusimonia sp. nov.

Candidatus Saccharicenans adsusimonia (NL. fem. n. *adsusimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharicenans sp014359965*. The type genome for the species is the GenBank assembly GCA_014359965.1. The GC content of the type genome is 45.54 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Saccharicenans daducago sp. nov.

Candidatus Saccharicenans daducago (NL. fem. n. *daducago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharicenans sp013178315*. The type genome for the species is the GenBank assembly GCA_013178315.1. The GC content of the type genome is 54.3 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Saccharicenans delebimonia sp. nov.

Candidatus Saccharicenans delebimonia (NL. fem. n. *delebimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharicenans sp002877915*. The type genome for the species is the GenBank assembly GCA_002877915.1. The GC content of the type genome is 43.29 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Saccharicenans habacitia sp. nov.

Candidatus Saccharicenans habacitia (NL. fem. n. *habacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharicenans sp003476685*. The type genome for the species is the GenBank assembly GCA_003476685.1. The GC content of the type genome is 53.7 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Saccharicenans inadfousia sp. nov.

Candidatus Saccharicenans inadfousia (NL. fem. n. *inadfousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharicenans sp014360015*. The type genome for the species is the GenBank assembly GCA_014360015.1. The GC content of the type genome is 45.05 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Saccharicenans insepago sp. nov.

Candidatus Saccharicenans insepago (NL. fem. n. *insepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharicenans sp002316315*. The type genome for the species is the GenBank assembly GCA_002316315.1. The GC content of the type genome is 45.74 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Saccharicenans paropedo sp. nov.

Candidatus Saccharicenans paropedo (NL. fem. n. *paropedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharicenans sp002441005*. The type genome for the species is the GenBank assembly GCA_003485065.1. The GC content of the type genome is 47.48 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Saccharicenans scaccilenta sp. nov.

Candidatus Saccharicenans scaccilenta (NL. fem. n. *scaccilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharicenans sp014360005*. The type genome for the species is the GenBank assembly GCA_014360005.1. The GC content of the type genome is 52.26 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Saccharicenans vitupimonas sp. nov.

Candidatus Saccharicenans vitupimonas (NL. fem. n. *vitupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Saccharicenans sp011373685*. The type genome for the species is the GenBank assembly GCA_011373685.1. The GC content of the type genome is 46.65 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Saccharimonas abnepicula sp. nov.

Candidatus Saccharimonas abnepicula (NL. fem. n. *abnepicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp002441145*. The type genome for the species is the GenBank assembly GCA_002441145.1. The GC content of the type genome is 48.26 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Saccharimonas acontibra sp. nov.

Candidatus Saccharimonas acontibra (NL. fem. n. *acontibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp013333675*. The type genome for the species is the GenBank assembly GCA_013333675.2. The GC content of the type genome is 48.9 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Saccharimonas arcebibula sp. nov.

Candidatus Saccharimonas arcebibula (NL. fem. n. *arcebibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp002336935*. The type genome for the species is the GenBank assembly GCA_002336935.1. The GC content of the type genome is 48.56 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Saccharimonas caselitudo sp. nov.

Candidatus Saccharimonas caselitudo (NL. fem. n. *caselitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp010202265*. The type genome for the species is the GenBank assembly RS_GCF_010202265.1. The GC content of the type genome is 46.73 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Saccharimonas colepugo sp. nov.

Candidatus Saccharimonas colepugo (NL. fem. n. *colepugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp002337095*. The type genome for the species is the GenBank assembly GCA_002337095.1. The GC content of the type genome is 53.17 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Saccharimonas crabrisca sp. nov.

Candidatus Saccharimonas crabrisca (NL. fem. n. *crabrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp013333645*. The type genome for the species is the GenBank assembly GCA_013333645.2. The GC content of the type genome is 52.05 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Saccharimonas decomimonas sp. nov.

Candidatus Saccharimonas decomimonas (NL. fem. n. *decomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp002421785*. The type genome for the species is the GenBank assembly GCA_002421785.1. The GC content of the type genome is 50.31 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Saccharimonas dicimatio sp. nov.

Candidatus Saccharimonas dicimatio (NL. fem. n. *dicimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp013333625*. The type genome for the species is the GenBank assembly GCA_013333625.2. The GC content of the type genome is 48.07 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Saccharimonas divolitudo sp. nov.

Candidatus Saccharimonas divolitudo (NL. fem. n. *divolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp002299795*. The type genome for the species is the GenBank assembly GCA_002299795.1. The GC content of the type genome is 51.03 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Saccharimonas malagifica sp. nov.

Candidatus Saccharimonas malagifica (NL. fem. n. *malagifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp013333845*. The type genome for the species is the GenBank assembly GCA_013333845.2. The GC content of the type genome is 47.79 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Saccharimonas prognilenta sp. nov.

Candidatus Saccharimonas prognilenta (NL. fem. n. *prognilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp002336735*. The type genome for the species is the GenBank assembly GCA_002336735.1. The GC content of the type genome is 49.02 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Saccharimonas scombousia sp. nov.

Candidatus Saccharimonas scombousia (NL. fem. n. *scombousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharimonas sp013333795*. The type genome for the species is the GenBank assembly GCA_013333795.2. The GC content of the type genome is 47.53 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Saccharococcus infacitudo sp. nov.

Candidatus Saccharococcus infacitudo (NL. fem. n. *infacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Saccharococcus sp000632515*. The type genome for the species is the GenBank assembly RS_GCF_000632515.1. The GC content of the type genome is 44.38 % and the genome length is 3.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "MNNG mutagenesis derived mutant of the parent strain NUB36".

Description of *Candidatus* Saccharofermentans ancipousia sp. nov.

Candidatus Saccharofermentans ancipousia (NL. fem. n. *ancipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp002450155*. The type genome for the species is the GenBank assembly GCA_002450155.1. The GC content of the type genome is 45.76 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Saccharofermentans cerarentia sp. nov.

Candidatus Saccharofermentans cerarentia (NL. fem. n. *cerarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp900107185*. The type genome for the species is the GenBank assembly RS_GCF_900107185.1. The GC content of the type genome is 43.65 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Saccharofermentans excoritrix sp. nov.

Candidatus Saccharofermentans excoritrix (NL. fem. n. *excoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp012728275*. The type genome for the species is the GenBank assembly GCA_012728275.1. The GC content of the type genome is 39.43 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Saccharofermentans forinimonia sp. nov.

Candidatus Saccharofermentans forinimonia (NL. fem. n. *forinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp900313405*. The type genome for the species is the GenBank assembly GCA_002373235.1. The GC content of the type genome is 48.62

% and the genome length is 2.19 Mbp.

Description of *Candidatus* Saccharofermentans hegumentia sp. nov.

Candidatus Saccharofermentans hegumentia (NL. fem. n. *hegumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp003543635*. The type genome for the species is the GenBank assembly GCA_003543635.1. The GC content of the type genome is 51.67 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Saccharofermentans inhumago sp. nov.

Candidatus Saccharofermentans inhumago (NL. fem. n. *inhumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp000621765*. The type genome for the species is the GenBank assembly RS_GCF_000621765.1. The GC content of the type genome is 45.66 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Saccharofermentans monimax sp. nov.

Candidatus Saccharofermentans monimax (NL. fem. n. *monimax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp003149065*. The type genome for the species is the GenBank assembly RS_GCF_900199645.1. The GC content of the type genome is 44.84 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Saccharofermentans monogitoga sp. nov.

Candidatus Saccharofermentans monogitoga (NL. fem. n. *monogitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp900099715*. The type genome for the species is the GenBank assembly RS_GCF_900099715.1. The GC content of the type genome is 47.83 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Saccharofermentans octinago sp. nov.

Candidatus Saccharofermentans octinago (NL. fem. n. *octinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp002371375*. The type genome for the species is the GenBank assembly GCA_002371375.1. The GC content of the type genome is 47.5 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Saccharofermentans recorivita sp. nov.

Candidatus Saccharofermentans recorivita (NL. fem. n. *recorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp001604135*. The type genome for the species is the GenBank assembly GCA_001604135.1. The GC content of the type genome is 46.32 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Saccharofermentans recumessa sp. nov.

Candidatus Saccharofermentans recumessa (NL. fem. n. *recumessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp900111435*. The type genome for the species is the GenBank assembly RS_GCF_900111435.1. The GC content of the type genome is 46.87 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Saccharofermentans revulivita sp. nov.

Candidatus Saccharofermentans revulivita (NL. fem. n. *revulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp900176545*. The type genome for the species is the GenBank assembly RS_GCF_900176545.1. The GC content of the type genome is 46.4 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Saccharofermentans sonivitas sp. nov.

Candidatus Saccharofermentans sonivitas (NL. fem. n. *sonivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp002394605*. The type genome for the species is the GenBank assembly GCA_002394605.1. The GC content of the type genome is 47.92 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Saccharofermentans vilitatica sp. nov.

Candidatus Saccharofermentans vilitatica (NL. fem. n. *vilitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp900314745*. The type genome for the species is the GenBank assembly GCA_900314745.1. The GC content of the type genome is 47.8 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Saccharofermentans xerametta sp. nov.

Candidatus Saccharofermentans xerametta (NL. fem. n. *xerametta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharofermentans sp002450095*. The type genome for the species is the GenBank assembly GCA_002394055.1. The GC content of the type genome is 46.33 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Saccharomonospora echogiforma sp. nov.

Candidatus Saccharomonospora echogiforma (NL. fem. n. *echogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharomonospora sp003202235*. The type genome for the species is the GenBank assembly RS_GCF_003202235.1. The GC content of the type genome is 70.83 % and the genome length is 8.1 Mbp.

Description of *Candidatus* Saccharomonospora inarditas sp. nov.

Candidatus Saccharomonospora inarditas (NL. fem. n. *inarditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Saccharomonospora sp001942305*. The type genome for the species is the GenBank assembly RS_GCF_001942305.1. The GC content of the type genome is 69.98 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Saccharopolyspora acrimitio sp. nov.

Candidatus Saccharopolyspora acrimitio (NL. fem. n. *acrimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharopolyspora sp012277335*. The type genome for the species is the GenBank assembly RS_GCF_012277335.1. The GC content of the type genome is 68.1 % and the genome length is 8.05 Mbp.

Description of *Candidatus* Saccharopolyspora enimvatica sp. nov.

Candidatus Saccharopolyspora enimvatica (NL. fem. n. *enimvatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharopolyspora sp004348445*. The type genome for the species is the GenBank assembly RS_GCF_004348445.1. The GC content of the type genome is 69.56 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Saccharopolyspora exsufetta sp. nov.

Candidatus Saccharopolyspora exsufetta (NL. fem. n. *exsufetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharopolyspora sp004348985*. The type genome for the species is the GenBank assembly RS_GCF_004348985.1. The GC content of the type genome is 69.67 % and the genome length is 10.3 Mbp.

Description of *Candidatus* Saccharopolyspora malifedo sp. nov.

Candidatus Saccharopolyspora malifedo (NL. fem. n. *malifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharopolyspora sp003931915*. The type genome for the species is the GenBank assembly RS_GCF_003931915.1. The GC content of the type genome is 70.63 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Saccharopolyspora redacibra sp. nov.

Candidatus Saccharopolyspora redacibra (NL. fem. n. *redacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharopolyspora sp004348435*. The type genome for the species is the GenBank assembly RS_GCF_004348435.1. The GC content of the type genome is 69.66 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Saccharospirillum obvericella sp. nov.

Candidatus Saccharospirillum obvericella (NL. fem. n. *obvericella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saccharospirillum sp003054965*. The type genome for the species is the GenBank assembly RS_GCF_003054965.1. The GC content of the type genome is 55.4 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Sacomana citivitura sp. nov.

Candidatus Sacomana citivitura (NL. fem. n. *citivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-57-11 sp001791115*. The type genome for the species is the GenBank assembly GCA_001791115.1. The GC content of the type genome is 56.76 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Sacomana gen. nov.

Candidatus Sacomana (NL. fem. n. *Sacomana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-57-11*. The type species for the genus is *Candidatus* Sacomana citivitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-57-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacomanaceae.

Description of *Candidatus* Sacomanaceae fam. nov.

Candidatus Sacomanaceae (NL. fem. n. *Sacomanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-57-11.* The type genus for the taxon is *Candidatus* Sacomana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Sacomaria cenacitica sp. nov.

Candidatus Sacomaria cenacitica (NL. fem. n. *cenacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLI01 sp011389195*. The type genome for the species is the GenBank assembly GCA_011389195.1. The GC content of the type genome is 41.52 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Sacomaria gen. nov.

Candidatus Sacomaria (NL. fem. n. *Sacomaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLI01*. The type species for the genus is *Candidatus* Sacomaria cenacitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTLI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacomariaceae.

Description of *Candidatus* Sacomariaceae fam. nov.

Candidatus Sacomariaceae (NL. fem. n. *Sacomariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLI01.* The type genus for the taxon is *Candidatus* Sacomaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2258*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Homulosales.

Description of *Candidatus* Sacomella exforago sp. nov.

Candidatus Sacomella exforago (NL. fem. n. *exforago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1427 sp012838545*. The type genome for the species is the GenBank assembly GCA_012838545.1. The GC content of the type genome is 38.78 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Sacomella gen. nov.

Candidatus Sacomella (NL. fem. n. *Sacomella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1427*. The type species for the genus is *Candidatus* Sacomella exforago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-313*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caliposaceae.

Description of *Candidatus* Sacomella rorifitura sp. nov.

Candidatus Sacomella rorifitura (NL. fem. n. *rorifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1427 sp002329485*. The type genome for the species is the GenBank assembly GCA_002070525.1. The GC content of the type genome is 42.72 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Sacomia catabicula sp. nov.

Candidatus Sacomia catabicula (NL. fem. n. *catabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU018 sp001513155*. The type genome for the species is the GenBank assembly GCA_001513155.1. The GC content of the type genome is 48.27 %

and the genome length is 2.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Sacomia gen. nov.

Candidatus Sacomia (NL. fem. n. *Sacomia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU018*. The type species for the genus is *Candidatus* Sacomia catabicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sacomia renavedo sp. nov.

Candidatus Sacomia renavedo (NL. fem. n. *renavedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU018 sp003444615*. The type genome for the species is the GenBank assembly GCA_003444615.1. The GC content of the type genome is 45.28 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Sacomia tenebifica sp. nov.

Candidatus Sacomia tenebifica (NL. fem. n. *tenebifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU018 sp002305535*. The type genome for the species is the GenBank assembly GCA_012523795.1. The GC content of the type genome is 46.19 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Sacomida mahelitas sp. nov.

Candidatus Sacomida mahelitas (NL. fem. n. *mahelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MEBICO9517 sp003285105*. The type genome for the species is the GenBank assembly GCA_003696175.1. The GC content of the type genome is 68.62 %

and the genome length is 4.37 Mbp.

Description of *Candidatus* Sacomida gen. nov.

Candidatus Sacomida (NL. fem. n. *Sacomida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MEBICO9517*. The type species for the genus is *Candidatus* Sacomida mahelitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sacomosa sugililega sp. nov.

Candidatus Sacomosa sugililega (NL. fem. n. *sugililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-36-39 sp001873435*. The type genome for the species is the GenBank assembly GCA_001873435.1. The GC content of the type genome is 35.65 % and the genome length is 0.98 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Sacomosa gen. nov.

Candidatus Sacomosa (NL. fem. n. *Sacomosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-36-39*. The type species for the genus is *Candidatus* Sacomosa sugililega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Sacomula amatratica sp. nov.

Candidatus Sacomula amatratica (NL. fem. n. *amatratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITWF01 sp903948415*. The type genome for the species is the

GenBank assembly GCA_903948415.1. The GC content of the type genome is 66.98 % and the genome length is 6.71 Mbp.

Description of *Candidatus* Sacomula gen. nov.

Candidatus Sacomula (NL. fem. n. *Sacomula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITWF01*. The type species for the genus is *Candidatus* Sacomula amatratica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sacomula cerimicella sp. nov.

Candidatus Sacomula cerimicella (NL. fem. n. *cerimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITWF01 sp005799525*. The type genome for the species is the GenBank assembly GCA_005799525.1. The GC content of the type genome is 63.21 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Sacomula nehaletta sp. nov.

Candidatus Sacomula nehaletta (NL. fem. n. *nehaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITWF01 sp009695305*. The type genome for the species is the GenBank assembly GCA_009695305.1. The GC content of the type genome is 64.91 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Sacomula vivifimonia sp. nov.

Candidatus Sacomula vivifimonia (NL. fem. n. *vivifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITWF01 sp903840415*. The type genome for the species is the GenBank assembly GCA_903903025.1. The GC content of the type genome is 61.86 % and the genome length is 5.48 Mbp.

Description of *Candidatus* Sacomula xenodago sp. nov.

Candidatus Sacomula xenodago (NL. fem. n. *xenodago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITWF01 sp903896015*. The type genome for the species is the GenBank assembly GCA_903825225.1. The GC content of the type genome is 63.36 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Sacopana dehinitica sp. nov.

Candidatus Sacopana dehinitica (NL. fem. n. *dehinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GLO-12 sp003353845*. The type genome for the species is the GenBank assembly GCA_003353845.1. The GC content of the type genome is 55.19 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Sacopana gen. nov.

Candidatus Sacopana (NL. fem. n. *Sacopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GLO-12*. The type species for the genus is *Candidatus* Sacopana dehinitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GLO-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopanaceae.

Description of *Candidatus* Sacopanaceae fam. nov.

Candidatus Sacopanaceae (NL. fem. n. *Sacopanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GLO-12.* The type genus for the taxon is *Candidatus* Sacopana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Buxifiales.

Description of *Candidatus* Sacopella noninivita sp. nov.

Candidatus Sacopella noninivita (NL. fem. n. *noninivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5941 sp002430735*. The type genome for the species is the GenBank assembly GCA_002430615.1. The GC content of the type genome is 41.93 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Sacopella gen. nov.

Candidatus Sacopella (NL. fem. n. *Sacopella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5941*. The type species for the genus is *Candidatus* Sacopella noninivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Sacopia hemiditrix sp. nov.

Candidatus Sacopia hemiditrix (NL. fem. n. *hemiditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-33-31 sp001872625*. The type genome for the species is the GenBank assembly GCA_001872625.1. The GC content of the type genome is 32.94 % and the genome length is 2.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Sacopia gen. nov.

Candidatus Sacopia (NL. fem. n. *Sacopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-33-31*. The type species for the genus is *Candidatus* Sacopia hemiditrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1556*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Depopellaceae.

Description of *Candidatus* Sacopida pacififorma sp. nov.

Candidatus Sacopida pacififorma (NL. fem. n. *pacififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5081 sp002415785*. The type genome for the species is the GenBank assembly GCA_002415785.1. The GC content of the type genome is 36.13 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Sacopida gen. nov.

Candidatus Sacopida (NL. fem. n. *Sacopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5081*. The type species for the genus is *Candidatus* Sacopida pacififorma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sacoposa delacax sp. nov.

Candidatus Sacoposa delacax (NL. fem. n. *delacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIYH01 sp014360055*. The type genome for the species is the GenBank assembly GCA_014360055.1. The GC content of the type genome is 68.02 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Sacoposa gen. nov.

Candidatus Sacoposa (NL. fem. n. *Sacoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIYH01*. The type species for the genus is *Candidatus* Sacoposa delacax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACIYH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacoposaceae.

Description of *Candidatus* Sacoposaceae fam. nov.

Candidatus Sacoposaceae (NL. fem. n. *Sacoposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIYH01*. The type genus for the taxon is *Candidatus* Sacoposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACIYH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sacoposales.

Description of *Candidatus* Sacoposales ord. nov.

Candidatus Sacoposales (NL. fem. n. *Sacoposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIYH01*. The type genus for the taxon is *Candidatus* Sacoposa .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetariae.

Description of *Candidatus* Sacopula adambax sp. nov.

Candidatus Sacopula adambax (NL. fem. n. *adambax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2979 sp002701625*. The type genome for the species is the GenBank assembly GCA_002701625.1. The GC content of the type genome is 45.4 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Sacopula gen. nov.

Candidatus Sacopula (NL. fem. n. *Sacopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2979*. The type species for the genus is *Candidatus* Sacopula adambax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sacopulaceae.

Description of *Candidatus* Sacopulaceae fam. nov.

Candidatus Sacopulaceae (NL. fem. n. *Sacopulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2979.* The type genus for the taxon is *Candidatus* Sacopula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sacopulales.

Description of *Candidatus* Sacopulales ord. nov.

Candidatus Sacopulales (NL. fem. n. *Sacopulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2979.* The type genus for the taxon is *Candidatus* Sacopula .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Sacopula impiribra sp. nov.

Candidatus Sacopula impiribra (NL. fem. n. *impiribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2979 sp002725365*. The type genome for the species is the GenBank assembly GCA_002725365.1. The GC content of the type genome is 47.61 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Sacopula redacessa sp. nov.

Candidatus Sacopula redacessa (NL. fem. n. *redacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2979 sp002348225*. The type genome for the species is the GenBank assembly GCA_002348225.1. The GC content of the type genome is 47.73 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Sagittula hexagitio sp. nov.

Candidatus Sagittula hexagitio (NL. fem. n. *hexagitio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sagittula sp002814095*. The type genome for the species is the GenBank assembly RS_GCF_002814095.1. The GC content of the type genome is 66.28 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Salegentibacter adnaritio sp. nov.

Candidatus Salegentibacter adnaritio (NL. fem. n. *adnaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salegentibacter sp004362395*. The type genome for the species is the GenBank assembly RS_GCF_004362395.1. The GC content of the type genome is 37.36 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Salegentibacter antimitura sp. nov.

Candidatus Salegentibacter antimitura (NL. fem. n. *antimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salegentibacter sp000745315*. The type genome for the species is the GenBank assembly RS_GCF_000745315.1. The GC content of the type genome is 36.55 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Salibacter repagax sp. nov.

Candidatus Salibacter repagax (NL. fem. n. *repagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salibacter sp003564735*. The type genome for the species is the GenBank assembly GCA_003564735.1. The GC content of the type genome is 42.69 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Salimicrobium panififorma sp. nov.

Candidatus Salimicrobium panififorma (NL. fem. n. *panififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salimicrobium sp002295105*. The type genome for the species is the GenBank assembly RS_GCF_900188545.1. The GC content of the type genome is 47.06 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Salinarimonas avuncousia sp. nov.

Candidatus Salinarimonas avuncousia (NL. fem. n. *avuncousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinarimonas sp003567055*. The type genome for the species is the GenBank assembly GCA_003567055.1. The GC content of the type genome is 65.22 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Salinarimonas sotulimonas sp. nov.

Candidatus Salinarimonas sotulimonas (NL. fem. n. *sotulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinarimonas sp900094735*. The type genome for the species is the GenBank assembly RS_GCF_900094735.1. The GC content of the type genome is 64.19 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Salinarimonas taraxifica sp. nov.

Candidatus Salinarimonas taraxifica (NL. fem. n. *taraxifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinarimonas sp007693435*. The type genome for the species is the GenBank assembly GCA_007693435.1. The GC content of the type genome is 66.69 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Salinibacillus cimitatica sp. nov.

Candidatus Salinibacillus cimitatica (NL. fem. n. *cimitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinibacillus sp010092505*. The type genome for the species is the GenBank assembly RS_GCF_010092505.1. The GC content of the type genome is 40.96 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Salinibacter fibicedo sp. nov.

Candidatus Salinibacter fibicedo (NL. fem. n. *fibicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinibacter sp003022655*. The type genome for the species is the GenBank assembly GCA_003022655.1. The GC content of the type genome is 64.25 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Salinibacter nitelivita sp. nov.

Candidatus Salinibacter nitelivita (NL. fem. n. *nitelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinibacter sp003023105*. The type genome for the species is the GenBank assembly GCA_003023105.1. The GC content of the type genome is 64.25 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Salinibacter redunatica sp. nov.

Candidatus Salinibacter redunatica (NL. fem. n. *redunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinibacter sp003023125*. The type genome for the species is the GenBank assembly GCA_003023025.1. The GC content of the type genome is 63.46 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Salinibacter verifitia sp. nov.

Candidatus Salinibacter verifitia (NL. fem. n. *verifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinibacter sp003022565*. The type genome for the species is the GenBank assembly GCA_003022565.1. The GC content of the type genome is 63.87 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Salinicoccus immeditoga sp. nov.

Candidatus Salinicoccus immeditoga (NL. fem. n. *immeditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinicoccus sp001265075*. The type genome for the species is the GenBank assembly RS_GCF_001265075.1. The GC content of the type genome is 41.76 % and the genome length is 2.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dust collection of the indoor air".

Description of *Candidatus* Salinicoccus odontatica sp. nov.

Candidatus Salinicoccus odontatica (NL. fem. n. *odontatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinicoccus sp002360325*. The type genome for the species is the GenBank assembly GCA_002360325.1. The GC content of the type genome is 43.5 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Salinicola milifessa sp. nov.

Candidatus Salinicola milifessa (NL. fem. n. *milifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinicola sp008298015*. The type genome for the species is the GenBank assembly RS_GCF_008298015.1. The GC content of the type genome is 62.6 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Salinicola mirificula sp. nov.

Candidatus Salinicola mirificula (NL. fem. n. *mirificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinicola sp000737985*. The type genome for the species is the GenBank assembly RS_GCF_000737985.1. The GC content of the type genome is 65.71 % and the genome length is 4.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "saline environment".

Description of *Candidatus* Salinicola rubigetta sp. nov.

Candidatus Salinicola rubigetta (NL. fem. n. *rubigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinicola sp002695065*. The type genome for the species is the GenBank assembly GCA_013214345.1. The GC content of the type genome is 64.16 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Salinimicrobium cemenedo sp. nov.

Candidatus Salinimicrobium cemenedo (NL. fem. n. *cemenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinimicrobium sp012038135*. The type genome for the species is the GenBank assembly RS_GCF_012038135.1. The GC content of the type genome is 41.7 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Salinimonas adsenitoga sp. nov.

Candidatus Salinimonas adsenitoga (NL. fem. n. *adsenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinimonas sp006228385*. The type genome for the species is the GenBank assembly RS_GCF_006228385.1. The GC content of the type genome is 47.29 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Salinisphaera agratimonas sp. nov.

Candidatus Salinisphaera agratimonas (NL. fem. n. *agratimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinisphaera sp002729955*. The type genome for the species is the GenBank assembly GCA_002729955.1. The GC content of the type genome is 63.46 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Salinisphaera buxifastra sp. nov.

Candidatus Salinisphaera buxifastra (NL. fem. n. *buxifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinisphaera sp002715985*. The type genome for the species is the GenBank assembly GCA_002291565.1. The GC content of the type genome is 63.97 %

and the genome length is 2.74 Mbp.

Description of *Candidatus* Salinisphaera immatitura sp. nov.

Candidatus Salinisphaera immatitura (NL. fem. n. *immatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinisphaera sp003602005*. The type genome for the species is the GenBank assembly RS_GCF_003602005.1. The GC content of the type genome is 64.19 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Salinisphaera levifatio sp. nov.

Candidatus Salinisphaera levifatio (NL. fem. n. *levifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinisphaera sp003177035*. The type genome for the species is the GenBank assembly RS_GCF_003177035.1. The GC content of the type genome is 63.98 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Salinisphaera ocissicula sp. nov.

Candidatus Salinisphaera ocissicula (NL. fem. n. *ocissicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinisphaera sp002320455*. The type genome for the species is the GenBank assembly GCA_002320455.1. The GC content of the type genome is 63.9 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Salinisphaera semivifica sp. nov.

Candidatus Salinisphaera semivifica (NL. fem. n. *semivifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinisphaera sp002433465*. The type genome for the species is the GenBank assembly GCA_002433465.1. The GC content of the type genome is 63.67 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Salinisphaera armifitio sp. nov.

Candidatus Salinisphaera armifitio (NL. fem. n. *armifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinisphaera_A sp002403445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002403445.1. The GC content of the type genome is 56.79 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Salinivenus aneclitia sp. nov.

Candidatus Salinivenus aneclitia (NL. fem. n. *aneclitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinivenus sp002954405*. The type genome for the species is the GenBank assembly RS_GCF_002954405.1. The GC content of the type genome is 60.71 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Salinivenus armipimonia sp. nov.

Candidatus Salinivenus armipimonia (NL. fem. n. *armipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinivenus sp003022435*. The type genome for the species is the GenBank assembly GCA_003022435.1. The GC content of the type genome is 63.03 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Salinivenus inoffilenta sp. nov.

Candidatus Salinivenus inoffilenta (NL. fem. n. *inoffilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinivenus sp003023365*. The type genome for the species is the GenBank assembly GCA_003023365.1. The GC content of the type genome is 61.77 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Salinivibrio accomitica sp. nov.

Candidatus Salinivibrio accomitica (NL. fem. n. *accomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinivibrio sp900141775*. The type genome for the species is the GenBank assembly RS_GCF_900141775.1. The GC content of the type genome is 49.26 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Salinivirga inlacax sp. nov.

Candidatus Salinivirga inlacax (NL. fem. n. *inlacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salinivirga sp002869335*. The type genome for the species is the GenBank assembly GCA_002869335.1. The GC content of the type genome is 35.01 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Salipiger pinacatica sp. nov.

Candidatus Salipiger pinacatica (NL. fem. n. *pinacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salipiger sp002300555*. The type genome for the species is the GenBank assembly RS_GCF_002300555.1. The GC content of the type genome is 66.39 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Salipiger tumefibula sp. nov.

Candidatus Salipiger tumefibula (NL. fem. n. *tumefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Salipiger sp001687105*. The type genome for the species is the GenBank assembly RS_GCF_010500775.1. The GC content of the type genome is 65.32 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Salubana cadurimonia sp. nov.

Candidatus Salubana cadurimonia (NL. fem. n. *cadurimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *2-02-FULL-50-16 sp001798715*. The type genome for the species is the GenBank assembly GCA_001798535.1. The GC content of the type genome is 49.1 % and the genome length is 1.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Salubana gen. nov.

Candidatus Salubana (NL. fem. n. *Salubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-50-16*. The type species for the genus is *Candidatus* Salubana cadurimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-50-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Salubanaceae.

Description of *Candidatus* Salubanaceae fam. nov.

Candidatus Salubanaceae (NL. fem. n. *Salubanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-50-16.* The type genus for the taxon is *Candidatus* Salubana .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-50-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Salubanales.

Description of *Candidatus* Salubanales ord. nov.

Candidatus Salubanales (NL. fem. n. *Salubanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-50-16.* The type genus for the taxon is *Candidatus* Salubana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Domigosae.

Description of *Candidatus* Salubaria relapitura sp. nov.

Candidatus Salubaria relapitura (NL. fem. n. *relapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-1181 sp003159495*. The type genome for the species is the GenBank assembly GCA_003142155.1. The GC content of the type genome is 46.26 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Salubaria gen. nov.

Candidatus Salubaria (NL. fem. n. *Salubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-1181*. The type species for the genus is *Candidatus* Salubaria relapitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1178*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Obrigosaceae.

Description of *Candidatus* Salubella culibitio sp. nov.

Candidatus Salubella culibitio (NL. fem. n. *culibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2796 sp002352035*. The type genome for the species is the GenBank assembly GCA_002352035.1. The GC content of the type genome is 56.95 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Salubella gen. nov.

Candidatus Salubella (NL. fem. n. *Salubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2796*. The type species for the genus is *Candidatus* Salubella culibitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Salubellaceae.

Description of *Candidatus* Salubellaceae fam. nov.

Candidatus Salubellaceae (NL. fem. n. *Salubellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2796.* The type genus for the taxon is *Candidatus* Salubella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBR1031*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nocumellales.

Description of *Candidatus* Salubia satacisca sp. nov.

Candidatus Salubia satacisca (NL. fem. n. *satacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-55-18 sp001768645*. The type genome for the species is the GenBank assembly GCA_001768645.1. The GC content of the type genome is 54.62 % and the genome length is 2.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Salubia gen. nov.

Candidatus Salubia (NL. fem. n. *Salubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-55-18*. The type species for the genus is *Candidatus* Salubia satacisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-55-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Salubiaceae.

Description of *Candidatus* Salubiaceae fam. nov.

Candidatus Salubiaceae (NL. fem. n. *Salubiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-55-18.* The type genus for the taxon is *Candidatus* Salubia .

According to the original version of GTDB R06-RS202, this family belongs to the order

RBG-13-55-18. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Salubiales.

Description of *Candidatus* Salubiales ord. nov.

Candidatus Salubiales (NL. fem. n. *Salubiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-55-18.* The type genus for the taxon is *Candidatus* Salubia .

According to the original version of GTDB R06-RS202, this family belongs to the class *RBG-13-55-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Salubiae.

Description of *Candidatus* Salubiae class. nov.

Candidatus Salubiae (NL. fem. n. *c__Salubiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-55-18.* The type genus for the taxon is *Candidatus* Salubia .

According to GTDB R06-RS202, this class belongs to the phylum *Actinobacteriota*.

Description of *Candidatus* Salubida adsesigena sp. nov.

Candidatus Salubida adsesigena (NL. fem. n. *adsesigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902766955*. The type genome for the species is the GenBank assembly GCA_902766955.1. The GC content of the type genome is 54.34 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Salubida gen. nov.

Candidatus Salubida (NL. fem. n. *Salubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1066*. The type species for the genus is *Candidatus* Salubida adsesigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Salubida almitisca sp. nov.

Candidatus Salubida almitisca (NL. fem. n. *almitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp002316215*. The type genome for the species is the GenBank assembly GCA_002316215.1. The GC content of the type genome is 47.62 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Salubida annicicula sp. nov.

Candidatus Salubida annicicula (NL. fem. n. *annicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902783325*. The type genome for the species is the GenBank assembly GCA_902783325.1. The GC content of the type genome is 54.55 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Salubida bicubastra sp. nov.

Candidatus Salubida bicubastra (NL. fem. n. *bicubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp900313955*. The type genome for the species is the GenBank assembly GCA_902803935.1. The GC content of the type genome is 52.06 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Salubida conibentia sp. nov.

Candidatus Salubida conibentia (NL. fem. n. *conibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp900315305*. The type genome for the species is the GenBank assembly GCA_900314055.1. The GC content of the type genome is 54.64 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Salubida conibousia sp. nov.

Candidatus Salubida conibousia (NL. fem. n. *conibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902779245*. The type genome for the species is the GenBank assembly GCA_902779245.1. The GC content of the type genome is 56.9 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Salubida crastitura sp. nov.

Candidatus Salubida crastitura (NL. fem. n. *crastitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902785985*. The type genome for the species is the GenBank assembly GCA_902785985.1. The GC content of the type genome is 50.41 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Salubida culibugo sp. nov.

Candidatus Salubida culibugo (NL. fem. n. *culibugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp900319795*. The type genome for the species is the GenBank assembly GCA_902790145.1. The GC content of the type genome is 52.23 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Salubida cuticigena sp. nov.

Candidatus Salubida cuticigena (NL. fem. n. *cuticigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902773195*. The type genome for the species is the GenBank assembly GCA_902773195.1. The GC content of the type genome is 60.95 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Salubida daducousia sp. nov.

Candidatus Salubida daducousia (NL. fem. n. *daducousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1066 sp902776305*. The type genome for the species is the GenBank assembly GCA_902779725.1. The GC content of the type genome is 47.46 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Salubida decomivita sp. nov.

Candidatus Salubida decomivita (NL. fem. n. *decomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902803245*. The type genome for the species is the GenBank assembly GCA_902766275.1. The GC content of the type genome is 56.52 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Salubida expisilenta sp. nov.

Candidatus Salubida expisilenta (NL. fem. n. *expisilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902773435*. The type genome for the species is the GenBank assembly GCA_902773435.1. The GC content of the type genome is 59.63 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Salubida frigdilenta sp. nov.

Candidatus Salubida frigdilenta (NL. fem. n. *frigdilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902766655*. The type genome for the species is the GenBank assembly GCA_902766655.1. The GC content of the type genome is 58.68 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Salubida funivitas sp. nov.

Candidatus Salubida funivitas (NL. fem. n. *funivitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902803505*. The type genome for the species is the GenBank assembly GCA_902803505.1. The GC content of the type genome is 54.32 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Salubida halucitrix sp. nov.

Candidatus Salubida halucitrix (NL. fem. n. *halucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp900320575*. The type genome for the species is the GenBank assembly GCA_902795305.1. The GC content of the type genome is 58.77 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Salubida infuciforma sp. nov.

Candidatus Salubida infuciforma (NL. fem. n. *infuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp002371465*. The type genome for the species is the GenBank assembly GCA_002371465.1. The GC content of the type genome is 52.17 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Salubida inherimonia sp. nov.

Candidatus Salubida inherimonia (NL. fem. n. *inherimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902783935*. The type genome for the species is the GenBank assembly GCA_902783935.1. The GC content of the type genome is 53.81 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Salubida inlumago sp. nov.

Candidatus Salubida inlumago (NL. fem. n. *inlumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902803635*. The type genome for the species is the GenBank assembly GCA_902803635.1. The GC content of the type genome is 56.27 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Salubida inmutisca sp. nov.

Candidatus Salubida inmutisca (NL. fem. n. *inmutisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp003446335*. The type genome for the species is the GenBank assembly GCA_003446335.1. The GC content of the type genome is 48.48 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Salubida lacinitrix sp. nov.

Candidatus Salubida lacinitrix (NL. fem. n. *lacinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp002350625*. The type genome for the species is the GenBank assembly GCA_902765775.1. The GC content of the type genome is 57.71 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Salubida locelivita sp. nov.

Candidatus Salubida locelivita (NL. fem. n. *locelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902788035*. The type genome for the species is the GenBank assembly GCA_902775165.1. The GC content of the type genome is 49.79 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Salubida munimigena sp. nov.

Candidatus Salubida munimigena (NL. fem. n. *munimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp900317045*. The type genome for the species is the GenBank assembly GCA_900313965.1. The GC content of the type genome is 57.09 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Salubida nicomilenta sp. nov.

Candidatus Salubida nicomilenta (NL. fem. n. *nicomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1066 sp900320615*. The type genome for the species is the GenBank assembly GCA_902792315.1. The GC content of the type genome is 54.59 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Salubida notabimonia sp. nov.

Candidatus Salubida notabimonia (NL. fem. n. *notabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902766945*. The type genome for the species is the GenBank assembly GCA_902766945.1. The GC content of the type genome is 56.05 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Salubida paralicula sp. nov.

Candidatus Salubida paralicula (NL. fem. n. *paralicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp900317515*. The type genome for the species is the GenBank assembly GCA_900317515.1. The GC content of the type genome is 56.13 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Salubida recomigena sp. nov.

Candidatus Salubida recomigena (NL. fem. n. *recomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp002369495*. The type genome for the species is the GenBank assembly GCA_002369495.1. The GC content of the type genome is 58.3 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Salubida resalimonas sp. nov.

Candidatus Salubida resalimonas (NL. fem. n. *resalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp900314565*. The type genome for the species is the GenBank assembly GCA_902781085.1. The GC content of the type genome is 52.93 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Salubida turibivita sp. nov.

Candidatus Salubida turibivita (NL. fem. n. *turibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1066 sp902797075*. The type genome for the species is the GenBank assembly GCA_902797075.1. The GC content of the type genome is 52.18 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Salubosa adsecitia sp. nov.

Candidatus Salubosa adsecitia (NL. fem. n. *adsecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp902802905*. The type genome for the species is the GenBank assembly GCA_902802905.1. The GC content of the type genome is 34.97 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Salubosa gen. nov.

Candidatus Salubosa (NL. fem. n. *Salubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2450*. The type species for the genus is *Candidatus* Salubosa adsecitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Salubosa anarrastra sp. nov.

Candidatus Salubosa anarrastra (NL. fem. n. *anarrastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp902800905*. The type genome for the species is the GenBank assembly GCA_902800905.1. The GC content of the type genome is 34.39 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Salubosa antecilega sp. nov.

Candidatus Salubosa antecilega (NL. fem. n. *antecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp902800355*. The type genome for the species is the GenBank assembly GCA_902800355.1. The GC content of the type genome is 33.86 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Salubosa catalastra sp. nov.

Candidatus Salubosa catalastra (NL. fem. n. *catalastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp902800025*. The type genome for the species is the GenBank assembly GCA_902772155.1. The GC content of the type genome is 34.85 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Salubosa catalicella sp. nov.

Candidatus Salubosa catalicella (NL. fem. n. *catalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp002392945*. The type genome for the species is the GenBank assembly GCA_002392945.1. The GC content of the type genome is 33.29 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Salubosa cepulago sp. nov.

Candidatus Salubosa cepulago (NL. fem. n. *cepulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp900314865*. The type genome for the species is the GenBank assembly GCA_902757615.1. The GC content of the type genome is 34.82 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Salubosa desomitoga sp. nov.

Candidatus Salubosa desomitoga (NL. fem. n. *desomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp002353275*. The type genome for the species is the GenBank assembly GCA_002353275.1. The GC content of the type genome is 33.52 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Salubosa maligax sp. nov.

Candidatus Salubosa maligax (NL. fem. n. *maligax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp002373085*. The type genome for the species is the GenBank assembly GCA_002373085.1. The GC content of the type genome is 34.56 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Salubosa meridiforma sp. nov.

Candidatus Salubosa meridiforma (NL. fem. n. *meridiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp902797795*. The type genome for the species is the GenBank assembly GCA_902797795.1. The GC content of the type genome is 33.72 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Salubosa nefarugo sp. nov.

Candidatus Salubosa nefarugo (NL. fem. n. *nefarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp002342545*. The type genome for the species is the GenBank assembly GCA_002342545.1. The GC content of the type genome is 32.81 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Salubosa risibetta sp. nov.

Candidatus Salubosa risibetta (NL. fem. n. *risibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp902803285*. The type genome for the species is the GenBank assembly GCA_902803285.1. The GC content of the type genome is 34.65 %

and the genome length is 1.04 Mbp.

Description of *Candidatus* Salubosa semipessa sp. nov.

Candidatus Salubosa semipessa (NL. fem. n. *semipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp902769185*. The type genome for the species is the GenBank assembly GCA_902769185.1. The GC content of the type genome is 33.26 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Salubosa visocimonia sp. nov.

Candidatus Salubosa visocimonia (NL. fem. n. *visocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2450 sp902800645*. The type genome for the species is the GenBank assembly GCA_902800645.1. The GC content of the type genome is 33.79 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Salubula exsanentia sp. nov.

Candidatus Salubula exsanentia (NL. fem. n. *exsanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN15 sp002898555*. The type genome for the species is the GenBank assembly GCA_002898555.1. The GC content of the type genome is 58.15 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Salubula gen. nov.

Candidatus Salubula (NL. fem. n. *Salubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN15*. The type species for the genus is *Candidatus* Salubula exsanentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-DC*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenebiaceae.

Description of *Candidatus* Salubula pedifitoga sp. nov.

Candidatus Salubula pedifitoga (NL. fem. n. *pedifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN15 sp011055025*. The type genome for the species is the GenBank assembly GCA_011055025.1. The GC content of the type genome is 58.73 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Sanabana cilotugo sp. nov.

Candidatus Sanabana cilotugo (NL. fem. n. *cilotugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-42-43 sp013287505*. The type genome for the species is the GenBank assembly GCA_013287505.1. The GC content of the type genome is 39.25 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Sanabana gen. nov.

Candidatus Sanabana (NL. fem. n. *Sanabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-42-43*. The type species for the genus is *Candidatus* Sanabana cilotugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sanabana coticago sp. nov.

Candidatus Sanabana coticago (NL. fem. n. *coticago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-42-43 sp001802455*. The type genome for the species is the GenBank assembly GCA_001802455.1. The GC content of the type genome is 39.15 % and the genome length is 1.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Sanabana derecitica sp. nov.

Candidatus Sanabana derecitica (NL. fem. n. *derecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-42-43 sp002793195*. The type genome for the species is the GenBank assembly GCA_002793195.1. The GC content of the type genome is 38.31 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Sanabana exsufibra sp. nov.

Candidatus Sanabana exsufibra (NL. fem. n. *exsufibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-42-43 sp001801815*. The type genome for the species is the GenBank assembly GCA_001801815.1. The GC content of the type genome is 35.59 % and the genome length is 1.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Sanabana inculisca sp. nov.

Candidatus Sanabana inculisca (NL. fem. n. *inculisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-42-43 sp001801515*. The type genome for the species is the GenBank assembly GCA_001801515.1. The GC content of the type genome is 37.87 % and the genome length is 2.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Sanabana visocedo sp. nov.

Candidatus Sanabana visocedo (NL. fem. n. *visocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-42-43 sp013287435*. The type genome for the species is the GenBank assembly GCA_013287435.1. The GC content of the type genome is 38.4 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Sanabana volubicula sp. nov.

Candidatus Sanabana volubicula (NL. fem. n. *volubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-42-43 sp001801425*. The type genome for the species is the GenBank assembly GCA_001801375.1. The GC content of the type genome is 41.23 % and the genome length is 1.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Sanabaria abmativita sp. nov.

Candidatus Sanabaria abmativita (NL. fem. n. *abmativita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWH01 sp004357005*. The type genome for the species is the GenBank assembly GCA_004357005.1. The GC content of the type genome is 60.48 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Sanabaria gen. nov.

Candidatus Sanabaria (NL. fem. n. *Sanabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMWH01*. The type species for the genus is *Candidatus* Sanabaria abmativita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SMWH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabariaceae.

Description of *Candidatus* Sanabariaceae fam. nov.

Candidatus Sanabariaceae (NL. fem. n. *Sanabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SMWH01*. The type genus for the taxon is *Candidatus* Sanabaria .

According to GTDB R06-RS202, this family belongs to the order *Xanthomonadales*.

Description of *Candidatus* Sanabella adsocatica sp. nov.

Candidatus Sanabella adsocatica (NL. fem. n. *adsocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10085 sp012842765*. The type genome for the species is the GenBank assembly GCA_012842765.1. The GC content of the type genome is 54.18 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Sanabella gen. nov.

Candidatus Sanabella (NL. fem. n. *Sanabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10085*. The type species for the genus is *Candidatus* Sanabella adsocatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU025*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemanaceae.

Description of *Candidatus* Sanabella caseletta sp. nov.

Candidatus Sanabella caseletta (NL. fem. n. *caseletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10085 sp003456765*. The type genome for the species is the GenBank assembly GCA_003456765.1. The GC content of the type genome is 55.4 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Sanabia noceniforma sp. nov.

Candidatus Sanabia noceniforma (NL. fem. n. *noceniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-552 sp000435495*. The type genome for the species is the GenBank assembly GCA_900544785.1. The GC content of the type genome is 42.85 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Sanabia gen. nov.

Candidatus Sanabia (NL. fem. n. *Sanabia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-552*. The type species for the genus is *Candidatus* Sanabia noceniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-552*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabiaceae.

Description of *Candidatus* Sanabiaceae fam. nov.

Candidatus Sanabiaceae (NL. fem. n. *Sanabiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-552.* The type genus for the taxon is *Candidatus* Sanabia .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Sanabida bonifastra sp. nov.

Candidatus Sanabida bonifastra (NL. fem. n. *bonifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUNC01 sp003551625*. The type genome for the species is the GenBank assembly GCA_003551625.1. The GC content of the type genome is 60.11 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Sanabida gen. nov.

Candidatus Sanabida (NL. fem. n. *Sanabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUNC01*. The type species for the genus is *Candidatus* Sanabida bonifastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUNC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabidaceae.

Description of *Candidatus* Sanabidaceae fam. nov.

Candidatus Sanabidaceae (NL. fem. n. *Sanabidaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PUNC01.* The type genus for the taxon is *Candidatus* Sanabida .

According to the original version of GTDB R06-RS202, this family belongs to the order *PUNC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sanabidales.

Description of *Candidatus* Sanabidales ord. nov.

Candidatus Sanabidales (NL. fem. n. *Sanabidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PUNC01.* The type genus for the taxon is *Candidatus* Sanabida .

According to the original version of GTDB R06-RS202, this family belongs to the class *PUNC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Sanabidae.

Description of *Candidatus* Sanabidae class. nov.

Candidatus Sanabidae (NL. fem. n. *c__Sanabidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PUNC01.* The type genus for the taxon is *Candidatus* Sanabida .

According to GTDB R06-RS202, this class belongs to the phylum *Aureabacteria_A*.

Description of *Candidatus* Sanabosa selecimonas sp. nov.

Candidatus Sanabosa selecimonas (NL. fem. n. *selecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSFT01 sp011057045*. The type genome for the species is the GenBank assembly GCA_011053525.1. The GC content of the type genome is 27.26 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Sanabosa gen. nov.

Candidatus Sanabosa (NL. fem. n. *Sanabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSFT01*. The type species for the genus is *Candidatus* Sanabosa selecimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSFT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sanabosaceae.

Description of *Candidatus* Sanabosaceae fam. nov.

Candidatus Sanabosaceae (NL. fem. n. *Sanabosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSFT01.* The type genus for the taxon is *Candidatus* Sanabosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *LBFQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bigemellales.

Description of *Candidatus* Sandaracinobacter femeligena sp. nov.

Candidatus Sandaracinobacter femeligena (NL. fem. n. *femeligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sandaracinobacter sp003248865*. The type genome for the species is the GenBank assembly GCA_003248865.1. The GC content of the type genome is 65.24 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Sandaracinobacter scaccousia sp. nov.

Candidatus Sandaracinobacter scaccousia (NL. fem. n. *scaccousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sandaracinobacter sp002422985*. The type genome for the species is the GenBank assembly GCA_002422985.1. The GC content of the type genome is 65.74 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Sandaracinus invecastra sp. nov.

Candidatus Sandaracinus invecastra (NL. fem. n. *invecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sandaracinus sp903828805*. The type genome for the species is the GenBank assembly GCA_903828805.1. The GC content of the type genome is 71.99 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Sandarakinorhabdus desulitia sp. nov.

Candidatus Sandarakinorhabdus desulitia (NL. fem. n. *desulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sandarakinorhabdus sp009733735*. The type genome for the species is the GenBank assembly RS_GCF_009733735.1. The GC content of the type genome is 66.56 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Sandarakinorhabdus immoditrix sp. nov.

Candidatus Sandarakinorhabdus immoditrix (NL. fem. n. *immoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sandarakinorhabdus sp000331225*. The type genome for the species is the GenBank assembly RS_GCF_000331225.1. The GC content of the type genome is 65.48 % and the genome length is 3.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface water of the Shahu Lake".

Description of *Candidatus* Sandarakinorhabdus legifilega sp. nov.

Candidatus Sandarakinorhabdus legifilega (NL. fem. n. *legifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sandarakinorhabdus sp002280855*. The type genome for the species is the GenBank assembly GCA_002281615.1. The GC content of the type genome is 64.58 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Sandarakinorhabdus vanitedo sp. nov.

Candidatus Sandarakinorhabdus vanitedo (NL. fem. n. *vanitedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sandarakinorhabdus sp010994245*. The type genome for the species is the GenBank assembly RS_GCF_010994245.1. The GC content of the type genome is 67.65 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Saonia viburicula sp. nov.

Candidatus Saonia viburicula (NL. fem. n. *viburicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saonia sp002746415*. The type genome for the species is the GenBank assembly GCA_002746415.1. The GC content of the type genome is 35.5 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Saprospira tametilega sp. nov.

Candidatus Saprospira tametilega (NL. fem. n. *tametilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Saprospira sp903854205*. The type genome for the species is the GenBank assembly GCA_903930595.1. The GC content of the type genome is 38.45 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Sarabana holovitoga sp. nov.

Candidatus Sarabana holovitoga (NL. fem. n. *holovitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12473 sp000993615*. The type genome for the species is the GenBank assembly GCA_000993615.1. The GC content of the type genome is 38.8 % and the genome length is 1.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Sarabana gen. nov.

Candidatus Sarabana (NL. fem. n. *Sarabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12473*. The type species for the genus is *Candidatus* Sarabana holovitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12473*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sarabanaceae.

Description of *Candidatus* Sarabanaceae fam. nov.

Candidatus Sarabanaceae (NL. fem. n. *Sarabanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12473.* The type genus for the taxon is *Candidatus* Sarabana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Sarabaria biparifica sp. nov.

Candidatus Sarabaria biparifica (NL. fem. n. *biparifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4417 sp903879715*. The type genome for the species is the GenBank assembly GCA_903879715.1. The GC content of the type genome is 39.99 % and the genome length is 6.07 Mbp.

Description of *Candidatus* Sarabaria gen. nov.

Candidatus Sarabaria (NL. fem. n. *Sarabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4417*. The type species for the genus is *Candidatus* Sarabaria biparifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sarabaria butubilega sp. nov.

Candidatus Sarabaria butubilega (NL. fem. n. *butubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4417 sp903913645*. The type genome for the species is the

GenBank assembly GCA_903913645.1. The GC content of the type genome is 40.09 % and the genome length is 5.71 Mbp.

Description of *Candidatus* Sarabaria cerucedo sp. nov.

Candidatus Sarabaria cerucedo (NL. fem. n. *cerucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4417 sp903887815*. The type genome for the species is the GenBank assembly GCA_903887815.1. The GC content of the type genome is 43.38 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Sarabaria denecicella sp. nov.

Candidatus Sarabaria denecicella (NL. fem. n. *denecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4417 sp903917425*. The type genome for the species is the GenBank assembly GCA_903917425.1. The GC content of the type genome is 41.48 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Sarabaria denomibra sp. nov.

Candidatus Sarabaria denomibra (NL. fem. n. *denomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4417 sp903822525*. The type genome for the species is the GenBank assembly GCA_903831445.1. The GC content of the type genome is 42.08 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Sarabaria epogdatio sp. nov.

Candidatus Sarabaria epogdatio (NL. fem. n. *epogdatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4417 sp903864265*. The type genome for the species is the GenBank assembly GCA_903864265.1. The GC content of the type genome is 45.68 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Sarabaria exhedigena sp. nov.

Candidatus Sarabaria exhedigena (NL. fem. n. *exhedigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4417 sp002389705*. The type genome for the species is the GenBank assembly GCA_002389705.1. The GC content of the type genome is 43.84 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Sarabaria secunatica sp. nov.

Candidatus Sarabaria secunatica (NL. fem. n. *secunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4417 sp903946925*. The type genome for the species is the GenBank assembly GCA_903946925.1. The GC content of the type genome is 40.35 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Sarabaria televentia sp. nov.

Candidatus Sarabaria televentia (NL. fem. n. *televentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4417 sp903878265*. The type genome for the species is the GenBank assembly GCA_903919875.1. The GC content of the type genome is 41.23 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Sarabella sicunitudo sp. nov.

Candidatus Sarabella sicunitudo (NL. fem. n. *sicunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VXYK01 sp009845995*. The type genome for the species is the GenBank assembly GCA_009836285.1. The GC content of the type genome is 61.09 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Sarabella gen. nov.

Candidatus Sarabella (NL. fem. n. *Sarabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VXYK01*. The type species for the genus is *Candidatus* Sarabella sicunitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11606*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Munifanaceae.

Description of *Candidatus* Sarabida decenitio sp. nov.

Candidatus Sarabida decenitio (NL. fem. n. *decenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6187 sp002422795*. The type genome for the species is the GenBank assembly GCA_002422795.1. The GC content of the type genome is 40.31 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Sarabida gen. nov.

Candidatus Sarabida (NL. fem. n. *Sarabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6187*. The type species for the genus is *Candidatus* Sarabida decenitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6187*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sarabidaceae.

Description of *Candidatus* Sarabidaceae fam. nov.

Candidatus Sarabidaceae (NL. fem. n. *Sarabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6187*. The type genus for the taxon is *Candidatus* Sarabida .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Sarabosa assefibra sp. nov.

Candidatus Sarabosa assefibra (NL. fem. n. *assefibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SRT547 sp009002475*. The type genome for the species is the GenBank assembly RS_GCF_009002475.1. The GC content of the type genome is 39.38 % and the genome length is 9.5 Mbp.

Description of *Candidatus* Sarabosa gen. nov.

Candidatus Sarabosa (NL. fem. n. *Sarabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SRT547*. The type species for the genus is *Candidatus* Sarabosa assefibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SRT547*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sarabosaceae.

Description of *Candidatus* Sarabosaceae fam. nov.

Candidatus Sarabosaceae (NL. fem. n. *Sarabosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SRT547.* The type genus for the taxon is *Candidatus* Sarabosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SRT547*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sarabosales.

Description of *Candidatus* Sarabosales ord. nov.

Candidatus Sarabosales (NL. fem. n. *Sarabosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SRT547.* The type genus for the taxon is *Candidatus* Sarabosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *J132*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Purulanae.

Description of *Candidatus* Sarabula citocitas sp. nov.

Candidatus Sarabula citocitas (NL. fem. n. *citocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1233 sp013694695*. The type genome for the species is the GenBank assembly GCA_013694695.1. The GC content of the type genome is 66.51 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Sarabula gen. nov.

Candidatus Sarabula (NL. fem. n. *Sarabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1233*. The type species for the genus is *Candidatus* Sarabula citocitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Sarabula ephemax sp. nov.

Candidatus Sarabula ephemax (NL. fem. n. *ephemax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1233 sp011390645*. The type genome for the species is the GenBank assembly GCA_011390645.1. The GC content of the type genome is 67.13 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Sarabula nubecetta sp. nov.

Candidatus Sarabula nubecetta (NL. fem. n. *nubecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1233 sp003169895*. The type genome for the species is the GenBank assembly GCA_003131805.1. The GC content of the type genome is 65.87 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Satacana desonivita sp. nov.

Candidatus Satacana desonivita (NL. fem. n. *desonivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAITLX01 sp903893335*. The type genome for the species is the GenBank assembly GCA_903893335.1. The GC content of the type genome is 73.55 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Satacana gen. nov.

Candidatus Satacana (NL. fem. n. *Satacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAITLX01*. The type species for the genus is *Candidatus* Satacana desonivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Satacaria holovousia sp. nov.

Candidatus Satacaria holovousia (NL. fem. n. *holovousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-40-12 sp002770755*. The type genome for the species is the GenBank assembly GCA_002774005.1. The GC content of the type genome is 39.21 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Satacaria gen. nov.

Candidatus Satacaria (NL. fem. n. *Satacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-40-12*. The type species for the genus is *Candidatus* Satacaria holovousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-40-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Satacariaceae.

Description of *Candidatus* Satacariaceae fam. nov.

Candidatus Satacariaceae (NL. fem. n. *Satacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *CG2-30-40-12.* The type genus for the taxon is *Candidatus* Satacaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-40-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacariales.

Description of *Candidatus* Satacariales ord. nov.

Candidatus Satacariales (NL. fem. n. *Satacariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-40-12.* The type genus for the taxon is *Candidatus* Satacaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *WWE3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Veridulae.

Description of *Candidatus* Satacella troclisca sp. nov.

Candidatus Satacella troclisca (NL. fem. n. *troclisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DQWO01 sp011042595*. The type genome for the species is the GenBank assembly GCA_011042595.1. The GC content of the type genome is 48.15 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Satacella gen. nov.

Candidatus Satacella (NL. fem. n. *Satacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DQWO01*. The type species for the genus is *Candidatus* Satacella troclisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DQWO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Satacellaceae.

Description of *Candidatus* Satacellaceae fam. nov.

Candidatus Satacellaceae (NL. fem. n. *Satacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DQWO01.* The type genus for the taxon is *Candidatus* Satacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DQWO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacellales.

Description of *Candidatus* Satacellales ord. nov.

Candidatus Satacellales (NL. fem. n. *Satacellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DQWO01.* The type genus for the taxon is *Candidatus* Satacella .

According to the original version of GTDB R06-RS202, this family belongs to the class *DQWO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Satacellae.

Description of *Candidatus* Satacellae class. nov.

Candidatus Satacellae (NL. fem. n. *c__Satacellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DQWO01.* The type genus for the taxon is *Candidatus* Satacella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *DQWO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Satacellota.

Description of *Candidatus* Satacellota phyl. nov.

Candidatus Satacellota (NL. fem. n. *Satacellota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DQWO01.* The type genus for the taxon is *Candidatus* Satacella .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Satacia insenilega sp. nov.

Candidatus Satacia insenilega (NL. fem. n. *insenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-698 sp000431235*. The type genome for the species is the GenBank assembly GCA_000431235.1. The GC content of the type genome is 28.18 % and the genome length is 1.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Satacia gen. nov.

Candidatus Satacia (NL. fem. n. *Satacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-698*. The type species for the genus is *Candidatus* Satacia insenilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Sataciaceae fam. nov.

Candidatus Sataciaceae (NL. fem. n. *Sataciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-698.* The type genus for the taxon is *Candidatus* Satacia .

According to the original version of GTDB R06-RS202, this family belongs to the order *ML615J-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monopidales.

Description of *Candidatus* Satacida ludibisca sp. nov.

Candidatus Satacida ludibisca (NL. fem. n. *ludibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWCM01 sp013360285*. The type genome for the species is the GenBank assembly GCA_013360285.1. The GC content of the type genome is 53.47 % and the genome length is 7.15 Mbp.

Description of *Candidatus* Satacida gen. nov.

Candidatus Satacida (NL. fem. n. *Satacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWCM01*. The type species for the genus is *Candidatus* Satacida ludibisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABWCM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Satacidaceae.

Description of *Candidatus* Satacidaceae fam. nov.

Candidatus Satacidaceae (NL. fem. n. *Satacidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWCM01.* The type genus for the taxon is *Candidatus* Satacida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABWCM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacidales.

Description of *Candidatus* Satacidales ord. nov.

Candidatus Satacidales (NL. fem. n. *Satacidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWCM01.* The type genus for the taxon is *Candidatus* Satacida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubigariae.

Description of *Candidatus* Satacula denigibula sp. nov.

Candidatus Satacula denigibula (NL. fem. n. *denigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG115 sp900315735*. The type genome for the species is the GenBank assembly GCA_902777075.1. The GC content of the type genome is 40.69 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Satacula gen. nov.

Candidatus Satacula (NL. fem. n. *Satacula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG115*. The type species for the genus is *Candidatus* Satacula denigibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Satacula detoritrix sp. nov.

Candidatus Satacula detoritrix (NL. fem. n. *detoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG115 sp900066395*. The type genome for the species is the GenBank assembly GCA_000432815.1. The GC content of the type genome is 41.08 % and the genome length is 2.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Satacula sicaritoga sp. nov.

Candidatus Satacula sicaritoga (NL. fem. n. *sicaritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG115 sp902782995*. The type genome for the species is the GenBank assembly GCA_902782995.1. The GC content of the type genome is 44.7 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Saxifana lutulastra sp. nov.

Candidatus Saxifana lutulastra (NL. fem. n. *lutulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1431 sp002329665*. The type genome for the species is the GenBank assembly GCA_012718835.1. The GC content of the type genome is 61.29 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Saxifana gen. nov.

Candidatus Saxifana (NL. fem. n. *Saxifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1431*. The type species for the genus is *Candidatus* Saxifana lutulastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1431*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifanaceae.

Description of *Candidatus* Saxifanaceae fam. nov.

Candidatus Saxifanaceae (NL. fem. n. *Saxifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1431.* The type genus for the taxon is *Candidatus* Saxifana .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Saxifella cenodifica sp. nov.

Candidatus Saxifella cenodifica (NL. fem. n. *cenodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBAS01 sp005882975*. The type genome for the species is the GenBank assembly GCA_005882975.1. The GC content of the type genome is 37.35 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Saxifella gen. nov.

Candidatus Saxifella (NL. fem. n. *Saxifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBAS01*. The type species for the genus is *Candidatus* Saxifella cenodifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Saxifella lenocilenta sp. nov.

Candidatus Saxifella lenocilenta (NL. fem. n. *lenocilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *VBAS01 sp005798905*. The type genome for the species is the GenBank assembly GCA_005792345.1. The GC content of the type genome is 33.73 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Saxifella luculousia sp. nov.

Candidatus Saxifella luculousia (NL. fem. n. *luculousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBAS01 sp004322425*. The type genome for the species is the GenBank assembly GCA_004322425.1. The GC content of the type genome is 40.86 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Saxifella odontitudo sp. nov.

Candidatus Saxifella odontitudo (NL. fem. n. *odontitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBAS01 sp005882315*. The type genome for the species is the GenBank assembly GCA_005882315.1. The GC content of the type genome is 38.33 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Saxifia sonipugo sp. nov.

Candidatus Saxifia sonipugo (NL. fem. n. *sonipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVDX01 sp903904805*. The type genome for the species is the GenBank assembly GCA_903904805.1. The GC content of the type genome is 66.3 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Saxifia gen. nov.

Candidatus Saxifia (NL. fem. n. *Saxifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVDX01*. The type species for the genus is *Candidatus* Saxifia sonipugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Saxifida entomicella sp. nov.

Candidatus Saxifida entomicella (NL. fem. n. *entomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPQS01 sp003818605*. The type genome for the species is the GenBank assembly GCA_003818605.1. The GC content of the type genome is 53.52 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Saxifida gen. nov.

Candidatus Saxifida (NL. fem. n. *Saxifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPQS01*. The type species for the genus is *Candidatus* Saxifida entomicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RPQS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxifidaceae.

Description of *Candidatus* Saxifidaceae fam. nov.

Candidatus Saxifidaceae (NL. fem. n. *Saxifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RPQS01*. The type genus for the taxon is *Candidatus* Saxifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *RPQS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Saxifidales.

Description of *Candidatus* Saxifidales ord. nov.

Candidatus Saxifidales (NL. fem. n. *Saxifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RPQS01*. The type genus for the taxon is *Candidatus* Saxifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *RPQS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Saxifidae.

Description of *Candidatus* Saxifidae class. nov.

Candidatus Saxifidae (NL. fem. n. *c__Saxifidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RPQS01*. The type genus for the taxon is *Candidatus* Saxifida .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *AABM5-125-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Desonellota.

Description of *Candidatus* Saxifosa cerebicella sp. nov.

Candidatus Saxifosa cerebicella (NL. fem. n. *cerebicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHN01 sp013821025*. The type genome for the species is the GenBank assembly GCA_013821025.1. The GC content of the type genome is 67.83 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Saxifosa gen. nov.

Candidatus Saxifosa (NL. fem. n. *Saxifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDHN01*. The type species for the genus is *Candidatus* Saxifosa cerebicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Saxifosa infiritas sp. nov.

Candidatus Saxifosa infiritas (NL. fem. n. *infiritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHN01 sp013815505*. The type genome for the species is the GenBank assembly GCA_013815505.1. The GC content of the type genome is 69.08 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Saxifula faticibra sp. nov.

Candidatus Saxifula faticibra (NL. fem. n. *faticibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-FULL-38-9 sp001793095*. The type genome for the species is the GenBank assembly GCA_001792065.1. The GC content of the type genome is 38.46 % and the genome length is 1.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Saxifula gen. nov.

Candidatus Saxifula (NL. fem. n. *Saxifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-FULL-38-9*. The type species for the genus is *Candidatus* Saxifula faticibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Saxoparia adnicisca sp. nov.

Candidatus Saxoparia adnicisca (NL. fem. n. *adnicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902780385*. The type genome for the species is the GenBank assembly GCA_902780385.1. The GC content of the type genome is 51.71 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Saxoparia gen. nov.

Candidatus Saxoparia (NL. fem. n. *Saxoparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-791*. The type species for the genus is *Candidatus* Saxoparia adnicisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Saxoparia adsifitoga sp. nov.

Candidatus Saxoparia adsifitoga (NL. fem. n. *adsifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902783385*. The type genome for the species is the GenBank assembly GCA_902783385.1. The GC content of the type genome is 56.69 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Saxoparia affabilega sp. nov.

Candidatus Saxoparia affabilega (NL. fem. n. *affabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900625025*. The type genome for the species is the GenBank assembly RS_GCF_900625025.1. The GC content of the type genome is 55.45 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Saxoparia affabitia sp. nov.

Candidatus Saxoparia affabitia (NL. fem. n. *affabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp002448395*. The type genome for the species is the GenBank assembly GCA_002448395.1. The GC content of the type genome is 52.19 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Saxoparia bonifilenta sp. nov.

Candidatus Saxoparia bonifilenta (NL. fem. n. *bonifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900319245*. The type genome for the species is the GenBank assembly GCA_902774595.1. The GC content of the type genome is 52.04 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Saxoparia bugilibra sp. nov.

Candidatus Saxoparia bugilibra (NL. fem. n. *bugilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900320325*. The type genome for the species is the GenBank assembly GCA_900320635.1. The GC content of the type genome is 54.79 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Saxoparia cadavitura sp. nov.

Candidatus Saxoparia cadavitura (NL. fem. n. *cadavitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902801415*. The type genome for the species is the GenBank assembly GCA_902761795.1. The GC content of the type genome is 52.97 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Saxoparia catecivita sp. nov.

Candidatus Saxoparia catecivita (NL. fem. n. *catecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900313745*. The type genome for the species is the GenBank assembly GCA_900313745.1. The GC content of the type genome is 58.12 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Saxoparia colepisca sp. nov.

Candidatus Saxoparia colepisca (NL. fem. n. *colepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900315055*. The type genome for the species is the GenBank assembly GCA_002351235.1. The GC content of the type genome is 55.83 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Saxoparia crusmastra sp. nov.

Candidatus Saxoparia crusmastra (NL. fem. n. *crusmastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-791 sp002390025*. The type genome for the species is the GenBank assembly GCA_002390025.1. The GC content of the type genome is 53.45 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Saxoparia culibatio sp. nov.

Candidatus Saxoparia culibatio (NL. fem. n. *culibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp002362155*. The type genome for the species is the GenBank assembly GCA_002362155.1. The GC content of the type genome is 55.24 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Saxoparia delubitia sp. nov.

Candidatus Saxoparia delubitia (NL. fem. n. *delubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp002449595*. The type genome for the species is the GenBank assembly GCA_002449595.1. The GC content of the type genome is 59.35 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Saxoparia derunastra sp. nov.

Candidatus Saxoparia derunastra (NL. fem. n. *derunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900317475*. The type genome for the species is the GenBank assembly GCA_902775885.1. The GC content of the type genome is 53.04 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Saxoparia detenifica sp. nov.

Candidatus Saxoparia detenifica (NL. fem. n. *detenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900318375*. The type genome for the species is the GenBank assembly GCA_902758845.1. The GC content of the type genome is 50.91 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Saxoparia dicabitrix sp. nov.

Candidatus Saxoparia dicabitrix (NL. fem. n. *dicabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp002358875*. The type genome for the species is the GenBank assembly GCA_002358875.1. The GC content of the type genome is 52.06 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Saxoparia didacilega sp. nov.

Candidatus Saxoparia didacilega (NL. fem. n. *didacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900317555*. The type genome for the species is the GenBank assembly GCA_900313635.1. The GC content of the type genome is 52.55 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Saxoparia dilogitudo sp. nov.

Candidatus Saxoparia dilogitudo (NL. fem. n. *dilogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900316855*. The type genome for the species is the GenBank assembly GCA_902795145.1. The GC content of the type genome is 56.26 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Saxoparia ermelatio sp. nov.

Candidatus Saxoparia ermelatio (NL. fem. n. *ermelatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp002372815*. The type genome for the species is the GenBank assembly GCA_002372815.1. The GC content of the type genome is 60.53 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Saxoparia excamicula sp. nov.

Candidatus Saxoparia excamicula (NL. fem. n. *excamicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902781655*. The type genome for the species is the GenBank assembly GCA_902781655.1. The GC content of the type genome is 55.32 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Saxoparia gabinatio sp. nov.

Candidatus Saxoparia gabinatio (NL. fem. n. *gabinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902785055*. The type genome for the species is the GenBank assembly GCA_902785055.1. The GC content of the type genome is 51.92 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Saxoparia galacifica sp. nov.

Candidatus Saxoparia galacifica (NL. fem. n. *galacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900318875*. The type genome for the species is the GenBank assembly GCA_902756205.1. The GC content of the type genome is 57.86 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Saxoparia hexapibula sp. nov.

Candidatus Saxoparia hexapibula (NL. fem. n. *hexapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900320335*. The type genome for the species is the GenBank assembly GCA_902768735.1. The GC content of the type genome is 53.81 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Saxoparia inlocatica sp. nov.

Candidatus Saxoparia inlocatica (NL. fem. n. *inlocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-791 sp002394525*. The type genome for the species is the GenBank assembly GCA_002394525.1. The GC content of the type genome is 58.04 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Saxoparia irregatica sp. nov.

Candidatus Saxoparia irregatica (NL. fem. n. *irregatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902796425*. The type genome for the species is the GenBank assembly GCA_902796425.1. The GC content of the type genome is 53.61 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Saxoparia lanifatica sp. nov.

Candidatus Saxoparia lanifatica (NL. fem. n. *lanifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp000431495*. The type genome for the species is the GenBank assembly GCA_900539235.1. The GC content of the type genome is 50.82 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Saxoparia lanugago sp. nov.

Candidatus Saxoparia lanugago (NL. fem. n. *lanugago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900320025*. The type genome for the species is the GenBank assembly GCA_902760725.1. The GC content of the type genome is 55.94 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Saxoparia luxuratio sp. nov.

Candidatus Saxoparia luxuratio (NL. fem. n. *luxuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900321785*. The type genome for the species is the GenBank assembly GCA_902778435.1. The GC content of the type genome is 51.77 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Saxoparia minuressa sp. nov.

Candidatus Saxoparia minuressa (NL. fem. n. *minuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900101015*. The type genome for the species is the GenBank assembly GCA_902762645.1. The GC content of the type genome is 52.91 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Saxoparia monopisca sp. nov.

Candidatus Saxoparia monopisca (NL. fem. n. *monopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp002395235*. The type genome for the species is the GenBank assembly GCA_002395235.1. The GC content of the type genome is 53.38 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Saxoparia notabisca sp. nov.

Candidatus Saxoparia notabisca (NL. fem. n. *notabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902794825*. The type genome for the species is the GenBank assembly GCA_902763225.1. The GC content of the type genome is 52.04 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Saxoparia offunivita sp. nov.

Candidatus Saxoparia offunivita (NL. fem. n. *offunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp012512995*. The type genome for the species is the GenBank assembly GCA_012512995.1. The GC content of the type genome is 46.33 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Saxoparia omnifugo sp. nov.

Candidatus Saxoparia omnifugo (NL. fem. n. *omnifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902767235*. The type genome for the species is the GenBank assembly GCA_902767235.1. The GC content of the type genome is 55.01 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Saxoparia ossarimonas sp. nov.

Candidatus Saxoparia ossarimonas (NL. fem. n. *ossarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp002353635*. The type genome for the species is the GenBank assembly GCA_002353635.1. The GC content of the type genome is 53.67 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Saxoparia podagessa sp. nov.

Candidatus Saxoparia podagessa (NL. fem. n. *podagessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902781325*. The type genome for the species is the GenBank assembly GCA_902781325.1. The GC content of the type genome is 51.81 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Saxoparia purulitia sp. nov.

Candidatus Saxoparia purulitia (NL. fem. n. *purulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902781215*. The type genome for the species is the GenBank assembly GCA_902781215.1. The GC content of the type genome is 56.64 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Saxoparia semipigena sp. nov.

Candidatus Saxoparia semipigena (NL. fem. n. *semipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAG-791 sp902801585*. The type genome for the species is the GenBank assembly GCA_902801585.1. The GC content of the type genome is 52.22 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Saxoparia telefimonas sp. nov.

Candidatus Saxoparia telefimonas (NL. fem. n. *telefimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902789735*. The type genome for the species is the GenBank assembly GCA_902790025.1. The GC content of the type genome is 53.64 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Saxoparia utrarilega sp. nov.

Candidatus Saxoparia utrarilega (NL. fem. n. *utrarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp003447895*. The type genome for the species is the GenBank assembly GCA_003447895.1. The GC content of the type genome is 54.77 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Saxoparia utrolitrix sp. nov.

Candidatus Saxoparia utrolitrix (NL. fem. n. *utrolitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp002392385*. The type genome for the species is the GenBank assembly GCA_002392385.1. The GC content of the type genome is 59.72 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Saxoparia vepaletta sp. nov.

Candidatus Saxoparia vepaletta (NL. fem. n. *vepaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp900107575*. The type genome for the species is the GenBank assembly RS_GCF_900107575.1. The GC content of the type genome is 54.26 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Saxoparia xenopugo sp. nov.

Candidatus Saxoparia xenopugo (NL. fem. n. *xenopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-791 sp902777355*. The type genome for the species is the GenBank assembly GCA_902777355.1. The GC content of the type genome is 51.37 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Saxopella cinefitrix sp. nov.

Candidatus Saxopella cinefitrix (NL. fem. n. *cinefitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4975 sp002427015*. The type genome for the species is the GenBank assembly GCA_002427015.1. The GC content of the type genome is 51.93 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Saxopella gen. nov.

Candidatus Saxopella (NL. fem. n. *Saxopella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4975*. The type species for the genus is *Candidatus* Saxopella cinefitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4975*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxopellaceae.

Description of *Candidatus* Saxopellaceae fam. nov.

Candidatus Saxopellaceae (NL. fem. n. *Saxopellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4975.* The type genus for the taxon is *Candidatus* Saxopella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4975*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Saxopellales.

Description of *Candidatus* Saxopellales ord. nov.

Candidatus Saxopellales (NL. fem. n. *Saxopellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4975.* The type genus for the taxon is *Candidatus* Saxopella .

According to the GTDB R06-RS202, this order belongs to the class *Proteinivoracia*.

Description of *Candidatus* Saxopella dilacitura sp. nov.

Candidatus Saxopella dilacitura (NL. fem. n. *dilacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4975 sp002408465*. The type genome for the species is the GenBank assembly GCA_002316925.1. The GC content of the type genome is 51.57 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Saxopella intecax sp. nov.

Candidatus Saxopella intecax (NL. fem. n. *intecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4975 sp002397155*. The type genome for the species is the GenBank assembly GCA_002397155.1. The GC content of the type genome is 58.39 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Saxopella penicicella sp. nov.

Candidatus Saxopella penicicella (NL. fem. n. *penicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4975 sp002423965*. The type genome for the species is the GenBank assembly GCA_002398855.1. The GC content of the type genome is 47.97 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Saxopella utillitrix sp. nov.

Candidatus Saxopella utillitrix (NL. fem. n. *utillitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4975 sp012727415*. The type genome for the species is the GenBank assembly GCA_012727415.1. The GC content of the type genome is 52.32 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Saxopia bugilatica sp. nov.

Candidatus Saxopia bugilatica (NL. fem. n. *bugilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-8 sp003232175*. The type genome for the species is the GenBank assembly GCA_003232175.1. The GC content of the type genome is 57.92 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Saxopia gen. nov.

Candidatus Saxopia (NL. fem. n. *Saxopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-8*. The type species for the genus is *Candidatus* Saxopia bugilatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Saxopiaceae.

Description of *Candidatus* Saxopiaceae fam. nov.

Candidatus Saxopiaceae (NL. fem. n. *Saxopiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-8.* The type genus for the taxon is *Candidatus* Saxopia .

According to GTDB R06-RS202, this family belongs to the order *Rhizobiales*.

Description of *Candidatus* Saxopida fediticella sp. nov.

Candidatus Saxopida fediticella (NL. fem. n. *fediticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAJAWW01 sp903946745*. The type genome for the species is the GenBank assembly GCA_903940955.1. The GC content of the type genome is 58.69 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Saxopida gen. nov.

Candidatus Saxopida (NL. fem. n. *Saxopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJAWW01*. The type species for the genus is *Candidatus* Saxopida fediticella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Saxoposa decametta sp. nov.

Candidatus Saxoposa decametta (NL. fem. n. *decametta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686765 sp002686765*. The type genome for the species is the GenBank assembly GCA_002686765.1. The GC content of the type genome is 59.64 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Saxoposa gen. nov.

Candidatus Saxoposa (NL. fem. n. *Saxoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2686765*. The type species for the genus is *Candidatus* Saxoposa decametta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-58-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Denicellaceae.

Description of *Candidatus* Saxoposa totidentia sp. nov.

Candidatus Saxoposa totidentia (NL. fem. n. *totidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2686765 sp013349695*. The type genome for the species is the

GenBank assembly GCA_013349335.1. The GC content of the type genome is 61.01 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Saxopula colopessa sp. nov.

Candidatus Saxopula colopessa (NL. fem. n. *colopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2730 sp900319955*. The type genome for the species is the GenBank assembly GCA_902790695.1. The GC content of the type genome is 26.85 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Saxopula gen. nov.

Candidatus Saxopula (NL. fem. n. *Saxopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2730*. The type species for the genus is *Candidatus* Saxopula colopessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Saxopula derelitudo sp. nov.

Candidatus Saxopula derelitudo (NL. fem. n. *derelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2730 sp900313345*. The type genome for the species is the GenBank assembly GCA_900313345.1. The GC content of the type genome is 24.68 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Saxopula levifax sp. nov.

Candidatus Saxopula levifax (NL. fem. n. *levifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2730 sp900320505*. The type genome for the species is the GenBank assembly GCA_900320505.1. The GC content of the type genome is 26.99 %

and the genome length is 1.2 Mbp.

Description of *Candidatus* Scaccana arrecimonas sp. nov.

Candidatus Scaccana arrecimonas (NL. fem. n. *arrecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ETA-A8 sp007747655*. The type genome for the species is the GenBank assembly RS_GCF_007747655.1. The GC content of the type genome is 57.78 % and the genome length is 9.01 Mbp.

Description of *Candidatus* Scaccana gen. nov.

Candidatus Scaccana (NL. fem. n. *Scaccana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ETA-A8*. The type species for the genus is *Candidatus* Scaccana arrecimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scaccida cocolitudo sp. nov.

Candidatus Scaccida cocolitudo (NL. fem. n. *cocolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUND01 sp003551645*. The type genome for the species is the GenBank assembly GCA_003551645.1. The GC content of the type genome is 63.48 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Scaccida gen. nov.

Candidatus Scaccida (NL. fem. n. *Scaccida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUND01*. The type species for the genus is *Candidatus* Scaccida cocolitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Scaccosa vilipax sp. nov.

Candidatus Scaccosa vilipax (NL. fem. n. *vilipax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAXGV01 sp012271185*. The type genome for the species is the GenBank assembly GCA_012271185.1. The GC content of the type genome is 59.32 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Scaccosa gen. nov.

Candidatus Scaccosa (NL. fem. n. *Scaccosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAXGV01*. The type species for the genus is *Candidatus* Scaccosa vilipax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin80*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revecanaceae.

Description of *Candidatus* Scalindua vocamastra sp. nov.

Candidatus Scalindua vocamastra (NL. fem. n. *vocamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Scalindua sp001828595*. The type genome for the species is the GenBank assembly GCA_001824605.1. The GC content of the type genome is 39.6 % and the genome length is 1.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Scammaria exsomivita sp. nov.

Candidatus Scammaria exsomivita (NL. fem. n. *exsomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZNL01 sp012798315*. The type genome for the species is the GenBank assembly GCA_012798315.1. The GC content of the type genome is 38.55 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Scammaria gen. nov.

Candidatus Scammaria (NL. fem. n. *Scammaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZNL01*. The type species for the genus is *Candidatus* Scammaria exsomivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10185*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Musulellaceae.

Description of *Candidatus* Scammella apsenilenta sp. nov.

Candidatus Scammella apsenilenta (NL. fem. n. *apsenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXLG01 sp005777805*. The type genome for the species is the GenBank assembly GCA_005777805.1. The GC content of the type genome is 69.17 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Scammella gen. nov.

Candidatus Scammella (NL. fem. n. *Scammella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXLG01*. The type species for the genus is *Candidatus* Scammella apsenilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Negotariaceae.

Description of *Candidatus* Scammella impiledo sp. nov.

Candidatus Scammella impiledo (NL. fem. n. *impiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXLG01 sp009885395*. The type genome for the species is the GenBank assembly GCA_009885395.1. The GC content of the type genome is 64.46 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Scammia fragledo sp. nov.

Candidatus Scammia fragledo (NL. fem. n. *fragledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXND01 sp005777235*. The type genome for the species is the GenBank assembly GCA_005777235.1. The GC content of the type genome is 61.23 % and the genome length is 6.03 Mbp.

Description of *Candidatus* Scammia gen. nov.

Candidatus Scammia (NL. fem. n. *Scammia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXND01*. The type species for the genus is *Candidatus* Scammia fragledo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scammosa papavisca sp. nov.

Candidatus Scammosa papavisca (NL. fem. n. *papavisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRFF01 sp009778945*. The type genome for the species is the GenBank assembly GCA_009778945.1. The GC content of the type genome is 55.99 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Scammosa gen. nov.

Candidatus Scammosa (NL. fem. n. *Scammosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRFF01*. The type species for the genus is *Candidatus* Scammosa papavisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scammula cicililenta sp. nov.

Candidatus Scammula cicililenta (NL. fem. n. *cicililenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1776 sp002314605*. The type genome for the species is the GenBank assembly GCA_002314605.1. The GC content of the type genome is 56.64 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Scammula gen. nov.

Candidatus Scammula (NL. fem. n. *Scammula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1776*. The type species for the genus is *Candidatus* Scammula cicililenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scandinavium bucelitas sp. nov.

Candidatus Scandinavium bucelitas (NL. fem. n. *bucelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Scandinavium sp009668205*. The type genome for the species is the GenBank assembly RS_GCF_009668205.1. The GC content of the type genome is 54.25 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Scandinavium energilega sp. nov.

Candidatus Scandinavium energilega (NL. fem. n. *energilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Scandinavium sp014156375*. The type genome for the species is the GenBank assembly GCA_014156375.1. The GC content of the type genome is 54.69 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Scandinavium gasifitura sp. nov.

Candidatus Scandinavium gasifitura (NL. fem. n. *gasifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Scandinavium sp900215375*. The type genome for the species is the GenBank assembly RS_GCF_900215375.1. The GC content of the type genome is 55.64 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Scandinavium hibisilenta sp. nov.

Candidatus Scandinavium hibisilenta (NL. fem. n. *hibisilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Scandinavium sp902706235*. The type genome for the species is the GenBank assembly RS_GCF_902706235.1. The GC content of the type genome is 53.71 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Scandinavium innoxitia sp. nov.

Candidatus Scandinavium innoxitia (NL. fem. n. *innoxitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Scandinavium sp002470465*. The type genome for the species is the GenBank assembly GCA_002470465.1. The GC content of the type genome is 55.08 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Scandinavium turilivita sp. nov.

Candidatus Scandinavium turilivita (NL. fem. n. *turilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Scandinavium sp902706205*. The type genome for the species is the GenBank assembly RS_GCF_902706205.1. The GC content of the type genome is 53.45 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Scellana casigousia sp. nov.

Candidatus Scellana casigousia (NL. fem. n. *casigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSBG01 sp011046135*. The type genome for the species is the GenBank assembly GCA_011046135.1. The GC content of the type genome is 55.17 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Scellana gen. nov.

Candidatus Scellana (NL. fem. n. *Scellana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSBG01*. The type species for the genus is *Candidatus* Scellana casigousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1062*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexapariaceae.

Description of *Candidatus* Scellaria depacessa sp. nov.

Candidatus Scellaria depacessa (NL. fem. n. *depacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFVX01 sp013362555*. The type genome for the species is the GenBank assembly GCA_013362555.1. The GC content of the type genome is 68.67 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Scellaria gen. nov.

Candidatus Scellaria (NL. fem. n. *Scellaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFVX01*. The type species for the genus is *Candidatus* Scellaria depacessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scellella exentitura sp. nov.

Candidatus Scellella exentitura (NL. fem. n. *exentitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OHK40 sp004367505*. The type genome for the species is the GenBank assembly GCA_004367505.1. The GC content of the type genome is 67.79 % and the genome length is 6.93 Mbp.

Description of *Candidatus* Scellella gen. nov.

Candidatus Scellella (NL. fem. n. *Scellella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OHK40*. The type species for the genus is *Candidatus* Scellella exentitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scellia chalbibra sp. nov.

Candidatus Scellia chalbibra (NL. fem. n. *chalbibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BN140002 sp008386575*. The type genome for the species is the GenBank assembly RS_GCF_008386575.1. The GC content of the type genome is 70.07 % and the genome length is 5.35 Mbp.

Description of *Candidatus* Scellia gen. nov.

Candidatus Scellia (NL. fem. n. *Scellia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BN140002*. The type species for the genus is *Candidatus* Scellia chalbibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scellida luticigena sp. nov.

Candidatus Scellida luticigena (NL. fem. n. *luticigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-162 sp005880055*. The type genome for the species is the GenBank assembly GCA_005880055.1. The GC content of the type genome is 63.87 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Scellida gen. nov.

Candidatus Scellida (NL. fem. n. *Scellida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-162*. The type species for the genus is *Candidatus* Scellida luticigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dedigellaceae.

Description of *Candidatus* Scellosa citivax sp. nov.

Candidatus Scellosa citivax (NL. fem. n. *citivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1038 sp003141915*. The type genome for the species is the GenBank assembly GCA_003141915.1. The GC content of the type genome is 50.03 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Scellosa gen. nov.

Candidatus Scellosa (NL. fem. n. *Scellosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1038*. The type species for the genus is *Candidatus* Scellosa citivax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Scellosa inrefitoga sp. nov.

Candidatus Scellosa inrefitoga (NL. fem. n. *inrefitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1038 sp003158885*. The type genome for the species is the GenBank assembly GCA_003158885.1. The GC content of the type genome is 52.53 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Sceptana exsorago sp. nov.

Candidatus Sceptana exsorago (NL. fem. n. *exsorago* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG14106 sp902795825*. The type genome for the species is the GenBank assembly GCA_902795825.1. The GC content of the type genome is 51.34 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Sceptana gen. nov.

Candidatus Sceptana (NL. fem. n. *Sceptana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG14106*. The type species for the genus is *Candidatus* Sceptana exsorago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sceptaria tubicibula sp. nov.

Candidatus Sceptaria tubicibula (NL. fem. n. *tubicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYQI01 sp012519385*. The type genome for the species is the GenBank assembly GCA_012519385.1. The GC content of the type genome is 38.34 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Sceptaria gen. nov.

Candidatus Sceptaria (NL. fem. n. *Sceptaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYQI01*. The type species for the genus is *Candidatus* Sceptaria tubicibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sceptella intolibra sp. nov.

Candidatus Sceptella intolibra (NL. fem. n. *intolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUQB01 sp012838035*. The type genome for the species is the GenBank assembly GCA_012838035.1. The GC content of the type genome is 53.53 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Sceptella gen. nov.

Candidatus Sceptella (NL. fem. n. *Sceptella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUQB01*. The type species for the genus is *Candidatus* Sceptella intolibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU080*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defosellaceae.

Description of *Candidatus* Sceptida infisicella sp. nov.

Candidatus Sceptida infisicella (NL. fem. n. *infisicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-49-15 sp002773415*. The type genome for the species is the GenBank assembly GCA_002773415.1. The GC content of the type genome is 49.18 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Sceptida gen. nov.

Candidatus Sceptida (NL. fem. n. *Sceptida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-49-15*. The type species for the genus is *Candidatus* Sceptida infisicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-0-10-44-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Revulidaceae.

Description of *Candidatus* Sceptosa venunetta sp. nov.

Candidatus Sceptosa venunetta (NL. fem. n. *venunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRGK01 sp011050075*. The type genome for the species is the GenBank assembly GCA_011050075.1. The GC content of the type genome is 43.68 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Sceptosa gen. nov.

Candidatus Sceptosa (NL. fem. n. *Sceptosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRGK01*. The type species for the genus is *Candidatus* Sceptosa venunetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Sceptula adporatica sp. nov.

Candidatus Sceptula adporatica (NL. fem. n. *adporatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBF01 sp013695055*. The type genome for the species is the GenBank assembly GCA_013695055.1. The GC content of the type genome is 63.62 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Sceptula gen. nov.

Candidatus Sceptula (NL. fem. n. *Sceptula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDBF01*. The type species for the genus is *Candidatus* Sceptula adporatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WHSQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recumanaceae.

Description of *Candidatus* Schaedlerella adgesitura sp. nov.

Candidatus Schaedlerella adgesitura (NL. fem. n. *adgesitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schaedlerella sp009774255*. The type genome for the species is the GenBank assembly GCA_009774255.1. The GC content of the type genome is 47.4 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Schaedlerella adtilitoga sp. nov.

Candidatus Schaedlerella adtilitoga (NL. fem. n. *adtilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schaedlerella sp004556565*. The type genome for the species is the GenBank assembly GCA_004556565.1. The GC content of the type genome is 43.39 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Schaedlerella alsisago sp. nov.

Candidatus Schaedlerella alsisago (NL. fem. n. *alsisago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schaedlerella sp009911175*. The type genome for the species is the GenBank assembly RS_GCF_009911175.1. The GC content of the type genome is 47.47 % and the genome length is 6.71 Mbp.

Description of *Candidatus* Schaedlerella carucitio sp. nov.

Candidatus Schaedlerella carucitio (NL. fem. n. *carucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schaedlerella sp900066545*. The type genome for the species is the GenBank assembly RS_GCF_003628495.1. The GC content of the type genome is 38.72 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Schaedlerella decatimonas sp. nov.

Candidatus Schaedlerella decatimonas (NL. fem. n. *decatimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schaedlerella sp900765975*. The type genome for the species is the GenBank assembly RS_GCF_900765975.1. The GC content of the type genome is 40.46 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Schaedlerella ephipugo sp. nov.

Candidatus Schaedlerella ephipugo (NL. fem. n. *ephipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schaedlerella sp002320245*. The type genome for the species is the GenBank assembly GCA_002320245.1. The GC content of the type genome is 43.73 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Schaedlerella gasomax sp. nov.

Candidatus Schaedlerella gasomax (NL. fem. n. *gasomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schaedlerella sp000403295*. The type genome for the species is the GenBank assembly RS_GCF_000403295.1. The GC content of the type genome is 47.16 % and the genome length is 5.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Schlesneria biverivita sp. nov.

Candidatus Schlesneria biverivita (NL. fem. n. *biverivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schlesneria sp903858935*. The type genome for the species is the GenBank assembly GCA_903908885.1. The GC content of the type genome is 52.29 % and the genome length is 8.0 Mbp.

Description of *Candidatus* Schlesneria cisalousia sp. nov.

Candidatus Schlesneria cisalousia (NL. fem. n. *cisalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schlesneria sp903871875*. The type genome for the species is the GenBank assembly GCA_903915595.1. The GC content of the type genome is 55.75 %

and the genome length is 7.64 Mbp.

Description of *Candidatus* Schlesneria detenicula sp. nov.

Candidatus Schlesneria detenicula (NL. fem. n. *detenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schlesneria sp903840265*. The type genome for the species is the GenBank assembly GCA_903840265.1. The GC content of the type genome is 56.43 % and the genome length is 7.49 Mbp.

Description of *Candidatus* Schlesneria lapilatio sp. nov.

Candidatus Schlesneria lapilatio (NL. fem. n. *lapilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schlesneria sp903899985*. The type genome for the species is the GenBank assembly GCA_903898875.1. The GC content of the type genome is 52.67 % and the genome length is 7.62 Mbp.

Description of *Candidatus* Schlesneria nocumilenta sp. nov.

Candidatus Schlesneria nocumilenta (NL. fem. n. *nocumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schlesneria sp903834925*. The type genome for the species is the GenBank assembly GCA_903834925.1. The GC content of the type genome is 52.2 % and the genome length is 9.02 Mbp.

Description of *Candidatus* Schlesneria seroticella sp. nov.

Candidatus Schlesneria seroticella (NL. fem. n. *seroticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schlesneria sp903904835*. The type genome for the species is the GenBank assembly GCA_903932225.1. The GC content of the type genome is 52.38 % and the genome length is 8.21 Mbp.

Description of *Candidatus* Schumannella angipedo sp. nov.

Candidatus Schumannella angipedo (NL. fem. n. *angipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schumannella sp006517535*. The type genome for the species is the GenBank assembly RS_GCF_006517535.1. The GC content of the type genome is 71.8 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Schumannella enuclitudo sp. nov.

Candidatus Schumannella enuclitudo (NL. fem. n. *enuclitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Schumannella sp006517435*. The type genome for the species is the GenBank assembly RS_GCF_006517435.1. The GC content of the type genome is 71.5 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Scintana arcubitica sp. nov.

Candidatus Scintana arcubitica (NL. fem. n. *arcubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF2-37-49 sp000989955*. The type genome for the species is the GenBank assembly GCA_000989955.1. The GC content of the type genome is 37.04 % and the genome length is 1.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Scintana gen. nov.

Candidatus Scintana (NL. fem. n. *Scintana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF2-37-49*. The type species for the genus is *Candidatus* Scintana arcubitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RVW-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpanaceae.

Description of *Candidatus* Scintella apperilega sp. nov.

Candidatus Scintella apperilega (NL. fem. n. *apperilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADEQ01 sp013153345*. The type genome for the species is the GenBank assembly GCA_013153345.1. The GC content of the type genome is 33.59 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Scintella gen. nov.

Candidatus Scintella (NL. fem. n. *Scintella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADEQ01*. The type species for the genus is *Candidatus* Scintella apperilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scintella fuligitio sp. nov.

Candidatus Scintella fuligitio (NL. fem. n. *fuligitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADEQ01 sp013153675*. The type genome for the species is the GenBank assembly GCA_013153675.1. The GC content of the type genome is 30.54 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Scintia vatiligena sp. nov.

Candidatus Scintia vatiligena (NL. fem. n. *vatiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DONG20-135 sp009831105*. The type genome for the species is the GenBank assembly RS_GCF_009831105.1. The GC content of the type genome is 42.22 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Scintia gen. nov.

Candidatus Scintia (NL. fem. n. *Scintia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DONG20-135*. The type species for the genus is *Candidatus* Scintia vatiligena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scintida podagitas sp. nov.

Candidatus Scintida podagitas (NL. fem. n. *podagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSYC01 sp011367615*. The type genome for the species is the GenBank assembly GCA_011367615.1. The GC content of the type genome is 32.65 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Scintida gen. nov.

Candidatus Scintida (NL. fem. n. *Scintida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSYC01*. The type species for the genus is *Candidatus* Scintida podagitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Scintosa uberratio sp. nov.

Candidatus Scintosa uberratio (NL. fem. n. *uberratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBAW01 sp005239955*. The type genome for the species is the GenBank assembly GCA_005239955.1. The GC content of the type genome is 51.9 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Scintosa gen. nov.

Candidatus Scintosa (NL. fem. n. *Scintosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SBAW01*. The type species for the genus is *Candidatus* Scintosa uberratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Sciscionella ontolimonas sp. nov.

Candidatus Sciscionella ontolimonas (NL. fem. n. *ontolimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sciscionella sp000737195*. The type genome for the species is the GenBank assembly RS_GCF_000737195.2. The GC content of the type genome is 68.67 % and the genome length is 7.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "intertidal sediment".

Description of *Candidatus* Scombana adoscitoga sp. nov.

Candidatus Scombana adoscitoga (NL. fem. n. *adoscitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3362 sp002360455*. The type genome for the species is the GenBank assembly GCA_002360455.1. The GC content of the type genome is 36.36 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Scombana gen. nov.

Candidatus Scombana (NL. fem. n. *Scombana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3362*. The type species for the genus is *Candidatus* Scombana adoscitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scombana apsimitica sp. nov.

Candidatus Scombana apsimitica (NL. fem. n. *apsimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3362 sp013140975*. The type genome for the species is the GenBank assembly GCA_013140975.1. The GC content of the type genome is 33.67 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Scombaria visifilega sp. nov.

Candidatus Scombaria visifilega (NL. fem. n. *visifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSM-9736 sp900187405*. The type genome for the species is the GenBank assembly RS_GCF_900187405.1. The GC content of the type genome is 56.1 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Scombaria gen. nov.

Candidatus Scombaria (NL. fem. n. *Scombaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSM-9736*. The type species for the genus is *Candidatus* Scombaria visifilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scombella mavoritio sp. nov.

Candidatus Scombella mavoritio (NL. fem. n. *mavoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXZ01 sp013696745*. The type genome for the species is the GenBank assembly GCA_013696745.1. The GC content of the type genome is 69.72 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Scombella gen. nov.

Candidatus Scombella (NL. fem. n. *Scombella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXZ01*. The type species for the genus is *Candidatus* Scombella mavoritio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scombia citipitas sp. nov.

Candidatus Scombia citipitas (NL. fem. n. *citipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA987 sp002428905*. The type genome for the species is the GenBank assembly GCA_002428905.1. The GC content of the type genome is 42.92 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Scombia gen. nov.

Candidatus Scombia (NL. fem. n. *Scombia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA987*. The type species for the genus is *Candidatus* Scombia citipitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9320*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lapilariaceae.

Description of *Candidatus* Scombia lutulifica sp. nov.

Candidatus Scombia lutulifica (NL. fem. n. *lutulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA987 sp002292105*. The type genome for the species is the GenBank assembly GCA_002292105.1. The GC content of the type genome is 39.97 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Scombosa videlago sp. nov.

Candidatus Scombosa videlago (NL. fem. n. *videlago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACYEI01 sp902773355*. The type genome for the species is the GenBank assembly GCA_902773355.1. The GC content of the type genome is 30.15 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Scombosa gen. nov.

Candidatus Scombosa (NL. fem. n. *Scombosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACYEI01*. The type species for the genus is *Candidatus* Scombosa videlago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scombula fusificula sp. nov.

Candidatus Scombula fusificula (NL. fem. n. *fusificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAH01 sp012719445*. The type genome for the species is the GenBank assembly GCA_012719445.1. The GC content of the type genome is 72.35 % and the genome length is 5.42 Mbp.

Description of *Candidatus* Scombula gen. nov.

Candidatus Scombula (NL. fem. n. *Scombula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAH01*. The type species for the genus is *Candidatus* Scombula fusificula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scorbana dinupatica sp. nov.

Candidatus Scorbana dinupatica (NL. fem. n. *dinupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-451 sp003646525*. The type genome for the species is the GenBank assembly GCA_003646525.1. The GC content of the type genome is 39.09 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Scorbana gen. nov.

Candidatus Scorbana (NL. fem. n. *Scorbana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-451*. The type species for the genus is *Candidatus* Scorbana dinupatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scorbana insepitia sp. nov.

Candidatus Scorbana insepitia (NL. fem. n. *insepitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-451 sp003252535*. The type genome for the species is the GenBank assembly GCA_003252535.1. The GC content of the type genome is 50.99 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Scorbaria tolutivita sp. nov.

Candidatus Scorbaria tolutivita (NL. fem. n. *tolutivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MFGM01 sp001778275*. The type genome for the species is the GenBank assembly GCA_001778275.1. The GC content of the type genome is 47.74 % and the genome length is 1.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point C".

Description of *Candidatus* Scorbaria gen. nov.

Candidatus Scorbaria (NL. fem. n. *Scorbaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MFGM01*. The type species for the genus is *Candidatus* Scorbaria tolutivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11705*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenanaceae.

Description of *Candidatus* Scorbida demagitia sp. nov.

Candidatus Scorbida demagitia (NL. fem. n. *demagitia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPY01 sp012838065*. The type genome for the species is the GenBank assembly GCA_012838065.1. The GC content of the type genome is 32.39 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Scorbida gen. nov.

Candidatus Scorbida (NL. fem. n. *Scorbida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPY01*. The type species for the genus is *Candidatus* Scorbida demagitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Scorbula vilipetta sp. nov.

Candidatus Scorbula vilipetta (NL. fem. n. *vilipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDKO01 sp013002165*. The type genome for the species is the GenBank assembly GCA_013002165.1. The GC content of the type genome is 51.66 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Scorbula gen. nov.

Candidatus Scorbula (NL. fem. n. *Scorbula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDKO01*. The type species for the genus is *Candidatus* Scorbula vilipetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10348*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divorosaceae.

Description of *Candidatus* Secunana delaciforma sp. nov.

Candidatus Secunana delaciforma (NL. fem. n. *delaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFHK01 sp004556395*. The type genome for the species is the GenBank assembly RS_GCF_900758175.1. The GC content of the type genome is 60.72 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Secunana gen. nov.

Candidatus Secunana (NL. fem. n. *Secunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFHK01*. The type species for the genus is *Candidatus* Secunana delaciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Secunaria inretitio sp. nov.

Candidatus Secunaria inretitio (NL. fem. n. *inretitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PIWD01 sp003354005*. The type genome for the species is the GenBank assembly GCA_003354005.1. The GC content of the type genome is 40.49 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Secunaria gen. nov.

Candidatus Secunaria (NL. fem. n. *Secunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PIWD01*. The type species for the genus is *Candidatus* Secunaria inretitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PIWD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunariaceae.

Description of *Candidatus* Secunariaceae fam. nov.

Candidatus Secunariaceae (NL. fem. n. *Secunariaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PIWD01.* The type genus for the taxon is *Candidatus* Secunaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *PIWD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Secunariales.

Description of *Candidatus* Secunariales ord. nov.

Candidatus Secunariales (NL. fem. n. *Secunariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PIWD01.* The type genus for the taxon is *Candidatus* Secunaria .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Secundilactobacillus absocitoga sp. nov.

Candidatus Secundilactobacillus absocitoga (NL. fem. n. *absocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Secundilactobacillus sp012641075*. The type genome for the species is the GenBank assembly RS_GCF_012641075.1. The GC content of the type genome is 43.33 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Secundilactobacillus anagnivita sp. nov.

Candidatus Secundilactobacillus anagnivita (NL. fem. n. *anagnivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Secundilactobacillus sp005405185*. The type genome for the species is the GenBank assembly RS_GCF_005405185.1. The GC content of the type genome is 44.29 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Secundilactobacillus inmolicula sp. nov.

Candidatus Secundilactobacillus inmolicula (NL. fem. n. *inmolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Secundilactobacillus sp009720675*. The type genome for the species is the GenBank assembly RS_GCF_009720675.1. The GC content of the type genome is 44.47 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Secunella undevimonas sp. nov.

Candidatus Secunella undevimonas (NL. fem. n. *undevimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQRI01 sp009786825*. The type genome for the species is the GenBank assembly GCA_009786825.1. The GC content of the type genome is 40.03 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Secunella gen. nov.

Candidatus Secunella (NL. fem. n. *Secunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQRI01*. The type species for the genus is *Candidatus* Secunella undevimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WQRI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunellaceae.

Description of *Candidatus* Secunellaceae fam. nov.

Candidatus Secunellaceae (NL. fem. n. *Secunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WQRI01.* The type genus for the taxon is *Candidatus* Secunella .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Secunia nubecibula sp. nov.

Candidatus Secunia nubecibula (NL. fem. n. *nubecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SYDY01 sp005801425*. The type genome for the species is the GenBank assembly GCA_005801425.1. The GC content of the type genome is 50.16 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Secunia gen. nov.

Candidatus Secunia (NL. fem. n. *Secunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYDY01*. The type species for the genus is *Candidatus* Secunia nubecibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYA12-FULL-58-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citipariaceae.

Description of *Candidatus* Secunida semivitica sp. nov.

Candidatus Secunida semivitica (NL. fem. n. *semivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-66-21 sp001767455*. The type genome for the species is the GenBank assembly GCA_001767055.1. The GC content of the type genome is 67.11 % and the genome length is 6.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Secunida gen. nov.

Candidatus Secunida (NL. fem. n. *Secunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-66-21*. The type species for the genus is *Candidatus* Secunida semivitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-66-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunidaceae.

Description of *Candidatus* Secunidaceae fam. nov.

Candidatus Secunidaceae (NL. fem. n. *Secunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-66-21.* The type genus for the taxon is *Candidatus* Secunida .

According to GTDB R06-RS202, this family belongs to the order *Vicinamibacterales*.

Description of *Candidatus* Secunosa noniniforma sp. nov.

Candidatus Secunosa noniniforma (NL. fem. n. *noniniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-37-22 sp002785215*. The type genome for the species is the GenBank assembly GCA_002785215.1. The GC content of the type genome is 36.75 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Secunosa gen. nov.

Candidatus Secunosa (NL. fem. n. *Secunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-37-22*. The type species for the genus is *Candidatus* Secunosa noniniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefiaceae.

Description of *Candidatus* Secunula filifimonia sp. nov.

Candidatus Secunula filifimonia (NL. fem. n. *filifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1400 sp003138485*. The type genome for the species is the GenBank assembly GCA_003138485.1. The GC content of the type genome is 60.24 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Secunula gen. nov.

Candidatus Secunula (NL. fem. n. *Secunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1400*. The type species for the genus is *Candidatus* Secunula filifimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Secunulaceae.

Description of *Candidatus* Secunulaceae fam. nov.

Candidatus Secunulaceae (NL. fem. n. *Secunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-1400.* The type genus for the taxon is *Candidatus* Secunula .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Secunula vocifatica sp. nov.

Candidatus Secunula vocifatica (NL. fem. n. *vocifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1400 sp003140095*. The type genome for the species is the GenBank assembly GCA_003140095.1. The GC content of the type genome is 57.84 % and the genome length is 7.81 Mbp.

Description of *Candidatus* Sedimentibacter acratibula sp. nov.

Candidatus Sedimentibacter acratibula (NL. fem. n. *acratibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp002409285*. The type genome for the species is the GenBank assembly GCA_002409285.1. The GC content of the type genome is 36.38 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Sedimentibacter assicisca sp. nov.

Candidatus Sedimentibacter assicisca (NL. fem. n. *assicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sedimentibacter sp012520455*. The type genome for the species is the GenBank assembly GCA_012520455.1. The GC content of the type genome is 39.63 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Sedimentibacter bipalitio sp. nov.

Candidatus Sedimentibacter bipalitio (NL. fem. n. *bipalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp002316225*. The type genome for the species is the GenBank assembly GCA_002316225.1. The GC content of the type genome is 39.5 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Sedimentibacter colepitoga sp. nov.

Candidatus Sedimentibacter colepitoga (NL. fem. n. *colepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp003487955*. The type genome for the species is the GenBank assembly GCA_003487955.1. The GC content of the type genome is 35.68 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Sedimentibacter exforimonas sp. nov.

Candidatus Sedimentibacter exforimonas (NL. fem. n. *exforimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp002399975*. The type genome for the species is the GenBank assembly GCA_002399975.1. The GC content of the type genome is 35.36 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Sedimentibacter expenitio sp. nov.

Candidatus Sedimentibacter expenitio (NL. fem. n. *expenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp002316585*. The type genome for the species is the GenBank assembly GCA_002316585.1. The GC content of the type genome is 35.82 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Sedimentibacter fatifimonia sp. nov.

Candidatus Sedimentibacter fatifimonia (NL. fem. n. *fatifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp003483345*. The type genome for the species is the GenBank assembly GCA_012510665.1. The GC content of the type genome is 34.84 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Sedimentibacter illunitoga sp. nov.

Candidatus Sedimentibacter illunitoga (NL. fem. n. *illunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp003514865*. The type genome for the species is the GenBank assembly GCA_003514865.1. The GC content of the type genome is 38.45 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Sedimentibacter inordago sp. nov.

Candidatus Sedimentibacter inordago (NL. fem. n. *inordago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp012518555*. The type genome for the species is the GenBank assembly GCA_012518555.1. The GC content of the type genome is 33.41 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Sedimentibacter luceribra sp. nov.

Candidatus Sedimentibacter luceribra (NL. fem. n. *luceribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp002340985*. The type genome for the species is the GenBank assembly GCA_002494095.1. The GC content of the type genome is 38.18 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Sedimentibacter manufifica sp. nov.

Candidatus Sedimentibacter manufifica (NL. fem. n. *manufifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp002385835*. The type genome for the species is the GenBank assembly GCA_002385835.1. The GC content of the type genome is 34.17 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Sedimentibacter murelitura sp. nov.

Candidatus Sedimentibacter murelitura (NL. fem. n. *murelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp012519555*. The type genome for the species is the GenBank assembly GCA_012519555.1. The GC content of the type genome is 35.46 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Sedimentibacter peracisca sp. nov.

Candidatus Sedimentibacter peracisca (NL. fem. n. *peracisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp002422545*. The type genome for the species is the GenBank assembly GCA_002422545.1. The GC content of the type genome is 36.32 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Sedimentibacter peribitura sp. nov.

Candidatus Sedimentibacter peribitura (NL. fem. n. *peribitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp002331025*. The type genome for the species is the GenBank assembly GCA_003537995.1. The GC content of the type genome is 35.34 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Sedimentibacter pimenivita sp. nov.

Candidatus Sedimentibacter pimenivita (NL. fem. n. *pimenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sedimentibacter sp002381185*. The type genome for the species is the GenBank assembly GCA_002367575.1. The GC content of the type genome is 35.37 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Sedimentibacter ranunibra sp. nov.

Candidatus Sedimentibacter ranunibra (NL. fem. n. *ranunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp003457065*. The type genome for the species is the GenBank assembly GCA_900549425.1. The GC content of the type genome is 37.74 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Sedimentibacter xenodousia sp. nov.

Candidatus Sedimentibacter xenodousia (NL. fem. n. *xenodousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sedimentibacter sp003497505*. The type genome for the species is the GenBank assembly GCA_003497505.1. The GC content of the type genome is 38.96 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Sediminibacterium abnorisca sp. nov.

Candidatus Sediminibacterium abnorisca (NL. fem. n. *abnorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp009996675*. The type genome for the species is the GenBank assembly GCA_009996675.1. The GC content of the type genome is 46.31 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Sediminibacterium adrenatica sp. nov.

Candidatus Sediminibacterium adrenatica (NL. fem. n. *adrenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp003526435*. The type genome for the species is the GenBank assembly GCA_003526435.1. The GC content of the type genome is 41.08 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Sediminibacterium adrenigena sp. nov.

Candidatus Sediminibacterium adrenigena (NL. fem. n. *adrenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp009939225*. The type genome for the species is the GenBank assembly RS_GCF_009939225.1. The GC content of the type genome is 50.08 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Sediminibacterium agnicitica sp. nov.

Candidatus Sediminibacterium agnicitica (NL. fem. n. *agnicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903848125*. The type genome for the species is the GenBank assembly GCA_903848125.1. The GC content of the type genome is 35.11 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Sediminibacterium algifimonas sp. nov.

Candidatus Sediminibacterium algifimonas (NL. fem. n. *algifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp902168225*. The type genome for the species is the GenBank assembly GCA_902168225.1. The GC content of the type genome is 37.51 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Sediminibacterium altifitia sp. nov.

Candidatus Sediminibacterium altifitia (NL. fem. n. *altifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903929425*. The type genome for the species is the GenBank assembly GCA_903929425.1. The GC content of the type genome is 34.23 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Sediminibacterium ammuratio sp. nov.

Candidatus Sediminibacterium ammuratio (NL. fem. n. *ammuratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903913355*. The type genome for the species is the GenBank assembly GCA_903913355.1. The GC content of the type genome is 39.63 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Sediminibacterium atrusousia sp. nov.

Candidatus Sediminibacterium atrusousia (NL. fem. n. *atrusousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903933765*. The type genome for the species is the GenBank assembly GCA_903933765.1. The GC content of the type genome is 36.7 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Sediminibacterium cilibimonas sp. nov.

Candidatus Sediminibacterium cilibimonas (NL. fem. n. *cilibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903862505*. The type genome for the species is the GenBank assembly GCA_903862505.1. The GC content of the type genome is 36.0 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Sediminibacterium cocibibula sp. nov.

Candidatus Sediminibacterium cocibibula (NL. fem. n. *cocibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp004028765*. The type genome for the species is the GenBank assembly GCA_004028765.1. The GC content of the type genome is 45.31 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Sediminibacterium cohorivita sp. nov.

Candidatus Sediminibacterium cohorivita (NL. fem. n. *cohorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sediminibacterium sp903874055*. The type genome for the species is the GenBank assembly GCA_903913075.1. The GC content of the type genome is 34.41 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Sediminibacterium conopitura sp. nov.

Candidatus Sediminibacterium conopitura (NL. fem. n. *conopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp009924165*. The type genome for the species is the GenBank assembly GCA_009924165.1. The GC content of the type genome is 36.26 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Sediminibacterium crabredo sp. nov.

Candidatus Sediminibacterium crabredo (NL. fem. n. *crabredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp012270485*. The type genome for the species is the GenBank assembly GCA_012270485.1. The GC content of the type genome is 39.27 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Sediminibacterium curabitrix sp. nov.

Candidatus Sediminibacterium curabitrix (NL. fem. n. *curabitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp000515315*. The type genome for the species is the GenBank assembly GCA_000427525.1. The GC content of the type genome is 45.65 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Sediminibacterium dehinilega sp. nov.

Candidatus Sediminibacterium dehinilega (NL. fem. n. *dehinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903944755*. The type genome for the species is the GenBank assembly GCA_903944755.1. The GC content of the type genome is 35.85 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Sediminibacterium denunisca sp. nov.

Candidatus Sediminibacterium denunisca (NL. fem. n. *denunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp003509845*. The type genome for the species is the GenBank assembly GCA_003509845.1. The GC content of the type genome is 35.52 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Sediminibacterium depocugo sp. nov.

Candidatus Sediminibacterium depocugo (NL. fem. n. *depocugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp004294465*. The type genome for the species is the GenBank assembly GCA_004294465.1. The GC content of the type genome is 35.5 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Sediminibacterium derecilega sp. nov.

Candidatus Sediminibacterium derecilega (NL. fem. n. *derecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903926855*. The type genome for the species is the GenBank assembly GCA_903869845.1. The GC content of the type genome is 39.67 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Sediminibacterium dicabitudo sp. nov.

Candidatus Sediminibacterium dicabitudo (NL. fem. n. *dicabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp004293505*. The type genome for the species is the GenBank assembly GCA_004293505.1. The GC content of the type genome is 47.7 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Sediminibacterium dilementia sp. nov.

Candidatus Sediminibacterium dilementia (NL. fem. n. *dilementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903819975*. The type genome for the species is the GenBank assembly GCA_903871355.1. The GC content of the type genome is 34.82 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Sediminibacterium eccisugo sp. nov.

Candidatus Sediminibacterium eccisugo (NL. fem. n. *eccisugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp009920495*. The type genome for the species is the GenBank assembly GCA_009920495.1. The GC content of the type genome is 35.6 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Sediminibacterium echiditica sp. nov.

Candidatus Sediminibacterium echiditica (NL. fem. n. *echiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903824725*. The type genome for the species is the GenBank assembly GCA_903824725.1. The GC content of the type genome is 34.97 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Sediminibacterium ectenentia sp. nov.

Candidatus Sediminibacterium ectenentia (NL. fem. n. *ectenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp000508085*. The type genome for the species is the GenBank assembly RS_GCF_000508085.1. The GC content of the type genome is 39.24 % and the genome length is 3.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "activated sludge".

Description of *Candidatus* Sediminibacterium fatilitica sp. nov.

Candidatus Sediminibacterium fatilitica (NL. fem. n. *fatilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp009928005*. The type genome for the species is the GenBank assembly GCA_009922485.1. The GC content of the type genome is 34.15 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Sediminibacterium furibetta sp. nov.

Candidatus Sediminibacterium furibetta (NL. fem. n. *furibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp002786355*. The type genome for the species is the GenBank assembly GCA_013823605.1. The GC content of the type genome is 35.98 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Sediminibacterium hecatentia sp. nov.

Candidatus Sediminibacterium hecatentia (NL. fem. n. *hecatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903899675*. The type genome for the species is the GenBank assembly GCA_903899675.1. The GC content of the type genome is 41.67 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Sediminibacterium hegumimonas sp. nov.

Candidatus Sediminibacterium hegumimonas (NL. fem. n. *hegumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903910765*. The type genome for the species is the GenBank assembly GCA_903910765.1. The GC content of the type genome is 35.34 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Sediminibacterium hexamibra sp. nov.

Candidatus Sediminibacterium hexamibra (NL. fem. n. *hexamibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903847655*. The type genome for the species is the GenBank assembly GCA_903847655.1. The GC content of the type genome is 36.76 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Sediminibacterium homolentia sp. nov.

Candidatus Sediminibacterium homolentia (NL. fem. n. *homolentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp013297995*. The type genome for the species is the GenBank assembly GCA_013297995.1. The GC content of the type genome is 37.19 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Sediminibacterium illepitio sp. nov.

Candidatus Sediminibacterium illepitio (NL. fem. n. *illepitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp008080615*. The type genome for the species is the GenBank assembly GCA_008080615.1. The GC content of the type genome is 35.74 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Sediminibacterium inabrifica sp. nov.

Candidatus Sediminibacterium inabrifica (NL. fem. n. *inabrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp013205585*. The type genome for the species is the GenBank assembly GCA_013205585.1. The GC content of the type genome is 35.0 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Sediminibacterium inabsilenta sp. nov.

Candidatus Sediminibacterium inabsilenta (NL. fem. n. *inabsilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903821465*. The type genome for the species is the GenBank assembly GCA_903821465.1. The GC content of the type genome is 37.12 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Sediminibacterium inexpisca sp. nov.

Candidatus Sediminibacterium inexpisca (NL. fem. n. *inexpisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp009693715*. The type genome for the species is the GenBank assembly GCA_009693715.1. The GC content of the type genome is 35.86 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Sediminibacterium infenousia sp. nov.

Candidatus Sediminibacterium infenousia (NL. fem. n. *infenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp007280515*. The type genome for the species is the GenBank assembly GCA_007280515.1. The GC content of the type genome is 35.13 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Sediminibacterium inurbimonia sp. nov.

Candidatus Sediminibacterium inurbimonia (NL. fem. n. *inurbimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp002281575*. The type genome for the species is the GenBank assembly GCA_002281575.1. The GC content of the type genome is 36.13 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Sediminibacterium lacinimonia sp. nov.

Candidatus Sediminibacterium lacinimonia (NL. fem. n. *lacinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp002281875*. The type genome for the species is the GenBank assembly GCA_002281875.1. The GC content of the type genome is 36.2 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Sediminibacterium lanugitrix sp. nov.

Candidatus Sediminibacterium lanugitrix (NL. fem. n. *lanugitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sediminibacterium sp903953815*. The type genome for the species is the GenBank assembly GCA_903951895.1. The GC content of the type genome is 35.26 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Sediminibacterium lapililenta sp. nov.

Candidatus Sediminibacterium lapililenta (NL. fem. n. *lapililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp004297075*. The type genome for the species is the GenBank assembly GCA_004297075.1. The GC content of the type genome is 46.09 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Sediminibacterium manufimonas sp. nov.

Candidatus Sediminibacterium manufimonas (NL. fem. n. *manufimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp002256765*. The type genome for the species is the GenBank assembly GCA_002282285.1. The GC content of the type genome is 39.03 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Sediminibacterium molecitudo sp. nov.

Candidatus Sediminibacterium molecitudo (NL. fem. n. *molecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903924075*. The type genome for the species is the GenBank assembly GCA_903924075.1. The GC content of the type genome is 37.64 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Sediminibacterium nubifitica sp. nov.

Candidatus Sediminibacterium nubifitica (NL. fem. n. *nubifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903938445*. The type genome for the species is the GenBank assembly GCA_903938445.1. The GC content of the type genome is 34.38 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Sediminibacterium octoditrix sp. nov.

Candidatus Sediminibacterium octoditrix (NL. fem. n. *octoditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp000438985*. The type genome for the species is the GenBank assembly GCA_000438985.1. The GC content of the type genome is 35.68 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Sediminibacterium petulentia sp. nov.

Candidatus Sediminibacterium petulentia (NL. fem. n. *petulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903854725*. The type genome for the species is the GenBank assembly GCA_903864285.1. The GC content of the type genome is 34.76 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Sediminibacterium podagivita sp. nov.

Candidatus Sediminibacterium podagivita (NL. fem. n. *podagivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp009773795*. The type genome for the species is the GenBank assembly GCA_009773795.1. The GC content of the type genome is 36.45 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Sediminibacterium repuditas sp. nov.

Candidatus Sediminibacterium repuditas (NL. fem. n. *repuditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903825065*. The type genome for the species is the GenBank assembly GCA_903888675.1. The GC content of the type genome is 34.88 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Sediminibacterium ridibousia sp. nov.

Candidatus Sediminibacterium ridibousia (NL. fem. n. *ridibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp004294135*. The type genome for the species is the GenBank assembly GCA_004294135.1. The GC content of the type genome is 37.49 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Sediminibacterium risibicula sp. nov.

Candidatus Sediminibacterium risibicula (NL. fem. n. *risibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp009693615*. The type genome for the species is the GenBank assembly GCA_009693615.1. The GC content of the type genome is 35.27 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Sediminibacterium rosacivita sp. nov.

Candidatus Sediminibacterium rosacivita (NL. fem. n. *rosacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp001829005*. The type genome for the species is the GenBank assembly GCA_001829035.1. The GC content of the type genome is 35.91 % and the genome length is 3.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Sediminibacterium selibilenta sp. nov.

Candidatus Sediminibacterium selibilenta (NL. fem. n. *selibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp013391385*. The type genome for the species is the GenBank assembly GCA_013391385.1. The GC content of the type genome is 39.32 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Sediminibacterium semapicula sp. nov.

Candidatus Sediminibacterium semapicula (NL. fem. n. *semapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903825095*. The type genome for the species is the GenBank assembly GCA_903825095.1. The GC content of the type genome is 35.05 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Sediminibacterium semuniforma sp. nov.

Candidatus Sediminibacterium semuniforma (NL. fem. n. *semuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903851465*. The type genome for the species is the GenBank assembly GCA_903882585.1. The GC content of the type genome is 36.43 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Sediminibacterium siligastra sp. nov.

Candidatus Sediminibacterium siligastra (NL. fem. n. *siligastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903927185*. The type genome for the species is the GenBank assembly GCA_903920625.1. The GC content of the type genome is 34.85 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Sediminibacterium subaditudo sp. nov.

Candidatus Sediminibacterium subaditudo (NL. fem. n. *subaditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp013289065*. The type genome for the species is the GenBank assembly GCA_013289065.1. The GC content of the type genome is 41.92 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Sediminibacterium teniletta sp. nov.

Candidatus Sediminibacterium teniletta (NL. fem. n. *teniletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903958045*. The type genome for the species is the GenBank assembly GCA_903938795.1. The GC content of the type genome is 38.41

% and the genome length is 2.34 Mbp.

Description of *Candidatus* Sediminibacterium totidedo sp. nov.

Candidatus Sediminibacterium totidedo (NL. fem. n. *totidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp002299885*. The type genome for the species is the GenBank assembly GCA_002299885.1. The GC content of the type genome is 35.91 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Sediminibacterium turifatio sp. nov.

Candidatus Sediminibacterium turifatio (NL. fem. n. *turifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903831935*. The type genome for the species is the GenBank assembly GCA_903858435.1. The GC content of the type genome is 35.52 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Sediminibacterium uberritura sp. nov.

Candidatus Sediminibacterium uberritura (NL. fem. n. *uberritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp005800655*. The type genome for the species is the GenBank assembly GCA_005800655.1. The GC content of the type genome is 35.8 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Sediminibacterium velivago sp. nov.

Candidatus Sediminibacterium velivago (NL. fem. n. *velivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903865435*. The type genome for the species is the GenBank assembly GCA_903873625.1. The GC content of the type genome is 35.59 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Sediminibacterium venucilega sp. nov.

Candidatus Sediminibacterium venucilega (NL. fem. n. *venucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp903933995*. The type genome for the species is the GenBank assembly GCA_903933995.1. The GC content of the type genome is 38.82 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Sediminibacterium voragatica sp. nov.

Candidatus Sediminibacterium voragatica (NL. fem. n. *voragatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminibacterium sp002256435*. The type genome for the species is the GenBank assembly GCA_002256435.1. The GC content of the type genome is 38.58 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Sediminicola adpenifica sp. nov.

Candidatus Sediminicola adpenifica (NL. fem. n. *adpenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminicola sp001430825*. The type genome for the species is the GenBank assembly RS_GCF_001430825.1. The GC content of the type genome is 39.4 % and the genome length is 3.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "environmental".

Description of *Candidatus* Sediminihabitans ammaticella sp. nov.

Candidatus Sediminihabitans ammaticella (NL. fem. n. *ammaticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminihabitans sp003752595*. The type genome for the species is the GenBank assembly RS_GCF_003752595.1. The GC content of the type genome is 74.1 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Sediminimonas fecunibula sp. nov.

Candidatus Sediminimonas fecunibula (NL. fem. n. *fecunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sediminimonas sp011389955*. The type genome for the species is the GenBank assembly GCA_011389955.1. The GC content of the type genome is 63.73 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Segetibacter irrevibra sp. nov.

Candidatus Segetibacter irrevibra (NL. fem. n. *irrevibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Segetibacter sp002050375*. The type genome for the species is the GenBank assembly GCA_002050375.1. The GC content of the type genome is 38.41 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Segetibacter ossaritia sp. nov.

Candidatus Segetibacter ossaritia (NL. fem. n. *ossaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Segetibacter sp004354985*. The type genome for the species is the GenBank assembly RS_GCF_004354985.1. The GC content of the type genome is 45.31 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Selecana dicanitas sp. nov.

Candidatus Selecana dicanitas (NL. fem. n. *dicanitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QOAZ01 sp003574675*. The type genome for the species is the GenBank assembly RS_GCF_003574615.1. The GC content of the type genome is 71.94 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Selecana gen. nov.

Candidatus Selecana (NL. fem. n. *Selecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QOAZ01*. The type species for the genus is *Candidatus* Selecana dicanitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Selecaria desulitrix sp. nov.

Candidatus Selecaria desulitrix (NL. fem. n. *desulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTN01 sp012031415*. The type genome for the species is the GenBank assembly GCA_012031415.1. The GC content of the type genome is 48.94 % and the genome length is 7.79 Mbp.

Description of *Candidatus* Selecaria gen. nov.

Candidatus Selecaria (NL. fem. n. *Selecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAUTN01*. The type species for the genus is *Candidatus* Selecaria desulitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Selecaria inargousia sp. nov.

Candidatus Selecaria inargousia (NL. fem. n. *inargousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAUTN01 sp012033355*. The type genome for the species is the GenBank assembly GCA_012033355.1. The GC content of the type genome is 49.59 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Selecia vitupilenta sp. nov.

Candidatus Selecia vitupilenta (NL. fem. n. *vitupilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2400 sp002343265*. The type genome for the species is the GenBank assembly GCA_002343265.1. The GC content of the type genome is 57.53 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Selecia gen. nov.

Candidatus Selecia (NL. fem. n. *Selecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2400*. The type species for the genus is *Candidatus* Selecia vitupilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Seleciaceae.

Description of *Candidatus* Seleciaceae fam. nov.

Candidatus Seleciaceae (NL. fem. n. *Seleciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2400.* The type genus for the taxon is *Candidatus* Selecia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Seleciales.

Description of *Candidatus* Seleciales ord. nov.

Candidatus Seleciales (NL. fem. n. *Seleciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2400.* The type genus for the taxon is *Candidatus* Selecia .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Selecosa funiviforma sp. nov.

Candidatus Selecosa funiviforma (NL. fem. n. *funiviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RS62 sp000496475*. The type genome for the species is the GenBank assembly GCA_002430165.1. The GC content of the type genome is 54.22 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Selecosa gen. nov.

Candidatus Selecosa (NL. fem. n. *Selecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RS62*. The type species for the genus is *Candidatus* Selecosa funiviforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Selecosa negidessa sp. nov.

Candidatus Selecosa negidessa (NL. fem. n. *negidessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RS62 sp002340675*. The type genome for the species is the GenBank assembly GCA_002340675.1. The GC content of the type genome is 56.77 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Selecula direpibra sp. nov.

Candidatus Selecula direpibra (NL. fem. n. *direpibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLNM01 sp007133055*. The type genome for the species is the GenBank assembly GCA_003557695.1. The GC content of the type genome is 57.06 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Selecula gen. nov.

Candidatus Selecula (NL. fem. n. *Selecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLNM01*. The type species for the genus is *Candidatus* Selecula direpibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUNB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desepellaceae.

Description of *Candidatus* Seleniivibrio inguratica sp. nov.

Candidatus Seleniivibrio inguratica (NL. fem. n. *inguratica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Seleniivibrio sp002452405*. The type genome for the species is the GenBank assembly GCA_002452405.1. The GC content of the type genome is 46.68 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Seleniivibrio obmutitoga sp. nov.

Candidatus Seleniivibrio obmutitoga (NL. fem. n. *obmutitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Seleniivibrio sp002452335*. The type genome for the species is the GenBank assembly GCA_002452335.1. The GC content of the type genome is 47.66 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Selenomonas agrimimonia sp. nov.

Candidatus Selenomonas agrimimonia (NL. fem. n. *agrimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Selenomonas_A sp000686945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000686945.1. The GC content of the type genome is 49.02 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Selenomonas debucousia sp. nov.

Candidatus Selenomonas debucousia (NL. fem. n. *debucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Selenomonas_A sp004552655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009697385.1. The GC content of the type genome is 52.68 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Selenomonas imbecitoga sp. nov.

Candidatus Selenomonas imbecitoga (NL. fem. n. *imbecitoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Selenomonas_A sp900769615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900769615.1. The GC content of the type genome is 41.13 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Selenomonas resulitudo sp. nov.

Candidatus Selenomonas resulitudo (NL. fem. n. *resulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Selenomonas_A sp000702005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000702005.1. The GC content of the type genome is 48.75 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Selenomonas tabitatica sp. nov.

Candidatus Selenomonas tabitatica (NL. fem. n. *tabitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Selenomonas_A sp008271295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008271295.1. The GC content of the type genome is 50.06 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Selenomonas cepurilenta sp. nov.

Candidatus Selenomonas cepurilenta (NL. fem. n. *cepurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Selenomonas_C sp900314825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902794105.1. The GC

content of the type genome is 58.41 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Selenomonas cicarivita sp. nov.

Candidatus Selenomonas cicarivita (NL. fem. n. *cicarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Selenomonas_C sp002351185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002351185.1. The GC content of the type genome is 61.57 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Selenomonas cotenitudo sp. nov.

Candidatus Selenomonas cotenitudo (NL. fem. n. *cotenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Selenomonas_C sp900315575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902776045.1. The GC content of the type genome is 58.63 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Selenomonas defenousia sp. nov.

Candidatus Selenomonas defenousia (NL. fem. n. *defenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Selenomonas_C sp900318215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902795175.1. The GC content of the type genome is 58.95 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Selenomonas vinuledo sp. nov.

Candidatus Selenomonas vinuledo (NL. fem. n. *vinuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Selenomonas_C sp902780535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902780535.1. The GC content of the type genome is 59.11 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Selibana detepax sp. nov.

Candidatus Selibana detepax (NL. fem. n. *detepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-964 sp902773265*. The type genome for the species is the GenBank assembly GCA_902773265.1. The GC content of the type genome is 38.93 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Selibana gen. nov.

Candidatus Selibana (NL. fem. n. *Selibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-964*. The type species for the genus is *Candidatus* Selibana detepax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Selibana letifibra sp. nov.

Candidatus Selibana letifibra (NL. fem. n. *letifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-964 sp902772795*. The type genome for the species is the GenBank assembly GCA_902772795.1. The GC content of the type genome is 40.77 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Selibana locupitio sp. nov.

Candidatus Selibana locupitio (NL. fem. n. *locupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-964 sp902789345*. The type genome for the species is the

GenBank assembly GCA_902789345.1. The GC content of the type genome is 39.68 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Selibana medimitudo sp. nov.

Candidatus Selibana medimitudo (NL. fem. n. *medimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-964 sp900316025*. The type genome for the species is the GenBank assembly GCA_902800885.1. The GC content of the type genome is 40.1 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Selibana noninessa sp. nov.

Candidatus Selibana noninessa (NL. fem. n. *noninessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-964 sp900316615*. The type genome for the species is the GenBank assembly GCA_902764765.1. The GC content of the type genome is 40.26 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Selibana obnupitio sp. nov.

Candidatus Selibana obnupitio (NL. fem. n. *obnupitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-964 sp902762375*. The type genome for the species is the GenBank assembly GCA_902762375.1. The GC content of the type genome is 38.48 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Selibana perexicella sp. nov.

Candidatus Selibana perexicella (NL. fem. n. *perexicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-964 sp000435335*. The type genome for the species is the GenBank assembly GCA_900540025.1. The GC content of the type genome is 40.51 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Selibaria catocago sp. nov.

Candidatus Selibaria catocago (NL. fem. n. *catocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2029 sp002332795*. The type genome for the species is the GenBank assembly GCA_002332795.1. The GC content of the type genome is 63.9 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Selibaria gen. nov.

Candidatus Selibaria (NL. fem. n. *Selibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2029*. The type species for the genus is *Candidatus* Selibaria catocago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selibariaceae.

Description of *Candidatus* Selibariaceae fam. nov.

Candidatus Selibariaceae (NL. fem. n. *Selibariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2029.* The type genus for the taxon is *Candidatus* Selibaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBR1031*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nocumellales.

Description of *Candidatus* Selibella demogiforma sp. nov.

Candidatus Selibella demogiforma (NL. fem. n. *demogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7057 sp002493865*. The type genome for the species is the GenBank assembly GCA_002493865.1. The GC content of the type genome is 31.13 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Selibella gen. nov.

Candidatus Selibella (NL. fem. n. *Selibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7057*. The type species for the genus is *Candidatus* Selibella demogiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Selibella pudibatio sp. nov.

Candidatus Selibella pudibatio (NL. fem. n. *pudibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7057 sp900543675*. The type genome for the species is the GenBank assembly RS_GCF_900760015.1. The GC content of the type genome is 31.78 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Selibella turifilega sp. nov.

Candidatus Selibella turifilega (NL. fem. n. *turifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7057 sp900542735*. The type genome for the species is the GenBank assembly RS_GCF_900759975.1. The GC content of the type genome is 27.1 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Selibia defositas sp. nov.

Candidatus Selibia defositas (NL. fem. n. *defositas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W0P31-042 sp004557195*. The type genome for the species is the GenBank assembly GCA_004556725.1. The GC content of the type genome is 49.59 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Selibia gen. nov.

Candidatus Selibia (NL. fem. n. *Selibia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *W0P31-042*. The type species for the genus is *Candidatus* Selibia defositas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Selibida murelugo sp. nov.

Candidatus Selibida murelugo (NL. fem. n. *murelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-371 sp003246475*. The type genome for the species is the GenBank assembly GCA_003246475.1. The GC content of the type genome is 50.55 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Selibida gen. nov.

Candidatus Selibida (NL. fem. n. *Selibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-371*. The type species for the genus is *Candidatus* Selibida murelugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-371*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selibidaceae.

Description of *Candidatus* Selibidaceae fam. nov.

Candidatus Selibidaceae (NL. fem. n. *Selibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-371.* The type genus for the taxon is *Candidatus* Selibida .

According to GTDB R06-RS202, this family belongs to the order *Victivallales*.

Description of *Candidatus* Selibosa ceromitudo sp. nov.

Candidatus Selibosa ceromitudo (NL. fem. n. *ceromitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MWAK01 sp002069365*. The type genome for the species is the GenBank assembly GCA_002069365.1. The GC content of the type genome is 64.44 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Selibosa gen. nov.

Candidatus Selibosa (NL. fem. n. *Selibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWAK01*. The type species for the genus is *Candidatus* Selibosa ceromitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MWAK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selibosaceae.

Description of *Candidatus* Selibosaceae fam. nov.

Candidatus Selibosaceae (NL. fem. n. *Selibosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWAK01.* The type genus for the taxon is *Candidatus* Selibosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *MWAK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Selibosales.

Description of *Candidatus* Selibosales ord. nov.

Candidatus Selibosales (NL. fem. n. *Selibosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MWAK01.* The type genus for the taxon is *Candidatus* Selibosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8468*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Semodulae.

Description of *Candidatus* Selibula adaggedo sp. nov.

Candidatus Selibula adaggedo (NL. fem. n. *adaggedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWUC01 sp007128555*. The type genome for the species is the GenBank assembly GCA_007128555.1. The GC content of the type genome is 59.63 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Selibula gen. nov.

Candidatus Selibula (NL. fem. n. *Selibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWUC01*. The type species for the genus is *Candidatus* Selibula adaggedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUMD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Reforariaceae.

Description of *Candidatus* Selibula alcalibula sp. nov.

Candidatus Selibula alcalibula (NL. fem. n. *alcalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWUC01 sp003562655*. The type genome for the species is the GenBank assembly GCA_003562655.1. The GC content of the type genome is 61.84 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Selibula xeramugo sp. nov.

Candidatus Selibula xeramugo (NL. fem. n. *xeramugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWUC01 sp003566675*. The type genome for the species is the GenBank assembly GCA_007119245.1. The GC content of the type genome is 58.73 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Sellimonas homagousia sp. nov.

Candidatus Sellimonas homagousia (NL. fem. n. *homagousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sellimonas sp002161525*. The type genome for the species is the GenBank assembly RS_GCF_002161525.1. The GC content of the type genome is 45.71 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Sellimonas locelitudo sp. nov.

Candidatus Sellimonas locelitudo (NL. fem. n. *locelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sellimonas sp002159995*. The type genome for the species is the GenBank assembly RS_GCF_002160415.1. The GC content of the type genome is 44.76 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Semapana delebugo sp. nov.

Candidatus Semapana delebugo (NL. fem. n. *delebugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNON01 sp013824865*. The type genome for the species is the GenBank assembly GCA_013824865.1. The GC content of the type genome is 49.39 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Semapana gen. nov.

Candidatus Semapana (NL. fem. n. *Semapana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNON01*. The type species for the genus is *Candidatus* Semapana delebugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semapana gasifessa sp. nov.

Candidatus Semapana gasifessa (NL. fem. n. *gasifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNON01 sp903828565*. The type genome for the species is the

GenBank assembly GCA_903828565.1. The GC content of the type genome is 52.12 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Semaparia desupastra sp. nov.

Candidatus Semaparia desupastra (NL. fem. n. *desupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTLJ01 sp011333345*. The type genome for the species is the GenBank assembly GCA_011333345.1. The GC content of the type genome is 47.89 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Semaparia gen. nov.

Candidatus Semaparia (NL. fem. n. *Semaparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTLJ01*. The type species for the genus is *Candidatus* Semaparia desupastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTLJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semapariaceae.

Description of *Candidatus* Semapariaceae fam. nov.

Candidatus Semapariaceae (NL. fem. n. *Semapariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTLJ01.* The type genus for the taxon is *Candidatus* Semaparia .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Semapella carunicula sp. nov.

Candidatus Semapella carunicula (NL. fem. n. *carunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-600 sp009702325*. The type genome for the species is the GenBank assembly GCA_009702325.1. The GC content of the type genome is 64.81 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Semapella gen. nov.

Candidatus Semapella (NL. fem. n. *Semapella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-600*. The type species for the genus is *Candidatus* Semapella carunicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semapella culigibula sp. nov.

Candidatus Semapella culigibula (NL. fem. n. *culigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-600 sp903915545*. The type genome for the species is the GenBank assembly GCA_903881195.1. The GC content of the type genome is 65.15 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Semapella exurrivita sp. nov.

Candidatus Semapella exurrivita (NL. fem. n. *exurrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-600 sp003136795*. The type genome for the species is the GenBank assembly GCA_003136795.1. The GC content of the type genome is 69.11 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Semapella minurilega sp. nov.

Candidatus Semapella minurilega (NL. fem. n. *minurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-600 sp903930195*. The type genome for the species is the GenBank assembly GCA_903930195.1. The GC content of the type genome is 70.13 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Semapella revecilenta sp. nov.

Candidatus Semapella revecilenta (NL. fem. n. *revecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-600 sp013362295*. The type genome for the species is the GenBank assembly GCA_013362295.1. The GC content of the type genome is 70.14 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Semapella triscetta sp. nov.

Candidatus Semapella triscetta (NL. fem. n. *triscetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-600 sp013821525*. The type genome for the species is the GenBank assembly GCA_013821525.1. The GC content of the type genome is 67.28 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Semapella vocifitudo sp. nov.

Candidatus Semapella vocifitudo (NL. fem. n. *vocifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-600 sp900299235*. The type genome for the species is the GenBank assembly GCA_900299235.1. The GC content of the type genome is 65.31 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Semapia artocatio sp. nov.

Candidatus Semapia artocatio (NL. fem. n. *artocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBZ01 sp013697395*. The type genome for the species is the GenBank assembly GCA_013697395.1. The GC content of the type genome is 69.0 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Semapia gen. nov.

Candidatus Semapia (NL. fem. n. *Semapia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDBZ01*. The type species for the genus is *Candidatus* Semapia

artocatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHBO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefariaceae.

Description of *Candidatus* Semapia lavacitoga sp. nov.

Candidatus Semapia lavacitoga (NL. fem. n. *lavacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBZ01 sp013694795*. The type genome for the species is the GenBank assembly GCA_013694795.1. The GC content of the type genome is 68.62 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Semapia obtecetta sp. nov.

Candidatus Semapia obtecetta (NL. fem. n. *obtecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBZ01 sp013694645*. The type genome for the species is the GenBank assembly GCA_013694645.1. The GC content of the type genome is 68.03 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Semapia repecentia sp. nov.

Candidatus Semapia repecentia (NL. fem. n. *repecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDBZ01 sp013820865*. The type genome for the species is the GenBank assembly GCA_013820865.1. The GC content of the type genome is 67.21 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Semapida delecitrix sp. nov.

Candidatus Semapida delecitrix (NL. fem. n. *delecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp7-AA6 sp003222385*. The type genome for the species is the

GenBank assembly GCA_003222385.1. The GC content of the type genome is 66.86 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Semapida gen. nov.

Candidatus Semapida (NL. fem. n. *Semapida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp7-AA6*. The type species for the genus is *Candidatus* Semapida delecitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Gp7-AA6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semapidaceae.

Description of *Candidatus* Semapidaceae fam. nov.

Candidatus Semapidaceae (NL. fem. n. *Semapidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Gp7-AA6.* The type genus for the taxon is *Candidatus* Semapida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tenebosales.

Description of *Candidatus* Semaposa umbilessa sp. nov.

Candidatus Semaposa umbilessa (NL. fem. n. *umbilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5620 sp002423605*. The type genome for the species is the GenBank assembly GCA_002423605.1. The GC content of the type genome is 48.1 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Semaposa gen. nov.

Candidatus Semaposa (NL. fem. n. *Semaposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5620*. The type species for the genus is *Candidatus* Semaposa umbilessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5620*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semaposaceae.

Description of *Candidatus* Semaposaceae fam. nov.

Candidatus Semaposaceae (NL. fem. n. *Semaposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5620.* The type genus for the taxon is *Candidatus* Semaposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GIF9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dedigiales.

Description of *Candidatus* Semapula cocolifica sp. nov.

Candidatus Semapula cocolifica (NL. fem. n. *cocolifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6669 sp002455175*. The type genome for the species is the GenBank assembly GCA_002455175.1. The GC content of the type genome is 57.04 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Semapula gen. nov.

Candidatus Semapula (NL. fem. n. *Semapula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6669*. The type species for the genus is *Candidatus* Semapula cocolifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semapula domipibra sp. nov.

Candidatus Semapula domipibra (NL. fem. n. *domipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6669 sp903862595*. The type genome for the species is the

GenBank assembly GCA_903944795.1. The GC content of the type genome is 66.57 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Semapula octopibula sp. nov.

Candidatus Semapula octopibula (NL. fem. n. *octopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6669 sp014584295*. The type genome for the species is the GenBank assembly GCA_014584295.1. The GC content of the type genome is 59.1 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Semibana retecibula sp. nov.

Candidatus Semibana retecibula (NL. fem. n. *retecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NZNC01 sp002692965*. The type genome for the species is the GenBank assembly GCA_002414445.1. The GC content of the type genome is 64.73 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Semibana gen. nov.

Candidatus Semibana (NL. fem. n. *Semibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NZNC01*. The type species for the genus is *Candidatus* Semibana retecibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semibaria regigicula sp. nov.

Candidatus Semibaria regigicula (NL. fem. n. *regigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730555 sp002730555*. The type genome for the species is the GenBank assembly GCA_003542155.1. The GC content of the type genome is 61.46 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Semibaria gen. nov.

Candidatus Semibaria (NL. fem. n. *Semibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2730555*. The type species for the genus is *Candidatus* Semibaria regigicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carucellaceae.

Description of *Candidatus* Semibaria vagabetta sp. nov.

Candidatus Semibaria vagabetta (NL. fem. n. *vagabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2730555 sp014239685*. The type genome for the species is the GenBank assembly GCA_014239685.1. The GC content of the type genome is 56.42 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Semibella obsurimonas sp. nov.

Candidatus Semibella obsurimonas (NL. fem. n. *obsurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQIC01 sp903871765*. The type genome for the species is the GenBank assembly GCA_903871765.1. The GC content of the type genome is 63.56 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Semibella gen. nov.

Candidatus Semibella (NL. fem. n. *Semibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQIC01*. The type species for the genus is *Candidatus* Semibella obsurimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIQIC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semibellaceae.

Description of *Candidatus* Semibellaceae fam. nov.

Candidatus Semibellaceae (NL. fem. n. *Semibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIQIC01*. The type genus for the taxon is *Candidatus* Semibella .

According to the original version of GTDB R06-RS202, this family belongs to the order *LD1-PB3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delacariales.

Description of *Candidatus* Semibia adtorugo sp. nov.

Candidatus Semibia adtorugo (NL. fem. n. *adtorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903903985*. The type genome for the species is the GenBank assembly GCA_903903985.1. The GC content of the type genome is 45.51 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Semibia gen. nov.

Candidatus Semibia (NL. fem. n. *Semibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVAT01*. The type species for the genus is *Candidatus* Semibia adtorugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FEN-979*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pedepariaceae.

Description of *Candidatus* Semibia ammatitio sp. nov.

Candidatus Semibia ammatitio (NL. fem. n. *ammatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903928285*. The type genome for the species is the GenBank assembly GCA_903928285.1. The GC content of the type genome is 48.95 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Semibia decamimonia sp. nov.

Candidatus Semibia decamimonia (NL. fem. n. *decamimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903828645*. The type genome for the species is the GenBank assembly GCA_903918305.1. The GC content of the type genome is 48.37 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Semibia echogastra sp. nov.

Candidatus Semibia echogastra (NL. fem. n. *echogastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903925275*. The type genome for the species is the GenBank assembly GCA_903925275.1. The GC content of the type genome is 43.19 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Semibia hexagitas sp. nov.

Candidatus Semibia hexagitas (NL. fem. n. *hexagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903913885*. The type genome for the species is the GenBank assembly GCA_903871895.1. The GC content of the type genome is 49.45 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Semibia manubitica sp. nov.

Candidatus Semibia manubitica (NL. fem. n. *manubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903875045*. The type genome for the species is the GenBank assembly GCA_903875045.1. The GC content of the type genome is 44.27 % and the genome length is 5.96 Mbp.

Description of *Candidatus* Semibia pulegivita sp. nov.

Candidatus Semibia pulegivita (NL. fem. n. *pulegivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903845055*. The type genome for the species is the GenBank assembly GCA_903917245.1. The GC content of the type genome is 51.91 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Semibia resuritio sp. nov.

Candidatus Semibia resuritio (NL. fem. n. *resuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903959905*. The type genome for the species is the GenBank assembly GCA_903935625.1. The GC content of the type genome is 47.09 % and the genome length is 4.93 Mbp.

Description of *Candidatus* Semibia secunitio sp. nov.

Candidatus Semibia secunitio (NL. fem. n. *secunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903945175*. The type genome for the species is the GenBank assembly GCA_903844745.1. The GC content of the type genome is 45.38 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Semibia venucitio sp. nov.

Candidatus Semibia venucitio (NL. fem. n. *venucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVAT01 sp903926565*. The type genome for the species is the GenBank assembly GCA_903926565.1. The GC content of the type genome is 45.6 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Semibia vitupivita sp. nov.

Candidatus Semibia vitupivita (NL. fem. n. *vitupivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIVAT01 sp903885595*. The type genome for the species is the GenBank assembly GCA_903885595.1. The GC content of the type genome is 44.04 % and the genome length is 6.02 Mbp.

Description of *Candidatus* Semibida tenebitoga sp. nov.

Candidatus Semibida tenebitoga (NL. fem. n. *tenebitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-793 sp003159795*. The type genome for the species is the GenBank assembly GCA_003162835.1. The GC content of the type genome is 68.96 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Semibida gen. nov.

Candidatus Semibida (NL. fem. n. *Semibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-793*. The type species for the genus is *Candidatus* Semibida tenebitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bog-793*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semibidaceae.

Description of *Candidatus* Semibidaceae fam. nov.

Candidatus Semibidaceae (NL. fem. n. *Semibidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bog-793.* The type genus for the taxon is *Candidatus* Semibida .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Semibosa accorifica sp. nov.

Candidatus Semibosa accorifica (NL. fem. n. *accorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012521615*. The type genome for the species is the GenBank assembly GCA_012521615.1. The GC content of the type genome is 38.83 %

and the genome length is 2.23 Mbp.

Description of *Candidatus* Semibosa gen. nov.

Candidatus Semibosa (NL. fem. n. *Semibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU059*. The type species for the genus is *Candidatus* Semibosa accorifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-8532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catabidaceae.

Description of *Candidatus* Semibosa arbavedo sp. nov.

Candidatus Semibosa arbavedo (NL. fem. n. *arbavedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012521705*. The type genome for the species is the GenBank assembly GCA_012521705.1. The GC content of the type genome is 41.53 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Semibosa cohorousia sp. nov.

Candidatus Semibosa cohorousia (NL. fem. n. *cohorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012523685*. The type genome for the species is the GenBank assembly GCA_012523685.1. The GC content of the type genome is 39.11 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Semibosa dinupicella sp. nov.

Candidatus Semibosa dinupicella (NL. fem. n. *dinupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012728095*. The type genome for the species is the GenBank assembly GCA_012728095.1. The GC content of the type genome is 40.73 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Semibosa egregisca sp. nov.

Candidatus Semibosa egregisca (NL. fem. n. *egregisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012520855*. The type genome for the species is the GenBank assembly GCA_012520855.1. The GC content of the type genome is 41.16 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Semibosa feculifica sp. nov.

Candidatus Semibosa feculifica (NL. fem. n. *feculifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp003535195*. The type genome for the species is the GenBank assembly GCA_003535195.1. The GC content of the type genome is 45.08 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Semibosa fibicilega sp. nov.

Candidatus Semibosa fibicilega (NL. fem. n. *fibicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012842645*. The type genome for the species is the GenBank assembly GCA_012842645.1. The GC content of the type genome is 47.07 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Semibosa idcirilenta sp. nov.

Candidatus Semibosa idcirilenta (NL. fem. n. *idcirilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012520615*. The type genome for the species is the GenBank assembly GCA_012520615.1. The GC content of the type genome is 37.94 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Semibosa inconetta sp. nov.

Candidatus Semibosa inconetta (NL. fem. n. *inconetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp002376415*. The type genome for the species is the GenBank assembly GCA_002376415.1. The GC content of the type genome is 48.2 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Semibosa inrevitica sp. nov.

Candidatus Semibosa inrevitica (NL. fem. n. *inrevitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012719545*. The type genome for the species is the GenBank assembly GCA_012719545.1. The GC content of the type genome is 40.89 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Semibosa irrefiforma sp. nov.

Candidatus Semibosa irrefiforma (NL. fem. n. *irrefiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012839205*. The type genome for the species is the GenBank assembly GCA_012839205.1. The GC content of the type genome is 39.25 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Semibosa levifibra sp. nov.

Candidatus Semibosa levifibra (NL. fem. n. *levifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU059 sp012523705*. The type genome for the species is the GenBank assembly GCA_012523705.1. The GC content of the type genome is 39.28 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Semibosa supelitoga sp. nov.

Candidatus Semibosa supelitoga (NL. fem. n. *supelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DTU059 sp012840245*. The type genome for the species is the GenBank assembly GCA_012840245.1. The GC content of the type genome is 44.01 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Semibula absorivita sp. nov.

Candidatus Semibula absorivita (NL. fem. n. *absorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-76 sp003232725*. The type genome for the species is the GenBank assembly GCA_003232725.1. The GC content of the type genome is 47.65 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Semibula gen. nov.

Candidatus Semibula (NL. fem. n. *Semibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-76*. The type species for the genus is *Candidatus* Semibula absorivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-140*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotiaceae.

Description of *Candidatus* Semibula domigessa sp. nov.

Candidatus Semibula domigessa (NL. fem. n. *domigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-76 sp011053135*. The type genome for the species is the GenBank assembly GCA_011053135.1. The GC content of the type genome is 51.83 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Semibula funebicula sp. nov.

Candidatus Semibula funebicula (NL. fem. n. *funebicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-76 sp003230195*. The type genome for the species is the

GenBank assembly GCA_003230195.1. The GC content of the type genome is 47.31 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Semidana perabibula sp. nov.

Candidatus Semidana perabibula (NL. fem. n. *perabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2108 sp002713215*. The type genome for the species is the GenBank assembly GCA_002331745.1. The GC content of the type genome is 39.82 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Semidana gen. nov.

Candidatus Semidana (NL. fem. n. *Semidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2108*. The type species for the genus is *Candidatus* Semidana perabibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semidaria colimatica sp. nov.

Candidatus Semidaria colimatica (NL. fem. n. *colimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4175 sp002379855*. The type genome for the species is the GenBank assembly GCA_002070895.1. The GC content of the type genome is 53.89 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Semidaria gen. nov.

Candidatus Semidaria (NL. fem. n. *Semidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4175*. The type species for the genus is *Candidatus* Semidaria colimatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semidella arcifentia sp. nov.

Candidatus Semidella arcifentia (NL. fem. n. *arcifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA967 sp903915315*. The type genome for the species is the GenBank assembly GCA_903915315.1. The GC content of the type genome is 54.52 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Semidella gen. nov.

Candidatus Semidella (NL. fem. n. *Semidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA967*. The type species for the genus is *Candidatus* Semidella arcifentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semidella ensicisca sp. nov.

Candidatus Semidella ensicisca (NL. fem. n. *ensicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA967 sp002396485*. The type genome for the species is the GenBank assembly GCA_002396485.1. The GC content of the type genome is 56.16 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Semidella fumifugo sp. nov.

Candidatus Semidella fumifugo (NL. fem. n. *fumifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA967 sp002290555*. The type genome for the species is the GenBank assembly GCA_002290555.1. The GC content of the type genome is 56.62 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Semidella occucibra sp. nov.

Candidatus Semidella occucibra (NL. fem. n. *occucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA967 sp009886045*. The type genome for the species is the GenBank assembly GCA_009886045.1. The GC content of the type genome is 54.14 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Semidella semigilega sp. nov.

Candidatus Semidella semigilega (NL. fem. n. *semigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA967 sp009920585*. The type genome for the species is the GenBank assembly GCA_009920585.1. The GC content of the type genome is 53.57 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Semidia colapessa sp. nov.

Candidatus Semidia colapessa (NL. fem. n. *colapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11713 sp001778985*. The type genome for the species is the GenBank assembly GCA_001778775.1. The GC content of the type genome is 48.02 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Semidia gen. nov.

Candidatus Semidia (NL. fem. n. *Semidia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11713*. The type species for the genus is *Candidatus* Semidia colapessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11713*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semidiaceae.

Description of *Candidatus* Semidiaceae fam. nov.

Candidatus Semidiaceae (NL. fem. n. *Semidiaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11713*. The type genus for the taxon is *Candidatus* Semidia .

According to the original version of GTDB R06-RS202, this family belongs to the order *WO2-41-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Refulariales.

Description of *Candidatus* Semidida desupibra sp. nov.

Candidatus Semidida desupibra (NL. fem. n. *desupibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An92 sp002159175*. The type genome for the species is the GenBank assembly RS_GCF_002160795.1. The GC content of the type genome is 61.45 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Semidida gen. nov.

Candidatus Semidida (NL. fem. n. *Semidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *An92*. The type species for the genus is *Candidatus* Semidida desupibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semidida molecifica sp. nov.

Candidatus Semidida molecifica (NL. fem. n. *molecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An92 sp009935845*. The type genome for the species is the GenBank assembly RS_GCF_009935845.1. The GC content of the type genome is 58.11 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Semidida selibivita sp. nov.

Candidatus Semidida selibivita (NL. fem. n. *selibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *An92 sp900199495*. The type genome for the species is the GenBank assembly RS_GCF_014288125.1. The GC content of the type genome is 60.13 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Semidosa effarimonia sp. nov.

Candidatus Semidosa effarimonia (NL. fem. n. *effarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADCTP01 sp902805565*. The type genome for the species is the GenBank assembly GCA_902805565.1. The GC content of the type genome is 75.15 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Semidosa gen. nov.

Candidatus Semidosa (NL. fem. n. *Semidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADCTP01*. The type species for the genus is *Candidatus* Semidosa effarimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADCTP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semidosaceae.

Description of *Candidatus* Semidosaceae fam. nov.

Candidatus Semidosaceae (NL. fem. n. *Semidosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADCTP01.* The type genus for the taxon is *Candidatus* Semidosa .

According to GTDB R06-RS202, this family belongs to the order *Mycobacteriales*.

Description of *Candidatus* Semidula inargicella sp. nov.

Candidatus Semidula inargicella (NL. fem. n. *inargicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GWA2-52-8 sp001804025*. The type genome for the species is the GenBank assembly GCA_001804025.1. The GC content of the type genome is 51.7 % and the genome length is 2.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Semidula gen. nov.

Candidatus Semidula (NL. fem. n. *Semidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-52-8*. The type species for the genus is *Candidatus* Semidula inargicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-52-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semidulaceae.

Description of *Candidatus* Semidulaceae fam. nov.

Candidatus Semidulaceae (NL. fem. n. *Semidulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-52-8.* The type genus for the taxon is *Candidatus* Semidula .

According to GTDB R06-RS202, this family belongs to the order *Omnitrophales*.

Description of *Candidatus* Semifana carunilega sp. nov.

Candidatus Semifana carunilega (NL. fem. n. *carunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11996 sp002500485*. The type genome for the species is the GenBank assembly GCA_002500485.1. The GC content of the type genome is 42.35 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Semifana gen. nov.

Candidatus Semifana (NL. fem. n. *Semifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11996*. The type species for the genus is *Candidatus* Semifana

carunilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nugivariaceae.

Description of *Candidatus* Semifana culilitudo sp. nov.

Candidatus Semifana culilitudo (NL. fem. n. *culilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11996 sp002728195*. The type genome for the species is the GenBank assembly GCA_002728195.1. The GC content of the type genome is 41.5 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Semifana denoritrix sp. nov.

Candidatus Semifana denoritrix (NL. fem. n. *denoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11996 sp002320875*. The type genome for the species is the GenBank assembly GCA_008373285.1. The GC content of the type genome is 41.87 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Semifana gemebimonia sp. nov.

Candidatus Semifana gemebimonia (NL. fem. n. *gemebimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11996 sp002708495*. The type genome for the species is the GenBank assembly GCA_002708495.1. The GC content of the type genome is 42.22 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Semifana inurbilega sp. nov.

Candidatus Semifana inurbilega (NL. fem. n. *inurbilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11996 sp003228105*. The type genome for the species is the

GenBank assembly GCA_003228105.1. The GC content of the type genome is 42.07 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Semifana lubenugo sp. nov.

Candidatus Semifana lubenugo (NL. fem. n. *lubenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11996 sp009392675*. The type genome for the species is the GenBank assembly GCA_009392675.1. The GC content of the type genome is 42.39 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Semifana pavimitura sp. nov.

Candidatus Semifana pavimitura (NL. fem. n. *pavimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11996 sp002722155*. The type genome for the species is the GenBank assembly GCA_003519885.1. The GC content of the type genome is 41.62 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Semifana retunimonas sp. nov.

Candidatus Semifana retunimonas (NL. fem. n. *retunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11996 sp002435305*. The type genome for the species is the GenBank assembly GCA_003500865.1. The GC content of the type genome is 42.77 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Semifana turicedo sp. nov.

Candidatus Semifana turicedo (NL. fem. n. *turicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11996 sp012965485*. The type genome for the species is the GenBank assembly GCA_012965485.1. The GC content of the type genome is 42.83 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Semifaria bimotedo sp. nov.

Candidatus Semifaria bimotedo (NL. fem. n. *bimotedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7985 sp002705565*. The type genome for the species is the GenBank assembly GCA_002705565.1. The GC content of the type genome is 58.43 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Semifaria gen. nov.

Candidatus Semifaria (NL. fem. n. *Semifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7985*. The type species for the genus is *Candidatus* Semifaria bimotedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7985*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifariaceae.

Description of *Candidatus* Semifariaceae fam. nov.

Candidatus Semifariaceae (NL. fem. n. *Semifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7985.* The type genus for the taxon is *Candidatus* Semifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7985*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semifariales.

Description of *Candidatus* Semifariales ord. nov.

Candidatus Semifariales (NL. fem. n. *Semifariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7985.* The type genus for the taxon is *Candidatus* Semifaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Semifaria bonifitura sp. nov.

Candidatus Semifaria bonifitura (NL. fem. n. *bonifitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7985 sp002711265*. The type genome for the species is the GenBank assembly GCA_002172855.1. The GC content of the type genome is 64.05 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Semifaria defalifica sp. nov.

Candidatus Semifaria defalifica (NL. fem. n. *defalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7985 sp002708995*. The type genome for the species is the GenBank assembly GCA_002708995.1. The GC content of the type genome is 63.24 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Semifaria semodatica sp. nov.

Candidatus Semifaria semodatica (NL. fem. n. *semodatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7985 sp002690455*. The type genome for the species is the GenBank assembly GCA_002690455.1. The GC content of the type genome is 59.21 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Semifaria subadifica sp. nov.

Candidatus Semifaria subadifica (NL. fem. n. *subadifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7985 sp002700865*. The type genome for the species is the GenBank assembly GCA_002172925.2. The GC content of the type genome is 58.84 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Semifella televicella sp. nov.

Candidatus Semifella televicella (NL. fem. n. *televicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB4 sp002050165*. The type genome for the species is the GenBank assembly GCA_001567325.1. The GC content of the type genome is 37.61 % and the genome length is 2.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Semifella gen. nov.

Candidatus Semifella (NL. fem. n. *Semifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB4*. The type species for the genus is *Candidatus* Semifella televicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B-1AR*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Genufosaceae.

Description of *Candidatus* Semifida decapifica sp. nov.

Candidatus Semifida decapifica (NL. fem. n. *decapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-37-13b sp001789395*. The type genome for the species is the GenBank assembly GCA_001788225.1. The GC content of the type genome is 36.01 % and the genome length is 1.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Semifida gen. nov.

Candidatus Semifida (NL. fem. n. *Semifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-37-13b*. The type species for the genus is *Candidatus* Semifida decapifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-37-13b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifidaceae.

Description of *Candidatus* Semifidaceae fam. nov.

Candidatus Semifidaceae (NL. fem. n. *Semifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HO2-37-13b.* The type genus for the taxon is *Candidatus* Semifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1406*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Molecanales.

Description of *Candidatus* Semifosa negidilega sp. nov.

Candidatus Semifosa negidilega (NL. fem. n. *negidilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6013 sp002428105*. The type genome for the species is the GenBank assembly GCA_002428105.1. The GC content of the type genome is 61.54 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Semifosa gen. nov.

Candidatus Semifosa (NL. fem. n. *Semifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6013*. The type species for the genus is *Candidatus* Semifosa negidilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6013*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifosaceae.

Description of *Candidatus* Semifosaceae fam. nov.

Candidatus Semifosaceae (NL. fem. n. *Semifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6013.* The type genus for the taxon is *Candidatus* Semifosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Semifula dupunousia sp. nov.

Candidatus Semifula dupunousia (NL. fem. n. *dupunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-38-22 sp001820055*. The type genome for the species is the GenBank assembly GCA_001820055.1. The GC content of the type genome is 37.95 % and the genome length is 0.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Semifula gen. nov.

Candidatus Semifula (NL. fem. n. *Semifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-38-22*. The type species for the genus is *Candidatus* Semifula dupunousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-38-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifulaceae.

Description of *Candidatus* Semifulaceae fam. nov.

Candidatus Semifulaceae (NL. fem. n. *Semifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-38-22.* The type genus for the taxon is *Candidatus* Semifula .

According to GTDB R06-RS202, this family belongs to the order *Spechtbacterales*.

Description of *Candidatus* Semigana conibitudo sp. nov.

Candidatus Semigana conibitudo (NL. fem. n. *conibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HTCC5015 sp000155715*. The type genome for the species is the GenBank assembly RS_GCF_000155715.1. The GC content of the type genome is 54.05 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Semigana gen. nov.

Candidatus Semigana (NL. fem. n. *Semigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HTCC5015*. The type species for the genus is *Candidatus* Semigana conibitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC5015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semiganaceae.

Description of *Candidatus* Semiganaceae fam. nov.

Candidatus Semiganaceae (NL. fem. n. *Semiganaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HTCC5015.* The type genus for the taxon is *Candidatus* Semigana .

According to the original version of GTDB R06-RS202, this family belongs to the order *HTCC5015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semiganales.

Description of *Candidatus* Semiganales ord. nov.

Candidatus Semiganales (NL. fem. n. *Semiganales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HTCC5015.* The type genus for the taxon is *Candidatus* Semigana .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Semigaria calipentia sp. nov.

Candidatus Semigaria calipentia (NL. fem. n. *calipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CHH4-2 sp002899675*. The type genome for the species is the GenBank assembly RS_GCF_002899675.1. The GC content of the type genome is 45.64 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Semigaria gen. nov.

Candidatus Semigaria (NL. fem. n. *Semigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CHH4-2*. The type species for the genus is *Candidatus* Semigaria calipentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semigella lanigax sp. nov.

Candidatus Semigella lanigax (NL. fem. n. *lanigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VSJD01 sp008636095*. The type genome for the species is the GenBank assembly GCA_008636085.1. The GC content of the type genome is 54.94 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Semigella gen. nov.

Candidatus Semigella (NL. fem. n. *Semigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VSJD01*. The type species for the genus is *Candidatus* Semigella lanigax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VSJD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semigellaceae.

Description of *Candidatus* Semigellaceae fam. nov.

Candidatus Semigellaceae (NL. fem. n. *Semigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VSJD01*. The type genus for the taxon is *Candidatus* Semigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAAZAB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Deforosales.

Description of *Candidatus* Semigia visocivita sp. nov.

Candidatus Semigia visocivita (NL. fem. n. *visocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MnTg04 sp008975185*. The type genome for the species is the GenBank assembly GCA_008975185.1. The GC content of the type genome is 57.99 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Semigia gen. nov.

Candidatus Semigia (NL. fem. n. *Semigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MnTg04*. The type species for the genus is *Candidatus* Semigia visocivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MnTg04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semigiaceae.

Description of *Candidatus* Semigiaceae fam. nov.

Candidatus Semigiaceae (NL. fem. n. *Semigiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MnTg04.* The type genus for the taxon is *Candidatus* Semigia .

According to the original version of GTDB R06-RS202, this family belongs to the order *MnTg04*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semigiales.

Description of *Candidatus* Semigiales ord. nov.

Candidatus Semigiales (NL. fem. n. *Semigiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MnTg04.* The type genus for the taxon is *Candidatus* Semigia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Semigida nosocisca sp. nov.

Candidatus Semigida nosocisca (NL. fem. n. *nosocisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-724 sp003524145*. The type genome for the species is the GenBank assembly GCA_900546815.1. The GC content of the type genome is 48.77 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Semigida gen. nov.

Candidatus Semigida (NL. fem. n. *Semigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-724*. The type species for the genus is *Candidatus* Semigida nosocisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Semigida senacitudo sp. nov.

Candidatus Semigida senacitudo (NL. fem. n. *senacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-724 sp900551005*. The type genome for the species is the GenBank assembly GCA_900551005.1. The GC content of the type genome is 47.75 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Semigosa domicedo sp. nov.

Candidatus Semigosa domicedo (NL. fem. n. *domicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWXP01 sp007127495*. The type genome for the species is the GenBank assembly GCA_007127495.1. The GC content of the type genome is 63.75 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Semigosa gen. nov.

Candidatus Semigosa (NL. fem. n. *Semigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWXP01*. The type species for the genus is *Candidatus* Semigosa domicedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11386*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Feficariaceae.

Description of *Candidatus* Semigosa gasomifica sp. nov.

Candidatus Semigosa gasomifica (NL. fem. n. *gasomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWXP01 sp003561895*. The type genome for the species is the GenBank assembly GCA_003561895.1. The GC content of the type genome is 65.35 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Semigosa semibivita sp. nov.

Candidatus Semigosa semibivita (NL. fem. n. *semibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWXP01 sp007122045*. The type genome for the species is the GenBank assembly GCA_007122045.1. The GC content of the type genome is 66.7 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Semigosa xenopitas sp. nov.

Candidatus Semigosa xenopitas (NL. fem. n. *xenopitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWXP01 sp003563515*. The type genome for the species is the GenBank assembly GCA_003563515.1. The GC content of the type genome is 61.97 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Semigula clancimonia sp. nov.

Candidatus Semigula clancimonia (NL. fem. n. *clancimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLWV01 sp012103395*. The type genome for the species is the GenBank assembly GCA_012103395.1. The GC content of the type genome is 45.9 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Semigula gen. nov.

Candidatus Semigula (NL. fem. n. *Semigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLWV01*. The type species for the genus is *Candidatus* Semigula clancimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LS-SOB*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repeciaceae.

Description of *Candidatus* Semigula legifugo sp. nov.

Candidatus Semigula legifugo (NL. fem. n. *legifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLWV01 sp011088265*. The type genome for the species is the GenBank assembly GCA_011088025.1. The GC content of the type genome is 46.14 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Semilana adobritica sp. nov.

Candidatus Semilana adobritica (NL. fem. n. *adobritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp002394535*. The type genome for the species is the GenBank assembly GCA_002394535.1. The GC content of the type genome is 44.7 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Semilana gen. nov.

Candidatus Semilana (NL. fem. n. *Semilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2868*. The type species for the genus is *Candidatus* Semilana adobritica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semilana agripimonia sp. nov.

Candidatus Semilana agripimonia (NL. fem. n. *agripimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp002373875*. The type genome for the species is the GenBank assembly GCA_002373875.1. The GC content of the type genome is 46.27 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Semilana anatrastra sp. nov.

Candidatus Semilana anatrastra (NL. fem. n. *anatrastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp003484785*. The type genome for the species is the GenBank assembly GCA_003484785.1. The GC content of the type genome is 49.18 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Semilana butubax sp. nov.

Candidatus Semilana butubax (NL. fem. n. *butubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp002371615*. The type genome for the species is the GenBank assembly GCA_002371615.1. The GC content of the type genome is 43.95 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Semilana cepurimonas sp. nov.

Candidatus Semilana cepurimonas (NL. fem. n. *cepurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2868 sp902779305*. The type genome for the species is the GenBank assembly GCA_902779305.1. The GC content of the type genome is 48.9 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Semilana dedigitas sp. nov.

Candidatus Semilana dedigitas (NL. fem. n. *dedigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp002350465*. The type genome for the species is the GenBank assembly GCA_902765765.1. The GC content of the type genome is 44.92 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Semilana domicousia sp. nov.

Candidatus Semilana domicousia (NL. fem. n. *domicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp003535955*. The type genome for the species is the GenBank assembly GCA_003535955.1. The GC content of the type genome is 46.04 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Semilana forinifica sp. nov.

Candidatus Semilana forinifica (NL. fem. n. *forinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp902803305*. The type genome for the species is the GenBank assembly GCA_902803305.1. The GC content of the type genome is 47.0 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Semilana ineffax sp. nov.

Candidatus Semilana ineffax (NL. fem. n. *ineffax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp004552595*. The type genome for the species is the GenBank assembly GCA_004552595.1. The GC content of the type genome is 37.92 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Semilana malivax sp. nov.

Candidatus Semilana malivax (NL. fem. n. *malivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp900320345*. The type genome for the species is the GenBank assembly GCA_900320345.1. The GC content of the type genome is 45.61 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Semilana taxilatio sp. nov.

Candidatus Semilana taxilatio (NL. fem. n. *taxilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp002368575*. The type genome for the species is the GenBank assembly GCA_003450975.1. The GC content of the type genome is 49.38 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Semilana tibicedo sp. nov.

Candidatus Semilana tibicedo (NL. fem. n. *tibicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2868 sp902775485*. The type genome for the species is the GenBank assembly GCA_902775485.1. The GC content of the type genome is 46.74 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Semilaria bucelax sp. nov.

Candidatus Semilaria bucelax (NL. fem. n. *bucelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PCPOR2b sp003635265*. The type genome for the species is the GenBank assembly GCA_003635265.1. The GC content of the type genome is 49.36 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Semilaria gen. nov.

Candidatus Semilaria (NL. fem. n. *Semilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PCPOR2b*. The type species for the genus is *Candidatus* Semilaria bucelax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PCPOR2b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semilariaceae.

Description of *Candidatus* Semilariaceae fam. nov.

Candidatus Semilariaceae (NL. fem. n. *Semilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PCPOR2b.* The type genus for the taxon is *Candidatus* Semilaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *WGA-4E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Demociales.

Description of *Candidatus* Semilella habacitrix sp. nov.

Candidatus Semilella habacitrix (NL. fem. n. *habacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYID01 sp903926205*. The type genome for the species is the GenBank assembly GCA_903897095.1. The GC content of the type genome is 41.82 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Semilella gen. nov.

Candidatus Semilella (NL. fem. n. *Semilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYID01*. The type species for the genus is *Candidatus* Semilella habacitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semilella inabritoga sp. nov.

Candidatus Semilella inabritoga (NL. fem. n. *inabritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYID01 sp013286585*. The type genome for the species is the GenBank assembly GCA_013286585.1. The GC content of the type genome is 48.6 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Semilia siligago sp. nov.

Candidatus Semilia siligago (NL. fem. n. *siligago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002782285 sp002790655*. The type genome for the species is the GenBank assembly GCA_002790655.1. The GC content of the type genome is 43.54 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Semilia gen. nov.

Candidatus Semilia (NL. fem. n. *Semilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002782285*. The type species for the genus is *Candidatus* Semilia siligago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11712*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Faticariaceae.

Description of *Candidatus* Semilida cohorigena sp. nov.

Candidatus Semilida cohorigena (NL. fem. n. *cohorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1407 sp902776645*. The type genome for the species is the GenBank assembly GCA_902794255.1. The GC content of the type genome is 55.81 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Semilida gen. nov.

Candidatus Semilida (NL. fem. n. *Semilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1407*. The type species for the genus is *Candidatus* Semilida cohorigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semilidaceae.

Description of *Candidatus* Semilidaceae fam. nov.

Candidatus Semilidaceae (NL. fem. n. *Semilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1407*. The type genus for the taxon is *Candidatus* Semilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semilidales.

Description of *Candidatus* Semilidales ord. nov.

Candidatus Semilidales (NL. fem. n. *Semilidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1407*. The type genus for the taxon is *Candidatus* Semilida .

According to the GTDB R06-RS202, this order belongs to the class *Lentisphaeria*.

Description of *Candidatus* Semilida ruricedo sp. nov.

Candidatus Semilida ruricedo (NL. fem. n. *ruricedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1407 sp002305655*. The type genome for the species is the GenBank assembly GCA_012515425.1. The GC content of the type genome is 52.38 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Semilosa letifitudo sp. nov.

Candidatus Semilosa letifitudo (NL. fem. n. *letifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSNQ01 sp011047215*. The type genome for the species is the GenBank assembly GCA_011047215.1. The GC content of the type genome is 24.22 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Semilosa gen. nov.

Candidatus Semilosa (NL. fem. n. *Semilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSNQ01*. The type species for the genus is *Candidatus* Semilosa letifitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRYD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Luculidaceae.

Description of *Candidatus* Semilula monodimonas sp. nov.

Candidatus Semilula monodimonas (NL. fem. n. *monodimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *M0603 sp006226755*. The type genome for the species is the GenBank assembly GCA_006226755.1. The GC content of the type genome is 39.29 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Semilula gen. nov.

Candidatus Semilula (NL. fem. n. *Semilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *M0603*. The type species for the genus is *Candidatus* Semilula monodimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semimana adtolilega sp. nov.

Candidatus Semimana adtolilega (NL. fem. n. *adtolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA5619 sp002424545*. The type genome for the species is the GenBank assembly GCA_002424545.1. The GC content of the type genome is 58.82 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Semimana gen. nov.

Candidatus Semimana (NL. fem. n. *Semimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5619*. The type species for the genus is *Candidatus* Semimana adtolilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5619*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semimanaceae.

Description of *Candidatus* Semimanaceae fam. nov.

Candidatus Semimanaceae (NL. fem. n. *Semimanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5619.* The type genus for the taxon is *Candidatus* Semimana .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Semimana biveritio sp. nov.

Candidatus Semimana biveritio (NL. fem. n. *biveritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5619 sp903928915*. The type genome for the species is the GenBank assembly GCA_903905465.1. The GC content of the type genome is 64.64 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Semimana cacopisca sp. nov.

Candidatus Semimana cacopisca (NL. fem. n. *cacopisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5619 sp001830835*. The type genome for the species is the GenBank assembly GCA_001797945.1. The GC content of the type genome is 56.62 %

and the genome length is 2.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Semimana cerofatio sp. nov.

Candidatus Semimana cerofatio (NL. fem. n. *cerofatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5619 sp001829875*. The type genome for the species is the GenBank assembly GCA_003489585.1. The GC content of the type genome is 55.98 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Semimana homolastra sp. nov.

Candidatus Semimana homolastra (NL. fem. n. *homolastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5619 sp013824905*. The type genome for the species is the GenBank assembly GCA_013824905.1. The GC content of the type genome is 56.15 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Semimana illapitoga sp. nov.

Candidatus Semimana illapitoga (NL. fem. n. *illapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5619 sp002423465*. The type genome for the species is the GenBank assembly GCA_002423465.1. The GC content of the type genome is 56.34 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Semimana meridetta sp. nov.

Candidatus Semimana meridetta (NL. fem. n. *meridetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5619 sp001873745*. The type genome for the species is the GenBank assembly GCA_002788055.1. The GC content of the type genome is 57.68 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Semimana rorulatio sp. nov.

Candidatus Semimana rorulatio (NL. fem. n. *rorulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5619 sp903903205*. The type genome for the species is the GenBank assembly GCA_903903205.1. The GC content of the type genome is 56.99 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Semimana saxopimonas sp. nov.

Candidatus Semimana saxopimonas (NL. fem. n. *saxopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5619 sp003141195*. The type genome for the species is the GenBank assembly GCA_003141195.1. The GC content of the type genome is 57.46 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Semimaria apporilenta sp. nov.

Candidatus Semimaria apporilenta (NL. fem. n. *apporilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SGZJ01 sp902515565*. The type genome for the species is the GenBank assembly GCA_902515565.1. The GC content of the type genome is 29.69 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Semimaria gen. nov.

Candidatus Semimaria (NL. fem. n. *Semimaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SGZJ01*. The type species for the genus is *Candidatus* Semimaria apporilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semimaria ficeditio sp. nov.

Candidatus Semimaria ficeditio (NL. fem. n. *ficeditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SGZJ01 sp004213995*. The type genome for the species is the GenBank assembly GCA_004213995.1. The GC content of the type genome is 29.24 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Semimella bonitimonas sp. nov.

Candidatus Semimella bonitimonas (NL. fem. n. *bonitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SPDA01 sp004525155*. The type genome for the species is the GenBank assembly GCA_004525155.1. The GC content of the type genome is 52.48 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Semimella gen. nov.

Candidatus Semimella (NL. fem. n. *Semimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SPDA01*. The type species for the genus is *Candidatus* Semimella bonitimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SPDA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semimellaceae.

Description of *Candidatus* Semimellaceae fam. nov.

Candidatus Semimellaceae (NL. fem. n. *Semimellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SPDA01*. The type genus for the taxon is *Candidatus* Semimella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SPDA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semimellales.

Description of *Candidatus* Semimellales ord. nov.

Candidatus Semimellales (NL. fem. n. *Semimellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SPDA01*. The type genus for the taxon is *Candidatus* Semimella .

According to the GTDB R06-RS202, this order belongs to the class *Spirochaetia*.

Description of *Candidatus* Semimia bimetitas sp. nov.

Candidatus Semimia bimetitas (NL. fem. n. *bimetitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G78 sp902514105*. The type genome for the species is the GenBank assembly GCA_902514105.1. The GC content of the type genome is 33.61 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Semimia gen. nov.

Candidatus Semimia (NL. fem. n. *Semimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G78*. The type species for the genus is *Candidatus* Semimia bimetitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Semimia inambatica sp. nov.

Candidatus Semimia inambatica (NL. fem. n. *inambatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G78 sp902514455*. The type genome for the species is the GenBank assembly GCA_902514455.1. The GC content of the type genome is 33.93 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Semimia manubatica sp. nov.

Candidatus Semimia manubatica (NL. fem. n. *manubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G78 sp902509965*. The type genome for the species is the GenBank assembly GCA_902509965.1. The GC content of the type genome is 33.79 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Semimia notabigena sp. nov.

Candidatus Semimia notabigena (NL. fem. n. *notabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G78 sp003331645*. The type genome for the species is the GenBank assembly GCA_003331645.1. The GC content of the type genome is 32.95 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Semimia socagitas sp. nov.

Candidatus Semimia socagitas (NL. fem. n. *socagitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G78 sp902558645*. The type genome for the species is the GenBank assembly GCA_902557645.1. The GC content of the type genome is 32.86 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Semimida cacopimonas sp. nov.

Candidatus Semimida cacopimonas (NL. fem. n. *cacopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12028 sp001002285*. The type genome for the species is the GenBank assembly GCA_003525295.1. The GC content of the type genome is 45.45 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Semimida gen. nov.

Candidatus Semimida (NL. fem. n. *Semimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12028*. The type species for the genus is *Candidatus* Semimida cacopimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA12028. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semimidaceae.

Description of *Candidatus* Semimidaceae fam. nov.

Candidatus Semimidaceae (NL. fem. n. *Semimidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12028.* The type genus for the taxon is *Candidatus* Semimida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Semimosa aphorilega sp. nov.

Candidatus Semimosa aphorilega (NL. fem. n. *aphorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSWW01 sp011370045*. The type genome for the species is the GenBank assembly GCA_011370045.1. The GC content of the type genome is 61.26 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Semimosa gen. nov.

Candidatus Semimosa (NL. fem. n. *Semimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSWW01*. The type species for the genus is *Candidatus* Semimosa aphorilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSWW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semimosaceae.

Description of *Candidatus* Semimosaceae fam. nov.

Candidatus Semimosaceae (NL. fem. n. *Semimosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSWW01.* The type genus for the taxon is *Candidatus* Semimosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSWW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semimosales.

Description of *Candidatus* Semimosales ord. nov.

Candidatus Semimosales (NL. fem. n. *Semimosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSWW01*. The type genus for the taxon is *Candidatus* Semimosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *DSWW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Semimosae.

Description of *Candidatus* Semimosae class. nov.

Candidatus Semimosae (NL. fem. n. *c__Semimosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSWW01*. The type genus for the taxon is *Candidatus* Semimosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *DSWW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Semimosota.

Description of *Candidatus* Semimosota phyl. nov.

Candidatus Semimosota (NL. fem. n. *Semimosota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSWW01*. The type genus for the taxon is *Candidatus* Semimosa .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Semimula cunabentia sp. nov.

Candidatus Semimula cunabentia (NL. fem. n. *cunabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABTG01 sp011389995*. The type genome for the species is the

GenBank assembly GCA_011389995.1. The GC content of the type genome is 67.38 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Semimula gen. nov.

Candidatus Semimula (NL. fem. n. *Semimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABTG01*. The type species for the genus is *Candidatus* Semimula cunabentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAABTG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semimulaceae.

Description of *Candidatus* Semimulaceae fam. nov.

Candidatus Semimulaceae (NL. fem. n. *Semimulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAABTG01.* The type genus for the taxon is *Candidatus* Semimula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAABTG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semimulales.

Description of *Candidatus* Semimulales ord. nov.

Candidatus Semimulales (NL. fem. n. *Semimulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAABTG01.* The type genus for the taxon is *Candidatus* Semimula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Semipana decucilenta sp. nov.

Candidatus Semipana decucilenta (NL. fem. n. *decucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CA54 sp007747995*. The type genome for the species is the GenBank

assembly RS_GCF_007747995.1. The GC content of the type genome is 55.32 % and the genome length is 7.77 Mbp.

Description of *Candidatus* Semipana gen. nov.

Candidatus Semipana (NL. fem. n. *Semipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CA54*. The type species for the genus is *Candidatus* Semipana decucilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CA54*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semipanaceae.

Description of *Candidatus* Semipanaceae fam. nov.

Candidatus Semipanaceae (NL. fem. n. *Semipanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CA54.* The type genus for the taxon is *Candidatus* Semipana .

According to GTDB R06-RS202, this family belongs to the order *Planctomycetales*.

Description of *Candidatus* Semipana hecatitica sp. nov.

Candidatus Semipana hecatitica (NL. fem. n. *hecatitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CA54 sp007860075*. The type genome for the species is the GenBank assembly RS_GCF_007860075.1. The GC content of the type genome is 55.22 % and the genome length is 7.57 Mbp.

Description of *Candidatus* Semiparia bicodessa sp. nov.

Candidatus Semiparia bicodessa (NL. fem. n. *bicodessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS973 sp900547295*. The type genome for the species is the GenBank assembly GCA_900547295.1. The GC content of the type genome is 43.18 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Semiparia gen. nov.

Candidatus Semiparia (NL. fem. n. *Semiparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS973*. The type species for the genus is *Candidatus* Semiparia bicodessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semipella denixastra sp. nov.

Candidatus Semipella denixastra (NL. fem. n. *denixastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HCM1 sp002995645*. The type genome for the species is the GenBank assembly GCA_002995645.1. The GC content of the type genome is 35.15 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Semipella gen. nov.

Candidatus Semipella (NL. fem. n. *Semipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HCM1*. The type species for the genus is *Candidatus* Semipella denixastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HCM1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semipellaceae.

Description of *Candidatus* Semipellaceae fam. nov.

Candidatus Semipellaceae (NL. fem. n. *Semipellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HCM1*. The type genus for the taxon is *Candidatus* Semipella .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYD2-FULL-50-16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nicomellales.

Description of *Candidatus* Semipia cosidimonia sp. nov.

Candidatus Semipia cosidimonia (NL. fem. n. *cosidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11051 sp003542955*. The type genome for the species is the GenBank assembly GCA_003542955.1. The GC content of the type genome is 65.66 % and the genome length is 6.64 Mbp.

Description of *Candidatus* Semipia gen. nov.

Candidatus Semipia (NL. fem. n. *Semipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11051*. The type species for the genus is *Candidatus* Semipia cosidimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11051*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semipiaceae.

Description of *Candidatus* Semipiaceae fam. nov.

Candidatus Semipiaceae (NL. fem. n. *Semipiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11051.* The type genus for the taxon is *Candidatus* Semipia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5377*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Latibosales.

Description of *Candidatus* Semipida fusifitrix sp. nov.

Candidatus Semipida fusifitrix (NL. fem. n. *fusifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *01-FULL-45-10b sp001804205*. The type genome for the species is the GenBank assembly GCA_001804205.1. The GC content of the type genome is 45.02 % and the genome length is 1.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2

conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Semipida gen. nov.

Candidatus Semipida (NL. fem. n. *Semipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *01-FULL-45-10b*. The type species for the genus is *Candidatus* Semipida fusifitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *01-FULL-45-10b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semipidaceae.

Description of *Candidatus* Semipidaceae fam. nov.

Candidatus Semipidaceae (NL. fem. n. *Semipidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *01-FULL-45-10b.* The type genus for the taxon is *Candidatus* Semipida .

According to GTDB R06-RS202, this family belongs to the order *Omnitrophales*.

Description of *Candidatus* Semiposa adpenatica sp. nov.

Candidatus Semiposa adpenatica (NL. fem. n. *adpenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSXP01 sp011367825*. The type genome for the species is the GenBank assembly GCA_011367825.1. The GC content of the type genome is 59.01 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Semiposa gen. nov.

Candidatus Semiposa (NL. fem. n. *Semiposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSXP01*. The type species for the genus is *Candidatus* Semiposa adpenatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSXP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Semiposaceae.

Description of *Candidatus* Semiposaceae fam. nov.

Candidatus Semiposaceae (NL. fem. n. *Semiposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSXP01*. The type genus for the taxon is *Candidatus* Semiposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depupellales.

Description of *Candidatus* Semipula depocastra sp. nov.

Candidatus Semipula depocastra (NL. fem. n. *depocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-43-11-A sp001789515*. The type genome for the species is the GenBank assembly GCA_001789515.1. The GC content of the type genome is 42.72 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Semipula gen. nov.

Candidatus Semipula (NL. fem. n. *Semipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-43-11-A*. The type species for the genus is *Candidatus* Semipula depocastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HO2-37-13b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semifidaceae.

Description of *Candidatus* Semivana catililega sp. nov.

Candidatus Semivana catililega (NL. fem. n. *catililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp002731695*. The type genome for the species is the GenBank assembly GCA_002731695.1. The GC content of the type genome is 43.19 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Semivana gen. nov.

Candidatus Semivana (NL. fem. n. *Semivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED48*. The type species for the genus is *Candidatus* Semivana catililega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semivana cotenatio sp. nov.

Candidatus Semivana cotenatio (NL. fem. n. *cotenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp002692165*. The type genome for the species is the GenBank assembly GCA_002692165.1. The GC content of the type genome is 44.91 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Semivana denixitura sp. nov.

Candidatus Semivana denixitura (NL. fem. n. *denixitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp002720735*. The type genome for the species is the GenBank assembly GCA_002720735.1. The GC content of the type genome is 43.02 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Semivana gerunibula sp. nov.

Candidatus Semivana gerunibula (NL. fem. n. *gerunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp002701765*. The type genome for the species is the GenBank assembly RS_GCF_902519285.1. The GC content of the type genome is 44.29

% and the genome length is 2.2 Mbp.

Description of *Candidatus* Semivana locupitrix sp. nov.

Candidatus Semivana locupitrix (NL. fem. n. *locupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp003509025*. The type genome for the species is the GenBank assembly GCA_003509025.1. The GC content of the type genome is 49.78 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Semivana obfiritas sp. nov.

Candidatus Semivana obfiritas (NL. fem. n. *obfiritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp002591625*. The type genome for the species is the GenBank assembly GCA_002591625.1. The GC content of the type genome is 44.58 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Semivana obvalibula sp. nov.

Candidatus Semivana obvalibula (NL. fem. n. *obvalibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp902557735*. The type genome for the species is the GenBank assembly RS_GCF_902557735.1. The GC content of the type genome is 44.79 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Semivana podagatica sp. nov.

Candidatus Semivana podagatica (NL. fem. n. *podagatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp002691825*. The type genome for the species is the GenBank assembly GCA_002691825.1. The GC content of the type genome is 42.95 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Semivana sicunisca sp. nov.

Candidatus Semivana sicunisca (NL. fem. n. *sicunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp002338445*. The type genome for the species is the GenBank assembly GCA_002338445.1. The GC content of the type genome is 42.66 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Semivana turililega sp. nov.

Candidatus Semivana turililega (NL. fem. n. *turililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp002689135*. The type genome for the species is the GenBank assembly GCA_002689135.1. The GC content of the type genome is 41.41 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Semivana vecorimonas sp. nov.

Candidatus Semivana vecorimonas (NL. fem. n. *vecorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp902562425*. The type genome for the species is the GenBank assembly RS_GCF_902562425.1. The GC content of the type genome is 42.55 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Semivana venabugo sp. nov.

Candidatus Semivana venabugo (NL. fem. n. *venabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED48 sp002339165*. The type genome for the species is the GenBank assembly GCA_002339165.1. The GC content of the type genome is 52.49 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Semivaria adtenago sp. nov.

Candidatus Semivaria adtenago (NL. fem. n. *adtenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6857 sp900768075*. The type genome for the species is the GenBank assembly RS_GCF_900768075.1. The GC content of the type genome is 41.4 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Semivaria gen. nov.

Candidatus Semivaria (NL. fem. n. *Semivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6857*. The type species for the genus is *Candidatus* Semivaria adtenago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semivaria ascenatio sp. nov.

Candidatus Semivaria ascenatio (NL. fem. n. *ascenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6857 sp002451715*. The type genome for the species is the GenBank assembly GCA_002451715.1. The GC content of the type genome is 43.62 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Semivaria carucisca sp. nov.

Candidatus Semivaria carucisca (NL. fem. n. *carucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6857 sp900555805*. The type genome for the species is the GenBank assembly GCA_900555805.1. The GC content of the type genome is 49.02 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Semivaria deculentia sp. nov.

Candidatus Semivaria deculentia (NL. fem. n. *deculentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6857 sp002438505*. The type genome for the species is the

GenBank assembly GCA_002404495.1. The GC content of the type genome is 46.21 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Semivaria ensicitica sp. nov.

Candidatus Semivaria ensicitica (NL. fem. n. *ensicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6857 sp900767015*. The type genome for the species is the GenBank assembly RS_GCF_900767015.1. The GC content of the type genome is 47.66 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Semivella bovicibra sp. nov.

Candidatus Semivella bovicibra (NL. fem. n. *bovicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3246-1 sp004353825*. The type genome for the species is the GenBank assembly RS_GCF_004353825.1. The GC content of the type genome is 71.38 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Semivella gen. nov.

Candidatus Semivella (NL. fem. n. *Semivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3246-1*. The type species for the genus is *Candidatus* Semivella bovicibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semivella catalilenta sp. nov.

Candidatus Semivella catalilenta (NL. fem. n. *catalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3246-1 sp902703175*. The type genome for the species is the GenBank assembly RS_GCF_902703175.1. The GC content of the type genome is 70.62 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Semivella defanago sp. nov.

Candidatus Semivella defanago (NL. fem. n. *defanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3246-1 sp009708215*. The type genome for the species is the GenBank assembly RS_GCF_009708215.1. The GC content of the type genome is 71.04 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Semivia bimetitia sp. nov.

Candidatus Semivia bimetitia (NL. fem. n. *bimetitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC2-FULL-35-21 sp001804705*. The type genome for the species is the GenBank assembly GCA_001802975.1. The GC content of the type genome is 34.9 % and the genome length is 4.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point A".

Description of *Candidatus* Semivia gen. nov.

Candidatus Semivia (NL. fem. n. *Semivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYC2-FULL-35-21*. The type species for the genus is *Candidatus* Semivia bimetitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Semivia infiratio sp. nov.

Candidatus Semivia infiratio (NL. fem. n. *infiratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC2-FULL-35-21 sp004322215*. The type genome for the species is the GenBank assembly GCA_004322215.1. The GC content of the type genome is 34.6 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Semivosa sacomimonas sp. nov.

Candidatus Semivosa sacomimonas (NL. fem. n. *sacomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYDM01 sp008638125*. The type genome for the species is the GenBank assembly GCA_008638175.1. The GC content of the type genome is 30.0 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Semivosa gen. nov.

Candidatus Semivosa (NL. fem. n. *Semivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYDM01*. The type species for the genus is *Candidatus* Semivosa sacomimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semivosa semapimonia sp. nov.

Candidatus Semivosa semapimonia (NL. fem. n. *semapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYDM01 sp005801485*. The type genome for the species is the GenBank assembly GCA_005801485.1. The GC content of the type genome is 28.68 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Semivula bicinitrix sp. nov.

Candidatus Semivula bicinitrix (NL. fem. n. *bicinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS856 sp900546265*. The type genome for the species is the GenBank assembly RS_GCF_900751855.1. The GC content of the type genome is 59.17 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Semivula gen. nov.

Candidatus Semivula (NL. fem. n. *Semivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS856*. The type species for the genus is *Candidatus* Semivula bicinitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semivula extunago sp. nov.

Candidatus Semivula extunago (NL. fem. n. *extunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS856 sp900760305*. The type genome for the species is the GenBank assembly RS_GCF_900760305.1. The GC content of the type genome is 60.91 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Semodaria lanifugo sp. nov.

Candidatus Semodaria lanifugo (NL. fem. n. *lanifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFXA01 sp013361955*. The type genome for the species is the GenBank assembly GCA_013361955.1. The GC content of the type genome is 72.53 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Semodaria gen. nov.

Candidatus Semodaria (NL. fem. n. *Semodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFXA01*. The type species for the genus is *Candidatus* Semodaria lanifugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semodella penicisca sp. nov.

Candidatus Semodella penicisca (NL. fem. n. *penicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CG2-30-36-38 sp001873465*. The type genome for the species is the GenBank assembly GCA_009992825.1. The GC content of the type genome is 36.26 % and the genome length is 0.41 Mbp.

Description of *Candidatus* Semodella gen. nov.

Candidatus Semodella (NL. fem. n. *Semodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-36-38*. The type species for the genus is *Candidatus* Semodella penicisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6264*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotulaceae.

Description of *Candidatus* Semodia arnacitudo sp. nov.

Candidatus Semodia arnacitudo (NL. fem. n. *arnacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABPW01 sp011391785*. The type genome for the species is the GenBank assembly GCA_011391785.1. The GC content of the type genome is 58.93 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Semodia gen. nov.

Candidatus Semodia (NL. fem. n. *Semodia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABPW01*. The type species for the genus is *Candidatus* Semodia arnacitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITUY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dupunosaceae.

Description of *Candidatus* Semodia venefitia sp. nov.

Candidatus Semodia venefitia (NL. fem. n. *venefitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABPW01 sp903934155*. The type genome for the species is the GenBank assembly GCA_903934155.1. The GC content of the type genome is 57.16 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Semodia voragitoga sp. nov.

Candidatus Semodia voragitoga (NL. fem. n. *voragitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABPW01 sp903958395*. The type genome for the species is the GenBank assembly GCA_903934585.1. The GC content of the type genome is 57.15 % and the genome length is 4.98 Mbp.

Description of *Candidatus* Semodida diminicula sp. nov.

Candidatus Semodida diminicula (NL. fem. n. *diminicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGH01 sp013152475*. The type genome for the species is the GenBank assembly GCA_013152475.1. The GC content of the type genome is 61.41 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Semodida gen. nov.

Candidatus Semodida (NL. fem. n. *Semodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGH01*. The type species for the genus is *Candidatus* Semodida diminicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADGH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semodidaceae.

Description of *Candidatus* Semodidaceae fam. nov.

Candidatus Semodidaceae (NL. fem. n. *Semodidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADGH01*. The type genus for the taxon is *Candidatus* Semodida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAADGH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semodidales.

Description of *Candidatus* Semodidales ord. nov.

Candidatus Semodidales (NL. fem. n. *Semodidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADGH01.* The type genus for the taxon is *Candidatus* Semodida .

According to the GTDB R06-RS202, this order belongs to the class *Brocadiae*.

Description of *Candidatus* Semodosa tegimigena sp. nov.

Candidatus Semodosa tegimigena (NL. fem. n. *tegimigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9294 sp003545155*. The type genome for the species is the GenBank assembly GCA_003545155.1. The GC content of the type genome is 55.34 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Semodosa gen. nov.

Candidatus Semodosa (NL. fem. n. *Semodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9294*. The type species for the genus is *Candidatus* Semodosa tegimigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9294*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semodosaceae.

Description of *Candidatus* Semodosaceae fam. nov.

Candidatus Semodosaceae (NL. fem. n. *Semodosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9294.* The type genus for the taxon is *Candidatus* Semodosa .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA7950. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Feficosales.

Description of *Candidatus* Semodula benifousia sp. nov.

Candidatus Semodula benifousia (NL. fem. n. *benifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8468 sp002791075*. The type genome for the species is the GenBank assembly GCA_001871865.1. The GC content of the type genome is 40.7 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Semodula gen. nov.

Candidatus Semodula (NL. fem. n. *Semodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8468*. The type species for the genus is *Candidatus* Semodula benifousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8468*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semodulaceae.

Description of *Candidatus* Semodulaceae fam. nov.

Candidatus Semodulaceae (NL. fem. n. *Semodulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8468.* The type genus for the taxon is *Candidatus* Semodula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8468*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semodulales.

Description of *Candidatus* Semodulales ord. nov.

Candidatus Semodulales (NL. fem. n. *Semodulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8468.* The type genus for the taxon is *Candidatus* Semodula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8468*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Semodulae.

Description of *Candidatus* Semodulae class. nov.

Candidatus Semodulae (NL. fem. n. *c__Semodulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8468.* The type genus for the taxon is *Candidatus* Semodula .

According to GTDB R06-RS202, this class belongs to the phylum *Ratteibacteria*.

Description of *Candidatus* Semunana omnipitrix sp. nov.

Candidatus Semunana omnipitrix (NL. fem. n. *omnipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZDU01 sp012512665*. The type genome for the species is the GenBank assembly GCA_012512665.1. The GC content of the type genome is 44.76 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Semunana gen. nov.

Candidatus Semunana (NL. fem. n. *Semunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZDU01*. The type species for the genus is *Candidatus* Semunana omnipitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZDU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semunanaceae.

Description of *Candidatus* Semunanaceae fam. nov.

Candidatus Semunanaceae (NL. fem. n. *Semunanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *JAAZDU01*. The type genus for the taxon is *Candidatus* Semunana .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depelidales.

Description of *Candidatus* Semunaria accapimonia sp. nov.

Candidatus Semunaria accapimonia (NL. fem. n. *accapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-226 sp003229345*. The type genome for the species is the GenBank assembly GCA_003229345.1. The GC content of the type genome is 50.35 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Semunaria gen. nov.

Candidatus Semunaria (NL. fem. n. *Semunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-226*. The type species for the genus is *Candidatus* Semunaria accapimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semunaria citocitudo sp. nov.

Candidatus Semunaria citocitudo (NL. fem. n. *citocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-226 sp004357365*. The type genome for the species is the GenBank assembly GCA_004357485.1. The GC content of the type genome is 54.56 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Semunella lenimousia sp. nov.

Candidatus Semunella lenimousia (NL. fem. n. *lenimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2242 sp002347855*. The type genome for the species is the

GenBank assembly GCA_002347855.1. The GC content of the type genome is 44.43 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Semunella gen. nov.

Candidatus Semunella (NL. fem. n. *Semunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2242*. The type species for the genus is *Candidatus* Semunella lenimousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semunellaceae.

Description of *Candidatus* Semunellaceae fam. nov.

Candidatus Semunellaceae (NL. fem. n. *Semunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2242.* The type genus for the taxon is *Candidatus* Semunella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semunellales.

Description of *Candidatus* Semunellales ord. nov.

Candidatus Semunellales (NL. fem. n. *Semunellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2242.* The type genus for the taxon is *Candidatus* Semunella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Semunellae.

Description of *Candidatus* Semunellae class. nov.

Candidatus Semunellae (NL. fem. n. *c__Semunellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2242.* The type genus for the taxon is *Candidatus* Semunella .

According to GTDB R06-RS202, this class belongs to the phylum *Marinisomatota*.

Description of *Candidatus* Semunia bonitigena sp. nov.

Candidatus Semunia bonitigena (NL. fem. n. *bonitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed11-175R1 sp003563915*. The type genome for the species is the GenBank assembly GCA_003563915.1. The GC content of the type genome is 69.95 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Semunia gen. nov.

Candidatus Semunia (NL. fem. n. *Semunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSed11-175R1*. The type species for the genus is *Candidatus* Semunia bonitigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semunia dirititia sp. nov.

Candidatus Semunia dirititia (NL. fem. n. *dirititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed11-175R1 sp007136095*. The type genome for the species is the GenBank assembly GCA_003561955.1. The GC content of the type genome is 69.66 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Semunia hirunetta sp. nov.

Candidatus Semunia hirunetta (NL. fem. n. *hirunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed11-175R1 sp007120565*. The type genome for the species is the GenBank assembly GCA_007135585.1. The GC content of the type genome is 68.75 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Semunia immigax sp. nov.

Candidatus Semunia immigax (NL. fem. n. *immigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed11-175R1 sp007120465*. The type genome for the species is the GenBank assembly GCA_007120465.1. The GC content of the type genome is 72.52 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Semunida adrecitudo sp. nov.

Candidatus Semunida adrecitudo (NL. fem. n. *adrecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp903957405*. The type genome for the species is the GenBank assembly GCA_903957405.1. The GC content of the type genome is 50.88 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Semunida gen. nov.

Candidatus Semunida (NL. fem. n. *Semunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXYR01*. The type species for the genus is *Candidatus* Semunida adrecitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semunida apsenessa sp. nov.

Candidatus Semunida apsenessa (NL. fem. n. *apsenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp903834825*. The type genome for the species is the GenBank assembly GCA_903834825.1. The GC content of the type genome is 44.45 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Semunida cinefax sp. nov.

Candidatus Semunida cinefax (NL. fem. n. *cinefax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp009919185*. The type genome for the species is the GenBank assembly GCA_009919185.1. The GC content of the type genome is 38.5 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Semunida defalitia sp. nov.

Candidatus Semunida defalitia (NL. fem. n. *defalitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp903826405*. The type genome for the species is the GenBank assembly GCA_903920815.1. The GC content of the type genome is 47.71 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Semunida demogibula sp. nov.

Candidatus Semunida demogibula (NL. fem. n. *demogibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp009922495*. The type genome for the species is the GenBank assembly GCA_009922495.1. The GC content of the type genome is 45.35 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Semunida denigifica sp. nov.

Candidatus Semunida denigifica (NL. fem. n. *denigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp005788265*. The type genome for the species is the GenBank assembly GCA_005788265.1. The GC content of the type genome is 41.05 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Semunida homilibra sp. nov.

Candidatus Semunida homilibra (NL. fem. n. *homilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SXYR01 sp903894575*. The type genome for the species is the GenBank assembly GCA_903894575.1. The GC content of the type genome is 44.0 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Semunida inrepitoga sp. nov.

Candidatus Semunida inrepitoga (NL. fem. n. *inrepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp004294195*. The type genome for the species is the GenBank assembly GCA_004294195.1. The GC content of the type genome is 46.71 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Semunida obvaliforma sp. nov.

Candidatus Semunida obvaliforma (NL. fem. n. *obvaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp010027295*. The type genome for the species is the GenBank assembly GCA_010027295.1. The GC content of the type genome is 60.81 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Semunida proscitoga sp. nov.

Candidatus Semunida proscitoga (NL. fem. n. *proscitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp903959965*. The type genome for the species is the GenBank assembly GCA_903959965.1. The GC content of the type genome is 52.43 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Semunida reforitia sp. nov.

Candidatus Semunida reforitia (NL. fem. n. *reforitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp903920455*. The type genome for the species is the GenBank assembly GCA_903948435.1. The GC content of the type genome is 40.39 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Semunida tibicago sp. nov.

Candidatus Semunida tibicago (NL. fem. n. *tibicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXYR01 sp903951405*. The type genome for the species is the GenBank assembly GCA_903831275.1. The GC content of the type genome is 37.3 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Semunosa rubecousia sp. nov.

Candidatus Semunosa rubecousia (NL. fem. n. *rubecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002779875 sp002792165*. The type genome for the species is the GenBank assembly GCA_002792165.1. The GC content of the type genome is 40.41 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Semunosa gen. nov.

Candidatus Semunosa (NL. fem. n. *Semunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002779875*. The type species for the genus is *Candidatus* Semunosa rubecousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Semunula idcirugo sp. nov.

Candidatus Semunula idcirugo (NL. fem. n. *idcirugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6262 sp002441095*. The type genome for the species is the GenBank assembly GCA_002441095.1. The GC content of the type genome is 45.12 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Semunula gen. nov.

Candidatus Semunula (NL. fem. n. *Semunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6262*. The type species for the genus is *Candidatus* Semunula idcirugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6262*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semunulaceae.

Description of *Candidatus* Semunulaceae fam. nov.

Candidatus Semunulaceae (NL. fem. n. *Semunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6262.* The type genus for the taxon is *Candidatus* Semunula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6262*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semunulales.

Description of *Candidatus* Semunulales ord. nov.

Candidatus Semunulales (NL. fem. n. *Semunulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6262.* The type genus for the taxon is *Candidatus* Semunula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6262*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Semunulae.

Description of *Candidatus* Semunulae class. nov.

Candidatus Semunulae (NL. fem. n. *c__Semunulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6262.* The type genus for the taxon is *Candidatus* Semunula .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBA6262*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Semunulota.

Description of *Candidatus* Semunulota phyl. nov.

Candidatus Semunulota (NL. fem. n. *Semunulota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6262.* The type genus for the taxon is *Candidatus* Semunula .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Senacana nefarisca sp. nov.

Candidatus Senacana nefarisca (NL. fem. n. *nefarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1124 sp900548725*. The type genome for the species is the GenBank assembly RS_GCF_900771845.1. The GC content of the type genome is 23.79 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Senacana gen. nov.

Candidatus Senacana (NL. fem. n. *Senacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1124*. The type species for the genus is *Candidatus* Senacana nefarisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Senacaria coticentia sp. nov.

Candidatus Senacaria coticentia (NL. fem. n. *coticentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACCCN01 sp902544525*. The type genome for the species is the GenBank assembly GCA_902603935.1. The GC content of the type genome is 32.32 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Senacaria gen. nov.

Candidatus Senacaria (NL. fem. n. *Senacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACCCN01*. The type species for the genus is *Candidatus* Senacaria coticentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AG-422-B15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirifosaceae.

Description of *Candidatus* Senacella annucigena sp. nov.

Candidatus Senacella annucigena (NL. fem. n. *annucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PIVX01 sp003353785*. The type genome for the species is the GenBank assembly GCA_003353785.1. The GC content of the type genome is 32.03 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Senacella gen. nov.

Candidatus Senacella (NL. fem. n. *Senacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PIVX01*. The type species for the genus is *Candidatus* Senacella annucigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PIVX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senacellaceae.

Description of *Candidatus* Senacellaceae fam. nov.

Candidatus Senacellaceae (NL. fem. n. *Senacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PIVX01*. The type genus for the taxon is *Candidatus* Senacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *PIVX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Senacellales.

Description of *Candidatus* Senacellales ord. nov.

Candidatus Senacellales (NL. fem. n. *Senacellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PIVX01*. The type genus for the taxon is *Candidatus* Senacella .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Senacella ignomivita sp. nov.

Candidatus Senacella ignomivita (NL. fem. n. *ignomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PIVX01 sp013215905*. The type genome for the species is the GenBank assembly GCA_013215905.1. The GC content of the type genome is 30.56 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Senacida corociforma sp. nov.

Candidatus Senacida corociforma (NL. fem. n. *corociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1820 sp003150615*. The type genome for the species is the GenBank assembly GCA_003150615.1. The GC content of the type genome is 47.93 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Senacida gen. nov.

Candidatus Senacida (NL. fem. n. *Senacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1820*. The type species for the genus is *Candidatus* Senacida corociforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1820*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senacidaceae.

Description of *Candidatus* Senacidaceae fam. nov.

Candidatus Senacidaceae (NL. fem. n. *Senacidaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1820.* The type genus for the taxon is *Candidatus* Senacida .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Senacida subodatica sp. nov.

Candidatus Senacida subodatica (NL. fem. n. *subodatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1820 sp002314265*. The type genome for the species is the GenBank assembly GCA_002314265.1. The GC content of the type genome is 56.64 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Senacosa avuncago sp. nov.

Candidatus Senacosa avuncago (NL. fem. n. *avuncago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-584 sp012719815*. The type genome for the species is the GenBank assembly GCA_012719815.1. The GC content of the type genome is 57.36 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Senacosa gen. nov.

Candidatus Senacosa (NL. fem. n. *Senacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-584*. The type species for the genus is *Candidatus* Senacosa avuncago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-584*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senacosaceae.

Description of *Candidatus* Senacosaceae fam. nov.

Candidatus Senacosaceae (NL. fem. n. *Senacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-584.* The type genus for the taxon is *Candidatus* Senacosa .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Senacosa tabititudo sp. nov.

Candidatus Senacosa tabititudo (NL. fem. n. *tabititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-584 sp003249555*. The type genome for the species is the GenBank assembly GCA_003249555.1. The GC content of the type genome is 47.56 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Senegalimassilia adsucago sp. nov.

Candidatus Senegalimassilia adsucago (NL. fem. n. *adsucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Senegalimassilia sp002431805*. The type genome for the species is the GenBank assembly GCA_002431805.1. The GC content of the type genome is 59.28 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Senegalimassilia dupunibra sp. nov.

Candidatus Senegalimassilia dupunibra (NL. fem. n. *dupunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Senegalimassilia sp900550055*. The type genome for the species is the GenBank assembly GCA_900763835.1. The GC content of the type genome is 62.28 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Senipana nugacitoga sp. nov.

Candidatus Senipana nugacitoga (NL. fem. n. *nugacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBBX01 sp903885605*. The type genome for the species is the

GenBank assembly GCA_903890005.1. The GC content of the type genome is 68.88 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Senipana gen. nov.

Candidatus Senipana (NL. fem. n. *Senipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBBX01*. The type species for the genus is *Candidatus* Senipana nugacitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAJBBX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senipanaceae.

Description of *Candidatus* Senipanaceae fam. nov.

Candidatus Senipanaceae (NL. fem. n. *Senipanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAJBBX01*. The type genus for the taxon is *Candidatus* Senipana .

According to GTDB R06-RS202, this family belongs to the order *Chthonomonadales*.

Description of *Candidatus* Senipana volubitica sp. nov.

Candidatus Senipana volubitica (NL. fem. n. *volubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBBX01 sp903951425*. The type genome for the species is the GenBank assembly GCA_903952775.1. The GC content of the type genome is 68.25 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Seniparia infelentia sp. nov.

Candidatus Seniparia infelentia (NL. fem. n. *infelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR202-VII-2 sp003228115*. The type genome for the species is the GenBank assembly GCA_003228115.1. The GC content of the type genome is 58.47 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Seniparia gen. nov.

Candidatus Seniparia (NL. fem. n. *Seniparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SAR202-VII-2*. The type species for the genus is *Candidatus* Seniparia infelentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SAR202-VII-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senipariaceae.

Description of *Candidatus* Senipariaceae fam. nov.

Candidatus Senipariaceae (NL. fem. n. *Senipariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SAR202-VII-2.* The type genus for the taxon is *Candidatus* Seniparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202-VII-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Senipariales.

Description of *Candidatus* Senipariales ord. nov.

Candidatus Senipariales (NL. fem. n. *Senipariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SAR202-VII-2.* The type genus for the taxon is *Candidatus* Seniparia .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Senipella bicodifica sp. nov.

Candidatus Senipella bicodifica (NL. fem. n. *bicodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS915 sp900546795*. The type genome for the species is the GenBank assembly GCA_902406125.1. The GC content of the type genome is 48.28 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Senipella gen. nov.

Candidatus Senipella (NL. fem. n. *Senipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS915*. The type species for the genus is *Candidatus* Senipella bicodifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Senipia omnigugo sp. nov.

Candidatus Senipia omnigugo (NL. fem. n. *omnigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAEB01 sp013389075*. The type genome for the species is the GenBank assembly GCA_013389075.1. The GC content of the type genome is 69.13 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Senipia gen. nov.

Candidatus Senipia (NL. fem. n. *Senipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAEB01*. The type species for the genus is *Candidatus* Senipia omnigugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACAEB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Senipiaceae.

Description of *Candidatus* Senipiaceae fam. nov.

Candidatus Senipiaceae (NL. fem. n. *Senipiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACAEB01.* The type genus for the taxon is *Candidatus* Senipia .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACAEB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Senipiales.

Description of *Candidatus* Senipiales ord. nov.

Candidatus Senipiales (NL. fem. n. *Senipiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACAEB01.* The type genus for the taxon is *Candidatus* Senipia .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Senipida sifunatica sp. nov.

Candidatus Senipida sifunatica (NL. fem. n. *sifunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRTR01 sp903881565*. The type genome for the species is the GenBank assembly GCA_903918395.1. The GC content of the type genome is 50.37 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Senipida gen. nov.

Candidatus Senipida (NL. fem. n. *Senipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRTR01*. The type species for the genus is *Candidatus* Senipida sifunatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Seniposa cibicax sp. nov.

Candidatus Seniposa cibicax (NL. fem. n. *cibicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYEH01 sp009843005*. The type genome for the species is the GenBank assembly GCA_009845555.1. The GC content of the type genome is 62.83 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Seniposa gen. nov.

Candidatus Seniposa (NL. fem. n. *Seniposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VYEH01*. The type species for the genus is *Candidatus* Seniposa cibicax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6522*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudecariaceae.

Description of *Candidatus* Senipula abnepitas sp. nov.

Candidatus Senipula abnepitas (NL. fem. n. *abnepitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2912 sp902796775*. The type genome for the species is the GenBank assembly GCA_902796775.1. The GC content of the type genome is 48.03 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Senipula gen. nov.

Candidatus Senipula (NL. fem. n. *Senipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2912*. The type species for the genus is *Candidatus* Senipula abnepitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Senipula benevitudo sp. nov.

Candidatus Senipula benevitudo (NL. fem. n. *benevitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2912 sp900314845*. The type genome for the species is the GenBank assembly GCA_900313975.1. The GC content of the type genome is 50.3 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Senipula locelitoga sp. nov.

Candidatus Senipula locelitoga (NL. fem. n. *locelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2912 sp902787905*. The type genome for the species is the GenBank assembly GCA_902787905.1. The GC content of the type genome is 54.07 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Senipula senipatica sp. nov.

Candidatus Senipula senipatica (NL. fem. n. *senipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2912 sp900317095*. The type genome for the species is the GenBank assembly GCA_900314275.1. The GC content of the type genome is 52.26 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Senipula vitupibra sp. nov.

Candidatus Senipula vitupibra (NL. fem. n. *vitupibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2912 sp900314775*. The type genome for the species is the GenBank assembly GCA_002349455.1. The GC content of the type genome is 53.39 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Seonamhaeicola divuliforma sp. nov.

Candidatus Seonamhaeicola divuliforma (NL. fem. n. *divuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Seonamhaeicola sp001971785*. The type genome for the species is the GenBank assembly RS_GCF_001971785.1. The GC content of the type genome is 32.26 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Seonamhaeicola obtecivita sp. nov.

Candidatus Seonamhaeicola obtecivita (NL. fem. n. *obtecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Seonamhaeicola sp004358095*. The type genome for the species is the GenBank assembly RS_GCF_004358095.2. The GC content of the type genome is 33.52

% and the genome length is 3.54 Mbp.

Description of *Candidatus* Seposana ruricibula sp. nov.

Candidatus Seposana ruricibula (NL. fem. n. *ruricibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-36-13 sp001829155*. The type genome for the species is the GenBank assembly GCA_001829155.1. The GC content of the type genome is 36.14 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 2 / B; 5m depth; 0.1 filter".

Description of *Candidatus* Seposana gen. nov.

Candidatus Seposana (NL. fem. n. *Seposana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-36-13*. The type species for the genus is *Candidatus* Seposana ruricibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-36-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Seposanaceae.

Description of *Candidatus* Seposanaceae fam. nov.

Candidatus Seposanaceae (NL. fem. n. *Seposanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWB1-36-13.* The type genus for the taxon is *Candidatus* Seposana .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWB1-36-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Seposanales.

Description of *Candidatus* Seposanales ord. nov.

Candidatus Seposanales (NL. fem. n. *Seposanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWB1-36-13.* The type genus for the taxon is *Candidatus* Seposana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6919*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Navifidae.

Description of *Candidatus* Seposaria arrecitrix sp. nov.

Candidatus Seposaria arrecitrix (NL. fem. n. *arrecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902527995*. The type genome for the species is the GenBank assembly GCA_902527995.1. The GC content of the type genome is 33.97 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Seposaria gen. nov.

Candidatus Seposaria (NL. fem. n. *Seposaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-339-G14*. The type species for the genus is *Candidatus* Seposaria arrecitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AG-339-G14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Seposariaceae.

Description of *Candidatus* Seposariaceae fam. nov.

Candidatus Seposariaceae (NL. fem. n. *Seposariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AG-339-G14.* The type genus for the taxon is *Candidatus* Seposaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR86*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ludimulales.

Description of *Candidatus* Seposaria benifentia sp. nov.

Candidatus Seposaria benifentia (NL. fem. n. *benifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902613455*. The type genome for the species is the GenBank assembly GCA_902542105.1. The GC content of the type genome is 34.3 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Seposaria diminimonas sp. nov.

Candidatus Seposaria diminimonas (NL. fem. n. *diminimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902635045*. The type genome for the species is the GenBank assembly GCA_902576305.1. The GC content of the type genome is 33.57 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Seposaria melilax sp. nov.

Candidatus Seposaria melilax (NL. fem. n. *melilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902536295*. The type genome for the species is the GenBank assembly GCA_902523285.1. The GC content of the type genome is 33.47 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Seposaria meridibra sp. nov.

Candidatus Seposaria meridibra (NL. fem. n. *meridibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902525735*. The type genome for the species is the GenBank assembly GCA_902525515.1. The GC content of the type genome is 33.49 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Seposaria munimago sp. nov.

Candidatus Seposaria munimago (NL. fem. n. *munimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp004213955*. The type genome for the species is the GenBank assembly GCA_004213955.1. The GC content of the type genome is 33.55 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Seposaria obnupimonia sp. nov.

Candidatus Seposaria obnupimonia (NL. fem. n. *obnupimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902523885*. The type genome for the species is the GenBank assembly GCA_902523885.1. The GC content of the type genome is 33.43 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Seposaria peribitoga sp. nov.

Candidatus Seposaria peribitoga (NL. fem. n. *peribitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902524805*. The type genome for the species is the GenBank assembly GCA_902524805.1. The GC content of the type genome is 33.47 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Seposaria semifibula sp. nov.

Candidatus Seposaria semifibula (NL. fem. n. *semifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp003282105*. The type genome for the species is the GenBank assembly GCA_902588135.1. The GC content of the type genome is 34.16 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Seposaria socagisca sp. nov.

Candidatus Seposaria socagisca (NL. fem. n. *socagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902562135*. The type genome for the species is the GenBank assembly GCA_902524465.1. The GC content of the type genome is 33.87 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Seposaria tenebivita sp. nov.

Candidatus Seposaria tenebivita (NL. fem. n. *tenebivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902522825*. The type genome for the species is the GenBank assembly GCA_902522825.1. The GC content of the type genome is 33.1 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Seposaria vinacilenta sp. nov.

Candidatus Seposaria vinacilenta (NL. fem. n. *vinacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902616715*. The type genome for the species is the GenBank assembly GCA_902578455.1. The GC content of the type genome is 33.73 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Seposaria vitigilenta sp. nov.

Candidatus Seposaria vitigilenta (NL. fem. n. *vitigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-339-G14 sp902614235*. The type genome for the species is the GenBank assembly GCA_902519485.1. The GC content of the type genome is 33.59 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Seposella catapedo sp. nov.

Candidatus Seposella catapedo (NL. fem. n. *catapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9631 sp003483925*. The type genome for the species is the GenBank assembly GCA_003451275.1. The GC content of the type genome is 58.07 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Seposella gen. nov.

Candidatus Seposella (NL. fem. n. *Seposella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9631*. The type species for the genus is *Candidatus* Seposella

catapedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Seposia adlubisca sp. nov.

Candidatus Seposia adlubisca (NL. fem. n. *adlubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-948 sp004297845*. The type genome for the species is the GenBank assembly GCA_004297845.1. The GC content of the type genome is 42.12 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Seposia gen. nov.

Candidatus Seposia (NL. fem. n. *Seposia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-948*. The type species for the genus is *Candidatus* Seposia adlubisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Palsa-948*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Seposiaceae.

Description of *Candidatus* Seposiaceae fam. nov.

Candidatus Seposiaceae (NL. fem. n. *Seposiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Palsa-948.* The type genus for the taxon is *Candidatus* Seposia .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacosales.

Description of *Candidatus* Seposia bovicicula sp. nov.

Candidatus Seposia bovicicula (NL. fem. n. *bovicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Palsa-948 sp003164895*. The type genome for the species is the GenBank assembly GCA_003168055.1. The GC content of the type genome is 36.94 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Seposida maxilastra sp. nov.

Candidatus Seposida maxilastra (NL. fem. n. *maxilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-38-14-A sp001790855*. The type genome for the species is the GenBank assembly GCA_001790865.1. The GC content of the type genome is 37.48 % and the genome length is 2.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Seposida gen. nov.

Candidatus Seposida (NL. fem. n. *Seposida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-38-14-A*. The type species for the genus is *Candidatus* Seposida maxilastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-38-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilanaceae.

Description of *Candidatus* Sepososa maxililega sp. nov.

Candidatus Sepososa maxililega (NL. fem. n. *maxililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMOR01 sp903835235*. The type genome for the species is the GenBank assembly GCA_903875175.1. The GC content of the type genome is 69.78 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Sepososa gen. nov.

Candidatus Sepososa (NL. fem. n. *Sepososa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *CAIMOR01*. The type species for the genus is *Candidatus* Sepososa maxililega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sepososa relecax sp. nov.

Candidatus Sepososa relecax (NL. fem. n. *relecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMOR01 sp903843125*. The type genome for the species is the GenBank assembly GCA_903922565.1. The GC content of the type genome is 70.89 % and the genome length is 5.85 Mbp.

Description of *Candidatus* Seposula adgenibula sp. nov.

Candidatus Seposula adgenibula (NL. fem. n. *adgenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUKZ01 sp003559855*. The type genome for the species is the GenBank assembly GCA_003559855.1. The GC content of the type genome is 38.44 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Seposula gen. nov.

Candidatus Seposula (NL. fem. n. *Seposula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUKZ01*. The type species for the genus is *Candidatus* Seposula adgenibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Detotosaceae.

Description of *Candidatus* Seposula gasifitoga sp. nov.

Candidatus Seposula gasifitoga (NL. fem. n. *gasifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *PUKZ01 sp003550725*. The type genome for the species is the GenBank assembly GCA_003550725.1. The GC content of the type genome is 35.92 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Seposula insoritura sp. nov.

Candidatus Seposula insoritura (NL. fem. n. *insoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUKZ01 sp003567625*. The type genome for the species is the GenBank assembly GCA_003567625.1. The GC content of the type genome is 37.52 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Seposula pepenugo sp. nov.

Candidatus Seposula pepenugo (NL. fem. n. *pepenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUKZ01 sp007130125*. The type genome for the species is the GenBank assembly GCA_003559015.1. The GC content of the type genome is 36.96 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Serinibacter lenunetta sp. nov.

Candidatus Serinibacter lenunetta (NL. fem. n. *lenunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Serinibacter_A sp003121705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003121705.1. The GC content of the type genome is 73.04 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Serinicoccus adnumigena sp. nov.

Candidatus Serinicoccus adnumigena (NL. fem. n. *adnumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Serinicoccus sp008919445*. The type genome for the species is the GenBank assembly RS_GCF_008919445.1. The GC content of the type genome is 72.22

% and the genome length is 3.5 Mbp.

Description of *Candidatus* Serinicoccus inexsilega sp. nov.

Candidatus Serinicoccus inexsilega (NL. fem. n. *inexsilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Serinicoccus sp008843165*. The type genome for the species is the GenBank assembly RS_GCF_008843165.1. The GC content of the type genome is 70.79 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Serinicoccus murilisca sp. nov.

Candidatus Serinicoccus murilisca (NL. fem. n. *murilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Serinicoccus sp004322775*. The type genome for the species is the GenBank assembly RS_GCF_004352975.1. The GC content of the type genome is 71.45 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Serotana malivitica sp. nov.

Candidatus Serotana malivitica (NL. fem. n. *malivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002719095 sp002719095*. The type genome for the species is the GenBank assembly GCA_002719095.1. The GC content of the type genome is 31.1 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Serotana gen. nov.

Candidatus Serotana (NL. fem. n. *Serotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002719095*. The type species for the genus is *Candidatus* Serotana malivitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002719095*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Serotanaceae.

Description of *Candidatus* Serotanaceae fam. nov.

Candidatus Serotanaceae (NL. fem. n. *Serotanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002719095*. The type genus for the taxon is *Candidatus* Serotana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Serotana purulibra sp. nov.

Candidatus Serotana purulibra (NL. fem. n. *purulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002719095 sp002705575*. The type genome for the species is the GenBank assembly GCA_002705575.1. The GC content of the type genome is 29.62 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Serotaria saxopugo sp. nov.

Candidatus Serotaria saxopugo (NL. fem. n. *saxopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-43-30 sp001819985*. The type genome for the species is the GenBank assembly GCA_001819985.1. The GC content of the type genome is 42.52 % and the genome length is 0.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Serotaria gen. nov.

Candidatus Serotaria (NL. fem. n. *Serotaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-43-30*. The type species for the genus is *Candidatus* Serotaria saxopugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *H02-43-30*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacidaceae.

Description of *Candidatus* Serotella semivitura sp. nov.

Candidatus Serotella semivitura (NL. fem. n. *semivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8987 sp003531345*. The type genome for the species is the GenBank assembly GCA_003531345.1. The GC content of the type genome is 37.43 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Serotella gen. nov.

Candidatus Serotella (NL. fem. n. *Serotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8987*. The type species for the genus is *Candidatus* Serotella semivitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8987*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Serotellaceae.

Description of *Candidatus* Serotellaceae fam. nov.

Candidatus Serotellaceae (NL. fem. n. *Serotellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8987*. The type genus for the taxon is *Candidatus* Serotella .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Serotia bifisastra sp. nov.

Candidatus Serotia bifisastra (NL. fem. n. *bifisastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-66-14 sp004298325*. The type genome for the species is the GenBank assembly GCA_004298325.1. The GC content of the type genome is 67.68 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Serotia gen. nov.

Candidatus Serotia (NL. fem. n. *Serotia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-66-14*. The type species for the genus is *Candidatus* Serotia bifisastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Serotia furibitia sp. nov.

Candidatus Serotia furibitia (NL. fem. n. *furibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-66-14 sp001771975*. The type genome for the species is the GenBank assembly GCA_001770625.1. The GC content of the type genome is 67.12 % and the genome length is 3.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Serotia inrededo sp. nov.

Candidatus Serotia inrededo (NL. fem. n. *inrededo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-66-14 sp001770475*. The type genome for the species is the GenBank assembly GCA_001770475.1. The GC content of the type genome is 66.28 % and the genome length is 2.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Serotia negotatio sp. nov.

Candidatus Serotia negotatio (NL. fem. n. *negotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-66-14 sp004298295*. The type genome for the species is the GenBank assembly GCA_004298295.1. The GC content of the type genome is 68.33 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Serotia repecicula sp. nov.

Candidatus Serotia repecicula (NL. fem. n. *repecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-66-14 sp002451175*. The type genome for the species is the GenBank assembly GCA_002451175.1. The GC content of the type genome is 68.98 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Serotida agrimousia sp. nov.

Candidatus Serotida agrimousia (NL. fem. n. *agrimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACLCV01 sp902535975*. The type genome for the species is the GenBank assembly GCA_902535975.1. The GC content of the type genome is 33.8 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Serotida gen. nov.

Candidatus Serotida (NL. fem. n. *Serotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACLCV01*. The type species for the genus is *Candidatus* Serotida agrimousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002716945*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecidaceae.

Description of *Candidatus* Serotida artolastra sp. nov.

Candidatus Serotida artolastra (NL. fem. n. *artolastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACLCV01 sp902605525*. The type genome for the species is the GenBank assembly GCA_902605525.1. The GC content of the type genome is 32.02 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Serotida excamastra sp. nov.

Candidatus Serotida excamastra (NL. fem. n. *excamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACLCV01 sp902559355*. The type genome for the species is the GenBank assembly GCA_902559355.1. The GC content of the type genome is 31.86 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Serotida hexamastra sp. nov.

Candidatus Serotida hexamastra (NL. fem. n. *hexamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACLCV01 sp902521725*. The type genome for the species is the GenBank assembly GCA_902521725.1. The GC content of the type genome is 34.01 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Serotosa melopago sp. nov.

Candidatus Serotosa melopago (NL. fem. n. *melopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-37-10 sp000992015*. The type genome for the species is the GenBank assembly GCA_000992015.1. The GC content of the type genome is 36.57 % and the genome length is 0.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Serotosa gen. nov.

Candidatus Serotosa (NL. fem. n. *Serotosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-37-10*. The type species for the genus is *Candidatus* Serotosa melopago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Serotula caravetta sp. nov.

Candidatus Serotula caravetta (NL. fem. n. *caravetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1020 sp012270305*. The type genome for the species is the GenBank assembly GCA_012270305.1. The GC content of the type genome is 45.51 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Serotula gen. nov.

Candidatus Serotula (NL. fem. n. *Serotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1020*. The type species for the genus is *Candidatus* Serotula caravetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Serotula detenimonas sp. nov.

Candidatus Serotula detenimonas (NL. fem. n. *detenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1020 sp000503915*. The type genome for the species is the GenBank assembly GCA_003537595.1. The GC content of the type genome is 50.02 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Serotula divoricula sp. nov.

Candidatus Serotula divoricula (NL. fem. n. *divoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1020 sp002434005*. The type genome for the species is the GenBank assembly GCA_002434005.1. The GC content of the type genome is 47.95 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Serotula laculitrix sp. nov.

Candidatus Serotula laculitrix (NL. fem. n. *laculitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1020 sp002348615*. The type genome for the species is the GenBank assembly GCA_002343645.1. The GC content of the type genome is 51.42 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Serotula lanifago sp. nov.

Candidatus Serotula lanifago (NL. fem. n. *lanifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1020 sp002316545*. The type genome for the species is the GenBank assembly GCA_002316545.1. The GC content of the type genome is 47.2 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Serotula momorimonas sp. nov.

Candidatus Serotula momorimonas (NL. fem. n. *momorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1020 sp002348605*. The type genome for the species is the GenBank assembly GCA_002343565.1. The GC content of the type genome is 50.66 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Serotula sarabitica sp. nov.

Candidatus Serotula sarabitica (NL. fem. n. *sarabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1020 sp002335175*. The type genome for the species is the GenBank assembly GCA_002344735.1. The GC content of the type genome is 49.9 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Serotula sonabisca sp. nov.

Candidatus Serotula sonabisca (NL. fem. n. *sonabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1020 sp002455275*. The type genome for the species is the GenBank assembly GCA_002455275.1. The GC content of the type genome is 47.12 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Serpentinomonas cicilago sp. nov.

Candidatus Serpentinomonas cicilago (NL. fem. n. *cicilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Serpentinomonas sp000696225*. The type genome for the species is the GenBank assembly RS_GCF_000696225.1. The GC content of the type genome is 66.22 % and the genome length is 2.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Water".

Description of *Candidatus* Serratia carecax sp. nov.

Candidatus Serratia carecax (NL. fem. n. *carecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Serratia_A sp000633355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000633315.1. The GC content of the type genome is 53.83 % and the genome length is 6.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Carnivorous Plant Phytotelma".

Description of *Candidatus* Serratia unetvibula sp. nov.

Candidatus Serratia unetvibula (NL. fem. n. *unetvibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Serratia_A sp000496755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000496755.2. The GC content of the type genome is 49.16 % and the genome length is 5.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gut".

Description of *Candidatus* Shewanella adsocifica sp. nov.

Candidatus Shewanella adsocifica (NL. fem. n. *adsocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp014163735*. The type genome for the species is the GenBank assembly RS_GCF_014163735.1. The GC content of the type genome is 44.28 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Shewanella adsuditio sp. nov.

Candidatus Shewanella adsuditio (NL. fem. n. *adsuditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp013248905*. The type genome for the species is the GenBank assembly RS_GCF_013248905.1. The GC content of the type genome is 41.01 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Shewanella bacifastra sp. nov.

Candidatus Shewanella bacifastra (NL. fem. n. *bacifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp007197555*. The type genome for the species is the GenBank assembly RS_GCF_007197555.1. The GC content of the type genome is 45.08 % and the genome length is 6.45 Mbp.

Description of *Candidatus* Shewanella betacilenta sp. nov.

Candidatus Shewanella betacilenta (NL. fem. n. *betacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp002836275*. The type genome for the species is the GenBank assembly RS_GCF_002836275.1. The GC content of the type genome is 42.28 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Shewanella bicapifica sp. nov.

Candidatus Shewanella bicapifica (NL. fem. n. *bicapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp000014665*. The type genome for the species is the GenBank assembly RS_GCF_000014665.1. The GC content of the type genome is 47.86 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Shewanella cilotimonas sp. nov.

Candidatus Shewanella cilotimonas (NL. fem. n. *cilotimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp001957125*. The type genome for the species is the GenBank assembly RS_GCF_001957125.1. The GC content of the type genome is 43.21 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Shewanella defetatica sp. nov.

Candidatus Shewanella defetatica (NL. fem. n. *defetatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp002836315*. The type genome for the species is the GenBank assembly RS_GCF_002836315.1. The GC content of the type genome is 41.76 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Shewanella desepedo sp. nov.

Candidatus Shewanella desepedo (NL. fem. n. *desepedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp009647595*. The type genome for the species is the GenBank assembly RS_GCF_009647595.1. The GC content of the type genome is 41.42 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Shewanella detoritudo sp. nov.

Candidatus Shewanella detoritudo (NL. fem. n. *detoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp002873615*. The type genome for the species is the GenBank assembly RS_GCF_002873615.1. The GC content of the type genome is 40.57 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Shewanella dinupetta sp. nov.

Candidatus Shewanella dinupetta (NL. fem. n. *dinupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp002873135*. The type genome for the species is the GenBank assembly RS_GCF_002873135.1. The GC content of the type genome is 41.56 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Shewanella favilentia sp. nov.

Candidatus Shewanella favilentia (NL. fem. n. *favilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp002783505*. The type genome for the species is the GenBank assembly GCA_002783505.1. The GC content of the type genome is 46.93 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Shewanella fetutitura sp. nov.

Candidatus Shewanella fetutitura (NL. fem. n. *fetutitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp000203935*. The type genome for the species is the GenBank assembly RS_GCF_002196695.1. The GC content of the type genome is 47.91 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Shewanella futatisca sp. nov.

Candidatus Shewanella futatisca (NL. fem. n. *futatisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp006494715*. The type genome for the species is the GenBank assembly RS_GCF_006494715.1. The GC content of the type genome is 45.55 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Shewanella indupigena sp. nov.

Candidatus Shewanella indupigena (NL. fem. n. *indupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Shewanella sp000217915*. The type genome for the species is the GenBank assembly RS_GCF_000217915.1. The GC content of the type genome is 46.53 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Shewanella infucax sp. nov.

Candidatus Shewanella infucax (NL. fem. n. *infucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp007004545*. The type genome for the species is the GenBank assembly RS_GCF_007004545.1. The GC content of the type genome is 43.57 % and the genome length is 5.91 Mbp.

Description of *Candidatus* Shewanella inmodedo sp. nov.

Candidatus Shewanella inmodedo (NL. fem. n. *inmodedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp012911865*. The type genome for the species is the GenBank assembly RS_GCF_012911865.1. The GC content of the type genome is 55.69 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Shewanella metabugo sp. nov.

Candidatus Shewanella metabugo (NL. fem. n. *metabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp002838165*. The type genome for the species is the GenBank assembly RS_GCF_002838165.1. The GC content of the type genome is 46.25 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Shewanella occucitia sp. nov.

Candidatus Shewanella occucitia (NL. fem. n. *occucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp014164505*. The type genome for the species is the GenBank assembly RS_GCF_014164505.1. The GC content of the type genome is 41.21 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Shewanella onocrifica sp. nov.

Candidatus Shewanella onocrifica (NL. fem. n. *onocrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp001957135*. The type genome for the species is the GenBank assembly RS_GCF_001957135.1. The GC content of the type genome is 41.99 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Shewanella ossucifica sp. nov.

Candidatus Shewanella ossucifica (NL. fem. n. *ossucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp013214165*. The type genome for the species is the GenBank assembly GCA_013214165.1. The GC content of the type genome is 46.1 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Shewanella rorifibula sp. nov.

Candidatus Shewanella rorifibula (NL. fem. n. *rorifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp002836205*. The type genome for the species is the GenBank assembly RS_GCF_002836205.1. The GC content of the type genome is 43.5 % and the genome length is 5.1 Mbp.

Description of *Candidatus* Shewanella rosacentia sp. nov.

Candidatus Shewanella rosacentia (NL. fem. n. *rosacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp009663145*. The type genome for the species is the GenBank assembly RS_GCF_009663145.1. The GC content of the type genome is 40.47 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Shewanella saxifitura sp. nov.

Candidatus Shewanella saxifitura (NL. fem. n. *saxifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp002966515*. The type genome for the species is the GenBank assembly RS_GCF_003315425.1. The GC content of the type genome is 45.45 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Shewanella sonabitia sp. nov.

Candidatus Shewanella sonabitia (NL. fem. n. *sonabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shewanella sp000832025*. The type genome for the species is the GenBank assembly RS_GCF_000832025.1. The GC content of the type genome is 53.13 % and the genome length is 4.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Marine".

Description of *Candidatus* Shimazuella semunentia sp. nov.

Candidatus Shimazuella semunentia (NL. fem. n. *semunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shimazuella sp009831235*. The type genome for the species is the GenBank assembly RS_GCF_009831235.1. The GC content of the type genome is 38.55 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Shimia acropilega sp. nov.

Candidatus Shimia acropilega (NL. fem. n. *acropilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shimia sp900537125*. The type genome for the species is the GenBank assembly RS_GCF_900537125.1. The GC content of the type genome is 56.41 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Shimia adnunivita sp. nov.

Candidatus Shimia adnunivita (NL. fem. n. *adnunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shimia sp900143615*. The type genome for the species is the GenBank assembly RS_GCF_900143615.1. The GC content of the type genome is 54.98 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Shimia exhiletta sp. nov.

Candidatus Shimia exhiletta (NL. fem. n. *exhiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shimia sp001292625*. The type genome for the species is the GenBank assembly RS_GCF_001292625.1. The GC content of the type genome is 57.22 % and the genome length is 4.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Norwegian Sea marine sediment".

Description of *Candidatus* Shimia inmacitica sp. nov.

Candidatus Shimia inmacitica (NL. fem. n. *inmacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shimia sp003990645*. The type genome for the species is the GenBank assembly RS_GCF_003990645.1. The GC content of the type genome is 58.9 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Shinella catabilega sp. nov.

Candidatus Shinella catabilega (NL. fem. n. *catabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shinella sp004514435*. The type genome for the species is the GenBank assembly RS_GCF_004514435.1. The GC content of the type genome is 63.41 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Shinella conipedo sp. nov.

Candidatus Shinella conipedo (NL. fem. n. *conipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shinella sp003432075*. The type genome for the species is the GenBank assembly RS_GCF_003432075.1. The GC content of the type genome is 62.74

% and the genome length is 5.15 Mbp.

Description of *Candidatus* Shinella genocitura sp. nov.

Candidatus Shinella genocitura (NL. fem. n. *genocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shinella sp002364745*. The type genome for the species is the GenBank assembly GCA_002429505.1. The GC content of the type genome is 62.3 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Shinella miracitoga sp. nov.

Candidatus Shinella miracitoga (NL. fem. n. *miracitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shinella sp001713395*. The type genome for the species is the GenBank assembly RS_GCF_001713395.1. The GC content of the type genome is 62.42 % and the genome length is 6.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Chrysochromulina tobin phycosphere".

Description of *Candidatus* Shinella senipitoga sp. nov.

Candidatus Shinella senipitoga (NL. fem. n. *senipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Shinella sp001262505*. The type genome for the species is the GenBank assembly RS_GCF_000496935.2. The GC content of the type genome is 63.39 % and the genome length is 7.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gut".

Description of *Candidatus* Sicarana femelitrix sp. nov.

Candidatus Sicarana femelitrix (NL. fem. n. *femelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QLZD01 sp008636115*. The type genome for the species is the GenBank assembly RS_GCF_008636115.1. The GC content of the type genome is 51.59 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Sicarana gen. nov.

Candidatus Sicarana (NL. fem. n. *Sicarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QLZD01*. The type species for the genus is *Candidatus* Sicarana femelitrix .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Sicararia holisatica sp. nov.

Candidatus Sicararia holisatica (NL. fem. n. *holisatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXNZ01 sp903920975*. The type genome for the species is the GenBank assembly GCA_903920975.1. The GC content of the type genome is 37.09 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Sicararia gen. nov.

Candidatus Sicararia (NL. fem. n. *Sicararia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXNZ01*. The type species for the genus is *Candidatus* Sicararia holisatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIXNZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicarariaceae.

Description of *Candidatus* Sicarariaceae fam. nov.

Candidatus Sicarariaceae (NL. fem. n. *Sicarariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIXNZ01.* The type genus for the taxon is *Candidatus* Sicararia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIXNZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sicarariales.

Description of *Candidatus* Sicarariales ord. nov.

Candidatus Sicarariales (NL. fem. n. *Sicarariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIXNZ01.* The type genus for the taxon is *Candidatus* Sicararia .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Sicarella brabritio sp. nov.

Candidatus Sicarella brabritio (NL. fem. n. *brabritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3700 sp002372775*. The type genome for the species is the GenBank assembly GCA_002372775.1. The GC content of the type genome is 32.85 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Sicarella gen. nov.

Candidatus Sicarella (NL. fem. n. *Sicarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3700*. The type species for the genus is *Candidatus* Sicarella brabritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3700*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicarellaceae.

Description of *Candidatus* Sicarellaceae fam. nov.

Candidatus Sicarellaceae (NL. fem. n. *Sicarellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3700.* The type genus for the taxon is *Candidatus* Sicarella .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Sicarida cuticax sp. nov.

Candidatus Sicarida cuticax (NL. fem. n. *cuticax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-401 sp003246035*. The type genome for the species is the GenBank assembly GCA_003246035.1. The GC content of the type genome is 63.06 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Sicarida gen. nov.

Candidatus Sicarida (NL. fem. n. *Sicarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-401*. The type species for the genus is *Candidatus* Sicarida cuticax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-401*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicaridaceae.

Description of *Candidatus* Sicaridaceae fam. nov.

Candidatus Sicaridaceae (NL. fem. n. *Sicaridaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-401.* The type genus for the taxon is *Candidatus* Sicarida .

According to GTDB R06-RS202, this family belongs to the order *Desulfuromonadales*.

Description of *Candidatus* Sicarida palifimonas sp. nov.

Candidatus Sicarida palifimonas (NL. fem. n. *palifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-401 sp002869605*. The type genome for the species is the GenBank assembly GCA_002869605.1. The GC content of the type genome is 57.94 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Sicarosa ascisedo sp. nov.

Candidatus Sicarosa ascisedo (NL. fem. n. *ascisedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS946 sp900547135*. The type genome for the species is the GenBank assembly GCA_900547135.1. The GC content of the type genome is 47.01 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Sicarosa gen. nov.

Candidatus Sicarosa (NL. fem. n. *Sicarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS946*. The type species for the genus is *Candidatus* Sicarosa ascisedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Sicarosa desuritia sp. nov.

Candidatus Sicarosa desuritia (NL. fem. n. *desuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS946 sp900544965*. The type genome for the species is the GenBank assembly RS_GCF_900752465.1. The GC content of the type genome is 48.54 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Sicarula hegumessa sp. nov.

Candidatus Sicarula hegumessa (NL. fem. n. *hegumessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4248 sp004554395*. The type genome for the species is the GenBank assembly RS_GCF_900766485.1. The GC content of the type genome is 52.13 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Sicarula gen. nov.

Candidatus Sicarula (NL. fem. n. *Sicarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4248*. The type species for the genus is *Candidatus* Sicarula hegumessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicarulaceae.

Description of *Candidatus* Sicarulaceae fam. nov.

Candidatus Sicarulaceae (NL. fem. n. *Sicarulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4248.* The type genus for the taxon is *Candidatus* Sicarula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sicarulales.

Description of *Candidatus* Sicarulales ord. nov.

Candidatus Sicarulales (NL. fem. n. *Sicarulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4248.* The type genus for the taxon is *Candidatus* Sicarula .

According to the GTDB R06-RS202, this order belongs to the class *Bradymonadia*.

Description of *Candidatus* Sicarula rosacitia sp. nov.

Candidatus Sicarula rosacitia (NL. fem. n. *rosacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4248 sp002395385*. The type genome for the species is the GenBank assembly GCA_002395385.1. The GC content of the type genome is 47.33 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Siccirubricoccus exorbimonia sp. nov.

Candidatus Siccirubricoccus exorbimonia (NL. fem. n. *exorbimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Siccirubricoccus sp008360935*. The type genome for the species is the GenBank assembly RS_GCF_008360935.1. The GC content of the type genome is 71.26 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Sicinana hemiticula sp. nov.

Candidatus Sicinana hemiticula (NL. fem. n. *hemiticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKSA01 sp009844085*. The type genome for the species is the GenBank assembly GCA_009838725.1. The GC content of the type genome is 60.77 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Sicinana gen. nov.

Candidatus Sicinana (NL. fem. n. *Sicinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RKSA01*. The type species for the genus is *Candidatus* Sicinana hemiticula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sicinana vivififica sp. nov.

Candidatus Sicinana vivififica (NL. fem. n. *vivififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RKSA01 sp007571115*. The type genome for the species is the GenBank assembly GCA_007571115.1. The GC content of the type genome is 63.17 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Sicinaria bigemigena sp. nov.

Candidatus Sicinaria bigemigena (NL. fem. n. *bigemigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-35-19 sp012514175*. The type genome for the species is the GenBank assembly GCA_012514175.1. The GC content of the type genome is 35.87 %

and the genome length is 0.64 Mbp.

Description of *Candidatus* Sicinaria gen. nov.

Candidatus Sicinaria (NL. fem. n. *Sicinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-35-19*. The type species for the genus is *Candidatus* Sicinaria bigemigena .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Sicinaria catiliforma sp. nov.

Candidatus Sicinaria catiliforma (NL. fem. n. *catiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-35-19 sp001824275*. The type genome for the species is the GenBank assembly GCA_001825445.1. The GC content of the type genome is 38.5 % and the genome length is 0.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Sicinaria cemenicella sp. nov.

Candidatus Sicinaria cemenicella (NL. fem. n. *cemenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-35-19 sp001823925*. The type genome for the species is the GenBank assembly GCA_001823925.1. The GC content of the type genome is 38.76 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Sicinaria ecfacitudo sp. nov.

Candidatus Sicinaria ecfacitudo (NL. fem. n. *ecfacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-35-19 sp003233455*. The type genome for the species is the

GenBank assembly GCA_003233455.1. The GC content of the type genome is 32.66 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Sicinaria munifitia sp. nov.

Candidatus Sicinaria munifitia (NL. fem. n. *munifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-35-19 sp002771075*. The type genome for the species is the GenBank assembly GCA_002771075.1. The GC content of the type genome is 34.09 % and the genome length is 0.44 Mbp.

Description of *Candidatus* Sicinaria panopitica sp. nov.

Candidatus Sicinaria panopitica (NL. fem. n. *panopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-35-19 sp001824215*. The type genome for the species is the GenBank assembly GCA_001824105.1. The GC content of the type genome is 38.45 % and the genome length is 0.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Sicinaria semunessa sp. nov.

Candidatus Sicinaria semunessa (NL. fem. n. *semunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-35-19 sp001825335*. The type genome for the species is the GenBank assembly GCA_001825335.1. The GC content of the type genome is 35.05 % and the genome length is 0.51 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Sicinella defalilenta sp. nov.

Candidatus Sicinella defalilenta (NL. fem. n. *defalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAK01 sp007126855*. The type genome for the species is the

GenBank assembly GCA_007119715.1. The GC content of the type genome is 65.57 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Sicinella gen. nov.

Candidatus Sicinella (NL. fem. n. *Sicinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLAK01*. The type species for the genus is *Candidatus* Sicinella defalilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2991*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Letifariaceae.

Description of *Candidatus* Sicinella relapisca sp. nov.

Candidatus Sicinella relapisca (NL. fem. n. *relapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLAK01 sp007118095*. The type genome for the species is the GenBank assembly GCA_007118095.1. The GC content of the type genome is 65.19 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Sicinia cituvatica sp. nov.

Candidatus Sicinia cituvatica (NL. fem. n. *cituvatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWVZ01 sp903916245*. The type genome for the species is the GenBank assembly GCA_903916245.1. The GC content of the type genome is 65.94 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Sicinia gen. nov.

Candidatus Sicinia (NL. fem. n. *Sicinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWVZ01*. The type species for the genus is *Candidatus* Sicinia cituvatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family

CAIWVZ01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siciniaceae.

Description of *Candidatus* Siciniaceae fam. nov.

Candidatus Siciniaceae (NL. fem. n. *Siciniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIWVZ01.* The type genus for the taxon is *Candidatus* Sicinia .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-002687715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Catobellales.

Description of *Candidatus* Sicinida catapitia sp. nov.

Candidatus Sicinida catapitia (NL. fem. n. *catapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADDX01 sp013153685*. The type genome for the species is the GenBank assembly GCA_013153685.1. The GC content of the type genome is 34.26 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Sicinida gen. nov.

Candidatus Sicinida (NL. fem. n. *Sicinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADDX01*. The type species for the genus is *Candidatus* Sicinida catapitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADDX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicinidaceae.

Description of *Candidatus* Sicinidaceae fam. nov.

Candidatus Sicinidaceae (NL. fem. n. *Sicinidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADDX01.* The type genus for the taxon is *Candidatus* Sicinida .

According to GTDB R06-RS202, this family belongs to the order *Nautiliales*.

Description of *Candidatus* Sicinosa antecugo sp. nov.

Candidatus Sicinosa antecugo (NL. fem. n. *antecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Lenti-02 sp001603055*. The type genome for the species is the GenBank assembly GCA_001603055.1. The GC content of the type genome is 67.26 % and the genome length is 4.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Sicinosa gen. nov.

Candidatus Sicinosa (NL. fem. n. *Sicinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Lenti-02*. The type species for the genus is *Candidatus* Sicinosa antecugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Lenti-02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicinosaceae.

Description of *Candidatus* Sicinosaceae fam. nov.

Candidatus Sicinosaceae (NL. fem. n. *Sicinosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Lenti-02.* The type genus for the taxon is *Candidatus* Sicinosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semilidales.

Description of *Candidatus* Sicinosa catagitia sp. nov.

Candidatus Sicinosa catagitia (NL. fem. n. *catagitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Lenti-02 sp003245525*. The type genome for the species is the GenBank assembly GCA_003245525.1. The GC content of the type genome is 65.89 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Sicinula rorarimonia sp. nov.

Candidatus Sicinula rorarimonia (NL. fem. n. *rorarimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZMI01 sp903934015*. The type genome for the species is the GenBank assembly GCA_903828055.1. The GC content of the type genome is 42.23 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Sicinula gen. nov.

Candidatus Sicinula (NL. fem. n. *Sicinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZMI01*. The type species for the genus is *Candidatus* Sicinula rorarimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIZMI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicinulaceae.

Description of *Candidatus* Sicinulaceae fam. nov.

Candidatus Sicinulaceae (NL. fem. n. *Sicinulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIZMI01*. The type genus for the taxon is *Candidatus* Sicinula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vinolidales.

Description of *Candidatus* Sicubana genocicula sp. nov.

Candidatus Sicubana genocicula (NL. fem. n. *genocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOAK01 sp903904005*. The type genome for the species is the GenBank assembly GCA_903932365.1. The GC content of the type genome is 71.04 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Sicubana gen. nov.

Candidatus Sicubana (NL. fem. n. *Sicubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOAK01*. The type species for the genus is *Candidatus* Sicubana genocicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sicubana pavicitoga sp. nov.

Candidatus Sicubana pavicitoga (NL. fem. n. *pavicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOAK01 sp903874275*. The type genome for the species is the GenBank assembly GCA_903894875.1. The GC content of the type genome is 70.9 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Sicubana saburilenta sp. nov.

Candidatus Sicubana saburilenta (NL. fem. n. *saburilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOAK01 sp903855945*. The type genome for the species is the GenBank assembly GCA_903855945.1. The GC content of the type genome is 70.82 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Sicubaria depecedo sp. nov.

Candidatus Sicubaria depecedo (NL. fem. n. *depecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXPF01 sp903921205*. The type genome for the species is the GenBank assembly GCA_903921205.1. The GC content of the type genome is 70.94 %

and the genome length is 4.36 Mbp.

Description of *Candidatus* Sicubaria gen. nov.

Candidatus Sicubaria (NL. fem. n. *Sicubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXPF01*. The type species for the genus is *Candidatus* Sicubaria depecedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIXPF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicubariaceae.

Description of *Candidatus* Sicubariaceae fam. nov.

Candidatus Sicubariaceae (NL. fem. n. *Sicubariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIXPF01.* The type genus for the taxon is *Candidatus* Sicubaria .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Sicubella vilipugo sp. nov.

Candidatus Sicubella vilipugo (NL. fem. n. *vilipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20-14-all-54-14 sp002772205*. The type genome for the species is the GenBank assembly GCA_002778565.1. The GC content of the type genome is 54.28 % and the genome length is 0.49 Mbp.

Description of *Candidatus* Sicubella gen. nov.

Candidatus Sicubella (NL. fem. n. *Sicubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *20-14-all-54-14*. The type species for the genus is *Candidatus* Sicubella vilipugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Sicubia affanugo sp. nov.

Candidatus Sicubia affanugo (NL. fem. n. *affanugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-66-18 sp903874575*. The type genome for the species is the GenBank assembly GCA_903874575.1. The GC content of the type genome is 66.17 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Sicubia gen. nov.

Candidatus Sicubia (NL. fem. n. *Sicubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-66-18*. The type species for the genus is *Candidatus* Sicubia affanugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9628*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recorariaceae.

Description of *Candidatus* Sicubia recucitas sp. nov.

Candidatus Sicubia recucitas (NL. fem. n. *recucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-66-18 sp001799675*. The type genome for the species is the GenBank assembly GCA_001799675.1. The GC content of the type genome is 65.43 % and the genome length is 2.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Sicubia rubecitrix sp. nov.

Candidatus Sicubia rubecitrix (NL. fem. n. *rubecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GWA2-66-18 sp013044195*. The type genome for the species is the GenBank assembly GCA_013044195.1. The GC content of the type genome is 66.63 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Sicubida figilimonia sp. nov.

Candidatus Sicubida figilimonia (NL. fem. n. *figilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSGV01 sp011057325*. The type genome for the species is the GenBank assembly GCA_011057325.1. The GC content of the type genome is 70.29 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Sicubida gen. nov.

Candidatus Sicubida (NL. fem. n. *Sicubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSGV01*. The type species for the genus is *Candidatus* Sicubida figilimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSGV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicubidaceae.

Description of *Candidatus* Sicubidaceae fam. nov.

Candidatus Sicubidaceae (NL. fem. n. *Sicubidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSGV01.* The type genus for the taxon is *Candidatus* Sicubida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSGV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sicubidales.

Description of *Candidatus* Sicubidales ord. nov.

Candidatus Sicubidales (NL. fem. n. *Sicubidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSGV01.* The type genus for the taxon is *Candidatus* Sicubida .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Sicubosa videletta sp. nov.

Candidatus Sicubosa videletta (NL. fem. n. *videletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-1138 sp000434675*. The type genome for the species is the GenBank assembly GCA_000434675.1. The GC content of the type genome is 48.66 % and the genome length is 1.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Sicubosa gen. nov.

Candidatus Sicubosa (NL. fem. n. *Sicubosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-1138*. The type species for the genus is *Candidatus* Sicubosa videletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-917*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dimadanaceae.

Description of *Candidatus* Sicubula catagibula sp. nov.

Candidatus Sicubula catagibula (NL. fem. n. *catagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1840 sp900555525*. The type genome for the species is the GenBank assembly GCA_900555525.1. The GC content of the type genome is 40.3 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Sicubula gen. nov.

Candidatus Sicubula (NL. fem. n. *Sicubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1840*. The type species for the genus is *Candidatus* Sicubula catagibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UMGS1840*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicubulaceae.

Description of *Candidatus* Sicubulaceae fam. nov.

Candidatus Sicubulaceae (NL. fem. n. *Sicubulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1840.* The type genus for the taxon is *Candidatus* Sicubula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UMGS1840*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sicubulales.

Description of *Candidatus* Sicubulales ord. nov.

Candidatus Sicubulales (NL. fem. n. *Sicubulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UMGS1840.* The type genus for the taxon is *Candidatus* Sicubula .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Siculibacillus parocifica sp. nov.

Candidatus Siculibacillus parocifica (NL. fem. n. *parocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Siculibacillus sp002298965*. The type genome for the species is the GenBank assembly GCA_002298965.1. The GC content of the type genome is 69.33 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Siculibacillus rurigitica sp. nov.

Candidatus Siculibacillus rurigitica (NL. fem. n. *rurigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Siculibacillus sp012517025*. The type genome for the species is the GenBank assembly GCA_012517025.1. The GC content of the type genome is 68.97 %

and the genome length is 4.55 Mbp.

Description of *Candidatus* Sicunana navifitio sp. nov.

Candidatus Sicunana navifitio (NL. fem. n. *navifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-49-15 sp001769855*. The type genome for the species is the GenBank assembly GCA_003485645.1. The GC content of the type genome is 46.91 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Sicunana gen. nov.

Candidatus Sicunana (NL. fem. n. *Sicunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-49-15*. The type species for the genus is *Candidatus* Sicunana navifitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sicunaria semifitica sp. nov.

Candidatus Sicunaria semifitica (NL. fem. n. *semifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1412 sp002308515*. The type genome for the species is the GenBank assembly GCA_002308515.1. The GC content of the type genome is 49.88 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Sicunaria gen. nov.

Candidatus Sicunaria (NL. fem. n. *Sicunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1412*. The type species for the genus is *Candidatus* Sicunaria semifitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1412*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicunariaceae.

Description of *Candidatus* Sicunariaceae fam. nov.

Candidatus Sicunariaceae (NL. fem. n. *Sicunariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1412.* The type genus for the taxon is *Candidatus* Sicunaria .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Sicunaria sicinitudo sp. nov.

Candidatus Sicunaria sicinitudo (NL. fem. n. *sicinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1412 sp002305615*. The type genome for the species is the GenBank assembly GCA_002305615.1. The GC content of the type genome is 51.5 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Sicunella pedifessa sp. nov.

Candidatus Sicunella pedifessa (NL. fem. n. *pedifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-41-12 sp001790445*. The type genome for the species is the GenBank assembly GCA_001790445.1. The GC content of the type genome is 41.18 % and the genome length is 0.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Sicunella gen. nov.

Candidatus Sicunella (NL. fem. n. *Sicunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-41-12*. The type species for the genus is *Candidatus* Sicunella pedifessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-41-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicunellaceae.

Description of *Candidatus* Sicunellaceae fam. nov.

Candidatus Sicunellaceae (NL. fem. n. *Sicunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-41-12.* The type genus for the taxon is *Candidatus* Sicunella .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Sicunia tolutiforma sp. nov.

Candidatus Sicunia tolutiforma (NL. fem. n. *tolutiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG844 sp900313875*. The type genome for the species is the GenBank assembly GCA_900313875.1. The GC content of the type genome is 62.63 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Sicunia gen. nov.

Candidatus Sicunia (NL. fem. n. *Sicunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG844*. The type species for the genus is *Candidatus* Sicunia tolutiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RUG844*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicuniaceae.

Description of *Candidatus* Sicuniaceae fam. nov.

Candidatus Sicuniaceae (NL. fem. n. *Sicuniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RUG844.* The type genus for the taxon is *Candidatus* Sicunia .

According to GTDB R06-RS202, this family belongs to the order *Coriobacteriales*.

Description of *Candidatus* Sicunida artiletta sp. nov.

Candidatus Sicunida artiletta (NL. fem. n. *artiletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQM01 sp007131435*. The type genome for the species is the GenBank assembly GCA_007131435.1. The GC content of the type genome is 45.97 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Sicunida gen. nov.

Candidatus Sicunida (NL. fem. n. *Sicunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLQM01*. The type species for the genus is *Candidatus* Sicunida artiletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Sicunida dececibra sp. nov.

Candidatus Sicunida dececibra (NL. fem. n. *dececibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLQM01 sp007129055*. The type genome for the species is the GenBank assembly GCA_007119675.1. The GC content of the type genome is 45.11 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Sicunosa supelivita sp. nov.

Candidatus Sicunosa supelivita (NL. fem. n. *supelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6935 sp002722705*. The type genome for the species is the GenBank assembly GCA_002722705.1. The GC content of the type genome is 39.44 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Sicunosa gen. nov.

Candidatus Sicunosa (NL. fem. n. *Sicunosa* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6935*. The type species for the genus is *Candidatus* Sicunosa supelivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicunosaceae.

Description of *Candidatus* Sicunosaceae fam. nov.

Candidatus Sicunosaceae (NL. fem. n. *Sicunosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6935.* The type genus for the taxon is *Candidatus* Sicunosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desorariales.

Description of *Candidatus* Sicunula dedigitia sp. nov.

Candidatus Sicunula dedigitia (NL. fem. n. *dedigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA693 sp903913865*. The type genome for the species is the GenBank assembly GCA_903871215.1. The GC content of the type genome is 58.92 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Sicunula gen. nov.

Candidatus Sicunula (NL. fem. n. *Sicunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA693*. The type species for the genus is *Candidatus* Sicunula dedigitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabitidaceae.

Description of *Candidatus* Sicunula dupunitia sp. nov.

Candidatus Sicunula dupunitia (NL. fem. n. *dupunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA693 sp002298785*. The type genome for the species is the GenBank assembly GCA_002298105.1. The GC content of the type genome is 59.18 % and the genome length is 7.29 Mbp.

Description of *Candidatus* Sideroxydans abagmedo sp. nov.

Candidatus Sideroxydans abagmedo (NL. fem. n. *abagmedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sideroxydans sp002421915*. The type genome for the species is the GenBank assembly GCA_002421915.1. The GC content of the type genome is 58.23 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Sideroxydans arancigena sp. nov.

Candidatus Sideroxydans arancigena (NL. fem. n. *arancigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sideroxydans sp003445795*. The type genome for the species is the GenBank assembly GCA_003445795.1. The GC content of the type genome is 59.58 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Sideroxydans atlanousia sp. nov.

Candidatus Sideroxydans atlanousia (NL. fem. n. *atlanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sideroxydans sp006218055*. The type genome for the species is the GenBank assembly GCA_006218055.1. The GC content of the type genome is 54.33 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Sideroxydans carunedo sp. nov.

Candidatus Sideroxydans carunedo (NL. fem. n. *carunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sideroxydans sp903847155*. The type genome for the species is the GenBank assembly GCA_903847155.1. The GC content of the type genome is 53.92 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Sideroxydans cucurentia sp. nov.

Candidatus Sideroxydans cucurentia (NL. fem. n. *cucurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sideroxydans sp002787455*. The type genome for the species is the GenBank assembly GCA_002781005.1. The GC content of the type genome is 60.29 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Sideroxydans ignipivita sp. nov.

Candidatus Sideroxydans ignipivita (NL. fem. n. *ignipivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sideroxydans sp011620315*. The type genome for the species is the GenBank assembly GCA_011620315.1. The GC content of the type genome is 59.09 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Sideroxydans letifibula sp. nov.

Candidatus Sideroxydans letifibula (NL. fem. n. *letifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sideroxydans sp013824485*. The type genome for the species is the GenBank assembly GCA_013824485.1. The GC content of the type genome is 53.28 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Sideroxydans solipibula sp. nov.

Candidatus Sideroxydans solipibula (NL. fem. n. *solipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sideroxydans sp013791855*. The type genome for the species is the GenBank assembly GCA_013791855.1. The GC content of the type genome is 58.47 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Sideroxydans vicecetta sp. nov.

Candidatus Sideroxydans vicecetta (NL. fem. n. *vicecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sideroxydans sp013140695*. The type genome for the species is the GenBank assembly GCA_013141275.1. The GC content of the type genome is 51.46 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Sifunana bugilibula sp. nov.

Candidatus Sifunana bugilibula (NL. fem. n. *bugilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB1-FULL-42-16 sp001823055*. The type genome for the species is the GenBank assembly GCA_001823055.1. The GC content of the type genome is 41.7 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Sifunana gen. nov.

Candidatus Sifunana (NL. fem. n. *Sifunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB1-FULL-42-16*. The type species for the genus is *Candidatus* Sifunana bugilibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYD1-FULL-46-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Disidellaceae.

Description of *Candidatus* Sifunaria apsocimonas sp. nov.

Candidatus Sifunaria apsocimonas (NL. fem. n. *apsocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXBQ01 sp007695285*. The type genome for the species is the GenBank assembly GCA_007695285.1. The GC content of the type genome is 60.56 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Sifunaria gen. nov.

Candidatus Sifunaria (NL. fem. n. *Sifunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXBQ01*. The type species for the genus is *Candidatus* Sifunaria apsocimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PXBQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sifunariaceae.

Description of *Candidatus* Sifunariaceae fam. nov.

Candidatus Sifunariaceae (NL. fem. n. *Sifunariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PXBQ01.* The type genus for the taxon is *Candidatus* Sifunaria .

According to GTDB R06-RS202, this family belongs to the order *Spirochaetales_C*.

Description of *Candidatus* Sifunaria rarefibra sp. nov.

Candidatus Sifunaria rarefibra (NL. fem. n. *rarefibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXBQ01 sp003566875*. The type genome for the species is the GenBank assembly GCA_007131775.1. The GC content of the type genome is 60.16 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Sifunella manufousia sp. nov.

Candidatus Sifunella manufousia (NL. fem. n. *manufousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-49-23 sp002791545*. The type genome for the species is the

GenBank assembly GCA_001871355.1. The GC content of the type genome is 49.46 % and the genome length is 2.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a a 3.0 um filter and then through a 0.2 um filter".

Description of *Candidatus* Sifunella gen. nov.

Candidatus Sifunella (NL. fem. n. *Sifunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-49-23*. The type species for the genus is *Candidatus* Sifunella manufousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sifunia adtilago sp. nov.

Candidatus Sifunia adtilago (NL. fem. n. *adtilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB12-FULL-50-7 sp003140935*. The type genome for the species is the GenBank assembly GCA_003140935.1. The GC content of the type genome is 51.56 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Sifunia gen. nov.

Candidatus Sifunia (NL. fem. n. *Sifunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB12-FULL-50-7*. The type species for the genus is *Candidatus* Sifunia adtilago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2337*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Panopellaceae.

Description of *Candidatus* Sifunia curotatio sp. nov.

Candidatus Sifunia curotatio (NL. fem. n. *curotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *XYB12-FULL-50-7 sp903856085*. The type genome for the species is the GenBank assembly GCA_903836045.1. The GC content of the type genome is 50.58 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Sifunia inadfibula sp. nov.

Candidatus Sifunia inadfibula (NL. fem. n. *inadfibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB12-FULL-50-7 sp001804345*. The type genome for the species is the GenBank assembly GCA_001804345.1. The GC content of the type genome is 50.34 % and the genome length is 2.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point B".

Description of *Candidatus* Sifunia vinolicella sp. nov.

Candidatus Sifunia vinolicella (NL. fem. n. *vinolicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB12-FULL-50-7 sp903884815*. The type genome for the species is the GenBank assembly GCA_903826415.1. The GC content of the type genome is 52.63 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Sifunida foricitia sp. nov.

Candidatus Sifunida foricitia (NL. fem. n. *foricitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJR01 sp011333785*. The type genome for the species is the GenBank assembly GCA_011333785.1. The GC content of the type genome is 39.8 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Sifunida gen. nov.

Candidatus Sifunida (NL. fem. n. *Sifunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJR01*. The type species for the genus is *Candidatus* Sifunida foricitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTJR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sifunidaceae.

Description of *Candidatus* Sifunidaceae fam. nov.

Candidatus Sifunidaceae (NL. fem. n. *Sifunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTJR01.* The type genus for the taxon is *Candidatus* Sifunida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1384*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Panifidales.

Description of *Candidatus* Sifunosa funebifica sp. nov.

Candidatus Sifunosa funebifica (NL. fem. n. *funebifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-37-12 sp001769655*. The type genome for the species is the GenBank assembly GCA_001769355.1. The GC content of the type genome is 36.72 % and the genome length is 3.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Sifunosa gen. nov.

Candidatus Sifunosa (NL. fem. n. *Sifunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-37-12*. The type species for the genus is *Candidatus* Sifunosa funebifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-37-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sifunosaceae.

Description of *Candidatus* Sifunosaceae fam. nov.

Candidatus Sifunosaceae (NL. fem. n. *Sifunosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-37-12.* The type genus for the taxon is *Candidatus* Sifunosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-12-FULL-37-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sifunosales.

Description of *Candidatus* Sifunosales ord. nov.

Candidatus Sifunosales (NL. fem. n. *Sifunosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-37-12.* The type genus for the taxon is *Candidatus* Sifunosa .

According to the GTDB R06-RS202, this order belongs to the class *Bacteroidia*.

Description of *Candidatus* Sifunula vitabilenta sp. nov.

Candidatus Sifunula vitabilenta (NL. fem. n. *vitabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAJBEZ01 sp903952205*. The type genome for the species is the GenBank assembly GCA_903859315.1. The GC content of the type genome is 46.41 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Sifunula gen. nov.

Candidatus Sifunula (NL. fem. n. *Sifunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAJBEZ01*. The type species for the genus is *Candidatus* Sifunula vitabilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Silanimonas adposago sp. nov.

Candidatus Silanimonas adposago (NL. fem. n. *adposago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Silanimonas sp003449515*. The type genome for the species is the GenBank assembly GCA_003449515.1. The GC content of the type genome is 70.07 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Siligana arcatastra sp. nov.

Candidatus Siligana arcatastra (NL. fem. n. *arcatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp002314915*. The type genome for the species is the GenBank assembly GCA_002314915.1. The GC content of the type genome is 43.15 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Siligana gen. nov.

Candidatus Siligana (NL. fem. n. *Siligana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4951*. The type species for the genus is *Candidatus* Siligana arcatastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-826*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pudibellaceae.

Description of *Candidatus* Siligana armipitia sp. nov.

Candidatus Siligana armipitia (NL. fem. n. *armipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp002395465*. The type genome for the species is the GenBank assembly GCA_002395465.1. The GC content of the type genome is 43.71 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Siligana biveretta sp. nov.

Candidatus Siligana biveretta (NL. fem. n. *biveretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp900321485*. The type genome for the species is the GenBank assembly GCA_900321485.1. The GC content of the type genome is 45.06 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Siligana buxanitia sp. nov.

Candidatus Siligana buxanitia (NL. fem. n. *buxanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp002296455*. The type genome for the species is the GenBank assembly GCA_002296455.1. The GC content of the type genome is 43.02 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Siligana cerimastra sp. nov.

Candidatus Siligana cerimastra (NL. fem. n. *cerimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp902802355*. The type genome for the species is the GenBank assembly GCA_902781915.1. The GC content of the type genome is 47.55 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Siligana clancousia sp. nov.

Candidatus Siligana clancousia (NL. fem. n. *clancousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp902781615*. The type genome for the species is the GenBank assembly GCA_902781615.1. The GC content of the type genome is 45.37 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Siligana culigitas sp. nov.

Candidatus Siligana culigitas (NL. fem. n. *culigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp900320745*. The type genome for the species is the GenBank assembly GCA_900320745.1. The GC content of the type genome is 44.46 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Siligana derelilega sp. nov.

Candidatus Siligana derelilega (NL. fem. n. *derelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp002449265*. The type genome for the species is the GenBank assembly GCA_002478915.1. The GC content of the type genome is 39.55 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Siligana exsomatica sp. nov.

Candidatus Siligana exsomatica (NL. fem. n. *exsomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp900542595*. The type genome for the species is the GenBank assembly GCA_900542595.1. The GC content of the type genome is 40.98 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Siligana fatifugo sp. nov.

Candidatus Siligana fatifugo (NL. fem. n. *fatifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp002297365*. The type genome for the species is the GenBank assembly GCA_002297365.1. The GC content of the type genome is 41.59 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Siligana loripisca sp. nov.

Candidatus Siligana loripisca (NL. fem. n. *loripisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp002440125*. The type genome for the species is the GenBank assembly GCA_002313775.1. The GC content of the type genome is 44.29 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Siligana obtunitica sp. nov.

Candidatus Siligana obtunitica (NL. fem. n. *obtunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp902800255*. The type genome for the species is the GenBank assembly GCA_902800255.1. The GC content of the type genome is 46.99 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Siligana retecatio sp. nov.

Candidatus Siligana retecatio (NL. fem. n. *retecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp900540385*. The type genome for the species is the GenBank assembly RS_GCF_900768975.1. The GC content of the type genome is 38.69 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Siligana rosarimonas sp. nov.

Candidatus Siligana rosarimonas (NL. fem. n. *rosarimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp002404865*. The type genome for the species is the GenBank assembly GCA_002404865.1. The GC content of the type genome is 40.17 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Siligana sugilessa sp. nov.

Candidatus Siligana sugilessa (NL. fem. n. *sugilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp002397465*. The type genome for the species is the GenBank assembly GCA_002483615.1. The GC content of the type genome is 48.51 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Siligana verecifica sp. nov.

Candidatus Siligana verecifica (NL. fem. n. *verecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA4951 sp902791085*. The type genome for the species is the GenBank assembly GCA_902791085.1. The GC content of the type genome is 43.76 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Siligana volubugo sp. nov.

Candidatus Siligana volubugo (NL. fem. n. *volubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4951 sp902793515*. The type genome for the species is the GenBank assembly GCA_902793515.1. The GC content of the type genome is 47.8 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Siligaria illunatica sp. nov.

Candidatus Siligaria illunatica (NL. fem. n. *illunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SW-11-45-7 sp003022985*. The type genome for the species is the GenBank assembly GCA_003022985.1. The GC content of the type genome is 44.91 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Siligaria gen. nov.

Candidatus Siligaria (NL. fem. n. *Siligaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SW-11-45-7*. The type species for the genus is *Candidatus* Siligaria illunatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SW-11-45-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siligariaceae.

Description of *Candidatus* Siligariaceae fam. nov.

Candidatus Siligariaceae (NL. fem. n. *Siligariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SW-11-45-7.* The type genus for the taxon is *Candidatus* Siligaria .

According to GTDB R06-RS202, this family belongs to the order *Chitinophagales*.

Description of *Candidatus* Siligella adrenisca sp. nov.

Candidatus Siligella adrenisca (NL. fem. n. *adrenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-851 sp003162415*. The type genome for the species is the GenBank assembly GCA_003162415.1. The GC content of the type genome is 66.09 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Siligella gen. nov.

Candidatus Siligella (NL. fem. n. *Siligella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-851*. The type species for the genus is *Candidatus* Siligella adrenisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibiaceae.

Description of *Candidatus* Siligella catecitudo sp. nov.

Candidatus Siligella catecitudo (NL. fem. n. *catecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-851 sp003132805*. The type genome for the species is the GenBank assembly GCA_003132805.1. The GC content of the type genome is 66.82 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Siligella grallax sp. nov.

Candidatus Siligella grallax (NL. fem. n. *grallax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-851 sp003136295*. The type genome for the species is the GenBank assembly GCA_003136295.1. The GC content of the type genome is 66.48 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Siligella hirudousia sp. nov.

Candidatus Siligella hirudousia (NL. fem. n. *hirudousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-851 sp003135895*. The type genome for the species is the GenBank assembly GCA_003135895.1. The GC content of the type genome is 66.39 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Siligella impigatica sp. nov.

Candidatus Siligella impigatica (NL. fem. n. *impigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-851 sp003131685*. The type genome for the species is the GenBank assembly GCA_003131685.1. The GC content of the type genome is 66.37 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Siligella lucelilega sp. nov.

Candidatus Siligella lucelilega (NL. fem. n. *lucelilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-851 sp003153505*. The type genome for the species is the GenBank assembly GCA_003131505.1. The GC content of the type genome is 66.64 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Siligella omnivitoga sp. nov.

Candidatus Siligella omnivitoga (NL. fem. n. *omnivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-851 sp003132525*. The type genome for the species is the GenBank assembly GCA_003132525.1. The GC content of the type genome is 66.48 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Siligia democilenta sp. nov.

Candidatus Siligia democilenta (NL. fem. n. *democilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2774 sp002352485*. The type genome for the species is the GenBank assembly GCA_002352485.1. The GC content of the type genome is 45.64 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Siligia gen. nov.

Candidatus Siligia (NL. fem. n. *Siligia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2774*. The type species for the genus is *Candidatus* Siligia democilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2774*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siligiaceae.

Description of *Candidatus* Siligiaceae fam. nov.

Candidatus Siligiaceae (NL. fem. n. *Siligiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2774.* The type genus for the taxon is *Candidatus* Siligia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2774*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Siligiales.

Description of *Candidatus* Siligiales ord. nov.

Candidatus Siligiales (NL. fem. n. *Siligiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2774.* The type genus for the taxon is *Candidatus* Siligia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1144*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Conifellae.

Description of *Candidatus* Siligia pericifica sp. nov.

Candidatus Siligia pericifica (NL. fem. n. *pericifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2774 sp003229065*. The type genome for the species is the GenBank assembly GCA_003229065.1. The GC content of the type genome is 46.73 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Siligida bicinitudo sp. nov.

Candidatus Siligida bicinitudo (NL. fem. n. *bicinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mf105b01 sp000509225*. The type genome for the species is the GenBank assembly GCA_003503495.1. The GC content of the type genome is 55.35 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Siligida gen. nov.

Candidatus Siligida (NL. fem. n. *Siligida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Mf105b01*. The type species for the genus is *Candidatus* Siligida bicinitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Siligida homagicula sp. nov.

Candidatus Siligida homagicula (NL. fem. n. *homagicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mf105b01 sp003330885*. The type genome for the species is the GenBank assembly RS_GCF_003330885.1. The GC content of the type genome is 55.13 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Siligida rarefiforma sp. nov.

Candidatus Siligida rarefiforma (NL. fem. n. *rarefiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Mf105b01 sp002715765*. The type genome for the species is the GenBank assembly GCA_002337635.1. The GC content of the type genome is 56.02 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Siligida subinago sp. nov.

Candidatus Siligida subinago (NL. fem. n. *subinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mf105b01 sp002746275*. The type genome for the species is the GenBank assembly GCA_002746275.1. The GC content of the type genome is 55.39 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Siligida valefousia sp. nov.

Candidatus Siligida valefousia (NL. fem. n. *valefousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Mf105b01 sp002695905*. The type genome for the species is the GenBank assembly GCA_002695905.1. The GC content of the type genome is 50.63 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Siligosa nivomibula sp. nov.

Candidatus Siligosa nivomibula (NL. fem. n. *nivomibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12403 sp003511125*. The type genome for the species is the GenBank assembly GCA_000995915.1. The GC content of the type genome is 44.44 % and the genome length is 1.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Siligosa gen. nov.

Candidatus Siligosa (NL. fem. n. *Siligosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12403*. The type species for the genus is *Candidatus* Siligosa nivomibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GWF2-40-263. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Siligula vinolibula sp. nov.

Candidatus Siligula vinolibula (NL. fem. n. *vinolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PFEM01 sp002793635*. The type genome for the species is the GenBank assembly GCA_002793635.1. The GC content of the type genome is 48.43 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Siligula gen. nov.

Candidatus Siligula (NL. fem. n. *Siligula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PFEM01*. The type species for the genus is *Candidatus* Siligula vinolibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PFEM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siligulaceae.

Description of *Candidatus* Siligulaceae fam. nov.

Candidatus Siligulaceae (NL. fem. n. *Siligulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PFEM01.* The type genus for the taxon is *Candidatus* Siligula .

According to the original version of GTDB R06-RS202, this family belongs to the order *PFEM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Siligulales.

Description of *Candidatus* Siligulales ord. nov.

Candidatus Siligulales (NL. fem. n. *Siligulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PFEM01.* The type genus for the taxon is *Candidatus* Siligula .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Silvanigrella anxifisca sp. nov.

Candidatus Silvanigrella anxifisca (NL. fem. n. *anxifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Silvanigrella sp009792895*. The type genome for the species is the GenBank assembly RS_GCF_009792895.1. The GC content of the type genome is 29.57 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Silvibacterium argitisca sp. nov.

Candidatus Silvibacterium argitisca (NL. fem. n. *argitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Silvibacterium sp013289875*. The type genome for the species is the GenBank assembly GCA_013289875.1. The GC content of the type genome is 58.56 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Siminana advigatio sp. nov.

Candidatus Siminana advigatio (NL. fem. n. *advigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp002869385*. The type genome for the species is the GenBank assembly GCA_002869385.1. The GC content of the type genome is 32.94 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Siminana gen. nov.

Candidatus Siminana (NL. fem. n. *Siminana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bact-19*. The type species for the genus is *Candidatus* Siminana advigatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ML635J-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carucariaceae.

Description of *Candidatus* Siminana demulitio sp. nov.

Candidatus Siminana demulitio (NL. fem. n. *demulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp902776565*. The type genome for the species is the GenBank assembly GCA_902776565.1. The GC content of the type genome is 43.47 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Siminana entomicula sp. nov.

Candidatus Siminana entomicula (NL. fem. n. *entomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp902762455*. The type genome for the species is the GenBank assembly GCA_902762455.1. The GC content of the type genome is 43.46 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Siminana infisessa sp. nov.

Candidatus Siminana infisessa (NL. fem. n. *infisessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp902791865*. The type genome for the species is the GenBank assembly GCA_902791865.1. The GC content of the type genome is 42.39 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Siminana inhosivita sp. nov.

Candidatus Siminana inhosivita (NL. fem. n. *inhosivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp001603595*. The type genome for the species is the GenBank assembly GCA_001603595.1. The GC content of the type genome is 32.06 % and the genome length is 3.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Siminana insenax sp. nov.

Candidatus Siminana insenax (NL. fem. n. *insenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp902800045*. The type genome for the species is the GenBank assembly GCA_902800045.1. The GC content of the type genome is 43.7 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Siminana nocenago sp. nov.

Candidatus Siminana nocenago (NL. fem. n. *nocenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp002412425*. The type genome for the species is the GenBank assembly GCA_002426565.1. The GC content of the type genome is 30.53 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Siminana pragmilenta sp. nov.

Candidatus Siminana pragmilenta (NL. fem. n. *pragmilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp002310235*. The type genome for the species is the GenBank assembly GCA_002310235.1. The GC content of the type genome is 42.78 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Siminana purulugo sp. nov.

Candidatus Siminana purulugo (NL. fem. n. *purulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp902790405*. The type genome for the species is the GenBank assembly GCA_902790405.1. The GC content of the type genome is 43.86 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Siminana sacopicella sp. nov.

Candidatus Siminana sacopicella (NL. fem. n. *sacopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp003249955*. The type genome for the species is the GenBank assembly GCA_003249955.1. The GC content of the type genome is 36.32 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Siminana tabiticella sp. nov.

Candidatus Siminana tabiticella (NL. fem. n. *tabiticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bact-19 sp012512075*. The type genome for the species is the GenBank assembly GCA_012512075.1. The GC content of the type genome is 29.7 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Siminaria caraventia sp. nov.

Candidatus Siminaria caraventia (NL. fem. n. *caraventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tous-C4FEB sp903938935*. The type genome for the species is the GenBank assembly GCA_903938935.1. The GC content of the type genome is 61.31 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Siminaria gen. nov.

Candidatus Siminaria (NL. fem. n. *Siminaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Tous-C4FEB*. The type species for the genus is *Candidatus* Siminaria caraventia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Siminaria caselago sp. nov.

Candidatus Siminaria caselago (NL. fem. n. *caselago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tous-C4FEB sp014376585*. The type genome for the species is the

GenBank assembly GCA_014376585.1. The GC content of the type genome is 63.63 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Siminaria exsomimonia sp. nov.

Candidatus Siminaria exsomimonia (NL. fem. n. *exsomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tous-C4FEB sp903919985*. The type genome for the species is the GenBank assembly GCA_903919985.1. The GC content of the type genome is 61.71 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Siminaria giganicula sp. nov.

Candidatus Siminaria giganicula (NL. fem. n. *giganicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tous-C4FEB sp002304445*. The type genome for the species is the GenBank assembly GCA_002304445.1. The GC content of the type genome is 62.76 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Siminaria insenitrix sp. nov.

Candidatus Siminaria insenitrix (NL. fem. n. *insenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tous-C4FEB sp009919985*. The type genome for the species is the GenBank assembly GCA_009919985.1. The GC content of the type genome is 58.98 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Siminaria pudibimonas sp. nov.

Candidatus Siminaria pudibimonas (NL. fem. n. *pudibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Tous-C4FEB sp002737275*. The type genome for the species is the GenBank assembly GCA_002737275.1. The GC content of the type genome is 62.84 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Siminella metapessa sp. nov.

Candidatus Siminella metapessa (NL. fem. n. *metapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA652 sp002299915*. The type genome for the species is the GenBank assembly GCA_002299915.1. The GC content of the type genome is 44.42 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Siminella gen. nov.

Candidatus Siminella (NL. fem. n. *Siminella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA652*. The type species for the genus is *Candidatus* Siminella metapessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Siminia ignigago sp. nov.

Candidatus Siminia ignigago (NL. fem. n. *ignigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN11 sp002898535*. The type genome for the species is the GenBank assembly GCA_002898535.1. The GC content of the type genome is 65.74 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Siminia gen. nov.

Candidatus Siminia (NL. fem. n. *Siminia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN11*. The type species for the genus is *Candidatus* Siminia ignigago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminiaceae.

Description of *Candidatus* Siminiaceae fam. nov.

Candidatus Siminiaceae (NL. fem. n. *Siminiaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN11*. The type genus for the taxon is *Candidatus* Siminia .

According to the original version of GTDB R06-RS202, this family belongs to the order *HRBIN11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Siminiales.

Description of *Candidatus* Siminiales ord. nov.

Candidatus Siminiales (NL. fem. n. *Siminiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN11*. The type genus for the taxon is *Candidatus* Siminia .

According to the original version of GTDB R06-RS202, this family belongs to the class *HRBIN11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Siminiae.

Description of *Candidatus* Siminiae class. nov.

Candidatus Siminiae (NL. fem. n. *c__Siminiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN11*. The type genus for the taxon is *Candidatus* Siminia .

According to GTDB R06-RS202, this class belongs to the phylum *Acidobacteriota*.

Description of *Candidatus* Siminida linigedo sp. nov.

Candidatus Siminida linigedo (NL. fem. n. *linigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACFD01 sp009937555*. The type genome for the species is the GenBank assembly GCA_009937555.1. The GC content of the type genome is 37.05 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Siminida gen. nov.

Candidatus Siminida (NL. fem. n. *Siminida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACFD01*. The type species for the genus is *Candidatus* Siminida linigedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACFD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminidaceae.

Description of *Candidatus* Siminidaceae fam. nov.

Candidatus Siminidaceae (NL. fem. n. *Siminidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAACFD01.* The type genus for the taxon is *Candidatus* Siminida .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Siminosa ablacisca sp. nov.

Candidatus Siminosa ablacisca (NL. fem. n. *ablacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG8-39 sp001303445*. The type genome for the species is the GenBank assembly GCA_001303445.1. The GC content of the type genome is 68.1 % and the genome length is 3.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sulfate-rich zone estuary sediments 8-12 cm".

Description of *Candidatus* Siminosa gen. nov.

Candidatus Siminosa (NL. fem. n. *Siminosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG8-39*. The type species for the genus is *Candidatus* Siminosa ablacisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siminosaceae.

Description of *Candidatus* Siminosaceae fam. nov.

Candidatus Siminosaceae (NL. fem. n. *Siminosaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SG8-39.* The type genus for the taxon is *Candidatus* Siminosa .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Siminovitchia adsulastra sp. nov.

Candidatus Siminovitchia adsulastra (NL. fem. n. *adsulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Siminovitchia sp001989355*. The type genome for the species is the GenBank assembly RS_GCF_001989355.1. The GC content of the type genome is 42.68 % and the genome length is 4.83 Mbp.

Description of *Candidatus* Siminovitchia turibitio sp. nov.

Candidatus Siminovitchia turibitio (NL. fem. n. *turibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Siminovitchia sp009928435*. The type genome for the species is the GenBank assembly RS_GCF_009928435.1. The GC content of the type genome is 40.89 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Siminula bicapilega sp. nov.

Candidatus Siminula bicapilega (NL. fem. n. *bicapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFJL01 sp013450215*. The type genome for the species is the GenBank assembly GCA_014190785.1. The GC content of the type genome is 50.06 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Siminula gen. nov.

Candidatus Siminula (NL. fem. n. *Siminula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFJL01*. The type species for the genus is *Candidatus* Siminula

bicapilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Siminula cilotitas sp. nov.

Candidatus Siminula cilotitas (NL. fem. n. *cilotitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFJL01 sp009886095*. The type genome for the species is the GenBank assembly GCA_009886095.1. The GC content of the type genome is 51.52 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Siminula saburifica sp. nov.

Candidatus Siminula saburifica (NL. fem. n. *saburifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFJL01 sp903957805*. The type genome for the species is the GenBank assembly GCA_903957805.1. The GC content of the type genome is 50.31 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Singulisphaera antegitura sp. nov.

Candidatus Singulisphaera antegitura (NL. fem. n. *antegitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Singulisphaera sp900129635*. The type genome for the species is the GenBank assembly RS_GCF_900129635.1. The GC content of the type genome is 63.07 % and the genome length is 10.69 Mbp.

Description of *Candidatus* Sinimarinibacterium xeramimonia sp. nov.

Candidatus Sinimarinibacterium xeramimonia (NL. fem. n. *xeramimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinimarinibacterium sp010092425*. The type genome for the species is the GenBank assembly RS_GCF_010092425.1. The GC content of the type genome is 60.84 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Sinomicrobium alsulitia sp. nov.

Candidatus Sinomicrobium alsulitia (NL. fem. n. *alsulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinomicrobium sp014518365*. The type genome for the species is the GenBank assembly RS_GCF_014518365.1. The GC content of the type genome is 45.19 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Sinomicrobium obveribra sp. nov.

Candidatus Sinomicrobium obveribra (NL. fem. n. *obveribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinomicrobium sp003285545*. The type genome for the species is the GenBank assembly RS_GCF_003285545.1. The GC content of the type genome is 47.7 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Sinomonas arundastra sp. nov.

Candidatus Sinomonas arundastra (NL. fem. n. *arundastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinomonas sp005876955*. The type genome for the species is the GenBank assembly RS_GCF_005876955.1. The GC content of the type genome is 67.64 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Sinomonas cerificula sp. nov.

Candidatus Sinomonas cerificula (NL. fem. n. *cerificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinomonas sp014656475*. The type genome for the species is the GenBank assembly GCA_014656475.1. The GC content of the type genome is 69.94 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Sinomonas infelousia sp. nov.

Candidatus Sinomonas infelousia (NL. fem. n. *infelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinomonas sp002224485*. The type genome for the species is the GenBank assembly GCA_002224485.1. The GC content of the type genome is 70.98 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Sinorhizobium abascentia sp. nov.

Candidatus Sinorhizobium abascentia (NL. fem. n. *abascentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinorhizobium sp000421085*. The type genome for the species is the GenBank assembly GCA_000421085.1. The GC content of the type genome is 61.94 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Sinorhizobium alsulatio sp. nov.

Candidatus Sinorhizobium alsulatio (NL. fem. n. *alsulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinorhizobium sp001854885*. The type genome for the species is the GenBank assembly RS_GCF_001854885.1. The GC content of the type genome is 62.19 % and the genome length is 6.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil from surrounding area".

Description of *Candidatus* Sinorhizobium appacivita sp. nov.

Candidatus Sinorhizobium appacivita (NL. fem. n. *appacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinorhizobium sp000513895*. The type genome for the species is the GenBank assembly RS_GCF_000513895.1. The GC content of the type genome is 61.83 % and the genome length is 6.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Sinorhizobium cosidessa sp. nov.

Candidatus Sinorhizobium cosidessa (NL. fem. n. *cosidessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinorhizobium sp000378985*. The type genome for the species is the GenBank assembly RS_GCF_000378985.1. The GC content of the type genome is 62.28 % and the genome length is 6.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rio de Janeiro".

Description of *Candidatus* Sinorhizobium loraritas sp. nov.

Candidatus Sinorhizobium loraritas (NL. fem. n. *loraritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sinorhizobium sp004827385*. The type genome for the species is the GenBank assembly RS_GCF_004827385.1. The GC content of the type genome is 61.16 % and the genome length is 7.7 Mbp.

Description of *Candidatus* Siphonobacter relenax sp. nov.

Candidatus Siphonobacter relenax (NL. fem. n. *relenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Siphonobacter sp002838835*. The type genome for the species is the GenBank assembly RS_GCF_002838835.1. The GC content of the type genome is 44.8 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Siphonobacter repudibra sp. nov.

Candidatus Siphonobacter repudibra (NL. fem. n. *repudibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Siphonobacter sp002872335*. The type genome for the species is the GenBank assembly RS_GCF_002872335.1. The GC content of the type genome is 48.6 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Sitelana cilicitura sp. nov.

Candidatus Sitelana cilicitura (NL. fem. n. *cilicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSQ01 sp007130355*. The type genome for the species is the

GenBank assembly GCA_003557735.1. The GC content of the type genome is 71.4 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Sitelana gen. nov.

Candidatus Sitelana (NL. fem. n. *Sitelana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLSQ01*. The type species for the genus is *Candidatus* Sitelana cilicitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sitelaria famelastra sp. nov.

Candidatus Sitelaria famelastra (NL. fem. n. *famelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU074 sp001513075*. The type genome for the species is the GenBank assembly GCA_012523455.1. The GC content of the type genome is 43.53 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Sitelaria gen. nov.

Candidatus Sitelaria (NL. fem. n. *Sitelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU074*. The type species for the genus is *Candidatus* Sitelaria famelastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sitelaria notabitio sp. nov.

Candidatus Sitelaria notabitio (NL. fem. n. *notabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU074 sp002385885*. The type genome for the species is the GenBank assembly GCA_001513065.1. The GC content of the type genome is 42.41 % and the genome length is 2.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a;

and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Sitelaria repuditica sp. nov.

Candidatus Sitelaria repuditica (NL. fem. n. *repuditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU074 sp001513505*. The type genome for the species is the GenBank assembly GCA_001513505.1. The GC content of the type genome is 41.7 % and the genome length is 2.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Sitelella sceptatio sp. nov.

Candidatus Sitelella sceptatio (NL. fem. n. *sceptatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-46-9 sp001804045*. The type genome for the species is the GenBank assembly GCA_001804045.1. The GC content of the type genome is 45.15 % and the genome length is 2.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Sitelella gen. nov.

Candidatus Sitelella (NL. fem. n. *Sitelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-46-9*. The type species for the genus is *Candidatus* Sitelella sceptatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-46-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sitelellaceae.

Description of *Candidatus* Sitelellaceae fam. nov.

Candidatus Sitelellaceae (NL. fem. n. *Sitelellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-46-9.* The type genus for the taxon is *Candidatus* Sitelella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1560*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vacilellales.

Description of *Candidatus* Sitelia defetitia sp. nov.

Candidatus Sitelia defetitia (NL. fem. n. *defetitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPC01 sp003553185*. The type genome for the species is the GenBank assembly GCA_003553185.1. The GC content of the type genome is 63.86 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Sitelia gen. nov.

Candidatus Sitelia (NL. fem. n. *Sitelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PUPC01*. The type species for the genus is *Candidatus* Sitelia defetitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PUPC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siteliaceae.

Description of *Candidatus* Siteliaceae fam. nov.

Candidatus Siteliaceae (NL. fem. n. *Siteliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PUPC01.* The type genus for the taxon is *Candidatus* Sitelia .

According to the original version of GTDB R06-RS202, this family belongs to the order *PUPC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Siteliales.

Description of *Candidatus* Siteliales ord. nov.

Candidatus Siteliales (NL. fem. n. *Siteliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PUPC01.* The type genus for the taxon is *Candidatus* Sitelia .

According to the original version of GTDB R06-RS202, this family belongs to the class *PUPC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Siteliae.

Description of *Candidatus* Siteliae class. nov.

Candidatus Siteliae (NL. fem. n. *c__Siteliae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PUPC01.* The type genus for the taxon is *Candidatus* Sitelia .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Sitelia meridousia sp. nov.

Candidatus Sitelia meridousia (NL. fem. n. *meridousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PUPC01 sp003559755*. The type genome for the species is the GenBank assembly GCA_003559755.1. The GC content of the type genome is 65.26 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Sitelosa derelitica sp. nov.

Candidatus Sitelosa derelitica (NL. fem. n. *derelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYWZ01 sp903930075*. The type genome for the species is the GenBank assembly GCA_903832595.1. The GC content of the type genome is 40.21 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Sitelosa gen. nov.

Candidatus Sitelosa (NL. fem. n. *Sitelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYWZ01*. The type species for the genus is *Candidatus* Sitelosa

derelitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIYWZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sitelosaceae.

Description of *Candidatus* Sitelosaceae fam. nov.

Candidatus Sitelosaceae (NL. fem. n. *Sitelosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIYWZ01.* The type genus for the taxon is *Candidatus* Sitelosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6184*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Metabidales.

Description of *Candidatus* Sitelula gasomigena sp. nov.

Candidatus Sitelula gasomigena (NL. fem. n. *gasomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SHVZ01 sp009694025*. The type genome for the species is the GenBank assembly GCA_009694025.1. The GC content of the type genome is 68.08 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Sitelula gen. nov.

Candidatus Sitelula (NL. fem. n. *Sitelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SHVZ01*. The type species for the genus is *Candidatus* Sitelula gasomigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SHVZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sitelulaceae.

Description of *Candidatus* Sitelulaceae fam. nov.

Candidatus Sitelulaceae (NL. fem. n. *Sitelulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVZ01*. The type genus for the taxon is *Candidatus* Sitelula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SHVZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sitelulales.

Description of *Candidatus* Sitelulales ord. nov.

Candidatus Sitelulales (NL. fem. n. *Sitelulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SHVZ01*. The type genus for the taxon is *Candidatus* Sitelula .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Siticana aciscentia sp. nov.

Candidatus Siticana aciscentia (NL. fem. n. *aciscentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-001735895 sp001735895*. The type genome for the species is the GenBank assembly GCA_001735895.1. The GC content of the type genome is 55.6 % and the genome length is 4.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gutless worms collected in the Mediterranean Sea; off the coast of Capo di".

Description of *Candidatus* Siticana gen. nov.

Candidatus Siticana (NL. fem. n. *Siticana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-001735895*. The type species for the genus is *Candidatus* Siticana aciscentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-001735895*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siticanaceae.

Description of *Candidatus* Siticanaceae fam. nov.

Candidatus Siticanaceae (NL. fem. n. *Siticanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-001735895.* The type genus for the taxon is *Candidatus* Siticana .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-001735895*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Siticanales.

Description of *Candidatus* Siticanales ord. nov.

Candidatus Siticanales (NL. fem. n. *Siticanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-001735895.* The type genus for the taxon is *Candidatus* Siticana .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Siticana exoscedo sp. nov.

Candidatus Siticana exoscedo (NL. fem. n. *exoscedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-001735895 sp003645435*. The type genome for the species is the GenBank assembly GCA_003645435.1. The GC content of the type genome is 50.34 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Siticana risibatio sp. nov.

Candidatus Siticana risibatio (NL. fem. n. *risibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-001735895 sp009937625*. The type genome for the species is the GenBank assembly GCA_009937625.1. The GC content of the type genome is 57.93 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Siticana tolutilenta sp. nov.

Candidatus Siticana tolutilenta (NL. fem. n. *tolutilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-001735895 sp003231795*. The type genome for the species is the GenBank assembly GCA_003231795.1. The GC content of the type genome is 50.3 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Siticaria mahelastra sp. nov.

Candidatus Siticaria mahelastra (NL. fem. n. *mahelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4782 sp002403095*. The type genome for the species is the GenBank assembly GCA_002328635.1. The GC content of the type genome is 52.62 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Siticaria gen. nov.

Candidatus Siticaria (NL. fem. n. *Siticaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4782*. The type species for the genus is *Candidatus* Siticaria mahelastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Siticella vicecilenta sp. nov.

Candidatus Siticella vicecilenta (NL. fem. n. *vicecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDJB01 sp013003425*. The type genome for the species is the GenBank assembly GCA_013043785.1. The GC content of the type genome is 60.04 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Siticella gen. nov.

Candidatus Siticella (NL. fem. n. *Siticella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDJB01*. The type species for the genus is *Candidatus* Siticella vicecilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SZUA-146. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solaculaceae.

Description of *Candidatus* Siticia acrotivita sp. nov.

Candidatus Siticia acrotivita (NL. fem. n. *acrotivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J058 sp003695705*. The type genome for the species is the GenBank assembly GCA_003695705.1. The GC content of the type genome is 72.17 % and the genome length is 6.61 Mbp.

Description of *Candidatus* Siticia gen. nov.

Candidatus Siticia (NL. fem. n. *Siticia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J058*. The type species for the genus is *Candidatus* Siticia acrotivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J058*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Siticiaceae.

Description of *Candidatus* Siticiaceae fam. nov.

Candidatus Siticiaceae (NL. fem. n. *Siticiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J058.* The type genus for the taxon is *Candidatus* Siticia .

According to the original version of GTDB R06-RS202, this family belongs to the order *J058*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Siticiales.

Description of *Candidatus* Siticiales ord. nov.

Candidatus Siticiales (NL. fem. n. *Siticiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J058.* The type genus for the taxon is *Candidatus* Siticia .

According to the original version of GTDB R06-RS202, this family belongs to the class

J058. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Siticiae.

Description of *Candidatus* Siticiae class. nov.

Candidatus Siticiae (NL. fem. n. *c__Siticiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J058.* The type genus for the taxon is *Candidatus* Siticia .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Siticida bovicifica sp. nov.

Candidatus Siticida bovicifica (NL. fem. n. *bovicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-70-11 sp003220315*. The type genome for the species is the GenBank assembly GCA_001919015.1. The GC content of the type genome is 70.53 % and the genome length is 2.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; 4 days after first rain event (27mm)".

Description of *Candidatus* Siticida gen. nov.

Candidatus Siticida (NL. fem. n. *Siticida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *20CM-2-70-11*. The type species for the genus is *Candidatus* Siticida bovicifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Siticida denicilenta sp. nov.

Candidatus Siticida denicilenta (NL. fem. n. *denicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *20CM-2-70-11 sp003221695*. The type genome for the species is the GenBank assembly GCA_003221695.1. The GC content of the type genome is 69.3 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Siticida denicimonas sp. nov.

Candidatus Siticida denicimonas (NL. fem. n. *denicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-70-11 sp001914535*. The type genome for the species is the GenBank assembly GCA_003220515.1. The GC content of the type genome is 69.52 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Siticida depetitrix sp. nov.

Candidatus Siticida depetitrix (NL. fem. n. *depetitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-70-11 sp003220675*. The type genome for the species is the GenBank assembly GCA_003220675.1. The GC content of the type genome is 68.94 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Siticosa impavitica sp. nov.

Candidatus Siticosa impavitica (NL. fem. n. *impavitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJG01 sp011333865*. The type genome for the species is the GenBank assembly GCA_011333865.1. The GC content of the type genome is 36.1 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Siticosa gen. nov.

Candidatus Siticosa (NL. fem. n. *Siticosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTJG01*. The type species for the genus is *Candidatus* Siticosa impavitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTJG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Siticosaceae.

Description of *Candidatus* Siticosaceae fam. nov.

Candidatus Siticosaceae (NL. fem. n. *Siticosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTJG01*. The type genus for the taxon is *Candidatus* Siticosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *B48-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Celamellales.

Description of *Candidatus* Siticosa remulilega sp. nov.

Candidatus Siticosa remulilega (NL. fem. n. *remulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTJG01 sp002070645*. The type genome for the species is the GenBank assembly GCA_002070645.1. The GC content of the type genome is 36.13 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Slackia antegetta sp. nov.

Candidatus Slackia antegetta (NL. fem. n. *antegetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Slackia_A sp900553775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900553775.1. The GC content of the type genome is 62.43 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Slackia ranunitoga sp. nov.

Candidatus Slackia ranunitoga (NL. fem. n. *ranunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Slackia_A sp900555495*. Although GTDB has assigned a genus name

with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900555495.1. The GC content of the type genome is 61.77 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Slackia vocifax sp. nov.

Candidatus Slackia vocifax (NL. fem. n. *vocifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Slackia_A sp900553655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900553655.1. The GC content of the type genome is 57.67 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Smegmana absorilenta sp. nov.

Candidatus Smegmana absorilenta (NL. fem. n. *absorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746565 sp002746565*. The type genome for the species is the GenBank assembly GCA_002746565.1. The GC content of the type genome is 34.59 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Smegmana gen. nov.

Candidatus Smegmana (NL. fem. n. *Smegmana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746565*. The type species for the genus is *Candidatus* Smegmana absorilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1877*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cosidosaceae.

Description of *Candidatus* Smegmella fumificella sp. nov.

Candidatus Smegmella fumificella (NL. fem. n. *fumificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *P52-10 sp000516555*. The type genome for the species is the GenBank assembly RS_GCF_000516555.1. The GC content of the type genome is 63.49 % and the genome length is 5.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "fruit bat held in captivity in Quebec; Canada and suffering from necrosis of its wing".

Description of *Candidatus* Smegmella gen. nov.

Candidatus Smegmella (NL. fem. n. *Smegmella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *P52-10*. The type species for the genus is *Candidatus* Smegmella fumificella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Smegmia arcebivita sp. nov.

Candidatus Smegmia arcebivita (NL. fem. n. *arcebivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIXD01 sp013178005*. The type genome for the species is the GenBank assembly GCA_013178005.1. The GC content of the type genome is 62.99 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Smegmia gen. nov.

Candidatus Smegmia (NL. fem. n. *Smegmia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIXD01*. The type species for the genus is *Candidatus* Smegmia arcebivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-55-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Salubiaceae.

Description of *Candidatus* Smegmia subacilega sp. nov.

Candidatus Smegmia subacilega (NL. fem. n. *subacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIXD01 sp014360645*. The type genome for the species is the GenBank assembly GCA_014360645.1. The GC content of the type genome is 65.28 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Smegmida effunitio sp. nov.

Candidatus Smegmida effunitio (NL. fem. n. *effunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBDL01 sp005884255*. The type genome for the species is the GenBank assembly GCA_005884255.1. The GC content of the type genome is 68.76 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Smegmida gen. nov.

Candidatus Smegmida (NL. fem. n. *Smegmida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBDL01*. The type species for the genus is *Candidatus* Smegmida effunitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Smegmosa albogatio sp. nov.

Candidatus Smegmosa albogatio (NL. fem. n. *albogatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZHD01 sp012510895*. The type genome for the species is the GenBank assembly GCA_012510895.1. The GC content of the type genome is 40.8 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Smegmosa gen. nov.

Candidatus Smegmosa (NL. fem. n. *Smegmosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZHD01*. The type species for the genus is *Candidatus* Smegmosa

albogatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU083*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petulellaceae.

Description of *Candidatus* Smegmula inexsugo sp. nov.

Candidatus Smegmula inexsugo (NL. fem. n. *inexsugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-35-11 sp001803185*. The type genome for the species is the GenBank assembly GCA_001803185.1. The GC content of the type genome is 34.88 % and the genome length is 1.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Smegmula gen. nov.

Candidatus Smegmula (NL. fem. n. *Smegmula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-35-11*. The type species for the genus is *Candidatus* Smegmula inexsugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Smithella accogimonia sp. nov.

Candidatus Smithella accogimonia (NL. fem. n. *accogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp003141615*. The type genome for the species is the GenBank assembly GCA_003141615.1. The GC content of the type genome is 43.67 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Smithella advigimonia sp. nov.

Candidatus Smithella advigimonia (NL. fem. n. *advigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp002441205*. The type genome for the species is the GenBank assembly GCA_002441205.1. The GC content of the type genome is 43.49 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Smithella arillitia sp. nov.

Candidatus Smithella arillitia (NL. fem. n. *arillitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp001683985*. The type genome for the species is the GenBank assembly GCA_001683985.1. The GC content of the type genome is 42.83 % and the genome length is 2.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "methanogenic consortium M82 from oily sludge".

Description of *Candidatus* Smithella bifaritia sp. nov.

Candidatus Smithella bifaritia (NL. fem. n. *bifaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp002327415*. The type genome for the species is the GenBank assembly GCA_003507965.1. The GC content of the type genome is 42.39 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Smithella bisulibra sp. nov.

Candidatus Smithella bisulibra (NL. fem. n. *bisulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp000747625*. The type genome for the species is the GenBank assembly GCA_003476025.1. The GC content of the type genome is 43.17 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Smithella catocessa sp. nov.

Candidatus Smithella catocessa (NL. fem. n. *catocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp000753945*. The type genome for the species is the

GenBank assembly GCA_002421695.1. The GC content of the type genome is 43.28 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Smithella denavitas sp. nov.

Candidatus Smithella denavitas (NL. fem. n. *denavitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp011371695*. The type genome for the species is the GenBank assembly GCA_011371695.1. The GC content of the type genome is 51.39 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Smithella depasitica sp. nov.

Candidatus Smithella depasitica (NL. fem. n. *depasitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp001412345*. The type genome for the species is the GenBank assembly GCA_001412345.1. The GC content of the type genome is 41.37 % and the genome length is 2.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "methanogenic consortium capable of long-chain paraffin degradation (SDB culture) enriched from contaminated sediments of San Diego Bay; California; degrades n-alkanes from C25 to C50".

Description of *Candidatus* Smithella desoritia sp. nov.

Candidatus Smithella desoritia (NL. fem. n. *desoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp003139775*. The type genome for the species is the GenBank assembly GCA_003169075.1. The GC content of the type genome is 43.34 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Smithella miracedo sp. nov.

Candidatus Smithella miracedo (NL. fem. n. *miracedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp002840555*. The type genome for the species is the GenBank assembly GCA_002840555.1. The GC content of the type genome is 45.65 %

and the genome length is 3.51 Mbp.

Description of *Candidatus* Smithella semunitudo sp. nov.

Candidatus Smithella semunitudo (NL. fem. n. *semunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Smithella sp002840505*. The type genome for the species is the GenBank assembly GCA_002840505.1. The GC content of the type genome is 42.84 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Sneathiella catocitio sp. nov.

Candidatus Sneathiella catocitio (NL. fem. n. *catocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sneathiella sp002694385*. The type genome for the species is the GenBank assembly GCA_002384365.1. The GC content of the type genome is 56.63 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Sneathiella cilotitio sp. nov.

Candidatus Sneathiella cilotitio (NL. fem. n. *cilotitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sneathiella sp006226265*. The type genome for the species is the GenBank assembly GCA_006226265.1. The GC content of the type genome is 57.26 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Sneathiella colubigena sp. nov.

Candidatus Sneathiella colubigena (NL. fem. n. *colubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sneathiella sp002706985*. The type genome for the species is the GenBank assembly GCA_002706985.1. The GC content of the type genome is 54.45 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Sneathiella excinivita sp. nov.

Candidatus Sneathiella excinivita (NL. fem. n. *excinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sneathiella sp002163135*. The type genome for the species is the GenBank assembly GCA_002163135.1. The GC content of the type genome is 45.62 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Sneathiella excucimonas sp. nov.

Candidatus Sneathiella excucimonas (NL. fem. n. *excucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sneathiella sp002428885*. The type genome for the species is the GenBank assembly GCA_002428885.1. The GC content of the type genome is 51.35 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Sneathiella expalicula sp. nov.

Candidatus Sneathiella expalicula (NL. fem. n. *expalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sneathiella sp009882915*. The type genome for the species is the GenBank assembly RS_GCF_009882915.1. The GC content of the type genome is 51.81 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Sneathiella utputitia sp. nov.

Candidatus Sneathiella utputitia (NL. fem. n. *utputitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sneathiella sp002732675*. The type genome for the species is the GenBank assembly GCA_002732675.1. The GC content of the type genome is 52.25 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Snodgrassella arcitimonas sp. nov.

Candidatus Snodgrassella arcitimonas (NL. fem. n. *arcitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Snodgrassella sp001590725*. The type genome for the species is the GenBank assembly RS_GCF_001590725.1. The GC content of the type genome is 47.81 % and the genome length is 2.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Poplar canker".

Description of *Candidatus* Snodgrassella gemebicella sp. nov.

Candidatus Snodgrassella gemebicella (NL. fem. n. *gemebicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Snodgrassella sp900094895*. The type genome for the species is the GenBank assembly RS_GCF_002777525.1. The GC content of the type genome is 42.72 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Snowella fragmitio sp. nov.

Candidatus Snowella fragmitio (NL. fem. n. *fragmitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Snowella sp003249095*. The type genome for the species is the GenBank assembly GCA_003249095.1. The GC content of the type genome is 40.74 % and the genome length is 4.61 Mbp.

Description of *Candidatus* SoCistrobi crusmatio sp. nov.

Candidatus SoCistrobi crusmatio (NL. fem. n. *crusmatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *SoCistrobi sp900143145*. The type genome for the species is the GenBank assembly RS_GCF_900143145.1. The GC content of the type genome is 56.43 % and the genome length is 3.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "host s whole body".

Description of *Candidatus* SoEE anatratio sp. nov.

Candidatus SoEE anatratio (NL. fem. n. *anatratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *SoEE sp009829945*. The type genome for the species is the GenBank assembly RS_GCF_009829945.1. The GC content of the type genome is 26.76 % and the genome length is 0.83 Mbp.

Description of *Candidatus* SoEE cimelibra sp. nov.

Candidatus SoEE cimelibra (NL. fem. n. *cimelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *SoEE sp002933315*. The type genome for the species is the GenBank assembly RS_GCF_002933315.1. The GC content of the type genome is 26.87 % and the genome length is 0.85 Mbp.

Description of *Candidatus* SoEE decinitoga sp. nov.

Candidatus SoEE decinitoga (NL. fem. n. *decinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *SoEE sp002933335*. The type genome for the species is the GenBank assembly RS_GCF_002933335.1. The GC content of the type genome is 27.79 % and the genome length is 0.84 Mbp.

Description of *Candidatus* SoEE nefaratio sp. nov.

Candidatus SoEE nefaratio (NL. fem. n. *nefaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *SoEE sp002933355*. The type genome for the species is the GenBank assembly RS_GCF_002933355.1. The GC content of the type genome is 27.59 % and the genome length is 0.84 Mbp.

Description of *Candidatus* SoEE nosocax sp. nov.

Candidatus SoEE nosocax (NL. fem. n. *nosocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *SoEE sp002933345*. The type genome for the species is the GenBank assembly RS_GCF_002933345.1. The GC content of the type genome is 26.64 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Socagana diludibra sp. nov.

Candidatus Socagana diludibra (NL. fem. n. *diludibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAALKI01 sp011088105*. The type genome for the species is the GenBank assembly GCA_011087855.1. The GC content of the type genome is 48.02 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Socagana gen. nov.

Candidatus Socagana (NL. fem. n. *Socagana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAALKI01*. The type species for the genus is *Candidatus* Socagana diludibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8639*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Locelidaceae.

Description of *Candidatus* Socagaria adtacitudo sp. nov.

Candidatus Socagaria adtacitudo (NL. fem. n. *adtacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp005788815*. The type genome for the species is the GenBank assembly GCA_005788815.1. The GC content of the type genome is 51.52 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Socagaria gen. nov.

Candidatus Socagaria (NL. fem. n. *Socagaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2093*. The type species for the genus is *Candidatus* Socagaria adtacitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Socagaria ammativita sp. nov.

Candidatus Socagaria ammativita (NL. fem. n. *ammativita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp009694565*. The type genome for the species is the GenBank assembly GCA_009694565.1. The GC content of the type genome is 51.21 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Socagaria cacopitura sp. nov.

Candidatus Socagaria cacopitura (NL. fem. n. *cacopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp009691255*. The type genome for the species is the GenBank assembly GCA_009691255.1. The GC content of the type genome is 51.25 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Socagaria defesetta sp. nov.

Candidatus Socagaria defesetta (NL. fem. n. *defesetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp005790505*. The type genome for the species is the GenBank assembly GCA_005797745.1. The GC content of the type genome is 50.61 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Socagaria dicanessa sp. nov.

Candidatus Socagaria dicanessa (NL. fem. n. *dicanessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp009705865*. The type genome for the species is the GenBank assembly GCA_009701435.1. The GC content of the type genome is 50.9 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Socagaria excanastra sp. nov.

Candidatus Socagaria excanastra (NL. fem. n. *excanastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp903904615*. The type genome for the species is the GenBank assembly GCA_903904615.1. The GC content of the type genome is 53.72 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Socagaria hecaticella sp. nov.

Candidatus Socagaria hecaticella (NL. fem. n. *hecaticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp009704065*. The type genome for the species is the GenBank assembly GCA_009703725.1. The GC content of the type genome is 51.56 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Socagaria inexcentia sp. nov.

Candidatus Socagaria inexcentia (NL. fem. n. *inexcentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp903934195*. The type genome for the species is the GenBank assembly GCA_903934195.1. The GC content of the type genome is 51.24 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Socagaria negidatica sp. nov.

Candidatus Socagaria negidatica (NL. fem. n. *negidatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp009920715*. The type genome for the species is the GenBank assembly GCA_009921015.1. The GC content of the type genome is 67.11 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Socagaria pacifitas sp. nov.

Candidatus Socagaria pacifitas (NL. fem. n. *pacifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp005789925*. The type genome for the species is the GenBank assembly GCA_005789925.1. The GC content of the type genome is 58.53 %

and the genome length is 1.5 Mbp.

Description of *Candidatus* Socagaria penicatica sp. nov.

Candidatus Socagaria penicatica (NL. fem. n. *penicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp009702755*. The type genome for the species is the GenBank assembly GCA_009702755.1. The GC content of the type genome is 53.44 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Socagaria pinifitas sp. nov.

Candidatus Socagaria pinifitas (NL. fem. n. *pinifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp002331255*. The type genome for the species is the GenBank assembly GCA_002451285.1. The GC content of the type genome is 57.22 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Socagaria propribra sp. nov.

Candidatus Socagaria propribra (NL. fem. n. *propribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp009703055*. The type genome for the species is the GenBank assembly GCA_009703055.1. The GC content of the type genome is 53.39 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Socagaria remeditica sp. nov.

Candidatus Socagaria remeditica (NL. fem. n. *remeditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp009703125*. The type genome for the species is the GenBank assembly GCA_009703125.1. The GC content of the type genome is 51.87 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Socagaria repepitura sp. nov.

Candidatus Socagaria repepitura (NL. fem. n. *repepitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp903929185*. The type genome for the species is the GenBank assembly GCA_903869055.1. The GC content of the type genome is 51.16 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Socagaria robigitia sp. nov.

Candidatus Socagaria robigitia (NL. fem. n. *robigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp014190235*. The type genome for the species is the GenBank assembly GCA_014190235.1. The GC content of the type genome is 51.3 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Socagaria sicunimonia sp. nov.

Candidatus Socagaria sicunimonia (NL. fem. n. *sicunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2093 sp005788205*. The type genome for the species is the GenBank assembly GCA_005788205.1. The GC content of the type genome is 67.57 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Socagella celamousia sp. nov.

Candidatus Socagella celamousia (NL. fem. n. *celamousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *67-14 sp903891285*. The type genome for the species is the GenBank assembly GCA_903891285.1. The GC content of the type genome is 66.8 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Socagella gen. nov.

Candidatus Socagella (NL. fem. n. *Socagella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *67-14*. The type species for the genus is *Candidatus* Socagella celamousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *70-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Foriciaceae.

Description of *Candidatus* Socagella depicetta sp. nov.

Candidatus Socagella depicetta (NL. fem. n. *depicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *67-14 sp001897355*. The type genome for the species is the GenBank assembly GCA_001897355.1. The GC content of the type genome is 66.62 % and the genome length is 3.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Socagella mutabessa sp. nov.

Candidatus Socagella mutabessa (NL. fem. n. *mutabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *67-14 sp903939845*. The type genome for the species is the GenBank assembly GCA_903958825.1. The GC content of the type genome is 65.19 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Socagella pepenentia sp. nov.

Candidatus Socagella pepenentia (NL. fem. n. *pepenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *67-14 sp903933815*. The type genome for the species is the GenBank assembly GCA_903959545.1. The GC content of the type genome is 63.32 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Socagia antepitrix sp. nov.

Candidatus Socagia antepitrix (NL. fem. n. *antepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHS01 sp013151745*. The type genome for the species is the GenBank assembly GCA_013151745.1. The GC content of the type genome is 43.47 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Socagia gen. nov.

Candidatus Socagia (NL. fem. n. *Socagia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHS01*. The type species for the genus is *Candidatus* Socagia antepitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADHS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagiaceae.

Description of *Candidatus* Socagiaceae fam. nov.

Candidatus Socagiaceae (NL. fem. n. *Socagiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADHS01.* The type genus for the taxon is *Candidatus* Socagia .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAADHS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Socagiales.

Description of *Candidatus* Socagiales ord. nov.

Candidatus Socagiales (NL. fem. n. *Socagiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADHS01.* The type genus for the taxon is *Candidatus* Socagia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Socagida abpatitio sp. nov.

Candidatus Socagida abpatitio (NL. fem. n. *abpatitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALR01 sp900542425*. The type genome for the species is the GenBank assembly GCA_900542425.1. The GC content of the type genome is 44.96 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Socagida gen. nov.

Candidatus Socagida (NL. fem. n. *Socagida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QALR01*. The type species for the genus is *Candidatus* Socagida abpatitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Socagida bipatugo sp. nov.

Candidatus Socagida bipatugo (NL. fem. n. *bipatugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALR01 sp900552255*. The type genome for the species is the GenBank assembly RS_GCF_900760365.1. The GC content of the type genome is 51.94 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Socagida immemessa sp. nov.

Candidatus Socagida immemessa (NL. fem. n. *immemessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALR01 sp003150035*. The type genome for the species is the GenBank assembly GCA_003150035.1. The GC content of the type genome is 48.9 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Socagida tomogessa sp. nov.

Candidatus Socagida tomogessa (NL. fem. n. *tomogessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALR01 sp900553085*. The type genome for the species is the GenBank assembly RS_GCF_900760595.1. The GC content of the type genome is 51.8 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Socagosa apercicula sp. nov.

Candidatus Socagosa apercicula (NL. fem. n. *apercicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-56-20 sp001818655*. The type genome for the species is the GenBank assembly GCA_001818655.1. The GC content of the type genome is 55.69 % and the genome length is 0.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Socagosa gen. nov.

Candidatus Socagosa (NL. fem. n. *Socagosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-56-20*. The type species for the genus is *Candidatus* Socagosa apercicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-56-20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagosaceae.

Description of *Candidatus* Socagosaceae fam. nov.

Candidatus Socagosaceae (NL. fem. n. *Socagosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-56-20.* The type genus for the taxon is *Candidatus* Socagosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Socagula legifitica sp. nov.

Candidatus Socagula legifitica (NL. fem. n. *legifitica* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIRTM01 sp903881505*. The type genome for the species is the GenBank assembly GCA_903838865.1. The GC content of the type genome is 58.93 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Socagula gen. nov.

Candidatus Socagula (NL. fem. n. *Socagula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIRTM01*. The type species for the genus is *Candidatus* Socagula legifitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIRTM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagulaceae.

Description of *Candidatus* Socagulaceae fam. nov.

Candidatus Socagulaceae (NL. fem. n. *Socagulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIRTM01.* The type genus for the taxon is *Candidatus* Socagula .

According to the original version of GTDB R06-RS202, this family belongs to the order *WTBG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depasidales.

Description of *Candidatus* Sodaliphilus alectimonia sp. nov.

Candidatus Sodaliphilus alectimonia (NL. fem. n. *alectimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp004559845*. The type genome for the species is the GenBank assembly GCA_004559845.1. The GC content of the type genome is 49.13 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Sodaliphilus argimisca sp. nov.

Candidatus Sodaliphilus argimisca (NL. fem. n. *argimisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902784675*. The type genome for the species is the GenBank assembly GCA_902784675.1. The GC content of the type genome is 52.46 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Sodaliphilus butubitia sp. nov.

Candidatus Sodaliphilus butubitia (NL. fem. n. *butubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp002314465*. The type genome for the species is the GenBank assembly GCA_002314465.1. The GC content of the type genome is 51.02 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Sodaliphilus capudetta sp. nov.

Candidatus Sodaliphilus capudetta (NL. fem. n. *capudetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902792895*. The type genome for the species is the GenBank assembly GCA_902792895.1. The GC content of the type genome is 53.81 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Sodaliphilus catapilenta sp. nov.

Candidatus Sodaliphilus catapilenta (NL. fem. n. *catapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902787185*. The type genome for the species is the GenBank assembly GCA_902787185.1. The GC content of the type genome is 52.47 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Sodaliphilus catecastra sp. nov.

Candidatus Sodaliphilus catecastra (NL. fem. n. *catecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900318065*. The type genome for the species is the GenBank assembly GCA_902781155.1. The GC content of the type genome is 50.68 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Sodaliphilus catocitas sp. nov.

Candidatus Sodaliphilus catocitas (NL. fem. n. *catocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900320055*. The type genome for the species is the GenBank assembly GCA_900319295.1. The GC content of the type genome is 53.05 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Sodaliphilus cepurastra sp. nov.

Candidatus Sodaliphilus cepurastra (NL. fem. n. *cepurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902762385*. The type genome for the species is the GenBank assembly GCA_902762385.1. The GC content of the type genome is 46.38 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Sodaliphilus cerofitoga sp. nov.

Candidatus Sodaliphilus cerofitoga (NL. fem. n. *cerofitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902777835*. The type genome for the species is the GenBank assembly GCA_902777835.1. The GC content of the type genome is 46.49 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Sodaliphilus cetarifica sp. nov.

Candidatus Sodaliphilus cetarifica (NL. fem. n. *cetarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900318865*. The type genome for the species is the GenBank assembly GCA_002371565.1. The GC content of the type genome is 55.99 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Sodaliphilus cimitifica sp. nov.

Candidatus Sodaliphilus cimitifica (NL. fem. n. *cimitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902760865*. The type genome for the species is the GenBank assembly GCA_902760865.1. The GC content of the type genome is 54.01 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Sodaliphilus conaritudo sp. nov.

Candidatus Sodaliphilus conaritudo (NL. fem. n. *conaritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900318255*. The type genome for the species is the GenBank assembly GCA_902785255.1. The GC content of the type genome is 49.92 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Sodaliphilus culigimonas sp. nov.

Candidatus Sodaliphilus culigimonas (NL. fem. n. *culigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp002396125*. The type genome for the species is the GenBank assembly GCA_002396125.1. The GC content of the type genome is 50.44 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Sodaliphilus curabibula sp. nov.

Candidatus Sodaliphilus curabibula (NL. fem. n. *curabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902792435*. The type genome for the species is the GenBank assembly GCA_902792435.1. The GC content of the type genome is 46.33 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Sodaliphilus dapifilega sp. nov.

Candidatus Sodaliphilus dapifilega (NL. fem. n. *dapifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900322135*. The type genome for the species is the GenBank assembly GCA_900322135.1. The GC content of the type genome is 53.41 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Sodaliphilus decunitio sp. nov.

Candidatus Sodaliphilus decunitio (NL. fem. n. *decunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900319525*. The type genome for the species is the GenBank assembly GCA_902755445.1. The GC content of the type genome is 52.7 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Sodaliphilus defenigena sp. nov.

Candidatus Sodaliphilus defenigena (NL. fem. n. *defenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902786725*. The type genome for the species is the GenBank assembly GCA_902786725.1. The GC content of the type genome is 51.39 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Sodaliphilus defosastra sp. nov.

Candidatus Sodaliphilus defosastra (NL. fem. n. *defosastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902774055*. The type genome for the species is the GenBank assembly GCA_902774055.1. The GC content of the type genome is 51.54 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Sodaliphilus defositudo sp. nov.

Candidatus Sodaliphilus defositudo (NL. fem. n. *defositudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sodaliphilus sp002476625*. The type genome for the species is the GenBank assembly GCA_002476625.1. The GC content of the type genome is 50.92 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Sodaliphilus defuletta sp. nov.

Candidatus Sodaliphilus defuletta (NL. fem. n. *defuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp002395965*. The type genome for the species is the GenBank assembly GCA_002395965.1. The GC content of the type genome is 51.24 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Sodaliphilus delucitrix sp. nov.

Candidatus Sodaliphilus delucitrix (NL. fem. n. *delucitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902800715*. The type genome for the species is the GenBank assembly GCA_902778615.1. The GC content of the type genome is 51.05 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Sodaliphilus demadimonia sp. nov.

Candidatus Sodaliphilus demadimonia (NL. fem. n. *demadimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902776835*. The type genome for the species is the GenBank assembly GCA_902776625.1. The GC content of the type genome is 54.2 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Sodaliphilus denixentia sp. nov.

Candidatus Sodaliphilus denixentia (NL. fem. n. *denixentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902761475*. The type genome for the species is the GenBank assembly GCA_902761475.1. The GC content of the type genome is 56.0 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Sodaliphilus diponessa sp. nov.

Candidatus Sodaliphilus diponessa (NL. fem. n. *diponessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900316835*. The type genome for the species is the GenBank assembly GCA_900318475.1. The GC content of the type genome is 47.24 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Sodaliphilus disidifica sp. nov.

Candidatus Sodaliphilus disidifica (NL. fem. n. *disidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp004557565*. The type genome for the species is the GenBank assembly GCA_004555465.1. The GC content of the type genome is 48.09 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Sodaliphilus energibula sp. nov.

Candidatus Sodaliphilus energibula (NL. fem. n. *energibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902772965*. The type genome for the species is the GenBank assembly GCA_902772965.1. The GC content of the type genome is 54.91 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Sodaliphilus giganago sp. nov.

Candidatus Sodaliphilus giganago (NL. fem. n. *giganago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900770215*. The type genome for the species is the GenBank assembly RS_GCF_900770215.1. The GC content of the type genome is 54.99 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Sodaliphilus haricax sp. nov.

Candidatus Sodaliphilus haricax (NL. fem. n. *haricax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900317835*. The type genome for the species is the GenBank assembly GCA_900317835.1. The GC content of the type genome is 50.87 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Sodaliphilus illapitio sp. nov.

Candidatus Sodaliphilus illapitio (NL. fem. n. *illapitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902772455*. The type genome for the species is the GenBank assembly GCA_902772455.1. The GC content of the type genome is 52.09 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Sodaliphilus infunitoga sp. nov.

Candidatus Sodaliphilus infunitoga (NL. fem. n. *infunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902782545*. The type genome for the species is the GenBank assembly GCA_902782545.1. The GC content of the type genome is 53.0 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Sodaliphilus inperugo sp. nov.

Candidatus Sodaliphilus inperugo (NL. fem. n. *inperugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902782465*. The type genome for the species is the GenBank assembly GCA_902782465.1. The GC content of the type genome is 52.89 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Sodaliphilus ludifisca sp. nov.

Candidatus Sodaliphilus ludifisca (NL. fem. n. *ludifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sodaliphilus sp902776435*. The type genome for the species is the GenBank assembly GCA_902776435.1. The GC content of the type genome is 50.47 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Sodaliphilus megalilenta sp. nov.

Candidatus Sodaliphilus megalilenta (NL. fem. n. *megalilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900318205*. The type genome for the species is the GenBank assembly GCA_902772325.1. The GC content of the type genome is 51.31 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Sodaliphilus refacentia sp. nov.

Candidatus Sodaliphilus refacentia (NL. fem. n. *refacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902779125*. The type genome for the species is the GenBank assembly GCA_902779125.1. The GC content of the type genome is 50.97 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Sodaliphilus renavitas sp. nov.

Candidatus Sodaliphilus renavitas (NL. fem. n. *renavitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900314215*. The type genome for the species is the GenBank assembly GCA_900314215.1. The GC content of the type genome is 55.97 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Sodaliphilus revecentia sp. nov.

Candidatus Sodaliphilus revecentia (NL. fem. n. *revecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902768435*. The type genome for the species is the GenBank assembly GCA_902768435.1. The GC content of the type genome is 50.62 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Sodaliphilus rubigastra sp. nov.

Candidatus Sodaliphilus rubigastra (NL. fem. n. *rubigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900318335*. The type genome for the species is the GenBank assembly GCA_900320005.1. The GC content of the type genome is 51.96 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Sodaliphilus rurigugo sp. nov.

Candidatus Sodaliphilus rurigugo (NL. fem. n. *rurigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902781045*. The type genome for the species is the GenBank assembly GCA_902782405.1. The GC content of the type genome is 54.79 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Sodaliphilus semivimonia sp. nov.

Candidatus Sodaliphilus semivimonia (NL. fem. n. *semivimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900318645*. The type genome for the species is the GenBank assembly GCA_902794195.1. The GC content of the type genome is 50.82 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Sodaliphilus semoditia sp. nov.

Candidatus Sodaliphilus semoditia (NL. fem. n. *semoditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902793405*. The type genome for the species is the GenBank assembly GCA_902793405.1. The GC content of the type genome is 53.1 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Sodaliphilus subinitia sp. nov.

Candidatus Sodaliphilus subinitia (NL. fem. n. *subinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900317325*. The type genome for the species is the GenBank assembly GCA_900317325.1. The GC content of the type genome is 52.51 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Sodaliphilus subodimonas sp. nov.

Candidatus Sodaliphilus subodimonas (NL. fem. n. *subodimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp002353885*. The type genome for the species is the GenBank assembly GCA_902778475.1. The GC content of the type genome is 53.85 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Sodaliphilus subuciforma sp. nov.

Candidatus Sodaliphilus subuciforma (NL. fem. n. *subuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902776955*. The type genome for the species is the GenBank assembly GCA_902776955.1. The GC content of the type genome is 53.73 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Sodaliphilus telegitoga sp. nov.

Candidatus Sodaliphilus telegitoga (NL. fem. n. *telegitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp002353285*. The type genome for the species is the GenBank assembly GCA_002353285.1. The GC content of the type genome is 49.41 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Sodaliphilus turibitoga sp. nov.

Candidatus Sodaliphilus turibitoga (NL. fem. n. *turibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sodaliphilus sp900318535*. The type genome for the species is the GenBank assembly GCA_902755085.1. The GC content of the type genome is 53.13 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Sodaliphilus turicivita sp. nov.

Candidatus Sodaliphilus turicivita (NL. fem. n. *turicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900318345*. The type genome for the species is the GenBank assembly GCA_902759645.1. The GC content of the type genome is 51.32 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Sodaliphilus vaniditia sp. nov.

Candidatus Sodaliphilus vaniditia (NL. fem. n. *vaniditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp900320245*. The type genome for the species is the GenBank assembly GCA_902792565.1. The GC content of the type genome is 54.91 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Sodaliphilus venefitura sp. nov.

Candidatus Sodaliphilus venefitura (NL. fem. n. *venefitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp902785925*. The type genome for the species is the GenBank assembly GCA_902798995.1. The GC content of the type genome is 46.75 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Sodaliphilus vitupago sp. nov.

Candidatus Sodaliphilus vitupago (NL. fem. n. *vitupago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sodaliphilus sp002396085*. The type genome for the species is the GenBank assembly GCA_902763945.1. The GC content of the type genome is 52.17 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Soehngenia recumitas sp. nov.

Candidatus Soehngenia recumitas (NL. fem. n. *recumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Soehngenia_A sp014360205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014360205.1. The GC content of the type genome is 31.31 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Soehngenia resaciforma sp. nov.

Candidatus Soehngenia resaciforma (NL. fem. n. *resaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Soehngenia_A sp002417735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004684055.1. The GC content of the type genome is 31.86 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Solacaria cululedo sp. nov.

Candidatus Solacaria cululedo (NL. fem. n. *cululedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-41-24 sp001775055*. The type genome for the species is the GenBank assembly GCA_000996905.1. The GC content of the type genome is 39.89 % and the genome length is 1.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Solacaria gen. nov.

Candidatus Solacaria (NL. fem. n. *Solacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-41-24*. The type species for the genus is *Candidatus* Solacaria cululedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GWA2-41-24. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacariaceae.

Description of *Candidatus* Solacariaceae fam. nov.

Candidatus Solacariaceae (NL. fem. n. *Solacariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-41-24.* The type genus for the taxon is *Candidatus* Solacaria .

According to GTDB R06-RS202, this family belongs to the order *Curtissbacterales*.

Description of *Candidatus* Solacella abrumicella sp. nov.

Candidatus Solacella abrumicella (NL. fem. n. *abrumicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902800055*. The type genome for the species is the GenBank assembly GCA_902800055.1. The GC content of the type genome is 64.26 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Solacella gen. nov.

Candidatus Solacella (NL. fem. n. *Solacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1067*. The type species for the genus is *Candidatus* Solacella abrumicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1067*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solacellaceae.

Description of *Candidatus* Solacellaceae fam. nov.

Candidatus Solacellaceae (NL. fem. n. *Solacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1067.* The type genus for the taxon is *Candidatus* Solacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *RFP12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Capudanales.

Description of *Candidatus* Solacella acrobedo sp. nov.

Candidatus Solacella acrobedo (NL. fem. n. *acrobedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902773015*. The type genome for the species is the GenBank assembly GCA_902773015.1. The GC content of the type genome is 64.63 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Solacella adfunisca sp. nov.

Candidatus Solacella adfunisca (NL. fem. n. *adfunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp004551905*. The type genome for the species is the GenBank assembly GCA_004551905.1. The GC content of the type genome is 65.34 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Solacella astipigena sp. nov.

Candidatus Solacella astipigena (NL. fem. n. *astipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002392765*. The type genome for the species is the GenBank assembly GCA_002392765.1. The GC content of the type genome is 58.91 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Solacella catobigena sp. nov.

Candidatus Solacella catobigena (NL. fem. n. *catobigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002321305*. The type genome for the species is the GenBank assembly GCA_002321305.1. The GC content of the type genome is 65.95 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Solacella cocibisca sp. nov.

Candidatus Solacella cocibisca (NL. fem. n. *cocibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902788415*. The type genome for the species is the GenBank assembly GCA_902788415.1. The GC content of the type genome is 61.62 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Solacella cohuredo sp. nov.

Candidatus Solacella cohuredo (NL. fem. n. *cohuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002369235*. The type genome for the species is the GenBank assembly GCA_002369235.1. The GC content of the type genome is 57.69 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Solacella decapessa sp. nov.

Candidatus Solacella decapessa (NL. fem. n. *decapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002315875*. The type genome for the species is the GenBank assembly GCA_002315875.1. The GC content of the type genome is 58.04 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Solacella demulessa sp. nov.

Candidatus Solacella demulessa (NL. fem. n. *demulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002298665*. The type genome for the species is the GenBank assembly GCA_003507075.1. The GC content of the type genome is 62.74 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Solacella desupousia sp. nov.

Candidatus Solacella desupousia (NL. fem. n. *desupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp900767325*. The type genome for the species is the GenBank assembly RS_GCF_900767325.1. The GC content of the type genome is 62.49 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Solacella detecatica sp. nov.

Candidatus Solacella detecatica (NL. fem. n. *detecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002351765*. The type genome for the species is the GenBank assembly GCA_002351765.1. The GC content of the type genome is 64.56 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Solacella domabatio sp. nov.

Candidatus Solacella domabatio (NL. fem. n. *domabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902770045*. The type genome for the species is the GenBank assembly GCA_902770045.1. The GC content of the type genome is 64.73 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Solacella fatifitas sp. nov.

Candidatus Solacella fatifitas (NL. fem. n. *fatifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902772905*. The type genome for the species is the GenBank assembly GCA_902772905.1. The GC content of the type genome is 58.22 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Solacella feficitas sp. nov.

Candidatus Solacella feficitas (NL. fem. n. *feficitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902799385*. The type genome for the species is the GenBank assembly GCA_902799385.1. The GC content of the type genome is 59.58 %

and the genome length is 2.71 Mbp.

Description of *Candidatus* Solacella illapitas sp. nov.

Candidatus Solacella illapitas (NL. fem. n. *illapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002371135*. The type genome for the species is the GenBank assembly GCA_002371135.1. The GC content of the type genome is 59.47 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Solacella immodicula sp. nov.

Candidatus Solacella immodicula (NL. fem. n. *immodicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902780865*. The type genome for the species is the GenBank assembly GCA_902780865.1. The GC content of the type genome is 60.48 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Solacella indevatica sp. nov.

Candidatus Solacella indevatica (NL. fem. n. *indevatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902801025*. The type genome for the species is the GenBank assembly GCA_902801025.1. The GC content of the type genome is 59.66 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Solacella intecimonia sp. nov.

Candidatus Solacella intecimonia (NL. fem. n. *intecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002363575*. The type genome for the species is the GenBank assembly GCA_002363575.1. The GC content of the type genome is 62.2 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Solacella lacinitura sp. nov.

Candidatus Solacella lacinitura (NL. fem. n. *lacinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp900321255*. The type genome for the species is the GenBank assembly GCA_900321255.1. The GC content of the type genome is 61.06 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Solacella levidugo sp. nov.

Candidatus Solacella levidugo (NL. fem. n. *levidugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902776615*. The type genome for the species is the GenBank assembly GCA_902776615.1. The GC content of the type genome is 58.0 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Solacella obrigetta sp. nov.

Candidatus Solacella obrigetta (NL. fem. n. *obrigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002371755*. The type genome for the species is the GenBank assembly GCA_002371755.1. The GC content of the type genome is 58.07 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Solacella omnigitas sp. nov.

Candidatus Solacella omnigitas (NL. fem. n. *omnigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902799955*. The type genome for the species is the GenBank assembly GCA_902799955.1. The GC content of the type genome is 61.89 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Solacella perexitia sp. nov.

Candidatus Solacella perexitia (NL. fem. n. *perexitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002350535*. The type genome for the species is the GenBank assembly GCA_902775595.1. The GC content of the type genome is 61.17 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Solacella reduvitio sp. nov.

Candidatus Solacella reduvitio (NL. fem. n. *reduvitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002440145*. The type genome for the species is the GenBank assembly GCA_003531875.1. The GC content of the type genome is 63.34 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Solacella salubifica sp. nov.

Candidatus Solacella salubifica (NL. fem. n. *salubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp902761275*. The type genome for the species is the GenBank assembly GCA_902761275.1. The GC content of the type genome is 58.76 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Solacella solipibra sp. nov.

Candidatus Solacella solipibra (NL. fem. n. *solipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002395905*. The type genome for the species is the GenBank assembly GCA_002395905.1. The GC content of the type genome is 60.89 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Solacella tranvifica sp. nov.

Candidatus Solacella tranvifica (NL. fem. n. *tranvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp002449695*. The type genome for the species is the GenBank assembly GCA_002449695.1. The GC content of the type genome is 65.16 %

and the genome length is 2.52 Mbp.

Description of *Candidatus* Solacella vinacisca sp. nov.

Candidatus Solacella vinacisca (NL. fem. n. *vinacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp900320855*. The type genome for the species is the GenBank assembly GCA_900320855.1. The GC content of the type genome is 66.11 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Solacella xenoditica sp. nov.

Candidatus Solacella xenoditica (NL. fem. n. *xenoditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1067 sp900321575*. The type genome for the species is the GenBank assembly GCA_902760205.1. The GC content of the type genome is 58.23 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Solacosa defasifica sp. nov.

Candidatus Solacosa defasifica (NL. fem. n. *defasifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-241 sp003565555*. The type genome for the species is the GenBank assembly GCA_003565555.1. The GC content of the type genome is 53.45 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Solacosa gen. nov.

Candidatus Solacosa (NL. fem. n. *Solacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3Sed10-241*. The type species for the genus is *Candidatus* Solacosa defasifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Solacosa velivibra sp. nov.

Candidatus Solacosa velivibra (NL. fem. n. *velivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3Sed10-241 sp007125175*. The type genome for the species is the GenBank assembly GCA_007125175.1. The GC content of the type genome is 51.43 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Solacula incunax sp. nov.

Candidatus Solacula incunax (NL. fem. n. *incunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-146 sp003228965*. The type genome for the species is the GenBank assembly GCA_003228965.1. The GC content of the type genome is 51.73 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Solacula gen. nov.

Candidatus Solacula (NL. fem. n. *Solacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-146*. The type species for the genus is *Candidatus* Solacula incunax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-146*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solaculaceae.

Description of *Candidatus* Solaculaceae fam. nov.

Candidatus Solaculaceae (NL. fem. n. *Solaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-146.* The type genus for the taxon is *Candidatus* Solacula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-146*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Solaculales.

Description of *Candidatus* Solaculales ord. nov.

Candidatus Solaculales (NL. fem. n. *Solaculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-146.* The type genus for the taxon is *Candidatus* Solacula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Solacula milifousia sp. nov.

Candidatus Solacula milifousia (NL. fem. n. *milifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-146 sp013002925*. The type genome for the species is the GenBank assembly GCA_013002925.1. The GC content of the type genome is 54.11 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Solibacillus desorisca sp. nov.

Candidatus Solibacillus desorisca (NL. fem. n. *desorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solibacillus sp003073375*. The type genome for the species is the GenBank assembly RS_GCF_003073375.1. The GC content of the type genome is 37.0 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Solibacillus innoxitoga sp. nov.

Candidatus Solibacillus innoxitoga (NL. fem. n. *innoxitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solibacillus sp002736105*. The type genome for the species is the GenBank assembly RS_GCF_002736105.1. The GC content of the type genome is 36.88 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Solibacter cenacatica sp. nov.

Candidatus Solibacter cenacatica (NL. fem. n. *cenacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solibacter sp003136215*. The type genome for the species is the GenBank assembly GCA_003136215.1. The GC content of the type genome is 62.85 % and the genome length is 7.1 Mbp.

Description of *Candidatus* Solidesulfovibrio exsufitio sp. nov.

Candidatus Solidesulfovibrio exsufitio (NL. fem. n. *exsufitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solidesulfovibrio sp001936595*. The type genome for the species is the GenBank assembly RS_GCF_001936595.1. The GC content of the type genome is 63.38 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Solidesulfovibrio indivilenta sp. nov.

Candidatus Solidesulfovibrio indivilenta (NL. fem. n. *indivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solidesulfovibrio sp003525525*. The type genome for the species is the GenBank assembly GCA_003525525.1. The GC content of the type genome is 66.37 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Solidesulfovibrio infiritio sp. nov.

Candidatus Solidesulfovibrio infiritio (NL. fem. n. *infiritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solidesulfovibrio sp000245055*. The type genome for the species is the GenBank assembly RS_GCF_000245055.1. The GC content of the type genome is 65.29 % and the genome length is 4.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Solidesulfovibrio vinolousia sp. nov.

Candidatus Solidesulfovibrio vinolousia (NL. fem. n. *vinolousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Solidesulfovibrio sp000801335*. The type genome for the species is the GenBank assembly RS_GCF_000801335.2. The GC content of the type genome is 61.71 % and the genome length is 5.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leachate from the gold ore mining spoils at an abandoned mining site".

Description of *Candidatus* Solifana conabetta sp. nov.

Candidatus Solifana conabetta (NL. fem. n. *conabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDEA01 sp013816725*. The type genome for the species is the GenBank assembly GCA_013816725.1. The GC content of the type genome is 68.73 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Solifana gen. nov.

Candidatus Solifana (NL. fem. n. *Solifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDEA01*. The type species for the genus is *Candidatus* Solifana conabetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACDEA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solifanaceae.

Description of *Candidatus* Solifanaceae fam. nov.

Candidatus Solifanaceae (NL. fem. n. *Solifanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACDEA01*. The type genus for the taxon is *Candidatus* Solifana .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Solifaria relecatica sp. nov.

Candidatus Solifaria relecatica (NL. fem. n. *relecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA6177 sp002422875*. The type genome for the species is the GenBank assembly GCA_002422875.1. The GC content of the type genome is 30.27 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Solifaria gen. nov.

Candidatus Solifaria (NL. fem. n. *Solifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6177*. The type species for the genus is *Candidatus* Solifaria relecatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6177*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solifariaceae.

Description of *Candidatus* Solifariaceae fam. nov.

Candidatus Solifariaceae (NL. fem. n. *Solifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6177.* The type genus for the taxon is *Candidatus* Solifaria .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Solifella binocax sp. nov.

Candidatus Solifella binocax (NL. fem. n. *binocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUCS01 sp903897715*. The type genome for the species is the GenBank assembly GCA_903892205.1. The GC content of the type genome is 44.5 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Solifella gen. nov.

Candidatus Solifella (NL. fem. n. *Solifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUCS01*. The type species for the genus is *Candidatus* Solifella binocax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIUCS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solifellaceae.

Description of *Candidatus* Solifellaceae fam. nov.

Candidatus Solifellaceae (NL. fem. n. *Solifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIUCS01.* The type genus for the taxon is *Candidatus* Solifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAIUCS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Solifellales.

Description of *Candidatus* Solifellales ord. nov.

Candidatus Solifellales (NL. fem. n. *Solifellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIUCS01.* The type genus for the taxon is *Candidatus* Solifella .

According to the GTDB R06-RS202, this order belongs to the class *Cyanobacteriia*.

Description of *Candidatus* Solifia favilisca sp. nov.

Candidatus Solifia favilisca (NL. fem. n. *favilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-70-10 sp001795345*. The type genome for the species is the GenBank assembly GCA_001797125.1. The GC content of the type genome is 71.34 % and the genome length is 1.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Solifia gen. nov.

Candidatus Solifia (NL. fem. n. *Solifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-70-10*. The type species for the genus is *Candidatus* Solifia

favilisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P2-11E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotosaceae.

Description of *Candidatus* Solifida bifisatica sp. nov.

Candidatus Solifida bifisatica (NL. fem. n. *bifisatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10029 sp001767575*. The type genome for the species is the GenBank assembly GCA_003522005.1. The GC content of the type genome is 53.11 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Solifida gen. nov.

Candidatus Solifida (NL. fem. n. *Solifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10029*. The type species for the genus is *Candidatus* Solifida bifisatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solifidaceae.

Description of *Candidatus* Solifidaceae fam. nov.

Candidatus Solifidaceae (NL. fem. n. *Solifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10029.* The type genus for the taxon is *Candidatus* Solifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10029*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Solifidales.

Description of *Candidatus* Solifidales ord. nov.

Candidatus Solifidales (NL. fem. n. *Solifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10029.* The type genus for the taxon is *Candidatus* Solifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Monocellae.

Description of *Candidatus* Solifosa parocessa sp. nov.

Candidatus Solifosa parocessa (NL. fem. n. *parocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12183 sp003530935*. The type genome for the species is the GenBank assembly GCA_014359945.1. The GC content of the type genome is 62.93 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Solifosa gen. nov.

Candidatus Solifosa (NL. fem. n. *Solifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12183*. The type species for the genus is *Candidatus* Solifosa parocessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Solimicrobium cerifibula sp. nov.

Candidatus Solimicrobium cerifibula (NL. fem. n. *cerifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solimicrobium sp903893945*. The type genome for the species is the GenBank assembly GCA_903920545.1. The GC content of the type genome is 52.67 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Solimicrobium inmemitudo sp. nov.

Candidatus Solimicrobium inmemitudo (NL. fem. n. *inmemitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Solimicrobium sp903914535*. The type genome for the species is the GenBank assembly GCA_903914535.1. The GC content of the type genome is 47.78 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Solimicrobium nugacastra sp. nov.

Candidatus Solimicrobium nugacastra (NL. fem. n. *nugacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solimicrobium sp903862415*. The type genome for the species is the GenBank assembly GCA_903829965.1. The GC content of the type genome is 51.13 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Solimonas adluventia sp. nov.

Candidatus Solimonas adluventia (NL. fem. n. *adluventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solimonas sp012241385*. The type genome for the species is the GenBank assembly RS_GCF_012241385.1. The GC content of the type genome is 65.37 % and the genome length is 4.7 Mbp.

Description of *Candidatus* Solimonas denoritio sp. nov.

Candidatus Solimonas denoritio (NL. fem. n. *denoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solimonas_A sp003428335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003428335.1. The GC content of the type genome is 67.09 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Solipana bicoditia sp. nov.

Candidatus Solipana bicoditia (NL. fem. n. *bicoditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6002 sp013697705*. The type genome for the species is the GenBank assembly GCA_013697705.1. The GC content of the type genome is 39.68 %

and the genome length is 2.28 Mbp.

Description of *Candidatus* Solipana gen. nov.

Candidatus Solipana (NL. fem. n. *Solipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6002*. The type species for the genus is *Candidatus* Solipana bicoditia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solipanaceae.

Description of *Candidatus* Solipanaceae fam. nov.

Candidatus Solipanaceae (NL. fem. n. *Solipanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6002.* The type genus for the taxon is *Candidatus* Solipana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6002*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Solipanales.

Description of *Candidatus* Solipanales ord. nov.

Candidatus Solipanales (NL. fem. n. *Solipanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6002.* The type genus for the taxon is *Candidatus* Solipana .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Solipana tenilitica sp. nov.

Candidatus Solipana tenilitica (NL. fem. n. *tenilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6002 sp002429595*. The type genome for the species is the GenBank assembly GCA_002429595.1. The GC content of the type genome is 39.61 %

and the genome length is 2.84 Mbp.

Description of *Candidatus* Soliparia affanitura sp. nov.

Candidatus Soliparia affanitura (NL. fem. n. *affanitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7227 sp003598975*. The type genome for the species is the GenBank assembly GCA_003598975.1. The GC content of the type genome is 55.51 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Soliparia gen. nov.

Candidatus Soliparia (NL. fem. n. *Soliparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7227*. The type species for the genus is *Candidatus* Soliparia affanitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *EnvOPS12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinoliaceae.

Description of *Candidatus* Soliparia bonifatio sp. nov.

Candidatus Soliparia bonifatio (NL. fem. n. *bonifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7227 sp002473085*. The type genome for the species is the GenBank assembly GCA_900696585.1. The GC content of the type genome is 60.84 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Soliparia exsanatio sp. nov.

Candidatus Soliparia exsanatio (NL. fem. n. *exsanatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7227 sp009885445*. The type genome for the species is the GenBank assembly GCA_009885445.1. The GC content of the type genome is 54.63 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Solipella bicubatica sp. nov.

Candidatus Solipella bicubatica (NL. fem. n. *bicubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-103 sp900317905*. The type genome for the species is the GenBank assembly GCA_900317905.1. The GC content of the type genome is 58.82 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Solipella gen. nov.

Candidatus Solipella (NL. fem. n. *Solipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-103*. The type species for the genus is *Candidatus* Solipella bicubatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Solipella catobessa sp. nov.

Candidatus Solipella catobessa (NL. fem. n. *catobessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-103 sp004556965*. The type genome for the species is the GenBank assembly GCA_004553085.1. The GC content of the type genome is 60.49 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Solipella ceracatica sp. nov.

Candidatus Solipella ceracatica (NL. fem. n. *ceracatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-103 sp900317855*. The type genome for the species is the GenBank assembly GCA_004551895.1. The GC content of the type genome is 62.26 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Solipella dimiditudo sp. nov.

Candidatus Solipella dimiditudo (NL. fem. n. *dimiditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-103 sp000432375*. The type genome for the species is the GenBank assembly GCA_900543135.1. The GC content of the type genome is 62.17 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Solipella luculiforma sp. nov.

Candidatus Solipella luculiforma (NL. fem. n. *luculiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-103 sp900757655*. The type genome for the species is the GenBank assembly GCA_900757655.1. The GC content of the type genome is 61.98 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Solipella risibessa sp. nov.

Candidatus Solipella risibessa (NL. fem. n. *risibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-103 sp900543625*. The type genome for the species is the GenBank assembly GCA_008672835.1. The GC content of the type genome is 61.79 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Solipella saxopedo sp. nov.

Candidatus Solipella saxopedo (NL. fem. n. *saxopedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-103 sp900316745*. The type genome for the species is the GenBank assembly GCA_900316745.1. The GC content of the type genome is 59.01 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Solipia solivitudo sp. nov.

Candidatus Solipia solivitudo (NL. fem. n. *solivitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAISDR01 sp903884125*. The type genome for the species is the GenBank assembly GCA_903884125.1. The GC content of the type genome is 55.18 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Solipia gen. nov.

Candidatus Solipia (NL. fem. n. *Solipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAISDR01*. The type species for the genus is *Candidatus* Solipia solivitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAISDR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solipiaceae.

Description of *Candidatus* Solipiaceae fam. nov.

Candidatus Solipiaceae (NL. fem. n. *Solipiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAISDR01.* The type genus for the taxon is *Candidatus* Solipia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAISDR01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Solipiales.

Description of *Candidatus* Solipiales ord. nov.

Candidatus Solipiales (NL. fem. n. *Solipiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAISDR01.* The type genus for the taxon is *Candidatus* Solipia .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Solipida benivago sp. nov.

Candidatus Solipida benivago (NL. fem. n. *benivago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp002071385*. The type genome for the species is the

GenBank assembly GCA_002071385.1. The GC content of the type genome is 48.84 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Solipida gen. nov.

Candidatus Solipida (NL. fem. n. *Solipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DMER64*. The type species for the genus is *Candidatus* Solipida benivago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Solipida biveritica sp. nov.

Candidatus Solipida biveritica (NL. fem. n. *biveritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp012515395*. The type genome for the species is the GenBank assembly GCA_012515395.1. The GC content of the type genome is 46.19 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Solipida hexapitura sp. nov.

Candidatus Solipida hexapitura (NL. fem. n. *hexapitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp002408205*. The type genome for the species is the GenBank assembly GCA_002408205.1. The GC content of the type genome is 46.48 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Solipida inmacentia sp. nov.

Candidatus Solipida inmacentia (NL. fem. n. *inmacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp012839605*. The type genome for the species is the GenBank assembly GCA_012839605.1. The GC content of the type genome is 44.92 %

and the genome length is 1.65 Mbp.

Description of *Candidatus* Solipida malogitica sp. nov.

Candidatus Solipida malogitica (NL. fem. n. *malogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp002070565*. The type genome for the species is the GenBank assembly GCA_002070565.1. The GC content of the type genome is 48.53 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Solipida munimugo sp. nov.

Candidatus Solipida munimugo (NL. fem. n. *munimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp002427525*. The type genome for the species is the GenBank assembly GCA_012519735.1. The GC content of the type genome is 46.2 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Solipida nitelitio sp. nov.

Candidatus Solipida nitelitio (NL. fem. n. *nitelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp002409325*. The type genome for the species is the GenBank assembly GCA_002409325.1. The GC content of the type genome is 48.48 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Solipida oppugitica sp. nov.

Candidatus Solipida oppugitica (NL. fem. n. *oppugitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp002071175*. The type genome for the species is the GenBank assembly GCA_002071175.1. The GC content of the type genome is 45.92 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Solipida recumugo sp. nov.

Candidatus Solipida recumugo (NL. fem. n. *recumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp002305545*. The type genome for the species is the GenBank assembly GCA_012516675.1. The GC content of the type genome is 48.89 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Solipida senacentia sp. nov.

Candidatus Solipida senacentia (NL. fem. n. *senacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp001603455*. The type genome for the species is the GenBank assembly GCA_012839545.1. The GC content of the type genome is 45.97 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Solipida subaditas sp. nov.

Candidatus Solipida subaditas (NL. fem. n. *subaditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp011620605*. The type genome for the species is the GenBank assembly GCA_011620605.1. The GC content of the type genome is 46.41 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Solipida utralousia sp. nov.

Candidatus Solipida utralousia (NL. fem. n. *utralousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp012510445*. The type genome for the species is the GenBank assembly GCA_012510445.1. The GC content of the type genome is 44.07 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Solipida volunitudo sp. nov.

Candidatus Solipida volunitudo (NL. fem. n. *volunitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DMER64 sp001512865*. The type genome for the species is the GenBank assembly GCA_012522235.1. The GC content of the type genome is 49.79 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Soliposa rorulitrix sp. nov.

Candidatus Soliposa rorulitrix (NL. fem. n. *rorulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *33-17 sp001897445*. The type genome for the species is the GenBank assembly GCA_001897445.1. The GC content of the type genome is 33.09 % and the genome length is 1.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Soliposa gen. nov.

Candidatus Soliposa (NL. fem. n. *Soliposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *33-17*. The type species for the genus is *Candidatus* Soliposa rorulitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *33-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Soliposaceae.

Description of *Candidatus* Soliposaceae fam. nov.

Candidatus Soliposaceae (NL. fem. n. *Soliposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *33-17.* The type genus for the taxon is *Candidatus* Soliposa .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Solipula monocitoga sp. nov.

Candidatus Solipula monocitoga (NL. fem. n. *monocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIVVT01 sp903909435*. The type genome for the species is the GenBank assembly GCA_903909435.1. The GC content of the type genome is 61.58 % and the genome length is 7.59 Mbp.

Description of *Candidatus* Solipula gen. nov.

Candidatus Solipula (NL. fem. n. *Solipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVVT01*. The type species for the genus is *Candidatus* Solipula monocitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Solirubrobacter offunilega sp. nov.

Candidatus Solirubrobacter offunilega (NL. fem. n. *offunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solirubrobacter sp000425945*. The type genome for the species is the GenBank assembly RS_GCF_000425945.1. The GC content of the type genome is 72.26 % and the genome length is 6.64 Mbp.

Description of *Candidatus* Solirubrum fatificula sp. nov.

Candidatus Solirubrum fatificula (NL. fem. n. *fatificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solirubrum sp009906935*. The type genome for the species is the GenBank assembly RS_GCF_008727865.1. The GC content of the type genome is 62.03 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Solirubrum incesifica sp. nov.

Candidatus Solirubrum incesifica (NL. fem. n. *incesifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solirubrum sp003258365*. The type genome for the species is the GenBank assembly RS_GCF_003258365.1. The GC content of the type genome is 65.58 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Solirubrum papavibula sp. nov.

Candidatus Solirubrum papavibula (NL. fem. n. *papavibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Solirubrum sp002007105*. The type genome for the species is the GenBank assembly RS_GCF_002007105.1. The GC content of the type genome is 62.82 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Solivana chalbicula sp. nov.

Candidatus Solivana chalbicula (NL. fem. n. *chalbicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J063 sp003696125*. The type genome for the species is the GenBank assembly GCA_003696125.1. The GC content of the type genome is 58.19 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Solivana gen. nov.

Candidatus Solivana (NL. fem. n. *Solivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J063*. The type species for the genus is *Candidatus* Solivana chalbicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J063*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solivanaceae.

Description of *Candidatus* Solivanaceae fam. nov.

Candidatus Solivanaceae (NL. fem. n. *Solivanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J063.* The type genus for the taxon is *Candidatus* Solivana .

According to the original version of GTDB R06-RS202, this family belongs to the order *J063*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Solivanales.

Description of *Candidatus* Solivanales ord. nov.

Candidatus Solivanales (NL. fem. n. *Solivanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J063.* The type genus for the taxon is *Candidatus* Solivana .

According to the GTDB R06-RS202, this order belongs to the class *Entotheonellia*.

Description of *Candidatus* Solivaria exurrisca sp. nov.

Candidatus Solivaria exurrisca (NL. fem. n. *exurrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINDR01 sp903839955*. The type genome for the species is the GenBank assembly GCA_903839955.1. The GC content of the type genome is 45.77 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Solivaria gen. nov.

Candidatus Solivaria (NL. fem. n. *Solivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAINDR01*. The type species for the genus is *Candidatus* Solivaria exurrisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Solivaria viragitica sp. nov.

Candidatus Solivaria viragitica (NL. fem. n. *viragitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAINDR01 sp903847415*. The type genome for the species is the GenBank assembly GCA_903847415.1. The GC content of the type genome is 35.4 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Solivella tenemitoga sp. nov.

Candidatus Solivella tenemitoga (NL. fem. n. *tenemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGY01 sp013152165*. The type genome for the species is the GenBank assembly GCA_013152165.1. The GC content of the type genome is 44.63 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Solivella gen. nov.

Candidatus Solivella (NL. fem. n. *Solivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGY01*. The type species for the genus is *Candidatus* Solivella tenemitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADGY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solivellaceae.

Description of *Candidatus* Solivellaceae fam. nov.

Candidatus Solivellaceae (NL. fem. n. *Solivellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADGY01.* The type genus for the taxon is *Candidatus* Solivella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAADGY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Solivellales.

Description of *Candidatus* Solivellales ord. nov.

Candidatus Solivellales (NL. fem. n. *Solivellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADGY01.* The type genus for the taxon is *Candidatus* Solivella .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Solivia cateciforma sp. nov.

Candidatus Solivia cateciforma (NL. fem. n. *cateciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11452 sp002069785*. The type genome for the species is the GenBank assembly GCA_002069785.1. The GC content of the type genome is 55.2 % and the genome length is 5.97 Mbp.

Description of *Candidatus* Solivia gen. nov.

Candidatus Solivia (NL. fem. n. *Solivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11452*. The type species for the genus is *Candidatus* Solivia cateciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenodidaceae.

Description of *Candidatus* Solivia filifitia sp. nov.

Candidatus Solivia filifitia (NL. fem. n. *filifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11452 sp003526375*. The type genome for the species is the GenBank assembly GCA_003522165.1. The GC content of the type genome is 51.66 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Solivida detumimonia sp. nov.

Candidatus Solivida detumimonia (NL. fem. n. *detumimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS882 sp900546385*. The type genome for the species is the GenBank assembly GCA_900546385.1. The GC content of the type genome is 51.09 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Solivida gen. nov.

Candidatus Solivida (NL. fem. n. *Solivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS882*. The type species for the genus is *Candidatus* Solivida

detumimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Solivida diritiforma sp. nov.

Candidatus Solivida diritiforma (NL. fem. n. *diritiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS882 sp900757905*. The type genome for the species is the GenBank assembly RS_GCF_900757905.1. The GC content of the type genome is 49.86 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Solivida vivifax sp. nov.

Candidatus Solivida vivifax (NL. fem. n. *vivifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS882 sp003343885*. The type genome for the species is the GenBank assembly GCA_003343885.1. The GC content of the type genome is 44.08 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Solivosa colipitica sp. nov.

Candidatus Solivosa colipitica (NL. fem. n. *colipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-44-12 sp001873995*. The type genome for the species is the GenBank assembly GCA_002322345.1. The GC content of the type genome is 44.06 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Solivosa gen. nov.

Candidatus Solivosa (NL. fem. n. *Solivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-44-12*. The type species for the genus is *Candidatus* Solivosa colipitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1572*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumanaceae.

Description of *Candidatus* Solivula verecilega sp. nov.

Candidatus Solivula verecilega (NL. fem. n. *verecilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTJ01 sp004297805*. The type genome for the species is the GenBank assembly GCA_004297805.1. The GC content of the type genome is 48.16 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Solivula gen. nov.

Candidatus Solivula (NL. fem. n. *Solivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTJ01*. The type species for the genus is *Candidatus* Solivula verecilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCTJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Solivulaceae.

Description of *Candidatus* Solivulaceae fam. nov.

Candidatus Solivulaceae (NL. fem. n. *Solivulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCTJ01*. The type genus for the taxon is *Candidatus* Solivula .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Sonabana ampenitoga sp. nov.

Candidatus Sonabana ampenitoga (NL. fem. n. *ampenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fibro-01 sp012841225*. The type genome for the species is the

GenBank assembly GCA_012841225.1. The GC content of the type genome is 41.18 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Sonabana gen. nov.

Candidatus Sonabana (NL. fem. n. *Sonabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fibro-01*. The type species for the genus is *Candidatus* Sonabana ampenitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sonabana bicubugo sp. nov.

Candidatus Sonabana bicubugo (NL. fem. n. *bicubugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fibro-01 sp012515825*. The type genome for the species is the GenBank assembly GCA_012515825.1. The GC content of the type genome is 37.0 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Sonabana senipitrix sp. nov.

Candidatus Sonabana senipitrix (NL. fem. n. *senipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fibro-01 sp001462345*. The type genome for the species is the GenBank assembly GCA_001603875.1. The GC content of the type genome is 37.37 % and the genome length is 2.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Sonabaria metabitica sp. nov.

Candidatus Sonabaria metabitica (NL. fem. n. *metabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701365 sp002701365*. The type genome for the species is the GenBank assembly GCA_002701365.1. The GC content of the type genome is 30.48 %

and the genome length is 1.55 Mbp.

Description of *Candidatus* Sonabaria gen. nov.

Candidatus Sonabaria (NL. fem. n. *Sonabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002701365*. The type species for the genus is *Candidatus* Sonabaria metabitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fusifulaceae.

Description of *Candidatus* Sonabella peripiforma sp. nov.

Candidatus Sonabella peripiforma (NL. fem. n. *peripiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU084 sp001512905*. The type genome for the species is the GenBank assembly GCA_012512655.1. The GC content of the type genome is 50.38 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Sonabella gen. nov.

Candidatus Sonabella (NL. fem. n. *Sonabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU084*. The type species for the genus is *Candidatus* Sonabella peripiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU084*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabellaceae.

Description of *Candidatus* Sonabellaceae fam. nov.

Candidatus Sonabellaceae (NL. fem. n. *Sonabellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU084.* The type genus for the taxon is *Candidatus* Sonabella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU084*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sonabellales.

Description of *Candidatus* Sonabellales ord. nov.

Candidatus Sonabellales (NL. fem. n. *Sonabellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU084.* The type genus for the taxon is *Candidatus* Sonabella .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU084*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Sonabellae.

Description of *Candidatus* Sonabellae class. nov.

Candidatus Sonabellae (NL. fem. n. *c__Sonabellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU084.* The type genus for the taxon is *Candidatus* Sonabella .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_G*.

Description of *Candidatus* Sonabia adrotibula sp. nov.

Candidatus Sonabia adrotibula (NL. fem. n. *adrotibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp003220985*. The type genome for the species is the GenBank assembly GCA_003220985.1. The GC content of the type genome is 65.88 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Sonabia gen. nov.

Candidatus Sonabia (NL. fem. n. *Sonabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *20CM-2-65-7*. The type species for the genus is *Candidatus* Sonabia adrotibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

GWC2-71-9. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Sonabia argimivita sp. nov.

Candidatus Sonabia argimivita (NL. fem. n. *argimivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp003221825*. The type genome for the species is the GenBank assembly GCA_003221825.1. The GC content of the type genome is 66.54 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Sonabia cunabax sp. nov.

Candidatus Sonabia cunabax (NL. fem. n. *cunabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp003222195*. The type genome for the species is the GenBank assembly GCA_001919895.1. The GC content of the type genome is 65.9 % and the genome length is 3.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 20cm depth; 2 days after second rain event (91mm)".

Description of *Candidatus* Sonabia ensifitoga sp. nov.

Candidatus Sonabia ensifitoga (NL. fem. n. *ensifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp003221035*. The type genome for the species is the GenBank assembly GCA_003221035.1. The GC content of the type genome is 65.71 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Sonabia hiruniforma sp. nov.

Candidatus Sonabia hiruniforma (NL. fem. n. *hiruniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp003221985*. The type genome for the species is the GenBank assembly GCA_003221985.1. The GC content of the type genome is 66.21 %

and the genome length is 3.03 Mbp.

Description of *Candidatus* Sonabia imbelago sp. nov.

Candidatus Sonabia imbelago (NL. fem. n. *imbelago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp003221895*. The type genome for the species is the GenBank assembly GCA_003221895.1. The GC content of the type genome is 65.58 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Sonabia luceretta sp. nov.

Candidatus Sonabia luceretta (NL. fem. n. *luceretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp003221075*. The type genome for the species is the GenBank assembly GCA_003221075.1. The GC content of the type genome is 65.72 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Sonabia manomisca sp. nov.

Candidatus Sonabia manomisca (NL. fem. n. *manomisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp003223395*. The type genome for the species is the GenBank assembly GCA_003223395.1. The GC content of the type genome is 65.87 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Sonabia onocretta sp. nov.

Candidatus Sonabia onocretta (NL. fem. n. *onocretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp001915025*. The type genome for the species is the GenBank assembly GCA_001915025.1. The GC content of the type genome is 65.1 % and the genome length is 2.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 2; 20cm depth; 2 days after second rain event (91mm)".

Description of *Candidatus* Sonabia triscago sp. nov.

Candidatus Sonabia triscago (NL. fem. n. *triscago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-65-7 sp003220955*. The type genome for the species is the GenBank assembly GCA_003220955.1. The GC content of the type genome is 65.97 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Sonabida clancitica sp. nov.

Candidatus Sonabida clancitica (NL. fem. n. *clancitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-71-46 sp001780165*. The type genome for the species is the GenBank assembly GCA_001780165.1. The GC content of the type genome is 71.02 % and the genome length is 3.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Sonabida gen. nov.

Candidatus Sonabida (NL. fem. n. *Sonabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-71-46*. The type species for the genus is *Candidatus* Sonabida clancitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabidaceae.

Description of *Candidatus* Sonabidaceae fam. nov.

Candidatus Sonabidaceae (NL. fem. n. *Sonabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-71-46.* The type genus for the taxon is *Candidatus* Sonabida .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sonabidales.

Description of *Candidatus* Sonabidales ord. nov.

Candidatus Sonabidales (NL. fem. n. *Sonabidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-71-46.* The type genus for the taxon is *Candidatus* Sonabida .

According to the original version of GTDB R06-RS202, this family belongs to the class *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Sonabidae.

Description of *Candidatus* Sonabidae class. nov.

Candidatus Sonabidae (NL. fem. n. *c__Sonabidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-71-46.* The type genus for the taxon is *Candidatus* Sonabida .

According to GTDB R06-RS202, this class belongs to the phylum *Eisenbacteria*.

Description of *Candidatus* Sonabosa adtorentia sp. nov.

Candidatus Sonabosa adtorentia (NL. fem. n. *adtorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009776905*. The type genome for the species is the GenBank assembly GCA_009776905.1. The GC content of the type genome is 52.42 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Sonabosa gen. nov.

Candidatus Sonabosa (NL. fem. n. *Sonabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRMH01*. The type species for the genus is *Candidatus* Sonabosa adtorentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sonabosa amercimonia sp. nov.

Candidatus Sonabosa amercimonia (NL. fem. n. *amercimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009778485*. The type genome for the species is the GenBank assembly GCA_009778485.1. The GC content of the type genome is 56.18 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Sonabosa antefivita sp. nov.

Candidatus Sonabosa antefivita (NL. fem. n. *antefivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009785655*. The type genome for the species is the GenBank assembly GCA_009785655.1. The GC content of the type genome is 50.21 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Sonabosa atricitia sp. nov.

Candidatus Sonabosa atricitia (NL. fem. n. *atricitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009783555*. The type genome for the species is the GenBank assembly GCA_009783555.1. The GC content of the type genome is 43.27 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Sonabosa attorimonia sp. nov.

Candidatus Sonabosa attorimonia (NL. fem. n. *attorimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009776445*. The type genome for the species is the GenBank assembly GCA_009776445.1. The GC content of the type genome is 47.32 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Sonabosa celamitudo sp. nov.

Candidatus Sonabosa celamitudo (NL. fem. n. *celamitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009785345*. The type genome for the species is the GenBank assembly GCA_009785345.1. The GC content of the type genome is 40.2 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Sonabosa celumago sp. nov.

Candidatus Sonabosa celumago (NL. fem. n. *celumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009777235*. The type genome for the species is the GenBank assembly GCA_009777235.1. The GC content of the type genome is 47.26 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Sonabosa incorilenta sp. nov.

Candidatus Sonabosa incorilenta (NL. fem. n. *incorilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009787625*. The type genome for the species is the GenBank assembly GCA_009787625.1. The GC content of the type genome is 43.66 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Sonabosa inrefedo sp. nov.

Candidatus Sonabosa inrefedo (NL. fem. n. *inrefedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009777775*. The type genome for the species is the GenBank assembly GCA_009777775.1. The GC content of the type genome is 41.24 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Sonabosa insibessa sp. nov.

Candidatus Sonabosa insibessa (NL. fem. n. *insibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009781695*. The type genome for the species is the GenBank assembly GCA_009781695.1. The GC content of the type genome is 45.49 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Sonabosa metucugo sp. nov.

Candidatus Sonabosa metucugo (NL. fem. n. *metucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009787995*. The type genome for the species is the GenBank assembly GCA_009787995.1. The GC content of the type genome is 50.06 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Sonabosa monoditio sp. nov.

Candidatus Sonabosa monoditio (NL. fem. n. *monoditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009781855*. The type genome for the species is the GenBank assembly GCA_009781855.1. The GC content of the type genome is 45.3 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Sonabosa munifivita sp. nov.

Candidatus Sonabosa munifivita (NL. fem. n. *munifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009786445*. The type genome for the species is the GenBank assembly GCA_009786445.1. The GC content of the type genome is 44.09 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Sonabosa oblonimonas sp. nov.

Candidatus Sonabosa oblonimonas (NL. fem. n. *oblonimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009784725*. The type genome for the species is the GenBank assembly GCA_009784725.1. The GC content of the type genome is 41.57 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Sonabosa seroticula sp. nov.

Candidatus Sonabosa seroticula (NL. fem. n. *seroticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009785525*. The type genome for the species is the GenBank assembly GCA_009785525.1. The GC content of the type genome is 50.02 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Sonabosa subacastra sp. nov.

Candidatus Sonabosa subacastra (NL. fem. n. *subacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009786775*. The type genome for the species is the GenBank assembly GCA_009786775.1. The GC content of the type genome is 48.19 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Sonabosa vagabiforma sp. nov.

Candidatus Sonabosa vagabiforma (NL. fem. n. *vagabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMH01 sp009781515*. The type genome for the species is the GenBank assembly GCA_009781515.1. The GC content of the type genome is 43.67 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Sonabula chernibula sp. nov.

Candidatus Sonabula chernibula (NL. fem. n. *chernibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1166 sp003142535*. The type genome for the species is the GenBank assembly GCA_003142535.1. The GC content of the type genome is 43.42 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Sonabula gen. nov.

Candidatus Sonabula (NL. fem. n. *Sonabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1166*. The type species for the genus is *Candidatus* Sonabula

chernibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sonabula energimonas sp. nov.

Candidatus Sonabula energimonas (NL. fem. n. *energimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1166 sp002068015*. The type genome for the species is the GenBank assembly GCA_002068015.1. The GC content of the type genome is 45.33 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Sonabula excanitas sp. nov.

Candidatus Sonabula excanitas (NL. fem. n. *excanitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1166 sp002840565*. The type genome for the species is the GenBank assembly GCA_002840565.1. The GC content of the type genome is 47.28 % and the genome length is 3.99 Mbp.

Description of *Candidatus* Sonabula metucibra sp. nov.

Candidatus Sonabula metucibra (NL. fem. n. *metucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1166 sp903907985*. The type genome for the species is the GenBank assembly GCA_903867525.1. The GC content of the type genome is 45.43 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Sonipana abrumousia sp. nov.

Candidatus Sonipana abrumousia (NL. fem. n. *abrumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTKN01 sp011333455*. The type genome for the species is the GenBank assembly GCA_011333455.1. The GC content of the type genome is 65.34 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Sonipana gen. nov.

Candidatus Sonipana (NL. fem. n. *Sonipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTKN01*. The type species for the genus is *Candidatus* Sonipana abrumousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTKN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonipanaceae.

Description of *Candidatus* Sonipanaceae fam. nov.

Candidatus Sonipanaceae (NL. fem. n. *Sonipanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTKN01*. The type genus for the taxon is *Candidatus* Sonipana .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTKN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sonipanales.

Description of *Candidatus* Sonipanales ord. nov.

Candidatus Sonipanales (NL. fem. n. *Sonipanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTKN01*. The type genus for the taxon is *Candidatus* Sonipana .

According to the GTDB R06-RS202, this order belongs to the class *Chloroflexia*.

Description of *Candidatus* Soniparia occalitoga sp. nov.

Candidatus Soniparia occalitoga (NL. fem. n. *occalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2712585 sp002712585*. The type genome for the species is the GenBank assembly GCA_002712585.1. The GC content of the type genome is 42.88 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Soniparia gen. nov.

Candidatus Soniparia (NL. fem. n. *Soniparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2712585*. The type species for the genus is *Candidatus* Soniparia occalitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2712585*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Soniparia**ceae**.

Description of *Candidatus* Sonipariaceae **fam. nov.**

Candidatus Soniparia**ceae** (NL. fem. n. *Soniparia**ceae*** a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2712585.* The type genus for the taxon is *Candidatus* Soniparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bicipellales.

Description of *Candidatus* Sonipella incesentia sp. nov.

Candidatus Sonipella incesentia (NL. fem. n. *incesentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKSP01 sp007693335*. The type genome for the species is the GenBank assembly GCA_007693335.1. The GC content of the type genome is 69.23 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Sonipella gen. nov.

Candidatus Sonipella (NL. fem. n. *Sonipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKSP01*. The type species for the genus is *Candidatus* Sonipella incesentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sonipella pomifedo sp. nov.

Candidatus Sonipella pomifedo (NL. fem. n. *pomifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKSP01 sp007122945*. The type genome for the species is the GenBank assembly GCA_007124885.1. The GC content of the type genome is 71.19 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Sonipia catalitio sp. nov.

Candidatus Sonipia catalitio (NL. fem. n. *catalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp900319455*. The type genome for the species is the GenBank assembly GCA_900319455.1. The GC content of the type genome is 45.94 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Sonipia gen. nov.

Candidatus Sonipia (NL. fem. n. *Sonipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-177*. The type species for the genus is *Candidatus* Sonipia catalitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sonipia detotedo sp. nov.

Candidatus Sonipia detotedo (NL. fem. n. *detotedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp900771185*. The type genome for the species is the GenBank assembly RS_GCF_900771185.1. The GC content of the type genome is 49.15 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Sonipia lubenitrix sp. nov.

Candidatus Sonipia lubenitrix (NL. fem. n. *lubenitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp002315935*. The type genome for the species is the GenBank assembly GCA_002315935.1. The GC content of the type genome is 42.77 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Sonipia nefanetta sp. nov.

Candidatus Sonipia nefanetta (NL. fem. n. *nefanetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp000431775*. The type genome for the species is the GenBank assembly GCA_004554595.1. The GC content of the type genome is 53.68 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Sonipia nitelilenta sp. nov.

Candidatus Sonipia nitelilenta (NL. fem. n. *nitelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp002438685*. The type genome for the species is the GenBank assembly GCA_002438685.1. The GC content of the type genome is 51.66 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Sonipia pimenentia sp. nov.

Candidatus Sonipia pimenentia (NL. fem. n. *pimenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp002309055*. The type genome for the species is the GenBank assembly GCA_002309055.1. The GC content of the type genome is 49.7 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Sonipia pudibitoga sp. nov.

Candidatus Sonipia pudibitoga (NL. fem. n. *pudibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp002451755*. The type genome for the species is the GenBank assembly GCA_003517135.1. The GC content of the type genome is 52.63 %

and the genome length is 1.58 Mbp.

Description of *Candidatus* Sonipia sonipibula sp. nov.

Candidatus Sonipia sonipibula (NL. fem. n. *sonipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp900770255*. The type genome for the species is the GenBank assembly RS_GCF_900770255.1. The GC content of the type genome is 52.13 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Sonipia telefentia sp. nov.

Candidatus Sonipia telefentia (NL. fem. n. *telefentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp003538135*. The type genome for the species is the GenBank assembly GCA_008668165.1. The GC content of the type genome is 51.9 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Sonipia terebifica sp. nov.

Candidatus Sonipia terebifica (NL. fem. n. *terebifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-177 sp003514385*. The type genome for the species is the GenBank assembly GCA_004552535.1. The GC content of the type genome is 53.41 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Sonipida sicarisca sp. nov.

Candidatus Sonipida sicarisca (NL. fem. n. *sicarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QOAL01 sp003978135*. The type genome for the species is the GenBank assembly GCA_003978135.1. The GC content of the type genome is 48.45 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Sonipida gen. nov.

Candidatus Sonipida (NL. fem. n. *Sonipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QOAL01*. The type species for the genus is *Candidatus* Sonipida sicarisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QOAL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonipidaceae.

Description of *Candidatus* Sonipidaceae fam. nov.

Candidatus Sonipidaceae (NL. fem. n. *Sonipidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QOAL01*. The type genus for the taxon is *Candidatus* Sonipida .

According to GTDB R06-RS202, this family belongs to the order *Dissulfuribacterales*.

Description of *Candidatus* Soniposa documetta sp. nov.

Candidatus Soniposa documetta (NL. fem. n. *documetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLCK01 sp007125845*. The type genome for the species is the GenBank assembly GCA_007125845.1. The GC content of the type genome is 66.61 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Soniposa gen. nov.

Candidatus Soniposa (NL. fem. n. *Soniposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLCK01*. The type species for the genus is *Candidatus* Soniposa documetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Soniposa viripitoga sp. nov.

Candidatus Soniposa viripitoga (NL. fem. n. *viripitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLCK01 sp007124095*. The type genome for the species is the GenBank assembly GCA_007119275.1. The GC content of the type genome is 65.65 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Sonipula celumessa sp. nov.

Candidatus Sonipula celumessa (NL. fem. n. *celumessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC1-37-10 sp001793825*. The type genome for the species is the GenBank assembly GCA_000992045.1. The GC content of the type genome is 37.41 % and the genome length is 0.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Sonipula gen. nov.

Candidatus Sonipula (NL. fem. n. *Sonipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC1-37-10*. The type species for the genus is *Candidatus* Sonipula celumessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9933*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capilanaceae.

Description of *Candidatus* Sonivaria cisalugo sp. nov.

Candidatus Sonivaria cisalugo (NL. fem. n. *cisalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5691 sp002420265*. The type genome for the species is the GenBank assembly GCA_002170515.2. The GC content of the type genome is 49.9 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Sonivaria gen. nov.

Candidatus Sonivaria (NL. fem. n. *Sonivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5691*. The type species for the genus is *Candidatus* Sonivaria cisalugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sonivaria lavabilega sp. nov.

Candidatus Sonivaria lavabilega (NL. fem. n. *lavabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5691 sp002420185*. The type genome for the species is the GenBank assembly GCA_002420185.1. The GC content of the type genome is 48.68 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Sonivaria mirififorma sp. nov.

Candidatus Sonivaria mirififorma (NL. fem. n. *mirififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5691 sp002694885*. The type genome for the species is the GenBank assembly GCA_003525105.1. The GC content of the type genome is 51.45 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Sonivaria nocenatica sp. nov.

Candidatus Sonivaria nocenatica (NL. fem. n. *nocenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5691 sp002474325*. The type genome for the species is the GenBank assembly GCA_002450395.1. The GC content of the type genome is 50.42 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Sonivella epogdax sp. nov.

Candidatus Sonivella epogdax (NL. fem. n. *epogdax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMD01 sp012840065*. The type genome for the species is the GenBank assembly GCA_012840065.1. The GC content of the type genome is 37.92 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Sonivella gen. nov.

Candidatus Sonivella (NL. fem. n. *Sonivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMD01*. The type species for the genus is *Candidatus* Sonivella epogdax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonivellaceae.

Description of *Candidatus* Sonivellaceae fam. nov.

Candidatus Sonivellaceae (NL. fem. n. *Sonivellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMD01.* The type genus for the taxon is *Candidatus* Sonivella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DUMD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sonivellales.

Description of *Candidatus* Sonivellales ord. nov.

Candidatus Sonivellales (NL. fem. n. *Sonivellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMD01.* The type genus for the taxon is *Candidatus* Sonivella .

According to the original version of GTDB R06-RS202, this family belongs to the class *DUMD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Sonivellae.

Description of *Candidatus* Sonivellae class. nov.

Candidatus Sonivellae (NL. fem. n. *c__Sonivellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMD01*. The type genus for the taxon is *Candidatus* Sonivella .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_C*.

Description of *Candidatus* Sonivida solifatio sp. nov.

Candidatus Sonivida solifatio (NL. fem. n. *solifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-68-19 sp001767525*. The type genome for the species is the GenBank assembly GCA_001767065.1. The GC content of the type genome is 68.11 % and the genome length is 4.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Sonivida gen. nov.

Candidatus Sonivida (NL. fem. n. *Sonivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-68-19*. The type species for the genus is *Candidatus* Sonivida solifatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2999*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Lucifanaceae.

Description of *Candidatus* Sonivida vocifatio sp. nov.

Candidatus Sonivida vocifatio (NL. fem. n. *vocifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-68-19 sp001767195*. The type genome for the species is the GenBank assembly GCA_001767515.1. The GC content of the type genome is 67.36 % and the genome length is 4.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Sonivosa citivigena sp. nov.

Candidatus Sonivosa citivigena (NL. fem. n. *citivigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002789015 sp002789015*. The type genome for the species is the GenBank assembly GCA_002789015.1. The GC content of the type genome is 34.73 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Sonivosa gen. nov.

Candidatus Sonivosa (NL. fem. n. *Sonivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002789015*. The type species for the genus is *Candidatus* Sonivosa citivigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-39-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domiculaceae.

Description of *Candidatus* Sonivula hexapilenta sp. nov.

Candidatus Sonivula hexapilenta (NL. fem. n. *hexapilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-44-17 sp001804285*. The type genome for the species is the GenBank assembly GCA_001804245.1. The GC content of the type genome is 44.46 % and the genome length is 3.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Sonivula gen. nov.

Candidatus Sonivula (NL. fem. n. *Sonivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-44-17*. The type species for the genus is *Candidatus* Sonivula hexapilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-44-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonivulaceae.

Description of *Candidatus* Sonivulaceae fam. nov.

Candidatus Sonivulaceae (NL. fem. n. *Sonivulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-44-17.* The type genus for the taxon is *Candidatus* Sonivula .

According to GTDB R06-RS202, this family belongs to the order *Omnitrophales*.

Description of *Candidatus* Soonwooa denecivita sp. nov.

Candidatus Soonwooa denecivita (NL. fem. n. *denecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Soonwooa sp011058315*. The type genome for the species is the GenBank assembly RS_GCF_011058315.1. The GC content of the type genome is 35.22 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Sotulana murilimonia sp. nov.

Candidatus Sotulana murilimonia (NL. fem. n. *murilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10165 sp001816475*. The type genome for the species is the GenBank assembly GCA_003505255.1. The GC content of the type genome is 39.37 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Sotulana gen. nov.

Candidatus Sotulana (NL. fem. n. *Sotulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10165*. The type species for the genus is *Candidatus* Sotulana murilimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sotulanaceae.

Description of *Candidatus* Sotulanaceae fam. nov.

Candidatus Sotulanaceae (NL. fem. n. *Sotulanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10165.* The type genus for the taxon is *Candidatus* Sotulana .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-44-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Notacellales.

Description of *Candidatus* Sotulella cerebisca sp. nov.

Candidatus Sotulella cerebisca (NL. fem. n. *cerebisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2742885 sp002742885*. The type genome for the species is the GenBank assembly GCA_002742885.1. The GC content of the type genome is 36.16 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Sotulella gen. nov.

Candidatus Sotulella (NL. fem. n. *Sotulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2742885*. The type species for the genus is *Candidatus* Sotulella cerebisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2742885*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sotulellaceae.

Description of *Candidatus* Sotulellaceae fam. nov.

Candidatus Sotulellaceae (NL. fem. n. *Sotulellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2742885.* The type genus for the taxon is *Candidatus* Sotulella .

According to GTDB R06-RS202, this family belongs to the order *Cloacimonadales*.

Description of *Candidatus* Sotulia ceracedo sp. nov.

Candidatus Sotulia ceracedo (NL. fem. n. *ceracedo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWNQ01 sp003557725*. The type genome for the species is the GenBank assembly GCA_003557725.1. The GC content of the type genome is 46.69 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Sotulia gen. nov.

Candidatus Sotulia (NL. fem. n. *Sotulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWNQ01*. The type species for the genus is *Candidatus* Sotulia ceracedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWNQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sotuliaceae.

Description of *Candidatus* Sotuliaceae fam. nov.

Candidatus Sotuliaceae (NL. fem. n. *Sotuliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWNQ01.* The type genus for the taxon is *Candidatus* Sotulia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Sotulida cinefivita sp. nov.

Candidatus Sotulida cinefivita (NL. fem. n. *cinefivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD2-FULL-39-9 sp001783215*. The type genome for the species is the GenBank assembly GCA_001783215.1. The GC content of the type genome is 39.6 % and the genome length is 1.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Sotulida gen. nov.

Candidatus Sotulida (NL. fem. n. *Sotulida* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD2-FULL-39-9*. The type species for the genus is *Candidatus* Sotulida cinefivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-37-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocariaceae.

Description of *Candidatus* Sotulida enharivita sp. nov.

Candidatus Sotulida enharivita (NL. fem. n. *enharivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD2-FULL-39-9 sp007376295*. The type genome for the species is the GenBank assembly GCA_007376295.1. The GC content of the type genome is 40.2 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Sotulosa divuletta sp. nov.

Candidatus Sotulosa divuletta (NL. fem. n. *divuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PSRM01 sp003176045*. The type genome for the species is the GenBank assembly GCA_003176045.1. The GC content of the type genome is 56.99 % and the genome length is 7.74 Mbp.

Description of *Candidatus* Sotulosa gen. nov.

Candidatus Sotulosa (NL. fem. n. *Sotulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PSRM01*. The type species for the genus is *Candidatus* Sotulosa divuletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabitidaceae.

Description of *Candidatus* Sotulula scombitia sp. nov.

Candidatus Sotulula scombitia (NL. fem. n. *scombitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11136 sp002686135*. The type genome for the species is the GenBank assembly GCA_002686135.1. The GC content of the type genome is 59.77 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Sotulula gen. nov.

Candidatus Sotulula (NL. fem. n. *Sotulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11136*. The type species for the genus is *Candidatus* Sotulula scombitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11136*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sotululaceae.

Description of *Candidatus* Sotululaceae fam. nov.

Candidatus Sotululaceae (NL. fem. n. *Sotululaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11136.* The type genus for the taxon is *Candidatus* Sotulula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11136*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sotululales.

Description of *Candidatus* Sotululales ord. nov.

Candidatus Sotululales (NL. fem. n. *Sotululales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11136.* The type genus for the taxon is *Candidatus* Sotulula .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Spartinivicinus accumiforma sp. nov.

Candidatus Spartinivicinus accumiforma (NL. fem. n. *accumiforma* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spartinivicinus sp013425485*. The type genome for the species is the GenBank assembly RS_GCF_013425485.1. The GC content of the type genome is 40.36 % and the genome length is 6.82 Mbp.

Description of *Candidatus* Spastaria documessa sp. nov.

Candidatus Spastaria documessa (NL. fem. n. *documessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4742 sp002403895*. The type genome for the species is the GenBank assembly GCA_002403895.1. The GC content of the type genome is 68.81 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Spastaria gen. nov.

Candidatus Spastaria (NL. fem. n. *Spastaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4742*. The type species for the genus is *Candidatus* Spastaria documessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8139*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recocellaceae.

Description of *Candidatus* Spastella indidentia sp. nov.

Candidatus Spastella indidentia (NL. fem. n. *indidentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMPX01 sp013203625*. The type genome for the species is the GenBank assembly GCA_013203625.1. The GC content of the type genome is 33.36 % and the genome length is 0.47 Mbp.

Description of *Candidatus* Spastella gen. nov.

Candidatus Spastella (NL. fem. n. *Spastella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMPX01*. The type species for the genus is *Candidatus* Spastella indidentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2143*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatulaceae.

Description of *Candidatus* Spastia artolitas sp. nov.

Candidatus Spastia artolitas (NL. fem. n. *artolitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11153 sp003511885*. The type genome for the species is the GenBank assembly GCA_003511885.1. The GC content of the type genome is 41.54 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Spastia gen. nov.

Candidatus Spastia (NL. fem. n. *Spastia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11153*. The type species for the genus is *Candidatus* Spastia artolitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Spastula veriditura sp. nov.

Candidatus Spastula veriditura (NL. fem. n. *veriditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMR01 sp009776995*. The type genome for the species is the GenBank assembly GCA_009776995.1. The GC content of the type genome is 51.8 % and the genome length is 4.66 Mbp.

Description of *Candidatus* Spastula gen. nov.

Candidatus Spastula (NL. fem. n. *Spastula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRMR01*. The type species for the genus is *Candidatus* Spastula veriditura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sphaerochaeta abagmitio sp. nov.

Candidatus Sphaerochaeta abagmitio (NL. fem. n. *abagmitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp001603105*. The type genome for the species is the GenBank assembly GCA_001603105.1. The GC content of the type genome is 56.04 % and the genome length is 2.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Sphaerochaeta acraticella sp. nov.

Candidatus Sphaerochaeta acraticella (NL. fem. n. *acraticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp012800465*. The type genome for the species is the GenBank assembly GCA_012800465.1. The GC content of the type genome is 58.49 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Sphaerochaeta cetaressa sp. nov.

Candidatus Sphaerochaeta cetaressa (NL. fem. n. *cetaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp012838275*. The type genome for the species is the GenBank assembly GCA_012838275.1. The GC content of the type genome is 49.46 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Sphaerochaeta conabilega sp. nov.

Candidatus Sphaerochaeta conabilega (NL. fem. n. *conabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp003446545*. The type genome for the species is the GenBank assembly GCA_003446545.1. The GC content of the type genome is 48.76 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Sphaerochaeta extunastra sp. nov.

Candidatus Sphaerochaeta extunastra (NL. fem. n. *extunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp012511235*. The type genome for the species is the GenBank assembly GCA_012511235.1. The GC content of the type genome is 51.78 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Sphaerochaeta facunitio sp. nov.

Candidatus Sphaerochaeta facunitio (NL. fem. n. *facunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp001604325*. The type genome for the species is the GenBank assembly GCA_001604325.1. The GC content of the type genome is 59.3 % and the genome length is 1.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Sphaerochaeta habacibula sp. nov.

Candidatus Sphaerochaeta habacibula (NL. fem. n. *habacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp003247345*. The type genome for the species is the GenBank assembly GCA_003247345.1. The GC content of the type genome is 43.8 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Sphaerochaeta luticax sp. nov.

Candidatus Sphaerochaeta luticax (NL. fem. n. *luticax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp001603115*. The type genome for the species is the

GenBank assembly GCA_001603115.1. The GC content of the type genome is 52.28 % and the genome length is 2.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Sphaerochaeta monacitrix sp. nov.

Candidatus Sphaerochaeta monacitrix (NL. fem. n. *monacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp012519115*. The type genome for the species is the GenBank assembly GCA_012519115.1. The GC content of the type genome is 52.3 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Sphaerochaeta repecatio sp. nov.

Candidatus Sphaerochaeta repecatio (NL. fem. n. *repecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp012514185*. The type genome for the species is the GenBank assembly GCA_012514185.1. The GC content of the type genome is 52.05 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Sphaerochaeta sanabigena sp. nov.

Candidatus Sphaerochaeta sanabigena (NL. fem. n. *sanabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp012519125*. The type genome for the species is the GenBank assembly GCA_012519125.1. The GC content of the type genome is 52.16 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Sphaerochaeta tumefedo sp. nov.

Candidatus Sphaerochaeta tumefedo (NL. fem. n. *tumefedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp002432715*. The type genome for the species is the GenBank assembly GCA_001896735.1. The GC content of the type genome is 50.85 % and the genome length is 3.25 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "sludge from a mesophilic anaerobic wastewater digester enriched on phosphite and carbon dioxide".

Description of *Candidatus* Sphaerochaeta videlentia sp. nov.

Candidatus Sphaerochaeta videlentia (NL. fem. n. *videlentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp009930195*. The type genome for the species is the GenBank assembly GCA_009929675.1. The GC content of the type genome is 52.91 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Sphaerochaeta visibicula sp. nov.

Candidatus Sphaerochaeta visibicula (NL. fem. n. *visibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerochaeta sp004294855*. The type genome for the species is the GenBank assembly GCA_004294855.1. The GC content of the type genome is 53.71 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Sphaerotilus biverentia sp. nov.

Candidatus Sphaerotilus biverentia (NL. fem. n. *biverentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerotilus sp013294065*. The type genome for the species is the GenBank assembly RS_GCF_013294065.1. The GC content of the type genome is 70.91 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Sphaerotilus verifax sp. nov.

Candidatus Sphaerotilus verifax (NL. fem. n. *verifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerotilus sp013299055*. The type genome for the species is the GenBank assembly GCA_013299055.1. The GC content of the type genome is 67.98 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Sphaerotilus vitigitura sp. nov.

Candidatus Sphaerotilus vitigitura (NL. fem. n. *vitigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphaerotilus sp013299175*. The type genome for the species is the GenBank assembly GCA_013299175.1. The GC content of the type genome is 68.09 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Sphingobacterium absoritio sp. nov.

Candidatus Sphingobacterium absoritio (NL. fem. n. *absoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002322865*. The type genome for the species is the GenBank assembly GCA_002322865.1. The GC content of the type genome is 40.36 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Sphingobacterium acculilega sp. nov.

Candidatus Sphingobacterium acculilega (NL. fem. n. *acculilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002420705*. The type genome for the species is the GenBank assembly GCA_002420705.1. The GC content of the type genome is 39.87 % and the genome length is 5.66 Mbp.

Description of *Candidatus* Sphingobacterium alcedigena sp. nov.

Candidatus Sphingobacterium alcedigena (NL. fem. n. *alcedigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002354335*. The type genome for the species is the GenBank assembly GCA_002354335.1. The GC content of the type genome is 41.38 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Sphingobacterium apogritia sp. nov.

Candidatus Sphingobacterium apogritia (NL. fem. n. *apogritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp000747525*. The type genome for the species is the GenBank assembly RS_GCF_000747525.1. The GC content of the type genome is 37.03 % and the genome length is 5.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "wing".

Description of *Candidatus* Sphingobacterium artolimonas sp. nov.

Candidatus Sphingobacterium artolimonas (NL. fem. n. *artolimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp006476045*. The type genome for the species is the GenBank assembly RS_GCF_006476045.1. The GC content of the type genome is 39.22 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Sphingobacterium bimotousia sp. nov.

Candidatus Sphingobacterium bimotousia (NL. fem. n. *bimotousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002429765*. The type genome for the species is the GenBank assembly GCA_002429765.1. The GC content of the type genome is 39.99 % and the genome length is 5.4 Mbp.

Description of *Candidatus* Sphingobacterium catecatica sp. nov.

Candidatus Sphingobacterium catecatica (NL. fem. n. *catecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp011043555*. The type genome for the species is the GenBank assembly RS_GCF_011043555.1. The GC content of the type genome is 42.12 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Sphingobacterium coninisca sp. nov.

Candidatus Sphingobacterium coninisca (NL. fem. n. *coninisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002500745*. The type genome for the species is

the GenBank assembly GCA_002378015.1. The GC content of the type genome is 39.82 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Sphingobacterium debucicula sp. nov.

Candidatus Sphingobacterium debucicula (NL. fem. n. *debucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp009557615*. The type genome for the species is the GenBank assembly RS_GCF_009557615.1. The GC content of the type genome is 38.92 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Sphingobacterium defesisca sp. nov.

Candidatus Sphingobacterium defesisca (NL. fem. n. *defesisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002734245*. The type genome for the species is the GenBank assembly RS_GCF_004526235.1. The GC content of the type genome is 40.68 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Sphingobacterium ecfunitas sp. nov.

Candidatus Sphingobacterium ecfunitas (NL. fem. n. *ecfunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp008180195*. The type genome for the species is the GenBank assembly RS_GCF_008180195.1. The GC content of the type genome is 41.75 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Sphingobacterium echogatica sp. nov.

Candidatus Sphingobacterium echogatica (NL. fem. n. *echogatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp011043525*. The type genome for the species is the GenBank assembly RS_GCF_011043525.1. The GC content of the type genome is 43.34 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Sphingobacterium forabago sp. nov.

Candidatus Sphingobacterium forabago (NL. fem. n. *forabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp011316935*. The type genome for the species is the GenBank assembly RS_GCF_011316935.1. The GC content of the type genome is 42.16 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Sphingobacterium hemitibula sp. nov.

Candidatus Sphingobacterium hemitibula (NL. fem. n. *hemitibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002000245*. The type genome for the species is the GenBank assembly RS_GCF_002000245.1. The GC content of the type genome is 40.77 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Sphingobacterium horomitoga sp. nov.

Candidatus Sphingobacterium horomitoga (NL. fem. n. *horomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp004208525*. The type genome for the species is the GenBank assembly RS_GCF_004208525.1. The GC content of the type genome is 41.71 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Sphingobacterium illunicula sp. nov.

Candidatus Sphingobacterium illunicula (NL. fem. n. *illunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp011043515*. The type genome for the species is the GenBank assembly RS_GCF_011043515.1. The GC content of the type genome is 35.87 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Sphingobacterium inhonastra sp. nov.

Candidatus Sphingobacterium inhonastra (NL. fem. n. *inhonastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp009733535*. The type genome for the species is the GenBank assembly RS_GCF_009733535.1. The GC content of the type genome is 36.4 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Sphingobacterium innulimonas sp. nov.

Candidatus Sphingobacterium innulimonas (NL. fem. n. *innulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002454415*. The type genome for the species is the GenBank assembly GCA_002454415.1. The GC content of the type genome is 39.3 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Sphingobacterium insematica sp. nov.

Candidatus Sphingobacterium insematica (NL. fem. n. *insematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002933815*. The type genome for the species is the GenBank assembly RS_GCF_002933815.1. The GC content of the type genome is 40.66 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Sphingobacterium luxurifica sp. nov.

Candidatus Sphingobacterium luxurifica (NL. fem. n. *luxurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp011030405*. The type genome for the species is the GenBank assembly RS_GCF_011030405.1. The GC content of the type genome is 43.42 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Sphingobacterium medimugo sp. nov.

Candidatus Sphingobacterium medimugo (NL. fem. n. *medimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp000783305*. The type genome for the species is the GenBank assembly RS_GCF_000783305.1. The GC content of the type genome is

41.02 % and the genome length is 5.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Sphingobacterium miraciforma sp. nov.

Candidatus Sphingobacterium miraciforma (NL. fem. n. *miraciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002472835*. The type genome for the species is the GenBank assembly RS_GCF_013167215.1. The GC content of the type genome is 40.38 % and the genome length is 6.02 Mbp.

Description of *Candidatus* Sphingobacterium nehalicula sp. nov.

Candidatus Sphingobacterium nehalicula (NL. fem. n. *nehalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp000814685*. The type genome for the species is the GenBank assembly RS_GCF_000814685.1. The GC content of the type genome is 41.25 % and the genome length is 3.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Sphingobacterium nicotiforma sp. nov.

Candidatus Sphingobacterium nicotiforma (NL. fem. n. *nicotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp000938735*. The type genome for the species is the GenBank assembly RS_GCF_000938735.2. The GC content of the type genome is 36.77 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Sphingobacterium nivomitrix sp. nov.

Candidatus Sphingobacterium nivomitrix (NL. fem. n. *nivomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp003076635*. The type genome for the species is the GenBank assembly RS_GCF_003076635.1. The GC content of the type genome is 41.96 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Sphingobacterium obnunitura sp. nov.

Candidatus Sphingobacterium obnunitura (NL. fem. n. *obnunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp900163865*. The type genome for the species is the GenBank assembly RS_GCF_900163865.1. The GC content of the type genome is 42.02 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Sphingobacterium occumax sp. nov.

Candidatus Sphingobacterium occumax (NL. fem. n. *occumax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002418355*. The type genome for the species is the GenBank assembly GCA_002418355.1. The GC content of the type genome is 39.3 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Sphingobacterium retecitio sp. nov.

Candidatus Sphingobacterium retecitio (NL. fem. n. *retecitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp001586775*. The type genome for the species is the GenBank assembly RS_GCF_001586775.1. The GC content of the type genome is 41.65 % and the genome length is 3.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Poplar".

Description of *Candidatus* Sphingobacterium rudicibra sp. nov.

Candidatus Sphingobacterium rudicibra (NL. fem. n. *rudicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp003071065*. The type genome for the species is the GenBank assembly GCA_002484085.1. The GC content of the type genome is 40.8 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Sphingobacterium tenilibra sp. nov.

Candidatus Sphingobacterium tenilibra (NL. fem. n. *tenilibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp011007365*. The type genome for the species is the GenBank assembly RS_GCF_011007365.1. The GC content of the type genome is 39.71 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Sphingobacterium vanidifica sp. nov.

Candidatus Sphingobacterium vanidifica (NL. fem. n. *vanidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobacterium sp002476975*. The type genome for the species is the GenBank assembly RS_GCF_014219045.1. The GC content of the type genome is 40.09 % and the genome length is 4.84 Mbp.

Description of *Candidatus* Sphingobium ablepitica sp. nov.

Candidatus Sphingobium ablepitica (NL. fem. n. *ablepitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp001899715*. The type genome for the species is the GenBank assembly GCA_001899715.1. The GC content of the type genome is 65.62 % and the genome length is 4.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Sphingobium ammatastra sp. nov.

Candidatus Sphingobium ammatastra (NL. fem. n. *ammatastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp001556865*. The type genome for the species is the GenBank assembly RS_GCF_001556865.1. The GC content of the type genome is 63.96 % and the genome length is 4.62 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Sphingobium astapivita sp. nov.

Candidatus Sphingobium astapivita (NL. fem. n. *astapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp009720145*. The type genome for the species is the GenBank assembly RS_GCF_009720145.1. The GC content of the type genome is 64.19 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Sphingobium atropitoga sp. nov.

Candidatus Sphingobium atropitoga (NL. fem. n. *atropitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp013375555*. The type genome for the species is the GenBank assembly RS_GCF_013375555.1. The GC content of the type genome is 62.46 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Sphingobium bipaletta sp. nov.

Candidatus Sphingobium bipaletta (NL. fem. n. *bipaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp001563285*. The type genome for the species is the GenBank assembly RS_GCF_001563285.1. The GC content of the type genome is 62.35 % and the genome length is 4.62 Mbp.

Description of *Candidatus* Sphingobium casabigena sp. nov.

Candidatus Sphingobium casabigena (NL. fem. n. *casabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp012927105*. The type genome for the species is the GenBank assembly RS_GCF_012927105.1. The GC content of the type genome is 63.15 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Sphingobium cenacigena sp. nov.

Candidatus Sphingobium cenacigena (NL. fem. n. *cenacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp001650725*. The type genome for the species is the GenBank assembly GCA_003446025.1. The GC content of the type genome is 65.35 %

and the genome length is 3.47 Mbp.

Description of *Candidatus* Sphingobium dehisatica sp. nov.

Candidatus Sphingobium dehisatica (NL. fem. n. *dehisatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp000283515*. The type genome for the species is the GenBank assembly RS_GCF_000283515.1. The GC content of the type genome is 65.53 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Sphingobium depelitudo sp. nov.

Candidatus Sphingobium depelitudo (NL. fem. n. *depelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp014201265*. The type genome for the species is the GenBank assembly RS_GCF_014201265.1. The GC content of the type genome is 64.5 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Sphingobium ecastigena sp. nov.

Candidatus Sphingobium ecastigena (NL. fem. n. *ecastigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp003248935*. The type genome for the species is the GenBank assembly GCA_003248935.1. The GC content of the type genome is 65.33 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Sphingobium encolibra sp. nov.

Candidatus Sphingobium encolibra (NL. fem. n. *encolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp900218065*. The type genome for the species is the GenBank assembly RS_GCF_900218065.1. The GC content of the type genome is 62.44 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Sphingobium ensifedo sp. nov.

Candidatus Sphingobium ensifedo (NL. fem. n. *ensifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp013911745*. The type genome for the species is the GenBank assembly GCA_013911745.1. The GC content of the type genome is 65.09 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Sphingobium exoscitica sp. nov.

Candidatus Sphingobium exoscitica (NL. fem. n. *exoscitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp013822485*. The type genome for the species is the GenBank assembly GCA_013822485.1. The GC content of the type genome is 64.25 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Sphingobium exturitas sp. nov.

Candidatus Sphingobium exturitas (NL. fem. n. *exturitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp003248505*. The type genome for the species is the GenBank assembly GCA_003248505.1. The GC content of the type genome is 63.56 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Sphingobium funebilenta sp. nov.

Candidatus Sphingobium funebilenta (NL. fem. n. *funebilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp003591655*. The type genome for the species is the GenBank assembly RS_GCF_003591655.1. The GC content of the type genome is 62.78 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Sphingobium hemidicella sp. nov.

Candidatus Sphingobium hemidicella (NL. fem. n. *hemidicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp009360885*. The type genome for the species is the GenBank assembly GCA_009360885.1. The GC content of the type genome is 55.74 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Sphingobium inmorimonas sp. nov.

Candidatus Sphingobium inmorimonas (NL. fem. n. *inmorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp002457415*. The type genome for the species is the GenBank assembly GCA_002457415.1. The GC content of the type genome is 66.26 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Sphingobium latibastra sp. nov.

Candidatus Sphingobium latibastra (NL. fem. n. *latibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp014203965*. The type genome for the species is the GenBank assembly RS_GCF_014203965.1. The GC content of the type genome is 63.13 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Sphingobium linigibula sp. nov.

Candidatus Sphingobium linigibula (NL. fem. n. *linigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp006226685*. The type genome for the species is the GenBank assembly GCA_006226295.1. The GC content of the type genome is 61.57 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Sphingobium lutulago sp. nov.

Candidatus Sphingobium lutulago (NL. fem. n. *lutulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp001563265*. The type genome for the species is the GenBank assembly RS_GCF_001563265.1. The GC content of the type genome is 63.07

% and the genome length is 6.23 Mbp.

Description of *Candidatus* Sphingobium milifibula sp. nov.

Candidatus Sphingobium milifibula (NL. fem. n. *milifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp001713415*. The type genome for the species is the GenBank assembly RS_GCF_001713415.1. The GC content of the type genome is 62.9 % and the genome length is 4.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Chrysochromulina tobin phycosphere".

Description of *Candidatus* Sphingobium monimisca sp. nov.

Candidatus Sphingobium monimisca (NL. fem. n. *monimisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp013375535*. The type genome for the species is the GenBank assembly RS_GCF_013375535.1. The GC content of the type genome is 63.35 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Sphingobium nocumicula sp. nov.

Candidatus Sphingobium nocumicula (NL. fem. n. *nocumicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp000588875*. The type genome for the species is the GenBank assembly RS_GCF_000588875.1. The GC content of the type genome is 62.41 % and the genome length is 5.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil-contaminated soil".

Description of *Candidatus* Sphingobium obmutimonas sp. nov.

Candidatus Sphingobium obmutimonas (NL. fem. n. *obmutimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp002953135*. The type genome for the species is the GenBank assembly RS_GCF_002953135.1. The GC content of the type genome is 60.64 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Sphingobium octopitio sp. nov.

Candidatus Sphingobium octopitio (NL. fem. n. *octopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp001421665*. The type genome for the species is the GenBank assembly RS_GCF_001421665.1. The GC content of the type genome is 63.49 % and the genome length is 4.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingobium saxopitura sp. nov.

Candidatus Sphingobium saxopitura (NL. fem. n. *saxopitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp000153545*. The type genome for the species is the GenBank assembly GCA_002360735.1. The GC content of the type genome is 63.64 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Sphingobium sceptastra sp. nov.

Candidatus Sphingobium sceptastra (NL. fem. n. *sceptastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp014280435*. The type genome for the species is the GenBank assembly RS_GCF_014280435.1. The GC content of the type genome is 62.63 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Sphingobium senacicella sp. nov.

Candidatus Sphingobium senacicella (NL. fem. n. *senacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp001658005*. The type genome for the species is the GenBank assembly RS_GCF_001658005.1. The GC content of the type genome is 61.91 % and the genome length is 4.26 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Sphingobium senipifica sp. nov.

Candidatus Sphingobium senipifica (NL. fem. n. *senipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp000508185*. The type genome for the species is the GenBank assembly RS_GCF_000508185.1. The GC content of the type genome is 63.9 % and the genome length is 4.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "surface sediment from Makarov Basin at a depth 4000 m and layer 36-38 cm".

Description of *Candidatus* Sphingobium siligitura sp. nov.

Candidatus Sphingobium siligitura (NL. fem. n. *siligitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp900109095*. The type genome for the species is the GenBank assembly RS_GCF_900109095.1. The GC content of the type genome is 62.25 % and the genome length is 6.17 Mbp.

Description of *Candidatus* Sphingobium sotulitrix sp. nov.

Candidatus Sphingobium sotulitrix (NL. fem. n. *sotulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp900013425*. The type genome for the species is the GenBank assembly RS_GCF_900010525.1. The GC content of the type genome is 63.36 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Sphingobium timefatica sp. nov.

Candidatus Sphingobium timefatica (NL. fem. n. *timefatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp000281715*. The type genome for the species is the GenBank assembly RS_GCF_000281715.1. The GC content of the type genome is 64.04 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Sphingobium vacilatio sp. nov.

Candidatus Sphingobium vacilatio (NL. fem. n. *vacilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp002312805*. The type genome for the species is the GenBank assembly GCA_001829085.1. The GC content of the type genome is 63.17 % and the genome length is 3.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Sphingobium virecitas sp. nov.

Candidatus Sphingobium virecitas (NL. fem. n. *virecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium sp900111125*. The type genome for the species is the GenBank assembly RS_GCF_900111125.1. The GC content of the type genome is 62.86 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Sphingobium adessax sp. nov.

Candidatus Sphingobium adessax (NL. fem. n. *adessax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingobium_A sp003590775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003590775.1. The GC content of the type genome is 63.9 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Sphingomicrobium admoritas sp. nov.

Candidatus Sphingomicrobium admoritas (NL. fem. n. *admoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp902806285*. The type genome for the species is the GenBank assembly GCA_902806285.1. The GC content of the type genome is 68.71 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Sphingomicrobium adsenatica sp. nov.

Candidatus Sphingomicrobium adsenatica (NL. fem. n. *adsenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp011302055*. The type genome for the species is the GenBank assembly RS_GCF_011302055.1. The GC content of the type genome is 65.45 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Sphingomicrobium aglasentia sp. nov.

Candidatus Sphingomicrobium aglasentia (NL. fem. n. *aglasentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp902806275*. The type genome for the species is the GenBank assembly GCA_902806275.1. The GC content of the type genome is 66.61 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Sphingomicrobium benepisca sp. nov.

Candidatus Sphingomicrobium benepisca (NL. fem. n. *benepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp013816785*. The type genome for the species is the GenBank assembly GCA_013816785.1. The GC content of the type genome is 64.29 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Sphingomicrobium cepuritrix sp. nov.

Candidatus Sphingomicrobium cepuritrix (NL. fem. n. *cepuritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp013816595*. The type genome for the species is the GenBank assembly GCA_013816595.1. The GC content of the type genome is 62.77 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Sphingomicrobium cerarugo sp. nov.

Candidatus Sphingomicrobium cerarugo (NL. fem. n. *cerarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sphingomicrobium sp003097155*. The type genome for the species is the GenBank assembly RS_GCF_003097155.1. The GC content of the type genome is 65.29 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Sphingomicrobium cosidatio sp. nov.

Candidatus Sphingomicrobium cosidatio (NL. fem. n. *cosidatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp013361785*. The type genome for the species is the GenBank assembly GCA_013361785.1. The GC content of the type genome is 64.9 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Sphingomicrobium fecuniforma sp. nov.

Candidatus Sphingomicrobium fecuniforma (NL. fem. n. *fecuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp003499275*. The type genome for the species is the GenBank assembly RS_GCF_003499275.1. The GC content of the type genome is 67.54 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Sphingomicrobium fecunigena sp. nov.

Candidatus Sphingomicrobium fecunigena (NL. fem. n. *fecunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp013812805*. The type genome for the species is the GenBank assembly GCA_013812805.1. The GC content of the type genome is 65.17 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Sphingomicrobium feficiforma sp. nov.

Candidatus Sphingomicrobium feficiforma (NL. fem. n. *feficiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp014352855*. The type genome for the species is the GenBank assembly RS_GCF_014352855.1. The GC content of the type genome is 65.85 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Sphingomicrobium fumacousia sp. nov.

Candidatus Sphingomicrobium fumacousia (NL. fem. n. *fumacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp902806295*. The type genome for the species is the GenBank assembly GCA_902806295.1. The GC content of the type genome is 65.96 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Sphingomicrobium holoventia sp. nov.

Candidatus Sphingomicrobium holoventia (NL. fem. n. *holoventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp004282935*. The type genome for the species is the GenBank assembly GCA_004282935.1. The GC content of the type genome is 61.9 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Sphingomicrobium inabsitura sp. nov.

Candidatus Sphingomicrobium inabsitura (NL. fem. n. *inabsitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp003970925*. The type genome for the species is the GenBank assembly RS_GCF_003970925.1. The GC content of the type genome is 68.43 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Sphingomicrobium inlepisca sp. nov.

Candidatus Sphingomicrobium inlepisca (NL. fem. n. *inlepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp011301715*. The type genome for the species is the GenBank assembly RS_GCF_011301715.1. The GC content of the type genome is 62.73 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Sphingomicrobium metabax sp. nov.

Candidatus Sphingomicrobium metabax (NL. fem. n. *metabax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp902806265*. The type genome for the species is the GenBank assembly GCA_902806265.1. The GC content of the type genome is 67.44 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Sphingomicrobium offulastra sp. nov.

Candidatus Sphingomicrobium offulastra (NL. fem. n. *offulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp011053295*. The type genome for the species is the GenBank assembly GCA_011053295.1. The GC content of the type genome is 67.09 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Sphingomicrobium ossucugo sp. nov.

Candidatus Sphingomicrobium ossucugo (NL. fem. n. *ossucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp011300455*. The type genome for the species is the GenBank assembly RS_GCF_011300455.1. The GC content of the type genome is 63.28 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Sphingomicrobium revulitas sp. nov.

Candidatus Sphingomicrobium revulitas (NL. fem. n. *revulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp009720245*. The type genome for the species is the GenBank assembly RS_GCF_009720245.1. The GC content of the type genome is 65.91 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Sphingomicrobium rurigivita sp. nov.

Candidatus Sphingomicrobium rurigivita (NL. fem. n. *rurigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sphingomicrobium sp000620665*. The type genome for the species is the GenBank assembly RS_GCF_000620665.1. The GC content of the type genome is 65.2 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Sphingomicrobium sugilatica sp. nov.

Candidatus Sphingomicrobium sugilatica (NL. fem. n. *sugilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp007998985*. The type genome for the species is the GenBank assembly RS_GCF_007998985.1. The GC content of the type genome is 63.66 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Sphingomicrobium tibicetta sp. nov.

Candidatus Sphingomicrobium tibicetta (NL. fem. n. *tibicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp013817375*. The type genome for the species is the GenBank assembly GCA_013817375.1. The GC content of the type genome is 63.89 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Sphingomicrobium vilititura sp. nov.

Candidatus Sphingomicrobium vilititura (NL. fem. n. *vilititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomicrobium sp013812825*. The type genome for the species is the GenBank assembly GCA_013812825.1. The GC content of the type genome is 66.25 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Sphingomonas abinvifica sp. nov.

Candidatus Sphingomonas abinvifica (NL. fem. n. *abinvifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp012927115*. The type genome for the species is the GenBank assembly RS_GCF_012927115.1. The GC content of the type genome is 65.84 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Sphingomonas abmatatica sp. nov.

Candidatus Sphingomonas abmatatica (NL. fem. n. *abmatatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421245*. The type genome for the species is the GenBank assembly RS_GCF_001421245.1. The GC content of the type genome is 65.8 % and the genome length is 4.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas abrelitrix sp. nov.

Candidatus Sphingomonas abrelitrix (NL. fem. n. *abrelitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp900114095*. The type genome for the species is the GenBank assembly RS_GCF_900114095.1. The GC content of the type genome is 67.32 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Sphingomonas abrumiforma sp. nov.

Candidatus Sphingomonas abrumiforma (NL. fem. n. *abrumiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp004341085*. The type genome for the species is the GenBank assembly RS_GCF_004341085.1. The GC content of the type genome is 65.14 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Sphingomonas adbelugo sp. nov.

Candidatus Sphingomonas adbelugo (NL. fem. n. *adbelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp004101245*. The type genome for the species is the GenBank assembly RS_GCF_004101245.1. The GC content of the type genome is 65.69 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Sphingomonas adfiritas sp. nov.

Candidatus Sphingomonas adfiritas (NL. fem. n. *adfiritas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp012035195*. The type genome for the species is the GenBank assembly RS_GCF_012035195.1. The GC content of the type genome is 70.28 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Sphingomonas adperitas sp. nov.

Candidatus Sphingomonas adperitas (NL. fem. n. *adperitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001422045*. The type genome for the species is the GenBank assembly RS_GCF_001422045.1. The GC content of the type genome is 65.31 % and the genome length is 4.3 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas adpicugo sp. nov.

Candidatus Sphingomonas adpicugo (NL. fem. n. *adpicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002707985*. The type genome for the species is the GenBank assembly GCA_002707985.1. The GC content of the type genome is 63.78 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Sphingomonas adporibula sp. nov.

Candidatus Sphingomonas adporibula (NL. fem. n. *adporibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002127225*. The type genome for the species is the GenBank assembly RS_GCF_002127225.1. The GC content of the type genome is 67.81 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Sphingomonas adsicisca sp. nov.

Candidatus Sphingomonas adsicisca (NL. fem. n. *adsicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001423765*. The type genome for the species is the GenBank assembly RS_GCF_001423765.1. The GC content of the type genome is 67.11 % and the genome length is 3.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas adtilax sp. nov.

Candidatus Sphingomonas adtilax (NL. fem. n. *adtilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001426195*. The type genome for the species is the GenBank assembly RS_GCF_001426195.1. The GC content of the type genome is 64.67 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas advigessa sp. nov.

Candidatus Sphingomonas advigessa (NL. fem. n. *advigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421995*. The type genome for the species is the GenBank assembly RS_GCF_001421995.1. The GC content of the type genome is 67.02 % and the genome length is 3.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas agratedo sp. nov.

Candidatus Sphingomonas agratedo (NL. fem. n. *agratedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp000712135*. The type genome for the species is the GenBank assembly RS_GCF_000712135.1. The GC content of the type genome is 65.9 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Sphingomonas ambacilenta sp. nov.

Candidatus Sphingomonas ambacilenta (NL. fem. n. *ambacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421505*. The type genome for the species is the GenBank assembly RS_GCF_001421505.1. The GC content of the type genome is 66.84 % and the genome length is 3.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas ambaditudo sp. nov.

Candidatus Sphingomonas ambaditudo (NL. fem. n. *ambaditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp004795835*. The type genome for the species is the GenBank assembly RS_GCF_004795835.1. The GC content of the type genome is 65.24 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Sphingomonas ambifitudo sp. nov.

Candidatus Sphingomonas ambifitudo (NL. fem. n. *ambifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp903642285*. The type genome for the species is the GenBank assembly RS_GCF_903642285.1. The GC content of the type genome is 66.16 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Sphingomonas ammiximonas sp. nov.

Candidatus Sphingomonas ammiximonas (NL. fem. n. *ammiximonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp013822915*. The type genome for the species is the GenBank assembly GCA_013822915.1. The GC content of the type genome is 64.38 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Sphingomonas anxifitudo sp. nov.

Candidatus Sphingomonas anxifitudo (NL. fem. n. *anxifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421415*. The type genome for the species is the GenBank assembly RS_GCF_001421415.1. The GC content of the type genome is 64.4

% and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas armidivita sp. nov.

Candidatus Sphingomonas armidivita (NL. fem. n. *armidivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421785*. The type genome for the species is the GenBank assembly RS_GCF_001421785.1. The GC content of the type genome is 67.44 % and the genome length is 3.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas ascenentia sp. nov.

Candidatus Sphingomonas ascenentia (NL. fem. n. *ascenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003946805*. The type genome for the species is the GenBank assembly RS_GCF_003946805.1. The GC content of the type genome is 67.7 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Sphingomonas attubiforma sp. nov.

Candidatus Sphingomonas attubiforma (NL. fem. n. *attubiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003355005*. The type genome for the species is the GenBank assembly RS_GCF_003355005.1. The GC content of the type genome is 67.56 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Sphingomonas baditetta sp. nov.

Candidatus Sphingomonas baditetta (NL. fem. n. *baditetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001897045*. The type genome for the species is the GenBank assembly RS_GCF_013409765.1. The GC content of the type genome is 66.08 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Sphingomonas binocitrix sp. nov.

Candidatus Sphingomonas binocitrix (NL. fem. n. *binocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421805*. The type genome for the species is the GenBank assembly RS_GCF_001421825.1. The GC content of the type genome is 65.85 % and the genome length is 3.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas biparibula sp. nov.

Candidatus Sphingomonas biparibula (NL. fem. n. *biparibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001556185*. The type genome for the species is the GenBank assembly RS_GCF_001556185.1. The GC content of the type genome is 65.12 % and the genome length is 3.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Sphingomonas bipenicula sp. nov.

Candidatus Sphingomonas bipenicula (NL. fem. n. *bipenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp004340965*. The type genome for the species is the GenBank assembly RS_GCF_004340965.1. The GC content of the type genome is 64.84 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Sphingomonas bonitilega sp. nov.

Candidatus Sphingomonas bonitilega (NL. fem. n. *bonitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002403415*. The type genome for the species is the GenBank assembly GCA_002403415.1. The GC content of the type genome is 63.63 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Sphingomonas brasmicella sp. nov.

Candidatus Sphingomonas brasmicella (NL. fem. n. *brasmicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp903643035*. The type genome for the species is the GenBank assembly RS_GCF_903643035.1. The GC content of the type genome is 68.8 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Sphingomonas butubessa sp. nov.

Candidatus Sphingomonas butubessa (NL. fem. n. *butubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001425385*. The type genome for the species is the GenBank assembly RS_GCF_001421845.1. The GC content of the type genome is 67.74 % and the genome length is 3.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas capuditia sp. nov.

Candidatus Sphingomonas capuditia (NL. fem. n. *capuditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp000282895*. The type genome for the species is the GenBank assembly RS_GCF_001469845.1. The GC content of the type genome is 65.89 % and the genome length is 4.04 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea-mud".

Description of *Candidatus* Sphingomonas categitudo sp. nov.

Candidatus Sphingomonas categitudo (NL. fem. n. *categitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001650735*. The type genome for the species is the GenBank assembly RS_GCF_001650735.1. The GC content of the type genome is 66.24 % and the genome length is 5.41 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment".

Description of *Candidatus* Sphingomonas cicaretta sp. nov.

Candidatus Sphingomonas cicaretta (NL. fem. n. *cicaretta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp005773165*. The type genome for the species is the GenBank assembly GCA_005773165.1. The GC content of the type genome is 69.32 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Sphingomonas cilibetta sp. nov.

Candidatus Sphingomonas cilibetta (NL. fem. n. *cilibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp004799495*. The type genome for the species is the GenBank assembly GCA_004799495.1. The GC content of the type genome is 66.52 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Sphingomonas coninedo sp. nov.

Candidatus Sphingomonas coninedo (NL. fem. n. *coninedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp013344685*. The type genome for the species is the GenBank assembly RS_GCF_013344685.1. The GC content of the type genome is 66.97 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Sphingomonas crusmessa sp. nov.

Candidatus Sphingomonas crusmessa (NL. fem. n. *crusmessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002002925*. The type genome for the species is the GenBank assembly RS_GCF_002002925.1. The GC content of the type genome is 66.2 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Sphingomonas crusmitrix sp. nov.

Candidatus Sphingomonas crusmitrix (NL. fem. n. *crusmitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp900110035*. The type genome for the species is the GenBank assembly RS_GCF_900110035.1. The GC content of the type genome is 66.95 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Sphingomonas defunago sp. nov.

Candidatus Sphingomonas defunago (NL. fem. n. *defunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp013416555*. The type genome for the species is the GenBank assembly RS_GCF_013416555.1. The GC content of the type genome is 66.65 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Sphingomonas delucousia sp. nov.

Candidatus Sphingomonas delucousia (NL. fem. n. *delucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003610375*. The type genome for the species is the GenBank assembly RS_GCF_004340825.1. The GC content of the type genome is 64.9 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Sphingomonas derelitura sp. nov.

Candidatus Sphingomonas derelitura (NL. fem. n. *derelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003951315*. The type genome for the species is the GenBank assembly RS_GCF_003951315.1. The GC content of the type genome is 67.38 % and the genome length is 4.2 Mbp.

Description of *Candidatus* Sphingomonas detumigena sp. nov.

Candidatus Sphingomonas detumigena (NL. fem. n. *detumigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002280565*. The type genome for the species is the GenBank assembly GCA_002280565.1. The GC content of the type genome is 66.05 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Sphingomonas diluditoga sp. nov.

Candidatus Sphingomonas diluditoga (NL. fem. n. *diluditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp902506455*. The type genome for the species is the GenBank assembly RS_GCF_902506455.1. The GC content of the type genome is 67.39 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Sphingomonas domicentia sp. nov.

Candidatus Sphingomonas domicentia (NL. fem. n. *domicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp014193845*. The type genome for the species is the GenBank assembly RS_GCF_014193405.1. The GC content of the type genome is 69.55 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Sphingomonas duponilenta sp. nov.

Candidatus Sphingomonas duponilenta (NL. fem. n. *duponilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp005144715*. The type genome for the species is the GenBank assembly RS_GCF_005144715.1. The GC content of the type genome is 67.81 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Sphingomonas duricilenta sp. nov.

Candidatus Sphingomonas duricilenta (NL. fem. n. *duricilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003075315*. The type genome for the species is the GenBank assembly GCA_003963085.1. The GC content of the type genome is 67.18 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Sphingomonas enuclibra sp. nov.

Candidatus Sphingomonas enuclibra (NL. fem. n. *enuclibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp000382485*. The type genome for the species is the GenBank assembly RS_GCF_000382485.1. The GC content of the type genome is 66.53 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Sphingomonas excoretta sp. nov.

Candidatus Sphingomonas excoretta (NL. fem. n. *excoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp000241485*. The type genome for the species is the GenBank assembly RS_GCF_000241485.1. The GC content of the type genome is 65.93 % and the genome length is 4.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Arctic lichen".

Description of *Candidatus* Sphingomonas fefelentia sp. nov.

Candidatus Sphingomonas fefelentia (NL. fem. n. *fefelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421765*. The type genome for the species is the GenBank assembly RS_GCF_001421405.1. The GC content of the type genome is 66.9 % and the genome length is 3.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas fiducilenta sp. nov.

Candidatus Sphingomonas fiducilenta (NL. fem. n. *fiducilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp900115295*. The type genome for the species is the GenBank assembly RS_GCF_900115295.1. The GC content of the type genome is 64.98 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Sphingomonas forabicula sp. nov.

Candidatus Sphingomonas forabicula (NL. fem. n. *forabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp014334115*. The type genome for the species is the GenBank assembly RS_GCF_014334115.1. The GC content of the type genome is 67.11 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Sphingomonas foricimonas sp. nov.

Candidatus Sphingomonas foricimonas (NL. fem. n. *foricimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421355*. The type genome for the species is the GenBank assembly RS_GCF_001421285.1. The GC content of the type genome is 66.87 % and the genome length is 3.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas funivicula sp. nov.

Candidatus Sphingomonas funivicula (NL. fem. n. *funivicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001424005*. The type genome for the species is the GenBank assembly RS_GCF_001424005.1. The GC content of the type genome is 65.63 % and the genome length is 4.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas furibicula sp. nov.

Candidatus Sphingomonas furibicula (NL. fem. n. *furibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003345355*. The type genome for the species is the GenBank assembly RS_GCF_003345355.1. The GC content of the type genome is 68.26 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Sphingomonas hecatibra sp. nov.

Candidatus Sphingomonas hecatibra (NL. fem. n. *hecatibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sphingomonas sp002083475*. The type genome for the species is the GenBank assembly GCA_002083475.1. The GC content of the type genome is 67.75 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Sphingomonas homulentia sp. nov.

Candidatus Sphingomonas homulentia (NL. fem. n. *homulentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001557215*. The type genome for the species is the GenBank assembly RS_GCF_001556635.1. The GC content of the type genome is 66.08 % and the genome length is 4.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Sphingomonas immobitudo sp. nov.

Candidatus Sphingomonas immobitudo (NL. fem. n. *immobitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp014358075*. The type genome for the species is the GenBank assembly RS_GCF_014358075.1. The GC content of the type genome is 65.67 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Sphingomonas immobivita sp. nov.

Candidatus Sphingomonas immobivita (NL. fem. n. *immobivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp007833215*. The type genome for the species is the GenBank assembly RS_GCF_007833215.1. The GC content of the type genome is 65.53 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Sphingomonas inbecessa sp. nov.

Candidatus Sphingomonas inbecessa (NL. fem. n. *inbecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp011057975*. The type genome for the species is the GenBank assembly RS_GCF_011057975.1. The GC content of the type genome is 64.69 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Sphingomonas infanatica sp. nov.

Candidatus Sphingomonas infanatica (NL. fem. n. *infanatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002083435*. The type genome for the species is the GenBank assembly GCA_002083435.1. The GC content of the type genome is 67.28 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Sphingomonas inmacugo sp. nov.

Candidatus Sphingomonas inmacugo (NL. fem. n. *inmacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp013374115*. The type genome for the species is the GenBank assembly RS_GCF_013374115.1. The GC content of the type genome is 65.47 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Sphingomonas inmenibula sp. nov.

Candidatus Sphingomonas inmenibula (NL. fem. n. *inmenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp012650175*. The type genome for the species is the GenBank assembly RS_GCF_012650175.1. The GC content of the type genome is 66.85 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Sphingomonas inmoriforma sp. nov.

Candidatus Sphingomonas inmoriforma (NL. fem. n. *inmoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421535*. The type genome for the species is the GenBank assembly RS_GCF_001421535.1. The GC content of the type genome is 66.09 % and the genome length is 4.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas insubivita sp. nov.

Candidatus Sphingomonas insubivita (NL. fem. n. *insubivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003050745*. The type genome for the species is the GenBank assembly RS_GCF_003050745.1. The GC content of the type genome is 65.47 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Sphingomonas intacigena sp. nov.

Candidatus Sphingomonas intacigena (NL. fem. n. *intacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp903643065*. The type genome for the species is the GenBank assembly RS_GCF_903643065.1. The GC content of the type genome is 69.02 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Sphingomonas intolilega sp. nov.

Candidatus Sphingomonas intolilega (NL. fem. n. *intolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002863155*. The type genome for the species is the GenBank assembly GCA_002863155.1. The GC content of the type genome is 65.56 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Sphingomonas invecilenta sp. nov.

Candidatus Sphingomonas invecilenta (NL. fem. n. *invecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp004345855*. The type genome for the species is the GenBank assembly RS_GCF_004345855.1. The GC content of the type genome is 70.01 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Sphingomonas lacinifica sp. nov.

Candidatus Sphingomonas lacinifica (NL. fem. n. *lacinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003096895*. The type genome for the species is the GenBank assembly RS_GCF_003096895.1. The GC content of the type genome is 67.21 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Sphingomonas latibifica sp. nov.

Candidatus Sphingomonas latibifica (NL. fem. n. *latibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002280555*. The type genome for the species is the GenBank assembly GCA_002280555.1. The GC content of the type genome is 62.29 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Sphingomonas lucerugo sp. nov.

Candidatus Sphingomonas lucerugo (NL. fem. n. *lucerugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp902498785*. The type genome for the species is the GenBank assembly RS_GCF_902498785.1. The GC content of the type genome is 66.46 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Sphingomonas lupanatio sp. nov.

Candidatus Sphingomonas lupanatio (NL. fem. n. *lupanatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp014217605*. The type genome for the species is the GenBank assembly RS_GCF_014217605.1. The GC content of the type genome is 67.24 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Sphingomonas luxurilega sp. nov.

Candidatus Sphingomonas luxurilega (NL. fem. n. *luxurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp005503355*. The type genome for the species is the GenBank assembly RS_GCF_005503245.1. The GC content of the type genome is 66.91 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Sphingomonas malogago sp. nov.

Candidatus Sphingomonas malogago (NL. fem. n. *malogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001464615*. The type genome for the species is the GenBank assembly GCA_001464615.1. The GC content of the type genome is 61.89 % and the genome length is 3.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Sphingomonas manomax sp. nov.

Candidatus Sphingomonas manomax (NL. fem. n. *manomax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp903884945*. The type genome for the species is the GenBank assembly GCA_903884945.1. The GC content of the type genome is 66.01 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Sphingomonas manubatio sp. nov.

Candidatus Sphingomonas manubatio (NL. fem. n. *manubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002796605*. The type genome for the species is the GenBank assembly RS_GCF_002796605.1. The GC content of the type genome is 65.59 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Sphingomonas melopatio sp. nov.

Candidatus Sphingomonas melopatio (NL. fem. n. *melopatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421715*. The type genome for the species is the GenBank assembly RS_GCF_001421155.1. The GC content of the type genome is 66.38 % and the genome length is 4.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas mimogitura sp. nov.

Candidatus Sphingomonas mimogitura (NL. fem. n. *mimogitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp000803065*. The type genome for the species is the GenBank assembly RS_GCF_000803065.1. The GC content of the type genome is 63.73 % and the genome length is 5.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Bacterial enrichment community from groundwater sediment".

Description of *Candidatus* Sphingomonas monocibula sp. nov.

Candidatus Sphingomonas monocibula (NL. fem. n. *monocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp000786205*. The type genome for the species is the GenBank assembly RS_GCF_000786205.1. The GC content of the type genome is 64.47 % and the genome length is 3.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "lake".

Description of *Candidatus* Sphingomonas noninentia sp. nov.

Candidatus Sphingomonas noninentia (NL. fem. n. *noninentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp900109205*. The type genome for the species is the GenBank assembly RS_GCF_001557395.1. The GC content of the type genome is 65.52 % and the genome length is 4.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Sphingomonas noninicella sp. nov.

Candidatus Sphingomonas noninicella (NL. fem. n. *noninicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp004173185*. The type genome for the species is the GenBank assembly GCA_004173185.1. The GC content of the type genome is 63.15 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Sphingomonas nugigibra sp. nov.

Candidatus Sphingomonas nugigibra (NL. fem. n. *nugigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp014194975*. The type genome for the species is the GenBank assembly RS_GCF_014194975.1. The GC content of the type genome is 70.03 % and the genome length is 4.9 Mbp.

Description of *Candidatus* Sphingomonas oblocitas sp. nov.

Candidatus Sphingomonas oblocitas (NL. fem. n. *oblocitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001425405*. The type genome for the species is the GenBank assembly RS_GCF_001425405.1. The GC content of the type genome is 69.41 % and the genome length is 3.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas obsolibra sp. nov.

Candidatus Sphingomonas obsolibra (NL. fem. n. *obsolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp013374095*. The type genome for the species is the GenBank assembly RS_GCF_013374095.1. The GC content of the type genome is 64.59 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Sphingomonas obsoritura sp. nov.

Candidatus Sphingomonas obsoritura (NL. fem. n. *obsoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001428865*. The type genome for the species is the GenBank assembly RS_GCF_001428865.1. The GC content of the type genome is 66.02 % and the genome length is 4.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Sphingomonas offunifica sp. nov.

Candidatus Sphingomonas offunifica (NL. fem. n. *offunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp902506605*. The type genome for the species is the GenBank assembly RS_GCF_902506605.1. The GC content of the type genome is 63.83 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Sphingomonas omnigax sp. nov.

Candidatus Sphingomonas omnigax (NL. fem. n. *omnigax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp005502745*. The type genome for the species is the GenBank assembly RS_GCF_005502745.1. The GC content of the type genome is 64.75 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Sphingomonas optabugo sp. nov.

Candidatus Sphingomonas optabugo (NL. fem. n. *optabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001423845*. The type genome for the species is the GenBank assembly RS_GCF_001423845.1. The GC content of the type genome is 65.42 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas ossarentia sp. nov.

Candidatus Sphingomonas ossarentia (NL. fem. n. *ossarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002083655*. The type genome for the species is the GenBank assembly GCA_002083655.1. The GC content of the type genome is 61.42 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Sphingomonas paralibula sp. nov.

Candidatus Sphingomonas paralibula (NL. fem. n. *paralibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002281535*. The type genome for the species is the GenBank assembly GCA_002281535.1. The GC content of the type genome is 63.29 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Sphingomonas perabilenta sp. nov.

Candidatus Sphingomonas perabilenta (NL. fem. n. *perabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp007859635*. The type genome for the species is the GenBank assembly RS_GCF_007859635.1. The GC content of the type genome is 65.15 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Sphingomonas peracibra sp. nov.

Candidatus Sphingomonas peracibra (NL. fem. n. *peracibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003688595*. The type genome for the species is the GenBank assembly RS_GCF_003688595.1. The GC content of the type genome is 65.51 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Sphingomonas pomifimonia sp. nov.

Candidatus Sphingomonas pomifimonia (NL. fem. n. *pomifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002281485*. The type genome for the species is the GenBank assembly GCA_002281485.1. The GC content of the type genome is 65.98 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Sphingomonas refinivita sp. nov.

Candidatus Sphingomonas refinivita (NL. fem. n. *refinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp902826325*. The type genome for the species is the GenBank assembly GCA_902825815.1. The GC content of the type genome is 66.62 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Sphingomonas saxifessa sp. nov.

Candidatus Sphingomonas saxifessa (NL. fem. n. *saxifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp903644135*. The type genome for the species is the GenBank assembly RS_GCF_903644135.1. The GC content of the type genome is 68.09 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Sphingomonas semiditas sp. nov.

Candidatus Sphingomonas semiditas (NL. fem. n. *semiditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp004340945*. The type genome for the species is the GenBank assembly RS_GCF_004340945.1. The GC content of the type genome is 64.97 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Sphingomonas semililega sp. nov.

Candidatus Sphingomonas semililega (NL. fem. n. *semililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp004341505*. The type genome for the species is the GenBank assembly RS_GCF_003950785.1. The GC content of the type genome is 67.61 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Sphingomonas solivessa sp. nov.

Candidatus Sphingomonas solivessa (NL. fem. n. *solivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp900103265*. The type genome for the species is the GenBank assembly RS_GCF_900103265.1. The GC content of the type genome is 66.97 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Sphingomonas solivimonas sp. nov.

Candidatus Sphingomonas solivimonas (NL. fem. n. *solivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp000251145*. The type genome for the species is the GenBank assembly RS_GCF_000242835.1. The GC content of the type genome is 65.71 % and the genome length is 4.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Arctic Lichen".

Description of *Candidatus* Sphingomonas subucedo sp. nov.

Candidatus Sphingomonas subucedo (NL. fem. n. *subucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp900109565*. The type genome for the species is the GenBank assembly RS_GCF_900109565.1. The GC content of the type genome is 67.33 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Sphingomonas tabititia sp. nov.

Candidatus Sphingomonas tabititia (NL. fem. n. *tabititia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp000797515*. The type genome for the species is the GenBank assembly RS_GCF_003985085.1. The GC content of the type genome is 64.61 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Sphingomonas tametitica sp. nov.

Candidatus Sphingomonas tametitica (NL. fem. n. *tametitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002117915*. The type genome for the species is the GenBank assembly RS_GCF_002117915.1. The GC content of the type genome is 67.17 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Sphingomonas tenilimonia sp. nov.

Candidatus Sphingomonas tenilimonia (NL. fem. n. *tenilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp003688625*. The type genome for the species is the GenBank assembly RS_GCF_003688625.1. The GC content of the type genome is 65.65 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Sphingomonas tetenitoga sp. nov.

Candidatus Sphingomonas tetenitoga (NL. fem. n. *tetenitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001555965*. The type genome for the species is the GenBank assembly RS_GCF_001556095.1. The GC content of the type genome is 66.83 % and the genome length is 3.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hospital shower hose biofilm".

Description of *Candidatus* Sphingomonas tomacentia sp. nov.

Candidatus Sphingomonas tomacentia (NL. fem. n. *tomacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp002292295*. The type genome for the species is the GenBank assembly GCA_002292295.1. The GC content of the type genome is 68.53 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Sphingomonas tubicimonas sp. nov.

Candidatus Sphingomonas tubicimonas (NL. fem. n. *tubicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421965*. The type genome for the species is the GenBank assembly RS_GCF_001421965.1. The GC content of the type genome is 65.91 % and the genome length is 4.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas vanidicella sp. nov.

Candidatus Sphingomonas vanidicella (NL. fem. n. *vanidicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp000632225*. The type genome for the species is the

GenBank assembly RS_GCF_000632225.1. The GC content of the type genome is 68.31 % and the genome length is 4.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Willow (Salix sp.)".

Description of *Candidatus* Sphingomonas vepalugo sp. nov.

Candidatus Sphingomonas vepalugo (NL. fem. n. *vepalugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp014489075*. The type genome for the species is the GenBank assembly RS_GCF_014489075.1. The GC content of the type genome is 65.51 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Sphingomonas vocamilega sp. nov.

Candidatus Sphingomonas vocamilega (NL. fem. n. *vocamilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001897375*. The type genome for the species is the GenBank assembly GCA_001897375.1. The GC content of the type genome is 67.41 % and the genome length is 4.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Sphingomonas vocifessa sp. nov.

Candidatus Sphingomonas vocifessa (NL. fem. n. *vocifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas sp001421745*. The type genome for the species is the GenBank assembly RS_GCF_001421745.1. The GC content of the type genome is 65.19 % and the genome length is 4.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Sphingomonas aclasiforma sp. nov.

Candidatus Sphingomonas aclasiforma (NL. fem. n. *aclasiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_B sp009913435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009913435.1. The GC content of the type genome is 68.27 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Sphingomonas arrabitio sp. nov.

Candidatus Sphingomonas arrabitio (NL. fem. n. *arrabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_B sp002291855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002291855.1. The GC content of the type genome is 68.61 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Sphingomonas dicibitio sp. nov.

Candidatus Sphingomonas dicibitio (NL. fem. n. *dicibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_B sp013044515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013044515.1. The GC content of the type genome is 65.68 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Sphingomonas vacilitica sp. nov.

Candidatus Sphingomonas vacilitica (NL. fem. n. *vacilitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_B sp013778485*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013778485.1. The GC content of the type genome is 67.34 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Sphingomonas diluvugo sp. nov.

Candidatus Sphingomonas diluvugo (NL. fem. n. *diluvugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_E sp002151445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002151445.1. The GC content of the type genome is 63.69 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Sphingomonas myalgigena sp. nov.

Candidatus Sphingomonas myalgigena (NL. fem. n. *myalgigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_G sp009739515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009739515.1. The GC content of the type genome is 69.2 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Sphingomonas lavacitrix sp. nov.

Candidatus Sphingomonas lavacitrix (NL. fem. n. *lavacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_I sp903644055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_903644055.1. The GC content of the type genome is 67.0 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Sphingomonas macilicella sp. nov.

Candidatus Sphingomonas macilicella (NL. fem. n. *macilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_I sp003248515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003248515.1. The GC content of the type genome is 65.51 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Sphingomonas sacomitrix sp. nov.

Candidatus Sphingomonas sacomitrix (NL. fem. n. *sacomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_I sp013113735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013113735.1. The GC content of the type genome is 65.76 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Sphingomonas melopitia sp. nov.

Candidatus Sphingomonas melopitia (NL. fem. n. *melopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_L sp004796535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004796535.1. The GC content of the type genome is 68.03 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Sphingomonas allubax sp. nov.

Candidatus Sphingomonas allubax (NL. fem. n. *allubax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_N sp000383095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000383095.1. The GC content of the type genome is 67.36 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "termitarium".

Description of *Candidatus* Sphingomonas cimelicella sp. nov.

Candidatus Sphingomonas cimelicella (NL. fem. n. *cimelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_N sp013778325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_013778325.1. The GC content of the type genome is 66.2 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Sphingomonas demogimonia sp. nov.

Candidatus Sphingomonas demogimonia (NL. fem. n. *demogimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_N sp903871605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903868005.1. The GC content of the type genome is 67.16 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Sphingomonas perabugo sp. nov.

Candidatus Sphingomonas perabugo (NL. fem. n. *perabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingomonas_N sp000333335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000333335.1. The GC content of the type genome is 65.93 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Sphingopyxis abascitia sp. nov.

Candidatus Sphingopyxis abascitia (NL. fem. n. *abascitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp003609835*. The type genome for the species is the GenBank assembly RS_GCF_003609835.1. The GC content of the type genome is 65.18 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Sphingopyxis adfunilega sp. nov.

Candidatus Sphingopyxis adfunilega (NL. fem. n. *adfunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001278035*. The type genome for the species is the GenBank assembly RS_GCF_001278035.1. The GC content of the type genome is 64.04 % and the genome length is 4.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "activated sludge".

Description of *Candidatus* Sphingopyxis adpacousia sp. nov.

Candidatus Sphingopyxis adpacousia (NL. fem. n. *adpacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp012035435*. The type genome for the species is the GenBank assembly GCA_012035435.1. The GC content of the type genome is 60.69 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Sphingopyxis adsesitas sp. nov.

Candidatus Sphingopyxis adsesitas (NL. fem. n. *adsesitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp004795895*. The type genome for the species is the GenBank assembly RS_GCF_004795895.1. The GC content of the type genome is 64.96 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Sphingopyxis ambificella sp. nov.

Candidatus Sphingopyxis ambificella (NL. fem. n. *ambificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001984035*. The type genome for the species is the GenBank assembly RS_GCF_001984035.1. The GC content of the type genome is 66.48 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Sphingopyxis anxifigena sp. nov.

Candidatus Sphingopyxis anxifigena (NL. fem. n. *anxifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp000763945*. The type genome for the species is the GenBank assembly RS_GCF_000763945.1. The GC content of the type genome is 62.85 % and the genome length is 3.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "crude oil contaminated seashore".

Description of *Candidatus* Sphingopyxis asporibula sp. nov.

Candidatus Sphingopyxis asporibula (NL. fem. n. *asporibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp000756385*. The type genome for the species is the GenBank assembly RS_GCF_000756385.1. The GC content of the type genome is 65.21 % and the genome length is 4.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cave surface layer".

Description of *Candidatus* Sphingopyxis bicodisca sp. nov.

Candidatus Sphingopyxis bicodisca (NL. fem. n. *bicodisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp002454115*. The type genome for the species is the GenBank assembly GCA_002453965.1. The GC content of the type genome is 63.96 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Sphingopyxis bugilitudo sp. nov.

Candidatus Sphingopyxis bugilitudo (NL. fem. n. *bugilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001047015*. The type genome for the species is the GenBank assembly RS_GCF_001047015.1. The GC content of the type genome is 63.73 % and the genome length is 4.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "lake water".

Description of *Candidatus* Sphingopyxis cerevago sp. nov.

Candidatus Sphingopyxis cerevago (NL. fem. n. *cerevago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sphingopyxis sp003609815*. The type genome for the species is the GenBank assembly RS_GCF_012274265.1. The GC content of the type genome is 64.83 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Sphingopyxis delecicella sp. nov.

Candidatus Sphingopyxis delecicella (NL. fem. n. *delecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001468265*. The type genome for the species is the GenBank assembly RS_GCF_001468265.1. The GC content of the type genome is 65.05 % and the genome length is 4.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Drinking Water".

Description of *Candidatus* Sphingopyxis democimonia sp. nov.

Candidatus Sphingopyxis democimonia (NL. fem. n. *democimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001468225*. The type genome for the species is the GenBank assembly RS_GCF_001467395.1. The GC content of the type genome is 64.69 % and the genome length is 5.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Drinking Water".

Description of *Candidatus* Sphingopyxis dicanatio sp. nov.

Candidatus Sphingopyxis dicanatio (NL. fem. n. *dicanatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001830555*. The type genome for the species is the GenBank assembly GCA_001830555.1. The GC content of the type genome is 64.6 % and the genome length is 3.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Sphingopyxis disidessa sp. nov.

Candidatus Sphingopyxis disidessa (NL. fem. n. *disidessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sphingopyxis sp002277025*. The type genome for the species is the GenBank assembly RS_GCF_002277025.1. The GC content of the type genome is 66.0 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Sphingopyxis domicitio sp. nov.

Candidatus Sphingopyxis domicitio (NL. fem. n. *domicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001990265*. The type genome for the species is the GenBank assembly RS_GCF_001990265.1. The GC content of the type genome is 66.17 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Sphingopyxis fefelatica sp. nov.

Candidatus Sphingopyxis fefelatica (NL. fem. n. *fefelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp013410105*. The type genome for the species is the GenBank assembly GCA_902168315.1. The GC content of the type genome is 65.35 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Sphingopyxis fuligimonas sp. nov.

Candidatus Sphingopyxis fuligimonas (NL. fem. n. *fuligimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp002841175*. The type genome for the species is the GenBank assembly GCA_002841175.1. The GC content of the type genome is 64.84 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Sphingopyxis giganitio sp. nov.

Candidatus Sphingopyxis giganitio (NL. fem. n. *giganitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp002842935*. The type genome for the species is the GenBank assembly GCA_002842935.1. The GC content of the type genome is 65.33 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Sphingopyxis infatitura sp. nov.

Candidatus Sphingopyxis infatitura (NL. fem. n. *infatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp005503215*. The type genome for the species is the GenBank assembly RS_GCF_005503215.1. The GC content of the type genome is 64.92 % and the genome length is 5.06 Mbp.

Description of *Candidatus* Sphingopyxis infenessa sp. nov.

Candidatus Sphingopyxis infenessa (NL. fem. n. *infenessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp012979535*. The type genome for the species is the GenBank assembly RS_GCF_012979535.1. The GC content of the type genome is 61.98 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Sphingopyxis ininnatio sp. nov.

Candidatus Sphingopyxis ininnatio (NL. fem. n. *ininnatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp013821905*. The type genome for the species is the GenBank assembly GCA_013821905.1. The GC content of the type genome is 66.63 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Sphingopyxis labecousia sp. nov.

Candidatus Sphingopyxis labecousia (NL. fem. n. *labecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001468285*. The type genome for the species is the GenBank assembly RS_GCF_001468305.1. The GC content of the type genome is 66.7 % and the genome length is 4.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Drinking Water".

Description of *Candidatus* Sphingopyxis laxitedo sp. nov.

Candidatus Sphingopyxis laxitedo (NL. fem. n. *laxitedo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001427085*. The type genome for the species is the GenBank assembly RS_GCF_001427085.1. The GC content of the type genome is 65.83 % and the genome length is 4.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Sphingopyxis licenitura sp. nov.

Candidatus Sphingopyxis licenitura (NL. fem. n. *licenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp014207235*. The type genome for the species is the GenBank assembly RS_GCF_014207235.1. The GC content of the type genome is 64.61 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Sphingopyxis lugubago sp. nov.

Candidatus Sphingopyxis lugubago (NL. fem. n. *lugubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp900108295*. The type genome for the species is the GenBank assembly RS_GCF_900108295.1. The GC content of the type genome is 64.0 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Sphingopyxis omninitica sp. nov.

Candidatus Sphingopyxis omninitica (NL. fem. n. *omninitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp000756375*. The type genome for the species is the GenBank assembly RS_GCF_000756375.1. The GC content of the type genome is 64.93 % and the genome length is 4.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cave surface layer".

Description of *Candidatus* Sphingopyxis omnivilenta sp. nov.

Candidatus Sphingopyxis omnivilenta (NL. fem. n. *omnivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp013911715*. The type genome for the species is the GenBank assembly GCA_013911715.1. The GC content of the type genome is 62.97 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Sphingopyxis opporisca sp. nov.

Candidatus Sphingopyxis opporisca (NL. fem. n. *opporisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp900078365*. The type genome for the species is the GenBank assembly GCA_900078365.1. The GC content of the type genome is 65.94 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Sphingopyxis prospitura sp. nov.

Candidatus Sphingopyxis prospitura (NL. fem. n. *prospitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp005502465*. The type genome for the species is the GenBank assembly RS_GCF_005502465.1. The GC content of the type genome is 64.7 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Sphingopyxis pudibilega sp. nov.

Candidatus Sphingopyxis pudibilega (NL. fem. n. *pudibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp014595975*. The type genome for the species is the GenBank assembly RS_GCF_014595975.1. The GC content of the type genome is 65.37 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Sphingopyxis reduvitrix sp. nov.

Candidatus Sphingopyxis reduvitrix (NL. fem. n. *reduvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001427105*. The type genome for the species is the GenBank assembly RS_GCF_001429105.1. The GC content of the type genome is 64.52

% and the genome length is 4.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Sphingopyxis resalitio sp. nov.

Candidatus Sphingopyxis resalitio (NL. fem. n. *resalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001468465*. The type genome for the species is the GenBank assembly RS_GCF_001468465.1. The GC content of the type genome is 64.33 % and the genome length is 4.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Drinking Water".

Description of *Candidatus* Sphingopyxis saburitrix sp. nov.

Candidatus Sphingopyxis saburitrix (NL. fem. n. *saburitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp001468395*. The type genome for the species is the GenBank assembly RS_GCF_001468345.1. The GC content of the type genome is 64.84 % and the genome length is 4.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Drinking Water".

Description of *Candidatus* Sphingopyxis subabivita sp. nov.

Candidatus Sphingopyxis subabivita (NL. fem. n. *subabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingopyxis sp005503165*. The type genome for the species is the GenBank assembly RS_GCF_005503165.1. The GC content of the type genome is 66.31 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Sphingorhabdus acertitia sp. nov.

Candidatus Sphingorhabdus acertitia (NL. fem. n. *acertitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp002479765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the

genus. The type genome for the species is the GenBank assembly GCA_002479765.1. The GC content of the type genome is 56.52 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Sphingorhabdus catagibra sp. nov.

Candidatus Sphingorhabdus catagibra (NL. fem. n. *catagibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp012032285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012032285.1. The GC content of the type genome is 53.84 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Sphingorhabdus catobitia sp. nov.

Candidatus Sphingorhabdus catobitia (NL. fem. n. *catobitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp002299195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002299195.1. The GC content of the type genome is 56.38 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Sphingorhabdus cocolentia sp. nov.

Candidatus Sphingorhabdus cocolentia (NL. fem. n. *cocolentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp002282385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002281585.1. The GC content of the type genome is 56.47 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Sphingorhabdus disiditoga sp. nov.

Candidatus Sphingorhabdus disiditoga (NL. fem. n. *disiditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp001464315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001464315.1. The GC content of the type genome is 56.47 % and the genome length is 2.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Sphingorhabdus inpelicula sp. nov.

Candidatus Sphingorhabdus inpelicula (NL. fem. n. *inpelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp003367235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003367235.1. The GC content of the type genome is 57.73 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Sphingorhabdus invetedo sp. nov.

Candidatus Sphingorhabdus invetedo (NL. fem. n. *invetedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp013297725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013297725.1. The GC content of the type genome is 54.95 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Sphingorhabdus lacinilega sp. nov.

Candidatus Sphingorhabdus lacinilega (NL. fem. n. *lacinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp002299895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002299895.1.

The GC content of the type genome is 54.96 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Sphingorhabdus malogatio sp. nov.

Candidatus Sphingorhabdus malogatio (NL. fem. n. *malogatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp903868245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903868245.1. The GC content of the type genome is 55.01 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Sphingorhabdus milififorma sp. nov.

Candidatus Sphingorhabdus milififorma (NL. fem. n. *milififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp002255985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002255985.1. The GC content of the type genome is 55.52 % and the genome length is 3.07 Mbp.

Description of *Candidatus* Sphingorhabdus nitelax sp. nov.

Candidatus Sphingorhabdus nitelax (NL. fem. n. *nitelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp903821685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_903821685.1. The GC content of the type genome is 55.0 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Sphingorhabdus obsolisca sp. nov.

Candidatus Sphingorhabdus obsolisca (NL. fem. n. *obsolisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sphingorhabdus_B sp001889025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001889025.1. The GC content of the type genome is 46.12 % and the genome length is 2.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea water".

Description of *Candidatus* Sphingorhabdus peraditica sp. nov.

Candidatus Sphingorhabdus peraditica (NL. fem. n. *peraditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp002278855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002257315.1. The GC content of the type genome is 55.84 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Sphingorhabdus tubicilega sp. nov.

Candidatus Sphingorhabdus tubicilega (NL. fem. n. *tubicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_B sp013823985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013823985.1. The GC content of the type genome is 57.62 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Sphingorhabdus ambusitica sp. nov.

Candidatus Sphingorhabdus ambusitica (NL. fem. n. *ambusitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingorhabdus_C sp009993585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009993585.1. The GC content of the type genome is 65.88 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Sphingosinicella advigibra sp. nov.

Candidatus Sphingosinicella advigibra (NL. fem. n. *advigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sphingosinicella sp013911755*. The type genome for the species is the GenBank assembly GCA_013911755.1. The GC content of the type genome is 64.75 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Spiribacter notabilega sp. nov.

Candidatus Spiribacter notabilega (NL. fem. n. *notabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spiribacter sp009676705*. The type genome for the species is the GenBank assembly RS_GCF_009676705.1. The GC content of the type genome is 64.21 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Spirillospora admuligena sp. nov.

Candidatus Spirillospora admuligena (NL. fem. n. *admuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp004348515*. The type genome for the species is the GenBank assembly RS_GCF_004348515.1. The GC content of the type genome is 71.81 % and the genome length is 8.27 Mbp.

Description of *Candidatus* Spirillospora adtoribra sp. nov.

Candidatus Spirillospora adtoribra (NL. fem. n. *adtoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp008327685*. The type genome for the species is the GenBank assembly RS_GCF_008327685.1. The GC content of the type genome is 72.39 % and the genome length is 9.65 Mbp.

Description of *Candidatus* Spirillospora adtorimonas sp. nov.

Candidatus Spirillospora adtorimonas (NL. fem. n. *adtorimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp004349245*. The type genome for the species is the GenBank assembly RS_GCF_004349245.1. The GC content of the type genome is 71.88 % and the genome length is 8.19 Mbp.

Description of *Candidatus* Spirillospora agricetta sp. nov.

Candidatus Spirillospora agricetta (NL. fem. n. *agricetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp004348665*. The type genome for the species is the GenBank assembly RS_GCF_004348665.1. The GC content of the type genome is 72.15 % and the genome length is 7.09 Mbp.

Description of *Candidatus* Spirillospora argitentia sp. nov.

Candidatus Spirillospora argitentia (NL. fem. n. *argitentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp001942465*. The type genome for the species is the GenBank assembly RS_GCF_001942465.1. The GC content of the type genome is 72.47 % and the genome length is 9.96 Mbp.

Description of *Candidatus* Spirillospora armidifica sp. nov.

Candidatus Spirillospora armidifica (NL. fem. n. *armidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp005889715*. The type genome for the species is the GenBank assembly RS_GCF_005889715.1. The GC content of the type genome is 71.33 % and the genome length is 9.04 Mbp.

Description of *Candidatus* Spirillospora carunitrix sp. nov.

Candidatus Spirillospora carunitrix (NL. fem. n. *carunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Spirillospora sp008824145*. The type genome for the species is the GenBank assembly RS_GCF_008824145.1. The GC content of the type genome is 73.16 % and the genome length is 9.19 Mbp.

Description of *Candidatus* Spirillospora defacibra sp. nov.

Candidatus Spirillospora defacibra (NL. fem. n. *defacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp004348735*. The type genome for the species is the GenBank assembly RS_GCF_004348735.1. The GC content of the type genome is 71.26 % and the genome length is 9.38 Mbp.

Description of *Candidatus* Spirillospora depicentia sp. nov.

Candidatus Spirillospora depicentia (NL. fem. n. *depicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp009733595*. The type genome for the species is the GenBank assembly RS_GCF_009733595.1. The GC content of the type genome is 72.78 % and the genome length is 9.16 Mbp.

Description of *Candidatus* Spirillospora dilicetta sp. nov.

Candidatus Spirillospora dilicetta (NL. fem. n. *dilicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp004348535*. The type genome for the species is the GenBank assembly RS_GCF_004348535.1. The GC content of the type genome is 71.34 % and the genome length is 9.06 Mbp.

Description of *Candidatus* Spirillospora endiviforma sp. nov.

Candidatus Spirillospora endiviforma (NL. fem. n. *endiviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp008923205*. The type genome for the species is the GenBank assembly RS_GCF_008923205.2. The GC content of the type genome is 72.49 % and the genome length is 10.0 Mbp.

Description of *Candidatus* Spirillospora essonitas sp. nov.

Candidatus Spirillospora essonitas (NL. fem. n. *essonitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp009604375*. The type genome for the species is the GenBank assembly RS_GCF_009604375.1. The GC content of the type genome is 73.14 % and the genome length is 8.54 Mbp.

Description of *Candidatus* Spirillospora excalibra sp. nov.

Candidatus Spirillospora excalibra (NL. fem. n. *excalibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp003432485*. The type genome for the species is the GenBank assembly RS_GCF_003432485.1. The GC content of the type genome is 70.66 % and the genome length is 7.71 Mbp.

Description of *Candidatus* Spirillospora ficulicula sp. nov.

Candidatus Spirillospora ficulicula (NL. fem. n. *ficulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp006547145*. The type genome for the species is the GenBank assembly RS_GCF_006547145.1. The GC content of the type genome is 72.44 % and the genome length is 9.53 Mbp.

Description of *Candidatus* Spirillospora immoditudo sp. nov.

Candidatus Spirillospora immoditudo (NL. fem. n. *immoditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp013372625*. The type genome for the species is the GenBank assembly RS_GCF_013372625.1. The GC content of the type genome is 71.13 % and the genome length is 8.03 Mbp.

Description of *Candidatus* Spirillospora monogilega sp. nov.

Candidatus Spirillospora monogilega (NL. fem. n. *monogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp002911665*. The type genome for the species is the GenBank assembly RS_GCF_002911665.1. The GC content of the type genome is 73.1 % and the genome length is 6.47 Mbp.

Description of *Candidatus* Spirillospora practitica sp. nov.

Candidatus Spirillospora practitica (NL. fem. n. *practitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp013364275*. The type genome for the species is the GenBank assembly RS_GCF_013364275.1. The GC content of the type genome is 72.72 % and the genome length is 9.43 Mbp.

Description of *Candidatus* Spirillospora sonivitrix sp. nov.

Candidatus Spirillospora sonivitrix (NL. fem. n. *sonivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp009793335*. The type genome for the species is the GenBank assembly RS_GCF_009793335.1. The GC content of the type genome is 73.21 % and the genome length is 10.33 Mbp.

Description of *Candidatus* Spirillospora subadago sp. nov.

Candidatus Spirillospora subadago (NL. fem. n. *subadago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirillospora sp004349215*. The type genome for the species is the GenBank assembly RS_GCF_004349215.1. The GC content of the type genome is 71.59 % and the genome length is 10.23 Mbp.

Description of *Candidatus* Spirillospora tenebentia sp. nov.

Candidatus Spirillospora tenebentia (NL. fem. n. *tenebentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Spirillospora sp004348425*. The type genome for the species is the GenBank assembly RS_GCF_004348425.1. The GC content of the type genome is 71.26 % and the genome length is 9.8 Mbp.

Description of *Candidatus* Spirochaeta grallicula sp. nov.

Candidatus Spirochaeta grallicula (NL. fem. n. *grallicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirochaeta_G sp003247135*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003247135.1. The GC content of the type genome is 32.53 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Spiroplasma nocumisca sp. nov.

Candidatus Spiroplasma nocumisca (NL. fem. n. *nocumisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spiroplasma sp001886495*. The type genome for the species is the GenBank assembly RS_GCF_001792795.1. The GC content of the type genome is 28.74 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Spiroplasma direcimonia sp. nov.

Candidatus Spiroplasma direcimonia (NL. fem. n. *direcimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spiroplasma_A sp010365805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010365805.1. The GC content of the type genome is 27.42 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Spiroplasma nehalitas sp. nov.

Candidatus Spiroplasma nehalitas (NL. fem. n. *nehalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Spiroplasma_A sp010365785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010365785.1. The GC content of the type genome is 28.24 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Spiroplasma repagisca sp. nov.

Candidatus Spiroplasma repagisca (NL. fem. n. *repagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spiroplasma_D sp005795965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_902809815.1. The GC content of the type genome is 23.67 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Spirosoma admigilenta sp. nov.

Candidatus Spirosoma admigilenta (NL. fem. n. *admigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp014117325*. The type genome for the species is the GenBank assembly RS_GCF_014117325.1. The GC content of the type genome is 46.69 % and the genome length is 8.85 Mbp.

Description of *Candidatus* Spirosoma agnomifica sp. nov.

Candidatus Spirosoma agnomifica (NL. fem. n. *agnomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp010233585*. The type genome for the species is the GenBank assembly RS_GCF_010233585.1. The GC content of the type genome is 47.69 % and the genome length is 10.33 Mbp.

Description of *Candidatus* Spirosoma amfitifica sp. nov.

Candidatus Spirosoma amfitifica (NL. fem. n. *amfitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Spirosoma sp012849055*. The type genome for the species is the GenBank assembly RS_GCF_012849055.1. The GC content of the type genome is 55.21 % and the genome length is 6.05 Mbp.

Description of *Candidatus* Spirosoma apercousia sp. nov.

Candidatus Spirosoma apercousia (NL. fem. n. *apercousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp011604685*. The type genome for the species is the GenBank assembly RS_GCF_011604685.1. The GC content of the type genome is 47.66 % and the genome length is 8.9 Mbp.

Description of *Candidatus* Spirosoma conipatica sp. nov.

Candidatus Spirosoma conipatica (NL. fem. n. *conipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp014282275*. The type genome for the species is the GenBank assembly RS_GCF_014282255.1. The GC content of the type genome is 52.11 % and the genome length is 7.04 Mbp.

Description of *Candidatus* Spirosoma ecfacatica sp. nov.

Candidatus Spirosoma ecfacatica (NL. fem. n. *ecfacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp013127955*. The type genome for the species is the GenBank assembly RS_GCF_013127955.1. The GC content of the type genome is 52.72 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Spirosoma feficatio sp. nov.

Candidatus Spirosoma feficatio (NL. fem. n. *feficatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp013375035*. The type genome for the species is the GenBank assembly RS_GCF_013375035.1. The GC content of the type genome is 52.05 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Spirosoma forabitia sp. nov.

Candidatus Spirosoma forabitia (NL. fem. n. *forabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp003259005*. The type genome for the species is the GenBank assembly RS_GCF_009754885.1. The GC content of the type genome is 47.24 % and the genome length is 9.09 Mbp.

Description of *Candidatus* Spirosoma gerunigena sp. nov.

Candidatus Spirosoma gerunigena (NL. fem. n. *gerunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp001898575*. The type genome for the species is the GenBank assembly GCA_001898575.1. The GC content of the type genome is 48.26 % and the genome length is 8.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Spirosoma oppugastra sp. nov.

Candidatus Spirosoma oppugastra (NL. fem. n. *oppugastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp009754945*. The type genome for the species is the GenBank assembly RS_GCF_009754945.1. The GC content of the type genome is 46.44 % and the genome length is 9.77 Mbp.

Description of *Candidatus* Spirosoma tomacastra sp. nov.

Candidatus Spirosoma tomacastra (NL. fem. n. *tomacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp014377625*. The type genome for the species is the GenBank assembly GCA_014377625.1. The GC content of the type genome is 53.48 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Spirosoma vecoritura sp. nov.

Candidatus Spirosoma vecoritura (NL. fem. n. *vecoritura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirosoma sp006965485*. The type genome for the species is the GenBank assembly RS_GCF_006965485.1. The GC content of the type genome is 47.44 % and the genome length is 8.66 Mbp.

Description of *Candidatus* Spirulina apsolivita sp. nov.

Candidatus Spirulina apsolivita (NL. fem. n. *apsolivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirulina sp011390265*. The type genome for the species is the GenBank assembly GCA_011390265.1. The GC content of the type genome is 53.06 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Spirulina exheriforma sp. nov.

Candidatus Spirulina exheriforma (NL. fem. n. *exheriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spirulina sp007693875*. The type genome for the species is the GenBank assembly GCA_007693875.1. The GC content of the type genome is 53.24 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Spongiibacter hegumifica sp. nov.

Candidatus Spongiibacter hegumifica (NL. fem. n. *hegumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spongiibacter sp002306875*. The type genome for the species is the GenBank assembly GCA_002306875.1. The GC content of the type genome is 55.67 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Spongiibacter peridugo sp. nov.

Candidatus Spongiibacter peridugo (NL. fem. n. *peridugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Spongiibacter sp012272835*. The type genome for the species is the GenBank assembly RS_GCF_012272835.1. The GC content of the type genome is 55.75 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Sporichthya adrotitura sp. nov.

Candidatus Sporichthya adrotitura (NL. fem. n. *adrotitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporichthya sp013815995*. The type genome for the species is the GenBank assembly GCA_013815995.1. The GC content of the type genome is 70.17 % and the genome length is 4.5 Mbp.

Description of *Candidatus* Sporobacter isoscitas sp. nov.

Candidatus Sporobacter isoscitas (NL. fem. n. *isoscitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporobacter sp012718935*. The type genome for the species is the GenBank assembly GCA_012718935.1. The GC content of the type genome is 53.14 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Sporobacter legifetta sp. nov.

Candidatus Sporobacter legifetta (NL. fem. n. *legifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporobacter sp012521555*. The type genome for the species is the GenBank assembly GCA_012521555.1. The GC content of the type genome is 60.69 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Sporobacter obfusago sp. nov.

Candidatus Sporobacter obfusago (NL. fem. n. *obfusago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporobacter sp002307055*. The type genome for the species is the GenBank assembly GCA_002307055.1. The GC content of the type genome is 48.85 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Sporobacter paropibula sp. nov.

Candidatus Sporobacter paropibula (NL. fem. n. *paropibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporobacter sp012838125*. The type genome for the species is the GenBank assembly GCA_012838125.1. The GC content of the type genome is 57.0 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Sporolactobacillus adrecitrix sp. nov.

Candidatus Sporolactobacillus adrecitrix (NL. fem. n. *adrecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporolactobacillus sp004153165*. The type genome for the species is the GenBank assembly RS_GCF_004153165.1. The GC content of the type genome is 45.53 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Sporolactobacillus catagedo sp. nov.

Candidatus Sporolactobacillus catagedo (NL. fem. n. *catagedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporolactobacillus sp004153225*. The type genome for the species is the GenBank assembly RS_GCF_004153225.1. The GC content of the type genome is 48.33 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Sporolactobacillus dilicibula sp. nov.

Candidatus Sporolactobacillus dilicibula (NL. fem. n. *dilicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporolactobacillus sp004153195*. The type genome for the species is the GenBank assembly RS_GCF_004153195.1. The GC content of the type genome is 46.93 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Sporolactobacillus paropitica sp. nov.

Candidatus Sporolactobacillus paropitica (NL. fem. n. *paropitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporolactobacillus sp900543345*. The type genome for the species is the GenBank assembly GCA_900543345.1. The GC content of the type genome is 50.31 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Sporomusa agrimitio sp. nov.

Candidatus Sporomusa agrimitio (NL. fem. n. *agrimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporomusa sp007830295*. The type genome for the species is the GenBank assembly RS_GCF_007830295.1. The GC content of the type genome is 43.67 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Sporosarcina admodisca sp. nov.

Candidatus Sporosarcina admodisca (NL. fem. n. *admodisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp009651005*. The type genome for the species is the GenBank assembly RS_GCF_009651005.1. The GC content of the type genome is 40.88 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Sporosarcina algebifica sp. nov.

Candidatus Sporosarcina algebifica (NL. fem. n. *algebifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp003351785*. The type genome for the species is the GenBank assembly RS_GCF_003351785.1. The GC content of the type genome is 40.91 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Sporosarcina alsisousia sp. nov.

Candidatus Sporosarcina alsisousia (NL. fem. n. *alsisousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sporosarcina sp000586555*. The type genome for the species is the GenBank assembly RS_GCF_000586555.1. The GC content of the type genome is 41.61 % and the genome length is 3.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment from creek".

Description of *Candidatus* Sporosarcina bifisax sp. nov.

Candidatus Sporosarcina bifisax (NL. fem. n. *bifisax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp000813425*. The type genome for the species is the GenBank assembly RS_GCF_900618155.1. The GC content of the type genome is 42.14 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Sporosarcina citocitica sp. nov.

Candidatus Sporosarcina citocitica (NL. fem. n. *citocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp002743375*. The type genome for the species is the GenBank assembly RS_GCF_002743375.1. The GC content of the type genome is 41.42 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Sporosarcina conamatica sp. nov.

Candidatus Sporosarcina conamatica (NL. fem. n. *conamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp008369195*. The type genome for the species is the GenBank assembly RS_GCF_008369195.1. The GC content of the type genome is 39.73 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Sporosarcina conigatica sp. nov.

Candidatus Sporosarcina conigatica (NL. fem. n. *conigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp002743335*. The type genome for the species is the GenBank assembly RS_GCF_002743315.1. The GC content of the type genome is 41.27 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Sporosarcina defunimonas sp. nov.

Candidatus Sporosarcina defunimonas (NL. fem. n. *defunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp002077155*. The type genome for the species is the GenBank assembly RS_GCF_002077155.1. The GC content of the type genome is 44.54 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Sporosarcina desuligena sp. nov.

Candidatus Sporosarcina desuligena (NL. fem. n. *desuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp002743255*. The type genome for the species is the GenBank assembly RS_GCF_002743135.1. The GC content of the type genome is 41.45 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Sporosarcina didacibula sp. nov.

Candidatus Sporosarcina didacibula (NL. fem. n. *didacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp009650995*. The type genome for the species is the GenBank assembly RS_GCF_009650995.1. The GC content of the type genome is 43.99 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Sporosarcina echogatio sp. nov.

Candidatus Sporosarcina echogatio (NL. fem. n. *echogatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp003384035*. The type genome for the species is the GenBank assembly RS_GCF_003384035.1. The GC content of the type genome is 42.13 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Sporosarcina enimvitoga sp. nov.

Candidatus Sporosarcina enimvitoga (NL. fem. n. *enimvitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp000829195*. The type genome for the species is the GenBank assembly RS_GCF_000829195.1. The GC content of the type genome is 47.85 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Sporosarcina everbentia sp. nov.

Candidatus Sporosarcina everbentia (NL. fem. n. *everbentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp013184495*. The type genome for the species is the GenBank assembly RS_GCF_013184495.1. The GC content of the type genome is 40.15 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Sporosarcina fecunago sp. nov.

Candidatus Sporosarcina fecunago (NL. fem. n. *fecunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp002743055*. The type genome for the species is the GenBank assembly RS_GCF_002743055.1. The GC content of the type genome is 40.58 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Sporosarcina indupitia sp. nov.

Candidatus Sporosarcina indupitia (NL. fem. n. *indupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp001563475*. The type genome for the species is the GenBank assembly RS_GCF_001563475.1. The GC content of the type genome is 41.75 % and the genome length is 3.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Concrete".

Description of *Candidatus* Sporosarcina peridentia sp. nov.

Candidatus Sporosarcina peridentia (NL. fem. n. *peridentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp009740415*. The type genome for the species is the GenBank assembly RS_GCF_009740415.1. The GC content of the type genome is 46.17 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Sporosarcina tabifedo sp. nov.

Candidatus Sporosarcina tabifedo (NL. fem. n. *tabifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp014282005*. The type genome for the species is the GenBank assembly RS_GCF_014282005.1. The GC content of the type genome is 40.67 % and the genome length is 4.03 Mbp.

Description of *Candidatus* Sporosarcina vacilibula sp. nov.

Candidatus Sporosarcina vacilibula (NL. fem. n. *vacilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sporosarcina sp013408665*. The type genome for the species is the GenBank assembly RS_GCF_013408665.1. The GC content of the type genome is 42.75 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Stagnimonas perabimonas sp. nov.

Candidatus Stagnimonas perabimonas (NL. fem. n. *perabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stagnimonas sp004297005*. The type genome for the species is the GenBank assembly GCA_004297005.1. The GC content of the type genome is 67.25 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Stanieria adnuletta sp. nov.

Candidatus Stanieria adnuletta (NL. fem. n. *adnuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stanieria sp002355455*. The type genome for the species is the GenBank assembly RS_GCF_002355455.1. The GC content of the type genome is 36.51 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Staphylococcus delapitrix sp. nov.

Candidatus Staphylococcus delapitrix (NL. fem. n. *delapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Staphylococcus sp001431205*. The type genome for the species is the GenBank assembly RS_GCF_001431205.1. The GC content of the type genome is 33.07 % and the genome length is 2.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "poultry litter".

Description of *Candidatus* Staphylococcus famelibra sp. nov.

Candidatus Staphylococcus famelibra (NL. fem. n. *famelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Staphylococcus sp013391405*. The type genome for the species is the GenBank assembly RS_GCF_013391405.1. The GC content of the type genome is 33.05 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Staphylococcus lametitas sp. nov.

Candidatus Staphylococcus lametitas (NL. fem. n. *lametitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Staphylococcus sp013463155*. The type genome for the species is the GenBank assembly RS_GCF_013463155.1. The GC content of the type genome is 36.0 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Staphylococcus pocilentia sp. nov.

Candidatus Staphylococcus pocilentia (NL. fem. n. *pocilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Staphylococcus sp010365305*. The type genome for the species is the GenBank assembly RS_GCF_010365305.1. The GC content of the type genome is 37.27 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Staphylococcus volucatio sp. nov.

Candidatus Staphylococcus volucatio (NL. fem. n. *volucatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Staphylococcus sp003718735*. The type genome for the species is the GenBank assembly RS_GCF_003718735.1. The GC content of the type genome is 36.59 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Stappia adpaciforma sp. nov.

Candidatus Stappia adpaciforma (NL. fem. n. *adpaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stappia sp002709505*. The type genome for the species is the GenBank assembly GCA_002709505.1. The GC content of the type genome is 65.42 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Stappia deruniforma sp. nov.

Candidatus Stappia deruniforma (NL. fem. n. *deruniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stappia sp900105595*. The type genome for the species is the GenBank assembly RS_GCF_900105595.1. The GC content of the type genome is 63.61 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Stappia recogitudo sp. nov.

Candidatus Stappia recogitudo (NL. fem. n. *recogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stappia sp002722295*. The type genome for the species is the GenBank assembly GCA_002722295.1. The GC content of the type genome is 65.75 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Stappia tirocivita sp. nov.

Candidatus Stappia tirocivita (NL. fem. n. *tirocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stappia sp003610575*. The type genome for the species is the GenBank assembly RS_GCF_014252955.1. The GC content of the type genome is 66.66 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Stappia visibitia sp. nov.

Candidatus Stappia visibitia (NL. fem. n. *visibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stappia sp900185725*. The type genome for the species is the GenBank assembly RS_GCF_900185735.1. The GC content of the type genome is 67.15 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Starkeya calipitura sp. nov.

Candidatus Starkeya calipitura (NL. fem. n. *calipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Starkeya sp007559435*. The type genome for the species is the GenBank assembly RS_GCF_007559435.1. The GC content of the type genome is 68.19 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Stella conifousia sp. nov.

Candidatus Stella conifousia (NL. fem. n. *conifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stella sp006738865*. The type genome for the species is the GenBank assembly GCA_006738865.1. The GC content of the type genome is 70.59 % and the genome length is 5.34 Mbp.

Description of *Candidatus* Stenomitos colopax sp. nov.

Candidatus Stenomitos colopax (NL. fem. n. *colopax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenomitos sp014380065*. The type genome for the species is the GenBank assembly GCA_014380065.1. The GC content of the type genome is 51.62 % and the genome length is 5.13 Mbp.

Description of *Candidatus* Stenotrophobium monoditoga sp. nov.

Candidatus Stenotrophobium monoditoga (NL. fem. n. *monoditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophobium sp008012115*. The type genome for the species is the GenBank assembly GCA_008012115.1. The GC content of the type genome is 65.98 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Stenotrophomonas anancitudo sp. nov.

Candidatus Stenotrophomonas anancitudo (NL. fem. n. *anancitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp011761925*. The type genome for the species is the GenBank assembly RS_GCF_011761925.1. The GC content of the type genome is 67.3 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Stenotrophomonas benevitrix sp. nov.

Candidatus Stenotrophomonas benevitrix (NL. fem. n. *benevitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp003086795*. The type genome for the species is the GenBank assembly GCA_002432525.1. The GC content of the type genome is 67.27 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Stenotrophomonas bicinugo sp. nov.

Candidatus Stenotrophomonas bicinugo (NL. fem. n. *bicinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp002345545*. The type genome for the species is the GenBank assembly GCA_002345545.1. The GC content of the type genome is 66.03 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Stenotrophomonas cetaritoga sp. nov.

Candidatus Stenotrophomonas cetaritoga (NL. fem. n. *cetaritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp002893095*. The type genome for the species is the GenBank assembly GCA_002429565.1. The GC content of the type genome is 66.55 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Stenotrophomonas cohorisca sp. nov.

Candidatus Stenotrophomonas cohorisca (NL. fem. n. *cohorisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp002192255*. The type genome for the species is the GenBank assembly RS_GCF_010609185.1. The GC content of the type genome is 66.72 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Stenotrophomonas cululax sp. nov.

Candidatus Stenotrophomonas cululax (NL. fem. n. *cululax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp002471015*. The type genome for the species is the GenBank assembly GCA_002396445.1. The GC content of the type genome is 64.84 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Stenotrophomonas extinitoga sp. nov.

Candidatus Stenotrophomonas extinitoga (NL. fem. n. *extinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp013364355*. The type genome for the species is the GenBank assembly RS_GCF_013364355.1. The GC content of the type genome is 66.04 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Stenotrophomonas labecitudo sp. nov.

Candidatus Stenotrophomonas labecitudo (NL. fem. n. *labecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Stenotrophomonas sp003086775*. The type genome for the species is the GenBank assembly GCA_002388155.1. The GC content of the type genome is 67.52 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Stenotrophomonas licenatio sp. nov.

Candidatus Stenotrophomonas licenatio (NL. fem. n. *licenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp003086895*. The type genome for the species is the GenBank assembly RS_GCF_003086895.1. The GC content of the type genome is 66.8 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Stenotrophomonas milipicella sp. nov.

Candidatus Stenotrophomonas milipicella (NL. fem. n. *milipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp002359895*. The type genome for the species is the GenBank assembly GCA_002359895.1. The GC content of the type genome is 63.19 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Stenotrophomonas novilivita sp. nov.

Candidatus Stenotrophomonas novilivita (NL. fem. n. *novilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp003028475*. The type genome for the species is the GenBank assembly GCA_900766255.1. The GC content of the type genome is 66.84 % and the genome length is 4.37 Mbp.

Description of *Candidatus* Stenotrophomonas nucifivita sp. nov.

Candidatus Stenotrophomonas nucifivita (NL. fem. n. *nucifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp900078405*. The type genome for the species is the GenBank assembly GCA_900078405.1. The GC content of the type genome is 67.79 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Stenotrophomonas repecitudo sp. nov.

Candidatus Stenotrophomonas repecitudo (NL. fem. n. *repecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp002329155*. The type genome for the species is the GenBank assembly GCA_002329155.1. The GC content of the type genome is 65.83 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Stenotrophomonas repudifica sp. nov.

Candidatus Stenotrophomonas repudifica (NL. fem. n. *repudifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp003504055*. The type genome for the species is the GenBank assembly GCA_003504055.1. The GC content of the type genome is 68.53 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Stenotrophomonas saxopetta sp. nov.

Candidatus Stenotrophomonas saxopetta (NL. fem. n. *saxopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp014621775*. The type genome for the species is the GenBank assembly RS_GCF_014621775.1. The GC content of the type genome is 65.55 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Stenotrophomonas siminugo sp. nov.

Candidatus Stenotrophomonas siminugo (NL. fem. n. *siminugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp002836635*. The type genome for the species is the GenBank assembly RS_GCF_002836635.1. The GC content of the type genome is 66.13 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Stenotrophomonas subinisca sp. nov.

Candidatus Stenotrophomonas subinisca (NL. fem. n. *subinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp004348115*. The type genome for the species is the GenBank assembly RS_GCF_004348115.1. The GC content of the type genome is 67.15 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Stenotrophomonas undevugo sp. nov.

Candidatus Stenotrophomonas undevugo (NL. fem. n. *undevugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp003248565*. The type genome for the species is the GenBank assembly GCA_003248565.1. The GC content of the type genome is 63.48 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Stenotrophomonas venabastra sp. nov.

Candidatus Stenotrophomonas venabastra (NL. fem. n. *venabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp003484865*. The type genome for the species is the GenBank assembly GCA_003484865.1. The GC content of the type genome is 66.87 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Stenotrophomonas volucicula sp. nov.

Candidatus Stenotrophomonas volucicula (NL. fem. n. *volucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas sp003086695*. The type genome for the species is the GenBank assembly GCA_003453935.1. The GC content of the type genome is 66.7 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Stenotrophomonas selibago sp. nov.

Candidatus Stenotrophomonas selibago (NL. fem. n. *selibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Stenotrophomonas_A sp004216795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004216795.1. The GC content of the type genome is 69.67 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Stenotrophomonas utricitura sp. nov.

Candidatus Stenotrophomonas utricitura (NL. fem. n. *utricitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stenotrophomonas_A sp002429615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002429615.1. The GC content of the type genome is 68.26 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Stercaria coturimonia sp. nov.

Candidatus Stercaria coturimonia (NL. fem. n. *coturimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM08974 sp900766555*. The type genome for the species is the GenBank assembly RS_GCF_900766555.1. The GC content of the type genome is 37.97 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Stercaria gen. nov.

Candidatus Stercaria (NL. fem. n. *Stercaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM08974*. The type species for the genus is *Candidatus* Stercaria coturimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Stercosa lapilifica sp. nov.

Candidatus Stercosa lapilifica (NL. fem. n. *lapilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM518 sp002869435*. The type genome for the species is the GenBank assembly GCA_002869435.1. The GC content of the type genome is 39.65 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Stercosa gen. nov.

Candidatus Stercosa (NL. fem. n. *Stercosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM518*. The type species for the genus is *Candidatus* Stercosa lapilifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domipanaceae.

Description of *Candidatus* Stercula abambax sp. nov.

Candidatus Stercula abambax (NL. fem. n. *abambax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2357 sp002344405*. The type genome for the species is the GenBank assembly GCA_002344405.1. The GC content of the type genome is 64.19 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Stercula gen. nov.

Candidatus Stercula (NL. fem. n. *Stercula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2357*. The type species for the genus is *Candidatus* Stercula abambax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Stercula repuritas sp. nov.

Candidatus Stercula repuritas (NL. fem. n. *repuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2357 sp002344625*. The type genome for the species is the GenBank assembly GCA_002344625.1. The GC content of the type genome is 64.25 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Steroidobacter semidetta sp. nov.

Candidatus Steroidobacter semidetta (NL. fem. n. *semidetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Steroidobacter_A sp009932515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009932515.1. The GC content of the type genome is 62.23 % and the genome length is 8.22 Mbp.

Description of *Candidatus* Stomatobaculum canacibula sp. nov.

Candidatus Stomatobaculum canacibula (NL. fem. n. *canacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stomatobaculum sp902780465*. The type genome for the species is the GenBank assembly GCA_902801855.1. The GC content of the type genome is 57.02 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Stomatobaculum documitoga sp. nov.

Candidatus Stomatobaculum documitoga (NL. fem. n. *documitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stomatobaculum sp902793685*. The type genome for the species is the GenBank assembly GCA_902800735.1. The GC content of the type genome is 58.04 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Stomatobaculum infanentia sp. nov.

Candidatus Stomatobaculum infanentia (NL. fem. n. *infanentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stomatobaculum sp902766415*. The type genome for the species is the

GenBank assembly GCA_902766415.1. The GC content of the type genome is 60.46 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Stomatobaculum pinigitrix sp. nov.

Candidatus Stomatobaculum pinigitrix (NL. fem. n. *pinigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stomatobaculum sp902766175*. The type genome for the species is the GenBank assembly GCA_902766175.1. The GC content of the type genome is 58.81 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Stomatobaculum semodousia sp. nov.

Candidatus Stomatobaculum semodousia (NL. fem. n. *semodousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stomatobaculum sp002892395*. The type genome for the species is the GenBank assembly RS_GCF_002892395.1. The GC content of the type genome is 51.35 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Stoquefichus bifisousia sp. nov.

Candidatus Stoquefichus bifisousia (NL. fem. n. *bifisousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Stoquefichus sp001244545*. The type genome for the species is the GenBank assembly RS_GCF_001244545.1. The GC content of the type genome is 30.92 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Streptacidiphilus abinditura sp. nov.

Candidatus Streptacidiphilus abinditura (NL. fem. n. *abinditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptacidiphilus sp014084105*. The type genome for the species is the GenBank assembly RS_GCF_014084105.1. The GC content of the type genome is 72.06 % and the genome length is 9.33 Mbp.

Description of *Candidatus* Streptacidiphilus acrolago sp. nov.

Candidatus Streptacidiphilus acrolago (NL. fem. n. *acrolago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptacidiphilus sp003751325*. The type genome for the species is the GenBank assembly RS_GCF_003751325.1. The GC content of the type genome is 71.0 % and the genome length is 8.83 Mbp.

Description of *Candidatus* Streptacidiphilus cicilitia sp. nov.

Candidatus Streptacidiphilus cicilitia (NL. fem. n. *cicilitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptacidiphilus sp004365705*. The type genome for the species is the GenBank assembly RS_GCF_004365705.1. The GC content of the type genome is 70.84 % and the genome length is 9.03 Mbp.

Description of *Candidatus* Streptacidiphilus colipigena sp. nov.

Candidatus Streptacidiphilus colipigena (NL. fem. n. *colipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptacidiphilus sp014284505*. The type genome for the species is the GenBank assembly GCA_014284505.1. The GC content of the type genome is 71.83 % and the genome length is 9.05 Mbp.

Description of *Candidatus* Streptacidiphilus scaccugo sp. nov.

Candidatus Streptacidiphilus scaccugo (NL. fem. n. *scaccugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptacidiphilus sp014084125*. The type genome for the species is the GenBank assembly RS_GCF_014084125.1. The GC content of the type genome is 72.64 % and the genome length is 7.67 Mbp.

Description of *Candidatus* Streptobacillus catobatica sp. nov.

Candidatus Streptobacillus catobatica (NL. fem. n. *catobatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptobacillus sp009733925*. The type genome for the species is the GenBank assembly RS_GCF_009733925.1. The GC content of the type genome is 26.6 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Streptococcus addivatica sp. nov.

Candidatus Streptococcus addivatica (NL. fem. n. *addivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp902373455*. The type genome for the species is the GenBank assembly GCA_902373455.1. The GC content of the type genome is 43.52 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Streptococcus adnepimonia sp. nov.

Candidatus Streptococcus adnepimonia (NL. fem. n. *adnepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp002355895*. The type genome for the species is the GenBank assembly RS_GCF_002355895.1. The GC content of the type genome is 41.09 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Streptococcus adpagifica sp. nov.

Candidatus Streptococcus adpagifica (NL. fem. n. *adpagifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001650315*. The type genome for the species is the GenBank assembly RS_GCF_001650315.1. The GC content of the type genome is 40.14 % and the genome length is 1.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sputum".

Description of *Candidatus* Streptococcus adpinitudo sp. nov.

Candidatus Streptococcus adpinitudo (NL. fem. n. *adpinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp004353325*. The type genome for the species is the

GenBank assembly RS_GCF_004353325.1. The GC content of the type genome is 41.13 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Streptococcus advinastra sp. nov.

Candidatus Streptococcus advinastra (NL. fem. n. *advinastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp013276505*. The type genome for the species is the GenBank assembly RS_GCF_013276505.1. The GC content of the type genome is 41.36 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Streptococcus appicicella sp. nov.

Candidatus Streptococcus appicicella (NL. fem. n. *appicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp003428885*. The type genome for the species is the GenBank assembly RS_GCF_003428885.1. The GC content of the type genome is 39.98 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Streptococcus apsimibra sp. nov.

Candidatus Streptococcus apsimibra (NL. fem. n. *apsimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001578865*. The type genome for the species is the GenBank assembly RS_GCF_001578865.1. The GC content of the type genome is 47.51 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Streptococcus arcifigena sp. nov.

Candidatus Streptococcus arcifigena (NL. fem. n. *arcifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001814775*. The type genome for the species is the GenBank assembly RS_GCF_001814775.1. The GC content of the type genome is 39.64 % and the genome length is 2.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "bronchial washing".

Description of *Candidatus* Streptococcus artilicella sp. nov.

Candidatus Streptococcus artilicella (NL. fem. n. *artilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp902460355*. The type genome for the species is the GenBank assembly RS_GCF_902460355.1. The GC content of the type genome is 42.48 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Streptococcus bicubatio sp. nov.

Candidatus Streptococcus bicubatio (NL. fem. n. *bicubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp900755085*. The type genome for the species is the GenBank assembly GCA_900755085.1. The GC content of the type genome is 42.17 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Streptococcus bipalivita sp. nov.

Candidatus Streptococcus bipalivita (NL. fem. n. *bipalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001808705*. The type genome for the species is the GenBank assembly RS_GCF_001808705.1. The GC content of the type genome is 39.08 % and the genome length is 2.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sputum".

Description of *Candidatus* Streptococcus bucolitudo sp. nov.

Candidatus Streptococcus bucolitudo (NL. fem. n. *bucolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp000220065*. The type genome for the species is the GenBank assembly RS_GCF_000220065.1. The GC content of the type genome is 39.47 % and the genome length is 1.94 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Streptococcus cadurilenta sp. nov.

Candidatus Streptococcus cadurilenta (NL. fem. n. *cadurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001587175*. The type genome for the species is the GenBank assembly RS_GCF_003943625.1. The GC content of the type genome is 42.16 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Streptococcus casigatica sp. nov.

Candidatus Streptococcus casigatica (NL. fem. n. *casigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp002393675*. The type genome for the species is the GenBank assembly GCA_002393675.1. The GC content of the type genome is 36.88 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Streptococcus cepulitia sp. nov.

Candidatus Streptococcus cepulitia (NL. fem. n. *cepulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp903645285*. The type genome for the species is the GenBank assembly RS_GCF_903645285.1. The GC content of the type genome is 40.47 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Streptococcus citocimonas sp. nov.

Candidatus Streptococcus citocimonas (NL. fem. n. *citocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp902363395*. The type genome for the species is the GenBank assembly RS_GCF_902363395.1. The GC content of the type genome is 42.18 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Streptococcus codifica sp. nov.

Candidatus Streptococcus codifica (NL. fem. n. *codifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp900543065*. The type genome for the species is the GenBank assembly RS_GCF_014435245.1. The GC content of the type genome is 41.6 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Streptococcus colapibra sp. nov.

Candidatus Streptococcus colapibra (NL. fem. n. *colapibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001182825*. The type genome for the species is the GenBank assembly RS_GCF_001182825.2. The GC content of the type genome is 40.72 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Streptococcus conipastra sp. nov.

Candidatus Streptococcus conipastra (NL. fem. n. *conipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp011421455*. The type genome for the species is the GenBank assembly RS_GCF_011421425.1. The GC content of the type genome is 37.6 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Streptococcus crusmimonas sp. nov.

Candidatus Streptococcus crusmimonas (NL. fem. n. *crusmimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp013394695*. The type genome for the species is the GenBank assembly RS_GCF_013394695.1. The GC content of the type genome is 39.52 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Streptococcus culigitoga sp. nov.

Candidatus Streptococcus culigitoga (NL. fem. n. *culigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001553685*. The type genome for the species is the GenBank assembly RS_GCF_001553685.1. The GC content of the type genome is 39.65

% and the genome length is 2.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "cultured enamel chip".

Description of *Candidatus* Streptococcus defenitio sp. nov.

Candidatus Streptococcus defenitio (NL. fem. n. *defenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001556435*. The type genome for the species is the GenBank assembly RS_GCF_009717225.1. The GC content of the type genome is 39.87 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Streptococcus denicibra sp. nov.

Candidatus Streptococcus denicibra (NL. fem. n. *denicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp003086355*. The type genome for the species is the GenBank assembly RS_GCF_003429025.1. The GC content of the type genome is 41.85 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Streptococcus detosousia sp. nov.

Candidatus Streptococcus detosousia (NL. fem. n. *detosousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp004569635*. The type genome for the species is the GenBank assembly RS_GCF_004569635.1. The GC content of the type genome is 40.76 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Streptococcus detumilega sp. nov.

Candidatus Streptococcus detumilega (NL. fem. n. *detumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp004166885*. The type genome for the species is the GenBank assembly RS_GCF_902363295.1. The GC content of the type genome is 42.09 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Streptococcus dibucivita sp. nov.

Candidatus Streptococcus dibucivita (NL. fem. n. *dibucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp012843315*. The type genome for the species is the GenBank assembly RS_GCF_012843315.1. The GC content of the type genome is 40.85 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Streptococcus effigivita sp. nov.

Candidatus Streptococcus effigivita (NL. fem. n. *effigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001937065*. The type genome for the species is the GenBank assembly RS_GCF_001937065.1. The GC content of the type genome is 42.25 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "enrichment of guinea pig fecal samples".

Description of *Candidatus* Streptococcus entomifica sp. nov.

Candidatus Streptococcus entomifica (NL. fem. n. *entomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp003521145*. The type genome for the species is the GenBank assembly GCA_003521145.1. The GC content of the type genome is 39.65 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Streptococcus expaliforma sp. nov.

Candidatus Streptococcus expaliforma (NL. fem. n. *expaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp002436115*. The type genome for the species is the GenBank assembly GCA_002436115.1. The GC content of the type genome is 40.61 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Streptococcus exsusisca sp. nov.

Candidatus Streptococcus exsusisca (NL. fem. n. *exsusisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001578805*. The type genome for the species is the GenBank assembly RS_GCF_001578805.1. The GC content of the type genome is 39.23 % and the genome length is 2.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "fruit residues (memencylon)".

Description of *Candidatus* Streptococcus fatiledo sp. nov.

Candidatus Streptococcus fatiledo (NL. fem. n. *fatiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp013623465*. The type genome for the species is the GenBank assembly RS_GCF_013623455.1. The GC content of the type genome is 40.64 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Streptococcus foricitica sp. nov.

Candidatus Streptococcus foricitica (NL. fem. n. *foricitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001810785*. The type genome for the species is the GenBank assembly RS_GCF_001810785.1. The GC content of the type genome is 40.4 % and the genome length is 1.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sputum".

Description of *Candidatus* Streptococcus fumacago sp. nov.

Candidatus Streptococcus fumacago (NL. fem. n. *fumacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp013277415*. The type genome for the species is the GenBank assembly RS_GCF_013277415.1. The GC content of the type genome is 40.06 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Streptococcus humecivita sp. nov.

Candidatus Streptococcus humecivita (NL. fem. n. *humecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Streptococcus sp900766505*. The type genome for the species is the GenBank assembly RS_GCF_001837905.1. The GC content of the type genome is 41.42 % and the genome length is 2.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sputum".

Description of *Candidatus* Streptococcus impinifica sp. nov.

Candidatus Streptococcus impinifica (NL. fem. n. *impinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp900546335*. The type genome for the species is the GenBank assembly GCA_900546335.1. The GC content of the type genome is 41.66 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Streptococcus nubifibra sp. nov.

Candidatus Streptococcus nubifibra (NL. fem. n. *nubifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp000187745*. The type genome for the species is the GenBank assembly RS_GCF_000187745.1. The GC content of the type genome is 39.22 % and the genome length is 2.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Streptococcus obsecimonia sp. nov.

Candidatus Streptococcus obsecimonia (NL. fem. n. *obsecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp900104285*. The type genome for the species is the GenBank assembly RS_GCF_900104285.1. The GC content of the type genome is 40.92 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Streptococcus octipicella sp. nov.

Candidatus Streptococcus octipicella (NL. fem. n. *octipicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp000259505*. The type genome for the species is the GenBank assembly RS_GCF_000259505.1. The GC content of the type genome is 39.04

% and the genome length is 1.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Streptococcus opporigena sp. nov.

Candidatus Streptococcus opporigena (NL. fem. n. *opporigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp000314795*. The type genome for the species is the GenBank assembly RS_GCF_000314795.2. The GC content of the type genome is 41.77 % and the genome length is 2.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Streptococcus ossifessa sp. nov.

Candidatus Streptococcus ossifessa (NL. fem. n. *ossifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp003686955*. The type genome for the species is the GenBank assembly RS_GCF_003686955.1. The GC content of the type genome is 39.49 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Streptococcus penurilenta sp. nov.

Candidatus Streptococcus penurilenta (NL. fem. n. *penurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp013277515*. The type genome for the species is the GenBank assembly RS_GCF_013277495.1. The GC content of the type genome is 39.88 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Streptococcus peraditrix sp. nov.

Candidatus Streptococcus peraditrix (NL. fem. n. *peraditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp013276795*. The type genome for the species is the GenBank assembly RS_GCF_013276565.1. The GC content of the type genome is 40.0 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Streptococcus peribentia sp. nov.

Candidatus Streptococcus peribentia (NL. fem. n. *peribentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp900555155*. The type genome for the species is the GenBank assembly RS_GCF_001071755.1. The GC content of the type genome is 41.05 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Streptococcus recometta sp. nov.

Candidatus Streptococcus recometta (NL. fem. n. *recometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp000187445*. The type genome for the species is the GenBank assembly GCA_902167585.1. The GC content of the type genome is 39.36 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Streptococcus recoritura sp. nov.

Candidatus Streptococcus recoritura (NL. fem. n. *recoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp000448565*. The type genome for the species is the GenBank assembly RS_GCF_000448565.1. The GC content of the type genome is 41.45 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Streptococcus redacatio sp. nov.

Candidatus Streptococcus redacatio (NL. fem. n. *redacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp000235485*. The type genome for the species is the GenBank assembly RS_GCF_000235485.1. The GC content of the type genome is 41.18 % and the genome length is 1.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Streptococcus roraratio sp. nov.

Candidatus Streptococcus roraratio (NL. fem. n. *roraratio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp000411475*. The type genome for the species is the GenBank assembly RS_GCF_902375005.1. The GC content of the type genome is 39.58 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Streptococcus rubecedo sp. nov.

Candidatus Streptococcus rubecedo (NL. fem. n. *rubecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001578875*. The type genome for the species is the GenBank assembly RS_GCF_001578875.1. The GC content of the type genome is 43.65 % and the genome length is 1.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "fruit residues (memencylon)".

Description of *Candidatus* Streptococcus rudicifica sp. nov.

Candidatus Streptococcus rudicifica (NL. fem. n. *rudicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp902729355*. The type genome for the species is the GenBank assembly RS_GCF_902729355.1. The GC content of the type genome is 38.53 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Streptococcus rutabessa sp. nov.

Candidatus Streptococcus rutabessa (NL. fem. n. *rutabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001578885*. The type genome for the species is the GenBank assembly RS_GCF_001578885.1. The GC content of the type genome is 45.24 % and the genome length is 1.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "fruit residues (memencylon)".

Description of *Candidatus* Streptococcus sicaritas sp. nov.

Candidatus Streptococcus sicaritas (NL. fem. n. *sicaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp001811505*. The type genome for the species is the GenBank assembly RS_GCF_001811505.1. The GC content of the type genome is 39.38 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "urine".

Description of *Candidatus* Streptococcus solifisca sp. nov.

Candidatus Streptococcus solifisca (NL. fem. n. *solifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp007859205*. The type genome for the species is the GenBank assembly RS_GCF_007859205.1. The GC content of the type genome is 38.62 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Streptococcus solipifica sp. nov.

Candidatus Streptococcus solipifica (NL. fem. n. *solipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp004570525*. The type genome for the species is the GenBank assembly RS_GCF_004570525.1. The GC content of the type genome is 41.48 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Streptococcus sonabitoga sp. nov.

Candidatus Streptococcus sonabitoga (NL. fem. n. *sonabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp000831085*. The type genome for the species is the GenBank assembly RS_GCF_004127235.1. The GC content of the type genome is 41.13 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Streptococcus tegimitas sp. nov.

Candidatus Streptococcus tegimitas (NL. fem. n. *tegimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp900550895*. The type genome for the species is the

GenBank assembly GCA_902406185.1. The GC content of the type genome is 41.24 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Streptococcus venucicella sp. nov.

Candidatus Streptococcus venucicella (NL. fem. n. *venucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptococcus sp011038795*. The type genome for the species is the GenBank assembly RS_GCF_011038795.1. The GC content of the type genome is 41.62 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Streptomonospora adtesugo sp. nov.

Candidatus Streptomonospora adtesugo (NL. fem. n. *adtesugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomonospora sp004323735*. The type genome for the species is the GenBank assembly RS_GCF_004323735.1. The GC content of the type genome is 72.13 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Streptomonospora anamnivita sp. nov.

Candidatus Streptomonospora anamnivita (NL. fem. n. *anamnivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomonospora sp009728995*. The type genome for the species is the GenBank assembly RS_GCF_009728995.1. The GC content of the type genome is 73.0 % and the genome length is 5.73 Mbp.

Description of *Candidatus* Streptomyces abascitura sp. nov.

Candidatus Streptomyces abascitura (NL. fem. n. *abascitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000720185*. The type genome for the species is the GenBank assembly RS_GCF_000720185.1. The GC content of the type genome is 72.83 % and the genome length is 8.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces abinvisca sp. nov.

Candidatus Streptomyces abinvisca (NL. fem. n. *abinvisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001417735*. The type genome for the species is the GenBank assembly RS_GCF_001417735.1. The GC content of the type genome is 71.55 % and the genome length is 8.92 Mbp.

Description of *Candidatus* Streptomyces abluvitrix sp. nov.

Candidatus Streptomyces abluvitrix (NL. fem. n. *abluvitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp010548275*. The type genome for the species is the GenBank assembly RS_GCF_010548275.1. The GC content of the type genome is 69.87 % and the genome length is 9.6 Mbp.

Description of *Candidatus* Streptomyces abveritoga sp. nov.

Candidatus Streptomyces abveritoga (NL. fem. n. *abveritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905385*. The type genome for the species is the GenBank assembly RS_GCF_001905385.1. The GC content of the type genome is 72.02 % and the genome length is 7.99 Mbp.

Description of *Candidatus* Streptomyces accenibra sp. nov.

Candidatus Streptomyces accenibra (NL. fem. n. *accenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp012726235*. The type genome for the species is the GenBank assembly RS_GCF_012726235.1. The GC content of the type genome is 72.97 % and the genome length is 6.37 Mbp.

Description of *Candidatus* Streptomyces accenitura sp. nov.

Candidatus Streptomyces accenitura (NL. fem. n. *accenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013364195*. The type genome for the species is the GenBank assembly RS_GCF_013364195.1. The GC content of the type genome is 70.82 % and the genome length is 7.89 Mbp.

Description of *Candidatus* Streptomyces accumugo sp. nov.

Candidatus Streptomyces accumugo (NL. fem. n. *accumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000720145*. The type genome for the species is the GenBank assembly RS_GCF_000720145.1. The GC content of the type genome is 72.29 % and the genome length is 8.73 Mbp.

Description of *Candidatus* Streptomyces acertimonia sp. nov.

Candidatus Streptomyces acertimonia (NL. fem. n. *acertimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp006715395*. The type genome for the species is the GenBank assembly RS_GCF_006715395.1. The GC content of the type genome is 71.11 % and the genome length is 9.47 Mbp.

Description of *Candidatus* Streptomyces acricisca sp. nov.

Candidatus Streptomyces acricisca (NL. fem. n. *acricisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905505*. The type genome for the species is the GenBank assembly RS_GCF_001905505.1. The GC content of the type genome is 71.25 % and the genome length is 8.31 Mbp.

Description of *Candidatus* Streptomyces acrotimonia sp. nov.

Candidatus Streptomyces acrotimonia (NL. fem. n. *acrotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Streptomyces sp004187715*. The type genome for the species is the GenBank assembly RS_GCF_004187715.1. The GC content of the type genome is 70.29 % and the genome length is 9.72 Mbp.

Description of *Candidatus* Streptomyces adcubigena sp. nov.

Candidatus Streptomyces adcubigena (NL. fem. n. *adcubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp011044995*. The type genome for the species is the GenBank assembly RS_GCF_011044995.1. The GC content of the type genome is 70.3 % and the genome length is 8.99 Mbp.

Description of *Candidatus* Streptomyces adcucilega sp. nov.

Candidatus Streptomyces adcucilega (NL. fem. n. *adcucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000720115*. The type genome for the species is the GenBank assembly RS_GCF_000720115.1. The GC content of the type genome is 71.81 % and the genome length is 8.45 Mbp.

Description of *Candidatus* Streptomyces adfulousia sp. nov.

Candidatus Streptomyces adfulousia (NL. fem. n. *adfulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001280065*. The type genome for the species is the GenBank assembly RS_GCF_001280065.1. The GC content of the type genome is 71.35 % and the genome length is 8.21 Mbp.

Description of *Candidatus* Streptomyces adlacimonas sp. nov.

Candidatus Streptomyces adlacimonas (NL. fem. n. *adlacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905005*. The type genome for the species is the GenBank assembly RS_GCF_001905005.1. The GC content of the type genome is 71.92 % and the genome length is 9.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces adlacivita sp. nov.

Candidatus Streptomyces adlacivita (NL. fem. n. *adlacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014489615*. The type genome for the species is the GenBank assembly RS_GCF_014489615.1. The GC content of the type genome is 73.43 % and the genome length is 8.19 Mbp.

Description of *Candidatus* Streptomyces adlapitia sp. nov.

Candidatus Streptomyces adlapitia (NL. fem. n. *adlapitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009709575*. The type genome for the species is the GenBank assembly RS_GCF_009709575.1. The GC content of the type genome is 72.75 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Streptomyces adlenicella sp. nov.

Candidatus Streptomyces adlenicella (NL. fem. n. *adlenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000424825*. The type genome for the species is the GenBank assembly RS_GCF_000424825.1. The GC content of the type genome is 72.69 % and the genome length is 6.79 Mbp.

Description of *Candidatus* Streptomyces adlubastra sp. nov.

Candidatus Streptomyces adlubastra (NL. fem. n. *adlubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009604455*. The type genome for the species is the GenBank assembly RS_GCF_009604455.1. The GC content of the type genome is 71.02 % and the genome length is 9.75 Mbp.

Description of *Candidatus* Streptomyces admodibula sp. nov.

Candidatus Streptomyces admodibula (NL. fem. n. *admodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000377965*. The type genome for the species is the GenBank assembly RS_GCF_000377965.1. The GC content of the type genome is 71.61 % and the genome length is 8.23 Mbp.

Description of *Candidatus* Streptomyces admoritia sp. nov.

Candidatus Streptomyces admoritia (NL. fem. n. *admoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp006715635*. The type genome for the species is the GenBank assembly RS_GCF_006715635.1. The GC content of the type genome is 69.48 % and the genome length is 7.79 Mbp.

Description of *Candidatus* Streptomyces adnariforma sp. nov.

Candidatus Streptomyces adnariforma (NL. fem. n. *adnariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004364245*. The type genome for the species is the GenBank assembly RS_GCF_004364245.1. The GC content of the type genome is 72.35 % and the genome length is 7.72 Mbp.

Description of *Candidatus* Streptomyces adnecifica sp. nov.

Candidatus Streptomyces adnecifica (NL. fem. n. *adnecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013364155*. The type genome for the species is the GenBank assembly RS_GCF_013364155.1. The GC content of the type genome is 71.05 % and the genome length is 9.77 Mbp.

Description of *Candidatus* Streptomyces adrecedo sp. nov.

Candidatus Streptomyces adrecedo (NL. fem. n. *adrecedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Streptomyces sp009184865*. The type genome for the species is the GenBank assembly RS_GCF_009184865.1. The GC content of the type genome is 70.86 % and the genome length is 10.18 Mbp.

Description of *Candidatus* Streptomyces adselitica sp. nov.

Candidatus Streptomyces adselitica (NL. fem. n. *adselitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905725*. The type genome for the species is the GenBank assembly RS_GCF_001905725.1. The GC content of the type genome is 71.67 % and the genome length is 8.93 Mbp.

Description of *Candidatus* Streptomyces adsesibra sp. nov.

Candidatus Streptomyces adsesibra (NL. fem. n. *adsesibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003675325*. The type genome for the species is the GenBank assembly RS_GCF_003675325.1. The GC content of the type genome is 72.12 % and the genome length is 8.16 Mbp.

Description of *Candidatus* Streptomyces adsicousia sp. nov.

Candidatus Streptomyces adsicousia (NL. fem. n. *adsicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp007096885*. The type genome for the species is the GenBank assembly RS_GCF_007096885.1. The GC content of the type genome is 72.38 % and the genome length is 7.14 Mbp.

Description of *Candidatus* Streptomyces adveritia sp. nov.

Candidatus Streptomyces adveritia (NL. fem. n. *adveritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000716605*. The type genome for the species is the GenBank assembly RS_GCF_000716605.1. The GC content of the type genome is 70.23 % and the genome length is 10.94 Mbp.

Description of *Candidatus* Streptomyces advinilega sp. nov.

Candidatus Streptomyces advinilega (NL. fem. n. *advinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008973465*. The type genome for the species is the GenBank assembly RS_GCF_008973465.1. The GC content of the type genome is 72.16 % and the genome length is 7.82 Mbp.

Description of *Candidatus* Streptomyces advinugo sp. nov.

Candidatus Streptomyces advinugo (NL. fem. n. *advinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002899455*. The type genome for the species is the GenBank assembly RS_GCF_002899455.1. The GC content of the type genome is 72.8 % and the genome length is 7.6 Mbp.

Description of *Candidatus* Streptomyces aglasatica sp. nov.

Candidatus Streptomyces aglasatica (NL. fem. n. *aglasatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008120935*. The type genome for the species is the GenBank assembly RS_GCF_008120935.1. The GC content of the type genome is 71.82 % and the genome length is 9.71 Mbp.

Description of *Candidatus* Streptomyces agricimonas sp. nov.

Candidatus Streptomyces agricimonas (NL. fem. n. *agricimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003143935*. The type genome for the species is the GenBank assembly RS_GCF_003143935.1. The GC content of the type genome is 71.3 % and the genome length is 9.62 Mbp.

Description of *Candidatus* Streptomyces alembiforma sp. nov.

Candidatus Streptomyces alembiforma (NL. fem. n. *alembiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009834125*. The type genome for the species is the GenBank assembly RS_GCF_009834125.1. The GC content of the type genome is 71.59 % and the genome length is 9.07 Mbp.

Description of *Candidatus* Streptomyces amfititudo sp. nov.

Candidatus Streptomyces amfititudo (NL. fem. n. *amfititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002920535*. The type genome for the species is the GenBank assembly RS_GCF_002920535.1. The GC content of the type genome is 72.1 % and the genome length is 8.23 Mbp.

Description of *Candidatus* Streptomyces ammigessa sp. nov.

Candidatus Streptomyces ammigessa (NL. fem. n. *ammigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002551355*. The type genome for the species is the GenBank assembly GCA_002551355.1. The GC content of the type genome is 71.6 % and the genome length is 8.07 Mbp.

Description of *Candidatus* Streptomyces anactatica sp. nov.

Candidatus Streptomyces anactatica (NL. fem. n. *anactatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp011193355*. The type genome for the species is the GenBank assembly RS_GCF_011193355.1. The GC content of the type genome is 72.73 % and the genome length is 7.32 Mbp.

Description of *Candidatus* Streptomyces anactitoga sp. nov.

Candidatus Streptomyces anactitoga (NL. fem. n. *anactitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Streptomyces sp011045015*. The type genome for the species is the GenBank assembly RS_GCF_011045015.1. The GC content of the type genome is 69.83 % and the genome length is 11.16 Mbp.

Description of *Candidatus* Streptomyces anastitudo sp. nov.

Candidatus Streptomyces anastitudo (NL. fem. n. *anastitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002941025*. The type genome for the species is the GenBank assembly RS_GCF_002941025.1. The GC content of the type genome is 70.88 % and the genome length is 8.78 Mbp.

Description of *Candidatus* Streptomyces annecicula sp. nov.

Candidatus Streptomyces annecicula (NL. fem. n. *annecicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009709555*. The type genome for the species is the GenBank assembly RS_GCF_009709555.1. The GC content of the type genome is 70.21 % and the genome length is 8.49 Mbp.

Description of *Candidatus* Streptomyces apercicella sp. nov.

Candidatus Streptomyces apercicella (NL. fem. n. *apercicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009498275*. The type genome for the species is the GenBank assembly RS_GCF_009498275.1. The GC content of the type genome is 71.24 % and the genome length is 8.88 Mbp.

Description of *Candidatus* Streptomyces apharitas sp. nov.

Candidatus Streptomyces apharitas (NL. fem. n. *apharitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014451325*. The type genome for the species is the GenBank assembly RS_GCF_014451325.1. The GC content of the type genome is 71.95 % and the genome length is 5.72 Mbp.

Description of *Candidatus* Streptomyces apsenisca sp. nov.

Candidatus Streptomyces apsenisca (NL. fem. n. *apsenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905445*. The type genome for the species is the GenBank assembly RS_GCF_001905445.1. The GC content of the type genome is 72.28 % and the genome length is 7.56 Mbp.

Description of *Candidatus* Streptomyces argiticella sp. nov.

Candidatus Streptomyces argiticella (NL. fem. n. *argiticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001636945*. The type genome for the species is the GenBank assembly RS_GCF_001636945.1. The GC content of the type genome is 71.21 % and the genome length is 9.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "red soil".

Description of *Candidatus* Streptomyces armipifica sp. nov.

Candidatus Streptomyces armipifica (NL. fem. n. *armipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003664315*. The type genome for the species is the GenBank assembly RS_GCF_003664315.1. The GC content of the type genome is 71.71 % and the genome length is 8.75 Mbp.

Description of *Candidatus* Streptomyces asbesugo sp. nov.

Candidatus Streptomyces asbesugo (NL. fem. n. *asbesugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001083795*. The type genome for the species is the GenBank assembly RS_GCF_001083795.1. The GC content of the type genome is 72.74 % and the genome length is 8.06 Mbp.

Description of *Candidatus* Streptomyces ascisax sp. nov.

Candidatus Streptomyces ascisax (NL. fem. n. *ascisax* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002027195*. The type genome for the species is the GenBank assembly RS_GCF_002027195.1. The GC content of the type genome is 70.73 % and the genome length is 8.3 Mbp.

Description of *Candidatus* Streptomyces assibibula sp. nov.

Candidatus Streptomyces assibibula (NL. fem. n. *assibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905845*. The type genome for the species is the GenBank assembly RS_GCF_001905845.1. The GC content of the type genome is 72.11 % and the genome length is 8.74 Mbp.

Description of *Candidatus* Streptomyces assifisca sp. nov.

Candidatus Streptomyces assifisca (NL. fem. n. *assifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009832925*. The type genome for the species is the GenBank assembly RS_GCF_009832925.1. The GC content of the type genome is 71.04 % and the genome length is 7.62 Mbp.

Description of *Candidatus* Streptomyces attoratio sp. nov.

Candidatus Streptomyces attoratio (NL. fem. n. *attoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003851625*. The type genome for the species is the GenBank assembly RS_GCF_003851625.1. The GC content of the type genome is 70.32 % and the genome length is 12.07 Mbp.

Description of *Candidatus* Streptomyces bacifisca sp. nov.

Candidatus Streptomyces bacifisca (NL. fem. n. *bacifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003671715*. The type genome for the species is the GenBank assembly RS_GCF_003671715.1. The GC content of the type genome is 71.57 % and the genome length is 7.91 Mbp.

Description of *Candidatus* Streptomyces badititura sp. nov.

Candidatus Streptomyces badititura (NL. fem. n. *badititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900091955*. The type genome for the species is the GenBank assembly RS_GCF_900091955.1. The GC content of the type genome is 69.59 % and the genome length is 9.36 Mbp.

Description of *Candidatus* Streptomyces benevitoga sp. nov.

Candidatus Streptomyces benevitoga (NL. fem. n. *benevitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000719555*. The type genome for the species is the GenBank assembly RS_GCF_000719555.1. The GC content of the type genome is 73.19 % and the genome length is 7.95 Mbp.

Description of *Candidatus* Streptomyces bicipitas sp. nov.

Candidatus Streptomyces bicipitas (NL. fem. n. *bicipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000383935*. The type genome for the species is the GenBank assembly RS_GCF_000383935.1. The GC content of the type genome is 72.93 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Streptomyces bicoditudo sp. nov.

Candidatus Streptomyces bicoditudo (NL. fem. n. *bicoditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002920615*. The type genome for the species is the GenBank assembly RS_GCF_004342785.1. The GC content of the type genome is 72.11 % and the genome length is 9.83 Mbp.

Description of *Candidatus* Streptomyces bicubibula sp. nov.

Candidatus Streptomyces bicubibula (NL. fem. n. *bicubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002797655*. The type genome for the species is the GenBank assembly RS_GCF_000424805.1. The GC content of the type genome is 73.59 % and the genome length is 8.61 Mbp.

Description of *Candidatus* Streptomyces bifarivita sp. nov.

Candidatus Streptomyces bifarivita (NL. fem. n. *bifarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014621695*. The type genome for the species is the GenBank assembly RS_GCF_014621695.1. The GC content of the type genome is 72.15 % and the genome length is 8.35 Mbp.

Description of *Candidatus* Streptomyces bifisedo sp. nov.

Candidatus Streptomyces bifisedo (NL. fem. n. *bifisedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004337435*. The type genome for the species is the GenBank assembly RS_GCF_004337435.2. The GC content of the type genome is 70.36 % and the genome length is 10.05 Mbp.

Description of *Candidatus* Streptomyces bifisentia sp. nov.

Candidatus Streptomyces bifisentia (NL. fem. n. *bifisentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001279725*. The type genome for the species is the GenBank assembly RS_GCF_001279725.1. The GC content of the type genome is 71.51 % and the genome length is 7.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces bimetedo sp. nov.

Candidatus Streptomyces bimetedo (NL. fem. n. *bimetedo* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000213055*. The type genome for the species is the GenBank assembly RS_GCF_000213055.1. The GC content of the type genome is 73.08 % and the genome length is 7.51 Mbp.

Description of *Candidatus* Streptomyces bipalatio sp. nov.

Candidatus Streptomyces bipalatio (NL. fem. n. *bipalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000426325*. The type genome for the species is the GenBank assembly RS_GCF_004795255.1. The GC content of the type genome is 72.56 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Streptomyces bucelicella sp. nov.

Candidatus Streptomyces bucelicella (NL. fem. n. *bucelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004795055*. The type genome for the species is the GenBank assembly RS_GCF_004795055.1. The GC content of the type genome is 71.54 % and the genome length is 8.05 Mbp.

Description of *Candidatus* Streptomyces bucelimonas sp. nov.

Candidatus Streptomyces bucelimonas (NL. fem. n. *bucelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp011421595*. The type genome for the species is the GenBank assembly RS_GCF_011421595.1. The GC content of the type genome is 73.46 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Streptomyces cacomitrix sp. nov.

Candidatus Streptomyces cacomitrix (NL. fem. n. *cacomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008042045*. The type genome for the species is the GenBank assembly RS_GCF_008042045.1. The GC content of the type genome is 72.93 % and the genome length is 8.27 Mbp.

Description of *Candidatus* Streptomyces cacomousia sp. nov.

Candidatus Streptomyces cacomousia (NL. fem. n. *cacomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003148825*. The type genome for the species is the GenBank assembly RS_GCF_003148825.1. The GC content of the type genome is 71.83 % and the genome length is 8.51 Mbp.

Description of *Candidatus* Streptomyces cacopitia sp. nov.

Candidatus Streptomyces cacopitia (NL. fem. n. *cacopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001953885*. The type genome for the species is the GenBank assembly RS_GCF_001953885.1. The GC content of the type genome is 70.69 % and the genome length is 9.99 Mbp.

Description of *Candidatus* Streptomyces capiliforma sp. nov.

Candidatus Streptomyces capiliforma (NL. fem. n. *capiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014295035*. The type genome for the species is the GenBank assembly RS_GCF_013364335.1. The GC content of the type genome is 72.87 % and the genome length is 9.09 Mbp.

Description of *Candidatus* Streptomyces capucentia sp. nov.

Candidatus Streptomyces capucentia (NL. fem. n. *capucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002939385*. The type genome for the species is the GenBank assembly RS_GCF_001970135.1. The GC content of the type genome is 72.09 % and the genome length is 8.45 Mbp.

Description of *Candidatus* Streptomyces capucigena sp. nov.

Candidatus Streptomyces capucigena (NL. fem. n. *capucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003330845*. The type genome for the species is the GenBank assembly RS_GCF_003330845.1. The GC content of the type genome is 71.96 % and the genome length is 8.57 Mbp.

Description of *Candidatus* Streptomyces carucetta sp. nov.

Candidatus Streptomyces carucetta (NL. fem. n. *carucetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001426405*. The type genome for the species is the GenBank assembly RS_GCF_001427745.1. The GC content of the type genome is 72.43 % and the genome length is 7.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Streptomyces casabimonas sp. nov.

Candidatus Streptomyces casabimonas (NL. fem. n. *casabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003725745*. The type genome for the species is the GenBank assembly RS_GCF_003725745.1. The GC content of the type genome is 72.47 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Streptomyces catabousia sp. nov.

Candidatus Streptomyces catabousia (NL. fem. n. *catabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000482585*. The type genome for the species is the GenBank assembly RS_GCF_000482585.1. The GC content of the type genome is 73.09 % and the genome length is 7.19 Mbp.

Description of *Candidatus* Streptomyces categicella sp. nov.

Candidatus Streptomyces categicella (NL. fem. n. *categicella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900091725*. The type genome for the species is the GenBank assembly RS_GCF_900091725.1. The GC content of the type genome is 70.98 % and the genome length is 9.32 Mbp.

Description of *Candidatus* Streptomyces cenobentia sp. nov.

Candidatus Streptomyces cenobentia (NL. fem. n. *cenobentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014489635*. The type genome for the species is the GenBank assembly RS_GCF_014489635.1. The GC content of the type genome is 71.77 % and the genome length is 9.95 Mbp.

Description of *Candidatus* Streptomyces cenodax sp. nov.

Candidatus Streptomyces cenodax (NL. fem. n. *cenodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905905*. The type genome for the species is the GenBank assembly RS_GCF_001905905.1. The GC content of the type genome is 72.53 % and the genome length is 7.37 Mbp.

Description of *Candidatus* Streptomyces cenotiforma sp. nov.

Candidatus Streptomyces cenotiforma (NL. fem. n. *cenotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000805335*. The type genome for the species is the GenBank assembly RS_GCF_000805335.1. The GC content of the type genome is 71.39 % and the genome length is 8.07 Mbp.

Description of *Candidatus* Streptomyces ceracitudo sp. nov.

Candidatus Streptomyces ceracitudo (NL. fem. n. *ceracitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004343515*. The type genome for the species is the GenBank assembly RS_GCF_004343515.1. The GC content of the type genome is 70.72 % and the genome length is 11.25 Mbp.

Description of *Candidatus* Streptomyces cerifilega sp. nov.

Candidatus Streptomyces cerifilega (NL. fem. n. *cerifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002382885*. The type genome for the species is the GenBank assembly RS_GCF_002382885.1. The GC content of the type genome is 71.19 % and the genome length is 8.12 Mbp.

Description of *Candidatus* Streptomyces ceromitio sp. nov.

Candidatus Streptomyces ceromitio (NL. fem. n. *ceromitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000721605*. The type genome for the species is the GenBank assembly RS_GCF_000721605.1. The GC content of the type genome is 72.01 % and the genome length is 8.23 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces chalbedo sp. nov.

Candidatus Streptomyces chalbedo (NL. fem. n. *chalbedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000718785*. The type genome for the species is the GenBank assembly RS_GCF_000718785.1. The GC content of the type genome is 71.55 % and the genome length is 7.92 Mbp.

Description of *Candidatus* Streptomyces cibarax sp. nov.

Candidatus Streptomyces cibarax (NL. fem. n. *cibarax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000721375*. The type genome for the species is the GenBank assembly GCA_000721375.1. The GC content of the type genome is 69.91 %

and the genome length is 8.57 Mbp.

Description of *Candidatus* Streptomyces ciminigena sp. nov.

Candidatus Streptomyces ciminigena (NL. fem. n. *ciminigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001184025*. The type genome for the species is the GenBank assembly GCA_002081495.1. The GC content of the type genome is 71.8 % and the genome length is 8.77 Mbp.

Description of *Candidatus* Streptomyces cisoritia sp. nov.

Candidatus Streptomyces cisoritia (NL. fem. n. *cisoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002847285*. The type genome for the species is the GenBank assembly RS_GCF_002847285.1. The GC content of the type genome is 73.14 % and the genome length is 8.03 Mbp.

Description of *Candidatus* Streptomyces citipilega sp. nov.

Candidatus Streptomyces citipilega (NL. fem. n. *citipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003814525*. The type genome for the species is the GenBank assembly RS_GCF_003814525.1. The GC content of the type genome is 70.76 % and the genome length is 10.42 Mbp.

Description of *Candidatus* Streptomyces citivitica sp. nov.

Candidatus Streptomyces citivitica (NL. fem. n. *citivitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004795035*. The type genome for the species is the GenBank assembly RS_GCF_004795035.1. The GC content of the type genome is 71.57 % and the genome length is 7.17 Mbp.

Description of *Candidatus* Streptomyces cocodicella sp. nov.

Candidatus Streptomyces cocodicella (NL. fem. n. *cocodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp011045025*. The type genome for the species is the GenBank assembly RS_GCF_011045025.1. The GC content of the type genome is 69.58 % and the genome length is 10.48 Mbp.

Description of *Candidatus* Streptomyces colipitas sp. nov.

Candidatus Streptomyces colipitas (NL. fem. n. *colipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004124325*. The type genome for the species is the GenBank assembly RS_GCF_004124325.1. The GC content of the type genome is 71.69 % and the genome length is 8.07 Mbp.

Description of *Candidatus* Streptomyces colopetta sp. nov.

Candidatus Streptomyces colopetta (NL. fem. n. *colopetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001509795*. The type genome for the species is the GenBank assembly RS_GCF_002156055.1. The GC content of the type genome is 72.12 % and the genome length is 7.33 Mbp.

Description of *Candidatus* Streptomyces conamitia sp. nov.

Candidatus Streptomyces conamitia (NL. fem. n. *conamitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003846175*. The type genome for the species is the GenBank assembly RS_GCF_003846175.1. The GC content of the type genome is 70.63 % and the genome length is 10.03 Mbp.

Description of *Candidatus* Streptomyces conipatio sp. nov.

Candidatus Streptomyces conipatio (NL. fem. n. *conipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003752275*. The type genome for the species is the GenBank assembly RS_GCF_003752275.1. The GC content of the type genome is 70.54 % and the genome length is 9.06 Mbp.

Description of *Candidatus* Streptomyces corocago sp. nov.

Candidatus Streptomyces corocago (NL. fem. n. *corocago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp012927245*. The type genome for the species is the GenBank assembly RS_GCF_012927245.1. The GC content of the type genome is 72.74 % and the genome length is 7.95 Mbp.

Description of *Candidatus* Streptomyces corocax sp. nov.

Candidatus Streptomyces corocax (NL. fem. n. *corocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002803085*. The type genome for the species is the GenBank assembly RS_GCF_002803085.1. The GC content of the type genome is 71.16 % and the genome length is 8.76 Mbp.

Description of *Candidatus* Streptomyces cuferitia sp. nov.

Candidatus Streptomyces cuferitia (NL. fem. n. *cuferitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003287935*. The type genome for the species is the GenBank assembly RS_GCF_003287935.1. The GC content of the type genome is 72.02 % and the genome length is 9.03 Mbp.

Description of *Candidatus* Streptomyces culibilenta sp. nov.

Candidatus Streptomyces culibilenta (NL. fem. n. *culibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003574445*. The type genome for the species is the GenBank assembly RS_GCF_003574445.1. The GC content of the type genome is 70.75

% and the genome length is 8.04 Mbp.

Description of *Candidatus* Streptomyces decamastra sp. nov.

Candidatus Streptomyces decamastra (NL. fem. n. *decamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000720845*. The type genome for the species is the GenBank assembly GCA_000720845.1. The GC content of the type genome is 72.0 % and the genome length is 8.39 Mbp.

Description of *Candidatus* Streptomyces decucicella sp. nov.

Candidatus Streptomyces decucicella (NL. fem. n. *decucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000373625*. The type genome for the species is the GenBank assembly RS_GCF_000373625.1. The GC content of the type genome is 71.83 % and the genome length is 6.85 Mbp.

Description of *Candidatus* Streptomyces dedigitura sp. nov.

Candidatus Streptomyces dedigitura (NL. fem. n. *dedigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003947455*. The type genome for the species is the GenBank assembly RS_GCF_003947455.1. The GC content of the type genome is 71.99 % and the genome length is 8.17 Mbp.

Description of *Candidatus* Streptomyces defanibula sp. nov.

Candidatus Streptomyces defanibula (NL. fem. n. *defanibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004217285*. The type genome for the species is the GenBank assembly RS_GCF_004217285.1. The GC content of the type genome is 71.93 % and the genome length is 6.14 Mbp.

Description of *Candidatus* Streptomyces defosicula sp. nov.

Candidatus Streptomyces defosicula (NL. fem. n. *defosicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008042155*. The type genome for the species is the GenBank assembly RS_GCF_008042155.1. The GC content of the type genome is 70.79 % and the genome length is 8.32 Mbp.

Description of *Candidatus* Streptomyces defulilega sp. nov.

Candidatus Streptomyces defulilega (NL. fem. n. *defulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900116325*. The type genome for the species is the GenBank assembly RS_GCF_900101975.1. The GC content of the type genome is 69.84 % and the genome length is 7.84 Mbp.

Description of *Candidatus* Streptomyces delacimonia sp. nov.

Candidatus Streptomyces delacimonia (NL. fem. n. *delacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004151105*. The type genome for the species is the GenBank assembly RS_GCF_004151105.1. The GC content of the type genome is 70.66 % and the genome length is 8.85 Mbp.

Description of *Candidatus* Streptomyces delapedo sp. nov.

Candidatus Streptomyces delapedo (NL. fem. n. *delapedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001746365*. The type genome for the species is the GenBank assembly RS_GCF_001746365.1. The GC content of the type genome is 71.63 % and the genome length is 9.18 Mbp.

Description of *Candidatus* Streptomyces delapisca sp. nov.

Candidatus Streptomyces delapisca (NL. fem. n. *delapisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003389455*. The type genome for the species is the GenBank assembly RS_GCF_003389455.1. The GC content of the type genome is 70.47 % and the genome length is 9.48 Mbp.

Description of *Candidatus* Streptomyces demogetta sp. nov.

Candidatus Streptomyces demogetta (NL. fem. n. *demogetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000716335*. The type genome for the species is the GenBank assembly RS_GCF_000716335.1. The GC content of the type genome is 72.58 % and the genome length is 7.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces denixilenta sp. nov.

Candidatus Streptomyces denixilenta (NL. fem. n. *denixilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp006088715*. The type genome for the species is the GenBank assembly RS_GCF_006088715.1. The GC content of the type genome is 72.42 % and the genome length is 11.1 Mbp.

Description of *Candidatus* Streptomyces deparilega sp. nov.

Candidatus Streptomyces deparilega (NL. fem. n. *deparilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905825*. The type genome for the species is the GenBank assembly RS_GCF_001905825.1. The GC content of the type genome is 72.28 % and the genome length is 9.2 Mbp.

Description of *Candidatus* Streptomyces depelitura sp. nov.

Candidatus Streptomyces depelitura (NL. fem. n. *depelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001514305*. The type genome for the species is the

GenBank assembly RS_GCF_001514305.1. The GC content of the type genome is 70.3 % and the genome length is 10.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sponge".

Description of *Candidatus* Streptomyces depupentia sp. nov.

Candidatus Streptomyces depupentia (NL. fem. n. *depupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009852415*. The type genome for the species is the GenBank assembly RS_GCF_009852415.1. The GC content of the type genome is 72.97 % and the genome length is 8.63 Mbp.

Description of *Candidatus* Streptomyces depupibra sp. nov.

Candidatus Streptomyces depupibra (NL. fem. n. *depupibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003814935*. The type genome for the species is the GenBank assembly RS_GCF_003814935.1. The GC content of the type genome is 70.66 % and the genome length is 10.52 Mbp.

Description of *Candidatus* Streptomyces derecitoga sp. nov.

Candidatus Streptomyces derecitoga (NL. fem. n. *derecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002910915*. The type genome for the species is the GenBank assembly RS_GCF_002910915.1. The GC content of the type genome is 70.8 % and the genome length is 7.47 Mbp.

Description of *Candidatus* Streptomyces detesimonas sp. nov.

Candidatus Streptomyces detesimonas (NL. fem. n. *detesimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001293595*. The type genome for the species is the GenBank assembly RS_GCF_000719815.1. The GC content of the type genome is 73.5 % and the genome length is 7.06 Mbp.

Description of *Candidatus* Streptomyces detunimonia sp. nov.

Candidatus Streptomyces detunimonia (NL. fem. n. *detunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000373585*. The type genome for the species is the GenBank assembly RS_GCF_000373585.1. The GC content of the type genome is 71.86 % and the genome length is 8.6 Mbp.

Description of *Candidatus* Streptomyces dibucitas sp. nov.

Candidatus Streptomyces dibucitas (NL. fem. n. *dibucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014495685*. The type genome for the species is the GenBank assembly RS_GCF_014495685.1. The GC content of the type genome is 70.61 % and the genome length is 9.67 Mbp.

Description of *Candidatus* Streptomyces dicabitica sp. nov.

Candidatus Streptomyces dicabitica (NL. fem. n. *dicabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001279775*. The type genome for the species is the GenBank assembly RS_GCF_001279775.1. The GC content of the type genome is 70.55 % and the genome length is 10.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces dilecimonas sp. nov.

Candidatus Streptomyces dilecimonas (NL. fem. n. *dilecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001514285*. The type genome for the species is the GenBank assembly RS_GCF_001514285.1. The GC content of the type genome is 71.91 % and the genome length is 9.38 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces dimacugo sp. nov.

Candidatus Streptomyces dimacugo (NL. fem. n. *dimacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001426585*. The type genome for the species is the GenBank assembly RS_GCF_003949845.1. The GC content of the type genome is 72.06 % and the genome length is 8.69 Mbp.

Description of *Candidatus* Streptomyces dimaditoga sp. nov.

Candidatus Streptomyces dimaditoga (NL. fem. n. *dimaditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003384795*. The type genome for the species is the GenBank assembly RS_GCF_003384795.1. The GC content of the type genome is 70.39 % and the genome length is 10.07 Mbp.

Description of *Candidatus* Streptomyces doxolessa sp. nov.

Candidatus Streptomyces doxolessa (NL. fem. n. *doxolessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001746295*. The type genome for the species is the GenBank assembly RS_GCF_001746295.1. The GC content of the type genome is 70.28 % and the genome length is 11.0 Mbp.

Description of *Candidatus* Streptomyces doxolifica sp. nov.

Candidatus Streptomyces doxolifica (NL. fem. n. *doxolifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004795105*. The type genome for the species is the GenBank assembly RS_GCF_004795105.1. The GC content of the type genome is 71.36 % and the genome length is 8.19 Mbp.

Description of *Candidatus* Streptomyces duricisca sp. nov.

Candidatus Streptomyces duricisca (NL. fem. n. *duricisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000818195*. The type genome for the species is the GenBank assembly RS_GCF_000818195.1. The GC content of the type genome is 70.16 % and the genome length is 9.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mushroom surface".

Description of *Candidatus* Streptomyces emortisca sp. nov.

Candidatus Streptomyces emortisca (NL. fem. n. *emortisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001895105*. The type genome for the species is the GenBank assembly RS_GCF_001895105.1. The GC content of the type genome is 72.08 % and the genome length is 7.63 Mbp.

Description of *Candidatus* Streptomyces encepilega sp. nov.

Candidatus Streptomyces encepilega (NL. fem. n. *encepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014253015*. The type genome for the species is the GenBank assembly RS_GCF_014253015.1. The GC content of the type genome is 73.15 % and the genome length is 7.6 Mbp.

Description of *Candidatus* Streptomyces endivax sp. nov.

Candidatus Streptomyces endivax (NL. fem. n. *endivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp007827595*. The type genome for the species is the GenBank assembly RS_GCF_007827595.1. The GC content of the type genome is 71.06 % and the genome length is 10.32 Mbp.

Description of *Candidatus* Streptomyces energitoga sp. nov.

Candidatus Streptomyces energitoga (NL. fem. n. *energitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000424785*. The type genome for the species is the

GenBank assembly RS_GCF_000424785.1. The GC content of the type genome is 72.3 % and the genome length is 7.72 Mbp.

Description of *Candidatus* Streptomyces excetitoga sp. nov.

Candidatus Streptomyces excetitoga (NL. fem. n. *excetitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003814875*. The type genome for the species is the GenBank assembly RS_GCF_003814875.1. The GC content of the type genome is 70.45 % and the genome length is 12.0 Mbp.

Description of *Candidatus* Streptomyces excomastra sp. nov.

Candidatus Streptomyces excomastra (NL. fem. n. *excomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002005565*. The type genome for the species is the GenBank assembly RS_GCF_002005565.1. The GC content of the type genome is 72.53 % and the genome length is 7.34 Mbp.

Description of *Candidatus* Streptomyces excoritica sp. nov.

Candidatus Streptomyces excoritica (NL. fem. n. *excoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905595*. The type genome for the species is the GenBank assembly RS_GCF_001905595.1. The GC content of the type genome is 71.3 % and the genome length is 7.41 Mbp.

Description of *Candidatus* Streptomyces exforax sp. nov.

Candidatus Streptomyces exforax (NL. fem. n. *exforax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000721275*. The type genome for the species is the GenBank assembly GCA_000721275.1. The GC content of the type genome is 73.64 % and the genome length is 7.48 Mbp.

Description of *Candidatus* Streptomyces exhoretta sp. nov.

Candidatus Streptomyces exhoretta (NL. fem. n. *exhoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp012726265*. The type genome for the species is the GenBank assembly RS_GCF_012726265.1. The GC content of the type genome is 71.56 % and the genome length is 7.38 Mbp.

Description of *Candidatus* Streptomyces exorbago sp. nov.

Candidatus Streptomyces exorbago (NL. fem. n. *exorbago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013044505*. The type genome for the species is the GenBank assembly RS_GCF_013044505.1. The GC content of the type genome is 70.55 % and the genome length is 10.99 Mbp.

Description of *Candidatus* Streptomyces exoscitio sp. nov.

Candidatus Streptomyces exoscitio (NL. fem. n. *exoscitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000972385*. The type genome for the species is the GenBank assembly RS_GCF_000972385.1. The GC content of the type genome is 70.4 % and the genome length is 9.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces expalimonas sp. nov.

Candidatus Streptomyces expalimonas (NL. fem. n. *expalimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000470535*. The type genome for the species is the GenBank assembly RS_GCF_000470535.1. The GC content of the type genome is 70.57 % and the genome length is 8.01 Mbp.

Description of *Candidatus* Streptomyces expanitoga sp. nov.

Candidatus Streptomyces expanitoga (NL. fem. n. *expanitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900103585*. The type genome for the species is the GenBank assembly RS_GCF_900103585.1. The GC content of the type genome is 70.54 % and the genome length is 10.62 Mbp.

Description of *Candidatus* Streptomyces expisetta sp. nov.

Candidatus Streptomyces expisetta (NL. fem. n. *expisetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905125*. The type genome for the species is the GenBank assembly RS_GCF_001905125.1. The GC content of the type genome is 70.61 % and the genome length is 9.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces exsanax sp. nov.

Candidatus Streptomyces exsanax (NL. fem. n. *exsanax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009796285*. The type genome for the species is the GenBank assembly RS_GCF_009796285.1. The GC content of the type genome is 70.89 % and the genome length is 9.74 Mbp.

Description of *Candidatus* Streptomyces exsufessa sp. nov.

Candidatus Streptomyces exsufessa (NL. fem. n. *exsufessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001653515*. The type genome for the species is the GenBank assembly RS_GCF_001653515.1. The GC content of the type genome is 71.38 % and the genome length is 7.11 Mbp.

Description of *Candidatus* Streptomyces exsupibra sp. nov.

Candidatus Streptomyces exsupibra (NL. fem. n. *exsupibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013055795*. The type genome for the species is the

GenBank assembly RS_GCF_013055795.1. The GC content of the type genome is 72.43 % and the genome length is 7.13 Mbp.

Description of *Candidatus* Streptomyces fatilastra sp. nov.

Candidatus Streptomyces fatilastra (NL. fem. n. *fatilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000154905*. The type genome for the species is the GenBank assembly RS_GCF_000154905.1. The GC content of the type genome is 73.0 % and the genome length is 6.97 Mbp.

Description of *Candidatus* Streptomyces fatilitrix sp. nov.

Candidatus Streptomyces fatilitrix (NL. fem. n. *fatilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003949805*. The type genome for the species is the GenBank assembly RS_GCF_003949805.1. The GC content of the type genome is 73.06 % and the genome length is 7.65 Mbp.

Description of *Candidatus* Streptomyces favonitudo sp. nov.

Candidatus Streptomyces favonitudo (NL. fem. n. *favonitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003949795*. The type genome for the species is the GenBank assembly RS_GCF_003949795.1. The GC content of the type genome is 73.13 % and the genome length is 7.94 Mbp.

Description of *Candidatus* Streptomyces fetifastra sp. nov.

Candidatus Streptomyces fetifastra (NL. fem. n. *fetifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900187385*. The type genome for the species is the GenBank assembly RS_GCF_900102245.1. The GC content of the type genome is 71.03 % and the genome length is 8.07 Mbp.

Description of *Candidatus* Streptomyces fetutitrix sp. nov.

Candidatus Streptomyces fetutitrix (NL. fem. n. *fetutitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002846625*. The type genome for the species is the GenBank assembly RS_GCF_002846625.1. The GC content of the type genome is 69.99 % and the genome length is 12.7 Mbp.

Description of *Candidatus* Streptomyces ficedessa sp. nov.

Candidatus Streptomyces ficedessa (NL. fem. n. *ficedessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013778455*. The type genome for the species is the GenBank assembly RS_GCF_013912435.1. The GC content of the type genome is 69.96 % and the genome length is 9.07 Mbp.

Description of *Candidatus* Streptomyces foricitudo sp. nov.

Candidatus Streptomyces foricitudo (NL. fem. n. *foricitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008271805*. The type genome for the species is the GenBank assembly RS_GCF_008271805.1. The GC content of the type genome is 71.47 % and the genome length is 7.49 Mbp.

Description of *Candidatus* Streptomyces fragmitura sp. nov.

Candidatus Streptomyces fragmitura (NL. fem. n. *fragmitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013450295*. The type genome for the species is the GenBank assembly RS_GCF_013450295.1. The GC content of the type genome is 72.9 % and the genome length is 6.74 Mbp.

Description of *Candidatus* Streptomyces frigdibula sp. nov.

Candidatus Streptomyces frigdibula (NL. fem. n. *frigdibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp007280575*. The type genome for the species is the GenBank assembly RS_GCF_007280575.1. The GC content of the type genome is 72.16 % and the genome length is 7.0 Mbp.

Description of *Candidatus* Streptomyces fuligatica sp. nov.

Candidatus Streptomyces fuligatica (NL. fem. n. *fuligatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp007176755*. The type genome for the species is the GenBank assembly RS_GCF_007176755.1. The GC content of the type genome is 72.59 % and the genome length is 7.85 Mbp.

Description of *Candidatus* Streptomyces fuligibula sp. nov.

Candidatus Streptomyces fuligibula (NL. fem. n. *fuligibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003519485*. The type genome for the species is the GenBank assembly GCA_003519485.1. The GC content of the type genome is 71.25 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Streptomyces funamatio sp. nov.

Candidatus Streptomyces funamatio (NL. fem. n. *funamatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002551245*. The type genome for the species is the GenBank assembly RS_GCF_002551245.1. The GC content of the type genome is 71.54 % and the genome length is 8.22 Mbp.

Description of *Candidatus* Streptomyces funamitrix sp. nov.

Candidatus Streptomyces funamitrix (NL. fem. n. *funamitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002711365*. The type genome for the species is the GenBank assembly GCA_900090175.1. The GC content of the type genome is 71.57 %

and the genome length is 7.87 Mbp.

Description of *Candidatus* Streptomyces fusifibula sp. nov.

Candidatus Streptomyces fusifibula (NL. fem. n. *fusifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003032475*. The type genome for the species is the GenBank assembly RS_GCF_003032475.1. The GC content of the type genome is 71.37 % and the genome length is 9.85 Mbp.

Description of *Candidatus* Streptomyces gasomitrix sp. nov.

Candidatus Streptomyces gasomitrix (NL. fem. n. *gasomitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001282115*. The type genome for the species is the GenBank assembly RS_GCF_001282115.1. The GC content of the type genome is 71.31 % and the genome length is 8.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "peanut".

Description of *Candidatus* Streptomyces gasomitura sp. nov.

Candidatus Streptomyces gasomitura (NL. fem. n. *gasomitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002803155*. The type genome for the species is the GenBank assembly RS_GCF_002803155.1. The GC content of the type genome is 71.84 % and the genome length is 10.36 Mbp.

Description of *Candidatus* Streptomyces habacedo sp. nov.

Candidatus Streptomyces habacedo (NL. fem. n. *habacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905365*. The type genome for the species is the GenBank assembly RS_GCF_001905365.1. The GC content of the type genome is 71.0 % and the genome length is 8.89 Mbp.

Description of *Candidatus* Streptomyces hexagifica sp. nov.

Candidatus Streptomyces hexagifica (NL. fem. n. *hexagifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000720175*. The type genome for the species is the GenBank assembly RS_GCF_000720175.1. The GC content of the type genome is 71.5 % and the genome length is 9.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces hexametta sp. nov.

Candidatus Streptomyces hexametta (NL. fem. n. *hexametta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009604385*. The type genome for the species is the GenBank assembly RS_GCF_009604385.1. The GC content of the type genome is 72.02 % and the genome length is 7.86 Mbp.

Description of *Candidatus* Streptomyces hirudicula sp. nov.

Candidatus Streptomyces hirudicula (NL. fem. n. *hirudicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001507435*. The type genome for the species is the GenBank assembly RS_GCF_001507435.1. The GC content of the type genome is 70.01 % and the genome length is 10.16 Mbp.

Description of *Candidatus* Streptomyces holisiforma sp. nov.

Candidatus Streptomyces holisiforma (NL. fem. n. *holisiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000717915*. The type genome for the species is the GenBank assembly RS_GCF_000717915.1. The GC content of the type genome is 72.33 % and the genome length is 7.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil from Salvador".

Description of *Candidatus* Streptomyces homiligena sp. nov.

Candidatus Streptomyces homiligena (NL. fem. n. *homiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000497405*. The type genome for the species is the GenBank assembly RS_GCF_000497405.1. The GC content of the type genome is 70.93 % and the genome length is 5.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sponge".

Description of *Candidatus* Streptomyces homililega sp. nov.

Candidatus Streptomyces homililega (NL. fem. n. *homililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009739465*. The type genome for the species is the GenBank assembly RS_GCF_009739465.1. The GC content of the type genome is 70.35 % and the genome length is 7.03 Mbp.

Description of *Candidatus* Streptomyces homogatio sp. nov.

Candidatus Streptomyces homogatio (NL. fem. n. *homogatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000424965*. The type genome for the species is the GenBank assembly RS_GCF_000424965.1. The GC content of the type genome is 71.21 % and the genome length is 6.58 Mbp.

Description of *Candidatus* Streptomyces immaticula sp. nov.

Candidatus Streptomyces immaticula (NL. fem. n. *immaticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900091315*. The type genome for the species is the GenBank assembly RS_GCF_900091315.1. The GC content of the type genome is 71.27 % and the genome length is 8.87 Mbp.

Description of *Candidatus* Streptomyces immobitas sp. nov.

Candidatus Streptomyces immobitas (NL. fem. n. *immobitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900110755*. The type genome for the species is the GenBank assembly RS_GCF_900110755.1. The GC content of the type genome is 71.23 % and the genome length is 9.07 Mbp.

Description of *Candidatus* Streptomyces inabsitia sp. nov.

Candidatus Streptomyces inabsitia (NL. fem. n. *inabsitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001279695*. The type genome for the species is the GenBank assembly RS_GCF_001279695.1. The GC content of the type genome is 70.65 % and the genome length is 9.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces indirifica sp. nov.

Candidatus Streptomyces indirifica (NL. fem. n. *indirifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003323735*. The type genome for the species is the GenBank assembly RS_GCF_003323735.1. The GC content of the type genome is 71.96 % and the genome length is 7.69 Mbp.

Description of *Candidatus* Streptomyces inforentia sp. nov.

Candidatus Streptomyces inforentia (NL. fem. n. *inforentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp007595705*. The type genome for the species is the GenBank assembly RS_GCF_007595705.1. The GC content of the type genome is 72.58 % and the genome length is 8.1 Mbp.

Description of *Candidatus* Streptomyces infunatica sp. nov.

Candidatus Streptomyces infunatica (NL. fem. n. *infunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001748085*. The type genome for the species is the GenBank assembly RS_GCF_001748085.1. The GC content of the type genome is 71.39

% and the genome length is 5.1 Mbp.

Description of *Candidatus* Streptomyces inheritica sp. nov.

Candidatus Streptomyces inheritica (NL. fem. n. *inheritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003403055*. The type genome for the species is the GenBank assembly RS_GCF_003403055.1. The GC content of the type genome is 70.39 % and the genome length is 10.57 Mbp.

Description of *Candidatus* Streptomyces inhonitia sp. nov.

Candidatus Streptomyces inhonitia (NL. fem. n. *inhonitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000721265*. The type genome for the species is the GenBank assembly RS_GCF_000721265.1. The GC content of the type genome is 72.02 % and the genome length is 7.19 Mbp.

Description of *Candidatus* Streptomyces inlepimonia sp. nov.

Candidatus Streptomyces inlepimonia (NL. fem. n. *inlepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp010548375*. The type genome for the species is the GenBank assembly RS_GCF_010548375.1. The GC content of the type genome is 71.01 % and the genome length is 10.94 Mbp.

Description of *Candidatus* Streptomyces inmodibra sp. nov.

Candidatus Streptomyces inmodibra (NL. fem. n. *inmodibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004346385*. The type genome for the species is the GenBank assembly RS_GCF_004346385.1. The GC content of the type genome is 72.79 % and the genome length is 7.84 Mbp.

Description of *Candidatus* Streptomyces innulitura sp. nov.

Candidatus Streptomyces innulitura (NL. fem. n. *innulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000719345*. The type genome for the species is the GenBank assembly RS_GCF_000719345.1. The GC content of the type genome is 72.14 % and the genome length is 7.98 Mbp.

Description of *Candidatus* Streptomyces innumitio sp. nov.

Candidatus Streptomyces innumitio (NL. fem. n. *innumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004795015*. The type genome for the species is the GenBank assembly RS_GCF_004795015.1. The GC content of the type genome is 71.75 % and the genome length is 7.33 Mbp.

Description of *Candidatus* Streptomyces inordiforma sp. nov.

Candidatus Streptomyces inordiforma (NL. fem. n. *inordiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002237655*. The type genome for the species is the GenBank assembly RS_GCF_002237655.1. The GC content of the type genome is 72.33 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Streptomyces inornitura sp. nov.

Candidatus Streptomyces inornitura (NL. fem. n. *inornitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003665095*. The type genome for the species is the GenBank assembly RS_GCF_003665095.1. The GC content of the type genome is 73.38 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Streptomyces inpenetta sp. nov.

Candidatus Streptomyces inpenetta (NL. fem. n. *inpenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001590865*. The type genome for the species is the GenBank assembly RS_GCF_001590865.1. The GC content of the type genome is 71.12 % and the genome length is 7.9 Mbp.

Description of *Candidatus* Streptomyces inregicula sp. nov.

Candidatus Streptomyces inregicula (NL. fem. n. *inregicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp010548465*. The type genome for the species is the GenBank assembly RS_GCF_010548465.1. The GC content of the type genome is 72.74 % and the genome length is 6.84 Mbp.

Description of *Candidatus* Streptomyces inrelivita sp. nov.

Candidatus Streptomyces inrelivita (NL. fem. n. *inrelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008042145*. The type genome for the species is the GenBank assembly RS_GCF_008042145.1. The GC content of the type genome is 72.68 % and the genome length is 7.92 Mbp.

Description of *Candidatus* Streptomyces inresitio sp. nov.

Candidatus Streptomyces inresitio (NL. fem. n. *inresitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004364215*. The type genome for the species is the GenBank assembly RS_GCF_004364215.1. The GC content of the type genome is 70.93 % and the genome length is 10.37 Mbp.

Description of *Candidatus* Streptomyces insubitrix sp. nov.

Candidatus Streptomyces insubitrix (NL. fem. n. *insubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002813405*. The type genome for the species is the GenBank assembly RS_GCF_002813405.1. The GC content of the type genome is 71.01

% and the genome length is 8.72 Mbp.

Description of *Candidatus* Streptomyces insusitia sp. nov.

Candidatus Streptomyces insusitia (NL. fem. n. *insusitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp005795905*. The type genome for the species is the GenBank assembly RS_GCF_005795905.1. The GC content of the type genome is 71.27 % and the genome length is 9.01 Mbp.

Description of *Candidatus* Streptomyces intecugo sp. nov.

Candidatus Streptomyces intecugo (NL. fem. n. *intecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002291145*. The type genome for the species is the GenBank assembly RS_GCF_002291145.1. The GC content of the type genome is 70.27 % and the genome length is 10.36 Mbp.

Description of *Candidatus* Streptomyces invigugo sp. nov.

Candidatus Streptomyces invigugo (NL. fem. n. *invigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp012034205*. The type genome for the species is the GenBank assembly RS_GCF_012034205.1. The GC content of the type genome is 72.23 % and the genome length is 6.52 Mbp.

Description of *Candidatus* Streptomyces irredax sp. nov.

Candidatus Streptomyces irredax (NL. fem. n. *irredax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000720325*. The type genome for the species is the GenBank assembly RS_GCF_000720325.1. The GC content of the type genome is 72.37 % and the genome length is 10.23 Mbp.

Description of *Candidatus* Streptomyces irremax sp. nov.

Candidatus Streptomyces irremax (NL. fem. n. *irremax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008905045*. The type genome for the species is the GenBank assembly RS_GCF_008905045.1. The GC content of the type genome is 70.01 % and the genome length is 11.98 Mbp.

Description of *Candidatus* Streptomyces lacinicella sp. nov.

Candidatus Streptomyces lacinicella (NL. fem. n. *lacinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009857135*. The type genome for the species is the GenBank assembly RS_GCF_009857135.1. The GC content of the type genome is 71.98 % and the genome length is 7.76 Mbp.

Description of *Candidatus* Streptomyces lenociforma sp. nov.

Candidatus Streptomyces lenociforma (NL. fem. n. *lenociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000527195*. The type genome for the species is the GenBank assembly RS_GCF_007828695.1. The GC content of the type genome is 72.03 % and the genome length is 7.8 Mbp.

Description of *Candidatus* Streptomyces lenocitica sp. nov.

Candidatus Streptomyces lenocitica (NL. fem. n. *lenocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001280005*. The type genome for the species is the GenBank assembly RS_GCF_001280005.1. The GC content of the type genome is 70.06 % and the genome length is 9.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces lenunicula sp. nov.

Candidatus Streptomyces lenunicula (NL. fem. n. *lenunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002982015*. The type genome for the species is the GenBank assembly RS_GCF_002982015.1. The GC content of the type genome is 73.67 % and the genome length is 6.41 Mbp.

Description of *Candidatus* Streptomyces lenunigena sp. nov.

Candidatus Streptomyces lenunigena (NL. fem. n. *lenunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009769735*. The type genome for the species is the GenBank assembly RS_GCF_009769735.1. The GC content of the type genome is 69.92 % and the genome length is 10.04 Mbp.

Description of *Candidatus* Streptomyces lucifatio sp. nov.

Candidatus Streptomyces lucifatio (NL. fem. n. *lucifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008042035*. The type genome for the species is the GenBank assembly RS_GCF_008042035.1. The GC content of the type genome is 71.76 % and the genome length is 7.86 Mbp.

Description of *Candidatus* Streptomyces luculitrix sp. nov.

Candidatus Streptomyces luculitrix (NL. fem. n. *luculitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009916105*. The type genome for the species is the GenBank assembly RS_GCF_009916105.1. The GC content of the type genome is 71.81 % and the genome length is 8.59 Mbp.

Description of *Candidatus* Streptomyces lugubastra sp. nov.

Candidatus Streptomyces lugubastra (NL. fem. n. *lugubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004342105*. The type genome for the species is the GenBank assembly RS_GCF_004342105.1. The GC content of the type genome is 71.75

% and the genome length is 8.9 Mbp.

Description of *Candidatus* Streptomyces malifitoga sp. nov.

Candidatus Streptomyces malifitoga (NL. fem. n. *malifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900114955*. The type genome for the species is the GenBank assembly RS_GCF_900114955.1. The GC content of the type genome is 71.38 % and the genome length is 10.0 Mbp.

Description of *Candidatus* Streptomyces maligifica sp. nov.

Candidatus Streptomyces maligifica (NL. fem. n. *maligifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000514715*. The type genome for the species is the GenBank assembly RS_GCF_000514715.1. The GC content of the type genome is 73.79 % and the genome length is 8.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Streptomyces manubibula sp. nov.

Candidatus Streptomyces manubibula (NL. fem. n. *manubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001865245*. The type genome for the species is the GenBank assembly RS_GCF_009025935.1. The GC content of the type genome is 73.51 % and the genome length is 6.9 Mbp.

Description of *Candidatus* Streptomyces melopatica sp. nov.

Candidatus Streptomyces melopatica (NL. fem. n. *melopatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp011766325*. The type genome for the species is the GenBank assembly RS_GCF_011766325.1. The GC content of the type genome is 72.32 % and the genome length is 6.71 Mbp.

Description of *Candidatus* Streptomyces menapessa sp. nov.

Candidatus Streptomyces menapessa (NL. fem. n. *menapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp012034935*. The type genome for the species is the GenBank assembly RS_GCF_012034935.1. The GC content of the type genome is 74.25 % and the genome length is 6.49 Mbp.

Description of *Candidatus* Streptomyces metabimonia sp. nov.

Candidatus Streptomyces metabimonia (NL. fem. n. *metabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000829695*. The type genome for the species is the GenBank assembly RS_GCF_001469455.2. The GC content of the type genome is 71.85 % and the genome length is 7.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Shallow water marine harbor".

Description of *Candidatus* Streptomyces miracigena sp. nov.

Candidatus Streptomyces miracigena (NL. fem. n. *miracigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900290235*. The type genome for the species is the GenBank assembly RS_GCF_900290235.1. The GC content of the type genome is 71.48 % and the genome length is 9.81 Mbp.

Description of *Candidatus* Streptomyces monacax sp. nov.

Candidatus Streptomyces monacax (NL. fem. n. *monacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009827025*. The type genome for the species is the GenBank assembly RS_GCF_009827025.1. The GC content of the type genome is 70.58 % and the genome length is 8.52 Mbp.

Description of *Candidatus* Streptomyces monacetta sp. nov.

Candidatus Streptomyces monacetta (NL. fem. n. *monacetta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009865385*. The type genome for the species is the GenBank assembly RS_GCF_009865385.1. The GC content of the type genome is 72.47 % and the genome length is 8.52 Mbp.

Description of *Candidatus* Streptomyces monacitica sp. nov.

Candidatus Streptomyces monacitica (NL. fem. n. *monacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004348315*. The type genome for the species is the GenBank assembly RS_GCF_004348315.1. The GC content of the type genome is 72.52 % and the genome length is 7.76 Mbp.

Description of *Candidatus* Streptomyces monimicula sp. nov.

Candidatus Streptomyces monimicula (NL. fem. n. *monimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900105415*. The type genome for the species is the GenBank assembly RS_GCF_900105415.1. The GC content of the type genome is 72.15 % and the genome length is 8.88 Mbp.

Description of *Candidatus* Streptomyces monodiforma sp. nov.

Candidatus Streptomyces monodiforma (NL. fem. n. *monodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003369795*. The type genome for the species is the GenBank assembly RS_GCF_003369795.1. The GC content of the type genome is 71.95 % and the genome length is 7.79 Mbp.

Description of *Candidatus* Streptomyces monopigena sp. nov.

Candidatus Streptomyces monopigena (NL. fem. n. *monopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900129855*. The type genome for the species is the GenBank assembly RS_GCF_900129855.1. The GC content of the type genome is 70.67 % and the genome length is 9.38 Mbp.

Description of *Candidatus* Streptomyces monopimonas sp. nov.

Candidatus Streptomyces monopimonas (NL. fem. n. *monopimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000377145*. The type genome for the species is the GenBank assembly RS_GCF_000377145.1. The GC content of the type genome is 73.29 % and the genome length is 6.46 Mbp.

Description of *Candidatus* Streptomyces myalgatio sp. nov.

Candidatus Streptomyces myalgatio (NL. fem. n. *myalgatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001280015*. The type genome for the species is the GenBank assembly RS_GCF_001280015.1. The GC content of the type genome is 71.25 % and the genome length is 9.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces navicicella sp. nov.

Candidatus Streptomyces navicicella (NL. fem. n. *navicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002573955*. The type genome for the species is the GenBank assembly RS_GCF_009735685.1. The GC content of the type genome is 73.07 % and the genome length is 7.65 Mbp.

Description of *Candidatus* Streptomyces navicitura sp. nov.

Candidatus Streptomyces navicitura (NL. fem. n. *navicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001984575*. The type genome for the species is the GenBank assembly RS_GCF_001984575.1. The GC content of the type genome is 72.42

% and the genome length is 7.96 Mbp.

Description of *Candidatus* Streptomyces navificella sp. nov.

Candidatus Streptomyces navificella (NL. fem. n. *navificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000719775*. The type genome for the species is the GenBank assembly RS_GCF_000719775.1. The GC content of the type genome is 71.74 % and the genome length is 8.02 Mbp.

Description of *Candidatus* Streptomyces navifitoga sp. nov.

Candidatus Streptomyces navifitoga (NL. fem. n. *navifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003751445*. The type genome for the species is the GenBank assembly RS_GCF_003751445.1. The GC content of the type genome is 71.27 % and the genome length is 8.84 Mbp.

Description of *Candidatus* Streptomyces navifitura sp. nov.

Candidatus Streptomyces navifitura (NL. fem. n. *navifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013401435*. The type genome for the species is the GenBank assembly RS_GCF_013401435.1. The GC content of the type genome is 72.64 % and the genome length is 8.16 Mbp.

Description of *Candidatus* Streptomyces nefaniforma sp. nov.

Candidatus Streptomyces nefaniforma (NL. fem. n. *nefaniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp007097205*. The type genome for the species is the GenBank assembly RS_GCF_013618515.1. The GC content of the type genome is 72.04 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Streptomyces nefaritio sp. nov.

Candidatus Streptomyces nefaritio (NL. fem. n. *nefaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002920575*. The type genome for the species is the GenBank assembly RS_GCF_002920575.1. The GC content of the type genome is 72.52 % and the genome length is 8.21 Mbp.

Description of *Candidatus* Streptomyces negoticella sp. nov.

Candidatus Streptomyces negoticella (NL. fem. n. *negoticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002920635*. The type genome for the species is the GenBank assembly RS_GCF_002920635.1. The GC content of the type genome is 70.86 % and the genome length is 8.51 Mbp.

Description of *Candidatus* Streptomyces nicomicula sp. nov.

Candidatus Streptomyces nicomicula (NL. fem. n. *nicomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003626575*. The type genome for the species is the GenBank assembly RS_GCF_003626575.1. The GC content of the type genome is 73.2 % and the genome length is 7.57 Mbp.

Description of *Candidatus* Streptomyces nicotitoga sp. nov.

Candidatus Streptomyces nicotitoga (NL. fem. n. *nicotitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003261055*. The type genome for the species is the GenBank assembly RS_GCF_001279985.1. The GC content of the type genome is 70.92 % and the genome length is 10.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces notabitoga sp. nov.

Candidatus Streptomyces notabitoga (NL. fem. n. *notabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001298555*. The type genome for the species is the GenBank assembly RS_GCF_001298555.1. The GC content of the type genome is 71.88 % and the genome length is 9.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Endosphere of plant Populus trichocarpa BESC137".

Description of *Candidatus* Streptomyces notaciforma sp. nov.

Candidatus Streptomyces notaciforma (NL. fem. n. *notaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003846185*. The type genome for the species is the GenBank assembly RS_GCF_003846185.1. The GC content of the type genome is 72.15 % and the genome length is 6.99 Mbp.

Description of *Candidatus* Streptomyces novilitio sp. nov.

Candidatus Streptomyces novilitio (NL. fem. n. *novilitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003634225*. The type genome for the species is the GenBank assembly RS_GCF_003634225.1. The GC content of the type genome is 70.97 % and the genome length is 10.35 Mbp.

Description of *Candidatus* Streptomyces nugacimonas sp. nov.

Candidatus Streptomyces nugacimonas (NL. fem. n. *nugacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003259365*. The type genome for the species is the GenBank assembly RS_GCF_003259365.1. The GC content of the type genome is 71.34 % and the genome length is 8.96 Mbp.

Description of *Candidatus* Streptomyces nugivitio sp. nov.

Candidatus Streptomyces nugivitio (NL. fem. n. *nugivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Streptomyces sp003324565*. The type genome for the species is the GenBank assembly RS_GCF_003324565.1. The GC content of the type genome is 71.44 % and the genome length is 8.58 Mbp.

Description of *Candidatus* Streptomyces nutabifica sp. nov.

Candidatus Streptomyces nutabifica (NL. fem. n. *nutabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002224125*. The type genome for the species is the GenBank assembly RS_GCF_002224125.1. The GC content of the type genome is 70.85 % and the genome length is 12.15 Mbp.

Description of *Candidatus* Streptomyces nutamicella sp. nov.

Candidatus Streptomyces nutamicella (NL. fem. n. *nutamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014257025*. The type genome for the species is the GenBank assembly RS_GCF_014257025.1. The GC content of the type genome is 70.19 % and the genome length is 9.4 Mbp.

Description of *Candidatus* Streptomyces oblocatio sp. nov.

Candidatus Streptomyces oblocatio (NL. fem. n. *oblocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp012034385*. The type genome for the species is the GenBank assembly RS_GCF_012034385.1. The GC content of the type genome is 73.34 % and the genome length is 5.71 Mbp.

Description of *Candidatus* Streptomyces obmutitica sp. nov.

Candidatus Streptomyces obmutitica (NL. fem. n. *obmutitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003945545*. The type genome for the species is the GenBank assembly RS_GCF_003945545.1. The GC content of the type genome is 71.32 % and the genome length is 8.27 Mbp.

Description of *Candidatus* Streptomyces obsurousia sp. nov.

Candidatus Streptomyces obsurousia (NL. fem. n. *obsurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp010548145*. The type genome for the species is the GenBank assembly RS_GCF_010548145.1. The GC content of the type genome is 70.72 % and the genome length is 7.77 Mbp.

Description of *Candidatus* Streptomyces occucivita sp. nov.

Candidatus Streptomyces occucivita (NL. fem. n. *occucivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001687325*. The type genome for the species is the GenBank assembly RS_GCF_001687325.1. The GC content of the type genome is 71.5 % and the genome length is 8.16 Mbp.

Description of *Candidatus* Streptomyces onocribula sp. nov.

Candidatus Streptomyces onocribula (NL. fem. n. *onocribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014493765*. The type genome for the species is the GenBank assembly RS_GCF_014493765.1. The GC content of the type genome is 70.22 % and the genome length is 10.16 Mbp.

Description of *Candidatus* Streptomyces opercastra sp. nov.

Candidatus Streptomyces opercastra (NL. fem. n. *opercastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013387495*. The type genome for the species is the GenBank assembly RS_GCF_013387495.1. The GC content of the type genome is 71.26 % and the genome length is 7.7 Mbp.

Description of *Candidatus* Streptomyces opporessa sp. nov.

Candidatus Streptomyces opporessa (NL. fem. n. *opporessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004005495*. The type genome for the species is the GenBank assembly RS_GCF_004005495.1. The GC content of the type genome is 70.74 % and the genome length is 8.93 Mbp.

Description of *Candidatus* Streptomyces opuscetta sp. nov.

Candidatus Streptomyces opuscetta (NL. fem. n. *opuscetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013362785*. The type genome for the species is the GenBank assembly GCA_013362785.1. The GC content of the type genome is 70.74 % and the genome length is 8.02 Mbp.

Description of *Candidatus* Streptomyces opuscitrix sp. nov.

Candidatus Streptomyces opuscitrix (NL. fem. n. *opuscitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000426165*. The type genome for the species is the GenBank assembly RS_GCF_000426165.1. The GC content of the type genome is 70.07 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Streptomyces orgetivita sp. nov.

Candidatus Streptomyces orgetivita (NL. fem. n. *orgetivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000719335*. The type genome for the species is the GenBank assembly RS_GCF_000719335.1. The GC content of the type genome is 73.51 % and the genome length is 8.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces ossifastra sp. nov.

Candidatus Streptomyces ossifastra (NL. fem. n. *ossifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp011044975*. The type genome for the species is the GenBank assembly RS_GCF_011044975.1. The GC content of the type genome is 71.49 % and the genome length is 9.03 Mbp.

Description of *Candidatus* Streptomyces papilicella sp. nov.

Candidatus Streptomyces papilicella (NL. fem. n. *papilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000373645*. The type genome for the species is the GenBank assembly RS_GCF_009865325.1. The GC content of the type genome is 71.73 % and the genome length is 7.95 Mbp.

Description of *Candidatus* Streptomyces paracetta sp. nov.

Candidatus Streptomyces paracetta (NL. fem. n. *paracetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002300165*. The type genome for the species is the GenBank assembly RS_GCF_002300165.1. The GC content of the type genome is 71.65 % and the genome length is 7.96 Mbp.

Description of *Candidatus* Streptomyces parocastra sp. nov.

Candidatus Streptomyces parocastra (NL. fem. n. *parocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014596525*. The type genome for the species is the GenBank assembly RS_GCF_014596525.1. The GC content of the type genome is 72.31 % and the genome length is 6.92 Mbp.

Description of *Candidatus* Streptomyces parocitura sp. nov.

Candidatus Streptomyces parocitura (NL. fem. n. *parocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008042115*. The type genome for the species is the GenBank assembly RS_GCF_008042115.1. The GC content of the type genome is 71.66 % and the genome length is 9.85 Mbp.

Description of *Candidatus* Streptomyces paropentia sp. nov.

Candidatus Streptomyces paropentia (NL. fem. n. *paropentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905735*. The type genome for the species is the GenBank assembly RS_GCF_001905705.1. The GC content of the type genome is 71.85 % and the genome length is 7.41 Mbp.

Description of *Candidatus* Streptomyces pedepigena sp. nov.

Candidatus Streptomyces pedepigena (NL. fem. n. *pedepigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000717875*. The type genome for the species is the GenBank assembly RS_GCF_000722015.1. The GC content of the type genome is 71.04 % and the genome length is 8.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces penicedo sp. nov.

Candidatus Streptomyces penicedo (NL. fem. n. *penicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002803075*. The type genome for the species is the GenBank assembly RS_GCF_002803075.1. The GC content of the type genome is 71.51 % and the genome length is 7.88 Mbp.

Description of *Candidatus* Streptomyces penicigena sp. nov.

Candidatus Streptomyces penicigena (NL. fem. n. *penicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009863025*. The type genome for the species is the GenBank assembly RS_GCF_009863025.1. The GC content of the type genome is 71.66 % and the genome length is 6.62 Mbp.

Description of *Candidatus* Streptomyces penurisca sp. nov.

Candidatus Streptomyces penurisca (NL. fem. n. *penurisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002080455*. The type genome for the species is the GenBank assembly RS_GCF_002028385.1. The GC content of the type genome is 71.5 % and the genome length is 8.99 Mbp.

Description of *Candidatus* Streptomyces perexisca sp. nov.

Candidatus Streptomyces perexisca (NL. fem. n. *perexisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003386135*. The type genome for the species is the GenBank assembly RS_GCF_014203895.1. The GC content of the type genome is 72.09 % and the genome length is 9.23 Mbp.

Description of *Candidatus* Streptomyces pinacastra sp. nov.

Candidatus Streptomyces pinacastra (NL. fem. n. *pinacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000158895*. The type genome for the species is the GenBank assembly RS_GCF_000158895.1. The GC content of the type genome is 72.61 % and the genome length is 8.46 Mbp.

Description of *Candidatus* Streptomyces pinacibra sp. nov.

Candidatus Streptomyces pinacibra (NL. fem. n. *pinacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002803065*. The type genome for the species is the GenBank assembly RS_GCF_002803065.1. The GC content of the type genome is 70.36 % and the genome length is 10.06 Mbp.

Description of *Candidatus* Streptomyces pocilimonia sp. nov.

Candidatus Streptomyces pocilimonia (NL. fem. n. *pocilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003259585*. The type genome for the species is the GenBank assembly RS_GCF_003259585.1. The GC content of the type genome is 72.44 % and the genome length is 8.03 Mbp.

Description of *Candidatus* Streptomyces proclicula sp. nov.

Candidatus Streptomyces proclicula (NL. fem. n. *proclicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008386495*. The type genome for the species is the GenBank assembly RS_GCF_008386495.1. The GC content of the type genome is 69.97 % and the genome length is 10.01 Mbp.

Description of *Candidatus* Streptomyces proclitas sp. nov.

Candidatus Streptomyces proclitas (NL. fem. n. *proclitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013362995*. The type genome for the species is the GenBank assembly RS_GCF_013362995.1. The GC content of the type genome is 72.31 % and the genome length is 6.91 Mbp.

Description of *Candidatus* Streptomyces propratio sp. nov.

Candidatus Streptomyces propratio (NL. fem. n. *propratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001428885*. The type genome for the species is the GenBank assembly RS_GCF_001428885.1. The GC content of the type genome is 71.65 % and the genome length is 9.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Streptomyces proslessa sp. nov.

Candidatus Streptomyces proslessa (NL. fem. n. *proslessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905665*. The type genome for the species is the GenBank assembly RS_GCF_001905665.1. The GC content of the type genome is 72.3

% and the genome length is 7.71 Mbp.

Description of *Candidatus* Streptomyces pudibicula sp. nov.

Candidatus Streptomyces pudibicula (NL. fem. n. *pudibicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp010550605*. The type genome for the species is the GenBank assembly RS_GCF_010550605.1. The GC content of the type genome is 71.89 % and the genome length is 7.66 Mbp.

Description of *Candidatus* Streptomyces rareficula sp. nov.

Candidatus Streptomyces rareficula (NL. fem. n. *rareficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003248315*. The type genome for the species is the GenBank assembly GCA_003248315.1. The GC content of the type genome is 73.32 % and the genome length is 7.48 Mbp.

Description of *Candidatus* Streptomyces recomivita sp. nov.

Candidatus Streptomyces recomivita (NL. fem. n. *recomivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000719475*. The type genome for the species is the GenBank assembly RS_GCF_000719475.1. The GC content of the type genome is 72.9 % and the genome length is 7.06 Mbp.

Description of *Candidatus* Streptomyces recoribra sp. nov.

Candidatus Streptomyces recoribra (NL. fem. n. *recoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001280125*. The type genome for the species is the GenBank assembly RS_GCF_001280095.1. The GC content of the type genome is 73.12 % and the genome length is 7.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "assoc. with Toninia coeruleonigricans".

Description of *Candidatus* Streptomyces recucax sp. nov.

Candidatus Streptomyces recucax (NL. fem. n. *recucax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000974485*. The type genome for the species is the GenBank assembly RS_GCF_000974485.1. The GC content of the type genome is 71.74 % and the genome length is 7.74 Mbp.

Description of *Candidatus* Streptomyces reduviforma sp. nov.

Candidatus Streptomyces reduviforma (NL. fem. n. *reduviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000612545*. The type genome for the species is the GenBank assembly RS_GCF_000612545.1. The GC content of the type genome is 72.15 % and the genome length is 7.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces refacetta sp. nov.

Candidatus Streptomyces refacetta (NL. fem. n. *refacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003311645*. The type genome for the species is the GenBank assembly RS_GCF_003311645.1. The GC content of the type genome is 72.91 % and the genome length is 6.92 Mbp.

Description of *Candidatus* Streptomyces refunivita sp. nov.

Candidatus Streptomyces refunivita (NL. fem. n. *refunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008042075*. The type genome for the species is the GenBank assembly RS_GCF_008042075.1. The GC content of the type genome is 70.71 % and the genome length is 9.9 Mbp.

Description of *Candidatus* Streptomyces relecago sp. nov.

Candidatus Streptomyces relecago (NL. fem. n. *relecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003143855*. The type genome for the species is the GenBank assembly RS_GCF_003143855.1. The GC content of the type genome is 70.83 % and the genome length is 9.43 Mbp.

Description of *Candidatus* Streptomyces remulicella sp. nov.

Candidatus Streptomyces remulicella (NL. fem. n. *remulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004363835*. The type genome for the species is the GenBank assembly RS_GCF_004363835.1. The GC content of the type genome is 71.44 % and the genome length is 10.64 Mbp.

Description of *Candidatus* Streptomyces remulitura sp. nov.

Candidatus Streptomyces remulitura (NL. fem. n. *remulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003116725*. The type genome for the species is the GenBank assembly RS_GCF_003610995.1. The GC content of the type genome is 71.7 % and the genome length is 7.24 Mbp.

Description of *Candidatus* Streptomyces resacousia sp. nov.

Candidatus Streptomyces resacousia (NL. fem. n. *resacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp010384365*. The type genome for the species is the GenBank assembly RS_GCF_008039505.1. The GC content of the type genome is 70.68 % and the genome length is 8.47 Mbp.

Description of *Candidatus* Streptomyces resupitoga sp. nov.

Candidatus Streptomyces resupitoga (NL. fem. n. *resupitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001941845*. The type genome for the species is the GenBank assembly RS_GCF_000956015.1. The GC content of the type genome is 72.48

% and the genome length is 7.08 Mbp.

Description of *Candidatus* Streptomyces retunisca sp. nov.

Candidatus Streptomyces retunisca (NL. fem. n. *retunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000720765*. The type genome for the species is the GenBank assembly RS_GCF_000720765.1. The GC content of the type genome is 70.25 % and the genome length is 10.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces ridibifica sp. nov.

Candidatus Streptomyces ridibifica (NL. fem. n. *ridibifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014534645*. The type genome for the species is the GenBank assembly RS_GCF_014534645.1. The GC content of the type genome is 72.15 % and the genome length is 8.83 Mbp.

Description of *Candidatus* Streptomyces rosaritia sp. nov.

Candidatus Streptomyces rosaritia (NL. fem. n. *rosaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000720135*. The type genome for the species is the GenBank assembly RS_GCF_001279545.1. The GC content of the type genome is 72.43 % and the genome length is 8.59 Mbp.

Description of *Candidatus* Streptomyces rubicetta sp. nov.

Candidatus Streptomyces rubicetta (NL. fem. n. *rubicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002128305*. The type genome for the species is the GenBank assembly RS_GCF_002128305.1. The GC content of the type genome is 73.52 % and the genome length is 6.29 Mbp.

Description of *Candidatus* Streptomyces rumificella sp. nov.

Candidatus Streptomyces rumificella (NL. fem. n. *rumificella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp006540305*. The type genome for the species is the GenBank assembly RS_GCF_006540305.1. The GC content of the type genome is 71.3 % and the genome length is 8.73 Mbp.

Description of *Candidatus* Streptomyces sacomibra sp. nov.

Candidatus Streptomyces sacomibra (NL. fem. n. *sacomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900105245*. The type genome for the species is the GenBank assembly RS_GCF_900105245.1. The GC content of the type genome is 71.92 % and the genome length is 8.85 Mbp.

Description of *Candidatus* Streptomyces sacopimonia sp. nov.

Candidatus Streptomyces sacopimonia (NL. fem. n. *sacopimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000718775*. The type genome for the species is the GenBank assembly RS_GCF_000718775.1. The GC content of the type genome is 72.82 % and the genome length is 8.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces salubentia sp. nov.

Candidatus Streptomyces salubentia (NL. fem. n. *salubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008369065*. The type genome for the species is the GenBank assembly RS_GCF_008369065.1. The GC content of the type genome is 72.1 % and the genome length is 8.85 Mbp.

Description of *Candidatus* Streptomyces satacedo sp. nov.

Candidatus Streptomyces satacedo (NL. fem. n. *satacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000818175*. The type genome for the species is the GenBank assembly RS_GCF_000818175.1. The GC content of the type genome is 70.02 % and the genome length is 9.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "vicinity of mycorrhizal roots of Norway spruce".

Description of *Candidatus* Streptomyces scombentia sp. nov.

Candidatus Streptomyces scombentia (NL. fem. n. *scombentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004346005*. The type genome for the species is the GenBank assembly RS_GCF_004346005.1. The GC content of the type genome is 71.62 % and the genome length is 9.29 Mbp.

Description of *Candidatus* Streptomyces semibatica sp. nov.

Candidatus Streptomyces semibatica (NL. fem. n. *semibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp007050945*. The type genome for the species is the GenBank assembly RS_GCF_007050945.1. The GC content of the type genome is 70.01 % and the genome length is 11.38 Mbp.

Description of *Candidatus* Streptomyces senacitica sp. nov.

Candidatus Streptomyces senacitica (NL. fem. n. *senacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp011694815*. The type genome for the species is the GenBank assembly RS_GCF_011694815.1. The GC content of the type genome is 72.1 % and the genome length is 7.72 Mbp.

Description of *Candidatus* Streptomyces sicaretta sp. nov.

Candidatus Streptomyces sicaretta (NL. fem. n. *sicaretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Streptomyces sp004353505*. The type genome for the species is the GenBank assembly RS_GCF_004353505.1. The GC content of the type genome is 72.73 % and the genome length is 7.14 Mbp.

Description of *Candidatus* Streptomyces siminilega sp. nov.

Candidatus Streptomyces siminilega (NL. fem. n. *siminilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000177195*. The type genome for the species is the GenBank assembly RS_GCF_900095575.1. The GC content of the type genome is 71.8 % and the genome length is 7.35 Mbp.

Description of *Candidatus* Streptomyces solacedo sp. nov.

Candidatus Streptomyces solacedo (NL. fem. n. *solacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp009862265*. The type genome for the species is the GenBank assembly RS_GCF_009862265.1. The GC content of the type genome is 73.9 % and the genome length is 7.78 Mbp.

Description of *Candidatus* Streptomyces sonivimonas sp. nov.

Candidatus Streptomyces sonivimonas (NL. fem. n. *sonivimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003046555*. The type genome for the species is the GenBank assembly RS_GCF_003046555.1. The GC content of the type genome is 70.74 % and the genome length is 8.56 Mbp.

Description of *Candidatus* Streptomyces subabastra sp. nov.

Candidatus Streptomyces subabastra (NL. fem. n. *subabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001509485*. The type genome for the species is the GenBank assembly RS_GCF_001509485.1. The GC content of the type genome is 73.3 % and the genome length is 7.52 Mbp.

Description of *Candidatus* Streptomyces subinicella sp. nov.

Candidatus Streptomyces subinicella (NL. fem. n. *subinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001484565*. The type genome for the species is the GenBank assembly RS_GCF_001484565.1. The GC content of the type genome is 71.53 % and the genome length is 10.19 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Streptomyces subodentia sp. nov.

Candidatus Streptomyces subodentia (NL. fem. n. *subodentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002754715*. The type genome for the species is the GenBank assembly RS_GCF_002754715.1. The GC content of the type genome is 70.21 % and the genome length is 10.93 Mbp.

Description of *Candidatus* Streptomyces subucicula sp. nov.

Candidatus Streptomyces subucicula (NL. fem. n. *subucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp012273515*. The type genome for the species is the GenBank assembly RS_GCF_012273515.1. The GC content of the type genome is 70.87 % and the genome length is 9.86 Mbp.

Description of *Candidatus* Streptomyces sugilicula sp. nov.

Candidatus Streptomyces sugilicula (NL. fem. n. *sugilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900105755*. The type genome for the species is the GenBank assembly RS_GCF_900105755.1. The GC content of the type genome is 71.47 % and the genome length is 9.46 Mbp.

Description of *Candidatus* Streptomyces supelicula sp. nov.

Candidatus Streptomyces supelicula (NL. fem. n. *supelicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp003248355*. The type genome for the species is the GenBank assembly RS_GCF_003248355.1. The GC content of the type genome is 71.56 % and the genome length is 7.65 Mbp.

Description of *Candidatus* Streptomyces tabifatio sp. nov.

Candidatus Streptomyces tabifatio (NL. fem. n. *tabifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013870515*. The type genome for the species is the GenBank assembly RS_GCF_013870515.1. The GC content of the type genome is 69.81 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Streptomyces tegimetta sp. nov.

Candidatus Streptomyces tegimetta (NL. fem. n. *tegimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002754675*. The type genome for the species is the GenBank assembly RS_GCF_002754675.1. The GC content of the type genome is 71.15 % and the genome length is 7.97 Mbp.

Description of *Candidatus* Streptomyces terebicella sp. nov.

Candidatus Streptomyces terebicella (NL. fem. n. *terebicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001298545*. The type genome for the species is the GenBank assembly RS_GCF_001426425.1. The GC content of the type genome is 71.51 % and the genome length is 9.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Streptomyces tomogiforma sp. nov.

Candidatus Streptomyces tomogiforma (NL. fem. n. *tomogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008042275*. The type genome for the species is the GenBank assembly RS_GCF_008042275.1. The GC content of the type genome is 71.0 % and the genome length is 9.11 Mbp.

Description of *Candidatus* Streptomyces tumefifica sp. nov.

Candidatus Streptomyces tumefifica (NL. fem. n. *tumefifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905885*. The type genome for the species is the GenBank assembly RS_GCF_002099185.1. The GC content of the type genome is 71.47 % and the genome length is 8.52 Mbp.

Description of *Candidatus* Streptomyces turilessa sp. nov.

Candidatus Streptomyces turilessa (NL. fem. n. *turilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001417775*. The type genome for the species is the GenBank assembly RS_GCF_001417775.1. The GC content of the type genome is 70.89 % and the genome length is 8.41 Mbp.

Description of *Candidatus* Streptomyces vanititura sp. nov.

Candidatus Streptomyces vanititura (NL. fem. n. *vanititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp013046785*. The type genome for the species is the GenBank assembly RS_GCF_013046785.1. The GC content of the type genome is 72.45 % and the genome length is 7.82 Mbp.

Description of *Candidatus* Streptomyces vavasitudo sp. nov.

Candidatus Streptomyces vavasitudo (NL. fem. n. *vavasitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000424765*. The type genome for the species is the GenBank assembly RS_GCF_001751375.1. The GC content of the type genome is 72.84

% and the genome length is 6.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sediment".

Description of *Candidatus* Streptomyces vecoricella sp. nov.

Candidatus Streptomyces vecoricella (NL. fem. n. *vecoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000411315*. The type genome for the species is the GenBank assembly RS_GCF_000411315.1. The GC content of the type genome is 70.72 % and the genome length is 9.36 Mbp.

Description of *Candidatus* Streptomyces vehicibula sp. nov.

Candidatus Streptomyces vehicibula (NL. fem. n. *vehicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014596915*. The type genome for the species is the GenBank assembly RS_GCF_014596915.1. The GC content of the type genome is 71.43 % and the genome length is 8.86 Mbp.

Description of *Candidatus* Streptomyces vehicivita sp. nov.

Candidatus Streptomyces vehicivita (NL. fem. n. *vehicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000424845*. The type genome for the species is the GenBank assembly RS_GCF_000424845.1. The GC content of the type genome is 72.52 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Streptomyces velificula sp. nov.

Candidatus Streptomyces velificula (NL. fem. n. *velificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002910905*. The type genome for the species is the GenBank assembly RS_GCF_002910905.1. The GC content of the type genome is 71.13 % and the genome length is 8.0 Mbp.

Description of *Candidatus* Streptomyces venabago sp. nov.

Candidatus Streptomyces venabago (NL. fem. n. *venabago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900091845*. The type genome for the species is the GenBank assembly RS_GCF_009863095.1. The GC content of the type genome is 73.0 % and the genome length is 8.99 Mbp.

Description of *Candidatus* Streptomyces venabitio sp. nov.

Candidatus Streptomyces venabitio (NL. fem. n. *venabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001905795*. The type genome for the species is the GenBank assembly RS_GCF_001905795.1. The GC content of the type genome is 71.22 % and the genome length is 8.49 Mbp.

Description of *Candidatus* Streptomyces viginedo sp. nov.

Candidatus Streptomyces viginedo (NL. fem. n. *viginedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001418285*. The type genome for the species is the GenBank assembly RS_GCF_004217425.1. The GC content of the type genome is 70.56 % and the genome length is 6.75 Mbp.

Description of *Candidatus* Streptomyces vilitimonas sp. nov.

Candidatus Streptomyces vilitimonas (NL. fem. n. *vilitimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp008042125*. The type genome for the species is the GenBank assembly RS_GCF_008042125.1. The GC content of the type genome is 72.54 % and the genome length is 7.79 Mbp.

Description of *Candidatus* Streptomyces vinacicula sp. nov.

Candidatus Streptomyces vinacicula (NL. fem. n. *vinacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001654495*. The type genome for the species is the GenBank assembly RS_GCF_001654495.1. The GC content of the type genome is 73.15 % and the genome length is 7.47 Mbp.

Description of *Candidatus* Streptomyces viripilenta sp. nov.

Candidatus Streptomyces viripilenta (NL. fem. n. *viripilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004193175*. The type genome for the species is the GenBank assembly RS_GCF_004193175.1. The GC content of the type genome is 73.44 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Streptomyces visocibula sp. nov.

Candidatus Streptomyces visocibula (NL. fem. n. *visocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp004684775*. The type genome for the species is the GenBank assembly RS_GCF_004684775.1. The GC content of the type genome is 70.21 % and the genome length is 9.11 Mbp.

Description of *Candidatus* Streptomyces vitabitura sp. nov.

Candidatus Streptomyces vitabitura (NL. fem. n. *vitabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000725625*. The type genome for the species is the GenBank assembly RS_GCF_000716615.1. The GC content of the type genome is 72.32 % and the genome length is 8.22 Mbp.

Description of *Candidatus* Streptomyces vitifetta sp. nov.

Candidatus Streptomyces vitifetta (NL. fem. n. *vitifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000772045*. The type genome for the species is the GenBank assembly RS_GCF_011007525.1. The GC content of the type genome is 72.11

% and the genome length is 7.87 Mbp.

Description of *Candidatus* Streptomyces vitigicella sp. nov.

Candidatus Streptomyces vitigicella (NL. fem. n. *vitigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp014596475*. The type genome for the species is the GenBank assembly RS_GCF_014596475.1. The GC content of the type genome is 70.64 % and the genome length is 8.8 Mbp.

Description of *Candidatus* Streptomyces vitupitica sp. nov.

Candidatus Streptomyces vitupitica (NL. fem. n. *vitupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp900105515*. The type genome for the species is the GenBank assembly RS_GCF_004345865.1. The GC content of the type genome is 71.73 % and the genome length is 7.76 Mbp.

Description of *Candidatus* Streptomyces vocamitas sp. nov.

Candidatus Streptomyces vocamitas (NL. fem. n. *vocamitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp001298575*. The type genome for the species is the GenBank assembly RS_GCF_001298575.1. The GC content of the type genome is 71.35 % and the genome length is 10.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Endosphere of plant Populus trichocarpa".

Description of *Candidatus* Streptomyces volubentia sp. nov.

Candidatus Streptomyces volubentia (NL. fem. n. *volubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp000373565*. The type genome for the species is the GenBank assembly RS_GCF_000373565.1. The GC content of the type genome is 71.15 % and the genome length is 9.16 Mbp.

Description of *Candidatus* Streptomyces xeropugo sp. nov.

Candidatus Streptomyces xeropugo (NL. fem. n. *xeropugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces sp002078175*. The type genome for the species is the GenBank assembly RS_GCF_010548515.1. The GC content of the type genome is 71.32 % and the genome length is 9.28 Mbp.

Description of *Candidatus* Streptomyces advoritica sp. nov.

Candidatus Streptomyces advoritica (NL. fem. n. *advoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_B sp005047355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005047355.1. The GC content of the type genome is 69.48 % and the genome length is 11.53 Mbp.

Description of *Candidatus* Streptomyces appicedo sp. nov.

Candidatus Streptomyces appicedo (NL. fem. n. *appicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_B sp000701325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000701325.1. The GC content of the type genome is 72.3 % and the genome length is 8.02 Mbp.

Description of *Candidatus* Streptomyces casigigena sp. nov.

Candidatus Streptomyces casigigena (NL. fem. n. *casigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_B sp900091855*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_009863045.1. The GC content of the type genome is 71.9 % and the genome length is 8.0 Mbp.

Description of *Candidatus* Streptomyces decatessa sp. nov.

Candidatus Streptomyces decatessa (NL. fem. n. *decatessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_B sp000721495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000721495.1. The GC content of the type genome is 73.24 % and the genome length is 8.8 Mbp.

Description of *Candidatus* Streptomyces deforisca sp. nov.

Candidatus Streptomyces deforisca (NL. fem. n. *deforisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_B sp003999195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003999195.1. The GC content of the type genome is 69.95 % and the genome length is 9.4 Mbp.

Description of *Candidatus* Streptomyces nubifitudo sp. nov.

Candidatus Streptomyces nubifitudo (NL. fem. n. *nubifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_B sp012034175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012034175.1. The GC content of the type genome is 73.57 % and the genome length is 8.25 Mbp.

Description of *Candidatus* Streptomyces ruricibra sp. nov.

Candidatus Streptomyces ruricibra (NL. fem. n. *ruricibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_B sp005860785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005860785.2. The GC content of the type genome is 70.43 % and the genome length is 9.56 Mbp.

Description of *Candidatus* Streptomyces vigenicula sp. nov.

Candidatus Streptomyces vigenicula (NL. fem. n. *vigenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_B sp009783685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009783685.1. The GC content of the type genome is 73.58 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Streptomyces vitabigena sp. nov.

Candidatus Streptomyces vitabigena (NL. fem. n. *vitabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_B sp014596445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014596445.1. The GC content of the type genome is 71.35 % and the genome length is 8.48 Mbp.

Description of *Candidatus* Streptomyces viragimonas sp. nov.

Candidatus Streptomyces viragimonas (NL. fem. n. *viragimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Streptomyces_C sp003144095*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003144095.1. The GC content of the type genome is 72.67 % and the genome length is 6.33 Mbp.

Description of *Candidatus* Subabana manomilega sp. nov.

Candidatus Subabana manomilega (NL. fem. n. *manomilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3907 sp002391545*. The type genome for the species is the GenBank assembly GCA_012842775.1. The GC content of the type genome is 45.18 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Subabana gen. nov.

Candidatus Subabana (NL. fem. n. *Subabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3907*. The type species for the genus is *Candidatus* Subabana manomilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicatosaceae.

Description of *Candidatus* Subabaria exheratica sp. nov.

Candidatus Subabaria exheratica (NL. fem. n. *exheratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-2-50-48-13 sp002783265*. The type genome for the species is the GenBank assembly GCA_002783265.1. The GC content of the type genome is 48.28 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Subabaria gen. nov.

Candidatus Subabaria (NL. fem. n. *Subabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-2-50-48-13*. The type species for the genus is *Candidatus* Subabaria exheratica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *1-14-2-50-48-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabariaceae.

Description of *Candidatus* Subabariaceae fam. nov.

Candidatus Subabariaceae (NL. fem. n. *Subabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-2-50-48-13.* The type genus for the taxon is *Candidatus* Subabaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *1-14-2-50-48-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Subabariales.

Description of *Candidatus* Subabariales ord. nov.

Candidatus Subabariales (NL. fem. n. *Subabariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *1-14-2-50-48-13.* The type genus for the taxon is *Candidatus* Subabaria .

According to the GTDB R06-RS202, this order belongs to the class *Gracilibacteria*.

Description of *Candidatus* Subabella adessousia sp. nov.

Candidatus Subabella adessousia (NL. fem. n. *adessousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12090 sp003510525*. The type genome for the species is the GenBank assembly GCA_003510525.1. The GC content of the type genome is 44.67 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Subabella gen. nov.

Candidatus Subabella (NL. fem. n. *Subabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12090*. The type species for the genus is *Candidatus* Subabella adessousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12090*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabellaceae.

Description of *Candidatus* Subabellaceae fam. nov.

Candidatus Subabellaceae (NL. fem. n. *Subabellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12090.* The type genus for the taxon is *Candidatus* Subabella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GIF10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Decamellales.

Description of *Candidatus* Subabia antipessa sp. nov.

Candidatus Subabia antipessa (NL. fem. n. *antipessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J089 sp003695105*. The type genome for the species is the GenBank assembly GCA_003695105.1. The GC content of the type genome is 55.74 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Subabia gen. nov.

Candidatus Subabia (NL. fem. n. *Subabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J089*. The type species for the genus is *Candidatus* Subabia antipessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabiaceae.

Description of *Candidatus* Subabiaceae fam. nov.

Candidatus Subabiaceae (NL. fem. n. *Subabiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J089.* The type genus for the taxon is *Candidatus* Subabia .

According to GTDB R06-RS202, this family belongs to the order *Marinisomatales*.

Description of *Candidatus* Subabia eccisifica sp. nov.

Candidatus Subabia eccisifica (NL. fem. n. *eccisifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J089 sp013152835*. The type genome for the species is the GenBank assembly GCA_013152835.1. The GC content of the type genome is 48.08 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Subabida nicomitoga sp. nov.

Candidatus Subabida nicomitoga (NL. fem. n. *nicomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-34-12 sp002789465*. The type genome for the species is the GenBank assembly GCA_002789465.1. The GC content of the type genome is 33.62 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Subabida gen. nov.

Candidatus Subabida (NL. fem. n. *Subabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-34-12*. The type species for the genus is *Candidatus* Subabida nicomitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Subabula exsusimonia sp. nov.

Candidatus Subabula exsusimonia (NL. fem. n. *exsusimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SG-bin7 sp002083485*. The type genome for the species is the GenBank assembly GCA_002083485.1. The GC content of the type genome is 41.92 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Subabula gen. nov.

Candidatus Subabula (NL. fem. n. *Subabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SG-bin7*. The type species for the genus is *Candidatus* Subabula exsusimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG-bin7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabulaceae.

Description of *Candidatus* Subabulaceae fam. nov.

Candidatus Subabulaceae (NL. fem. n. *Subabulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SG-bin7.* The type genus for the taxon is *Candidatus* Subabula .

According to GTDB R06-RS202, this family belongs to the order *Bdellovibrionales*.

Description of *Candidatus* Subacana abambetta sp. nov.

Candidatus Subacana abambetta (NL. fem. n. *abambetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACABE01 sp903899825*. The type genome for the species is the GenBank assembly GCA_903899825.1. The GC content of the type genome is 33.84 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Subacana gen. nov.

Candidatus Subacana (NL. fem. n. *Subacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACABE01*. The type species for the genus is *Candidatus* Subacana abambetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACABE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subacanaceae.

Description of *Candidatus* Subacanaceae fam. nov.

Candidatus Subacanaceae (NL. fem. n. *Subacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACABE01.* The type genus for the taxon is *Candidatus* Subacana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Subacana refuletta sp. nov.

Candidatus Subacana refuletta (NL. fem. n. *refuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACABE01 sp903911455*. The type genome for the species is the GenBank assembly GCA_903911455.1. The GC content of the type genome is 32.06 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Subacana remulitudo sp. nov.

Candidatus Subacana remulitudo (NL. fem. n. *remulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACABE01 sp903936865*. The type genome for the species is the GenBank assembly GCA_903936865.1. The GC content of the type genome is 31.46 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Subacana siticatio sp. nov.

Candidatus Subacana siticatio (NL. fem. n. *siticatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACABE01 sp013377005*. The type genome for the species is the GenBank assembly GCA_013377005.1. The GC content of the type genome is 31.75 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Subacella cuferago sp. nov.

Candidatus Subacella cuferago (NL. fem. n. *cuferago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Naka2016 sp003731655*. The type genome for the species is the GenBank assembly GCA_003731655.1. The GC content of the type genome is 37.11 %

and the genome length is 2.62 Mbp.

Description of *Candidatus* Subacella gen. nov.

Candidatus Subacella (NL. fem. n. *Subacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Naka2016*. The type species for the genus is *Candidatus* Subacella cuferago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Linigiaceae.

Description of *Candidatus* Subacella irreciforma sp. nov.

Candidatus Subacella irreciforma (NL. fem. n. *irreciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Naka2016 sp003731685*. The type genome for the species is the GenBank assembly GCA_003731685.1. The GC content of the type genome is 38.47 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Subacia exentitas sp. nov.

Candidatus Subacia exentitas (NL. fem. n. *exentitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6094 sp002435915*. The type genome for the species is the GenBank assembly GCA_002435915.1. The GC content of the type genome is 36.84 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Subacia gen. nov.

Candidatus Subacia (NL. fem. n. *Subacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6094*. The type species for the genus is *Candidatus* Subacia exentitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6094*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Subaciaceae.

Description of *Candidatus* Subaciaceae fam. nov.

Candidatus Subaciaceae (NL. fem. n. *Subaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6094.* The type genus for the taxon is *Candidatus* Subacia .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Subacida adcelessa sp. nov.

Candidatus Subacida adcelessa (NL. fem. n. *adcelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5018 sp014280235*. The type genome for the species is the GenBank assembly RS_GCF_014280235.1. The GC content of the type genome is 67.93 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Subacida gen. nov.

Candidatus Subacida (NL. fem. n. *Subacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5018*. The type species for the genus is *Candidatus* Subacida adcelessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Subacida bifisitica sp. nov.

Candidatus Subacida bifisitica (NL. fem. n. *bifisitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5018 sp007135755*. The type genome for the species is the GenBank assembly GCA_007135755.1. The GC content of the type genome is 69.23 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Subacida catagicula sp. nov.

Candidatus Subacida catagicula (NL. fem. n. *catagicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5018 sp000155635*. The type genome for the species is the GenBank assembly RS_GCF_000155635.1. The GC content of the type genome is 68.74 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Subacida denigatica sp. nov.

Candidatus Subacida denigatica (NL. fem. n. *denigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5018 sp007694915*. The type genome for the species is the GenBank assembly GCA_007694915.1. The GC content of the type genome is 69.42 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Subacida peradimonia sp. nov.

Candidatus Subacida peradimonia (NL. fem. n. *peradimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5018 sp903862155*. The type genome for the species is the GenBank assembly GCA_903831835.1. The GC content of the type genome is 67.34 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Subacida turifessa sp. nov.

Candidatus Subacida turifessa (NL. fem. n. *turifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5018 sp001039265*. The type genome for the species is the GenBank assembly RS_GCF_001039265.1. The GC content of the type genome is 67.83 % and the genome length is 2.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Lago dos Indios".

Description of *Candidatus* Subacida vanidicula sp. nov.

Candidatus Subacida vanidicula (NL. fem. n. *vanidicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5018 sp002396505*. The type genome for the species is the GenBank assembly GCA_003508015.1. The GC content of the type genome is 61.02 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Subacida venunilenta sp. nov.

Candidatus Subacida venunilenta (NL. fem. n. *venunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5018 sp900088535*. The type genome for the species is the GenBank assembly RS_GCF_900088535.1. The GC content of the type genome is 68.62 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Subacosa asbesax sp. nov.

Candidatus Subacosa asbesax (NL. fem. n. *asbesax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLPQ01 sp007131925*. The type genome for the species is the GenBank assembly GCA_007131925.1. The GC content of the type genome is 59.86 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Subacosa gen. nov.

Candidatus Subacosa (NL. fem. n. *Subacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLPQ01*. The type species for the genus is *Candidatus* Subacosa asbesax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLPQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subacosaceae.

Description of *Candidatus* Subacosaceae fam. nov.

Candidatus Subacosaceae (NL. fem. n. *Subacosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *SLPQ01*. The type genus for the taxon is *Candidatus* Subacosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLPQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Subacosales.

Description of *Candidatus* Subacosales ord. nov.

Candidatus Subacosales (NL. fem. n. *Subacosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLPQ01*. The type genus for the taxon is *Candidatus* Subacosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *DG-23*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rorulosae.

Description of *Candidatus* Subacula cenotitas sp. nov.

Candidatus Subacula cenotitas (NL. fem. n. *cenotitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1109 sp012521465*. The type genome for the species is the GenBank assembly GCA_012521465.1. The GC content of the type genome is 55.02 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Subacula gen. nov.

Candidatus Subacula (NL. fem. n. *Subacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1109*. The type species for the genus is *Candidatus* Subacula cenotitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Subacula supeligena sp. nov.

Candidatus Subacula supeligena (NL. fem. n. *supeligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1109 sp001028815*. The type genome for the species is the GenBank assembly GCA_012837505.1. The GC content of the type genome is 54.9 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Subadana bicorax sp. nov.

Candidatus Subadana bicorax (NL. fem. n. *bicorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1SED10-198M sp003554345*. The type genome for the species is the GenBank assembly GCA_003554345.1. The GC content of the type genome is 42.37 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Subadana gen. nov.

Candidatus Subadana (NL. fem. n. *Subadana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1SED10-198M*. The type species for the genus is *Candidatus* Subadana bicorax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *T1SED10-198M*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadanaceae.

Description of *Candidatus* Subadanaceae fam. nov.

Candidatus Subadanaceae (NL. fem. n. *Subadanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T1SED10-198M.* The type genus for the taxon is *Candidatus* Subadana .

According to the original version of GTDB R06-RS202, this family belongs to the order *T1SED10-198M*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Subadanales.

Description of *Candidatus* Subadanales ord. nov.

Candidatus Subadanales (NL. fem. n. *Subadanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *T1SED10-198M.* The type genus for the taxon is *Candidatus* Subadana .

According to the original version of GTDB R06-RS202, this family belongs to the class *T1SED10-198M*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Subadanae.

Description of *Candidatus* Subadanae class. nov.

Candidatus Subadanae (NL. fem. n. *c__Subadanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T1SED10-198M.* The type genus for the taxon is *Candidatus* Subadana .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *T1SED10-198M*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Subadanota.

Description of *Candidatus* Subadanota phyl. nov.

Candidatus Subadanota (NL. fem. n. *Subadanota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *T1SED10-198M.* The type genus for the taxon is *Candidatus* Subadana .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Subadaria navicicula sp. nov.

Candidatus Subadaria navicicula (NL. fem. n. *navicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B47-G16 sp003648815*. The type genome for the species is the GenBank assembly GCA_003648815.1. The GC content of the type genome is 44.6 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Subadaria gen. nov.

Candidatus Subadaria (NL. fem. n. *Subadaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B47-G16*. The type species for the genus is *Candidatus* Subadaria navicicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B47-G16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadariaceae.

Description of *Candidatus* Subadariaceae fam. nov.

Candidatus Subadariaceae (NL. fem. n. *Subadariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B47-G16.* The type genus for the taxon is *Candidatus* Subadaria .

According to GTDB R06-RS202, this family belongs to the order *Aerophobales*.

Description of *Candidatus* Subadella adlecitudo sp. nov.

Candidatus Subadella adlecitudo (NL. fem. n. *adlecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA300-D14 sp902515855*. The type genome for the species is the GenBank assembly GCA_902515855.1. The GC content of the type genome is 39.1 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Subadella gen. nov.

Candidatus Subadella (NL. fem. n. *Subadella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AAA300-D14*. The type species for the genus is *Candidatus* Subadella adlecitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Subadella adpicibra sp. nov.

Candidatus Subadella adpicibra (NL. fem. n. *adpicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA300-D14 sp000384995*. The type genome for the species is the GenBank assembly GCA_000384995.1. The GC content of the type genome is 38.37 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Subadella decacicella sp. nov.

Candidatus Subadella decacicella (NL. fem. n. *decacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA300-D14 sp902565775*. The type genome for the species is the GenBank assembly GCA_902535095.1. The GC content of the type genome is 38.67 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Subadella diponimonas sp. nov.

Candidatus Subadella diponimonas (NL. fem. n. *diponimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA300-D14 sp002711285*. The type genome for the species is the GenBank assembly GCA_002711285.1. The GC content of the type genome is 38.68 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Subadella exhoricula sp. nov.

Candidatus Subadella exhoricula (NL. fem. n. *exhoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA300-D14 sp002710745*. The type genome for the species is the GenBank assembly GCA_002710745.1. The GC content of the type genome is 38.75 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Subadella petulago sp. nov.

Candidatus Subadella petulago (NL. fem. n. *petulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA300-D14 sp902604945*. The type genome for the species is the GenBank assembly GCA_902604945.1. The GC content of the type genome is 38.94 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Subadella refinicula sp. nov.

Candidatus Subadella refinicula (NL. fem. n. *refinicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA300-D14 sp002715065*. The type genome for the species is the GenBank assembly GCA_002728875.1. The GC content of the type genome is 38.55 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Subadia alsisatio sp. nov.

Candidatus Subadia alsisatio (NL. fem. n. *alsisatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902802535*. The type genome for the species is the GenBank assembly GCA_902802535.1. The GC content of the type genome is 48.59 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Subadia gen. nov.

Candidatus Subadia (NL. fem. n. *Subadia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F082*. The type species for the genus is *Candidatus* Subadia alsisatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *F082*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadiaceae.

Description of *Candidatus* Subadiaceae fam. nov.

Candidatus Subadiaceae (NL. fem. n. *Subadiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *F082*. The type genus for the taxon is *Candidatus* Subadia .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Subadia anamnimonia sp. nov.

Candidatus Subadia anamnimonia (NL. fem. n. *anamnimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902783365*. The type genome for the species is the GenBank assembly GCA_902783365.1. The GC content of the type genome is 52.48 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Subadia apsoretta sp. nov.

Candidatus Subadia apsoretta (NL. fem. n. *apsoretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902771635*. The type genome for the species is the GenBank assembly GCA_902771635.1. The GC content of the type genome is 47.89 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Subadia bicoratica sp. nov.

Candidatus Subadia bicoratica (NL. fem. n. *bicoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902801625*. The type genome for the species is the GenBank assembly GCA_902801625.1. The GC content of the type genome is 47.8 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Subadia bipinimonas sp. nov.

Candidatus Subadia bipinimonas (NL. fem. n. *bipinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902791165*. The type genome for the species is the GenBank assembly GCA_902786885.1. The GC content of the type genome is 49.66 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Subadia bucelibra sp. nov.

Candidatus Subadia bucelibra (NL. fem. n. *bucelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902770835*. The type genome for the species is the GenBank assembly GCA_902777895.1. The GC content of the type genome is 48.4 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Subadia caravitio sp. nov.

Candidatus Subadia caravitio (NL. fem. n. *caravitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp001543395*. The type genome for the species is the GenBank assembly GCA_001543395.1. The GC content of the type genome is 50.03 % and the genome length is 2.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rumen fluid".

Description of *Candidatus* Subadia cicilimonia sp. nov.

Candidatus Subadia cicilimonia (NL. fem. n. *cicilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900317055*. The type genome for the species is the GenBank assembly GCA_902759205.1. The GC content of the type genome is 47.92 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Subadia dapifisca sp. nov.

Candidatus Subadia dapifisca (NL. fem. n. *dapifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp002311655*. The type genome for the species is the GenBank assembly GCA_002311655.1. The GC content of the type genome is 44.46 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Subadia desucitas sp. nov.

Candidatus Subadia desucitas (NL. fem. n. *desucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902800965*. The type genome for the species is the GenBank assembly GCA_902768525.1. The GC content of the type genome is 48.43 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Subadia dicabousia sp. nov.

Candidatus Subadia dicabousia (NL. fem. n. *dicabousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900315175*. The type genome for the species is the GenBank assembly GCA_900315175.1. The GC content of the type genome is 45.21 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Subadia divulitio sp. nov.

Candidatus Subadia divulitio (NL. fem. n. *divulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp002633315*. The type genome for the species is the GenBank assembly GCA_002633315.1. The GC content of the type genome is 38.04 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Subadia ecastetta sp. nov.

Candidatus Subadia ecastetta (NL. fem. n. *ecastetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902799345*. The type genome for the species is the GenBank assembly GCA_902799345.1. The GC content of the type genome is 50.64 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Subadia egritibra sp. nov.

Candidatus Subadia egritibra (NL. fem. n. *egritibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900771045*. The type genome for the species is the GenBank assembly RS_GCF_900771045.1. The GC content of the type genome is 47.79 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Subadia favililenta sp. nov.

Candidatus Subadia favililenta (NL. fem. n. *favililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900542475*. The type genome for the species is the GenBank assembly GCA_900542475.1. The GC content of the type genome is 44.4 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Subadia fumacatica sp. nov.

Candidatus Subadia fumacatica (NL. fem. n. *fumacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902767725*. The type genome for the species is the GenBank assembly GCA_902767725.1. The GC content of the type genome is 48.87 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Subadia inadfitica sp. nov.

Candidatus Subadia inadfitica (NL. fem. n. *inadfitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902769875*. The type genome for the species is the GenBank assembly GCA_902769875.1. The GC content of the type genome is 49.12 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Subadia indipatio sp. nov.

Candidatus Subadia indipatio (NL. fem. n. *indipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902774295*. The type genome for the species is the GenBank assembly GCA_902774295.1. The GC content of the type genome is 45.03 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Subadia infabibra sp. nov.

Candidatus Subadia infabibra (NL. fem. n. *infabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902789915*. The type genome for the species is the GenBank assembly GCA_902789915.1. The GC content of the type genome is 49.41 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Subadia loripedo sp. nov.

Candidatus Subadia loripedo (NL. fem. n. *loripedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902786745*. The type genome for the species is the GenBank assembly GCA_902778955.1. The GC content of the type genome is 51.04 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Subadia luceritas sp. nov.

Candidatus Subadia luceritas (NL. fem. n. *luceritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900317155*. The type genome for the species is the GenBank assembly GCA_900317155.1. The GC content of the type genome is 47.56 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Subadia lucifousia sp. nov.

Candidatus Subadia lucifousia (NL. fem. n. *lucifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902769815*. The type genome for the species is the GenBank assembly GCA_902769815.1. The GC content of the type genome is 48.26 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Subadia morigatio sp. nov.

Candidatus Subadia morigatio (NL. fem. n. *morigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900321315*. The type genome for the species is the GenBank assembly GCA_900321315.1. The GC content of the type genome is 50.18 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Subadia morigitio sp. nov.

Candidatus Subadia morigitio (NL. fem. n. *morigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900318465*. The type genome for the species is the GenBank assembly GCA_902755195.1. The GC content of the type genome is 48.11 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Subadia nubifitio sp. nov.

Candidatus Subadia nubifitio (NL. fem. n. *nubifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902801465*. The type genome for the species is the GenBank assembly GCA_902801465.1. The GC content of the type genome is 50.38 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Subadia nugigitrix sp. nov.

Candidatus Subadia nugigitrix (NL. fem. n. *nugigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900318085*. The type genome for the species is the GenBank assembly GCA_902801045.1. The GC content of the type genome is 49.63 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Subadia papaviforma sp. nov.

Candidatus Subadia papaviforma (NL. fem. n. *papaviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902787095*. The type genome for the species is the GenBank assembly GCA_902787095.1. The GC content of the type genome is 46.48 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Subadia paropitia sp. nov.

Candidatus Subadia paropitia (NL. fem. n. *paropitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *F082 sp902774365*. The type genome for the species is the GenBank assembly GCA_902774365.1. The GC content of the type genome is 50.88 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Subadia rarefilega sp. nov.

Candidatus Subadia rarefilega (NL. fem. n. *rarefilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp001603665*. The type genome for the species is the GenBank assembly GCA_001603665.1. The GC content of the type genome is 46.99 % and the genome length is 2.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Subadia redacitrix sp. nov.

Candidatus Subadia redacitrix (NL. fem. n. *redacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900769945*. The type genome for the species is the GenBank assembly RS_GCF_900769945.1. The GC content of the type genome is 45.08 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Subadia remuledo sp. nov.

Candidatus Subadia remuledo (NL. fem. n. *remuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp900318265*. The type genome for the species is the GenBank assembly GCA_902759395.1. The GC content of the type genome is 49.83 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Subadia semilifica sp. nov.

Candidatus Subadia semilifica (NL. fem. n. *semilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp002396205*. The type genome for the species is the GenBank assembly GCA_002396205.1. The GC content of the type genome is 51.39 % and the

genome length is 2.96 Mbp.

Description of *Candidatus* Subadia taxilimonia sp. nov.

Candidatus Subadia taxilimonia (NL. fem. n. *taxilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902794155*. The type genome for the species is the GenBank assembly GCA_902794155.1. The GC content of the type genome is 48.17 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Subadia tomogitudo sp. nov.

Candidatus Subadia tomogitudo (NL. fem. n. *tomogitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp002310075*. The type genome for the species is the GenBank assembly GCA_002310075.1. The GC content of the type genome is 48.8 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Subadia vilipitura sp. nov.

Candidatus Subadia vilipitura (NL. fem. n. *vilipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F082 sp902785755*. The type genome for the species is the GenBank assembly GCA_902786495.1. The GC content of the type genome is 48.53 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Subadida conopicella sp. nov.

Candidatus Subadida conopicella (NL. fem. n. *conopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA955 sp005788145*. The type genome for the species is the GenBank assembly GCA_009921285.1. The GC content of the type genome is 46.41 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Subadida gen. nov.

Candidatus Subadida (NL. fem. n. *Subadida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA955*. The type species for the genus is *Candidatus* Subadida conopicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA955*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadidaceae.

Description of *Candidatus* Subadidaceae fam. nov.

Candidatus Subadidaceae (NL. fem. n. *Subadidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA955.* The type genus for the taxon is *Candidatus* Subadida .

According to the original version of GTDB R06-RS202, this family belongs to the order *NS11-12g*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Peropanales.

Description of *Candidatus* Subadida faticax sp. nov.

Candidatus Subadida faticax (NL. fem. n. *faticax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA955 sp005798825*. The type genome for the species is the GenBank assembly GCA_005789365.1. The GC content of the type genome is 40.1 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Subadida nugacugo sp. nov.

Candidatus Subadida nugacugo (NL. fem. n. *nugacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA955 sp903959115*. The type genome for the species is the GenBank assembly GCA_903950265.1. The GC content of the type genome is 43.57 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Subadida relapicella sp. nov.

Candidatus Subadida relapicella (NL. fem. n. *relapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA955 sp002737625*. The type genome for the species is the GenBank assembly GCA_009693525.1. The GC content of the type genome is 43.6 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Subadida revulimonas sp. nov.

Candidatus Subadida revulimonas (NL. fem. n. *revulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA955 sp002347985*. The type genome for the species is the GenBank assembly GCA_002347985.1. The GC content of the type genome is 43.18 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Subadida tabifigena sp. nov.

Candidatus Subadida tabifigena (NL. fem. n. *tabifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA955 sp002293105*. The type genome for the species is the GenBank assembly GCA_903871145.1. The GC content of the type genome is 45.63 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Subadida veridessa sp. nov.

Candidatus Subadida veridessa (NL. fem. n. *veridessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA955 sp002737705*. The type genome for the species is the GenBank assembly GCA_002737705.1. The GC content of the type genome is 40.67 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Subadosa eclipilega sp. nov.

Candidatus Subadosa eclipilega (NL. fem. n. *eclipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-32-10 sp001872995*. The type genome for the species is the GenBank assembly GCA_001872995.1. The GC content of the type genome is 31.5 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Subadosa gen. nov.

Candidatus Subadosa (NL. fem. n. *Subadosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-32-10*. The type species for the genus is *Candidatus* Subadosa eclipilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-32-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subadosaceae.

Description of *Candidatus* Subadosaceae fam. nov.

Candidatus Subadosaceae (NL. fem. n. *Subadosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-32-10.* The type genus for the taxon is *Candidatus* Subadosa .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Subadula calipitio sp. nov.

Candidatus Subadula calipitio (NL. fem. n. *calipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS621 sp900543915*. The type genome for the species is the GenBank assembly GCA_900543915.1. The GC content of the type genome is 54.55 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Subadula gen. nov.

Candidatus Subadula (NL. fem. n. *Subadula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS621*. The type species for the genus is *Candidatus* Subadula calipitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Subinana adnumatio sp. nov.

Candidatus Subinana adnumatio (NL. fem. n. *adnumatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G20 sp002457645*. The type genome for the species is the GenBank assembly GCA_002457645.1. The GC content of the type genome is 30.07 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Subinana gen. nov.

Candidatus Subinana (NL. fem. n. *Subinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G20*. The type species for the genus is *Candidatus* Subinana adnumatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favonellaceae.

Description of *Candidatus* Subinana epicretta sp. nov.

Candidatus Subinana epicretta (NL. fem. n. *epicretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G20 sp002713405*. The type genome for the species is the GenBank assembly GCA_002713405.1. The GC content of the type genome is 30.28 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Subinana excucigena sp. nov.

Candidatus Subinana excucigena (NL. fem. n. *excucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G20 sp902599165*. The type genome for the species is the GenBank assembly GCA_902599165.1. The GC content of the type genome is 31.26 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Subinana foricicula sp. nov.

Candidatus Subinana foricicula (NL. fem. n. *foricicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G20 sp002691605*. The type genome for the species is the GenBank assembly GCA_902538145.1. The GC content of the type genome is 30.07 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Subinana musulax sp. nov.

Candidatus Subinana musulax (NL. fem. n. *musulax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G20 sp002699745*. The type genome for the species is the GenBank assembly GCA_009886165.1. The GC content of the type genome is 31.05 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Subinana tabififica sp. nov.

Candidatus Subinana tabififica (NL. fem. n. *tabififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G20 sp002686655*. The type genome for the species is the GenBank assembly GCA_002715205.1. The GC content of the type genome is 29.55 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Subinaria leviditudo sp. nov.

Candidatus Subinaria leviditudo (NL. fem. n. *leviditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2691145 sp002691145*. The type genome for the species is the GenBank assembly GCA_002691145.1. The GC content of the type genome is 31.08 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Subinaria gen. nov.

Candidatus Subinaria (NL. fem. n. *Subinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2691145*. The type species for the genus is *Candidatus* Subinaria levididudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Subinella adaggitura sp. nov.

Candidatus Subinella adaggitura (NL. fem. n. *adaggitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1268 sp003509235*. The type genome for the species is the GenBank assembly GCA_003509235.1. The GC content of the type genome is 48.28 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Subinella gen. nov.

Candidatus Subinella (NL. fem. n. *Subinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1268*. The type species for the genus is *Candidatus* Subinella adaggitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subinellaceae.

Description of *Candidatus* Subinellaceae fam. nov.

Candidatus Subinellaceae (NL. fem. n. *Subinellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1268.* The type genus for the taxon is *Candidatus* Subinella .

According to GTDB R06-RS202, this family belongs to the order *Pirellulales*.

Description of *Candidatus* Subinella adpagitio sp. nov.

Candidatus Subinella adpagitio (NL. fem. n. *adpagitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1268 sp002712395*. The type genome for the species is the GenBank assembly GCA_002712395.1. The GC content of the type genome is 49.1 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Subinella ammixago sp. nov.

Candidatus Subinella ammixago (NL. fem. n. *ammixago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1268 sp009919445*. The type genome for the species is the GenBank assembly GCA_009919445.1. The GC content of the type genome is 59.9 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Subinella antevago sp. nov.

Candidatus Subinella antevago (NL. fem. n. *antevago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1268 sp014238855*. The type genome for the species is the GenBank assembly GCA_014238855.1. The GC content of the type genome is 48.05 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Subinella defacugo sp. nov.

Candidatus Subinella defacugo (NL. fem. n. *defacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1268 sp002694955*. The type genome for the species is the GenBank assembly GCA_002694955.1. The GC content of the type genome is 47.84 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Subinella dicanedo sp. nov.

Candidatus Subinella dicanedo (NL. fem. n. *dicanedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1268 sp002862175*. The type genome for the species is the GenBank assembly GCA_003505845.1. The GC content of the type genome is 49.26 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Subinella exhonibra sp. nov.

Candidatus Subinella exhonibra (NL. fem. n. *exhonibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1268 sp011523305*. The type genome for the species is the GenBank assembly GCA_011523305.1. The GC content of the type genome is 61.46 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Subinella minuratica sp. nov.

Candidatus Subinella minuratica (NL. fem. n. *minuratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1268 sp002862165*. The type genome for the species is the GenBank assembly GCA_002862165.1. The GC content of the type genome is 47.89 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Subinella pavimimonas sp. nov.

Candidatus Subinella pavimimonas (NL. fem. n. *pavimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1268 sp009922585*. The type genome for the species is the GenBank assembly GCA_009922585.1. The GC content of the type genome is 62.37 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Subinella semoditoga sp. nov.

Candidatus Subinella semoditoga (NL. fem. n. *semoditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1268 sp002171115*. The type genome for the species is the GenBank assembly GCA_002171115.1. The GC content of the type genome is 49.2 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Subinia lapilentia sp. nov.

Candidatus Subinia lapilentia (NL. fem. n. *lapilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D37C17 sp004124405*. The type genome for the species is the GenBank assembly RS_GCF_003709175.1. The GC content of the type genome is 37.58 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Subinia gen. nov.

Candidatus Subinia (NL. fem. n. *Subinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *D37C17*. The type species for the genus is *Candidatus* Subinia lapilentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D37C17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subiniaceae.

Description of *Candidatus* Subiniaceae fam. nov.

Candidatus Subiniaceae (NL. fem. n. *Subiniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *D37C17*. The type genus for the taxon is *Candidatus* Subinia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Subinia omninetta sp. nov.

Candidatus Subinia omninetta (NL. fem. n. *omninetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *D37C17 sp014381415*. The type genome for the species is the GenBank assembly GCA_014381415.1. The GC content of the type genome is 36.93 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Subinia penuritas sp. nov.

Candidatus Subinia penuritas (NL. fem. n. *penuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D37C17 sp012964845*. The type genome for the species is the GenBank assembly GCA_012964845.1. The GC content of the type genome is 38.09 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Subinida desulitura sp. nov.

Candidatus Subinida desulitura (NL. fem. n. *desulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRS1 sp003650305*. The type genome for the species is the GenBank assembly GCA_003650305.1. The GC content of the type genome is 31.46 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Subinida gen. nov.

Candidatus Subinida (NL. fem. n. *Subinida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PRS1*. The type species for the genus is *Candidatus* Subinida desulitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Subinida oblanibra sp. nov.

Candidatus Subinida oblanibra (NL. fem. n. *oblanibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRS1 sp003709165*. The type genome for the species is the GenBank assembly RS_GCF_003709165.1. The GC content of the type genome is 32.1 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Subinida turiliforma sp. nov.

Candidatus Subinida turiliforma (NL. fem. n. *turiliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PRS1 sp013151975*. The type genome for the species is the GenBank assembly GCA_013151975.1. The GC content of the type genome is 32.51 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Subinosa adpagibra sp. nov.

Candidatus Subinosa adpagibra (NL. fem. n. *adpagibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp014239455*. The type genome for the species is the GenBank assembly GCA_014239455.1. The GC content of the type genome is 37.34 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Subinosa gen. nov.

Candidatus Subinosa (NL. fem. n. *Subinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACIIZ01*. The type species for the genus is *Candidatus* Subinosa adpagibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Subinosa bimotitia sp. nov.

Candidatus Subinosa bimotitia (NL. fem. n. *bimotitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902562285*. The type genome for the species is the GenBank assembly GCA_902562285.1. The GC content of the type genome is 31.28 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Subinosa calipitoga sp. nov.

Candidatus Subinosa calipitoga (NL. fem. n. *calipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp002699695*. The type genome for the species is the GenBank assembly GCA_002699695.2. The GC content of the type genome is 37.66 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Subinosa carucitoga sp. nov.

Candidatus Subinosa carucitoga (NL. fem. n. *carucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp002695745*. The type genome for the species is the GenBank assembly GCA_002695745.2. The GC content of the type genome is 30.93 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Subinosa dececibula sp. nov.

Candidatus Subinosa dececibula (NL. fem. n. *dececibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902616265*. The type genome for the species is the GenBank assembly GCA_902616265.1. The GC content of the type genome is 30.98 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Subinosa deforimonas sp. nov.

Candidatus Subinosa deforimonas (NL. fem. n. *deforimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902578545*. The type genome for the species is the GenBank assembly GCA_902542635.1. The GC content of the type genome is 30.91 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Subinosa detunessa sp. nov.

Candidatus Subinosa detunessa (NL. fem. n. *detunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CACIIZ01 sp902567595*. The type genome for the species is the GenBank assembly GCA_902567595.1. The GC content of the type genome is 31.11 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Subinosa dicibimonas sp. nov.

Candidatus Subinosa dicibimonas (NL. fem. n. *dicibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902586855*. The type genome for the species is the GenBank assembly GCA_902586855.1. The GC content of the type genome is 38.47 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Subinosa eclecivita sp. nov.

Candidatus Subinosa eclecivita (NL. fem. n. *eclecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902625475*. The type genome for the species is the GenBank assembly GCA_902625475.1. The GC content of the type genome is 31.14 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Subinosa enharessa sp. nov.

Candidatus Subinosa enharessa (NL. fem. n. *enharessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902541695*. The type genome for the species is the GenBank assembly GCA_902541695.1. The GC content of the type genome is 30.74 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Subinosa extinifica sp. nov.

Candidatus Subinosa extinifica (NL. fem. n. *extinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902570265*. The type genome for the species is the GenBank assembly GCA_902570265.1. The GC content of the type genome is 31.22 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Subinosa inergitica sp. nov.

Candidatus Subinosa inergitica (NL. fem. n. *inergitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902538975*. The type genome for the species is the GenBank assembly GCA_902538975.1. The GC content of the type genome is 31.24 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Subinosa inobrivita sp. nov.

Candidatus Subinosa inobrivita (NL. fem. n. *inobrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902599445*. The type genome for the species is the GenBank assembly GCA_902599445.1. The GC content of the type genome is 38.31 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Subinosa inregastra sp. nov.

Candidatus Subinosa inregastra (NL. fem. n. *inregastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902611605*. The type genome for the species is the GenBank assembly GCA_902611605.1. The GC content of the type genome is 31.5 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Subinosa obveressa sp. nov.

Candidatus Subinosa obveressa (NL. fem. n. *obveressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902573735*. The type genome for the species is the GenBank assembly GCA_902573735.1. The GC content of the type genome is 31.2 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Subinosa peribago sp. nov.

Candidatus Subinosa peribago (NL. fem. n. *peribago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACIIZ01 sp902614945*. The type genome for the species is the GenBank assembly GCA_902614945.1. The GC content of the type genome is 31.25 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Subinula bulapiforma sp. nov.

Candidatus Subinula bulapiforma (NL. fem. n. *bulapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOSP01 sp903861005*. The type genome for the species is the GenBank assembly GCA_903861005.1. The GC content of the type genome is 70.49 % and the genome length is 5.81 Mbp.

Description of *Candidatus* Subinula gen. nov.

Candidatus Subinula (NL. fem. n. *Subinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOSP01*. The type species for the genus is *Candidatus* Subinula bulapiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2862545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tolutanaceae.

Description of *Candidatus* Subodana letifetta sp. nov.

Candidatus Subodana letifetta (NL. fem. n. *letifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9936 sp001774105*. The type genome for the species is the GenBank assembly GCA_003518965.1. The GC content of the type genome is 46.14 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Subodana gen. nov.

Candidatus Subodana (NL. fem. n. *Subodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9936*. The type species for the genus is *Candidatus* Subodana letifetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9936*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subodanaceae.

Description of *Candidatus* Subodanaceae fam. nov.

Candidatus Subodanaceae (NL. fem. n. *Subodanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9936.* The type genus for the taxon is *Candidatus* Subodana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9936*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Subodanales.

Description of *Candidatus* Subodanales ord. nov.

Candidatus Subodanales (NL. fem. n. *Subodanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9936.* The type genus for the taxon is *Candidatus* Subodana .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Subodaria dicabatio sp. nov.

Candidatus Subodaria dicabatio (NL. fem. n. *dicabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM520 sp009930445*. The type genome for the species is the GenBank assembly GCA_009930445.1. The GC content of the type genome is 42.51 % and the genome length is 3.47 Mbp.

Description of *Candidatus* Subodaria gen. nov.

Candidatus Subodaria (NL. fem. n. *Subodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *BM520*. The type species for the genus is *Candidatus* Subodaria dicabatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM520*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subodariaceae.

Description of *Candidatus* Subodariaceae fam. nov.

Candidatus Subodariaceae (NL. fem. n. *Subodariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM520.* The type genus for the taxon is *Candidatus* Subodaria .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Subodaria immatilega sp. nov.

Candidatus Subodaria immatilega (NL. fem. n. *immatilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM520 sp002869405*. The type genome for the species is the GenBank assembly GCA_002869405.1. The GC content of the type genome is 41.49 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Subodaria ludifedo sp. nov.

Candidatus Subodaria ludifedo (NL. fem. n. *ludifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM520 sp002748065*. The type genome for the species is the GenBank assembly GCA_002748065.1. The GC content of the type genome is 46.37 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Subodella cinipitas sp. nov.

Candidatus Subodella cinipitas (NL. fem. n. *cinipitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-54 sp002011475*. The type genome for the species is the

GenBank assembly GCA_002011475.1. The GC content of the type genome is 59.73 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Subodella gen. nov.

Candidatus Subodella (NL. fem. n. *Subodella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-54*. The type species for the genus is *Candidatus* Subodella cinipitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JdFR-54*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subodellaceae.

Description of *Candidatus* Subodellaceae fam. nov.

Candidatus Subodellaceae (NL. fem. n. *Subodellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-54.* The type genus for the taxon is *Candidatus* Subodella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JdFR-54*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Subodellales.

Description of *Candidatus* Subodellales ord. nov.

Candidatus Subodellales (NL. fem. n. *Subodellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JdFR-54.* The type genus for the taxon is *Candidatus* Subodella .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Subodia effosimonas sp. nov.

Candidatus Subodia effosimonas (NL. fem. n. *effosimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5738 sp002419295*. The type genome for the species is the GenBank assembly GCA_002419295.1. The GC content of the type genome is 45.92 %

and the genome length is 0.85 Mbp.

Description of *Candidatus* Subodia gen. nov.

Candidatus Subodia (NL. fem. n. *Subodia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5738*. The type species for the genus is *Candidatus* Subodia effosimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subodiaceae.

Description of *Candidatus* Subodiaceae fam. nov.

Candidatus Subodiaceae (NL. fem. n. *Subodiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5738.* The type genus for the taxon is *Candidatus* Subodia .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Subodia inmorugo sp. nov.

Candidatus Subodia inmorugo (NL. fem. n. *inmorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5738 sp002423555*. The type genome for the species is the GenBank assembly GCA_002423555.1. The GC content of the type genome is 47.58 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Subodida monimitudo sp. nov.

Candidatus Subodida monimitudo (NL. fem. n. *monimitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMEV01 sp007375725*. The type genome for the species is the GenBank assembly GCA_007376705.1. The GC content of the type genome is 44.81 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Subodida gen. nov.

Candidatus Subodida (NL. fem. n. *Subodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMEV01*. The type species for the genus is *Candidatus* Subodida monimitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VMEV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subodidaceae.

Description of *Candidatus* Subodidaceae fam. nov.

Candidatus Subodidaceae (NL. fem. n. *Subodidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VMEV01.* The type genus for the taxon is *Candidatus* Subodida .

According to the original version of GTDB R06-RS202, this family belongs to the order *VMEV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Subodidales.

Description of *Candidatus* Subodidales ord. nov.

Candidatus Subodidales (NL. fem. n. *Subodidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VMEV01.* The type genus for the taxon is *Candidatus* Subodida .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Subodosa desomicula sp. nov.

Candidatus Subodosa desomicula (NL. fem. n. *desomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQRX01 sp009779755*. The type genome for the species is the GenBank assembly GCA_009779755.1. The GC content of the type genome is 50.45 %

and the genome length is 3.1 Mbp.

Description of *Candidatus* Subodosa gen. nov.

Candidatus Subodosa (NL. fem. n. *Subodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQRX01*. The type species for the genus is *Candidatus* Subodosa desomicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diritidaceae.

Description of *Candidatus* Subodosa protritio sp. nov.

Candidatus Subodosa protritio (NL. fem. n. *protritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQRX01 sp009781755*. The type genome for the species is the GenBank assembly GCA_009781755.1. The GC content of the type genome is 50.64 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Subodosa rurigitudo sp. nov.

Candidatus Subodosa rurigitudo (NL. fem. n. *rurigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQRX01 sp009786535*. The type genome for the species is the GenBank assembly GCA_009787595.1. The GC content of the type genome is 47.8 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Subodosa sanabisca sp. nov.

Candidatus Subodosa sanabisca (NL. fem. n. *sanabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQRX01 sp009787785*. The type genome for the species is the GenBank assembly GCA_009786545.1. The GC content of the type genome is 53.76 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Subodosa siligifica sp. nov.

Candidatus Subodosa siligifica (NL. fem. n. *siligifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQRX01 sp009780585*. The type genome for the species is the GenBank assembly GCA_009780585.1. The GC content of the type genome is 51.65 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Subodula tenilugo sp. nov.

Candidatus Subodula tenilugo (NL. fem. n. *tenilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2698665 sp002698665*. The type genome for the species is the GenBank assembly GCA_002698665.1. The GC content of the type genome is 31.34 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Subodula gen. nov.

Candidatus Subodula (NL. fem. n. *Subodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2698665*. The type species for the genus is *Candidatus* Subodula tenilugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002716945*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecidaceae.

Description of *Candidatus* Subofana ciminilenta sp. nov.

Candidatus Subofana ciminilenta (NL. fem. n. *ciminilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AG-363-B04 sp003278465*. The type genome for the species is the GenBank assembly GCA_003278465.1. The GC content of the type genome is 38.3 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Subofana gen. nov.

Candidatus Subofana (NL. fem. n. *Subofana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AG-363-B04*. The type species for the genus is *Candidatus* Subofana ciminilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Subofaria ducilitrix sp. nov.

Candidatus Subofaria ducilitrix (NL. fem. n. *ducilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2786165 sp903885895*. The type genome for the species is the GenBank assembly GCA_903885895.1. The GC content of the type genome is 41.16 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Subofaria gen. nov.

Candidatus Subofaria (NL. fem. n. *Subofaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2786165*. The type species for the genus is *Candidatus* Subofaria ducilitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Subofaria embamiforma sp. nov.

Candidatus Subofaria embamiforma (NL. fem. n. *embamiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2786165 sp002786165*. The type genome for the species is the GenBank assembly GCA_002786165.1. The GC content of the type genome is 40.65 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Subofaria pacifilenta sp. nov.

Candidatus Subofaria pacifilenta (NL. fem. n. *pacifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2786165 sp903877115*. The type genome for the species is the GenBank assembly GCA_903931985.1. The GC content of the type genome is 42.41 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Subofella relenisca sp. nov.

Candidatus Subofella relenisca (NL. fem. n. *relenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD1-37-29 sp001818495*. The type genome for the species is the GenBank assembly GCA_001818445.1. The GC content of the type genome is 36.61 % and the genome length is 0.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point C".

Description of *Candidatus* Subofella gen. nov.

Candidatus Subofella (NL. fem. n. *Subofella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD1-37-29*. The type species for the genus is *Candidatus* Subofella relenisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-36-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mutabiaceae.

Description of *Candidatus* Subofia adhositas sp. nov.

Candidatus Subofia adhositas (NL. fem. n. *adhositas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1396 sp003140275*. The type genome for the species is the GenBank assembly GCA_003140275.1. The GC content of the type genome is 56.04 % and the genome length is 5.86 Mbp.

Description of *Candidatus* Subofia gen. nov.

Candidatus Subofia (NL. fem. n. *Subofia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1396*. The type species for the genus is *Candidatus* Subofia adhositas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-1396*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subofiaceae.

Description of *Candidatus* Subofiaceae fam. nov.

Candidatus Subofiaceae (NL. fem. n. *Subofiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PALSA-1396.* The type genus for the taxon is *Candidatus* Subofia .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Subofida ascisigena sp. nov.

Candidatus Subofida ascisigena (NL. fem. n. *ascisigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6256 sp012516125*. The type genome for the species is the GenBank assembly GCA_012516125.1. The GC content of the type genome is 62.36 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Subofida gen. nov.

Candidatus Subofida (NL. fem. n. *Subofida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6256*. The type species for the genus is *Candidatus* Subofida ascisigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4971*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citocariaceae.

Description of *Candidatus* Subofida bacifitoga sp. nov.

Candidatus Subofida bacifitoga (NL. fem. n. *bacifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6256 sp002452295*. The type genome for the species is the GenBank assembly GCA_002452295.1. The GC content of the type genome is 64.16 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Subofida inseniforma sp. nov.

Candidatus Subofida inseniforma (NL. fem. n. *inseniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6256 sp012842395*. The type genome for the species is the GenBank assembly GCA_012842395.1. The GC content of the type genome is 62.21 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Subofida modifetta sp. nov.

Candidatus Subofida modifetta (NL. fem. n. *modifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6256 sp014360195*. The type genome for the species is the GenBank assembly GCA_014360195.1. The GC content of the type genome is 62.02 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Subofosa forinatica sp. nov.

Candidatus Subofosa forinatica (NL. fem. n. *forinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JdFR-56 sp002011495*. The type genome for the species is the GenBank assembly GCA_002011495.1. The GC content of the type genome is 56.94 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Subofosa gen. nov.

Candidatus Subofosa (NL. fem. n. *Subofosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JdFR-56*. The type species for the genus is *Candidatus* Subofosa

forinatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-60-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunidaceae.

Description of *Candidatus* Subsaximicrobium homicitudo sp. nov.

Candidatus Subsaximicrobium homicitudo (NL. fem. n. *homicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Subsaximicrobium sp000688335*. The type genome for the species is the GenBank assembly RS_GCF_000688335.1. The GC content of the type genome is 36.99 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Subtercola curacax sp. nov.

Candidatus Subtercola curacax (NL. fem. n. *curacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Subtercola sp002931235*. The type genome for the species is the GenBank assembly RS_GCF_002931235.1. The GC content of the type genome is 68.96 % and the genome length is 3.53 Mbp.

Description of *Candidatus* Subucana ascisifica sp. nov.

Candidatus Subucana ascisifica (NL. fem. n. *ascisifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2594 sp002339355*. The type genome for the species is the GenBank assembly GCA_002339355.1. The GC content of the type genome is 45.48 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Subucana gen. nov.

Candidatus Subucana (NL. fem. n. *Subucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2594*. The type species for the genus is *Candidatus* Subucana ascisifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2594*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subucanaceae.

Description of *Candidatus* Subucanaceae fam. nov.

Candidatus Subucanaceae (NL. fem. n. *Subucanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2594.* The type genus for the taxon is *Candidatus* Subucana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Monocellales.

Description of *Candidatus* Subucaria capilitoga sp. nov.

Candidatus Subucaria capilitoga (NL. fem. n. *capilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp003480315*. The type genome for the species is the GenBank assembly RS_GCF_003480315.1. The GC content of the type genome is 48.71 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Subucaria gen. nov.

Candidatus Subucaria (NL. fem. n. *Subucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9502*. The type species for the genus is *Candidatus* Subucaria capilitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Subucaria defacax sp. nov.

Candidatus Subucaria defacax (NL. fem. n. *defacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp003481825*. The type genome for the species is the

GenBank assembly RS_GCF_003477935.1. The GC content of the type genome is 46.94 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Subucaria defanitio sp. nov.

Candidatus Subucaria defanitio (NL. fem. n. *defanitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp003506385*. The type genome for the species is the GenBank assembly RS_GCF_003480105.1. The GC content of the type genome is 47.98 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Subucaria duponedo sp. nov.

Candidatus Subucaria duponedo (NL. fem. n. *duponedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp003669055*. The type genome for the species is the GenBank assembly RS_GCF_003669055.1. The GC content of the type genome is 50.11 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Subucaria feficugo sp. nov.

Candidatus Subucaria feficugo (NL. fem. n. *feficugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp900540335*. The type genome for the species is the GenBank assembly GCA_900540335.1. The GC content of the type genome is 47.07 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Subucaria hemidimonas sp. nov.

Candidatus Subucaria hemidimonas (NL. fem. n. *hemidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp900555625*. The type genome for the species is the GenBank assembly GCA_900555625.1. The GC content of the type genome is 47.95 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Subucaria immobetta sp. nov.

Candidatus Subucaria immobetta (NL. fem. n. *immobetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp004554205*. The type genome for the species is the GenBank assembly GCA_004554205.1. The GC content of the type genome is 54.96 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Subucaria meridilenta sp. nov.

Candidatus Subucaria meridilenta (NL. fem. n. *meridilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp003478505*. The type genome for the species is the GenBank assembly GCA_900544695.1. The GC content of the type genome is 49.44 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Subucaria metucentia sp. nov.

Candidatus Subucaria metucentia (NL. fem. n. *metucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp900770535*. The type genome for the species is the GenBank assembly RS_GCF_900770535.1. The GC content of the type genome is 51.19 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Subucaria morigicella sp. nov.

Candidatus Subucaria morigicella (NL. fem. n. *morigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp900538475*. The type genome for the species is the GenBank assembly GCA_900538475.1. The GC content of the type genome is 46.22 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Subucaria musulousia sp. nov.

Candidatus Subucaria musulousia (NL. fem. n. *musulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp003611875*. The type genome for the species is the GenBank assembly RS_GCF_003611875.1. The GC content of the type genome is 46.24 % and the genome length is 5.54 Mbp.

Description of *Candidatus* Subucaria rubicilega sp. nov.

Candidatus Subucaria rubicilega (NL. fem. n. *rubicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9502 sp009911065*. The type genome for the species is the GenBank assembly RS_GCF_009911065.1. The GC content of the type genome is 44.37 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Subucella cisalatio sp. nov.

Candidatus Subucella cisalatio (NL. fem. n. *cisalatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *43-108 sp001915545*. The type genome for the species is the GenBank assembly GCA_001915545.1. The GC content of the type genome is 43.17 % and the genome length is 5.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "healthy adult 3C".

Description of *Candidatus* Subucella gen. nov.

Candidatus Subucella (NL. fem. n. *Subucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *43-108*. The type species for the genus is *Candidatus* Subucella cisalatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Subucia adcogugo sp. nov.

Candidatus Subucia adcogugo (NL. fem. n. *adcogugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Fen-1137 sp003153875*. The type genome for the species is the GenBank assembly GCA_003153875.1. The GC content of the type genome is 64.13 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Subucia gen. nov.

Candidatus Subucia (NL. fem. n. *Subucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1137*. The type species for the genus is *Candidatus* Subucia adcogugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1088*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Acrotanaceae.

Description of *Candidatus* Subucia diritetta sp. nov.

Candidatus Subucia diritetta (NL. fem. n. *diritetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1137 sp003157775*. The type genome for the species is the GenBank assembly GCA_003171435.1. The GC content of the type genome is 63.74 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Subucia femelugo sp. nov.

Candidatus Subucia femelugo (NL. fem. n. *femelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1137 sp003157315*. The type genome for the species is the GenBank assembly GCA_003157315.1. The GC content of the type genome is 63.72 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Subucia holovisca sp. nov.

Candidatus Subucia holovisca (NL. fem. n. *holovisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1137 sp003158395*. The type genome for the species is the

GenBank assembly GCA_003161975.1. The GC content of the type genome is 64.39 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Subucia inresilenta sp. nov.

Candidatus Subucia inresilenta (NL. fem. n. *inresilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1137 sp003170035*. The type genome for the species is the GenBank assembly GCA_003170035.1. The GC content of the type genome is 64.86 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Subucia luculilega sp. nov.

Candidatus Subucia luculilega (NL. fem. n. *luculilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1137 sp003153015*. The type genome for the species is the GenBank assembly GCA_003153015.1. The GC content of the type genome is 64.16 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Subucia lutulitrix sp. nov.

Candidatus Subucia lutulitrix (NL. fem. n. *lutulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1137 sp003142855*. The type genome for the species is the GenBank assembly GCA_003155895.1. The GC content of the type genome is 63.97 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Subucia refuligena sp. nov.

Candidatus Subucia refuligena (NL. fem. n. *refuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1137 sp003155465*. The type genome for the species is the GenBank assembly GCA_003155465.1. The GC content of the type genome is 64.48 % and the genome length is 5.53 Mbp.

Description of *Candidatus* Subucia solipisca sp. nov.

Candidatus Subucia solipisca (NL. fem. n. *solipisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1137 sp003158455*. The type genome for the species is the GenBank assembly GCA_003158655.1. The GC content of the type genome is 63.88 % and the genome length is 6.5 Mbp.

Description of *Candidatus* Subucia telegitia sp. nov.

Candidatus Subucia telegitia (NL. fem. n. *telegitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1137 sp003158735*. The type genome for the species is the GenBank assembly GCA_003161935.1. The GC content of the type genome is 63.74 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Subucida capudibula sp. nov.

Candidatus Subucida capudibula (NL. fem. n. *capudibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GBS-2 sp001443025*. The type genome for the species is the GenBank assembly GCA_001443025.1. The GC content of the type genome is 32.93 % and the genome length is 0.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hot springs".

Description of *Candidatus* Subucida gen. nov.

Candidatus Subucida (NL. fem. n. *Subucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GBS-2*. The type species for the genus is *Candidatus* Subucida capudibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subucidaceae.

Description of *Candidatus* Subucidaceae fam. nov.

Candidatus Subucidaceae (NL. fem. n. *Subucidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GBS-2.* The type genus for the taxon is *Candidatus* Subucida .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Subucosa adpelicella sp. nov.

Candidatus Subucosa adpelicella (NL. fem. n. *adpelicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-01-48-18 sp001824435*. The type genome for the species is the GenBank assembly GCA_001824435.1. The GC content of the type genome is 48.12 % and the genome length is 1.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Subucosa gen. nov.

Candidatus Subucosa (NL. fem. n. *Subucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-01-48-18*. The type species for the genus is *Candidatus* Subucosa adpelicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WO2-01-48-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subucosaceae.

Description of *Candidatus* Subucosaceae fam. nov.

Candidatus Subucosaceae (NL. fem. n. *Subucosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WO2-01-48-18.* The type genus for the taxon is *Candidatus* Subucosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Succiniclasticum conigitrix sp. nov.

Candidatus Succiniclasticum conigitrix (NL. fem. n. *conigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succiniclasticum sp900315345*. The type genome for the species is the GenBank assembly GCA_902795245.1. The GC content of the type genome is 49.44 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Succiniclasticum cucuressa sp. nov.

Candidatus Succiniclasticum cucuressa (NL. fem. n. *cucuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succiniclasticum sp902801365*. The type genome for the species is the GenBank assembly GCA_902779605.1. The GC content of the type genome is 50.5 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Succiniclasticum desepitoga sp. nov.

Candidatus Succiniclasticum desepitoga (NL. fem. n. *desepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succiniclasticum sp900315925*. The type genome for the species is the GenBank assembly GCA_902758205.1. The GC content of the type genome is 49.04 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Succiniclasticum irrelitudo sp. nov.

Candidatus Succiniclasticum irrelitudo (NL. fem. n. *irrelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succiniclasticum sp002342505*. The type genome for the species is the GenBank assembly GCA_002342505.1. The GC content of the type genome is 49.94 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Succiniclasticum loripitoga sp. nov.

Candidatus Succiniclasticum loripitoga (NL. fem. n. *loripitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succiniclasticum sp900316935*. The type genome for the species is the GenBank assembly GCA_002351665.1. The GC content of the type genome is 59.1 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Succiniclasticum lucifastra sp. nov.

Candidatus Succiniclasticum lucifastra (NL. fem. n. *lucifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succiniclasticum sp900315805*. The type genome for the species is the GenBank assembly GCA_900315805.1. The GC content of the type genome is 59.16 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Succiniclasticum sotuliforma sp. nov.

Candidatus Succiniclasticum sotuliforma (NL. fem. n. *sotuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succiniclasticum sp900544275*. The type genome for the species is the GenBank assembly GCA_900761495.1. The GC content of the type genome is 47.64 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Succiniclasticum tiguratica sp. nov.

Candidatus Succiniclasticum tiguratica (NL. fem. n. *tiguratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succiniclasticum sp003512125*. The type genome for the species is the GenBank assembly GCA_003512125.1. The GC content of the type genome is 49.31 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Succiniclasticum tomogatio sp. nov.

Candidatus Succiniclasticum tomogatio (NL. fem. n. *tomogatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Succiniclasticum sp900314855*. The type genome for the species is the GenBank assembly GCA_900314855.1. The GC content of the type genome is 59.45 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Succinimonas apperitudo sp. nov.

Candidatus Succinimonas apperitudo (NL. fem. n. *apperitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinimonas sp902776415*. The type genome for the species is the GenBank assembly GCA_902776415.1. The GC content of the type genome is 51.17 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Succinimonas denicicella sp. nov.

Candidatus Succinimonas denicicella (NL. fem. n. *denicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinimonas sp002372325*. The type genome for the species is the GenBank assembly GCA_002372325.1. The GC content of the type genome is 51.73 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Succinivibrio buxanifica sp. nov.

Candidatus Succinivibrio buxanifica (NL. fem. n. *buxanifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp900316375*. The type genome for the species is the GenBank assembly GCA_902755545.1. The GC content of the type genome is 36.84 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Succinivibrio conibitio sp. nov.

Candidatus Succinivibrio conibitio (NL. fem. n. *conibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp002473165*. The type genome for the species is the GenBank assembly GCA_002472215.1. The GC content of the type genome is 58.75 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Succinivibrio dicabivita sp. nov.

Candidatus Succinivibrio dicabivita (NL. fem. n. *dicabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp900316175*. The type genome for the species is the GenBank assembly GCA_002308175.1. The GC content of the type genome is 40.34 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Succinivibrio dilemetta sp. nov.

Candidatus Succinivibrio dilemetta (NL. fem. n. *dilemetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp902776275*. The type genome for the species is the GenBank assembly GCA_902776275.1. The GC content of the type genome is 62.17 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Succinivibrio eccisitica sp. nov.

Candidatus Succinivibrio eccisitica (NL. fem. n. *eccisitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp012519775*. The type genome for the species is the GenBank assembly GCA_012519775.1. The GC content of the type genome is 38.04 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Succinivibrio excarastra sp. nov.

Candidatus Succinivibrio excarastra (NL. fem. n. *excarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp900767695*. The type genome for the species is the GenBank assembly GCA_900767695.1. The GC content of the type genome is 63.02 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Succinivibrio exsolimonas sp. nov.

Candidatus Succinivibrio exsolimonas (NL. fem. n. *exsolimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp900548485*. The type genome for the species is the GenBank assembly GCA_900548485.1. The GC content of the type genome is 36.29 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Succinivibrio fiducax sp. nov.

Candidatus Succinivibrio fiducax (NL. fem. n. *fiducax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp000431835*. The type genome for the species is the GenBank assembly GCA_902765685.1. The GC content of the type genome is 36.46 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Succinivibrio ignicitura sp. nov.

Candidatus Succinivibrio ignicitura (NL. fem. n. *ignicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp902772715*. The type genome for the species is the GenBank assembly GCA_902772715.1. The GC content of the type genome is 39.22 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Succinivibrio lametivita sp. nov.

Candidatus Succinivibrio lametivita (NL. fem. n. *lametivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp900552905*. The type genome for the species is the GenBank assembly GCA_900766015.1. The GC content of the type genome is 42.29 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Succinivibrio lenimetta sp. nov.

Candidatus Succinivibrio lenimetta (NL. fem. n. *lenimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Succinivibrio sp900555115*. The type genome for the species is the GenBank assembly GCA_900754255.1. The GC content of the type genome is 46.99 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Succinivibrio morigitas sp. nov.

Candidatus Succinivibrio morigitas (NL. fem. n. *morigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp900770725*. The type genome for the species is the GenBank assembly GCA_900770725.1. The GC content of the type genome is 62.16 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Succinivibrio nugacitrix sp. nov.

Candidatus Succinivibrio nugacitrix (NL. fem. n. *nugacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp900315395*. The type genome for the species is the GenBank assembly GCA_900315395.1. The GC content of the type genome is 37.24 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Succinivibrio odollitas sp. nov.

Candidatus Succinivibrio odollitas (NL. fem. n. *odollitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp003477345*. The type genome for the species is the GenBank assembly GCA_003477345.1. The GC content of the type genome is 43.57 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Succinivibrio palifitica sp. nov.

Candidatus Succinivibrio palifitica (NL. fem. n. *palifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp900317105*. The type genome for the species is the GenBank assembly GCA_900317105.1. The GC content of the type genome is 39.75 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Succinivibrio recucatica sp. nov.

Candidatus Succinivibrio recucatica (NL. fem. n. *recucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp003456415*. The type genome for the species is the GenBank assembly GCA_900768665.1. The GC content of the type genome is 35.62 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Succinivibrio refulicula sp. nov.

Candidatus Succinivibrio refulicula (NL. fem. n. *refulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Succinivibrio sp002449335*. The type genome for the species is the GenBank assembly GCA_002449335.1. The GC content of the type genome is 37.11 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Sugilana detoricella sp. nov.

Candidatus Sugilana detoricella (NL. fem. n. *detoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CABIZH01 sp902363205*. The type genome for the species is the GenBank assembly RS_GCF_900754345.1. The GC content of the type genome is 35.49 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Sugilana gen. nov.

Candidatus Sugilana (NL. fem. n. *Sugilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CABIZH01*. The type species for the genus is *Candidatus* Sugilana detoricella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sugilaria visififorma sp. nov.

Candidatus Sugilaria visififorma (NL. fem. n. *visififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABFGF01 sp013112635*. The type genome for the species is the GenBank assembly GCA_013112635.1. The GC content of the type genome is 36.53 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Sugilaria gen. nov.

Candidatus Sugilaria (NL. fem. n. *Sugilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABFGF01*. The type species for the genus is *Candidatus* Sugilaria visififorma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J004*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celumiaceae.

Description of *Candidatus* Sugilella coticessa sp. nov.

Candidatus Sugilella coticessa (NL. fem. n. *coticessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYLG01 sp005808665*. The type genome for the species is the GenBank assembly GCA_005792915.1. The GC content of the type genome is 51.45 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Sugilella gen. nov.

Candidatus Sugilella (NL. fem. n. *Sugilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYLG01*. The type species for the genus is *Candidatus* Sugilella coticessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Sugilella subadatio sp. nov.

Candidatus Sugilella subadatio (NL. fem. n. *subadatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYLG01 sp009691815*. The type genome for the species is the GenBank assembly GCA_009691815.1. The GC content of the type genome is 52.37 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Sugilia bisuliforma sp. nov.

Candidatus Sugilia bisuliforma (NL. fem. n. *bisuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10151 sp001776635*. The type genome for the species is the GenBank assembly GCA_001776635.1. The GC content of the type genome is 40.16 % and the genome length is 0.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Sugilia gen. nov.

Candidatus Sugilia (NL. fem. n. *Sugilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10151*. The type species for the genus is *Candidatus* Sugilia bisuliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Sugiliaceae fam. nov.

Candidatus Sugiliaceae (NL. fem. n. *Sugiliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10151.* The type genus for the taxon is *Candidatus* Sugilia .

According to GTDB R06-RS202, this family belongs to the order *Daviesbacterales*.

Description of *Candidatus* Sugilia cisalessa sp. nov.

Candidatus Sugilia cisalessa (NL. fem. n. *cisalessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10151 sp001776935*. The type genome for the species is the GenBank assembly GCA_000995045.1. The GC content of the type genome is 38.78 % and the genome length is 1.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Sugilia hecatimonas sp. nov.

Candidatus Sugilia hecatimonas (NL. fem. n. *hecatimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10151 sp001777455*. The type genome for the species is the GenBank assembly GCA_001777455.1. The GC content of the type genome is 40.9 % and the genome length is 0.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Sugilida manomatica sp. nov.

Candidatus Sugilida manomatica (NL. fem. n. *manomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin61 sp009840635*. The type genome for the species is the GenBank assembly GCA_009839025.1. The GC content of the type genome is 69.15 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Sugilida gen. nov.

Candidatus Sugilida (NL. fem. n. *Sugilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin61*. The type species for the genus is *Candidatus* Sugilida manomatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugilidaceae.

Description of *Candidatus* Sugilidaceae fam. nov.

Candidatus Sugilidaceae (NL. fem. n. *Sugilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin61*. The type genus for the taxon is *Candidatus* Sugilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *Bin61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Sugilidales.

Description of *Candidatus* Sugilidales ord. nov.

Candidatus Sugilidales (NL. fem. n. *Sugilidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin61*. The type genus for the taxon is *Candidatus* Sugilida .

According to the GTDB R06-RS202, this order belongs to the class *Vicinamibacteria*.

Description of *Candidatus* Sugilida revecitura sp. nov.

Candidatus Sugilida revecitura (NL. fem. n. *revecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin61 sp009835985*. The type genome for the species is the GenBank assembly GCA_009839885.1. The GC content of the type genome is 69.3 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Sugilida rubigigena sp. nov.

Candidatus Sugilida rubigigena (NL. fem. n. *rubigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin61 sp012271265*. The type genome for the species is the GenBank assembly GCA_012271265.1. The GC content of the type genome is 70.75 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Sugilida semidicula sp. nov.

Candidatus Sugilida semidicula (NL. fem. n. *semidicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Bin61 sp002238705*. The type genome for the species is the GenBank assembly GCA_002238705.1. The GC content of the type genome is 67.65 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Sugilosa milifitoga sp. nov.

Candidatus Sugilosa milifitoga (NL. fem. n. *milifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-40-28 sp001798135*. The type genome for the species is the GenBank assembly GCA_001798135.1. The GC content of the type genome is 39.27 % and the genome length is 2.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Sugilosa gen. nov.

Candidatus Sugilosa (NL. fem. n. *Sugilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-40-28*. The type species for the genus is *Candidatus* Sugilosa milifitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-40-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugilosaceae.

Description of *Candidatus* Sugilosaceae fam. nov.

Candidatus Sugilosaceae (NL. fem. n. *Sugilosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-40-28.* The type genus for the taxon is *Candidatus* Sugilosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Domigosales.

Description of *Candidatus* Sugilula adpagitoga sp. nov.

Candidatus Sugilula adpagitoga (NL. fem. n. *adpagitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR31 sp003220535*. The type genome for the species is the GenBank assembly GCA_003220535.1. The GC content of the type genome is 68.0 % and the genome length is 7.18 Mbp.

Description of *Candidatus* Sugilula gen. nov.

Candidatus Sugilula (NL. fem. n. *Sugilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AR31*. The type species for the genus is *Candidatus* Sugilula adpagitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-73-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fibiciaceae.

Description of *Candidatus* Sugilula adtoratica sp. nov.

Candidatus Sugilula adtoratica (NL. fem. n. *adtoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR31 sp003221635*. The type genome for the species is the GenBank assembly GCA_003221635.1. The GC content of the type genome is 68.11 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Sugilula dedigago sp. nov.

Candidatus Sugilula dedigago (NL. fem. n. *dedigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR31 sp003221615*. The type genome for the species is the GenBank assembly GCA_003221615.1. The GC content of the type genome is 67.75 % and the genome length is 7.24 Mbp.

Description of *Candidatus* Sugilula effunitia sp. nov.

Candidatus Sugilula effunitia (NL. fem. n. *effunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR31 sp003220495*. The type genome for the species is the GenBank assembly GCA_003220495.1. The GC content of the type genome is 68.49 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Sugilula exsusilenta sp. nov.

Candidatus Sugilula exsusilenta (NL. fem. n. *exsusilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR31 sp003221655*. The type genome for the species is the GenBank assembly GCA_003221655.1. The GC content of the type genome is 68.06 % and the genome length is 4.48 Mbp.

Description of *Candidatus* Sugilula fetuledo sp. nov.

Candidatus Sugilula fetuledo (NL. fem. n. *fetuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR31 sp003221595*. The type genome for the species is the GenBank assembly GCA_003221595.1. The GC content of the type genome is 69.49 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Sugilula inretitrix sp. nov.

Candidatus Sugilula inretitrix (NL. fem. n. *inretitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR31 sp003220685*. The type genome for the species is the GenBank assembly GCA_003220685.1. The GC content of the type genome is 68.71 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Sugilula niteletta sp. nov.

Candidatus Sugilula niteletta (NL. fem. n. *niteletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR31 sp003220435*. The type genome for the species is the GenBank assembly GCA_003220435.1. The GC content of the type genome is 68.95 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Sugilula vitupicula sp. nov.

Candidatus Sugilula vitupicula (NL. fem. n. *vitupicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AR31 sp003221515*. The type genome for the species is the GenBank assembly GCA_003220525.1. The GC content of the type genome is 69.0 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Sulfitobacter adcogentia sp. nov.

Candidatus Sulfitobacter adcogentia (NL. fem. n. *adcogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp001650875*. The type genome for the species is the GenBank assembly RS_GCF_001650875.1. The GC content of the type genome is 61.28 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Sulfitobacter adsusisca sp. nov.

Candidatus Sulfitobacter adsusisca (NL. fem. n. *adsusisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp013346665*. The type genome for the species is the GenBank assembly RS_GCF_013346665.1. The GC content of the type genome is 59.79 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Sulfitobacter antiricula sp. nov.

Candidatus Sulfitobacter antiricula (NL. fem. n. *antiricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp003335585*. The type genome for the species is the GenBank assembly RS_GCF_003335585.1. The GC content of the type genome is 61.73 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Sulfitobacter assicivita sp. nov.

Candidatus Sulfitobacter assicivita (NL. fem. n. *assicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp006064855*. The type genome for the species is the GenBank assembly RS_GCF_006064855.1. The GC content of the type genome is 58.46 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Sulfitobacter bicoriforma sp. nov.

Candidatus Sulfitobacter bicoriforma (NL. fem. n. *bicoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp002703405*. The type genome for the species is the GenBank assembly GCA_003525825.1. The GC content of the type genome is 61.79 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Sulfitobacter demuletta sp. nov.

Candidatus Sulfitobacter demuletta (NL. fem. n. *demuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp001634885*. The type genome for the species is the GenBank assembly GCA_002725105.1. The GC content of the type genome is 63.32 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Sulfitobacter dimacigena sp. nov.

Candidatus Sulfitobacter dimacigena (NL. fem. n. *dimacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp009363555*. The type genome for the species is the GenBank assembly RS_GCF_009363555.1. The GC content of the type genome is 63.31 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Sulfitobacter evangicula sp. nov.

Candidatus Sulfitobacter evangicula (NL. fem. n. *evangicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sulfitobacter sp003352085*. The type genome for the species is the GenBank assembly RS_GCF_003352085.1. The GC content of the type genome is 54.89 % and the genome length is 5.18 Mbp.

Description of *Candidatus* Sulfitobacter favonitio sp. nov.

Candidatus Sulfitobacter favonitio (NL. fem. n. *favonitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp013002405*. The type genome for the species is the GenBank assembly GCA_013002405.1. The GC content of the type genome is 62.02 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Sulfitobacter holovibula sp. nov.

Candidatus Sulfitobacter holovibula (NL. fem. n. *holovibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp001635605*. The type genome for the species is the GenBank assembly RS_GCF_005068605.1. The GC content of the type genome is 62.46 % and the genome length is 3.67 Mbp.

Description of *Candidatus* Sulfitobacter nefarentia sp. nov.

Candidatus Sulfitobacter nefarentia (NL. fem. n. *nefarentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp001634775*. The type genome for the species is the GenBank assembly RS_GCF_001634775.1. The GC content of the type genome is 60.75 % and the genome length is 4.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea water".

Description of *Candidatus* Sulfitobacter pabilago sp. nov.

Candidatus Sulfitobacter pabilago (NL. fem. n. *pabilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp002731875*. The type genome for the species is the GenBank assembly GCA_002708965.1. The GC content of the type genome is 56.8 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Sulfitobacter pimenifica sp. nov.

Candidatus Sulfitobacter pimenifica (NL. fem. n. *pimenifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp011050655*. The type genome for the species is the GenBank assembly GCA_011050655.1. The GC content of the type genome is 54.8 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Sulfitobacter pocililenta sp. nov.

Candidatus Sulfitobacter pocililenta (NL. fem. n. *pocililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp013139555*. The type genome for the species is the GenBank assembly GCA_013139555.1. The GC content of the type genome is 57.19 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Sulfitobacter podagitrix sp. nov.

Candidatus Sulfitobacter podagitrix (NL. fem. n. *podagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp003352065*. The type genome for the species is the GenBank assembly RS_GCF_003352065.1. The GC content of the type genome is 56.59 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Sulfitobacter refocifica sp. nov.

Candidatus Sulfitobacter refocifica (NL. fem. n. *refocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp013282155*. The type genome for the species is the GenBank assembly RS_GCF_013282155.1. The GC content of the type genome is 57.9 % and the genome length is 3.82 Mbp.

Description of *Candidatus* Sulfitobacter resacentia sp. nov.

Candidatus Sulfitobacter resacentia (NL. fem. n. *resacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp000156335*. The type genome for the species is the GenBank assembly RS_GCF_000156335.1. The GC content of the type genome is 58.74 % and the genome length is 4.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater off the coast of Georgia".

Description of *Candidatus* Sulfitobacter tametatica sp. nov.

Candidatus Sulfitobacter tametatica (NL. fem. n. *tametatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp001886735*. The type genome for the species is the GenBank assembly RS_GCF_001886735.1. The GC content of the type genome is 64.52 % and the genome length is 4.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "cell culture of Alexandrium minutum 1089".

Description of *Candidatus* Sulfitobacter utillicula sp. nov.

Candidatus Sulfitobacter utillicula (NL. fem. n. *utillicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter sp010667575*. The type genome for the species is the GenBank assembly RS_GCF_010667575.1. The GC content of the type genome is 57.83 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Sulfitobacter adsucitoga sp. nov.

Candidatus Sulfitobacter adsucitoga (NL. fem. n. *adsucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter_C sp000620505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000620505.1. The GC content of the type genome is 61.72 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Sulfitobacter vanidibra sp. nov.

Candidatus Sulfitobacter vanidibra (NL. fem. n. *vanidibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfitobacter_C sp003335545*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003335545.1. The GC content of the type genome is 60.87 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Sulfobacillus fidenilega sp. nov.

Candidatus Sulfobacillus fidenilega (NL. fem. n. *fidenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfobacillus_B sp012933365*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012933365.1. The GC content of the type genome is 58.2 % and the genome length is 4.4 Mbp.

Description of *Candidatus* Sulfopaludibacter assifilega sp. nov.

Candidatus Sulfopaludibacter assifilega (NL. fem. n. *assifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfopaludibacter sp900290315*. The type genome for the species is the GenBank assembly RS_GCF_900290315.1. The GC content of the type genome is 61.74 % and the genome length is 8.52 Mbp.

Description of *Candidatus* Sulfotelmatobacter betacedo sp. nov.

Candidatus Sulfotelmatobacter betacedo (NL. fem. n. *betacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003134995*. The type genome for the species is the GenBank assembly GCA_003161455.1. The GC content of the type genome is 56.84 % and the genome length is 5.59 Mbp.

Description of *Candidatus* Sulfotelmatobacter cerevastra sp. nov.

Candidatus Sulfotelmatobacter cerevastra (NL. fem. n. *cerevastra* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003168355*. The type genome for the species is the GenBank assembly GCA_003167095.1. The GC content of the type genome is 57.68 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Sulfotelmatobacter conibatica sp. nov.

Candidatus Sulfotelmatobacter conibatica (NL. fem. n. *conibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003134655*. The type genome for the species is the GenBank assembly GCA_003151355.1. The GC content of the type genome is 58.11 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Sulfotelmatobacter delapivita sp. nov.

Candidatus Sulfotelmatobacter delapivita (NL. fem. n. *delapivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003131585*. The type genome for the species is the GenBank assembly GCA_003131585.1. The GC content of the type genome is 59.24 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Sulfotelmatobacter diritastra sp. nov.

Candidatus Sulfotelmatobacter diritastra (NL. fem. n. *diritastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp013289765*. The type genome for the species is the GenBank assembly GCA_013289765.1. The GC content of the type genome is 56.12 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Sulfotelmatobacter encolimonia sp. nov.

Candidatus Sulfotelmatobacter encolimonia (NL. fem. n. *encolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003165855*. The type genome for the species is the GenBank assembly GCA_003165855.1. The GC content of the type genome is 58.32 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Sulfotelmatobacter feditito ga sp. nov.

Candidatus Sulfotelmatobacter feditito ga (NL. fem. n. *feditito ga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003164855*. The type genome for the species is the GenBank assembly GCA_003164855.1. The GC content of the type genome is 57.26 % and the genome length is 5.23 Mbp.

Description of *Candidatus* Sulfotelmatobacter ficulago sp. nov.

Candidatus Sulfotelmatobacter ficulago (NL. fem. n. *ficulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003156805*. The type genome for the species is the GenBank assembly GCA_003133595.1. The GC content of the type genome is 58.6 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Sulfotelmatobacter inargago sp. nov.

Candidatus Sulfotelmatobacter inargago (NL. fem. n. *inargago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp013289685*. The type genome for the species is the GenBank assembly GCA_013289685.1. The GC content of the type genome is 58.5 % and the genome length is 6.85 Mbp.

Description of *Candidatus* Sulfotelmatobacter incomedo sp. nov.

Candidatus Sulfotelmatobacter incomedo (NL. fem. n. *incomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003136335*. The type genome for the species is the GenBank assembly GCA_003136335.1. The GC content of the type genome is 57.83 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Sulfotelmatobacter maxumitudo sp. nov.

Candidatus Sulfotelmatobacter maxumitudo (NL. fem. n. *maxumitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003140075*. The type genome for the species is the GenBank assembly GCA_003140075.1. The GC content of the type genome is 57.95 % and the genome length is 5.77 Mbp.

Description of *Candidatus* Sulfotelmatobacter menapigena sp. nov.

Candidatus Sulfotelmatobacter menapigena (NL. fem. n. *menapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003138975*. The type genome for the species is the GenBank assembly GCA_003138975.1. The GC content of the type genome is 57.15 % and the genome length is 5.45 Mbp.

Description of *Candidatus* Sulfotelmatobacter nugivicella sp. nov.

Candidatus Sulfotelmatobacter nugivicella (NL. fem. n. *nugivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003166855*. The type genome for the species is the GenBank assembly GCA_003140725.1. The GC content of the type genome is 58.13 % and the genome length is 7.41 Mbp.

Description of *Candidatus* Sulfotelmatobacter odontivita sp. nov.

Candidatus Sulfotelmatobacter odontivita (NL. fem. n. *odontivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003132445*. The type genome for the species is the GenBank assembly GCA_003132445.1. The GC content of the type genome is 56.23 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Sulfotelmatobacter rorulatica sp. nov.

Candidatus Sulfotelmatobacter rorulatica (NL. fem. n. *rorulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003225555*. The type genome for the species is the GenBank assembly GCA_003225555.1. The GC content of the type genome is 57.97 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Sulfotelmatobacter sicinimonas sp. nov.

Candidatus Sulfotelmatobacter sicinimonas (NL. fem. n. *sicinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003165455*. The type genome for the species is the GenBank assembly GCA_003165455.1. The GC content of the type genome is 55.52 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Sulfotelmatobacter sicinitica sp. nov.

Candidatus Sulfotelmatobacter sicinitica (NL. fem. n. *sicinitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003223595*. The type genome for the species is the GenBank assembly GCA_003223595.1. The GC content of the type genome is 57.61 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Sulfotelmatobacter tolutitia sp. nov.

Candidatus Sulfotelmatobacter tolutitia (NL. fem. n. *tolutitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfotelmatobacter sp003225005*. The type genome for the species is the GenBank assembly GCA_003225005.1. The GC content of the type genome is 56.63 % and the genome length is 7.9 Mbp.

Description of *Candidatus* Sulfotelmatobacter vinacetta sp. nov.

Candidatus Sulfotelmatobacter vinacetta (NL. fem. n. *vinacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sulfotelmatobacter sp003131635*. The type genome for the species is the GenBank assembly GCA_003167075.1. The GC content of the type genome is 57.25 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Sulfuricaulis visifitia sp. nov.

Candidatus Sulfuricaulis visifitia (NL. fem. n. *visifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricaulis sp001785195*. The type genome for the species is the GenBank assembly GCA_001785155.1. The GC content of the type genome is 60.47 % and the genome length is 1.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Sulfuricella nubecimonas sp. nov.

Candidatus Sulfuricella nubecimonas (NL. fem. n. *nubecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricella sp002784065*. The type genome for the species is the GenBank assembly GCA_002790295.1. The GC content of the type genome is 58.51 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Sulfuricella obambatica sp. nov.

Candidatus Sulfuricella obambatica (NL. fem. n. *obambatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricella sp000971475*. The type genome for the species is the GenBank assembly RS_GCF_000971475.1. The GC content of the type genome is 56.91 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Sulfuricella abrelitio sp. nov.

Candidatus Sulfuricella abrelitio (NL. fem. n. *abrelitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricella_A sp003104895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003104895.1. The GC content of the type genome is 60.56 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Sulfuricurvum caravax sp. nov.

Candidatus Sulfuricurvum caravax (NL. fem. n. *caravax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricurvum sp002633015*. The type genome for the species is the GenBank assembly GCA_002633015.1. The GC content of the type genome is 42.23 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Sulfuricurvum homolitia sp. nov.

Candidatus Sulfuricurvum homolitia (NL. fem. n. *homolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricurvum sp903844635*. The type genome for the species is the GenBank assembly GCA_903844635.1. The GC content of the type genome is 39.76 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Sulfuricurvum miracilega sp. nov.

Candidatus Sulfuricurvum miracilega (NL. fem. n. *miracilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricurvum sp011391735*. The type genome for the species is the GenBank assembly GCA_011391735.1. The GC content of the type genome is 41.14 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Sulfuricurvum paralitia sp. nov.

Candidatus Sulfuricurvum paralitia (NL. fem. n. *paralitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricurvum sp002282015*. The type genome for the species is the GenBank assembly GCA_002282015.1. The GC content of the type genome is 40.02 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Sulfuricurvum sicunessa sp. nov.

Candidatus Sulfuricurvum sicunessa (NL. fem. n. *sicunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricurvum sp000747095*. The type genome for the species is the GenBank assembly GCA_000747095.1. The GC content of the type genome is 49.11 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "mature fine tailings from oil sands tailings pond".

Description of *Candidatus* Sulfuricurvum timefitudo sp. nov.

Candidatus Sulfuricurvum timefitudo (NL. fem. n. *timefitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricurvum sp000310245*. The type genome for the species is the GenBank assembly GCA_001829605.1. The GC content of the type genome is 43.42 % and the genome length is 2.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Sulfuricurvum tirunugo sp. nov.

Candidatus Sulfuricurvum tirunugo (NL. fem. n. *tirunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuricurvum sp002327465*. The type genome for the species is the GenBank assembly RS_GCF_004347735.1. The GC content of the type genome is 52.62 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Sulfuriferula demogitia sp. nov.

Candidatus Sulfuriferula demogitia (NL. fem. n. *demogitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuriferula sp003455595*. The type genome for the species is the GenBank assembly GCA_003455595.1. The GC content of the type genome is 58.01 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Sulfuriferula atricitudo sp. nov.

Candidatus Sulfuriferula atricitudo (NL. fem. n. *atricitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuriferula_A sp013140765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013140765.1. The GC content of the type genome is 48.58 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Sulfuriferula lanigatio sp. nov.

Candidatus Sulfuriferula lanigatio (NL. fem. n. *lanigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuriferula_A sp002162035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002162035.1. The GC content of the type genome is 54.99 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Sulfurihydrogenibium muriliforma sp. nov.

Candidatus Sulfurihydrogenibium muriliforma (NL. fem. n. *muriliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurihydrogenibium sp000020325*. The type genome for the species is the GenBank assembly GCA_003510745.1. The GC content of the type genome is 31.95 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Sulfurihydrogenibium taxiligena sp. nov.

Candidatus Sulfurihydrogenibium taxiligena (NL. fem. n. *taxiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurihydrogenibium sp002878035*. The type genome for the species is the GenBank assembly GCA_002878035.1. The GC content of the type genome is 34.41 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Sulfurimonas adpugastra sp. nov.

Candidatus Sulfurimonas adpugastra (NL. fem. n. *adpugastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp009258225*. The type genome for the species is the GenBank assembly RS_GCF_009258225.1. The GC content of the type genome is 33.29 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Sulfurimonas adtoritica sp. nov.

Candidatus Sulfurimonas adtoritica (NL. fem. n. *adtoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp003978465*. The type genome for the species is the GenBank assembly GCA_003978465.1. The GC content of the type genome is 34.15 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Sulfurimonas aggubicella sp. nov.

Candidatus Sulfurimonas aggubicella (NL. fem. n. *aggubicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp013607635*. The type genome for the species is the GenBank assembly GCA_013607635.1. The GC content of the type genome is 40.04 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Sulfurimonas anatritoga sp. nov.

Candidatus Sulfurimonas anatritoga (NL. fem. n. *anatritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp002899765*. The type genome for the species is the GenBank assembly GCA_002899765.1. The GC content of the type genome is 36.69 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Sulfurimonas benepedo sp. nov.

Candidatus Sulfurimonas benepedo (NL. fem. n. *benepedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp002732645*. The type genome for the species is the GenBank assembly GCA_002732645.1. The GC content of the type genome is 33.58 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Sulfurimonas bicubessa sp. nov.

Candidatus Sulfurimonas bicubessa (NL. fem. n. *bicubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp903903705*. The type genome for the species is the GenBank assembly GCA_903903705.1. The GC content of the type genome is 36.96 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Sulfurimonas decamilega sp. nov.

Candidatus Sulfurimonas decamilega (NL. fem. n. *decamilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp002781365*. The type genome for the species is the GenBank assembly GCA_002781365.1. The GC content of the type genome is 35.86 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Sulfurimonas decinicella sp. nov.

Candidatus Sulfurimonas decinicella (NL. fem. n. *decinicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp001829785*. The type genome for the species is the GenBank assembly GCA_001830805.1. The GC content of the type genome is 34.49 % and the genome length is 2.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Sulfurimonas exadvibra sp. nov.

Candidatus Sulfurimonas exadvibra (NL. fem. n. *exadvibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp001829715*. The type genome for the species is the GenBank assembly GCA_001829715.1. The GC content of the type genome is 35.72 % and the genome length is 2.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point B".

Description of *Candidatus* Sulfurimonas extoratica sp. nov.

Candidatus Sulfurimonas extoratica (NL. fem. n. *extoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp002428085*. The type genome for the species is the GenBank assembly GCA_002428085.1. The GC content of the type genome is 37.56 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Sulfurimonas fumacisca sp. nov.

Candidatus Sulfurimonas fumacisca (NL. fem. n. *fumacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp001829675*. The type genome for the species is the GenBank assembly GCA_001830775.1. The GC content of the type genome is 36.18 % and the genome length is 1.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Sulfurimonas gabinitoga sp. nov.

Candidatus Sulfurimonas gabinitoga (NL. fem. n. *gabinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp011391635*. The type genome for the species is the GenBank assembly GCA_011391635.1. The GC content of the type genome is 35.8 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Sulfurimonas holisibula sp. nov.

Candidatus Sulfurimonas holisibula (NL. fem. n. *holisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp013791885*. The type genome for the species is the GenBank assembly GCA_013791885.1. The GC content of the type genome is 37.24 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Sulfurimonas impinitudo sp. nov.

Candidatus Sulfurimonas impinitudo (NL. fem. n. *impinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp013153755*. The type genome for the species is the GenBank assembly GCA_013153755.1. The GC content of the type genome is 31.99 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Sulfurimonas impuditica sp. nov.

Candidatus Sulfurimonas impuditica (NL. fem. n. *impuditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp001873135*. The type genome for the species is the GenBank assembly GCA_001873135.1. The GC content of the type genome is 35.97 % and the genome length is 1.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Sulfurimonas locupedo sp. nov.

Candidatus Sulfurimonas locupedo (NL. fem. n. *locupedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp002335055*. The type genome for the species is the GenBank assembly GCA_002335055.1. The GC content of the type genome is 34.24 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Sulfurimonas ludimitas sp. nov.

Candidatus Sulfurimonas ludimitas (NL. fem. n. *ludimitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sulfurimonas sp009068765*. The type genome for the species is the GenBank assembly RS_GCF_009068765.1. The GC content of the type genome is 37.3 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Sulfurimonas nitelimonia sp. nov.

Candidatus Sulfurimonas nitelimonia (NL. fem. n. *nitelimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp002452425*. The type genome for the species is the GenBank assembly GCA_002422695.1. The GC content of the type genome is 40.01 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Sulfurimonas ratificula sp. nov.

Candidatus Sulfurimonas ratificula (NL. fem. n. *ratificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp001829625*. The type genome for the species is the GenBank assembly GCA_001829625.1. The GC content of the type genome is 36.86 % and the genome length is 1.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Sulfurimonas recucilenta sp. nov.

Candidatus Sulfurimonas recucilenta (NL. fem. n. *recucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp002452895*. The type genome for the species is the GenBank assembly GCA_002869525.1. The GC content of the type genome is 34.37 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Sulfurimonas revulicella sp. nov.

Candidatus Sulfurimonas revulicella (NL. fem. n. *revulicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp013607665*. The type genome for the species is the GenBank assembly GCA_013607665.1. The GC content of the type genome is 38.78 %

and the genome length is 1.53 Mbp.

Description of *Candidatus* Sulfurimonas tegimicula sp. nov.

Candidatus Sulfurimonas tegimicula (NL. fem. n. *tegimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp002733945*. The type genome for the species is the GenBank assembly GCA_002733945.1. The GC content of the type genome is 33.86 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Sulfurimonas viripibra sp. nov.

Candidatus Sulfurimonas viripibra (NL. fem. n. *viripibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp014381585*. The type genome for the species is the GenBank assembly GCA_014381585.1. The GC content of the type genome is 35.65 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Sulfurimonas visibilenta sp. nov.

Candidatus Sulfurimonas visibilenta (NL. fem. n. *visibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp002733155*. The type genome for the species is the GenBank assembly GCA_002733155.1. The GC content of the type genome is 29.92 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Sulfurimonas volucicella sp. nov.

Candidatus Sulfurimonas volucicella (NL. fem. n. *volucicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurimonas sp009192995*. The type genome for the species is the GenBank assembly RS_GCF_009192995.1. The GC content of the type genome is 36.78 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Sulfuritalea capucousia sp. nov.

Candidatus Sulfuritalea capucousia (NL. fem. n. *capucousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuritalea sp903908065*. The type genome for the species is the GenBank assembly GCA_903859645.1. The GC content of the type genome is 63.95 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Sulfuritalea depacigena sp. nov.

Candidatus Sulfuritalea depacigena (NL. fem. n. *depacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuritalea sp903932755*. The type genome for the species is the GenBank assembly GCA_903953285.1. The GC content of the type genome is 64.03 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Sulfuritalea detenitica sp. nov.

Candidatus Sulfuritalea detenitica (NL. fem. n. *detenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuritalea sp903959855*. The type genome for the species is the GenBank assembly GCA_903952035.1. The GC content of the type genome is 63.07 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Sulfuritalea detotago sp. nov.

Candidatus Sulfuritalea detotago (NL. fem. n. *detotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuritalea sp006218025*. The type genome for the species is the GenBank assembly GCA_009773275.1. The GC content of the type genome is 63.08 % and the genome length is 4.41 Mbp.

Description of *Candidatus* Sulfuritalea occaledo sp. nov.

Candidatus Sulfuritalea occaledo (NL. fem. n. *occaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuritalea sp001828935*. The type genome for the species is the GenBank assembly GCA_001828935.1. The GC content of the type genome is 63.28 % and the genome length is 4.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Sulfuritalea pabilitoga sp. nov.

Candidatus Sulfuritalea pabilitoga (NL. fem. n. *pabilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuritalea sp903933395*. The type genome for the species is the GenBank assembly GCA_903961235.1. The GC content of the type genome is 64.53 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Sulfuritalea resulivita sp. nov.

Candidatus Sulfuritalea resulivita (NL. fem. n. *resulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuritalea sp012026675*. The type genome for the species is the GenBank assembly GCA_012026675.1. The GC content of the type genome is 62.69 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Sulfuritalea vigenastra sp. nov.

Candidatus Sulfuritalea vigenastra (NL. fem. n. *vigenastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuritalea sp903848955*. The type genome for the species is the GenBank assembly GCA_903825995.1. The GC content of the type genome is 62.91 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Sulfuritortus adtolitica sp. nov.

Candidatus Sulfuritortus adtolitica (NL. fem. n. *adtolitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sulfuritortus sp013389055*. The type genome for the species is the GenBank assembly GCA_013389055.1. The GC content of the type genome is 64.55 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Sulfuritortus denicifica sp. nov.

Candidatus Sulfuritortus denicifica (NL. fem. n. *denicifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfuritortus sp002339725*. The type genome for the species is the GenBank assembly GCA_002339725.1. The GC content of the type genome is 66.08 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Sulfurivermis malogimonas sp. nov.

Candidatus Sulfurivermis malogimonas (NL. fem. n. *malogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurivermis sp002376325*. The type genome for the species is the GenBank assembly GCA_002376325.1. The GC content of the type genome is 63.0 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Sulfurivermis semipitoga sp. nov.

Candidatus Sulfurivermis semipitoga (NL. fem. n. *semipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurivermis sp002840095*. The type genome for the species is the GenBank assembly GCA_002840095.1. The GC content of the type genome is 63.52 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Sulfurospirillum cacaledo sp. nov.

Candidatus Sulfurospirillum cacaledo (NL. fem. n. *cacaledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum sp001548035*. The type genome for the species is the GenBank assembly RS_GCF_001548035.1. The GC content of the type genome is 37.56 % and the genome length is 2.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "chloroethene-contaminated

groundwater".

Description of *Candidatus* Sulfurospirillum capucifica sp. nov.

Candidatus Sulfurospirillum capucifica (NL. fem. n. *capucifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum sp000743525*. The type genome for the species is the GenBank assembly GCA_002383505.1. The GC content of the type genome is 41.67 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Sulfurospirillum cemenimonas sp. nov.

Candidatus Sulfurospirillum cemenimonas (NL. fem. n. *cemenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum sp002328495*. The type genome for the species is the GenBank assembly GCA_002328495.1. The GC content of the type genome is 39.46 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Sulfurospirillum decamitudo sp. nov.

Candidatus Sulfurospirillum decamitudo (NL. fem. n. *decamitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum sp002309535*. The type genome for the species is the GenBank assembly RS_GCF_002309535.1. The GC content of the type genome is 38.84 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Sulfurospirillum encomedo sp. nov.

Candidatus Sulfurospirillum encomedo (NL. fem. n. *encomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum sp002307095*. The type genome for the species is the GenBank assembly GCA_002307095.1. The GC content of the type genome is 41.45 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Sulfurospirillum funebiforma sp. nov.

Candidatus Sulfurospirillum funebiforma (NL. fem. n. *funebiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum sp002452855*. The type genome for the species is the GenBank assembly GCA_002452855.1. The GC content of the type genome is 38.73 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Sulfurospirillum homunimonia sp. nov.

Candidatus Sulfurospirillum homunimonia (NL. fem. n. *homunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum sp002382085*. The type genome for the species is the GenBank assembly GCA_002382085.1. The GC content of the type genome is 43.76 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Sulfurospirillum maxilatio sp. nov.

Candidatus Sulfurospirillum maxilatio (NL. fem. n. *maxilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum sp002162315*. The type genome for the species is the GenBank assembly RS_GCF_002162315.1. The GC content of the type genome is 38.69 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Sulfurospirillum repecicella sp. nov.

Candidatus Sulfurospirillum repecicella (NL. fem. n. *repecicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum sp009930355*. The type genome for the species is the GenBank assembly GCA_009930355.1. The GC content of the type genome is 38.01 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Sulfurospirillum apogrifica sp. nov.

Candidatus Sulfurospirillum apogrifica (NL. fem. n. *apogrifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum_A sp002469305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002469305.1. The GC content of the type genome is 33.96 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Sulfurospirillum horomigena sp. nov.

Candidatus Sulfurospirillum horomigena (NL. fem. n. *horomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurospirillum_A sp002742765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002742765.1. The GC content of the type genome is 33.76 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Sulfurovum abascicella sp. nov.

Candidatus Sulfurovum abascicella (NL. fem. n. *abascicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp902727855*. The type genome for the species is the GenBank assembly GCA_902727855.1. The GC content of the type genome is 34.83 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Sulfurovum denecifica sp. nov.

Candidatus Sulfurovum denecifica (NL. fem. n. *denecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp003934925*. The type genome for the species is the GenBank assembly GCA_003934925.1. The GC content of the type genome is 39.73 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Sulfurovum denupicula sp. nov.

Candidatus Sulfurovum denupicula (NL. fem. n. *denupicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp004377245*. The type genome for the species is the GenBank assembly GCA_004377245.1. The GC content of the type genome is 37.84 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Sulfurovum dicanitrix sp. nov.

Candidatus Sulfurovum dicanitrix (NL. fem. n. *dicanitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp003978375*. The type genome for the species is the GenBank assembly GCA_003978375.1. The GC content of the type genome is 34.8 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Sulfurovum diludivita sp. nov.

Candidatus Sulfurovum diludivita (NL. fem. n. *diludivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp002281755*. The type genome for the species is the GenBank assembly GCA_002256845.1. The GC content of the type genome is 41.68 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Sulfurovum effinatio sp. nov.

Candidatus Sulfurovum effinatio (NL. fem. n. *effinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp013607775*. The type genome for the species is the GenBank assembly GCA_013607775.1. The GC content of the type genome is 37.36 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Sulfurovum excamicella sp. nov.

Candidatus Sulfurovum excamicella (NL. fem. n. *excamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp002085305*. The type genome for the species is the GenBank assembly GCA_002085305.1. The GC content of the type genome is 38.02 %

and the genome length is 1.13 Mbp.

Description of *Candidatus* Sulfurovum fatilatio sp. nov.

Candidatus Sulfurovum fatilatio (NL. fem. n. *fatilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp002403155*. The type genome for the species is the GenBank assembly GCA_002403155.1. The GC content of the type genome is 41.68 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Sulfurovum fetifitudo sp. nov.

Candidatus Sulfurovum fetifitudo (NL. fem. n. *fetifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp011048515*. The type genome for the species is the GenBank assembly GCA_011048515.1. The GC content of the type genome is 45.87 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Sulfurovum imbecitia sp. nov.

Candidatus Sulfurovum imbecitia (NL. fem. n. *imbecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp000296775*. The type genome for the species is the GenBank assembly RS_GCF_000296775.1. The GC content of the type genome is 39.24 % and the genome length is 2.13 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sediment".

Description of *Candidatus* Sulfurovum impacatica sp. nov.

Candidatus Sulfurovum impacatica (NL. fem. n. *impacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp000010345*. The type genome for the species is the GenBank assembly RS_GCF_000010345.1. The GC content of the type genome is 43.87 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Sulfurovum inmorilega sp. nov.

Candidatus Sulfurovum inmorilega (NL. fem. n. *inmorilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp002733355*. The type genome for the species is the GenBank assembly GCA_002733355.1. The GC content of the type genome is 35.77 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Sulfurovum innabedo sp. nov.

Candidatus Sulfurovum innabedo (NL. fem. n. *innabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp011391015*. The type genome for the species is the GenBank assembly GCA_011391015.1. The GC content of the type genome is 41.61 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Sulfurovum metapiforma sp. nov.

Candidatus Sulfurovum metapiforma (NL. fem. n. *metapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp003646505*. The type genome for the species is the GenBank assembly GCA_003646505.1. The GC content of the type genome is 37.09 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Sulfurovum recogimonas sp. nov.

Candidatus Sulfurovum recogimonas (NL. fem. n. *recogimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp002742845*. The type genome for the species is the GenBank assembly GCA_002402935.1. The GC content of the type genome is 40.48 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Sulfurovum recucisca sp. nov.

Candidatus Sulfurovum recucisca (NL. fem. n. *recucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp013139765*. The type genome for the species is the GenBank assembly GCA_013139765.1. The GC content of the type genome is 37.31 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Sulfurovum robigilenta sp. nov.

Candidatus Sulfurovum robigilenta (NL. fem. n. *robigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp002733215*. The type genome for the species is the GenBank assembly GCA_002733215.1. The GC content of the type genome is 38.47 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Sulfurovum visibitoga sp. nov.

Candidatus Sulfurovum visibitoga (NL. fem. n. *visibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sulfurovum sp011330645*. The type genome for the species is the GenBank assembly GCA_011330645.1. The GC content of the type genome is 37.13 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Sunxiuqinia insepimonia sp. nov.

Candidatus Sunxiuqinia insepimonia (NL. fem. n. *insepimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sunxiuqinia sp009847015*. The type genome for the species is the GenBank assembly RS_GCF_009847015.1. The GC content of the type genome is 40.52 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Supelaria sonipigena sp. nov.

Candidatus Supelaria sonipigena (NL. fem. n. *sonipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BIGb0383 sp003751845*. The type genome for the species is the GenBank assembly RS_GCF_003751845.1. The GC content of the type genome is 55.99

% and the genome length is 5.07 Mbp.

Description of *Candidatus* Supelaria gen. nov.

Candidatus Supelaria (NL. fem. n. *Supelaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BIGb0383*. The type species for the genus is *Candidatus* Supelaria sonipigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Supelella cataledo sp. nov.

Candidatus Supelella cataledo (NL. fem. n. *cataledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8901 sp002403115*. The type genome for the species is the GenBank assembly GCA_003501845.1. The GC content of the type genome is 64.14 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Supelella gen. nov.

Candidatus Supelella (NL. fem. n. *Supelella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8901*. The type species for the genus is *Candidatus* Supelella cataledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8901*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Supelellaceae.

Description of *Candidatus* Supelellaceae fam. nov.

Candidatus Supelellaceae (NL. fem. n. *Supelellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8901.* The type genus for the taxon is *Candidatus* Supelella .

According to the original version of GTDB R06-RS202, this family belongs to the order *AC1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the

order *Candidatus* Colutosales.

Description of *Candidatus* Supelia repurifica sp. nov.

Candidatus Supelia repurifica (NL. fem. n. *repurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB2-47-37 sp001803635*. The type genome for the species is the GenBank assembly GCA_003538695.1. The GC content of the type genome is 46.74 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Supelia gen. nov.

Candidatus Supelia (NL. fem. n. *Supelia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB2-47-37*. The type species for the genus is *Candidatus* Supelia repurifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramosaceae.

Description of *Candidatus* Supelida assucibra sp. nov.

Candidatus Supelida assucibra (NL. fem. n. *assucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AP-15 sp005884825*. The type genome for the species is the GenBank assembly GCA_005884825.1. The GC content of the type genome is 63.63 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Supelida gen. nov.

Candidatus Supelida (NL. fem. n. *Supelida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AP-15*. The type species for the genus is *Candidatus* Supelida assucibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Supelida rudecessa sp. nov.

Candidatus Supelida rudecessa (NL. fem. n. *rudecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AP-15 sp005888425*. The type genome for the species is the GenBank assembly GCA_005888555.1. The GC content of the type genome is 65.44 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Supelida triscitia sp. nov.

Candidatus Supelida triscitia (NL. fem. n. *triscitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AP-15 sp005888515*. The type genome for the species is the GenBank assembly GCA_005888515.1. The GC content of the type genome is 65.38 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Supelosa adlacastra sp. nov.

Candidatus Supelosa adlacastra (NL. fem. n. *adlacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1217 sp902784465*. The type genome for the species is the GenBank assembly GCA_902784465.1. The GC content of the type genome is 50.72 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Supelosa gen. nov.

Candidatus Supelosa (NL. fem. n. *Supelosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1217*. The type species for the genus is *Candidatus* Supelosa adlacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Halucosaceae.

Description of *Candidatus* Supelosa dehisitrix sp. nov.

Candidatus Supelosa dehisitrix (NL. fem. n. *dehisitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1217 sp900316965*. The type genome for the species is the GenBank assembly GCA_900316965.1. The GC content of the type genome is 46.91 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Supelosa ecligiforma sp. nov.

Candidatus Supelosa ecligiforma (NL. fem. n. *ecligiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1217 sp002309155*. The type genome for the species is the GenBank assembly GCA_002309155.1. The GC content of the type genome is 48.3 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Supelosa homagentia sp. nov.

Candidatus Supelosa homagentia (NL. fem. n. *homagentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1217 sp902796265*. The type genome for the species is the GenBank assembly GCA_902796265.1. The GC content of the type genome is 46.52 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Supelosa indubibula sp. nov.

Candidatus Supelosa indubibula (NL. fem. n. *indubibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1217 sp902793295*. The type genome for the species is the GenBank assembly GCA_902793295.1. The GC content of the type genome is 52.41 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Supelosa irrelifica sp. nov.

Candidatus Supelosa irrelifica (NL. fem. n. *irrelifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1217 sp002371315*. The type genome for the species is the GenBank assembly GCA_002371315.1. The GC content of the type genome is 54.02 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Supelosa opuscitica sp. nov.

Candidatus Supelosa opuscitica (NL. fem. n. *opuscitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1217 sp002309335*. The type genome for the species is the GenBank assembly GCA_002309335.1. The GC content of the type genome is 47.84 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Supelosa parocitia sp. nov.

Candidatus Supelosa parocitia (NL. fem. n. *parocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1217 sp902788805*. The type genome for the species is the GenBank assembly GCA_902764795.1. The GC content of the type genome is 51.09 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Supelula tomacisca sp. nov.

Candidatus Supelula tomacisca (NL. fem. n. *tomacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LNNU-3342 sp008711135*. The type genome for the species is the GenBank assembly RS_GCF_008711135.1. The GC content of the type genome is 64.56 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Supelula gen. nov.

Candidatus Supelula (NL. fem. n. *Supelula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LNNU-3342*. The type species for the genus is *Candidatus* Supelula tomacisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Superficieibacter nutabitica sp. nov.

Candidatus Superficieibacter nutabitica (NL. fem. n. *nutabitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Superficieibacter sp001187865*. The type genome for the species is the GenBank assembly GCA_002435565.1. The GC content of the type genome is 52.44 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Superficieibacter seposax sp. nov.

Candidatus Superficieibacter seposax (NL. fem. n. *seposax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Superficieibacter sp002421005*. The type genome for the species is the GenBank assembly GCA_002421005.1. The GC content of the type genome is 54.93 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Superficieibacter timefax sp. nov.

Candidatus Superficieibacter timefax (NL. fem. n. *timefax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Superficieibacter sp900766525*. The type genome for the species is the GenBank assembly RS_GCF_900766525.1. The GC content of the type genome is 53.81 % and the genome length is 5.08 Mbp.

Description of *Candidatus* Susicana cilicousia sp. nov.

Candidatus Susicana cilicousia (NL. fem. n. *cilicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNBT01 sp013349435*. The type genome for the species is the GenBank assembly GCA_013349435.1. The GC content of the type genome is 48.44 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Susicana gen. nov.

Candidatus Susicana (NL. fem. n. *Susicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNBT01*. The type species for the genus is *Candidatus* Susicana cilicousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Susicana cohurisca sp. nov.

Candidatus Susicana cohurisca (NL. fem. n. *cohurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNBT01 sp003644205*. The type genome for the species is the GenBank assembly GCA_003644205.1. The GC content of the type genome is 48.7 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Susicaria cerebimonia sp. nov.

Candidatus Susicaria cerebimonia (NL. fem. n. *cerebimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *O2-02-FULL-48-8 sp001777575*. The type genome for the species is the GenBank assembly GCA_001777815.1. The GC content of the type genome is 48.22 % and the genome length is 0.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Susicaria gen. nov.

Candidatus Susicaria (NL. fem. n. *Susicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *O2-02-FULL-48-8*. The type species for the genus is *Candidatus* Susicaria cerebimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-02-FULL-48-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicariaceae.

Description of *Candidatus* Susicariaceae fam. nov.

Candidatus Susicariaceae (NL. fem. n. *Susicariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *O2-02-FULL-48-8.* The type genus for the taxon is *Candidatus* Susicaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA920*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denicosales.

Description of *Candidatus* Susicella insicicella sp. nov.

Candidatus Susicella insicicella (NL. fem. n. *insicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5829 sp002431715*. The type genome for the species is the GenBank assembly GCA_002431715.1. The GC content of the type genome is 49.08 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Susicella gen. nov.

Candidatus Susicella (NL. fem. n. *Susicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5829*. The type species for the genus is *Candidatus* Susicella insicicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicellaceae.

Description of *Candidatus* Susicellaceae fam. nov.

Candidatus Susicellaceae (NL. fem. n. *Susicellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5829.* The type genus for the taxon is *Candidatus* Susicella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Susicellales.

Description of *Candidatus* Susicellales ord. nov.

Candidatus Susicellales (NL. fem. n. *Susicellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5829.* The type genus for the taxon is *Candidatus* Susicella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA5829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Susicellae.

Description of *Candidatus* Susicellae class. nov.

Candidatus Susicellae (NL. fem. n. *c__Susicellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5829.* The type genus for the taxon is *Candidatus* Susicella .

According to GTDB R06-RS202, this class belongs to the phylum *Armatimonadota*.

Description of *Candidatus* Susicia reforedo sp. nov.

Candidatus Susicia reforedo (NL. fem. n. *reforedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QFOP01 sp003248785*. The type genome for the species is the GenBank assembly GCA_003248785.1. The GC content of the type genome is 65.72 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Susicia gen. nov.

Candidatus Susicia (NL. fem. n. *Susicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QFOP01*. The type species for the genus is *Candidatus* Susicia reforedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Susicida agratitrix sp. nov.

Candidatus Susicida agratitrix (NL. fem. n. *agratitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGZB01 sp010031735*. The type genome for the species is the GenBank assembly GCA_010031735.1. The GC content of the type genome is 53.07 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Susicida gen. nov.

Candidatus Susicida (NL. fem. n. *Susicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGZB01*. The type species for the genus is *Candidatus* Susicida agratitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RGZB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicidaceae.

Description of *Candidatus* Susicidaceae fam. nov.

Candidatus Susicidaceae (NL. fem. n. *Susicidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RGZB01.* The type genus for the taxon is *Candidatus* Susicida .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Susicosa troclatica sp. nov.

Candidatus Susicosa troclatica (NL. fem. n. *troclatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADEER01 sp902826395*. The type genome for the species is the GenBank assembly GCA_902826395.1. The GC content of the type genome is 66.22 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Susicosa gen. nov.

Candidatus Susicosa (NL. fem. n. *Susicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADEER01*. The type species for the genus is *Candidatus* Susicosa troclatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADEER01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicosaceae.

Description of *Candidatus* Susicosaceae fam. nov.

Candidatus Susicosaceae (NL. fem. n. *Susicosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADEER01*. The type genus for the taxon is *Candidatus* Susicosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *HRBIN30*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Repecosales.

Description of *Candidatus* Susicula conubifica sp. nov.

Candidatus Susicula conubifica (NL. fem. n. *conubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-67-15 sp001830475*. The type genome for the species is the GenBank assembly GCA_001830475.1. The GC content of the type genome is 66.65 % and the genome length is 2.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Susicula gen. nov.

Candidatus Susicula (NL. fem. n. *Susicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-67-15*. The type species for the genus is *Candidatus* Susicula conubifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-12-FULL-67-15*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Susiculaceae.

Description of *Candidatus* Susiculaceae fam. nov.

Candidatus Susiculaceae (NL. fem. n. *Susiculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-12-FULL-67-15.* The type genus for the taxon is *Candidatus* Susicula .

According to GTDB R06-RS202, this family belongs to the order *Rhodospirillales*.

Description of *Candidatus* Susicula nutabitura sp. nov.

Candidatus Susicula nutabitura (NL. fem. n. *nutabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-67-15 sp009693905*. The type genome for the species is the GenBank assembly GCA_009691085.1. The GC content of the type genome is 66.57 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Sutcliffiella cenodessa sp. nov.

Candidatus Sutcliffiella cenodessa (NL. fem. n. *cenodessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutcliffiella sp001293645*. The type genome for the species is the GenBank assembly RS_GCF_001293645.1. The GC content of the type genome is 39.94 % and the genome length is 3.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea water".

Description of *Candidatus* Sutcliffiella innuliforma sp. nov.

Candidatus Sutcliffiella innuliforma (NL. fem. n. *innuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutcliffiella sp012524115*. The type genome for the species is the GenBank assembly RS_GCF_012524115.1. The GC content of the type genome is 40.31 % and the genome length is 4.22 Mbp.

Description of *Candidatus* Sutcliffiella oblonitura sp. nov.

Candidatus Sutcliffiella oblonitura (NL. fem. n. *oblonitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutcliffiella sp012911845*. The type genome for the species is the GenBank assembly RS_GCF_012911845.1. The GC content of the type genome is 40.23 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Sutcliffiella oratrastra sp. nov.

Candidatus Sutcliffiella oratrastra (NL. fem. n. *oratrastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutcliffiella sp009363695*. The type genome for the species is the GenBank assembly RS_GCF_009363695.1. The GC content of the type genome is 39.75 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Sutcliffiella semigibra sp. nov.

Candidatus Sutcliffiella semigibra (NL. fem. n. *semigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutcliffiella sp002335755*. The type genome for the species is the GenBank assembly RS_GCF_002335755.1. The GC content of the type genome is 36.14 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Sutterella absorousia sp. nov.

Candidatus Sutterella absorousia (NL. fem. n. *absorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutterella sp900764215*. The type genome for the species is the GenBank assembly GCA_900764215.1. The GC content of the type genome is 61.0 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Sutterella acertedo sp. nov.

Candidatus Sutterella acertedo (NL. fem. n. *acertedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutterella sp900754475*. The type genome for the species is the GenBank assembly GCA_900754475.1. The GC content of the type genome is 63.36 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Sutterella annicigena sp. nov.

Candidatus Sutterella annicigena (NL. fem. n. *annicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutterella sp900757865*. The type genome for the species is the GenBank assembly GCA_900757865.1. The GC content of the type genome is 50.66 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Sutterella artopugo sp. nov.

Candidatus Sutterella artopugo (NL. fem. n. *artopugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutterella sp900545275*. The type genome for the species is the GenBank assembly GCA_900545275.1. The GC content of the type genome is 61.28 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Sutterella exsurigena sp. nov.

Candidatus Sutterella exsurigena (NL. fem. n. *exsurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutterella sp900762445*. The type genome for the species is the GenBank assembly GCA_900762445.1. The GC content of the type genome is 49.5 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Sutterella feculitica sp. nov.

Candidatus Sutterella feculitica (NL. fem. n. *feculitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Sutterella sp900770335*. The type genome for the species is the GenBank assembly GCA_900770335.1. The GC content of the type genome is 67.64 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Sutterella retecitas sp. nov.

Candidatus Sutterella retecitas (NL. fem. n. *retecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Sutterella sp900543805*. The type genome for the species is the GenBank assembly GCA_900754925.1. The GC content of the type genome is 61.81 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Symbiobacterium monopitia sp. nov.

Candidatus Symbiobacterium monopitia (NL. fem. n. *monopitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Symbiobacterium sp003242675*. The type genome for the species is the GenBank assembly GCA_003242675.1. The GC content of the type genome is 69.99 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Synechococcus demadisca sp. nov.

Candidatus Synechococcus demadisca (NL. fem. n. *demadisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_B sp007571085*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007571085.1. The GC content of the type genome is 57.28 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Synechococcus pedepitrix sp. nov.

Candidatus Synechococcus pedepitrix (NL. fem. n. *pedepitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_B sp009840445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into

a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009844725.1. The GC content of the type genome is 62.23 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Synechococcus tomacatica sp. nov.

Candidatus Synechococcus tomacatica (NL. fem. n. *tomacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_B sp009836025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009843455.1. The GC content of the type genome is 61.67 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Synechococcus adsifastra sp. nov.

Candidatus Synechococcus adsifastra (NL. fem. n. *adsifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp900474295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900474295.1. The GC content of the type genome is 57.8 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Synechococcus aminnimonia sp. nov.

Candidatus Synechococcus aminnimonia (NL. fem. n. *aminnimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp011523835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011523835.1. The GC content of the type genome is 58.71 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Synechococcus bigematica sp. nov.

Candidatus Synechococcus bigematica (NL. fem. n. *bigematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp001632165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210935.1. The GC content of the type genome is 56.4 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Synechococcus bonitiforma sp. nov.

Candidatus Synechococcus bonitiforma (NL. fem. n. *bonitiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp002687115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002687115.1. The GC content of the type genome is 55.49 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Synechococcus catiligena sp. nov.

Candidatus Synechococcus catiligena (NL. fem. n. *catiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp003210315*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210315.1. The GC content of the type genome is 52.21 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Synechococcus daducitica sp. nov.

Candidatus Synechococcus daducitica (NL. fem. n. *daducitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp002171995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002698505.1. The GC content of the type genome is 58.87 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Synechococcus defunatica sp. nov.

Candidatus Synechococcus defunatica (NL. fem. n. *defunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp014279795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014279795.1. The GC content of the type genome is 59.27 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Synechococcus detosibula sp. nov.

Candidatus Synechococcus detosibula (NL. fem. n. *detosibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp002500205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003208775.1. The GC content of the type genome is 52.91 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Synechococcus domipitio sp. nov.

Candidatus Synechococcus domipitio (NL. fem. n. *domipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp002172935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002172935.1. The GC content of the type genome is 59.8 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Synechococcus eviscastra sp. nov.

Candidatus Synechococcus eviscastra (NL. fem. n. *eviscastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Synechococcus_C sp000153825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000153825.1. The GC content of the type genome is 59.81 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Synechococcus genufivita sp. nov.

Candidatus Synechococcus genufivita (NL. fem. n. *genufivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp000014585*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000014585.1. The GC content of the type genome is 52.45 % and the genome length is 2.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "edge of California current after nitrate enrichment and low light incubation".

Description of *Candidatus* Synechococcus haricimonia sp. nov.

Candidatus Synechococcus haricimonia (NL. fem. n. *haricimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp001631935*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001631935.1. The GC content of the type genome is 55.42 % and the genome length is 3.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "ocean water".

Description of *Candidatus* Synechococcus ignipitrix sp. nov.

Candidatus Synechococcus ignipitrix (NL. fem. n. *ignipitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp001040845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into

a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001040845.1. The GC content of the type genome is 53.14 % and the genome length is 2.66 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water sample".

Description of *Candidatus* Synechococcus infisitia sp. nov.

Candidatus Synechococcus infisitia (NL. fem. n. *infisitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp003211205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003211205.1. The GC content of the type genome is 55.94 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Synechococcus levidax sp. nov.

Candidatus Synechococcus levidax (NL. fem. n. *levidax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp000230675*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014279655.1. The GC content of the type genome is 53.96 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Synechococcus levifitudo sp. nov.

Candidatus Synechococcus levifitudo (NL. fem. n. *levifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp000153065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000153065.1. The GC content of the type genome is 64.46 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Synechococcus lucelisca sp. nov.

Candidatus Synechococcus lucelisca (NL. fem. n. *lucelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp014279815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014279815.1. The GC content of the type genome is 58.82 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Synechococcus malagisca sp. nov.

Candidatus Synechococcus malagisca (NL. fem. n. *malagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp003209155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209155.1. The GC content of the type genome is 56.36 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Synechococcus nutabitas sp. nov.

Candidatus Synechococcus nutabitas (NL. fem. n. *nutabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp014279835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009937125.1. The GC content of the type genome is 54.86 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Synechococcus octopiforma sp. nov.

Candidatus Synechococcus octopiforma (NL. fem. n. *octopiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Synechococcus_C sp003210555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210555.1. The GC content of the type genome is 52.7 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Synechococcus podagastra sp. nov.

Candidatus Synechococcus podagastra (NL. fem. n. *podagastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp000063505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014279955.1. The GC content of the type genome is 60.36 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Synechococcus refocitoga sp. nov.

Candidatus Synechococcus refocitoga (NL. fem. n. *refocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp000153285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000153285.1. The GC content of the type genome is 57.63 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Synechococcus refulimonia sp. nov.

Candidatus Synechococcus refulimonia (NL. fem. n. *refulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp014279975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014279975.1. The GC content of the type genome is 54.98 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Synechococcus regigilenta sp. nov.

Candidatus Synechococcus regigilenta (NL. fem. n. *regigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp002693285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014280095.1. The GC content of the type genome is 58.22 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Synechococcus resuretta sp. nov.

Candidatus Synechococcus resuretta (NL. fem. n. *resuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp900473965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900473965.1. The GC content of the type genome is 54.5 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Synechococcus rubigimonas sp. nov.

Candidatus Synechococcus rubigimonas (NL. fem. n. *rubigimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp011523155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011523155.1. The GC content of the type genome is 62.43 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Synechococcus rutabentia sp. nov.

Candidatus Synechococcus rutabentia (NL. fem. n. *rutabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp011525445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011525445.1. The GC content of the type genome is 52.42 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Synechococcus satacigena sp. nov.

Candidatus Synechococcus satacigena (NL. fem. n. *satacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp004209775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014304795.1. The GC content of the type genome is 63.35 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Synechococcus semibago sp. nov.

Candidatus Synechococcus semibago (NL. fem. n. *semibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp003210755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002702445.1. The GC content of the type genome is 52.33 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Synechococcus semivibra sp. nov.

Candidatus Synechococcus semivibra (NL. fem. n. *semivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp004332415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004332415.1. The GC content of the type genome is 61.61 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Synechococcus sotulitio sp. nov.

Candidatus Synechococcus sotulitio (NL. fem. n. *sotulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_C sp003210775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210775.1. The GC content of the type genome is 54.62 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Synechococcus holisatio sp. nov.

Candidatus Synechococcus holisatio (NL. fem. n. *holisatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_D sp009914645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009914645.1. The GC content of the type genome is 49.85 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Synechococcus acrifatica sp. nov.

Candidatus Synechococcus acrifatica (NL. fem. n. *acrifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp003211535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003211535.1. The GC content of the type genome is 57.39 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Synechococcus adperilenta sp. nov.

Candidatus Synechococcus adperilenta (NL. fem. n. *adperilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp002690325*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002690325.1. The GC content of the type genome is 55.94 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Synechococcus adrecatio sp. nov.

Candidatus Synechococcus adrecatio (NL. fem. n. *adrecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp014280195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014280195.1. The GC content of the type genome is 59.64 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Synechococcus adrenitura sp. nov.

Candidatus Synechococcus adrenitura (NL. fem. n. *adrenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp003211235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003211235.1. The GC content of the type genome is 55.65 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Synechococcus agripiforma sp. nov.

Candidatus Synechococcus agripiforma (NL. fem. n. *agripiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp003209165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003209165.1. The GC content of the type genome is 56.91 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Synechococcus bonitibula sp. nov.

Candidatus Synechococcus bonitibula (NL. fem. n. *bonitibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp002724845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001628325.1. The GC content of the type genome is 62.76 % and the genome length is 1.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 12 - depth 25m".

Description of *Candidatus* Synechococcus calipifica sp. nov.

Candidatus Synechococcus calipifica (NL. fem. n. *calipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp002700765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002169615.1. The GC content of the type genome is 57.7 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Synechococcus capilago sp. nov.

Candidatus Synechococcus capilago (NL. fem. n. *capilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp000195975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003712085.1. The GC content of the type genome is 59.31 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Synechococcus catapitas sp. nov.

Candidatus Synechococcus catapitas (NL. fem. n. *catapitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp000515235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into

a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002167425.2. The GC content of the type genome is 56.52 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Synechococcus cibarilega sp. nov.

Candidatus Synechococcus cibarilega (NL. fem. n. *cibarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp000737575*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002470335.1. The GC content of the type genome is 64.05 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Synechococcus cohonetta sp. nov.

Candidatus Synechococcus cohonetta (NL. fem. n. *cohonetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp000012625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000012625.1. The GC content of the type genome is 59.22 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Synechococcus depupicella sp. nov.

Candidatus Synechococcus depupicella (NL. fem. n. *depupicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp002170825*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002170825.1. The GC content of the type genome is 60.52 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Synechococcus desacitura sp. nov.

Candidatus Synechococcus desacitura (NL. fem. n. *desacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp000737595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000737595.1. The GC content of the type genome is 59.09 % and the genome length is 2.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Synechococcus desurimonas sp. nov.

Candidatus Synechococcus desurimonas (NL. fem. n. *desurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp000153805*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000153805.1. The GC content of the type genome is 54.24 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Synechococcus detenisca sp. nov.

Candidatus Synechococcus detenisca (NL. fem. n. *detenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp002701375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002701375.1. The GC content of the type genome is 51.2 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Synechococcus dupunago sp. nov.

Candidatus Synechococcus dupunago (NL. fem. n. *dupunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp003211515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into

a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003211515.1. The GC content of the type genome is 52.72 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Synechococcus epicribula sp. nov.

Candidatus Synechococcus epicribula (NL. fem. n. *epicribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp003210795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210795.1. The GC content of the type genome is 56.23 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Synechococcus exaggicula sp. nov.

Candidatus Synechococcus exaggicula (NL. fem. n. *exaggicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp002684175*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002684175.1. The GC content of the type genome is 55.62 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Synechococcus feculousia sp. nov.

Candidatus Synechococcus feculousia (NL. fem. n. *feculousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp003210735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003210735.1. The GC content of the type genome is 56.06 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Synechococcus laxitibula sp. nov.

Candidatus Synechococcus laxitibula (NL. fem. n. *laxitibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp004212765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004212765.1. The GC content of the type genome is 61.87 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Synechococcus manomicella sp. nov.

Candidatus Synechococcus manomicella (NL. fem. n. *manomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp000012505*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000012505.1. The GC content of the type genome is 54.16 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Synechococcus nefaritoga sp. nov.

Candidatus Synechococcus nefaritoga (NL. fem. n. *nefaritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp014279755*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014279755.1. The GC content of the type genome is 58.38 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Synechococcus nucifastra sp. nov.

Candidatus Synechococcus nucifastra (NL. fem. n. *nucifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp002691345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002172015.1.

The GC content of the type genome is 59.41 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Synechococcus pedifentia sp. nov.

Candidatus Synechococcus pedifentia (NL. fem. n. *pedifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp003208835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003208835.1. The GC content of the type genome is 52.93 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Synechococcus rinocigena sp. nov.

Candidatus Synechococcus rinocigena (NL. fem. n. *rinocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp000737535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000737535.1. The GC content of the type genome is 57.5 % and the genome length is 2.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "seawater".

Description of *Candidatus* Synechococcus rosacitudo sp. nov.

Candidatus Synechococcus rosacitudo (NL. fem. n. *rosacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp900474185*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_011365345.1. The GC content of the type genome is 58.24 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Synechococcus semunilega sp. nov.

Candidatus Synechococcus semunilega (NL. fem. n. *semunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp013911515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013911515.1. The GC content of the type genome is 61.4 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Synechococcus utrinimonas sp. nov.

Candidatus Synechococcus utrinimonas (NL. fem. n. *utrinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechococcus_E sp000161795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000161795.2. The GC content of the type genome is 60.09 % and the genome length is 2.11 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sargasso Sea".

Description of *Candidatus* Synechocystis butubifica sp. nov.

Candidatus Synechocystis butubifica (NL. fem. n. *butubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechocystis sp000284455*. The type genome for the species is the GenBank assembly RS_GCF_000284215.1. The GC content of the type genome is 47.74 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Synechocystis sanabilega sp. nov.

Candidatus Synechocystis sanabilega (NL. fem. n. *sanabilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Synechocystis sp000478825*. The type genome for the species is the GenBank assembly RS_GCF_000478825.2. The GC content of the type genome is 47.55 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Syntrophaceticus algebitura sp. nov.

Candidatus Syntrophaceticus algebitura (NL. fem. n. *algebitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophaceticus sp002397275*. The type genome for the species is the GenBank assembly GCA_002397275.1. The GC content of the type genome is 50.71 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Syntrophaceticus anactousia sp. nov.

Candidatus Syntrophaceticus anactousia (NL. fem. n. *anactousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophaceticus sp002426495*. The type genome for the species is the GenBank assembly GCA_002426495.1. The GC content of the type genome is 45.38 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Syntrophaceticus loripousia sp. nov.

Candidatus Syntrophaceticus loripousia (NL. fem. n. *loripousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophaceticus sp012839645*. The type genome for the species is the GenBank assembly GCA_012839645.1. The GC content of the type genome is 46.2 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Syntrophomonas inlepilenta sp. nov.

Candidatus Syntrophomonas inlepilenta (NL. fem. n. *inlepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophomonas_A sp012729835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012729835.1. The GC content of the type genome is 47.6 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Syntrophomonas epitricella sp. nov.

Candidatus Syntrophomonas epitricella (NL. fem. n. *epitricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophomonas_B sp012729495*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012729495.1. The GC content of the type genome is 45.53 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Syntrophorhabdus conarousia sp. nov.

Candidatus Syntrophorhabdus conarousia (NL. fem. n. *conarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophorhabdus sp002067475*. The type genome for the species is the GenBank assembly GCA_002067475.1. The GC content of the type genome is 50.97 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Syntrophorhabdus pinacitas sp. nov.

Candidatus Syntrophorhabdus pinacitas (NL. fem. n. *pinacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophorhabdus sp002067585*. The type genome for the species is the GenBank assembly GCA_002070575.1. The GC content of the type genome is 43.94 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Syntrophorhabdus vigenigena sp. nov.

Candidatus Syntrophorhabdus vigenigena (NL. fem. n. *vigenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophorhabdus sp002067165*. The type genome for the species is the GenBank assembly GCA_002067415.1. The GC content of the type genome is 50.47 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Syntrophosphaera admulisca sp. nov.

Candidatus Syntrophosphaera admulisca (NL. fem. n. *admulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophosphaera sp012522635*. The type genome for the species is the GenBank assembly GCA_012522635.1. The GC content of the type genome is 49.78 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Syntrophosphaera carucentia sp. nov.

Candidatus Syntrophosphaera carucentia (NL. fem. n. *carucentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophosphaera sp002376725*. The type genome for the species is the GenBank assembly GCA_002376725.1. The GC content of the type genome is 36.03 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Syntrophosphaera holovilenta sp. nov.

Candidatus Syntrophosphaera holovilenta (NL. fem. n. *holovilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophosphaera sp012516855*. The type genome for the species is the GenBank assembly GCA_012516855.1. The GC content of the type genome is 54.01 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Syntrophosphaera nocenimonia sp. nov.

Candidatus Syntrophosphaera nocenimonia (NL. fem. n. *nocenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophosphaera sp012728875*. The type genome for the species is the GenBank assembly GCA_012728875.1. The GC content of the type genome is 50.51 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Syntrophosphaera nubecousia sp. nov.

Candidatus Syntrophosphaera nubecousia (NL. fem. n. *nubecousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophosphaera sp002070045*. The type genome for the species is the GenBank assembly GCA_002070045.1. The GC content of the type genome is 36.3

% and the genome length is 1.4 Mbp.

Description of *Candidatus* Syntrophotalea adcucilenta sp. nov.

Candidatus Syntrophotalea adcucilenta (NL. fem. n. *adcucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophotalea sp002435955*. The type genome for the species is the GenBank assembly GCA_002435955.1. The GC content of the type genome is 56.15 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Syntrophotalea bicoritura sp. nov.

Candidatus Syntrophotalea bicoritura (NL. fem. n. *bicoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophotalea sp002452265*. The type genome for the species is the GenBank assembly GCA_002452265.1. The GC content of the type genome is 52.83 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Syntrophotalea tomogilega sp. nov.

Candidatus Syntrophotalea tomogilega (NL. fem. n. *tomogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophotalea sp002424645*. The type genome for the species is the GenBank assembly GCA_002424645.1. The GC content of the type genome is 53.45 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Syntrophus casabivita sp. nov.

Candidatus Syntrophus casabivita (NL. fem. n. *casabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophus sp002067745*. The type genome for the species is the GenBank assembly GCA_002067745.1. The GC content of the type genome is 55.11 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Syntrophus vehicitura sp. nov.

Candidatus Syntrophus vehicitura (NL. fem. n. *vehicitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Syntrophus sp002067815*. The type genome for the species is the GenBank assembly GCA_002067815.1. The GC content of the type genome is 48.91 % and the genome length is 2.84 Mbp.

Description of *Candidatus* TOLSYN celumitio sp. nov.

Candidatus TOLSYN celumitio (NL. fem. n. *celumitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *TOLSYN sp903851035*. The type genome for the species is the GenBank assembly GCA_903912655.1. The GC content of the type genome is 61.2 % and the genome length is 3.26 Mbp.

Description of *Candidatus* TOLSYN ignifousia sp. nov.

Candidatus TOLSYN ignifousia (NL. fem. n. *ignifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *TOLSYN sp003010405*. The type genome for the species is the GenBank assembly GCA_003010405.1. The GC content of the type genome is 55.46 % and the genome length is 3.64 Mbp.

Description of *Candidatus* TOLSYN nidifitudo sp. nov.

Candidatus TOLSYN nidifitudo (NL. fem. n. *nidifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *TOLSYN sp903832295*. The type genome for the species is the GenBank assembly GCA_903832295.1. The GC content of the type genome is 59.29 % and the genome length is 4.87 Mbp.

Description of *Candidatus* Tabifana pedepitio sp. nov.

Candidatus Tabifana pedepitio (NL. fem. n. *pedepitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMQI01 sp014377045*. The type genome for the species is the GenBank assembly GCA_014377045.1. The GC content of the type genome is 32.05 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Tabifana gen. nov.

Candidatus Tabifana (NL. fem. n. *Tabifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMQI01*. The type species for the genus is *Candidatus* Tabifana pedepitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACMRA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ficedosaceae.

Description of *Candidatus* Tabifaria cibicitrix sp. nov.

Candidatus Tabifaria cibicitrix (NL. fem. n. *cibicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J111 sp003694775*. The type genome for the species is the GenBank assembly GCA_003694775.1. The GC content of the type genome is 60.34 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Tabifaria gen. nov.

Candidatus Tabifaria (NL. fem. n. *Tabifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J111*. The type species for the genus is *Candidatus* Tabifaria cibicitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J111*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifariaceae.

Description of *Candidatus* Tabifariaceae fam. nov.

Candidatus Tabifariaceae (NL. fem. n. *Tabifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J111*. The type genus for the taxon is *Candidatus* Tabifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *4572-78*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bovicidales.

Description of *Candidatus* Tabifella peridicella sp. nov.

Candidatus Tabifella peridicella (NL. fem. n. *peridicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-55-46 sp001595385*. The type genome for the species is the GenBank assembly GCA_001798425.1. The GC content of the type genome is 55.4 % and the genome length is 2.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Tabifella gen. nov.

Candidatus Tabifella (NL. fem. n. *Tabifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-55-46*. The type species for the genus is *Candidatus* Tabifella peridicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifellaceae.

Description of *Candidatus* Tabifellaceae fam. nov.

Candidatus Tabifellaceae (NL. fem. n. *Tabifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-55-46.* The type genus for the taxon is *Candidatus* Tabifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabifellales.

Description of *Candidatus* Tabifellales ord. nov.

Candidatus Tabifellales (NL. fem. n. *Tabifellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-55-46.* The type genus for the taxon is *Candidatus* Tabifella .

According to the original version of GTDB R06-RS202, this family belongs to the class *GWC2-55-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Tabifellae.

Description of *Candidatus* Tabifellae class. nov.

Candidatus Tabifellae (NL. fem. n. *c__Tabifellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-55-46.* The type genus for the taxon is *Candidatus* Tabifella .

According to GTDB R06-RS202, this class belongs to the phylum *Desulfobacterota_F*.

Description of *Candidatus* Tabifia capabitio sp. nov.

Candidatus Tabifia capabitio (NL. fem. n. *capabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2135 sp002327685*. The type genome for the species is the GenBank assembly GCA_002688065.1. The GC content of the type genome is 40.48 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Tabifia gen. nov.

Candidatus Tabifia (NL. fem. n. *Tabifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2135*. The type species for the genus is *Candidatus* Tabifia capabitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifiaceae.

Description of *Candidatus* Tabifiaceae fam. nov.

Candidatus Tabifiaceae (NL. fem. n. *Tabifiaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2135.* The type genus for the taxon is *Candidatus* Tabifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Tabifida hemitigena sp. nov.

Candidatus Tabifida hemitigena (NL. fem. n. *hemitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADDZV01 sp902812875*. The type genome for the species is the GenBank assembly RS_GCF_902812875.1. The GC content of the type genome is 62.24 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Tabifida gen. nov.

Candidatus Tabifida (NL. fem. n. *Tabifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADDZV01*. The type species for the genus is *Candidatus* Tabifida hemitigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADDZV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifidaceae.

Description of *Candidatus* Tabifidaceae fam. nov.

Candidatus Tabifidaceae (NL. fem. n. *Tabifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADDZV01.* The type genus for the taxon is *Candidatus* Tabifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *CADDZV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabifidales.

Description of *Candidatus* Tabifidales ord. nov.

Candidatus Tabifidales (NL. fem. n. *Tabifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADDZV01*. The type genus for the taxon is *Candidatus* Tabifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetariae.

Description of *Candidatus* Tabifosa benifibula sp. nov.

Candidatus Tabifosa benifibula (NL. fem. n. *benifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACEFB01 sp013694095*. The type genome for the species is the GenBank assembly GCA_011048125.1. The GC content of the type genome is 60.33 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Tabifosa gen. nov.

Candidatus Tabifosa (NL. fem. n. *Tabifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACEFB01*. The type species for the genus is *Candidatus* Tabifosa benifibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tabifula fefeliforma sp. nov.

Candidatus Tabifula fefeliforma (NL. fem. n. *fefeliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB2-FULL-38-15 sp001778095*. The type genome for the species is the GenBank assembly GCA_001780335.1. The GC content of the type genome is 38.41 % and the genome length is 0.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point D".

Description of *Candidatus* Tabifula gen. nov.

Candidatus Tabifula (NL. fem. n. *Tabifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB2-FULL-38-15*. The type species for the genus is *Candidatus* Tabifula fefeliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYB2-FULL-38-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabifulaceae.

Description of *Candidatus* Tabifulaceae fam. nov.

Candidatus Tabifulaceae (NL. fem. n. *Tabifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYB2-FULL-38-15.* The type genus for the taxon is *Candidatus* Tabifula .

According to the original version of GTDB R06-RS202, this family belongs to the order *XYB2-FULL-38-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabifulales.

Description of *Candidatus* Tabifulales ord. nov.

Candidatus Tabifulales (NL. fem. n. *Tabifulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYB2-FULL-38-15.* The type genus for the taxon is *Candidatus* Tabifula .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Tabitana oppanitica sp. nov.

Candidatus Tabitana oppanitica (NL. fem. n. *oppanitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWAT01 sp013360915*. The type genome for the species is the GenBank assembly GCA_013360915.1. The GC content of the type genome is 49.91 %

and the genome length is 3.66 Mbp.

Description of *Candidatus* Tabitana gen. nov.

Candidatus Tabitana (NL. fem. n. *Tabitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWAT01*. The type species for the genus is *Candidatus* Tabitana oppanitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABWAT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabitanaceae.

Description of *Candidatus* Tabitanaceae fam. nov.

Candidatus Tabitanaceae (NL. fem. n. *Tabitanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWAT01.* The type genus for the taxon is *Candidatus* Tabitana .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABWAT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabitanales.

Description of *Candidatus* Tabitanales ord. nov.

Candidatus Tabitanales (NL. fem. n. *Tabitanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWAT01.* The type genus for the taxon is *Candidatus* Tabitana .

According to the original version of GTDB R06-RS202, this family belongs to the class *JABWAT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Tabitanae.

Description of *Candidatus* Tabitanae class. nov.

Candidatus Tabitanae (NL. fem. n. *c__Tabitanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWAT01.* The type genus for the taxon is *Candidatus* Tabitana .

According to GTDB R06-RS202, this class belongs to the phylum *Bacteroidota*.

Description of *Candidatus* Tabitaria rubigisca sp. nov.

Candidatus Tabitaria rubigisca (NL. fem. n. *rubigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-44-25 sp001778635*. The type genome for the species is the GenBank assembly GCA_001778635.1. The GC content of the type genome is 44.32 % and the genome length is 0.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Tabitaria gen. nov.

Candidatus Tabitaria (NL. fem. n. *Tabitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-44-25*. The type species for the genus is *Candidatus* Tabitaria rubigisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-45-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tametellaceae.

Description of *Candidatus* Tabitaria vocamago sp. nov.

Candidatus Tabitaria vocamago (NL. fem. n. *vocamago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-44-25 sp001780725*. The type genome for the species is the GenBank assembly GCA_001778935.1. The GC content of the type genome is 44.31 % and the genome length is 0.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Tabitella anamniforma sp. nov.

Candidatus Tabitella anamniforma (NL. fem. n. *anamniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002050365 sp013696385*. The type genome for the species is the GenBank assembly GCA_013696385.1. The GC content of the type genome is 43.74 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Tabitella gen. nov.

Candidatus Tabitella (NL. fem. n. *Tabitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002050365*. The type species for the genus is *Candidatus* Tabitella anamniforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tabitella cicatigena sp. nov.

Candidatus Tabitella cicatigena (NL. fem. n. *cicatigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002050365 sp902805935*. The type genome for the species is the GenBank assembly GCA_902805935.1. The GC content of the type genome is 50.52 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Tabitella denigastra sp. nov.

Candidatus Tabitella denigastra (NL. fem. n. *denigastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002050365 sp002050455*. The type genome for the species is the GenBank assembly GCA_013816965.1. The GC content of the type genome is 44.3 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Tabitella ephemastra sp. nov.

Candidatus Tabitella ephemastra (NL. fem. n. *ephemastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002050365 sp013813755*. The type genome for the species is the

GenBank assembly GCA_013813755.1. The GC content of the type genome is 44.86 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Tabitella epicritia sp. nov.

Candidatus Tabitella epicritia (NL. fem. n. *epicritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002050365 sp002050355*. The type genome for the species is the GenBank assembly GCA_002050355.1. The GC content of the type genome is 45.7 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Tabitella petuledo sp. nov.

Candidatus Tabitella petuledo (NL. fem. n. *petuledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002050365 sp002050365*. The type genome for the species is the GenBank assembly GCA_002050365.1. The GC content of the type genome is 45.41 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Tabitia bifarigena sp. nov.

Candidatus Tabitia bifarigena (NL. fem. n. *bifarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8921 sp003535395*. The type genome for the species is the GenBank assembly GCA_003535395.1. The GC content of the type genome is 52.64 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Tabitia gen. nov.

Candidatus Tabitia (NL. fem. n. *Tabitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8921*. The type species for the genus is *Candidatus* Tabitia bifarigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8921*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabitiaceae.

Description of *Candidatus* Tabitiaceae fam. nov.

Candidatus Tabitiaceae (NL. fem. n. *Tabitiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8921.* The type genus for the taxon is *Candidatus* Tabitia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8921*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tabitiales.

Description of *Candidatus* Tabitiales ord. nov.

Candidatus Tabitiales (NL. fem. n. *Tabitiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8921.* The type genus for the taxon is *Candidatus* Tabitia .

According to the GTDB R06-RS202, this order belongs to the class *Clostridia*.

Description of *Candidatus* Tabitida favililega sp. nov.

Candidatus Tabitida favililega (NL. fem. n. *favililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8199 sp003527065*. The type genome for the species is the GenBank assembly GCA_002071015.1. The GC content of the type genome is 63.74 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Tabitida gen. nov.

Candidatus Tabitida (NL. fem. n. *Tabitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8199*. The type species for the genus is *Candidatus* Tabitida favililega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8199*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabitidaceae.

Description of *Candidatus* Tabitidaceae fam. nov.

Candidatus Tabitidaceae (NL. fem. n. *Tabitidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8199.* The type genus for the taxon is *Candidatus* Tabitida .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Tabitosa domabitas sp. nov.

Candidatus Tabitosa domabitas (NL. fem. n. *domabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12463 sp011355115*. The type genome for the species is the GenBank assembly GCA_011355115.1. The GC content of the type genome is 37.78 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Tabitosa gen. nov.

Candidatus Tabitosa (NL. fem. n. *Tabitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12463*. The type species for the genus is *Candidatus* Tabitosa domabitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12463*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tabitosaceae.

Description of *Candidatus* Tabitosaceae fam. nov.

Candidatus Tabitosaceae (NL. fem. n. *Tabitosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12463.* The type genus for the taxon is *Candidatus* Tabitosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Tabitosa ludifago sp. nov.

Candidatus Tabitosa ludifago (NL. fem. n. *ludifago* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12463 sp000993595*. The type genome for the species is the GenBank assembly GCA_000993595.1. The GC content of the type genome is 38.47 % and the genome length is 1.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Tabitosa ludifessa sp. nov.

Candidatus Tabitosa ludifessa (NL. fem. n. *ludifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12463 sp000992695*. The type genome for the species is the GenBank assembly GCA_003488815.1. The GC content of the type genome is 37.94 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Tabitula adsocibula sp. nov.

Candidatus Tabitula adsocibula (NL. fem. n. *adsocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3796 sp902773295*. The type genome for the species is the GenBank assembly GCA_902773295.1. The GC content of the type genome is 53.33 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Tabitula gen. nov.

Candidatus Tabitula (NL. fem. n. *Tabitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3796*. The type species for the genus is *Candidatus* Tabitula adsocibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tabitula detenatica sp. nov.

Candidatus Tabitula detenatica (NL. fem. n. *detenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3796 sp002369175*. The type genome for the species is the GenBank assembly GCA_002369175.1. The GC content of the type genome is 52.57 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Tabitula medimastra sp. nov.

Candidatus Tabitula medimastra (NL. fem. n. *medimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3796 sp902801565*. The type genome for the species is the GenBank assembly GCA_902801565.1. The GC content of the type genome is 53.47 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Tabrizicola aggesitica sp. nov.

Candidatus Tabrizicola aggesitica (NL. fem. n. *aggesitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp012032275*. The type genome for the species is the GenBank assembly GCA_012032275.1. The GC content of the type genome is 64.22 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Tabrizicola apercigena sp. nov.

Candidatus Tabrizicola apercigena (NL. fem. n. *apercigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp011174775*. The type genome for the species is the GenBank assembly RS_GCF_011174775.1. The GC content of the type genome is 67.46 % and the genome length is 3.63 Mbp.

Description of *Candidatus* Tabrizicola aplesousia sp. nov.

Candidatus Tabrizicola aplesousia (NL. fem. n. *aplesousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp009773055*. The type genome for the species is the GenBank assembly GCA_009773055.1. The GC content of the type genome is 64.14 %

and the genome length is 2.26 Mbp.

Description of *Candidatus* Tabrizicola capilatio sp. nov.

Candidatus Tabrizicola capilatio (NL. fem. n. *capilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp004762095*. The type genome for the species is the GenBank assembly RS_GCF_004762095.1. The GC content of the type genome is 65.69 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Tabrizicola carecessa sp. nov.

Candidatus Tabrizicola carecessa (NL. fem. n. *carecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp005222785*. The type genome for the species is the GenBank assembly RS_GCF_005222785.1. The GC content of the type genome is 65.27 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Tabrizicola cepulimonas sp. nov.

Candidatus Tabrizicola cepulimonas (NL. fem. n. *cepulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp002280315*. The type genome for the species is the GenBank assembly GCA_002279895.1. The GC content of the type genome is 65.46 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Tabrizicola desomatica sp. nov.

Candidatus Tabrizicola desomatica (NL. fem. n. *desomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp002280405*. The type genome for the species is the GenBank assembly GCA_002280405.1. The GC content of the type genome is 66.37 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Tabrizicola infanisca sp. nov.

Candidatus Tabrizicola infanisca (NL. fem. n. *infanisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp012036325*. The type genome for the species is the GenBank assembly GCA_012036325.1. The GC content of the type genome is 63.89 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Tabrizicola nocenax sp. nov.

Candidatus Tabrizicola nocenax (NL. fem. n. *nocenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp903917595*. The type genome for the species is the GenBank assembly GCA_903917595.1. The GC content of the type genome is 62.73 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Tabrizicola rinocatica sp. nov.

Candidatus Tabrizicola rinocatica (NL. fem. n. *rinocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp013824055*. The type genome for the species is the GenBank assembly GCA_013824055.1. The GC content of the type genome is 67.14 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Tabrizicola visibatica sp. nov.

Candidatus Tabrizicola visibatica (NL. fem. n. *visibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tabrizicola sp013821825*. The type genome for the species is the GenBank assembly GCA_013821825.1. The GC content of the type genome is 64.22 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Tagaea octodiforma sp. nov.

Candidatus Tagaea octodiforma (NL. fem. n. *octodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tagaea sp014444615*. The type genome for the species is the GenBank assembly GCA_014444615.1. The GC content of the type genome is 64.99 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Tahibacter anxifedo sp. nov.

Candidatus Tahibacter anxifedo (NL. fem. n. *anxifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tahibacter sp013298265*. The type genome for the species is the GenBank assembly GCA_013298265.1. The GC content of the type genome is 66.05 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Tahibacter vivifibra sp. nov.

Candidatus Tahibacter vivifibra (NL. fem. n. *vivifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tahibacter sp001725155*. The type genome for the species is the GenBank assembly GCA_001725155.1. The GC content of the type genome is 68.63 % and the genome length is 5.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Tamaricihabitans inremitas sp. nov.

Candidatus Tamaricihabitans inremitas (NL. fem. n. *inremitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tamaricihabitans sp009379845*. The type genome for the species is the GenBank assembly GCA_009379845.1. The GC content of the type genome is 67.94 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Tametana domipitudo sp. nov.

Candidatus Tametana domipitudo (NL. fem. n. *domipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-54-11 sp001873755*. The type genome for the species is the

GenBank assembly GCA_001873755.1. The GC content of the type genome is 54.08 % and the genome length is 1.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "groundwater filtered through a 3.0 um filter".

Description of *Candidatus* Tametana gen. nov.

Candidatus Tametana (NL. fem. n. *Tametana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-54-11*. The type species for the genus is *Candidatus* Tametana domipitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-54-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tametanaceae.

Description of *Candidatus* Tametanaceae fam. nov.

Candidatus Tametanaceae (NL. fem. n. *Tametanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-54-11.* The type genus for the taxon is *Candidatus* Tametana .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-54-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tametanales.

Description of *Candidatus* Tametanales ord. nov.

Candidatus Tametanales (NL. fem. n. *Tametanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-54-11.* The type genus for the taxon is *Candidatus* Tametana .

According to the original version of GTDB R06-RS202, this family belongs to the class *CG2-30-54-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Tametanae.

Description of *Candidatus* Tametanae class. nov.

Candidatus Tametanae (NL. fem. n. *c__Tametanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-54-11.* The type genus for the taxon is *Candidatus* Tametana .

According to GTDB R06-RS202, this class belongs to the phylum *Patescibacteria*.

Description of *Candidatus* Tametaria extipastra sp. nov.

Candidatus Tametaria extipastra (NL. fem. n. *extipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5342 sp002408065*. The type genome for the species is the GenBank assembly GCA_002408065.1. The GC content of the type genome is 40.27 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Tametaria gen. nov.

Candidatus Tametaria (NL. fem. n. *Tametaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5342*. The type species for the genus is *Candidatus* Tametaria extipastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5342*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tametariaceae.

Description of *Candidatus* Tametariaceae fam. nov.

Candidatus Tametariaceae (NL. fem. n. *Tametariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5342.* The type genus for the taxon is *Candidatus* Tametaria .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Tametella cinefimonia sp. nov.

Candidatus Tametella cinefimonia (NL. fem. n. *cinefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-45-33 sp001778875*. The type genome for the species is

the GenBank assembly GCA_001780565.1. The GC content of the type genome is 43.6 % and the genome length is 0.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Tametella gen. nov.

Candidatus Tametella (NL. fem. n. *Tametella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-45-33*. The type species for the genus is *Candidatus* Tametella cinefimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-45-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tametellaceae.

Description of *Candidatus* Tametellaceae fam. nov.

Candidatus Tametellaceae (NL. fem. n. *Tametellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-45-33.* The type genus for the taxon is *Candidatus* Tametella .

According to the original version of GTDB R06-RS202, this family belongs to the order *WO2-41-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Refulariales.

Description of *Candidatus* Tametella redaciforma sp. nov.

Candidatus Tametella redaciforma (NL. fem. n. *redaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-45-33 sp001778595*. The type genome for the species is the GenBank assembly GCA_001778595.1. The GC content of the type genome is 44.31 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Tametia accogicula sp. nov.

Candidatus Tametia accogicula (NL. fem. n. *accogicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902632555*. The type genome for the species is the GenBank assembly GCA_902632555.1. The GC content of the type genome is 32.97 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Tametia gen. nov.

Candidatus Tametia (NL. fem. n. *Tametia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SAR86A*. The type species for the genus is *Candidatus* Tametia accogicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *D2472*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bisulosaceae.

Description of *Candidatus* Tametia adrotifica sp. nov.

Candidatus Tametia adrotifica (NL. fem. n. *adrotifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902528875*. The type genome for the species is the GenBank assembly GCA_902528875.1. The GC content of the type genome is 31.91 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Tametia alsisax sp. nov.

Candidatus Tametia alsisax (NL. fem. n. *alsisax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902517425*. The type genome for the species is the GenBank assembly GCA_902517425.1. The GC content of the type genome is 32.58 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Tametia apoplitica sp. nov.

Candidatus Tametia apoplitica (NL. fem. n. *apoplitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902559345*. The type genome for the species is the GenBank assembly GCA_902559345.1. The GC content of the type genome is 32.2 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Tametia argititas sp. nov.

Candidatus Tametia argititas (NL. fem. n. *argititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp002710265*. The type genome for the species is the GenBank assembly GCA_002710265.1. The GC content of the type genome is 32.76 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Tametia benivibra sp. nov.

Candidatus Tametia benivibra (NL. fem. n. *benivibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902586925*. The type genome for the species is the GenBank assembly GCA_902517325.1. The GC content of the type genome is 31.85 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Tametia bovicitudo sp. nov.

Candidatus Tametia bovicitudo (NL. fem. n. *bovicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902582355*. The type genome for the species is the GenBank assembly GCA_902586865.1. The GC content of the type genome is 31.35 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Tametia colutivita sp. nov.

Candidatus Tametia colutivita (NL. fem. n. *colutivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SAR86A sp902583575*. The type genome for the species is the GenBank assembly GCA_902583575.1. The GC content of the type genome is 31.84 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Tametia decucigena sp. nov.

Candidatus Tametia decucigena (NL. fem. n. *decucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902563835*. The type genome for the species is the GenBank assembly GCA_902563835.1. The GC content of the type genome is 31.85 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Tametia denunilenta sp. nov.

Candidatus Tametia denunilenta (NL. fem. n. *denunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp002169625*. The type genome for the species is the GenBank assembly GCA_902602285.1. The GC content of the type genome is 31.29 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Tametia desorivita sp. nov.

Candidatus Tametia desorivita (NL. fem. n. *desorivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902556105*. The type genome for the species is the GenBank assembly GCA_902556105.1. The GC content of the type genome is 32.67 % and the genome length is 1.01 Mbp.

Description of *Candidatus* Tametia detoredo sp. nov.

Candidatus Tametia detoredo (NL. fem. n. *detoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp002721465*. The type genome for the species is the GenBank assembly GCA_002721465.1. The GC content of the type genome is 31.59 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Tametia dupunitio sp. nov.

Candidatus Tametia dupunitio (NL. fem. n. *dupunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902520725*. The type genome for the species is the GenBank assembly GCA_902517195.1. The GC content of the type genome is 32.49 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Tametia entomimonas sp. nov.

Candidatus Tametia entomimonas (NL. fem. n. *entomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902558095*. The type genome for the species is the GenBank assembly GCA_902558095.1. The GC content of the type genome is 32.17 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Tametia facunitas sp. nov.

Candidatus Tametia facunitas (NL. fem. n. *facunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp003213495*. The type genome for the species is the GenBank assembly GCA_902574745.1. The GC content of the type genome is 32.39 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Tametia fiducatica sp. nov.

Candidatus Tametia fiducatica (NL. fem. n. *fiducatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902626385*. The type genome for the species is the GenBank assembly GCA_902626385.1. The GC content of the type genome is 33.16 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Tametia fusifitudo sp. nov.

Candidatus Tametia fusifitudo (NL. fem. n. *fusifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp000252525*. The type genome for the species is the GenBank assembly GCA_902524435.1. The GC content of the type genome is 32.46 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Tametia hexapigena sp. nov.

Candidatus Tametia hexapigena (NL. fem. n. *hexapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902551185*. The type genome for the species is the GenBank assembly GCA_902581765.1. The GC content of the type genome is 31.75 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Tametia innoximonas sp. nov.

Candidatus Tametia innoximonas (NL. fem. n. *innoximonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902630885*. The type genome for the species is the GenBank assembly GCA_902630885.1. The GC content of the type genome is 32.44 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Tametia laxitisca sp. nov.

Candidatus Tametia laxitisca (NL. fem. n. *laxitisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902541175*. The type genome for the species is the GenBank assembly GCA_902541175.1. The GC content of the type genome is 32.14 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Tametia lenocicella sp. nov.

Candidatus Tametia lenocicella (NL. fem. n. *lenocicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SAR86A sp902516285*. The type genome for the species is the GenBank assembly GCA_902617815.1. The GC content of the type genome is 31.81 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Tametia lugubatica sp. nov.

Candidatus Tametia lugubatica (NL. fem. n. *lugubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902612915*. The type genome for the species is the GenBank assembly GCA_902563165.1. The GC content of the type genome is 32.28 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Tametia mimogitas sp. nov.

Candidatus Tametia mimogitas (NL. fem. n. *mimogitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902591925*. The type genome for the species is the GenBank assembly GCA_902562385.1. The GC content of the type genome is 32.18 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Tametia nefarastra sp. nov.

Candidatus Tametia nefarastra (NL. fem. n. *nefarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902557965*. The type genome for the species is the GenBank assembly GCA_902557965.1. The GC content of the type genome is 32.82 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Tametia nugigigena sp. nov.

Candidatus Tametia nugigigena (NL. fem. n. *nugigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp004212975*. The type genome for the species is the GenBank assembly GCA_902579895.1. The GC content of the type genome is 32.14 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Tametia nutabedo sp. nov.

Candidatus Tametia nutabedo (NL. fem. n. *nutabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp002690725*. The type genome for the species is the GenBank assembly GCA_002690725.1. The GC content of the type genome is 31.81 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Tametia odontimonia sp. nov.

Candidatus Tametia odontimonia (NL. fem. n. *odontimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp002721385*. The type genome for the species is the GenBank assembly GCA_002721385.1. The GC content of the type genome is 31.96 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Tametia recucitica sp. nov.

Candidatus Tametia recucitica (NL. fem. n. *recucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902560315*. The type genome for the species is the GenBank assembly GCA_902560315.1. The GC content of the type genome is 31.89 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Tametia remedentia sp. nov.

Candidatus Tametia remedentia (NL. fem. n. *remedentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902520495*. The type genome for the species is the GenBank assembly GCA_902520495.1. The GC content of the type genome is 32.07 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Tametia saburilega sp. nov.

Candidatus Tametia saburilega (NL. fem. n. *saburilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902547295*. The type genome for the species is the GenBank assembly GCA_902547295.1. The GC content of the type genome is 32.16 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Tametia semimatica sp. nov.

Candidatus Tametia semimatica (NL. fem. n. *semimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902617045*. The type genome for the species is the GenBank assembly GCA_902617045.1. The GC content of the type genome is 32.26 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Tametia solacitudo sp. nov.

Candidatus Tametia solacitudo (NL. fem. n. *solacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902631785*. The type genome for the species is the GenBank assembly GCA_902631785.1. The GC content of the type genome is 32.45 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Tametia solivatica sp. nov.

Candidatus Tametia solivatica (NL. fem. n. *solivatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp002169105*. The type genome for the species is the GenBank assembly GCA_002169105.1. The GC content of the type genome is 32.88 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Tametia tetenibula sp. nov.

Candidatus Tametia tetenibula (NL. fem. n. *tetenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SAR86A sp902517505*. The type genome for the species is the GenBank assembly GCA_902516215.1. The GC content of the type genome is 31.81 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Tametia uberritoga sp. nov.

Candidatus Tametia uberritoga (NL. fem. n. *uberritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAR86A sp902579825*. The type genome for the species is the GenBank assembly GCA_902579825.1. The GC content of the type genome is 32.24 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Tametida desonifica sp. nov.

Candidatus Tametida desonifica (NL. fem. n. *desonifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-47-26 sp001001705*. The type genome for the species is the GenBank assembly GCA_001001705.1. The GC content of the type genome is 46.48 % and the genome length is 0.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Tametida gen. nov.

Candidatus Tametida (NL. fem. n. *Tametida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-47-26*. The type species for the genus is *Candidatus* Tametida desonifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-47-26*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tametidaceae.

Description of *Candidatus* Tametidaceae fam. nov.

Candidatus Tametidaceae (NL. fem. n. *Tametidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-47-26.* The type genus for the taxon is *Candidatus* Tametida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Tametida desurax sp. nov.

Candidatus Tametida desurax (NL. fem. n. *desurax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-47-26 sp001790815*. The type genome for the species is the GenBank assembly GCA_001791195.1. The GC content of the type genome is 46.67 % and the genome length is 1.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Tametosa documilega sp. nov.

Candidatus Tametosa documilega (NL. fem. n. *documilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1046 sp012519085*. The type genome for the species is the GenBank assembly GCA_012519085.1. The GC content of the type genome is 47.31 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Tametosa gen. nov.

Candidatus Tametosa (NL. fem. n. *Tametosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1046*. The type species for the genus is *Candidatus* Tametosa documilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decunariaceae.

Description of *Candidatus* Tametosa ectenitica sp. nov.

Candidatus Tametosa ectenitica (NL. fem. n. *ectenitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1046 sp012838475*. The type genome for the species is the GenBank assembly GCA_012838475.1. The GC content of the type genome is 45.35 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Tametosa inlusatio sp. nov.

Candidatus Tametosa inlusatio (NL. fem. n. *inlusatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1046 sp002316595*. The type genome for the species is the GenBank assembly GCA_002316595.1. The GC content of the type genome is 46.27 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Tametosa inretiforma sp. nov.

Candidatus Tametosa inretiforma (NL. fem. n. *inretiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1046 sp012511325*. The type genome for the species is the GenBank assembly GCA_012511325.1. The GC content of the type genome is 47.99 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Tametosa peropilenta sp. nov.

Candidatus Tametosa peropilenta (NL. fem. n. *peropilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1046 sp012839385*. The type genome for the species is the GenBank assembly GCA_012839385.1. The GC content of the type genome is 43.87 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Tametula nutamatica sp. nov.

Candidatus Tametula nutamatica (NL. fem. n. *nutamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU078 sp002385415*. The type genome for the species is the GenBank assembly GCA_002385415.1. The GC content of the type genome is 52.62 %

and the genome length is 2.01 Mbp.

Description of *Candidatus* Tametula gen. nov.

Candidatus Tametula (NL. fem. n. *Tametula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU078*. The type species for the genus is *Candidatus* Tametula nutamatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Tametula proprimonia sp. nov.

Candidatus Tametula proprimonia (NL. fem. n. *proprimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU078 sp002397345*. The type genome for the species is the GenBank assembly GCA_002397345.1. The GC content of the type genome is 51.52 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Tametula sicinitia sp. nov.

Candidatus Tametula sicinitia (NL. fem. n. *sicinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU078 sp012840355*. The type genome for the species is the GenBank assembly GCA_012840355.1. The GC content of the type genome is 53.94 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Tamlana encolitio sp. nov.

Candidatus Tamlana encolitio (NL. fem. n. *encolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tamlana_A sp002893765*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_002893765.1. The GC content of the type genome is 35.25 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Tamlana extipitio sp. nov.

Candidatus Tamlana extipitio (NL. fem. n. *extipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tamlana_A sp008806375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_008806375.1. The GC content of the type genome is 34.88 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Tamlana venefitas sp. nov.

Candidatus Tamlana venefitas (NL. fem. n. *venefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tamlana_A sp004804355*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004804355.1. The GC content of the type genome is 34.89 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Tannerella cobalilega sp. nov.

Candidatus Tannerella cobalilega (NL. fem. n. *cobalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tannerella sp002890585*. The type genome for the species is the GenBank assembly GCA_002890575.1. The GC content of the type genome is 57.52 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Tannerella vilititudo sp. nov.

Candidatus Tannerella vilititudo (NL. fem. n. *vilititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tannerella sp003033925*. The type genome for the species is the

GenBank assembly GCA_000510505.1. The GC content of the type genome is 55.85 % and the genome length is 3.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "subgingival plaque".

Description of *Candidatus* Taraxaria acrifugo sp. nov.

Candidatus Taraxaria acrifugo (NL. fem. n. *acrifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB2-FULL-45-11 sp001791715*. The type genome for the species is the GenBank assembly GCA_001791715.1. The GC content of the type genome is 45.03 % and the genome length is 0.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Taraxaria gen. nov.

Candidatus Taraxaria (NL. fem. n. *Taraxaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB2-FULL-45-11*. The type species for the genus is *Candidatus* Taraxaria acrifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Taraxaria malifimonas sp. nov.

Candidatus Taraxaria malifimonas (NL. fem. n. *malifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB2-FULL-45-11 sp903831335*. The type genome for the species is the GenBank assembly GCA_903831335.1. The GC content of the type genome is 43.24 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Taraxaria regifessa sp. nov.

Candidatus Taraxaria regifessa (NL. fem. n. *regifessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB2-FULL-45-11 sp001791305*. The type genome for the species is the GenBank assembly GCA_001790985.1. The GC content of the type genome is 47.21 % and the genome length is 1.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Taraxida pedepitudo sp. nov.

Candidatus Taraxida pedepitudo (NL. fem. n. *pedepitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU073 sp001512665*. The type genome for the species is the GenBank assembly GCA_001512665.1. The GC content of the type genome is 38.49 % and the genome length is 1.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Taraxida gen. nov.

Candidatus Taraxida (NL. fem. n. *Taraxida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU073*. The type species for the genus is *Candidatus* Taraxida pedepitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Taraxidaceae.

Description of *Candidatus* Taraxidaceae fam. nov.

Candidatus Taraxidaceae (NL. fem. n. *Taraxidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU073.* The type genus for the taxon is *Candidatus* Taraxida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRI-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Latibellales.

Description of *Candidatus* Taraxosa podagetta sp. nov.

Candidatus Taraxosa podagetta (NL. fem. n. *podagetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED167 sp002170915*. The type genome for the species is the GenBank assembly GCA_002691065.1. The GC content of the type genome is 53.44 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Taraxosa gen. nov.

Candidatus Taraxosa (NL. fem. n. *Taraxosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED167*. The type species for the genus is *Candidatus* Taraxosa podagetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2165*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colubanaceae.

Description of *Candidatus* Taraxosa refulousia sp. nov.

Candidatus Taraxosa refulousia (NL. fem. n. *refulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED167 sp002723345*. The type genome for the species is the GenBank assembly GCA_002723345.1. The GC content of the type genome is 50.84 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Taraxula telegugo sp. nov.

Candidatus Taraxula telegugo (NL. fem. n. *telegugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NSJ-32 sp014384895*. The type genome for the species is the GenBank assembly GCA_014384895.1. The GC content of the type genome is 49.87 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Taraxula gen. nov.

Candidatus Taraxula (NL. fem. n. *Taraxula* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NSJ-32*. The type species for the genus is *Candidatus* Taraxula telegugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1390*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicibiaceae.

Description of *Candidatus* Tardiphaga chancentia sp. nov.

Candidatus Tardiphaga chancentia (NL. fem. n. *chancentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tardiphaga sp004173095*. The type genome for the species is the GenBank assembly GCA_004173095.1. The GC content of the type genome is 62.64 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Tardiphaga colimimonas sp. nov.

Candidatus Tardiphaga colimimonas (NL. fem. n. *colimimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tardiphaga sp900114605*. The type genome for the species is the GenBank assembly RS_GCF_003353545.1. The GC content of the type genome is 61.52 % and the genome length is 6.22 Mbp.

Description of *Candidatus* Tardiphaga detenilenta sp. nov.

Candidatus Tardiphaga detenilenta (NL. fem. n. *detenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tardiphaga sp008329525*. The type genome for the species is the GenBank assembly RS_GCF_008329525.1. The GC content of the type genome is 61.23 % and the genome length is 6.16 Mbp.

Description of *Candidatus* Tardiphaga direcedo sp. nov.

Candidatus Tardiphaga direcedo (NL. fem. n. *direcedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tardiphaga sp007018905*. The type genome for the species is the GenBank assembly RS_GCF_007018645.1. The GC content of the type genome is 63.6 % and the genome length is 5.61 Mbp.

Description of *Candidatus* Tardiphaga peropitia sp. nov.

Candidatus Tardiphaga peropitia (NL. fem. n. *peropitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tardiphaga sp002256345*. The type genome for the species is the GenBank assembly GCA_002256345.1. The GC content of the type genome is 62.01 % and the genome length is 6.95 Mbp.

Description of *Candidatus* Tardiphaga pluscatica sp. nov.

Candidatus Tardiphaga pluscatica (NL. fem. n. *pluscatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tardiphaga sp003096755*. The type genome for the species is the GenBank assembly RS_GCF_003096755.1. The GC content of the type genome is 61.4 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Tardiphaga vepalimonia sp. nov.

Candidatus Tardiphaga vepalimonia (NL. fem. n. *vepalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tardiphaga sp014377915*. The type genome for the species is the GenBank assembly GCA_014377915.1. The GC content of the type genome is 63.6 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Tateyamaria admuressa sp. nov.

Candidatus Tateyamaria admuressa (NL. fem. n. *admuressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Tateyamaria sp900143535*. The type genome for the species is the GenBank assembly RS_GCF_900143535.1. The GC content of the type genome is 57.4 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Tateyamaria aphoritura sp. nov.

Candidatus Tateyamaria aphoritura (NL. fem. n. *aphoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tateyamaria sp003445215*. The type genome for the species is the GenBank assembly GCA_003445215.1. The GC content of the type genome is 44.27 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Tateyamaria nucifatica sp. nov.

Candidatus Tateyamaria nucifatica (NL. fem. n. *nucifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tateyamaria sp000814025*. The type genome for the species is the GenBank assembly RS_GCF_000814025.1. The GC content of the type genome is 60.61 % and the genome length is 4.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "accessory nidamental gland".

Description of *Candidatus* Tateyamaria siminitudo sp. nov.

Candidatus Tateyamaria siminitudo (NL. fem. n. *siminitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tateyamaria sp007995245*. The type genome for the species is the GenBank assembly RS_GCF_007995245.1. The GC content of the type genome is 61.27 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Tatlockia adcesousia sp. nov.

Candidatus Tatlockia adcesousia (NL. fem. n. *adcesousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tatlockia sp013697645*. The type genome for the species is the GenBank assembly GCA_013697645.1. The GC content of the type genome is 38.75 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Tatlockia adessibra sp. nov.

Candidatus Tatlockia adessibra (NL. fem. n. *adessibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tatlockia sp013697725*. The type genome for the species is the GenBank assembly GCA_013697725.1. The GC content of the type genome is 37.85 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Tatlockia denavifica sp. nov.

Candidatus Tatlockia denavifica (NL. fem. n. *denavifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tatlockia sp013697955*. The type genome for the species is the GenBank assembly GCA_013697955.1. The GC content of the type genome is 37.79 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Tatlockia mutabicella sp. nov.

Candidatus Tatlockia mutabicella (NL. fem. n. *mutabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tatlockia sp900640175*. The type genome for the species is the GenBank assembly RS_GCF_900640175.1. The GC content of the type genome is 41.8 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Tatlockia podagifica sp. nov.

Candidatus Tatlockia podagifica (NL. fem. n. *podagifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tatlockia sp013812775*. The type genome for the species is the GenBank assembly GCA_013812775.1. The GC content of the type genome is 38.8 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Tautonia effosilenta sp. nov.

Candidatus Tautonia effosilenta (NL. fem. n. *effosilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tautonia sp009177065*. The type genome for the species is the GenBank assembly RS_GCF_009177065.1. The GC content of the type genome is 63.94 % and the genome length is 7.07 Mbp.

Description of *Candidatus* Tautonia filififica sp. nov.

Candidatus Tautonia filififica (NL. fem. n. *filififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tautonia sp014154995*. The type genome for the species is the GenBank assembly RS_GCF_012958305.1. The GC content of the type genome is 62.74 % and the genome length is 6.97 Mbp.

Description of *Candidatus* Tautonia holovitudo sp. nov.

Candidatus Tautonia holovitudo (NL. fem. n. *holovitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tautonia sp007752535*. The type genome for the species is the GenBank assembly RS_GCF_007752535.1. The GC content of the type genome is 71.07 % and the genome length is 9.4 Mbp.

Description of *Candidatus* Taxilaria subiniforma sp. nov.

Candidatus Taxilaria subiniforma (NL. fem. n. *subiniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULL01 sp012840395*. The type genome for the species is the GenBank assembly GCA_012840395.1. The GC content of the type genome is 36.15 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Taxilaria gen. nov.

Candidatus Taxilaria (NL. fem. n. *Taxilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DULL01*. The type species for the genus is *Candidatus* Taxilaria

subiniforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DULL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Taxilariaceae.

Description of *Candidatus* Taxilariaceae fam. nov.

Candidatus Taxilariaceae (NL. fem. n. *Taxilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DULL01.* The type genus for the taxon is *Candidatus* Taxilaria .

According to GTDB R06-RS202, this family belongs to the order *Acetivibrionales*.

Description of *Candidatus* Taxilia detoratio sp. nov.

Candidatus Taxilia detoratio (NL. fem. n. *detoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3534 sp002376875*. The type genome for the species is the GenBank assembly GCA_002376875.1. The GC content of the type genome is 46.24 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Taxilia gen. nov.

Candidatus Taxilia (NL. fem. n. *Taxilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3534*. The type species for the genus is *Candidatus* Taxilia detoratio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3534*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Taxiliaceae.

Description of *Candidatus* Taxiliaceae fam. nov.

Candidatus Taxiliaceae (NL. fem. n. *Taxiliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3534.* The type genus for the taxon is *Candidatus* Taxilia .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Taxilosa acricitoga sp. nov.

Candidatus Taxilosa acricitoga (NL. fem. n. *acricitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-4-69-9 sp013816245*. The type genome for the species is the GenBank assembly GCA_013816245.1. The GC content of the type genome is 66.47 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Taxilosa gen. nov.

Candidatus Taxilosa (NL. fem. n. *Taxilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *3-1-20CM-4-69-9*. The type species for the genus is *Candidatus* Taxilosa acricitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Taxilosa adverilenta sp. nov.

Candidatus Taxilosa adverilenta (NL. fem. n. *adverilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-4-69-9 sp005885245*. The type genome for the species is the GenBank assembly GCA_005885245.1. The GC content of the type genome is 67.52 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Taxilosa asporatica sp. nov.

Candidatus Taxilosa asporatica (NL. fem. n. *asporatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-4-69-9 sp001920085*. The type genome for the species is the GenBank assembly GCA_001920085.1. The GC content of the type genome is 69.56 % and the genome length is 1.86 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1;

20cm depth; 2 days after second rain event (91mm)".

Description of *Candidatus* Taxilosa cuticilega sp. nov.

Candidatus Taxilosa cuticilega (NL. fem. n. *cuticilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-4-69-9 sp005888435*. The type genome for the species is the GenBank assembly GCA_005888435.1. The GC content of the type genome is 68.89 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Taxilosa didacibra sp. nov.

Candidatus Taxilosa didacibra (NL. fem. n. *didacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-4-69-9 sp005883355*. The type genome for the species is the GenBank assembly GCA_005883355.1. The GC content of the type genome is 66.98 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Taxilosa oratrisca sp. nov.

Candidatus Taxilosa oratrisca (NL. fem. n. *oratrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *3-1-20CM-4-69-9 sp005885085*. The type genome for the species is the GenBank assembly GCA_005885085.1. The GC content of the type genome is 68.75 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Taxilula bonifax sp. nov.

Candidatus Taxilula bonifax (NL. fem. n. *bonifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11883 sp002714565*. The type genome for the species is the GenBank assembly GCA_002714565.1. The GC content of the type genome is 48.43 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Taxilula gen. nov.

Candidatus Taxilula (NL. fem. n. *Taxilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11883*. The type species for the genus is *Candidatus* Taxilula bonifax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tegimana derecitudo sp. nov.

Candidatus Tegimana derecitudo (NL. fem. n. *derecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1245 sp003157095*. The type genome for the species is the GenBank assembly GCA_003157095.1. The GC content of the type genome is 69.78 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Tegimana gen. nov.

Candidatus Tegimana (NL. fem. n. *Tegimana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1245*. The type species for the genus is *Candidatus* Tegimana derecitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Tegimaria roraritio sp. nov.

Candidatus Tegimaria roraritio (NL. fem. n. *roraritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS755 sp900545185*. The type genome for the species is the GenBank assembly GCA_900545185.1. The GC content of the type genome is 47.75 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Tegimaria gen. nov.

Candidatus Tegimaria (NL. fem. n. *Tegimaria* a name created arbitrarily, while

preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS755*. The type species for the genus is *Candidatus* Tegimaria roraritio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9506*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Coturellaceae.

Description of *Candidatus* Tegimella decatatica sp. nov.

Candidatus Tegimella decatatica (NL. fem. n. *decatatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYTD01 sp903928955*. The type genome for the species is the GenBank assembly GCA_903928955.1. The GC content of the type genome is 40.72 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Tegimella gen. nov.

Candidatus Tegimella (NL. fem. n. *Tegimella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYTD01*. The type species for the genus is *Candidatus* Tegimella decatatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desorariaceae.

Description of *Candidatus* Tegimia conigimonia sp. nov.

Candidatus Tegimia conigimonia (NL. fem. n. *conigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPAT01 sp903863035*. The type genome for the species is the GenBank assembly GCA_903863035.1. The GC content of the type genome is 47.1 % and the genome length is 6.71 Mbp.

Description of *Candidatus* Tegimia gen. nov.

Candidatus Tegimia (NL. fem. n. *Tegimia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPAT01*. The type species for the genus is *Candidatus* Tegimia conigimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tegimia xeropax sp. nov.

Candidatus Tegimia xeropax (NL. fem. n. *xeropax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPAT01 sp903831825*. The type genome for the species is the GenBank assembly GCA_903932215.1. The GC content of the type genome is 47.69 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Tegimida alticessa sp. nov.

Candidatus Tegimida alticessa (NL. fem. n. *alticessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9148 sp003450655*. The type genome for the species is the GenBank assembly GCA_003450655.1. The GC content of the type genome is 41.93 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Tegimida gen. nov.

Candidatus Tegimida (NL. fem. n. *Tegimida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9148*. The type species for the genus is *Candidatus* Tegimida alticessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tegimida atricicella sp. nov.

Candidatus Tegimida atricicella (NL. fem. n. *atricicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9148 sp014238445*. The type genome for the species is the GenBank assembly GCA_014238445.1. The GC content of the type genome is 43.86 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Tegimida fiducatio sp. nov.

Candidatus Tegimida fiducatio (NL. fem. n. *fiducatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9148 sp011523685*. The type genome for the species is the GenBank assembly GCA_011523685.1. The GC content of the type genome is 40.75 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Tegimida vacilax sp. nov.

Candidatus Tegimida vacilax (NL. fem. n. *vacilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9148 sp902623005*. The type genome for the species is the GenBank assembly GCA_902623005.1. The GC content of the type genome is 42.15 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Tegimida vinulilega sp. nov.

Candidatus Tegimida vinulilega (NL. fem. n. *vinulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9148 sp002323325*. The type genome for the species is the GenBank assembly GCA_002731975.1. The GC content of the type genome is 41.13 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Tegimosa rurigitrix sp. nov.

Candidatus Tegimosa rurigitrix (NL. fem. n. *rurigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7966 sp002299125*. The type genome for the species is the GenBank assembly GCA_002299125.1. The GC content of the type genome is 66.87 %

and the genome length is 2.37 Mbp.

Description of *Candidatus* Tegimosa gen. nov.

Candidatus Tegimosa (NL. fem. n. *Tegimosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7966*. The type species for the genus is *Candidatus* Tegimosa rurigitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7966*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegimosaceae.

Description of *Candidatus* Tegimosaceae fam. nov.

Candidatus Tegimosaceae (NL. fem. n. *Tegimosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7966.* The type genus for the taxon is *Candidatus* Tegimosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7966*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tegimosales.

Description of *Candidatus* Tegimosales ord. nov.

Candidatus Tegimosales (NL. fem. n. *Tegimosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7966.* The type genus for the taxon is *Candidatus* Tegimosa .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Tegimosa sotulousia sp. nov.

Candidatus Tegimosa sotulousia (NL. fem. n. *sotulousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7966 sp003485715*. The type genome for the species is the GenBank assembly GCA_003485715.1. The GC content of the type genome is 66.64 %

and the genome length is 2.14 Mbp.

Description of *Candidatus* Tegimula adsenibra sp. nov.

Candidatus Tegimula adsenibra (NL. fem. n. *adsenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTIE01 sp011334565*. The type genome for the species is the GenBank assembly GCA_011334565.1. The GC content of the type genome is 61.36 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Tegimula gen. nov.

Candidatus Tegimula (NL. fem. n. *Tegimula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTIE01*. The type species for the genus is *Candidatus* Tegimula adsenibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTIE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegimulaceae.

Description of *Candidatus* Tegimulaceae fam. nov.

Candidatus Tegimulaceae (NL. fem. n. *Tegimulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTIE01.* The type genus for the taxon is *Candidatus* Tegimula .

According to the original version of GTDB R06-RS202, this family belongs to the order *FW602-bin22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colipulales.

Description of *Candidatus* Tegumana divolugo sp. nov.

Candidatus Tegumana divolugo (NL. fem. n. *divolugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10014 sp000996355*. The type genome for the species is the GenBank assembly GCA_003523645.1. The GC content of the type genome is 41.24 %

and the genome length is 1.04 Mbp.

Description of *Candidatus* Tegumana gen. nov.

Candidatus Tegumana (NL. fem. n. *Tegumana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10014*. The type species for the genus is *Candidatus* Tegumana divolugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-40-263*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fetifidaceae.

Description of *Candidatus* Tegumaria viragicella sp. nov.

Candidatus Tegumaria viragicella (NL. fem. n. *viragicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AAA071-K20 sp003265975*. The type genome for the species is the GenBank assembly GCA_003265975.1. The GC content of the type genome is 35.94 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Tegumaria gen. nov.

Candidatus Tegumaria (NL. fem. n. *Tegumaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AAA071-K20*. The type species for the genus is *Candidatus* Tegumaria viragicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AAA071-K20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumariaceae.

Description of *Candidatus* Tegumariaceae fam. nov.

Candidatus Tegumariaceae (NL. fem. n. *Tegumariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AAA071-K20.* The type genus for the taxon is *Candidatus* Tegumaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2716485*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resurulales.

Description of *Candidatus* Tegumella immurugo sp. nov.

Candidatus Tegumella immurugo (NL. fem. n. *immurugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2401785 sp002401785*. The type genome for the species is the GenBank assembly GCA_002401785.1. The GC content of the type genome is 35.09 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Tegumella gen. nov.

Candidatus Tegumella (NL. fem. n. *Tegumella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2401785*. The type species for the genus is *Candidatus* Tegumella immurugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2401785*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumellaceae.

Description of *Candidatus* Tegumellaceae fam. nov.

Candidatus Tegumellaceae (NL. fem. n. *Tegumellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2401785.* The type genus for the taxon is *Candidatus* Tegumella .

According to GTDB R06-RS202, this family belongs to the order *Babeliales*.

Description of *Candidatus* Tegumida appagibula sp. nov.

Candidatus Tegumida appagibula (NL. fem. n. *appagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7359 sp002470825*. The type genome for the species is the

GenBank assembly GCA_002470825.1. The GC content of the type genome is 37.22 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Tegumida gen. nov.

Candidatus Tegumida (NL. fem. n. *Tegumida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7359*. The type species for the genus is *Candidatus* Tegumida appagibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4486*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Facunulaceae.

Description of *Candidatus* Tegumida bimetentia sp. nov.

Candidatus Tegumida bimetentia (NL. fem. n. *bimetentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7359 sp002292815*. The type genome for the species is the GenBank assembly GCA_002292815.1. The GC content of the type genome is 40.74 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Tegumula pluscitas sp. nov.

Candidatus Tegumula pluscitas (NL. fem. n. *pluscitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBP01 sp012730075*. The type genome for the species is the GenBank assembly GCA_012730075.1. The GC content of the type genome is 73.97 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Tegumula gen. nov.

Candidatus Tegumula (NL. fem. n. *Tegumula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBP01*. The type species for the genus is *Candidatus* Tegumula pluscitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family

JAAYBP01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumulaceae.

Description of *Candidatus* Tegumulaceae fam. nov.

Candidatus Tegumulaceae (NL. fem. n. *Tegumulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYBP01.* The type genus for the taxon is *Candidatus* Tegumula .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Telefana ulcisibra sp. nov.

Candidatus Telefana ulcisibra (NL. fem. n. *ulcisibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-38-13b sp000992445*. The type genome for the species is the GenBank assembly GCA_000992445.2. The GC content of the type genome is 37.83 % and the genome length is 0.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Telefana gen. nov.

Candidatus Telefana (NL. fem. n. *Telefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-38-13b*. The type species for the genus is *Candidatus* Telefana ulcisibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-38-13b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telefanaceae.

Description of *Candidatus* Telefanaceae fam. nov.

Candidatus Telefanaceae (NL. fem. n. *Telefanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-38-13b.* The type genus for the taxon is *Candidatus* Telefana .

According to the original version of GTDB R06-RS202, this family belongs to the order

GWA2-38-13b. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Telefanales.

Description of *Candidatus* Telefanales ord. nov.

Candidatus Telefanales (NL. fem. n. *Telefanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-38-13b.* The type genus for the taxon is *Candidatus* Telefana .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Telefaria sacomitia sp. nov.

Candidatus Telefaria sacomitia (NL. fem. n. *sacomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11490 sp003524095*. The type genome for the species is the GenBank assembly GCA_003524095.1. The GC content of the type genome is 32.42 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Telefaria gen. nov.

Candidatus Telefaria (NL. fem. n. *Telefaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11490*. The type species for the genus is *Candidatus* Telefaria sacomitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Telefella cuferimonia sp. nov.

Candidatus Telefella cuferimonia (NL. fem. n. *cuferimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7701 sp002482545*. The type genome for the species is the GenBank assembly GCA_002482545.1. The GC content of the type genome is 55.99 %

and the genome length is 3.58 Mbp.

Description of *Candidatus* Telefella gen. nov.

Candidatus Telefella (NL. fem. n. *Telefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7701*. The type species for the genus is *Candidatus* Telefella cuferimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7701*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telefellaceae.

Description of *Candidatus* Telefellaceae fam. nov.

Candidatus Telefellaceae (NL. fem. n. *Telefellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7701*. The type genus for the taxon is *Candidatus* Telefella .

According to GTDB R06-RS202, this family belongs to the order *Sporomusales*.

Description of *Candidatus* Telefia colubitas sp. nov.

Candidatus Telefia colubitas (NL. fem. n. *colubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-49-22 sp001788565*. The type genome for the species is the GenBank assembly GCA_001788565.1. The GC content of the type genome is 49.17 % and the genome length is 0.69 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Telefia gen. nov.

Candidatus Telefia (NL. fem. n. *Telefia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-49-22*. The type species for the genus is *Candidatus* Telefia colubitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10212*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categiaceae.

Description of *Candidatus* Telefida turifisca sp. nov.

Candidatus Telefida turifisca (NL. fem. n. *turifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLDV01 sp007125165*. The type genome for the species is the GenBank assembly GCA_007133475.1. The GC content of the type genome is 52.22 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Telefida gen. nov.

Candidatus Telefida (NL. fem. n. *Telefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLDV01*. The type species for the genus is *Candidatus* Telefida turifisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Telefosa tametimonas sp. nov.

Candidatus Telefosa tametimonas (NL. fem. n. *tametimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-883 sp003151425*. The type genome for the species is the GenBank assembly GCA_003151425.1. The GC content of the type genome is 66.34 % and the genome length is 7.75 Mbp.

Description of *Candidatus* Telefosa gen. nov.

Candidatus Telefosa (NL. fem. n. *Telefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-883*. The type species for the genus is *Candidatus* Telefosa tametimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Telefula catafitrix sp. nov.

Candidatus Telefula catafitrix (NL. fem. n. *catafitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B3-Chlor sp005223035*. The type genome for the species is the GenBank assembly GCA_005223035.1. The GC content of the type genome is 58.19 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Telefula gen. nov.

Candidatus Telefula (NL. fem. n. *Telefula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B3-Chlor*. The type species for the genus is *Candidatus* Telefula catafitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B3-Chlor*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telefulaceae.

Description of *Candidatus* Telefulaceae fam. nov.

Candidatus Telefulaceae (NL. fem. n. *Telefulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B3-Chlor.* The type genus for the taxon is *Candidatus* Telefula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7937*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Releniales.

Description of *Candidatus* Telegana buxanousia sp. nov.

Candidatus Telegana buxanousia (NL. fem. n. *buxanousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7185 sp002491065*. The type genome for the species is the GenBank assembly GCA_002361105.1. The GC content of the type genome is 44.24 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Telegana gen. nov.

Candidatus Telegana (NL. fem. n. *Telegana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7185*. The type species for the genus is *Candidatus* Telegana buxanousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Telegana cerififica sp. nov.

Candidatus Telegana cerififica (NL. fem. n. *cerififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7185 sp900556545*. The type genome for the species is the GenBank assembly GCA_900556545.1. The GC content of the type genome is 42.84 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Telegana indupastra sp. nov.

Candidatus Telegana indupastra (NL. fem. n. *indupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7185 sp900756555*. The type genome for the species is the GenBank assembly RS_GCF_900756555.1. The GC content of the type genome is 45.34 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Telegaria fefelibra sp. nov.

Candidatus Telegaria fefelibra (NL. fem. n. *fefelibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-43-13 sp000999025*. The type genome for the species is the GenBank assembly GCA_001818135.1. The GC content of the type genome is 43.32 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Telegaria gen. nov.

Candidatus Telegaria (NL. fem. n. *Telegaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-43-13*. The type species for the genus is *Candidatus* Telegaria fefelibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-43-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegariaceae.

Description of *Candidatus* Telegariaceae fam. nov.

Candidatus Telegariaceae (NL. fem. n. *Telegariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-43-13.* The type genus for the taxon is *Candidatus* Telegaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-43-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Telegariales.

Description of *Candidatus* Telegariales ord. nov.

Candidatus Telegariales (NL. fem. n. *Telegariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA2-43-13.* The type genus for the taxon is *Candidatus* Telegaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Telegella semodetta sp. nov.

Candidatus Telegella semodetta (NL. fem. n. *semodetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACIZP01 sp014359355*. The type genome for the species is the GenBank assembly GCA_014359355.1. The GC content of the type genome is 61.34 % and the genome length is 3.79 Mbp.

Description of *Candidatus* Telegella gen. nov.

Candidatus Telegella (NL. fem. n. *Telegella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACIZP01*. The type species for the genus is *Candidatus* Telegella semodetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACIZP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegellaceae.

Description of *Candidatus* Telegellaceae fam. nov.

Candidatus Telegellaceae (NL. fem. n. *Telegellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIZP01.* The type genus for the taxon is *Candidatus* Telegella .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACIZP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Telegellales.

Description of *Candidatus* Telegellales ord. nov.

Candidatus Telegellales (NL. fem. n. *Telegellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACIZP01.* The type genus for the taxon is *Candidatus* Telegella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2214*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Renavosae.

Description of *Candidatus* Telegida monopifica sp. nov.

Candidatus Telegida monopifica (NL. fem. n. *monopifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D16-34 sp003612515*. The type genome for the species is the GenBank assembly RS_GCF_003612515.1. The GC content of the type genome is 48.79 % and the

genome length is 2.17 Mbp.

Description of *Candidatus* Telegida gen. nov.

Candidatus Telegida (NL. fem. n. *Telegida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *D16-34*. The type species for the genus is *Candidatus* Telegida monopifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Telegida penicilega sp. nov.

Candidatus Telegida penicilega (NL. fem. n. *penicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D16-34 sp009911635*. The type genome for the species is the GenBank assembly RS_GCF_009911635.1. The GC content of the type genome is 64.42 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Telegida socagimonas sp. nov.

Candidatus Telegida socagimonas (NL. fem. n. *socagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D16-34 sp011039175*. The type genome for the species is the GenBank assembly RS_GCF_011039215.1. The GC content of the type genome is 63.23 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Telegida terebisca sp. nov.

Candidatus Telegida terebisca (NL. fem. n. *terebisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D16-34 sp011392455*. The type genome for the species is the GenBank assembly RS_GCF_011040415.1. The GC content of the type genome is 63.17 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Telegosa obnunitoga sp. nov.

Candidatus Telegosa obnunitoga (NL. fem. n. *obnunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8190 sp003453695*. The type genome for the species is the GenBank assembly GCA_003453695.1. The GC content of the type genome is 70.49 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Telegosa gen. nov.

Candidatus Telegosa (NL. fem. n. *Telegosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8190*. The type species for the genus is *Candidatus* Telegosa obnunitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegosaceae.

Description of *Candidatus* Telegosaceae fam. nov.

Candidatus Telegosaceae (NL. fem. n. *Telegosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8190.* The type genus for the taxon is *Candidatus* Telegosa .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Telegula invicentia sp. nov.

Candidatus Telegula invicentia (NL. fem. n. *invicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLHB01 sp007136375*. The type genome for the species is the GenBank assembly GCA_007136375.1. The GC content of the type genome is 64.69 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Telegula gen. nov.

Candidatus Telegula (NL. fem. n. *Telegula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLHB01*. The type species for the genus is *Candidatus* Telegula invicentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLHB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Telegulaceae.

Description of *Candidatus* Telegulaceae fam. nov.

Candidatus Telegulaceae (NL. fem. n. *Telegulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLHB01*. The type genus for the taxon is *Candidatus* Telegula .

According to GTDB R06-RS202, this family belongs to the order *Hydrogenedentiales*.

Description of *Candidatus* Televana selecibra sp. nov.

Candidatus Televana selecibra (NL. fem. n. *selecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-52-16 sp001787535*. The type genome for the species is the GenBank assembly GCA_001787535.1. The GC content of the type genome is 51.57 % and the genome length is 1.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Televana gen. nov.

Candidatus Televana (NL. fem. n. *Televana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-52-16*. The type species for the genus is *Candidatus* Televana selecibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Televaria fetulatica sp. nov.

Candidatus Televaria fetulatica (NL. fem. n. *fetulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-956 sp011343225*. The type genome for the species is the GenBank assembly GCA_011343225.1. The GC content of the type genome is 34.54 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Televaria gen. nov.

Candidatus Televaria (NL. fem. n. *Televaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-956*. The type species for the genus is *Candidatus* Televaria fetulatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-956*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Televariaceae.

Description of *Candidatus* Televariaceae fam. nov.

Candidatus Televariaceae (NL. fem. n. *Televariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-956.* The type genus for the taxon is *Candidatus* Televaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-956*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Televariales.

Description of *Candidatus* Televariales ord. nov.

Candidatus Televariales (NL. fem. n. *Televariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-956.* The type genus for the taxon is *Candidatus* Televaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *SpSt-956*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Televariae.

Description of *Candidatus* Televariae class. nov.

Candidatus Televariae (NL. fem. n. *c__Televariae* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-956.* The type genus for the taxon is *Candidatus* Televaria .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *SpSt-956*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Televariota.

Description of *Candidatus* Televariota phyl. nov.

Candidatus Televariota (NL. fem. n. *Televariota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-956.* The type genus for the taxon is *Candidatus* Televaria .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Televella deforitura sp. nov.

Candidatus Televella deforitura (NL. fem. n. *deforitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLG01 sp007123395*. The type genome for the species is the GenBank assembly GCA_007123395.1. The GC content of the type genome is 62.77 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Televella gen. nov.

Candidatus Televella (NL. fem. n. *Televella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLLG01*. The type species for the genus is *Candidatus* Televella deforitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Verruco-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigidaceae.

Description of *Candidatus* Televella extunitia sp. nov.

Candidatus Televella extunitia (NL. fem. n. *extunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLG01 sp007134215*. The type genome for the species is the GenBank assembly GCA_007134215.1. The GC content of the type genome is 63.75 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Televia adlecitoga sp. nov.

Candidatus Televia adlecitoga (NL. fem. n. *adlecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-465 sp000433335*. The type genome for the species is the GenBank assembly GCA_000433335.1. The GC content of the type genome is 28.11 % and the genome length is 1.07 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Televia gen. nov.

Candidatus Televia (NL. fem. n. *Televia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-465*. The type species for the genus is *Candidatus* Televia adlecitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Televiaceae.

Description of *Candidatus* Televiaceae fam. nov.

Candidatus Televiaceae (NL. fem. n. *Televiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-465.* The type genus for the taxon is *Candidatus* Televia .

According to the original version of GTDB R06-RS202, this family belongs to the order *TANB77*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dupuniales.

Description of *Candidatus* Televia fibicimonas sp. nov.

Candidatus Televia fibicimonas (NL. fem. n. *fibicimonas* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-465 sp900772475*. The type genome for the species is the GenBank assembly RS_GCF_900772475.1. The GC content of the type genome is 26.98 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Televia hegumedo sp. nov.

Candidatus Televia hegumedo (NL. fem. n. *hegumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-465 sp000433755*. The type genome for the species is the GenBank assembly GCA_000433755.1. The GC content of the type genome is 26.75 % and the genome length is 1.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Televia horomastra sp. nov.

Candidatus Televia horomastra (NL. fem. n. *horomastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-465 sp000433135*. The type genome for the species is the GenBank assembly GCA_000433135.1. The GC content of the type genome is 27.32 % and the genome length is 1.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Televia visibousia sp. nov.

Candidatus Televia visibousia (NL. fem. n. *visibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-465 sp900554875*. The type genome for the species is the GenBank assembly GCA_900554875.1. The GC content of the type genome is 27.69 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Televosa repepilenta sp. nov.

Candidatus Televosa repepilenta (NL. fem. n. *repepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J113 sp003694425*. The type genome for the species is the GenBank assembly GCA_003694425.1. The GC content of the type genome is 67.29 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Televosa gen. nov.

Candidatus Televosa (NL. fem. n. *Televosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J113*. The type species for the genus is *Candidatus* Televosa repepilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Televosaceae.

Description of *Candidatus* Televosaceae fam. nov.

Candidatus Televosaceae (NL. fem. n. *Televosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J113.* The type genus for the taxon is *Candidatus* Televosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *J113*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Televosales.

Description of *Candidatus* Televosales ord. nov.

Candidatus Televosales (NL. fem. n. *Televosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J113.* The type genus for the taxon is *Candidatus* Televosa .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Televula exhoritura sp. nov.

Candidatus Televula exhoritura (NL. fem. n. *exhoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTMN01 sp011332965*. The type genome for the species is the GenBank assembly GCA_011332965.1. The GC content of the type genome is 55.97 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Televula gen. nov.

Candidatus Televula (NL. fem. n. *Televula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTMN01*. The type species for the genus is *Candidatus* Televula exhoritura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTMN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Televulaceae.

Description of *Candidatus* Televulaceae fam. nov.

Candidatus Televulaceae (NL. fem. n. *Televulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTMN01.* The type genus for the taxon is *Candidatus* Televula .

According to the original version of GTDB R06-RS202, this family belongs to the order *LBFQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bigemellales.

Description of *Candidatus* Telmatospirillum crusmitio sp. nov.

Candidatus Telmatospirillum crusmitio (NL. fem. n. *crusmitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Telmatospirillum sp009712185*. The type genome for the species is the GenBank assembly GCA_009712185.1. The GC content of the type genome is 64.53 % and the genome length is 6.11 Mbp.

Description of *Candidatus* Telmatospirillum horomilenta sp. nov.

Candidatus Telmatospirillum horomilenta (NL. fem. n. *horomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Telmatospirillum sp013349735*. The type genome for the species is the GenBank assembly GCA_013349735.1. The GC content of the type genome is 57.51 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Telmatospirillum legifousia sp. nov.

Candidatus Telmatospirillum legifousia (NL. fem. n. *legifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Telmatospirillum sp013349665*. The type genome for the species is the GenBank assembly GCA_013349665.1. The GC content of the type genome is 64.25 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Telmatospirillum xeramax sp. nov.

Candidatus Telmatospirillum xeramax (NL. fem. n. *xeramax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Telmatospirillum sp903858635*. The type genome for the species is the GenBank assembly GCA_903858635.1. The GC content of the type genome is 64.68 % and the genome length is 6.13 Mbp.

Description of *Candidatus* Tenacibaculum anaclugo sp. nov.

Candidatus Tenacibaculum anaclugo (NL. fem. n. *anaclugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenacibaculum sp002836595*. The type genome for the species is the GenBank assembly RS_GCF_002836595.1. The GC content of the type genome is 29.77 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Tenacibaculum aspiledo sp. nov.

Candidatus Tenacibaculum aspiledo (NL. fem. n. *aspiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenacibaculum sp900239505*. The type genome for the species is the GenBank assembly RS_GCF_900239505.1. The GC content of the type genome is 30.71

% and the genome length is 2.45 Mbp.

Description of *Candidatus* Tenacibaculum attoritoga sp. nov.

Candidatus Tenacibaculum attoritoga (NL. fem. n. *attoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenacibaculum sp002813915*. The type genome for the species is the GenBank assembly RS_GCF_002813915.1. The GC content of the type genome is 31.14 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Tenacibaculum bicoditio sp. nov.

Candidatus Tenacibaculum bicoditio (NL. fem. n. *bicoditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenacibaculum sp014062345*. The type genome for the species is the GenBank assembly RS_GCF_014062345.1. The GC content of the type genome is 30.86 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Tenacibaculum depupousia sp. nov.

Candidatus Tenacibaculum depupousia (NL. fem. n. *depupousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenacibaculum sp004337695*. The type genome for the species is the GenBank assembly RS_GCF_004337695.1. The GC content of the type genome is 30.09 % and the genome length is 5.12 Mbp.

Description of *Candidatus* Tenacibaculum epicrimonas sp. nov.

Candidatus Tenacibaculum epicrimonas (NL. fem. n. *epicrimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenacibaculum sp004762155*. The type genome for the species is the GenBank assembly RS_GCF_004762155.1. The GC content of the type genome is 29.33 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Tenacibaculum ignifitoga sp. nov.

Candidatus Tenacibaculum ignifitoga (NL. fem. n. *ignifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenacibaculum sp900105455*. The type genome for the species is the GenBank assembly RS_GCF_900105455.1. The GC content of the type genome is 32.4 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Tenacibaculum malivugo sp. nov.

Candidatus Tenacibaculum malivugo (NL. fem. n. *malivugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenacibaculum sp900105985*. The type genome for the species is the GenBank assembly RS_GCF_900105985.1. The GC content of the type genome is 29.32 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Tenacibaculum xenodax sp. nov.

Candidatus Tenacibaculum xenodax (NL. fem. n. *xenodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenacibaculum sp002954385*. The type genome for the species is the GenBank assembly RS_GCF_002954385.1. The GC content of the type genome is 34.37 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Tenebana acricicella sp. nov.

Candidatus Tenebana acricicella (NL. fem. n. *acricicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9475 sp900554075*. The type genome for the species is the GenBank assembly GCA_900554075.1. The GC content of the type genome is 60.84 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Tenebana gen. nov.

Candidatus Tenebana (NL. fem. n. *Tenebana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9475*. The type species for the genus is *Candidatus* Tenebana acricicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tenebana adculessa sp. nov.

Candidatus Tenebana adculessa (NL. fem. n. *adculessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9475 sp002161235*. The type genome for the species is the GenBank assembly RS_GCF_002161235.1. The GC content of the type genome is 56.19 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Tenebana angipitia sp. nov.

Candidatus Tenebana angipitia (NL. fem. n. *angipitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9475 sp004560375*. The type genome for the species is the GenBank assembly GCA_004560375.1. The GC content of the type genome is 63.86 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Tenebana dicimilega sp. nov.

Candidatus Tenebana dicimilega (NL. fem. n. *dicimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9475 sp900549885*. The type genome for the species is the GenBank assembly GCA_900549885.1. The GC content of the type genome is 58.22 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Tenebana direpatio sp. nov.

Candidatus Tenebana direpatio (NL. fem. n. *direpatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9475 sp002161675*. The type genome for the species is the

GenBank assembly RS_GCF_012027765.1. The GC content of the type genome is 58.09 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Tenebana sepositica sp. nov.

Candidatus Tenebana sepositica (NL. fem. n. *sepositica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9475 sp003534045*. The type genome for the species is the GenBank assembly GCA_003534045.1. The GC content of the type genome is 61.38 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Tenebaria aglasimonia sp. nov.

Candidatus Tenebaria aglasimonia (NL. fem. n. *aglasimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVHB01 sp903905585*. The type genome for the species is the GenBank assembly GCA_903905585.1. The GC content of the type genome is 48.54 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Tenebaria gen. nov.

Candidatus Tenebaria (NL. fem. n. *Tenebaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVHB01*. The type species for the genus is *Candidatus* Tenebaria aglasimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tenebaria cocibitudo sp. nov.

Candidatus Tenebaria cocibitudo (NL. fem. n. *cocibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVHB01 sp903863375*. The type genome for the species is the GenBank assembly GCA_903926265.1. The GC content of the type genome is 65.24 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Tenebaria enuclilega sp. nov.

Candidatus Tenebaria enuclilega (NL. fem. n. *enuclilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVHB01 sp903867885*. The type genome for the species is the GenBank assembly GCA_903867885.1. The GC content of the type genome is 48.58 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Tenebaria secunitrix sp. nov.

Candidatus Tenebaria secunitrix (NL. fem. n. *secunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVHB01 sp903893215*. The type genome for the species is the GenBank assembly GCA_903893215.1. The GC content of the type genome is 63.73 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Tenebella calipilega sp. nov.

Candidatus Tenebella calipilega (NL. fem. n. *calipilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3839 sp900319385*. The type genome for the species is the GenBank assembly GCA_902795915.1. The GC content of the type genome is 55.71 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Tenebella gen. nov.

Candidatus Tenebella (NL. fem. n. *Tenebella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3839*. The type species for the genus is *Candidatus* Tenebella calipilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tenebella canacitoga sp. nov.

Candidatus Tenebella canacitoga (NL. fem. n. *canacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3839 sp002393575*. The type genome for the species is the GenBank assembly GCA_002393575.1. The GC content of the type genome is 47.34 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Tenebella cinipastra sp. nov.

Candidatus Tenebella cinipastra (NL. fem. n. *cinipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3839 sp900321835*. The type genome for the species is the GenBank assembly GCA_902756015.1. The GC content of the type genome is 55.49 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Tenebella deforicella sp. nov.

Candidatus Tenebella deforicella (NL. fem. n. *deforicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3839 sp900313845*. The type genome for the species is the GenBank assembly GCA_002391305.1. The GC content of the type genome is 46.4 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Tenebella deneciforma sp. nov.

Candidatus Tenebella deneciforma (NL. fem. n. *deneciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3839 sp002350855*. The type genome for the species is the GenBank assembly GCA_002350855.1. The GC content of the type genome is 45.81 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Tenebella detecitia sp. nov.

Candidatus Tenebella detecitia (NL. fem. n. *detecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA3839 sp902798705*. The type genome for the species is the GenBank assembly GCA_902798705.1. The GC content of the type genome is 47.18 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Tenebella homulitudo sp. nov.

Candidatus Tenebella homulitudo (NL. fem. n. *homulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3839 sp002305265*. The type genome for the species is the GenBank assembly GCA_002305265.1. The GC content of the type genome is 60.12 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Tenebella mirifigena sp. nov.

Candidatus Tenebella mirifigena (NL. fem. n. *mirifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3839 sp900314125*. The type genome for the species is the GenBank assembly GCA_902762005.1. The GC content of the type genome is 48.4 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Tenebia depelugo sp. nov.

Candidatus Tenebia depelugo (NL. fem. n. *depelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GBS-DC sp011054145*. The type genome for the species is the GenBank assembly GCA_011048035.1. The GC content of the type genome is 63.95 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Tenebia gen. nov.

Candidatus Tenebia (NL. fem. n. *Tenebia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GBS-DC*. The type species for the genus is *Candidatus* Tenebia depelugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GBS-DC*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Tenebiaceae.

Description of *Candidatus* Tenebiaceae fam. nov.

Candidatus Tenebiaceae (NL. fem. n. *Tenebiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GBS-DC.* The type genus for the taxon is *Candidatus* Tenebia .

According to GTDB R06-RS202, this family belongs to the order *Fimbriimonadales*.

Description of *Candidatus* Tenebia domigifica sp. nov.

Candidatus Tenebia domigifica (NL. fem. n. *domigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GBS-DC sp002254605*. The type genome for the species is the GenBank assembly GCA_003695875.1. The GC content of the type genome is 59.23 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Tenebia eccililega sp. nov.

Candidatus Tenebia eccililega (NL. fem. n. *eccililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GBS-DC sp011380455*. The type genome for the species is the GenBank assembly GCA_011380455.1. The GC content of the type genome is 59.35 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Tenebia fumifivita sp. nov.

Candidatus Tenebia fumifivita (NL. fem. n. *fumifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GBS-DC sp011373295*. The type genome for the species is the GenBank assembly GCA_011373295.1. The GC content of the type genome is 61.26 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Tenebida cacalisca sp. nov.

Candidatus Tenebida cacalisca (NL. fem. n. *cacalisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WREN01 sp009779295*. The type genome for the species is the GenBank assembly GCA_009779295.1. The GC content of the type genome is 43.68 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Tenebida gen. nov.

Candidatus Tenebida (NL. fem. n. *Tenebida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WREN01*. The type species for the genus is *Candidatus* Tenebida cacalisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Tenebosa funamitura sp. nov.

Candidatus Tenebosa funamitura (NL. fem. n. *funamitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5066 sp002414905*. The type genome for the species is the GenBank assembly GCA_002414905.1. The GC content of the type genome is 69.02 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Tenebosa gen. nov.

Candidatus Tenebosa (NL. fem. n. *Tenebosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5066*. The type species for the genus is *Candidatus* Tenebosa funamitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenebosaceae.

Description of *Candidatus* Tenebosaceae fam. nov.

Candidatus Tenebosaceae (NL. fem. n. *Tenebosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5066.* The type genus for the taxon is *Candidatus* Tenebosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tenebosales.

Description of *Candidatus* Tenebosales ord. nov.

Candidatus Tenebosales (NL. fem. n. *Tenebosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5066.* The type genus for the taxon is *Candidatus* Tenebosa .

According to the GTDB R06-RS202, this order belongs to the class *Thermoanaerobaculia*.

Description of *Candidatus* Tenebula figilifica sp. nov.

Candidatus Tenebula figilifica (NL. fem. n. *figilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFH-75059 sp004331795*. The type genome for the species is the GenBank assembly RS_GCF_004153605.1. The GC content of the type genome is 68.51 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Tenebula gen. nov.

Candidatus Tenebula (NL. fem. n. *Tenebula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CFH-75059*. The type species for the genus is *Candidatus* Tenebula figilifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tenemana refulugo sp. nov.

Candidatus Tenemana refulugo (NL. fem. n. *refulugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-31-10 sp001829315*. The type genome for the species is the GenBank assembly GCA_003497525.1. The GC content of the type genome is 31.37 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Tenemana gen. nov.

Candidatus Tenemana (NL. fem. n. *Tenemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE2-31-10*. The type species for the genus is *Candidatus* Tenemana refulugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWE2-31-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemanaceae.

Description of *Candidatus* Tenemanaceae fam. nov.

Candidatus Tenemanaceae (NL. fem. n. *Tenemanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWE2-31-10.* The type genus for the taxon is *Candidatus* Tenemana .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWE2-31-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tenemanales.

Description of *Candidatus* Tenemanales ord. nov.

Candidatus Tenemanales (NL. fem. n. *Tenemanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWE2-31-10.* The type genus for the taxon is *Candidatus* Tenemana .

According to the original version of GTDB R06-RS202, this family belongs to the class *GWE2-31-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Tenemanae.

Description of *Candidatus* Tenemanae class. nov.

Candidatus Tenemanae (NL. fem. n. *c__Tenemanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWE2-31-10.* The type genus for the taxon is *Candidatus* Tenemana .

According to GTDB R06-RS202, this class belongs to the phylum *Spirochaetota*.

Description of *Candidatus* Tenemaria abambentia sp. nov.

Candidatus Tenemaria abambentia (NL. fem. n. *abambentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2645 sp903879805*. The type genome for the species is the GenBank assembly GCA_903879805.1. The GC content of the type genome is 41.09 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Tenemaria gen. nov.

Candidatus Tenemaria (NL. fem. n. *Tenemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2645*. The type species for the genus is *Candidatus* Tenemaria abambentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1997*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decapiaceae.

Description of *Candidatus* Tenemaria catapimonia sp. nov.

Candidatus Tenemaria catapimonia (NL. fem. n. *catapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2645 sp903870105*. The type genome for the species is the GenBank assembly GCA_903917585.1. The GC content of the type genome is 40.19 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Tenemaria conipilenta sp. nov.

Candidatus Tenemaria conipilenta (NL. fem. n. *conipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2645 sp002359655*. The type genome for the species is the GenBank assembly GCA_002342325.1. The GC content of the type genome is 36.2 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Tenemaria conopessa sp. nov.

Candidatus Tenemaria conopessa (NL. fem. n. *conopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2645 sp903898475*. The type genome for the species is the GenBank assembly GCA_903831915.1. The GC content of the type genome is 40.82 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Tenemaria funivilenta sp. nov.

Candidatus Tenemaria funivilenta (NL. fem. n. *funivilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2645 sp903849835*. The type genome for the species is the GenBank assembly GCA_903849835.1. The GC content of the type genome is 41.71 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Tenemaria nutabessa sp. nov.

Candidatus Tenemaria nutabessa (NL. fem. n. *nutabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2645 sp009693885*. The type genome for the species is the GenBank assembly GCA_009693885.1. The GC content of the type genome is 36.84 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Tenemaria serotedo sp. nov.

Candidatus Tenemaria serotedo (NL. fem. n. *serotedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2645 sp001767955*. The type genome for the species is the GenBank assembly GCA_001768805.1. The GC content of the type genome is 39.93 % and the genome length is 1.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Tenemaria tametifica sp. nov.

Candidatus Tenemaria tametifica (NL. fem. n. *tametifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2645 sp903937405*. The type genome for the species is the GenBank assembly GCA_903906295.1. The GC content of the type genome is 36.47 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Tenemaria ulcisitio sp. nov.

Candidatus Tenemaria ulcisitio (NL. fem. n. *ulcisitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2645 sp903927415*. The type genome for the species is the GenBank assembly GCA_903927415.1. The GC content of the type genome is 41.27 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Tenemella absuricula sp. nov.

Candidatus Tenemella absuricula (NL. fem. n. *absuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J027 sp010092845*. The type genome for the species is the GenBank assembly GCA_010092845.1. The GC content of the type genome is 55.72 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Tenemella gen. nov.

Candidatus Tenemella (NL. fem. n. *Tenemella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J027*. The type species for the genus is *Candidatus* Tenemella

absuricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J027*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemellaceae.

Description of *Candidatus* Tenemellaceae fam. nov.

Candidatus Tenemellaceae (NL. fem. n. *Tenemellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *J027.* The type genus for the taxon is *Candidatus* Tenemella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBR1031*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nocumellales.

Description of *Candidatus* Tenemella impudousia sp. nov.

Candidatus Tenemella impudousia (NL. fem. n. *impudousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J027 sp003697365*. The type genome for the species is the GenBank assembly GCA_003697365.1. The GC content of the type genome is 43.45 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Tenemia inlusitrix sp. nov.

Candidatus Tenemia inlusitrix (NL. fem. n. *inlusitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QZLD01 sp004796385*. The type genome for the species is the GenBank assembly GCA_004796385.1. The GC content of the type genome is 39.7 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Tenemia gen. nov.

Candidatus Tenemia (NL. fem. n. *Tenemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QZLD01*. The type species for the genus is *Candidatus* Tenemia

inlusitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QZLD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemiaceae.

Description of *Candidatus* Tenemiaceae fam. nov.

Candidatus Tenemiaceae (NL. fem. n. *Tenemiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QZLD01.* The type genus for the taxon is *Candidatus* Tenemia .

According to the original version of GTDB R06-RS202, this family belongs to the order *QZLD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tenemiales.

Description of *Candidatus* Tenemiales ord. nov.

Candidatus Tenemiales (NL. fem. n. *Tenemiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QZLD01.* The type genus for the taxon is *Candidatus* Tenemia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Tenemida mutabibula sp. nov.

Candidatus Tenemida mutabibula (NL. fem. n. *mutabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS60 sp001577135*. The type genome for the species is the GenBank assembly GCA_001577135.1. The GC content of the type genome is 35.55 % and the genome length is 0.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biofilm from deap sea brine pool".

Description of *Candidatus* Tenemida gen. nov.

Candidatus Tenemida (NL. fem. n. *Tenemida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *TCS60*. The type species for the genus is *Candidatus* Tenemida mutabibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS60*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemidaceae.

Description of *Candidatus* Tenemidaceae fam. nov.

Candidatus Tenemidaceae (NL. fem. n. *Tenemidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TCS60.* The type genus for the taxon is *Candidatus* Tenemida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JGIOTU-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bimetanales.

Description of *Candidatus* Tenemosa bipaticella sp. nov.

Candidatus Tenemosa bipaticella (NL. fem. n. *bipaticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Fen-1087 sp003161855*. The type genome for the species is the GenBank assembly GCA_003153715.1. The GC content of the type genome is 50.41 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Tenemosa gen. nov.

Candidatus Tenemosa (NL. fem. n. *Tenemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Fen-1087*. The type species for the genus is *Candidatus* Tenemosa bipaticella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-1087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemosaceae.

Description of *Candidatus* Tenemosaceae fam. nov.

Candidatus Tenemosaceae (NL. fem. n. *Tenemosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Fen-1087.* The type genus for the taxon is *Candidatus* Tenemosa .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Tenemula cosigivita sp. nov.

Candidatus Tenemula cosigivita (NL. fem. n. *cosigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12077 sp013138975*. The type genome for the species is the GenBank assembly GCA_013138975.1. The GC content of the type genome is 30.83 % and the genome length is 6.81 Mbp.

Description of *Candidatus* Tenemula gen. nov.

Candidatus Tenemula (NL. fem. n. *Tenemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12077*. The type species for the genus is *Candidatus* Tenemula cosigivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12077*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenemulaceae.

Description of *Candidatus* Tenemulaceae fam. nov.

Candidatus Tenemulaceae (NL. fem. n. *Tenemulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12077.* The type genus for the taxon is *Candidatus* Tenemula .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Tenemula fiducousia sp. nov.

Candidatus Tenemula fiducousia (NL. fem. n. *fiducousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA12077 sp002869305*. The type genome for the species is the GenBank assembly GCA_002869305.1. The GC content of the type genome is 32.46 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Tenemula illibitura sp. nov.

Candidatus Tenemula illibitura (NL. fem. n. *illibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12077 sp001769005*. The type genome for the species is the GenBank assembly GCA_001769005.1. The GC content of the type genome is 30.97 % and the genome length is 3.35 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Tenemula mutabatio sp. nov.

Candidatus Tenemula mutabatio (NL. fem. n. *mutabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12077 sp003446015*. The type genome for the species is the GenBank assembly GCA_003446015.1. The GC content of the type genome is 32.34 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Tenemula peracitio sp. nov.

Candidatus Tenemula peracitio (NL. fem. n. *peracitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12077 sp001768235*. The type genome for the species is the GenBank assembly GCA_001769045.1. The GC content of the type genome is 33.5 % and the genome length is 3.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 1 / A; 5m depth; 0.2 filter".

Description of *Candidatus* Tenemula sicunitoga sp. nov.

Candidatus Tenemula sicunitoga (NL. fem. n. *sicunitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA12077 sp001768565*. The type genome for the species is the GenBank assembly GCA_001768565.1. The GC content of the type genome is 32.48 % and the genome length is 4.33 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Tenilana semililenta sp. nov.

Candidatus Tenilana semililenta (NL. fem. n. *semililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-43-120 sp001821295*. The type genome for the species is the GenBank assembly GCA_001820825.1. The GC content of the type genome is 43.15 % and the genome length is 0.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Tenilana gen. nov.

Candidatus Tenilana (NL. fem. n. *Tenilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-43-120*. The type species for the genus is *Candidatus* Tenilana semililenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_C*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mavorellaceae.

Description of *Candidatus* Tenilaria bisulatica sp. nov.

Candidatus Tenilaria bisulatica (NL. fem. n. *bisulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1611 sp012964275*. The type genome for the species is the GenBank assembly GCA_012965175.1. The GC content of the type genome is 42.07 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Tenilaria gen. nov.

Candidatus Tenilaria (NL. fem. n. *Tenilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1611*. The type species for the genus is *Candidatus* Tenilaria bisulatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1611*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilariaceae.

Description of *Candidatus* Tenilariaceae fam. nov.

Candidatus Tenilariaceae (NL. fem. n. *Tenilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1611*. The type genus for the taxon is *Candidatus* Tenilaria .

According to GTDB R06-RS202, this family belongs to the order *Marinisomatales*.

Description of *Candidatus* Tenilaria offunessa sp. nov.

Candidatus Tenilaria offunessa (NL. fem. n. *offunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1611 sp002321855*. The type genome for the species is the GenBank assembly GCA_002321855.1. The GC content of the type genome is 39.77 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Tenilella tomacatio sp. nov.

Candidatus Tenilella tomacatio (NL. fem. n. *tomacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHN01 sp013151865*. The type genome for the species is the GenBank assembly GCA_013151865.1. The GC content of the type genome is 63.45 % and the genome length is 6.21 Mbp.

Description of *Candidatus* Tenilella gen. nov.

Candidatus Tenilella (NL. fem. n. *Tenilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *JAADHN01*. The type species for the genus is *Candidatus* Tenilella tomacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADHN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilellaceae.

Description of *Candidatus* Tenilellaceae fam. nov.

Candidatus Tenilellaceae (NL. fem. n. *Tenilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADHN01*. The type genus for the taxon is *Candidatus* Tenilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1407*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semilidales.

Description of *Candidatus* Tenilia cosidedo sp. nov.

Candidatus Tenilia cosidedo (NL. fem. n. *cosidedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGXB01 sp010029555*. The type genome for the species is the GenBank assembly GCA_010029555.1. The GC content of the type genome is 42.47 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Tenilia gen. nov.

Candidatus Tenilia (NL. fem. n. *Tenilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGXB01*. The type species for the genus is *Candidatus* Tenilia cosidedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RGXB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Teniliaceae.

Description of *Candidatus* Teniliaceae fam. nov.

Candidatus Teniliaceae (NL. fem. n. *Teniliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RGXB01.* The type genus for the taxon is *Candidatus* Tenilia .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-12-FULL-49-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Categanales.

Description of *Candidatus* Tenilia detoribula sp. nov.

Candidatus Tenilia detoribula (NL. fem. n. *detoribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGXB01 sp010031885*. The type genome for the species is the GenBank assembly GCA_010031885.1. The GC content of the type genome is 40.37 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Tenilida pinifousia sp. nov.

Candidatus Tenilida pinifousia (NL. fem. n. *pinifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-50-11 sp001777585*. The type genome for the species is the GenBank assembly GCA_001777585.1. The GC content of the type genome is 50.18 % and the genome length is 0.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Tenilida gen. nov.

Candidatus Tenilida (NL. fem. n. *Tenilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-50-11*. The type species for the genus is *Candidatus* Tenilida pinifousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-50-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tenilidaceae.

Description of *Candidatus* Tenilidaceae fam. nov.

Candidatus Tenilidaceae (NL. fem. n. *Tenilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-01-FULL-50-11.* The type genus for the taxon is *Candidatus* Tenilida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA920*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denicosales.

Description of *Candidatus* Tenilosa colimitoga sp. nov.

Candidatus Tenilosa colimitoga (NL. fem. n. *colimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQUJ01 sp008501635*. The type genome for the species is the GenBank assembly GCA_011526005.1. The GC content of the type genome is 60.01 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Tenilosa gen. nov.

Candidatus Tenilosa (NL. fem. n. *Tenilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QQUJ01*. The type species for the genus is *Candidatus* Tenilosa colimitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-100275*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicabellaceae.

Description of *Candidatus* Tenilula cerevilega sp. nov.

Candidatus Tenilula cerevilega (NL. fem. n. *cerevilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC1-42-9 sp000995185*. The type genome for the species is the GenBank assembly GCA_000995185.1. The GC content of the type genome is 41.39 % and the genome length is 0.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Tenilula gen. nov.

Candidatus Tenilula (NL. fem. n. *Tenilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC1-42-9*. The type species for the genus is *Candidatus* Tenilula cerevilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Tenuifilum admulimonia sp. nov.

Candidatus Tenuifilum admulimonia (NL. fem. n. *admulimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenuifilum sp011045955*. The type genome for the species is the GenBank assembly GCA_011045955.1. The GC content of the type genome is 42.25 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Tenuifilum apogricella sp. nov.

Candidatus Tenuifilum apogricella (NL. fem. n. *apogricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenuifilum sp011367975*. The type genome for the species is the GenBank assembly GCA_011367975.1. The GC content of the type genome is 42.13 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Tenuifilum legifax sp. nov.

Candidatus Tenuifilum legifax (NL. fem. n. *legifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenuifilum sp001603415*. The type genome for the species is the GenBank assembly GCA_001603415.1. The GC content of the type genome is 42.35 % and the genome length is 2.45 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Tenuifilum peribitrix sp. nov.

Candidatus Tenuifilum peribitrix (NL. fem. n. *peribitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tenuifilum sp002383425*. The type genome for the species is the GenBank assembly GCA_002383425.1. The GC content of the type genome is 40.6 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Tepidanaerobacter papilatio sp. nov.

Candidatus Tepidanaerobacter papilatio (NL. fem. n. *papilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tepidanaerobacter sp001896545*. The type genome for the species is the GenBank assembly GCA_001896545.1. The GC content of the type genome is 37.65 % and the genome length is 2.39 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sludge from a mesophilic anaerobic wastewater digester enriched on phosphite and carbon dioxide".

Description of *Candidatus* Tepidicaulis oblivitura sp. nov.

Candidatus Tepidicaulis oblivitura (NL. fem. n. *oblivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tepidicaulis sp002389665*. The type genome for the species is the GenBank assembly GCA_002389665.1. The GC content of the type genome is 60.89 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Tepidiforma culibetta sp. nov.

Candidatus Tepidiforma culibetta (NL. fem. n. *culibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tepidiforma sp002563855*. The type genome for the species is the GenBank assembly RS_GCF_002563855.1. The GC content of the type genome is 69.37 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Tepidimicrobium resurousia sp. nov.

Candidatus Tepidimicrobium resurousia (NL. fem. n. *resurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tepidimicrobium sp012728595*. The type genome for the species is the GenBank assembly GCA_012728595.1. The GC content of the type genome is 35.65 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Tepidiphilus bonitousia sp. nov.

Candidatus Tepidiphilus bonitousia (NL. fem. n. *bonitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tepidiphilus sp006980785*. The type genome for the species is the GenBank assembly RS_GCF_006980705.1. The GC content of the type genome is 64.39 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Terasakiella desulibula sp. nov.

Candidatus Terasakiella desulibula (NL. fem. n. *desulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terasakiella sp004564135*. The type genome for the species is the GenBank assembly RS_GCF_004564135.1. The GC content of the type genome is 47.53 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Terasakiella levifigena sp. nov.

Candidatus Terasakiella levifigena (NL. fem. n. *levifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terasakiella sp013373265*. The type genome for the species is the GenBank assembly GCA_013373265.1. The GC content of the type genome is 46.0 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Terasakiella omniventia sp. nov.

Candidatus Terasakiella omniventia (NL. fem. n. *omniventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terasakiella sp013373205*. The type genome for the species is the GenBank assembly GCA_013373205.1. The GC content of the type genome is 47.65 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Terebana papaventia sp. nov.

Candidatus Terebana papaventia (NL. fem. n. *papaventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2985 sp002717805*. The type genome for the species is the GenBank assembly GCA_002346715.1. The GC content of the type genome is 41.51 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Terebana gen. nov.

Candidatus Terebana (NL. fem. n. *Terebana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2985*. The type species for the genus is *Candidatus* Terebana papaventia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2985*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Terebanaceae.

Description of *Candidatus* Terebanaceae fam. nov.

Candidatus Terebanaceae (NL. fem. n. *Terebanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2985.* The type genus for the taxon is *Candidatus* Terebana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2985*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Terebanales.

Description of *Candidatus* Terebanales ord. nov.

Candidatus Terebanales (NL. fem. n. *Terebanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2985.* The type genus for the taxon is *Candidatus* Terebana .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Terebaria arrabibra sp. nov.

Candidatus Terebaria arrabibra (NL. fem. n. *arrabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp010024525*. The type genome for the species is the GenBank assembly GCA_010024525.1. The GC content of the type genome is 56.58 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Terebaria gen. nov.

Candidatus Terebaria (NL. fem. n. *Terebaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3015*. The type species for the genus is *Candidatus* Terebaria arrabibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Terebariaceae.

Description of *Candidatus* Terebariaceae fam. nov.

Candidatus Terebariaceae (NL. fem. n. *Terebariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3015.* The type genus for the taxon is *Candidatus* Terebaria .

According to GTDB R06-RS202, this family belongs to the order *Methylacidiphilales*.

Description of *Candidatus* Terebaria bonititas sp. nov.

Candidatus Terebaria bonititas (NL. fem. n. *bonititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp010025475*. The type genome for the species is the

GenBank assembly GCA_010027545.1. The GC content of the type genome is 58.81 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Terebaria cetaritas sp. nov.

Candidatus Terebaria cetaritas (NL. fem. n. *cetaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp903956835*. The type genome for the species is the GenBank assembly GCA_903877425.1. The GC content of the type genome is 54.32 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Terebaria cimititudo sp. nov.

Candidatus Terebaria cimititudo (NL. fem. n. *cimititudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp002342345*. The type genome for the species is the GenBank assembly GCA_002342345.1. The GC content of the type genome is 61.83 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Terebaria decucugo sp. nov.

Candidatus Terebaria decucugo (NL. fem. n. *decucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp001438005*. The type genome for the species is the GenBank assembly GCA_002346355.1. The GC content of the type genome is 56.01 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Terebaria decupetta sp. nov.

Candidatus Terebaria decupetta (NL. fem. n. *decupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp002367435*. The type genome for the species is the GenBank assembly GCA_009921055.1. The GC content of the type genome is 57.35 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Terebaria ludifibula sp. nov.

Candidatus Terebaria ludifibula (NL. fem. n. *ludifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp009921985*. The type genome for the species is the GenBank assembly GCA_009921985.1. The GC content of the type genome is 57.94 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Terebaria patibitoga sp. nov.

Candidatus Terebaria patibitoga (NL. fem. n. *patibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp903905395*. The type genome for the species is the GenBank assembly GCA_903905395.1. The GC content of the type genome is 57.07 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Terebaria progratio sp. nov.

Candidatus Terebaria progratio (NL. fem. n. *progratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp010028775*. The type genome for the species is the GenBank assembly GCA_010028775.1. The GC content of the type genome is 59.05 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Terebaria subacitica sp. nov.

Candidatus Terebaria subacitica (NL. fem. n. *subacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp002366885*. The type genome for the species is the GenBank assembly GCA_002366885.1. The GC content of the type genome is 61.47 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Terebaria vocifitura sp. nov.

Candidatus Terebaria vocifitura (NL. fem. n. *vocifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3015 sp010031845*. The type genome for the species is the GenBank assembly GCA_010031845.1. The GC content of the type genome is 57.46 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Terebida peraciforma sp. nov.

Candidatus Terebida peraciforma (NL. fem. n. *peraciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADAUA01 sp900315375*. The type genome for the species is the GenBank assembly GCA_902791035.1. The GC content of the type genome is 66.29 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Terebida gen. nov.

Candidatus Terebida (NL. fem. n. *Terebida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADAUA01*. The type species for the genus is *Candidatus* Terebida peraciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Terebosa pimenicella sp. nov.

Candidatus Terebosa pimenicella (NL. fem. n. *pimenicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-55-14 sp001802945*. The type genome for the species is the GenBank assembly GCA_001802945.1. The GC content of the type genome is 55.75 % and the genome length is 3.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Terebosa gen. nov.

Candidatus Terebosa (NL. fem. n. *Terebosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *2-02-FULL-55-14*. The type species for the genus is *Candidatus* Terebosa pimenicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabanaceae.

Description of *Candidatus* Terebula diluvousia sp. nov.

Candidatus Terebula diluvousia (NL. fem. n. *diluvousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1941 sp003165135*. The type genome for the species is the GenBank assembly GCA_003165135.1. The GC content of the type genome is 44.36 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Terebula gen. nov.

Candidatus Terebula (NL. fem. n. *Terebula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1941*. The type species for the genus is *Candidatus* Terebula diluvousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LD1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalidaceae.

Description of *Candidatus* Terebula gasifatica sp. nov.

Candidatus Terebula gasifatica (NL. fem. n. *gasifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1941 sp903917755*. The type genome for the species is the GenBank assembly GCA_903888635.1. The GC content of the type genome is 43.99 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Terebula papilitoga sp. nov.

Candidatus Terebula papilitoga (NL. fem. n. *papilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1941 sp002336805*. The type genome for the species is the GenBank assembly GCA_002389745.1. The GC content of the type genome is 50.67 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Teredinibacter bisacigena sp. nov.

Candidatus Teredinibacter bisacigena (NL. fem. n. *bisacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Teredinibacter sp000966245*. The type genome for the species is the GenBank assembly GCA_014217335.1. The GC content of the type genome is 45.71 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Teredinibacter chancetta sp. nov.

Candidatus Teredinibacter chancetta (NL. fem. n. *chancetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Teredinibacter sp003634075*. The type genome for the species is the GenBank assembly RS_GCF_003634075.1. The GC content of the type genome is 54.8 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Teredinibacter fibicatio sp. nov.

Candidatus Teredinibacter fibicatio (NL. fem. n. *fibicatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Teredinibacter sp001922955*. The type genome for the species is the GenBank assembly RS_GCF_014211975.1. The GC content of the type genome is 47.18 % and the genome length is 4.92 Mbp.

Description of *Candidatus* Teredinibacter lenocatio sp. nov.

Candidatus Teredinibacter lenocatio (NL. fem. n. *lenocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Teredinibacter sp900177435*. The type genome for the species is the GenBank assembly RS_GCF_900177435.1. The GC content of the type genome is 47.69

% and the genome length is 5.02 Mbp.

Description of *Candidatus* Teredinibacter tribrimonia sp. nov.

Candidatus Teredinibacter tribrimonia (NL. fem. n. *tribrimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Teredinibacter sp007827375*. The type genome for the species is the GenBank assembly RS_GCF_007827375.1. The GC content of the type genome is 47.96 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Terrabacter adgesitio sp. nov.

Candidatus Terrabacter adgesitio (NL. fem. n. *adgesitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrabacter sp000383675*. The type genome for the species is the GenBank assembly RS_GCF_000383675.1. The GC content of the type genome is 71.5 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Terrabacter alsisugo sp. nov.

Candidatus Terrabacter alsisugo (NL. fem. n. *alsisugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrabacter sp014518425*. The type genome for the species is the GenBank assembly RS_GCF_014518425.1. The GC content of the type genome is 70.86 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Terrabacter buxanitudo sp. nov.

Candidatus Terrabacter buxanitudo (NL. fem. n. *buxanitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrabacter sp013361975*. The type genome for the species is the GenBank assembly GCA_013361975.1. The GC content of the type genome is 71.89 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Terrabacter conipicula sp. nov.

Candidatus Terrabacter conipicula (NL. fem. n. *conipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrabacter sp000955875*. The type genome for the species is the GenBank assembly GCA_000955875.1. The GC content of the type genome is 71.39 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Terrabacter depupivita sp. nov.

Candidatus Terrabacter depupivita (NL. fem. n. *depupivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrabacter sp000620545*. The type genome for the species is the GenBank assembly RS_GCF_000620545.1. The GC content of the type genome is 70.87 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Terrabacter dicimatica sp. nov.

Candidatus Terrabacter dicimatica (NL. fem. n. *dicimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrabacter sp006716915*. The type genome for the species is the GenBank assembly RS_GCF_006716915.1. The GC content of the type genome is 71.24 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Terrabacter diminitura sp. nov.

Candidatus Terrabacter diminitura (NL. fem. n. *diminitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrabacter sp006715875*. The type genome for the species is the GenBank assembly RS_GCF_006715875.1. The GC content of the type genome is 71.41 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Terrabacter funamimonia sp. nov.

Candidatus Terrabacter funamimonia (NL. fem. n. *funamimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrabacter sp001428505*. The type genome for the species is the GenBank assembly RS_GCF_001429645.1. The GC content of the type genome is 71.46 % and the genome length is 4.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Terrabacter funamitudo sp. nov.

Candidatus Terrabacter funamitudo (NL. fem. n. *funamitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrabacter sp001429185*. The type genome for the species is the GenBank assembly RS_GCF_001429655.1. The GC content of the type genome is 71.52 % and the genome length is 4.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Terracidiphilus adcesago sp. nov.

Candidatus Terracidiphilus adcesago (NL. fem. n. *adcesago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp903911925*. The type genome for the species is the GenBank assembly GCA_903911925.1. The GC content of the type genome is 59.2 % and the genome length is 5.79 Mbp.

Description of *Candidatus* Terracidiphilus adpinitrix sp. nov.

Candidatus Terracidiphilus adpinitrix (NL. fem. n. *adpinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003140705*. The type genome for the species is the GenBank assembly GCA_003140705.1. The GC content of the type genome is 57.85 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Terracidiphilus adsucitas sp. nov.

Candidatus Terracidiphilus adsucitas (NL. fem. n. *adsucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Terracidiphilus sp003171315*. The type genome for the species is the GenBank assembly GCA_003171315.1. The GC content of the type genome is 61.46 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Terracidiphilus advigitio sp. nov.

Candidatus Terracidiphilus advigitio (NL. fem. n. *advigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003165095*. The type genome for the species is the GenBank assembly GCA_003165095.1. The GC content of the type genome is 60.25 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Terracidiphilus ampenatica sp. nov.

Candidatus Terracidiphilus ampenatica (NL. fem. n. *ampenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp002307235*. The type genome for the species is the GenBank assembly GCA_002307235.1. The GC content of the type genome is 60.99 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Terracidiphilus atrusilega sp. nov.

Candidatus Terracidiphilus atrusilega (NL. fem. n. *atrusilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003164635*. The type genome for the species is the GenBank assembly GCA_003164635.1. The GC content of the type genome is 58.97 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Terracidiphilus bonifitas sp. nov.

Candidatus Terracidiphilus bonifitas (NL. fem. n. *bonifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003142015*. The type genome for the species is the GenBank assembly GCA_003142015.1. The GC content of the type genome is 59.56 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Terracidiphilus bucolimonas sp. nov.

Candidatus Terracidiphilus bucolimonas (NL. fem. n. *bucolimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003156495*. The type genome for the species is the GenBank assembly GCA_003156495.1. The GC content of the type genome is 59.39 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Terracidiphilus cereviforma sp. nov.

Candidatus Terracidiphilus cereviforma (NL. fem. n. *cereviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003134855*. The type genome for the species is the GenBank assembly GCA_003134855.1. The GC content of the type genome is 59.94 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Terracidiphilus denavatica sp. nov.

Candidatus Terracidiphilus denavatica (NL. fem. n. *denavatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003133425*. The type genome for the species is the GenBank assembly GCA_003132365.1. The GC content of the type genome is 57.71 % and the genome length is 6.73 Mbp.

Description of *Candidatus* Terracidiphilus denavibula sp. nov.

Candidatus Terracidiphilus denavibula (NL. fem. n. *denavibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp903842065*. The type genome for the species is the GenBank assembly GCA_903842065.1. The GC content of the type genome is 60.36 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Terracidiphilus detecimonas sp. nov.

Candidatus Terracidiphilus detecimonas (NL. fem. n. *detecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp000620725*. The type genome for the species is the GenBank assembly RS_GCF_000620725.1. The GC content of the type genome is 60.25 % and the genome length is 6.68 Mbp.

Description of *Candidatus* Terracidiphilus didacatio sp. nov.

Candidatus Terracidiphilus didacatio (NL. fem. n. *didacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp903849645*. The type genome for the species is the GenBank assembly GCA_903834995.1. The GC content of the type genome is 63.54 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Terracidiphilus documitudo sp. nov.

Candidatus Terracidiphilus documitudo (NL. fem. n. *documitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003140785*. The type genome for the species is the GenBank assembly GCA_003166975.1. The GC content of the type genome is 57.93 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Terracidiphilus fuligibra sp. nov.

Candidatus Terracidiphilus fuligibra (NL. fem. n. *fuligibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003170825*. The type genome for the species is the GenBank assembly GCA_003160025.1. The GC content of the type genome is 61.25 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Terracidiphilus herinetta sp. nov.

Candidatus Terracidiphilus herinetta (NL. fem. n. *herinetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Terracidiphilus sp003159355*. The type genome for the species is the GenBank assembly GCA_003159355.1. The GC content of the type genome is 59.93 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Terracidiphilus hexamimonas sp. nov.

Candidatus Terracidiphilus hexamimonas (NL. fem. n. *hexamimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003162495*. The type genome for the species is the GenBank assembly GCA_003162495.1. The GC content of the type genome is 60.56 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Terracidiphilus horomimonas sp. nov.

Candidatus Terracidiphilus horomimonas (NL. fem. n. *horomimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003151435*. The type genome for the species is the GenBank assembly GCA_003151435.1. The GC content of the type genome is 59.1 % and the genome length is 5.96 Mbp.

Description of *Candidatus* Terracidiphilus inergifica sp. nov.

Candidatus Terracidiphilus inergifica (NL. fem. n. *inergifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp008682415*. The type genome for the species is the GenBank assembly RS_GCF_008682415.1. The GC content of the type genome is 61.86 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Terracidiphilus lacinivita sp. nov.

Candidatus Terracidiphilus lacinivita (NL. fem. n. *lacinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003165075*. The type genome for the species is the GenBank assembly GCA_003165075.1. The GC content of the type genome is 58.77 % and the genome length is 5.68 Mbp.

Description of *Candidatus* Terracidiphilus macilicula sp. nov.

Candidatus Terracidiphilus macilicula (NL. fem. n. *macilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp903828675*. The type genome for the species is the GenBank assembly GCA_903828675.1. The GC content of the type genome is 58.41 % and the genome length is 6.39 Mbp.

Description of *Candidatus* Terracidiphilus malifitura sp. nov.

Candidatus Terracidiphilus malifitura (NL. fem. n. *malifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003156235*. The type genome for the species is the GenBank assembly GCA_003156235.1. The GC content of the type genome is 58.14 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Terracidiphilus metabedo sp. nov.

Candidatus Terracidiphilus metabedo (NL. fem. n. *metabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003151985*. The type genome for the species is the GenBank assembly GCA_003135875.1. The GC content of the type genome is 57.46 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Terracidiphilus nosocentia sp. nov.

Candidatus Terracidiphilus nosocentia (NL. fem. n. *nosocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp002314435*. The type genome for the species is the GenBank assembly GCA_002314435.1. The GC content of the type genome is 61.56 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Terracidiphilus parocimonia sp. nov.

Candidatus Terracidiphilus parocimonia (NL. fem. n. *parocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003165935*. The type genome for the species is the GenBank assembly GCA_003165935.1. The GC content of the type genome is 59.64 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Terracidiphilus peripago sp. nov.

Candidatus Terracidiphilus peripago (NL. fem. n. *peripago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003167305*. The type genome for the species is the GenBank assembly GCA_003167305.1. The GC content of the type genome is 60.63 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Terracidiphilus rinocifica sp. nov.

Candidatus Terracidiphilus rinocifica (NL. fem. n. *rinocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003165005*. The type genome for the species is the GenBank assembly GCA_003165005.1. The GC content of the type genome is 61.56 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Terracidiphilus risibimonas sp. nov.

Candidatus Terracidiphilus risibimonas (NL. fem. n. *risibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003161045*. The type genome for the species is the GenBank assembly GCA_003139755.1. The GC content of the type genome is 61.99 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Terracidiphilus rubefax sp. nov.

Candidatus Terracidiphilus rubefax (NL. fem. n. *rubefax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Terracidiphilus sp003134815*. The type genome for the species is the GenBank assembly GCA_003134815.1. The GC content of the type genome is 59.13 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Terracidiphilus sacopitio sp. nov.

Candidatus Terracidiphilus sacopitio (NL. fem. n. *sacopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003138365*. The type genome for the species is the GenBank assembly GCA_003156155.1. The GC content of the type genome is 59.92 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Terracidiphilus selibessa sp. nov.

Candidatus Terracidiphilus selibessa (NL. fem. n. *selibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003166055*. The type genome for the species is the GenBank assembly GCA_003166055.1. The GC content of the type genome is 59.21 % and the genome length is 5.33 Mbp.

Description of *Candidatus* Terracidiphilus telefibula sp. nov.

Candidatus Terracidiphilus telefibula (NL. fem. n. *telefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003142935*. The type genome for the species is the GenBank assembly GCA_003142935.1. The GC content of the type genome is 58.75 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Terracidiphilus tenemitudo sp. nov.

Candidatus Terracidiphilus tenemitudo (NL. fem. n. *tenemitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003138515*. The type genome for the species is the GenBank assembly GCA_003166415.1. The GC content of the type genome is 60.14 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Terracidiphilus vicatitica sp. nov.

Candidatus Terracidiphilus vicatitica (NL. fem. n. *vicatitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracidiphilus sp003139795*. The type genome for the species is the GenBank assembly GCA_003138215.1. The GC content of the type genome is 61.15 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Terracoccus onocratica sp. nov.

Candidatus Terracoccus onocratica (NL. fem. n. *onocratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terracoccus sp001758225*. The type genome for the species is the GenBank assembly RS_GCF_001758225.1. The GC content of the type genome is 69.33 % and the genome length is 5.02 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Terribacillus baropedo sp. nov.

Candidatus Terribacillus baropedo (NL. fem. n. *baropedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terribacillus sp002272135*. The type genome for the species is the GenBank assembly RS_GCF_002272135.1. The GC content of the type genome is 43.9 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Terribacillus selecisca sp. nov.

Candidatus Terribacillus selecisca (NL. fem. n. *selecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terribacillus sp002271665*. The type genome for the species is the GenBank assembly RS_GCF_002271665.1. The GC content of the type genome is 46.46 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Terricaulis biparicula sp. nov.

Candidatus Terricaulis biparicula (NL. fem. n. *biparicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp004634425*. The type genome for the species is the GenBank assembly RS_GCF_004634425.1. The GC content of the type genome is 62.91 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Terricaulis conabifica sp. nov.

Candidatus Terricaulis conabifica (NL. fem. n. *conabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp002083515*. The type genome for the species is the GenBank assembly GCA_002083515.1. The GC content of the type genome is 64.5 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Terricaulis conaricula sp. nov.

Candidatus Terricaulis conaricula (NL. fem. n. *conaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp003242075*. The type genome for the species is the GenBank assembly GCA_003242075.1. The GC content of the type genome is 63.32 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Terricaulis crabritoga sp. nov.

Candidatus Terricaulis crabritoga (NL. fem. n. *crabritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp001464425*. The type genome for the species is the GenBank assembly GCA_001464425.1. The GC content of the type genome is 62.78 % and the genome length is 3.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Terricaulis depecimonas sp. nov.

Candidatus Terricaulis depecimonas (NL. fem. n. *depecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp900696695*. The type genome for the species is the GenBank assembly GCA_900696695.1. The GC content of the type genome is 67.42 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Terricaulis ecligitica sp. nov.

Candidatus Terricaulis ecligitica (NL. fem. n. *ecligitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp902826145*. The type genome for the species is the GenBank assembly GCA_902826145.1. The GC content of the type genome is 62.92 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Terricaulis esculicula sp. nov.

Candidatus Terricaulis esculicula (NL. fem. n. *esculicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp902826245*. The type genome for the species is the GenBank assembly GCA_902826245.1. The GC content of the type genome is 63.37 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Terricaulis immatousia sp. nov.

Candidatus Terricaulis immatousia (NL. fem. n. *immatousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp902826035*. The type genome for the species is the GenBank assembly GCA_902826035.1. The GC content of the type genome is 63.18 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Terricaulis inoffiforma sp. nov.

Candidatus Terricaulis inoffiforma (NL. fem. n. *inoffiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp001679665*. The type genome for the species is the GenBank assembly RS_GCF_001679665.1. The GC content of the type genome is 61.5

% and the genome length is 3.73 Mbp.

Description of *Candidatus* Terricaulis luceritio sp. nov.

Candidatus Terricaulis luceritio (NL. fem. n. *luceritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp002343395*. The type genome for the species is the GenBank assembly GCA_002343395.1. The GC content of the type genome is 64.03 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Terricaulis oblocax sp. nov.

Candidatus Terricaulis oblocax (NL. fem. n. *oblocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp003526465*. The type genome for the species is the GenBank assembly GCA_003526465.1. The GC content of the type genome is 63.79 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Terricaulis octipugo sp. nov.

Candidatus Terricaulis octipugo (NL. fem. n. *octipugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp000974665*. The type genome for the species is the GenBank assembly RS_GCF_000974665.1. The GC content of the type genome is 63.31 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Terricaulis podagimonia sp. nov.

Candidatus Terricaulis podagimonia (NL. fem. n. *podagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp011332235*. The type genome for the species is the GenBank assembly GCA_011332235.1. The GC content of the type genome is 64.92 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Terricaulis rubecigena sp. nov.

Candidatus Terricaulis rubecigena (NL. fem. n. *rubecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terricaulis sp014378995*. The type genome for the species is the GenBank assembly GCA_014378995.1. The GC content of the type genome is 63.93 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Terriglobus betacetta sp. nov.

Candidatus Terriglobus betacetta (NL. fem. n. *betacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terriglobus sp903642225*. The type genome for the species is the GenBank assembly RS_GCF_903642225.1. The GC content of the type genome is 60.42 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Terriglobus duricivita sp. nov.

Candidatus Terriglobus duricivita (NL. fem. n. *duricivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terriglobus sp000800015*. The type genome for the species is the GenBank assembly RS_GCF_000800015.1. The GC content of the type genome is 56.69 % and the genome length is 4.95 Mbp.

Description of *Candidatus* Terriglobus uberrentia sp. nov.

Candidatus Terriglobus uberrentia (NL. fem. n. *uberrentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terriglobus_A sp013361705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013361705.1. The GC content of the type genome is 58.29 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Terrilactibacillus niteliforma sp. nov.

Candidatus Terrilactibacillus niteliforma (NL. fem. n. *niteliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrilactibacillus sp009718825*. The type genome for the species is the GenBank assembly RS_GCF_009718825.1. The GC content of the type genome is 37.09 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Terrimicrobium asporimonas sp. nov.

Candidatus Terrimicrobium asporimonas (NL. fem. n. *asporimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrimicrobium sp001897195*. The type genome for the species is the GenBank assembly GCA_001897195.1. The GC content of the type genome is 60.76 % and the genome length is 5.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Terrimicrobium venefilega sp. nov.

Candidatus Terrimicrobium venefilega (NL. fem. n. *venefilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrimicrobium sp003054655*. The type genome for the species is the GenBank assembly RS_GCF_003054655.1. The GC content of the type genome is 60.74 % and the genome length is 4.75 Mbp.

Description of *Candidatus* Terrimonas dinupitica sp. nov.

Candidatus Terrimonas dinupitica (NL. fem. n. *dinupitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrimonas sp002399735*. The type genome for the species is the GenBank assembly GCA_002399735.1. The GC content of the type genome is 37.96 % and the genome length is 4.82 Mbp.

Description of *Candidatus* Terrisporobacter abnoritoga sp. nov.

Candidatus Terrisporobacter abnoritoga (NL. fem. n. *abnoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrisporobacter sp900557165*. The type genome for the species is the GenBank assembly GCA_900557165.1. The GC content of the type genome is 27.45 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Terrisporobacter intacatio sp. nov.

Candidatus Terrisporobacter intacatio (NL. fem. n. *intacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Terrisporobacter sp902363255*. The type genome for the species is the GenBank assembly RS_GCF_902363255.1. The GC content of the type genome is 28.37 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Tersicoccus annifivita sp. nov.

Candidatus Tersicoccus annifivita (NL. fem. n. *annifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tersicoccus sp001968825*. The type genome for the species is the GenBank assembly RS_GCF_001968825.1. The GC content of the type genome is 71.79 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Tetenana lenocitoga sp. nov.

Candidatus Tetenana lenocitoga (NL. fem. n. *lenocitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCRT01 sp004298465*. The type genome for the species is the GenBank assembly GCA_004323705.1. The GC content of the type genome is 64.7 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Tetenana gen. nov.

Candidatus Tetenana (NL. fem. n. *Tetenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCRT01*. The type species for the genus is *Candidatus* Tetenana lenocitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tetenaria chancedo sp. nov.

Candidatus Tetenaria chancedo (NL. fem. n. *chancedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-68-14 sp001796995*. The type genome for the species is the GenBank assembly GCA_001796995.1. The GC content of the type genome is 68.1 % and the genome length is 2.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Tetenaria gen. nov.

Candidatus Tetenaria (NL. fem. n. *Tetenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-68-14*. The type species for the genus is *Candidatus* Tetenaria chancedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-68-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tetenariaceae.

Description of *Candidatus* Tetenariaceae fam. nov.

Candidatus Tetenariaceae (NL. fem. n. *Tetenariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-68-14.* The type genus for the taxon is *Candidatus* Tetenaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSTF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cinefiales.

Description of *Candidatus* Tetenella foricibula sp. nov.

Candidatus Tetenella foricibula (NL. fem. n. *foricibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6163 sp003506095*. The type genome for the species is the GenBank assembly GCA_003506095.1. The GC content of the type genome is 54.24 %

and the genome length is 7.27 Mbp.

Description of *Candidatus* Tetenella gen. nov.

Candidatus Tetenella (NL. fem. n. *Tetenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6163*. The type species for the genus is *Candidatus* Tetenella foricibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tetenella ignomicula sp. nov.

Candidatus Tetenella ignomicula (NL. fem. n. *ignomicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6163 sp007694185*. The type genome for the species is the GenBank assembly GCA_007694185.1. The GC content of the type genome is 62.28 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Tetenella lanigousia sp. nov.

Candidatus Tetenella lanigousia (NL. fem. n. *lanigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6163 sp007127095*. The type genome for the species is the GenBank assembly GCA_007127095.1. The GC content of the type genome is 60.97 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Tetenella lucerigena sp. nov.

Candidatus Tetenella lucerigena (NL. fem. n. *lucerigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6163 sp002428205*. The type genome for the species is the GenBank assembly GCA_002428205.1. The GC content of the type genome is 55.12 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Tetenella xenodilega sp. nov.

Candidatus Tetenella xenodilega (NL. fem. n. *xenodilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6163 sp002422955*. The type genome for the species is the GenBank assembly GCA_002422955.1. The GC content of the type genome is 62.43 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Tetenia cotenentia sp. nov.

Candidatus Tetenia cotenentia (NL. fem. n. *cotenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZES01 sp903932045*. The type genome for the species is the GenBank assembly GCA_903875115.1. The GC content of the type genome is 45.87 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Tetenia gen. nov.

Candidatus Tetenia (NL. fem. n. *Tetenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZES01*. The type species for the genus is *Candidatus* Tetenia cotenentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tetenida ancepousia sp. nov.

Candidatus Tetenida ancepousia (NL. fem. n. *ancepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBV01 sp013359445*. The type genome for the species is the GenBank assembly GCA_013359445.1. The GC content of the type genome is 55.38 % and the genome length is 7.04 Mbp.

Description of *Candidatus* Tetenida gen. nov.

Candidatus Tetenida (NL. fem. n. *Tetenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBV01*. The type species for the genus is *Candidatus* Tetenida ancepousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABWBV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tetenidaceae.

Description of *Candidatus* Tetenidaceae fam. nov.

Candidatus Tetenidaceae (NL. fem. n. *Tetenidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABWBV01*. The type genus for the taxon is *Candidatus* Tetenida .

According to GTDB R06-RS202, this family belongs to the order *Anaerolineales*.

Description of *Candidatus* Tetenosa coturimonas sp. nov.

Candidatus Tetenosa coturimonas (NL. fem. n. *coturimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-159 sp003166475*. The type genome for the species is the GenBank assembly GCA_003166195.1. The GC content of the type genome is 62.59 % and the genome length is 7.11 Mbp.

Description of *Candidatus* Tetenosa gen. nov.

Candidatus Tetenosa (NL. fem. n. *Tetenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-159*. The type species for the genus is *Candidatus* Tetenosa coturimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tetenula duricedo sp. nov.

Candidatus Tetenula duricedo (NL. fem. n. *duricedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SMWT01 sp003650125*. The type genome for the species is the GenBank assembly GCA_003650085.1. The GC content of the type genome is 38.37 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Tetenula gen. nov.

Candidatus Tetenula (NL. fem. n. *Tetenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMWT01*. The type species for the genus is *Candidatus* Tetenula duricedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tetenula semivessa sp. nov.

Candidatus Tetenula semivessa (NL. fem. n. *semivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWT01 sp004356615*. The type genome for the species is the GenBank assembly GCA_004356615.1. The GC content of the type genome is 39.23 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Thalassobaculum armicentia sp. nov.

Candidatus Thalassobaculum armicentia (NL. fem. n. *armicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassobaculum_A sp000171835*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000171835.1. The GC content of the type genome is 65.02 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Thalassobius camilastra sp. nov.

Candidatus Thalassobius camilastra (NL. fem. n. *camilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Thalassobius sp009857745*. The type genome for the species is the GenBank assembly RS_GCF_009857745.1. The GC content of the type genome is 63.77 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Thalassobius decatousia sp. nov.

Candidatus Thalassobius decatousia (NL. fem. n. *decatousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassobius sp002708925*. The type genome for the species is the GenBank assembly GCA_002729995.1. The GC content of the type genome is 59.99 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Thalassospira casabilenta sp. nov.

Candidatus Thalassospira casabilenta (NL. fem. n. *casabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassospira sp011806525*. The type genome for the species is the GenBank assembly RS_GCF_011806525.1. The GC content of the type genome is 54.49 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Thalassospira gasomicella sp. nov.

Candidatus Thalassospira gasomicella (NL. fem. n. *gasomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassospira sp001613795*. The type genome for the species is the GenBank assembly RS_GCF_001613795.1. The GC content of the type genome is 54.67 % and the genome length is 4.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "deep sea sediment".

Description of *Candidatus* Thalassospira inlocastra sp. nov.

Candidatus Thalassospira inlocastra (NL. fem. n. *inlocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassospira sp001907695*. The type genome for the species is the GenBank assembly RS_GCF_001907695.1. The GC content of the type genome is 54.0 % and the genome length is 4.98 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "oil-polluted soil".

Description of *Candidatus* Thalassospira inornimonas sp. nov.

Candidatus Thalassospira inornimonas (NL. fem. n. *inornimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassospira sp000948415*. The type genome for the species is the GenBank assembly RS_GCF_000948415.1. The GC content of the type genome is 54.91 % and the genome length is 4.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "tidal marine sediment".

Description of *Candidatus* Thalassospira linigitia sp. nov.

Candidatus Thalassospira linigitia (NL. fem. n. *linigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassospira sp002115785*. The type genome for the species is the GenBank assembly RS_GCF_002115785.1. The GC content of the type genome is 54.68 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Thalassospira semodessa sp. nov.

Candidatus Thalassospira semodessa (NL. fem. n. *semodessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassospira sp002115825*. The type genome for the species is the GenBank assembly RS_GCF_002115825.1. The GC content of the type genome is 53.08 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Thalassospira vitabastra sp. nov.

Candidatus Thalassospira vitabastra (NL. fem. n. *vitabastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassospira sp002709775*. The type genome for the species is the GenBank assembly GCA_002709775.1. The GC content of the type genome is 55.46 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Thalassotalea manubitio sp. nov.

Candidatus Thalassotalea manubitio (NL. fem. n. *manubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassotalea sp012932965*. The type genome for the species is the GenBank assembly RS_GCF_012932965.1. The GC content of the type genome is 39.15 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Thalassotalea acricimonas sp. nov.

Candidatus Thalassotalea acricimonas (NL. fem. n. *acricimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassotalea_A sp007197775*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007197775.1. The GC content of the type genome is 44.23 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Thalassotalea betacimonas sp. nov.

Candidatus Thalassotalea betacimonas (NL. fem. n. *betacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassotalea_A sp004752005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_012932945.1. The GC content of the type genome is 42.66 % and the genome length is 3.74 Mbp.

Description of *Candidatus* Thalassotalea figilentia sp. nov.

Candidatus Thalassotalea figilentia (NL. fem. n. *figilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassotalea_A sp000764205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000764205.1. The GC content of the type genome is 42.23 % and the genome length is 4.58 Mbp. The isolation

source for the NCBI BioSample associated with the type genome is descibed as "Eastern Mediterranean water".

Description of *Candidatus* Thalassotalea mavoricella sp. nov.

Candidatus Thalassotalea mavoricella (NL. fem. n. *mavoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassotalea_A sp002162925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002162925.1. The GC content of the type genome is 41.62 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Thalassotalea vicecimonas sp. nov.

Candidatus Thalassotalea vicecimonas (NL. fem. n. *vicecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassotalea_A sp007097525*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_007097525.1. The GC content of the type genome is 37.68 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Thalassotalea adtesivita sp. nov.

Candidatus Thalassotalea adtesivita (NL. fem. n. *adtesivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thalassotalea_C sp001913705*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001913705.1. The GC content of the type genome is 38.29 % and the genome length is 4.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "calm larvae in shellfish hatchery".

Description of *Candidatus* Thapsana cepuredo sp. nov.

Candidatus Thapsana cepuredo (NL. fem. n. *cepuredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUSN01 sp012842605*. The type genome for the species is the GenBank assembly GCA_012842605.1. The GC content of the type genome is 42.14 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Thapsana gen. nov.

Candidatus Thapsana (NL. fem. n. *Thapsana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUSN01*. The type species for the genus is *Candidatus* Thapsana cepuredo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU083*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petulellaceae.

Description of *Candidatus* Thapsaria exsufiforma sp. nov.

Candidatus Thapsaria exsufiforma (NL. fem. n. *exsufiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAB01 sp009779845*. The type genome for the species is the GenBank assembly GCA_009779845.1. The GC content of the type genome is 51.79 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Thapsaria gen. nov.

Candidatus Thapsaria (NL. fem. n. *Thapsaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAB01*. The type species for the genus is *Candidatus* Thapsaria exsufiforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Thapsaria homagimonia sp. nov.

Candidatus Thapsaria homagimonia (NL. fem. n. *homagimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAB01 sp009780435*. The type genome for the species is the GenBank assembly GCA_009780435.1. The GC content of the type genome is 53.67 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Thapsaria homilibula sp. nov.

Candidatus Thapsaria homilibula (NL. fem. n. *homilibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAB01 sp009780175*. The type genome for the species is the GenBank assembly GCA_009780175.1. The GC content of the type genome is 54.57 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Thapsaria oblonitio sp. nov.

Candidatus Thapsaria oblonitio (NL. fem. n. *oblonitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAB01 sp009780235*. The type genome for the species is the GenBank assembly GCA_009780235.1. The GC content of the type genome is 55.17 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Thapsella inmitibula sp. nov.

Candidatus Thapsella inmitibula (NL. fem. n. *inmitibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDKH01 sp013002345*. The type genome for the species is the GenBank assembly GCA_013002345.1. The GC content of the type genome is 58.5 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Thapsella gen. nov.

Candidatus Thapsella (NL. fem. n. *Thapsella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDKH01*. The type species for the genus is *Candidatus* Thapsella inmitibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10348*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Divorosaceae.

Description of *Candidatus* Thapsida brasmitura sp. nov.

Candidatus Thapsida brasmitura (NL. fem. n. *brasmitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDEJ01 sp013288555*. The type genome for the species is the GenBank assembly GCA_013288555.1. The GC content of the type genome is 39.71 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Thapsida gen. nov.

Candidatus Thapsida (NL. fem. n. *Thapsida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDEJ01*. The type species for the genus is *Candidatus* Thapsida brasmitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAILMK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dicimosaceae.

Description of *Candidatus* Thapsida demigetta sp. nov.

Candidatus Thapsida demigetta (NL. fem. n. *demigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDEJ01 sp013287095*. The type genome for the species is the GenBank assembly GCA_013287095.1. The GC content of the type genome is 40.89 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Thapsula scombitrix sp. nov.

Candidatus Thapsula scombitrix (NL. fem. n. *scombitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MWCO01 sp002070115*. The type genome for the species is the GenBank assembly GCA_002070115.1. The GC content of the type genome is 57.26 % and the genome length is 6.55 Mbp.

Description of *Candidatus* Thapsula gen. nov.

Candidatus Thapsula (NL. fem. n. *Thapsula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MWCO01*. The type species for the genus is *Candidatus* Thapsula scombitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Thauera aggesitoga sp. nov.

Candidatus Thauera aggesitoga (NL. fem. n. *aggesitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera sp002354895*. The type genome for the species is the GenBank assembly RS_GCF_002354895.1. The GC content of the type genome is 67.67 % and the genome length is 5.29 Mbp.

Description of *Candidatus* Thauera allibitica sp. nov.

Candidatus Thauera allibitica (NL. fem. n. *allibitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera sp002422685*. The type genome for the species is the GenBank assembly GCA_002422685.1. The GC content of the type genome is 67.92 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Thauera democifica sp. nov.

Candidatus Thauera democifica (NL. fem. n. *democifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera sp003446655*. The type genome for the species is the GenBank assembly GCA_012840655.1. The GC content of the type genome is 67.25 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Thauera funebentia sp. nov.

Candidatus Thauera funebentia (NL. fem. n. *funebentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera sp000310145*. The type genome for the species is the GenBank assembly RS_GCF_000310125.2. The GC content of the type genome is 65.79 % and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "wastewater treatment reactor".

Description of *Candidatus* Thauera ludibigena sp. nov.

Candidatus Thauera ludibigena (NL. fem. n. *ludibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera sp009469595*. The type genome for the species is the GenBank assembly RS_GCF_009469595.1. The GC content of the type genome is 65.54 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Thauera redunimonia sp. nov.

Candidatus Thauera redunimonia (NL. fem. n. *redunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera sp003963015*. The type genome for the species is the GenBank assembly GCA_003963015.1. The GC content of the type genome is 68.41 % and the genome length is 5.0 Mbp.

Description of *Candidatus* Thauera repecimonas sp. nov.

Candidatus Thauera repecimonas (NL. fem. n. *repecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera sp004295105*. The type genome for the species is the GenBank assembly GCA_004295105.1. The GC content of the type genome is 67.21 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Thauera antipilenta sp. nov.

Candidatus Thauera antipilenta (NL. fem. n. *antipilenta* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera_A sp004801295*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004801295.1. The GC content of the type genome is 67.51 % and the genome length is 4.72 Mbp.

Description of *Candidatus* Thauera cepuritoga sp. nov.

Candidatus Thauera cepuritoga (NL. fem. n. *cepuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera_A sp003034845*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_003034845.1. The GC content of the type genome is 67.19 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Thauera invigitura sp. nov.

Candidatus Thauera invigitura (NL. fem. n. *invigitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera_A sp014489115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014489115.1. The GC content of the type genome is 68.0 % and the genome length is 3.96 Mbp.

Description of *Candidatus* Thauera seposastra sp. nov.

Candidatus Thauera seposastra (NL. fem. n. *seposastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thauera_A sp004801305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004801305.1. The GC

content of the type genome is 68.3 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Thermaerobacter arrugetta sp. nov.

Candidatus Thermaerobacter arrugetta (NL. fem. n. *arrugetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermaerobacter sp004634385*. The type genome for the species is the GenBank assembly RS_GCF_004634385.1. The GC content of the type genome is 73.26 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Thermaerobacter inoccilega sp. nov.

Candidatus Thermaerobacter inoccilega (NL. fem. n. *inoccilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermaerobacter sp003242195*. The type genome for the species is the GenBank assembly GCA_003242195.1. The GC content of the type genome is 69.99 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Thermoactinomyces tenebicula sp. nov.

Candidatus Thermoactinomyces tenebicula (NL. fem. n. *tenebicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoactinomyces sp013868055*. The type genome for the species is the GenBank assembly RS_GCF_013868055.1. The GC content of the type genome is 44.69 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Thermoanaerobacter cadavitrix sp. nov.

Candidatus Thermoanaerobacter cadavitrix (NL. fem. n. *cadavitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoanaerobacter sp012840485*. The type genome for the species is the GenBank assembly GCA_012840485.1. The GC content of the type genome is 33.81 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Thermoanaerobacter maxumicula sp. nov.

Candidatus Thermoanaerobacter maxumicula (NL. fem. n. *maxumicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoanaerobacter sp000445185*. The type genome for the species is the GenBank assembly GCA_000445185.1. The GC content of the type genome is 34.01 % and the genome length is 2.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "formation water extracted 1960m underground from a high temperature (102C) petroleum reservoir at Gippsland Basin; Australia".

Description of *Candidatus* Thermoanaerobacterium octipimonas sp. nov.

Candidatus Thermoanaerobacterium octipimonas (NL. fem. n. *octipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoanaerobacterium sp900205865*. The type genome for the species is the GenBank assembly RS_GCF_900205865.1. The GC content of the type genome is 32.48 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Thermoanaerobacterium pecunax sp. nov.

Candidatus Thermoanaerobacterium pecunax (NL. fem. n. *pecunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoanaerobacterium sp002102475*. The type genome for the species is the GenBank assembly GCA_012839995.1. The GC content of the type genome is 35.92 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Thermobacillus acertimonas sp. nov.

Candidatus Thermobacillus acertimonas (NL. fem. n. *acertimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermobacillus sp002159085*. The type genome for the species is the GenBank assembly GCA_002159085.1. The GC content of the type genome is 64.34 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Thermochlorobacter nicomedo sp. nov.

Candidatus Thermochlorobacter nicomedo (NL. fem. n. *nicomedo* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermochlorobacter sp002763895*. The type genome for the species is the GenBank assembly GCA_002763895.1. The GC content of the type genome is 47.28 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Thermoclostridium abinvastra sp. nov.

Candidatus Thermoclostridium abinvastra (NL. fem. n. *abinvastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoclostridium sp012519655*. The type genome for the species is the GenBank assembly GCA_012519655.1. The GC content of the type genome is 35.83 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Thermoclostridium cucuribra sp. nov.

Candidatus Thermoclostridium cucuribra (NL. fem. n. *cucuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoclostridium sp001513105*. The type genome for the species is the GenBank assembly GCA_012728495.1. The GC content of the type genome is 43.67 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Thermoclostridium recomago sp. nov.

Candidatus Thermoclostridium recomago (NL. fem. n. *recomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoclostridium sp012521105*. The type genome for the species is the GenBank assembly GCA_012521105.1. The GC content of the type genome is 38.28 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Thermoclostridium adfirisca sp. nov.

Candidatus Thermoclostridium adfirisca (NL. fem. n. *adfirisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoclostridium_A sp012719645*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012719645.1. The GC content of the type genome is 50.36 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Thermoclostridium demogilenta sp. nov.

Candidatus Thermoclostridium demogilenta (NL. fem. n. *demogilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoclostridium_A sp001512555*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_001512555.1. The GC content of the type genome is 46.94 % and the genome length is 2.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Thermoclostridium derecastra sp. nov.

Candidatus Thermoclostridium derecastra (NL. fem. n. *derecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoclostridium_A sp012518025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012518025.1. The GC content of the type genome is 46.98 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Thermoclostridium obvolitia sp. nov.

Candidatus Thermoclostridium obvolitia (NL. fem. n. *obvolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoclostridium_A sp012728015*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012728015.1.

The GC content of the type genome is 50.29 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Thermocrinis appicitica sp. nov.

Candidatus Thermocrinis appicitica (NL. fem. n. *appicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermocrinis sp000702425*. The type genome for the species is the GenBank assembly RS_GCF_000702425.1. The GC content of the type genome is 41.32 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Thermocrinis famelugo sp. nov.

Candidatus Thermocrinis famelugo (NL. fem. n. *famelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermocrinis sp009903855*. The type genome for the species is the GenBank assembly GCA_009903855.1. The GC content of the type genome is 45.25 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Thermodesulfatator disidimonia sp. nov.

Candidatus Thermodesulfatator disidimonia (NL. fem. n. *disidimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermodesulfatator_A sp013153725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_013153725.1. The GC content of the type genome is 55.4 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Thermodesulfobacterium algifetta sp. nov.

Candidatus Thermodesulfobacterium algifetta (NL. fem. n. *algifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermodesulfobacterium sp003641645*. The type genome for the species is the GenBank assembly GCA_003641645.1. The GC content of the type genome is 29.79 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Thermodesulfobacterium impacigena sp. nov.

Candidatus Thermodesulfobacterium impacigena (NL. fem. n. *impacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermodesulfobacterium sp013153525*. The type genome for the species is the GenBank assembly GCA_013153525.1. The GC content of the type genome is 36.29 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Thermodesulfobacterium pluscitoga sp. nov.

Candidatus Thermodesulfobacterium pluscitoga (NL. fem. n. *pluscitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermodesulfobacterium sp008630935*. The type genome for the species is the GenBank assembly RS_GCF_008630935.1. The GC content of the type genome is 36.42 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Thermodesulfovibrio pomificula sp. nov.

Candidatus Thermodesulfovibrio pomificula (NL. fem. n. *pomificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermodesulfovibrio sp001707915*. The type genome for the species is the GenBank assembly RS_GCF_001707915.1. The GC content of the type genome is 32.99 % and the genome length is 1.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "borehole".

Description of *Candidatus* Thermodesulfovibrio vocifitoga sp. nov.

Candidatus Thermodesulfovibrio vocifitoga (NL. fem. n. *vocifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermodesulfovibrio sp002339325*. The type genome for the species is the GenBank assembly GCA_002339325.1. The GC content of the type genome is 36.78 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Thermoflavimicrobium lavacibra sp. nov.

Candidatus Thermoflavimicrobium lavacibra (NL. fem. n. *lavacibra* a species epithet

created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoflavimicrobium sp003313465*. The type genome for the species is the GenBank assembly RS_GCF_003313465.1. The GC content of the type genome is 37.82 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Thermoflexibacter cenodiforma sp. nov.

Candidatus Thermoflexibacter cenodiforma (NL. fem. n. *cenodiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoflexibacter sp013298985*. The type genome for the species is the GenBank assembly GCA_013298985.1. The GC content of the type genome is 39.13 % and the genome length is 6.06 Mbp.

Description of *Candidatus* Thermoflexibacter invorago sp. nov.

Candidatus Thermoflexibacter invorago (NL. fem. n. *invorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoflexibacter sp004294445*. The type genome for the species is the GenBank assembly GCA_004294445.1. The GC content of the type genome is 38.5 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Thermoflexus deculago sp. nov.

Candidatus Thermoflexus deculago (NL. fem. n. *deculago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoflexus sp011373175*. The type genome for the species is the GenBank assembly GCA_011369885.1. The GC content of the type genome is 63.42 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Thermoflexus nehalago sp. nov.

Candidatus Thermoflexus nehalago (NL. fem. n. *nehalago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoflexus sp002898735*. The type genome for the species is the GenBank assembly GCA_002898735.1. The GC content of the type genome is 66.05 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Thermoflexus secunicula sp. nov.

Candidatus Thermoflexus secunicula (NL. fem. n. *secunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoflexus sp011048055*. The type genome for the species is the GenBank assembly GCA_011055825.1. The GC content of the type genome is 65.06 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Thermogutta occenatica sp. nov.

Candidatus Thermogutta occenatica (NL. fem. n. *occenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermogutta sp012798155*. The type genome for the species is the GenBank assembly GCA_012798155.1. The GC content of the type genome is 63.85 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Thermoleophilum lenocastra sp. nov.

Candidatus Thermoleophilum lenocastra (NL. fem. n. *lenocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermoleophilum sp002898855*. The type genome for the species is the GenBank assembly GCA_002898855.1. The GC content of the type genome is 70.47 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Thermomicrobium nucifitio sp. nov.

Candidatus Thermomicrobium nucifitio (NL. fem. n. *nucifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermomicrobium sp002898255*. The type genome for the species is the GenBank assembly GCA_011047935.1. The GC content of the type genome is 61.53 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Thermomicrobium vinacitrix sp. nov.

Candidatus Thermomicrobium vinacitrix (NL. fem. n. *vinacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermomicrobium sp002898975*. The type genome for the species is the GenBank assembly GCA_002898975.1. The GC content of the type genome is 65.35 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Thermomonas defositica sp. nov.

Candidatus Thermomonas defositica (NL. fem. n. *defositica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermomonas sp006337105*. The type genome for the species is the GenBank assembly RS_GCF_006337105.1. The GC content of the type genome is 67.95 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Thermomonas detecigena sp. nov.

Candidatus Thermomonas detecigena (NL. fem. n. *detecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermomonas sp011302915*. The type genome for the species is the GenBank assembly RS_GCF_011302915.1. The GC content of the type genome is 64.93 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Thermopetrobacter adlapigena sp. nov.

Candidatus Thermopetrobacter adlapigena (NL. fem. n. *adlapigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermopetrobacter sp000746275*. The type genome for the species is the GenBank assembly RS_GCF_000746275.1. The GC content of the type genome is 62.02 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Thermopetrobacter retunatica sp. nov.

Candidatus Thermopetrobacter retunatica (NL. fem. n. *retunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a

noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermopetrobacter sp011374735*. The type genome for the species is the GenBank assembly GCA_011374735.1. The GC content of the type genome is 67.6 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Thermopolyspora excogentia sp. nov.

Candidatus Thermopolyspora excogentia (NL. fem. n. *excogentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermopolyspora sp003242605*. The type genome for the species is the GenBank assembly GCA_003242605.1. The GC content of the type genome is 73.51 % and the genome length is 5.57 Mbp.

Description of *Candidatus* Thermosulfurimonas nicomitudo sp. nov.

Candidatus Thermosulfurimonas nicomitudo (NL. fem. n. *nicomitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermosulfurimonas_A sp003978075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003978075.1. The GC content of the type genome is 57.72 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Thermosynechococcus adgenilega sp. nov.

Candidatus Thermosynechococcus adgenilega (NL. fem. n. *adgenilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermosynechococcus sp008386235*. The type genome for the species is the GenBank assembly RS_GCF_008386235.1. The GC content of the type genome is 53.48 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Thermosynechococcus vacililenta sp. nov.

Candidatus Thermosynechococcus vacililenta (NL. fem. n. *vacililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermosynechococcus sp000505665*. The type genome for the species is the GenBank assembly GCA_003696925.1. The GC content of the type genome is 53.83 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Thermotoga amnenatica sp. nov.

Candidatus Thermotoga amnenatica (NL. fem. n. *amnenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermotoga sp002865985*. The type genome for the species is the GenBank assembly RS_GCF_002865985.1. The GC content of the type genome is 45.94 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Thermotoga colopastra sp. nov.

Candidatus Thermotoga colopastra (NL. fem. n. *colopastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermotoga sp002866025*. The type genome for the species is the GenBank assembly RS_GCF_002866025.1. The GC content of the type genome is 41.44 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Thermotoga xenopicula sp. nov.

Candidatus Thermotoga xenopicula (NL. fem. n. *xenopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermotoga sp000784835*. The type genome for the species is the GenBank assembly RS_GCF_000784835.1. The GC content of the type genome is 45.96 % and the genome length is 1.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine hydrothermal vent".

Description of *Candidatus* Thermus adlocitio sp. nov.

Candidatus Thermus adlocitio (NL. fem. n. *adlocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermus sp001311585*. The type genome for the species is the

GenBank assembly GCA_001311585.1. The GC content of the type genome is 67.97 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Thermus dapifilenta sp. nov.

Candidatus Thermus dapifilenta (NL. fem. n. *dapifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermus sp000794385*. The type genome for the species is the GenBank assembly RS_GCF_000794385.1. The GC content of the type genome is 67.3 % and the genome length is 2.4 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "hot water spring".

Description of *Candidatus* Thermus supelitica sp. nov.

Candidatus Thermus supelitica (NL. fem. n. *supelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thermus sp000236585*. The type genome for the species is the GenBank assembly RS_GCF_000236585.1. The GC content of the type genome is 68.58 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Thessana xenopicella sp. nov.

Candidatus Thessana xenopicella (NL. fem. n. *xenopicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZT01 sp013695785*. The type genome for the species is the GenBank assembly GCA_013695785.1. The GC content of the type genome is 68.92 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Thessana gen. nov.

Candidatus Thessana (NL. fem. n. *Thessana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZT01*. The type species for the genus is *Candidatus* Thessana xenopicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Thessella adfiretta sp. nov.

Candidatus Thessella adfiretta (NL. fem. n. *adfiretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2402025 sp002402025*. The type genome for the species is the GenBank assembly GCA_002402025.1. The GC content of the type genome is 38.55 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Thessella gen. nov.

Candidatus Thessella (NL. fem. n. *Thessella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2402025*. The type species for the genus is *Candidatus* Thessella adfiretta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Thessida desacilenta sp. nov.

Candidatus Thessida desacilenta (NL. fem. n. *desacilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2713145 sp002713145*. The type genome for the species is the GenBank assembly GCA_002713145.1. The GC content of the type genome is 37.34 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Thessida gen. nov.

Candidatus Thessida (NL. fem. n. *Thessida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2713145*. The type species for the genus is *Candidatus* Thessida desacilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Thessosa ciminitura sp. nov.

Candidatus Thessosa ciminitura (NL. fem. n. *ciminitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFL01 sp012728235*. The type genome for the species is the GenBank assembly GCA_012728235.1. The GC content of the type genome is 39.06 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Thessosa gen. nov.

Candidatus Thessosa (NL. fem. n. *Thessosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYFL01*. The type species for the genus is *Candidatus* Thessosa ciminitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Thessosa cohonigena sp. nov.

Candidatus Thessosa cohonigena (NL. fem. n. *cohonigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFL01 sp012728165*. The type genome for the species is the GenBank assembly GCA_012728165.1. The GC content of the type genome is 38.51 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Thessula decamigena sp. nov.

Candidatus Thessula decamigena (NL. fem. n. *decamigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSTR01 sp011329245*. The type genome for the species is the GenBank assembly GCA_011329245.1. The GC content of the type genome is 61.1 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Thessula gen. nov.

Candidatus Thessula (NL. fem. n. *Thessula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DSTR01*. The type species for the genus is *Candidatus* Thessula decamigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B48-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamellaceae.

Description of *Candidatus* Thioalkalivibrio acontilenta sp. nov.

Candidatus Thioalkalivibrio acontilenta (NL. fem. n. *acontilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000381945*. The type genome for the species is the GenBank assembly RS_GCF_000381945.1. The GC content of the type genome is 67.56 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Thioalkalivibrio adpicetta sp. nov.

Candidatus Thioalkalivibrio adpicetta (NL. fem. n. *adpicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000381825*. The type genome for the species is the GenBank assembly RS_GCF_000381825.1. The GC content of the type genome is 65.79 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Thioalkalivibrio bicipitudo sp. nov.

Candidatus Thioalkalivibrio bicipitudo (NL. fem. n. *bicipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000377205*. The type genome for the species is the GenBank assembly RS_GCF_000377205.1. The GC content of the type genome is 65.3 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Thioalkalivibrio ceromastra sp. nov.

Candidatus Thioalkalivibrio ceromastra (NL. fem. n. *ceromastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Thioalkalivibrio sp000025545*. The type genome for the species is the GenBank assembly RS_GCF_000025545.1. The GC content of the type genome is 65.54 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Thioalkalivibrio defenetta sp. nov.

Candidatus Thioalkalivibrio defenetta (NL. fem. n. *defenetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp007120575*. The type genome for the species is the GenBank assembly GCA_007133245.1. The GC content of the type genome is 65.91 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Thioalkalivibrio denixibra sp. nov.

Candidatus Thioalkalivibrio denixibra (NL. fem. n. *denixibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000420165*. The type genome for the species is the GenBank assembly RS_GCF_000420165.1. The GC content of the type genome is 66.8 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Thioalkalivibrio fidenentia sp. nov.

Candidatus Thioalkalivibrio fidenentia (NL. fem. n. *fidenentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000378305*. The type genome for the species is the GenBank assembly RS_GCF_000377245.1. The GC content of the type genome is 65.68 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Thioalkalivibrio luticitio sp. nov.

Candidatus Thioalkalivibrio luticitio (NL. fem. n. *luticitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000376845*. The type genome for the species is the GenBank assembly RS_GCF_000364565.1. The GC content of the type genome is 66.76 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Thioalkalivibrio monogitica sp. nov.

Candidatus Thioalkalivibrio monogitica (NL. fem. n. *monogitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000377345*. The type genome for the species is the GenBank assembly RS_GCF_000377345.1. The GC content of the type genome is 66.99 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Thioalkalivibrio nubifitura sp. nov.

Candidatus Thioalkalivibrio nubifitura (NL. fem. n. *nubifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000376865*. The type genome for the species is the GenBank assembly RS_GCF_000377365.1. The GC content of the type genome is 64.28 % and the genome length is 2.85 Mbp.

Description of *Candidatus* Thioalkalivibrio proclicella sp. nov.

Candidatus Thioalkalivibrio proclicella (NL. fem. n. *proclicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000377905*. The type genome for the species is the GenBank assembly RS_GCF_000377905.1. The GC content of the type genome is 65.98 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Thioalkalivibrio revulibra sp. nov.

Candidatus Thioalkalivibrio revulibra (NL. fem. n. *revulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000378605*. The type genome for the species is the GenBank assembly RS_GCF_000378605.1. The GC content of the type genome is 65.38 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Thioalkalivibrio sanabivita sp. nov.

Candidatus Thioalkalivibrio sanabivita (NL. fem. n. *sanabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000377405*. The type genome for the species is the GenBank assembly RS_GCF_000377285.1. The GC content of the type genome is 67.16 % and the genome length is 2.86 Mbp.

Description of *Candidatus* Thioalkalivibrio uberrax sp. nov.

Candidatus Thioalkalivibrio uberrax (NL. fem. n. *uberrax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000377785*. The type genome for the species is the GenBank assembly RS_GCF_000377785.1. The GC content of the type genome is 67.55 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Thioalkalivibrio vocifivita sp. nov.

Candidatus Thioalkalivibrio vocifivita (NL. fem. n. *vocifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio sp000377845*. The type genome for the species is the GenBank assembly RS_GCF_000377845.1. The GC content of the type genome is 64.91 % and the genome length is 3.0 Mbp.

Description of *Candidatus* Thioalkalivibrio pimenibula sp. nov.

Candidatus Thioalkalivibrio pimenibula (NL. fem. n. *pimenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_A sp007120155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007120155.1. The GC content of the type genome is 63.19 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Thioalkalivibrio adcelilenta sp. nov.

Candidatus Thioalkalivibrio adcelilenta (NL. fem. n. *adcelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp007133115*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007133115.1. The GC content of the type genome is 64.6 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Thioalkalivibrio aneclibra sp. nov.

Candidatus Thioalkalivibrio aneclibra (NL. fem. n. *aneclibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp003553165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003553165.1. The GC content of the type genome is 65.78 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Thioalkalivibrio assucitoga sp. nov.

Candidatus Thioalkalivibrio assucitoga (NL. fem. n. *assucitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp007692435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007692435.1. The GC content of the type genome is 67.97 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Thioalkalivibrio catalitura sp. nov.

Candidatus Thioalkalivibrio catalitura (NL. fem. n. *catalitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp007136145*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007124975.1. The GC content of the type genome is 62.32 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Thioalkalivibrio colutedo sp. nov.

Candidatus Thioalkalivibrio colutedo (NL. fem. n. *colutedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp011389655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_011389655.1. The GC content of the type genome is 67.1 % and the genome length is 3.46 Mbp.

Description of *Candidatus* Thioalkalivibrio diminibula sp. nov.

Candidatus Thioalkalivibrio diminibula (NL. fem. n. *diminibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp003555285*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003555285.1. The GC content of the type genome is 66.03 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Thioalkalivibrio disiditica sp. nov.

Candidatus Thioalkalivibrio disiditica (NL. fem. n. *disiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp007116035*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007116035.1. The GC content of the type genome is 65.58 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Thioalkalivibrio documugo sp. nov.

Candidatus Thioalkalivibrio documugo (NL. fem. n. *documugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp007119005*. Although GTDB has assigned a

genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007119005.1. The GC content of the type genome is 66.95 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Thioalkalivibrio lucifivita sp. nov.

Candidatus Thioalkalivibrio lucifivita (NL. fem. n. *lucifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp003550945*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003550945.1. The GC content of the type genome is 66.13 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Thioalkalivibrio purulibula sp. nov.

Candidatus Thioalkalivibrio purulibula (NL. fem. n. *purulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp007692535*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007692535.1. The GC content of the type genome is 65.64 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Thioalkalivibrio tabifilega sp. nov.

Candidatus Thioalkalivibrio tabifilega (NL. fem. n. *tabifilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioalkalivibrio_B sp003563455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003563455.1. The GC content of the type genome is 66.38 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Thiobacillus acropicula sp. nov.

Candidatus Thiobacillus acropicula (NL. fem. n. *acropicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp001899775*. The type genome for the species is the GenBank assembly GCA_001899775.1. The GC content of the type genome is 65.46 % and the genome length is 2.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Thiobacillus bicorifica sp. nov.

Candidatus Thiobacillus bicorifica (NL. fem. n. *bicorifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp001899765*. The type genome for the species is the GenBank assembly GCA_001725535.1. The GC content of the type genome is 63.7 % and the genome length is 2.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate bioreactor".

Description of *Candidatus* Thiobacillus ceraredo sp. nov.

Candidatus Thiobacillus ceraredo (NL. fem. n. *ceraredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp001897705*. The type genome for the species is the GenBank assembly GCA_001725525.1. The GC content of the type genome is 64.77 % and the genome length is 3.05 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate bioreactor".

Description of *Candidatus* Thiobacillus conubatio sp. nov.

Candidatus Thiobacillus conubatio (NL. fem. n. *conubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp001897675*. The type genome for the species is the GenBank assembly GCA_002281975.1. The GC content of the type genome is 64.48 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Thiobacillus dilecitura sp. nov.

Candidatus Thiobacillus dilecitura (NL. fem. n. *dilecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp002279795*. The type genome for the species is the GenBank assembly GCA_002279795.1. The GC content of the type genome is 61.42 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Thiobacillus diluvago sp. nov.

Candidatus Thiobacillus diluvago (NL. fem. n. *diluvago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp011391655*. The type genome for the species is the GenBank assembly GCA_011391655.1. The GC content of the type genome is 61.31 % and the genome length is 1.64 Mbp.

Description of *Candidatus* Thiobacillus divuligena sp. nov.

Candidatus Thiobacillus divuligena (NL. fem. n. *divuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp002257045*. The type genome for the species is the GenBank assembly GCA_002281435.1. The GC content of the type genome is 61.47 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Thiobacillus exsurilega sp. nov.

Candidatus Thiobacillus exsurilega (NL. fem. n. *exsurilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp002256785*. The type genome for the species is the GenBank assembly GCA_002256785.1. The GC content of the type genome is 61.11 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Thiobacillus impolitudo sp. nov.

Candidatus Thiobacillus impolitudo (NL. fem. n. *impolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp012274165*. The type genome for the species is the GenBank assembly GCA_012274165.1. The GC content of the type genome is 61.36 %

and the genome length is 3.16 Mbp.

Description of *Candidatus* Thiobacillus insinago sp. nov.

Candidatus Thiobacillus insinago (NL. fem. n. *insinago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp001802655*. The type genome for the species is the GenBank assembly GCA_001802655.1. The GC content of the type genome is 60.96 % and the genome length is 3.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point D".

Description of *Candidatus* Thiobacillus maledisca sp. nov.

Candidatus Thiobacillus maledisca (NL. fem. n. *maledisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp003510325*. The type genome for the species is the GenBank assembly GCA_001831015.1. The GC content of the type genome is 63.84 % and the genome length is 2.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 5 / E; 5m depth; 0.1 filter".

Description of *Candidatus* Thiobacillus momoratio sp. nov.

Candidatus Thiobacillus momoratio (NL. fem. n. *momoratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp011391285*. The type genome for the species is the GenBank assembly GCA_011391285.1. The GC content of the type genome is 63.94 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Thiobacillus monacicella sp. nov.

Candidatus Thiobacillus monacicella (NL. fem. n. *monacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp001899305*. The type genome for the species is the GenBank assembly GCA_013693775.1. The GC content of the type genome is 62.52 %

and the genome length is 3.55 Mbp.

Description of *Candidatus* Thiobacillus siligicella sp. nov.

Candidatus Thiobacillus siligicella (NL. fem. n. *siligicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp002281775*. The type genome for the species is the GenBank assembly GCA_002256885.1. The GC content of the type genome is 64.32 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Thiobacillus solivetta sp. nov.

Candidatus Thiobacillus solivetta (NL. fem. n. *solivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp002256995*. The type genome for the species is the GenBank assembly GCA_002282115.1. The GC content of the type genome is 63.66 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Thiobacillus tribrigena sp. nov.

Candidatus Thiobacillus tribrigena (NL. fem. n. *tribrigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiobacillus sp010365175*. The type genome for the species is the GenBank assembly GCA_010365175.1. The GC content of the type genome is 56.87 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Thiocapsa adsocatio sp. nov.

Candidatus Thiocapsa adsocatio (NL. fem. n. *adsocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiocapsa sp002423035*. The type genome for the species is the GenBank assembly GCA_002423035.1. The GC content of the type genome is 64.45 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Thiocapsa capuditrix sp. nov.

Candidatus Thiocapsa capuditrix (NL. fem. n. *capuditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiocapsa sp009929855*. The type genome for the species is the GenBank assembly GCA_009929855.1. The GC content of the type genome is 63.9 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Thiocapsa indililega sp. nov.

Candidatus Thiocapsa indililega (NL. fem. n. *indililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiocapsa sp011390875*. The type genome for the species is the GenBank assembly GCA_011390875.1. The GC content of the type genome is 64.31 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Thiocapsa mahemago sp. nov.

Candidatus Thiocapsa mahemago (NL. fem. n. *mahemago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiocapsa sp001499735*. The type genome for the species is the GenBank assembly RS_GCF_001499735.1. The GC content of the type genome is 64.31 % and the genome length is 10.38 Mbp.

Description of *Candidatus* Thioclava cicaticella sp. nov.

Candidatus Thioclava cicaticella (NL. fem. n. *cicaticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioclava sp001705665*. The type genome for the species is the GenBank assembly RS_GCF_001705665.1. The GC content of the type genome is 57.23 % and the genome length is 4.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sea surface microlayer".

Description of *Candidatus* Thioclava conigibra sp. nov.

Candidatus Thioclava conigibra (NL. fem. n. *conigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioclava sp004153385*. The type genome for the species is the GenBank assembly RS_GCF_004153385.1. The GC content of the type genome is 59.64 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Thioclava sonabibra sp. nov.

Candidatus Thioclava sonabibra (NL. fem. n. *sonabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioclava sp002563775*. The type genome for the species is the GenBank assembly RS_GCF_002563775.1. The GC content of the type genome is 64.21 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Thiocystis cuferugo sp. nov.

Candidatus Thiocystis cuferugo (NL. fem. n. *cuferugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiocystis sp903866365*. The type genome for the species is the GenBank assembly GCA_903866365.1. The GC content of the type genome is 62.41 % and the genome length is 5.52 Mbp.

Description of *Candidatus* Thiodiazotropha miracitura sp. nov.

Candidatus Thiodiazotropha miracitura (NL. fem. n. *miracitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodiazotropha sp003058525*. The type genome for the species is the GenBank assembly GCA_003058525.1. The GC content of the type genome is 52.33 % and the genome length is 4.74 Mbp.

Description of *Candidatus* Thiodiazotropha papavitura sp. nov.

Candidatus Thiodiazotropha papavitura (NL. fem. n. *papavitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodiazotropha sp003676145*. The type genome for the species is the GenBank assembly GCA_003676175.1. The GC content of the type genome is 53.25 %

and the genome length is 4.18 Mbp.

Description of *Candidatus* Thiodiazotropha rudicugo sp. nov.

Candidatus Thiodiazotropha rudicugo (NL. fem. n. *rudicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodiazotropha sp003058495*. The type genome for the species is the GenBank assembly GCA_003058495.1. The GC content of the type genome is 57.49 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Thiodiazotropha saburivita sp. nov.

Candidatus Thiodiazotropha saburivita (NL. fem. n. *saburivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodiazotropha sp003094535*. The type genome for the species is the GenBank assembly GCA_003094535.1. The GC content of the type genome is 55.88 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Thiodiazotropha vitigitio sp. nov.

Candidatus Thiodiazotropha vitigitio (NL. fem. n. *vitigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodiazotropha sp003094555*. The type genome for the species is the GenBank assembly GCA_003094515.1. The GC content of the type genome is 53.52 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Thiodictyon cerarastra sp. nov.

Candidatus Thiodictyon cerarastra (NL. fem. n. *cerarastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodictyon sp903837595*. The type genome for the species is the GenBank assembly GCA_903837595.1. The GC content of the type genome is 64.48 % and the genome length is 7.79 Mbp.

Description of *Candidatus* Thiodictyon indepessa sp. nov.

Candidatus Thiodictyon indepessa (NL. fem. n. *indepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodictyon sp903828115*. The type genome for the species is the GenBank assembly GCA_903828115.1. The GC content of the type genome is 65.97 % and the genome length is 7.51 Mbp.

Description of *Candidatus* Thiodictyon visibimonas sp. nov.

Candidatus Thiodictyon visibimonas (NL. fem. n. *visibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodictyon sp903946935*. The type genome for the species is the GenBank assembly GCA_903946935.1. The GC content of the type genome is 64.86 % and the genome length is 6.0 Mbp.

Description of *Candidatus* Thiodubiliella demogago sp. nov.

Candidatus Thiodubiliella demogago (NL. fem. n. *demogago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodubiliella sp001875585*. The type genome for the species is the GenBank assembly RS_GCF_001875585.1. The GC content of the type genome is 37.74 % and the genome length is 3.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "gill tissue".

Description of *Candidatus* Thiodubiliella desacigena sp. nov.

Candidatus Thiodubiliella desacigena (NL. fem. n. *desacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodubiliella sp900180345*. The type genome for the species is the GenBank assembly RS_GCF_900180345.1. The GC content of the type genome is 38.82 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Thiodubiliella dirititas sp. nov.

Candidatus Thiodubiliella dirititas (NL. fem. n. *dirititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodubiliella sp001547755*. The type genome for the species is the GenBank assembly GCA_003973615.1. The GC content of the type genome is 38.85 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Thiodubiliella dirititura sp. nov.

Candidatus Thiodubiliella dirititura (NL. fem. n. *dirititura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodubiliella sp008364125*. The type genome for the species is the GenBank assembly GCA_008364125.1. The GC content of the type genome is 41.37 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Thiodubiliella lapicax sp. nov.

Candidatus Thiodubiliella lapicax (NL. fem. n. *lapicax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodubiliella sp900128405*. The type genome for the species is the GenBank assembly RS_GCF_900128405.1. The GC content of the type genome is 36.64 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Thiodubiliella podagugo sp. nov.

Candidatus Thiodubiliella podagugo (NL. fem. n. *podagugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodubiliella sp900128535*. The type genome for the species is the GenBank assembly RS_GCF_900128535.1. The GC content of the type genome is 37.81 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Thiodubiliella vehematio sp. nov.

Candidatus Thiodubiliella vehematio (NL. fem. n. *vehematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiodubiliella sp001298715*. The type genome for the species is the GenBank assembly RS_GCF_001298715.1. The GC content of the type genome is 37.58

% and the genome length is 1.86 Mbp.

Description of *Candidatus* Thioglobus bicapatio sp. nov.

Candidatus Thioglobus bicapatio (NL. fem. n. *bicapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp002169705*. The type genome for the species is the GenBank assembly GCA_902556205.1. The GC content of the type genome is 37.89 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Thioglobus curotago sp. nov.

Candidatus Thioglobus curotago (NL. fem. n. *curotago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp902512485*. The type genome for the species is the GenBank assembly GCA_902512485.1. The GC content of the type genome is 37.95 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Thioglobus dedigetta sp. nov.

Candidatus Thioglobus dedigetta (NL. fem. n. *dedigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp902511025*. The type genome for the species is the GenBank assembly GCA_902511025.1. The GC content of the type genome is 37.78 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Thioglobus desurastra sp. nov.

Candidatus Thioglobus desurastra (NL. fem. n. *desurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp014384565*. The type genome for the species is the GenBank assembly GCA_014384565.1. The GC content of the type genome is 37.17 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Thioglobus dilicitudo sp. nov.

Candidatus Thioglobus dilicitudo (NL. fem. n. *dilicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp902512305*. The type genome for the species is the GenBank assembly GCA_902512035.1. The GC content of the type genome is 36.36 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Thioglobus emorticula sp. nov.

Candidatus Thioglobus emorticula (NL. fem. n. *emorticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp002711905*. The type genome for the species is the GenBank assembly GCA_002711905.1. The GC content of the type genome is 37.26 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Thioglobus homagitio sp. nov.

Candidatus Thioglobus homagitio (NL. fem. n. *homagitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp000372785*. The type genome for the species is the GenBank assembly GCA_000372785.1. The GC content of the type genome is 38.87 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Thioglobus immusibra sp. nov.

Candidatus Thioglobus immusibra (NL. fem. n. *immusibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp902513495*. The type genome for the species is the GenBank assembly GCA_902513495.1. The GC content of the type genome is 37.87 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Thioglobus insorago sp. nov.

Candidatus Thioglobus insorago (NL. fem. n. *insorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp902514405*. The type genome for the species is the GenBank assembly GCA_902514405.1. The GC content of the type genome is 37.96 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Thioglobus malivitoga sp. nov.

Candidatus Thioglobus malivitoga (NL. fem. n. *malivitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp902509905*. The type genome for the species is the GenBank assembly GCA_902509905.1. The GC content of the type genome is 37.96 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Thioglobus pedifitica sp. nov.

Candidatus Thioglobus pedifitica (NL. fem. n. *pedifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp001628405*. The type genome for the species is the GenBank assembly GCA_001628345.1. The GC content of the type genome is 38.39 % and the genome length is 1.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 12 - depth 47m".

Description of *Candidatus* Thioglobus pomifitudo sp. nov.

Candidatus Thioglobus pomifitudo (NL. fem. n. *pomifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp002729805*. The type genome for the species is the GenBank assembly GCA_002729805.1. The GC content of the type genome is 38.7 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Thioglobus refocibra sp. nov.

Candidatus Thioglobus refocibra (NL. fem. n. *refocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Thioglobus sp000213395*. The type genome for the species is the GenBank assembly GCA_000213395.2. The GC content of the type genome is 38.1 % and the genome length is 1.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "South Atlantic sub-tropical gyre (station KN192-5-11)".

Description of *Candidatus* Thioglobus resulitia sp. nov.

Candidatus Thioglobus resulitia (NL. fem. n. *resulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp002698045*. The type genome for the species is the GenBank assembly GCA_902512375.1. The GC content of the type genome is 37.02 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Thioglobus sitelilenta sp. nov.

Candidatus Thioglobus sitelilenta (NL. fem. n. *sitelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp902510115*. The type genome for the species is the GenBank assembly GCA_902510115.1. The GC content of the type genome is 38.4 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Thioglobus tirunimonia sp. nov.

Candidatus Thioglobus tirunimonia (NL. fem. n. *tirunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus sp902606745*. The type genome for the species is the GenBank assembly GCA_902606745.1. The GC content of the type genome is 37.31 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Thioglobus almucatio sp. nov.

Candidatus Thioglobus almucatio (NL. fem. n. *almucatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus_A sp014384345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_014384345.1. The GC content of the type genome is 39.88 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Thioglobus culilousia sp. nov.

Candidatus Thioglobus culilousia (NL. fem. n. *culilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus_A sp012963715*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012959215.1. The GC content of the type genome is 38.16 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Thioglobus didacetta sp. nov.

Candidatus Thioglobus didacetta (NL. fem. n. *didacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus_A sp900128515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900128515.1. The GC content of the type genome is 37.4 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Thioglobus funamibra sp. nov.

Candidatus Thioglobus funamibra (NL. fem. n. *funamibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioglobus_A sp900180385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900180385.1. The GC content of the type genome is 36.91 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Thiogranum adambessa sp. nov.

Candidatus Thiogranum adambessa (NL. fem. n. *adambessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiogranum sp011321775*. The type genome for the species is the GenBank assembly GCA_011321775.1. The GC content of the type genome is 64.7 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Thiogranum inergibula sp. nov.

Candidatus Thiogranum inergibula (NL. fem. n. *inergibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiogranum sp011374975*. The type genome for the species is the GenBank assembly GCA_011374975.1. The GC content of the type genome is 59.44 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Thiogranum melopigena sp. nov.

Candidatus Thiogranum melopigena (NL. fem. n. *melopigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiogranum sp011371465*. The type genome for the species is the GenBank assembly GCA_011371465.1. The GC content of the type genome is 60.88 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Thiohalobacter hexamentia sp. nov.

Candidatus Thiohalobacter hexamentia (NL. fem. n. *hexamentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiohalobacter sp002699185*. The type genome for the species is the GenBank assembly GCA_002699185.1. The GC content of the type genome is 64.87 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Thiohalocapsa cerimicula sp. nov.

Candidatus Thiohalocapsa cerimicula (NL. fem. n. *cerimicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiohalocapsa sp003525925*. The type genome for the species is the GenBank assembly GCA_003499475.1. The GC content of the type genome is 57.94 %

and the genome length is 3.86 Mbp.

Description of *Candidatus* Thiohalocapsa immodetta sp. nov.

Candidatus Thiohalocapsa immodetta (NL. fem. n. *immodetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiohalocapsa sp001469165*. The type genome for the species is the GenBank assembly RS_GCF_001469165.1. The GC content of the type genome is 68.31 % and the genome length is 6.31 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water".

Description of *Candidatus* Thiohalocapsa irradugo sp. nov.

Candidatus Thiohalocapsa irradugo (NL. fem. n. *irradugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiohalocapsa sp009908515*. The type genome for the species is the GenBank assembly GCA_009908515.1. The GC content of the type genome is 68.63 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Thiolapillus colutessa sp. nov.

Candidatus Thiolapillus colutessa (NL. fem. n. *colutessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiolapillus sp003972985*. The type genome for the species is the GenBank assembly GCA_003973075.1. The GC content of the type genome is 63.32 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Thiolapillus lugubitas sp. nov.

Candidatus Thiolapillus lugubitas (NL. fem. n. *lugubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiolapillus sp012962365*. The type genome for the species is the GenBank assembly GCA_012962365.1. The GC content of the type genome is 55.31 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Thiolinea admurousia sp. nov.

Candidatus Thiolinea admurousia (NL. fem. n. *admurousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiolinea sp902727945*. The type genome for the species is the GenBank assembly GCA_902727945.1. The GC content of the type genome is 47.63 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Thiolinea desulitoga sp. nov.

Candidatus Thiolinea desulitoga (NL. fem. n. *desulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiolinea sp002747435*. The type genome for the species is the GenBank assembly GCA_002747435.1. The GC content of the type genome is 45.32 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Thiolinea inardetta sp. nov.

Candidatus Thiolinea inardetta (NL. fem. n. *inardetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiolinea sp008015155*. The type genome for the species is the GenBank assembly GCA_008015155.1. The GC content of the type genome is 44.76 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Thiomicrorhabdus acistetta sp. nov.

Candidatus Thiomicrorhabdus acistetta (NL. fem. n. *acistetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrorhabdus sp005885815*. The type genome for the species is the GenBank assembly RS_GCF_005885815.1. The GC content of the type genome is 45.19 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Thiomicrorhabdus anxifimonia sp. nov.

Candidatus Thiomicrorhabdus anxifimonia (NL. fem. n. *anxifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrorhabdus sp013282625*. The type genome for the species is the GenBank assembly RS_GCF_013282625.1. The GC content of the type genome is 48.36 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Thiomicrorhabdus arcelitura sp. nov.

Candidatus Thiomicrorhabdus arcelitura (NL. fem. n. *arcelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrorhabdus sp013153955*. The type genome for the species is the GenBank assembly GCA_013153955.1. The GC content of the type genome is 44.31 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Thiomicrorhabdus catagifica sp. nov.

Candidatus Thiomicrorhabdus catagifica (NL. fem. n. *catagifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrorhabdus sp006222135*. The type genome for the species is the GenBank assembly GCA_006222135.1. The GC content of the type genome is 42.29 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Thiomicrorhabdus desepigena sp. nov.

Candidatus Thiomicrorhabdus desepigena (NL. fem. n. *desepigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrorhabdus sp011398355*. The type genome for the species is the GenBank assembly RS_GCF_011398355.1. The GC content of the type genome is 45.49 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Thiomicrorhabdus expecentia sp. nov.

Candidatus Thiomicrorhabdus expecentia (NL. fem. n. *expecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrorhabdus sp000478585*. The type genome for the species is the GenBank assembly RS_GCF_000478585.1. The GC content of the type genome is

39.88 % and the genome length is 2.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Thiomicrorhabdus favilessa sp. nov.

Candidatus Thiomicrorhabdus favilessa (NL. fem. n. *favilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrorhabdus sp000702325*. The type genome for the species is the GenBank assembly RS_GCF_000702325.1. The GC content of the type genome is 38.21 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Thiomicrorhabdus inresitrix sp. nov.

Candidatus Thiomicrorhabdus inresitrix (NL. fem. n. *inresitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrorhabdus sp013391695*. The type genome for the species is the GenBank assembly RS_GCF_013391695.1. The GC content of the type genome is 52.37 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Thiomicrorhabdus timefitas sp. nov.

Candidatus Thiomicrorhabdus timefitas (NL. fem. n. *timefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrorhabdus sp002299245*. The type genome for the species is the GenBank assembly GCA_002299245.1. The GC content of the type genome is 41.99 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Thiomicrospira andabugo sp. nov.

Candidatus Thiomicrospira andabugo (NL. fem. n. *andabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrospira sp002421475*. The type genome for the species is the GenBank assembly GCA_002421475.1. The GC content of the type genome is 44.58 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Thiomicrospira offulitudo sp. nov.

Candidatus Thiomicrospira offulitudo (NL. fem. n. *offulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomicrospira sp900112445*. The type genome for the species is the GenBank assembly RS_GCF_900112445.1. The GC content of the type genome is 45.69 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Thiomonas alembugo sp. nov.

Candidatus Thiomonas alembugo (NL. fem. n. *alembugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomonas sp013044035*. The type genome for the species is the GenBank assembly GCA_013044035.1. The GC content of the type genome is 64.41 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Thiomonas ignosilenta sp. nov.

Candidatus Thiomonas ignosilenta (NL. fem. n. *ignosilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomonas sp000733775*. The type genome for the species is the GenBank assembly RS_GCF_000733775.1. The GC content of the type genome is 62.51 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Thiomonas inexcibula sp. nov.

Candidatus Thiomonas inexcibula (NL. fem. n. *inexcibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomonas sp900089495*. The type genome for the species is the GenBank assembly RS_GCF_900089495.1. The GC content of the type genome is 64.51 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Thiomonas ludibitrix sp. nov.

Candidatus Thiomonas ludibitrix (NL. fem. n. *ludibitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomonas sp000377645*. The type genome for the species is the GenBank assembly RS_GCF_000377645.1. The GC content of the type genome is 69.97 % and the genome length is 4.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Sediment".

Description of *Candidatus* Thiomonas smegmitia sp. nov.

Candidatus Thiomonas smegmitia (NL. fem. n. *smegmitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiomonas sp011334805*. The type genome for the species is the GenBank assembly GCA_011334805.1. The GC content of the type genome is 63.71 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Thioploca reforicella sp. nov.

Candidatus Thioploca reforicella (NL. fem. n. *reforicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thioploca sp012032555*. The type genome for the species is the GenBank assembly GCA_012032555.1. The GC content of the type genome is 39.64 % and the genome length is 5.56 Mbp.

Description of *Candidatus* Thiopseudomonas ensifimonia sp. nov.

Candidatus Thiopseudomonas ensifimonia (NL. fem. n. *ensifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiopseudomonas sp012728415*. The type genome for the species is the GenBank assembly GCA_012728415.1. The GC content of the type genome is 56.31 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Thiopseudomonas valefax sp. nov.

Candidatus Thiopseudomonas valefax (NL. fem. n. *valefax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiopseudomonas sp001513435*. The type genome for the species is the GenBank assembly GCA_001513435.1. The GC content of the type genome is 48.91 % and the genome length is 2.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "pool of bioreactors CSTR01a; CSTR02a; and CSTR03a; thermophilic anaerobic digestion of cattle manure in continuous reactors for biogas production (methane)".

Description of *Candidatus* Thiorhodovibrio holovifica sp. nov.

Candidatus Thiorhodovibrio holovifica (NL. fem. n. *holovifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiorhodovibrio_A sp000228725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000228725.2. The GC content of the type genome is 60.22 % and the genome length is 5.34 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine microbial mat from the North Sea island of Mellum".

Description of *Candidatus* Thiorhodovibrio mahementia sp. nov.

Candidatus Thiorhodovibrio mahementia (NL. fem. n. *mahementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiorhodovibrio_B sp007128075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_007123245.1. The GC content of the type genome is 54.68 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Thiothrix casabiforma sp. nov.

Candidatus Thiothrix casabiforma (NL. fem. n. *casabiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiothrix sp002425225*. The type genome for the species is the GenBank assembly GCA_002344905.1. The GC content of the type genome is 53.68 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Thiothrix idipsifica sp. nov.

Candidatus Thiothrix idipsifica (NL. fem. n. *idipsifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiothrix sp013693955*. The type genome for the species is the GenBank assembly GCA_013693955.1. The GC content of the type genome is 55.56 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Thiovulum agrimessa sp. nov.

Candidatus Thiovulum agrimessa (NL. fem. n. *agrimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Thiovulum sp000276965*. The type genome for the species is the GenBank assembly GCA_000276965.1. The GC content of the type genome is 33.01 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Tianweitania algifibula sp. nov.

Candidatus Tianweitania algifibula (NL. fem. n. *algifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tianweitania sp014534685*. The type genome for the species is the GenBank assembly RS_GCF_014534685.1. The GC content of the type genome is 61.51 % and the genome length is 4.89 Mbp.

Description of *Candidatus* Tibeticola fidenilenta sp. nov.

Candidatus Tibeticola fidenilenta (NL. fem. n. *fidenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tibeticola sp013693755*. The type genome for the species is the GenBank assembly GCA_013693755.1. The GC content of the type genome is 68.87 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Tibicana depeledo sp. nov.

Candidatus Tibicana depeledo (NL. fem. n. *depeledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1162 sp002311135*. The type genome for the species is the GenBank assembly GCA_002311135.1. The GC content of the type genome is 50.85 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Tibicana gen. nov.

Candidatus Tibicana (NL. fem. n. *Tibicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1162*. The type species for the genus is *Candidatus* Tibicana depeledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5629*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Deneciaceae.

Description of *Candidatus* Tibicana homulitia sp. nov.

Candidatus Tibicana homulitia (NL. fem. n. *homulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1162 sp003142375*. The type genome for the species is the GenBank assembly GCA_003171355.1. The GC content of the type genome is 52.48 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Tibicaria acrifitudo sp. nov.

Candidatus Tibicaria acrifitudo (NL. fem. n. *acrifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp002492295*. The type genome for the species is the GenBank assembly GCA_002492295.1. The GC content of the type genome is 45.49 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Tibicaria gen. nov.

Candidatus Tibicaria (NL. fem. n. *Tibicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *COE1*. The type species for the genus is *Candidatus* Tibicaria acrifitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tibicaria bicapitoga sp. nov.

Candidatus Tibicaria bicapitoga (NL. fem. n. *bicapitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp011959805*. The type genome for the species is the GenBank assembly RS_GCF_011959805.1. The GC content of the type genome is 37.93 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Tibicaria cinipetta sp. nov.

Candidatus Tibicaria cinipetta (NL. fem. n. *cinipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp000403335*. The type genome for the species is the GenBank assembly RS_GCF_000403335.2. The GC content of the type genome is 44.08 % and the genome length is 4.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Tibicaria culigicella sp. nov.

Candidatus Tibicaria culigicella (NL. fem. n. *culigicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp002490665*. The type genome for the species is the GenBank assembly GCA_002490665.1. The GC content of the type genome is 47.19 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Tibicaria detecitas sp. nov.

Candidatus Tibicaria detecitas (NL. fem. n. *detecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *COE1 sp001916965*. The type genome for the species is the GenBank assembly GCA_003150445.1. The GC content of the type genome is 41.09 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Tibicaria femeledo sp. nov.

Candidatus Tibicaria femeledo (NL. fem. n. *femeledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp003513705*. The type genome for the species is the GenBank assembly GCA_003513705.1. The GC content of the type genome is 37.83 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Tibicaria insopessa sp. nov.

Candidatus Tibicaria insopessa (NL. fem. n. *insopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp009774395*. The type genome for the species is the GenBank assembly GCA_009774395.1. The GC content of the type genome is 39.58 % and the genome length is 4.78 Mbp.

Description of *Candidatus* Tibicaria lanugousia sp. nov.

Candidatus Tibicaria lanugousia (NL. fem. n. *lanugousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp002491195*. The type genome for the species is the GenBank assembly GCA_002491195.1. The GC content of the type genome is 45.73 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Tibicaria manubago sp. nov.

Candidatus Tibicaria manubago (NL. fem. n. *manubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp009774375*. The type genome for the species is the GenBank assembly GCA_009774375.1. The GC content of the type genome is 50.52 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Tibicaria milipetta sp. nov.

Candidatus Tibicaria milipetta (NL. fem. n. *milipetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp000403215*. The type genome for the species is the GenBank assembly RS_GCF_000403215.1. The GC content of the type genome is 44.46 % and the genome length is 6.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ceca".

Description of *Candidatus* Tibicaria monodousia sp. nov.

Candidatus Tibicaria monodousia (NL. fem. n. *monodousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp009774245*. The type genome for the species is the GenBank assembly GCA_009774245.1. The GC content of the type genome is 46.63 % and the genome length is 6.09 Mbp.

Description of *Candidatus* Tibicaria obverivita sp. nov.

Candidatus Tibicaria obverivita (NL. fem. n. *obverivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp009774345*. The type genome for the species is the GenBank assembly GCA_009774345.1. The GC content of the type genome is 46.06 % and the genome length is 4.8 Mbp.

Description of *Candidatus* Tibicaria serotivita sp. nov.

Candidatus Tibicaria serotivita (NL. fem. n. *serotivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp002358575*. The type genome for the species is the GenBank assembly GCA_002358575.1. The GC content of the type genome is 40.27 % and the genome length is 4.23 Mbp.

Description of *Candidatus* Tibicaria subucousia sp. nov.

Candidatus Tibicaria subucousia (NL. fem. n. *subucousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp014239155*. The type genome for the species is the GenBank assembly GCA_014239155.1. The GC content of the type genome is 38.91 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Tibicaria tetenitudo sp. nov.

Candidatus Tibicaria tetenitudo (NL. fem. n. *tetenitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *COE1 sp900753305*. The type genome for the species is the GenBank assembly RS_GCF_900753305.1. The GC content of the type genome is 40.52 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Tibicella bicodicella sp. nov.

Candidatus Tibicella bicodicella (NL. fem. n. *bicodicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-27 sp903844845*. The type genome for the species is the GenBank assembly GCA_903844845.1. The GC content of the type genome is 52.42 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Tibicella gen. nov.

Candidatus Tibicella (NL. fem. n. *Tibicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-27*. The type species for the genus is *Candidatus* Tibicella bicodicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1222*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Resacidaceae.

Description of *Candidatus* Tibicella mavorentia sp. nov.

Candidatus Tibicella mavorentia (NL. fem. n. *mavorentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-27 sp003597995*. The type genome for the species is the GenBank assembly GCA_003597995.1. The GC content of the type genome is 53.85 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Tibicia devecilenta sp. nov.

Candidatus Tibicia devecilenta (NL. fem. n. *devecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12420 sp001795385*. The type genome for the species is the GenBank assembly GCA_001795385.1. The GC content of the type genome is 31.51 % and the genome length is 1.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 4 / D; 5m depth; 0.2 filter".

Description of *Candidatus* Tibicia gen. nov.

Candidatus Tibicia (NL. fem. n. *Tibicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12420*. The type species for the genus is *Candidatus* Tibicia devecilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12420*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tibiciaceae.

Description of *Candidatus* Tibiciaceae fam. nov.

Candidatus Tibiciaceae (NL. fem. n. *Tibiciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA12420.* The type genus for the taxon is *Candidatus* Tibicia .

According to GTDB R06-RS202, this family belongs to the order *Lachnospirales*.

Description of *Candidatus* Tibicia hecatedo sp. nov.

Candidatus Tibicia hecatedo (NL. fem. n. *hecatedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12420 sp003452395*. The type genome for the species is the GenBank assembly GCA_003452395.1. The GC content of the type genome is 31.97 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Tibicia mutabigena sp. nov.

Candidatus Tibicia mutabigena (NL. fem. n. *mutabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12420 sp001797255*. The type genome for the species is the GenBank assembly GCA_003513965.1. The GC content of the type genome is 31.37 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Tibicida benepousia sp. nov.

Candidatus Tibicida benepousia (NL. fem. n. *benepousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKLC01 sp007123425*. The type genome for the species is the GenBank assembly GCA_007123425.1. The GC content of the type genome is 73.2 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Tibicida gen. nov.

Candidatus Tibicida (NL. fem. n. *Tibicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKLC01*. The type species for the genus is *Candidatus* Tibicida benepousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tibicida mavoriforma sp. nov.

Candidatus Tibicida mavoriforma (NL. fem. n. *mavoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SKLC01 sp007130695*. The type genome for the species is the GenBank assembly GCA_007120835.1. The GC content of the type genome is 72.05 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Tibicosa favilicula sp. nov.

Candidatus Tibicosa favilicula (NL. fem. n. *favilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FW602-bin16 sp004297765*. The type genome for the species is the GenBank assembly GCA_004297765.1. The GC content of the type genome is 60.75 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Tibicosa gen. nov.

Candidatus Tibicosa (NL. fem. n. *Tibicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FW602-bin16*. The type species for the genus is *Candidatus* Tibicosa favilicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *FW602-bin16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tibicosaceae.

Description of *Candidatus* Tibicosaceae fam. nov.

Candidatus Tibicosaceae (NL. fem. n. *Tibicosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FW602-bin16.* The type genus for the taxon is *Candidatus* Tibicosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *FW602-bin16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tibicosales.

Description of *Candidatus* Tibicosales ord. nov.

Candidatus Tibicosales (NL. fem. n. *Tibicosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *FW602-bin16.* The type genus for the taxon is *Candidatus* Tibicosa .

According to the GTDB R06-RS202, this order belongs to the class *Dehalococcoidia*.

Description of *Candidatus* Tibicula curacitia sp. nov.

Candidatus Tibicula curacitia (NL. fem. n. *curacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AqS2 sp001750625*. The type genome for the species is the GenBank assembly GCA_001750625.1. The GC content of the type genome is 68.83 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Tibicula gen. nov.

Candidatus Tibicula (NL. fem. n. *Tibicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AqS2*. The type species for the genus is *Candidatus* Tibicula curacitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AqS2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tibiculaceae.

Description of *Candidatus* Tibiculaceae fam. nov.

Candidatus Tibiculaceae (NL. fem. n. *Tibiculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AqS2*. The type genus for the taxon is *Candidatus* Tibicula .

According to the original version of GTDB R06-RS202, this family belongs to the order *AqS2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tibiculales.

Description of *Candidatus* Tibiculales ord. nov.

Candidatus Tibiculales (NL. fem. n. *Tibiculales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AqS2*. The type genus for the taxon is *Candidatus* Tibicula .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Tidjanibacter semipilenta sp. nov.

Candidatus Tidjanibacter semipilenta (NL. fem. n. *semipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tidjanibacter sp009783565*. The type genome for the species is the GenBank assembly GCA_009783565.1. The GC content of the type genome is 53.69 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Tigurana cilicitas sp. nov.

Candidatus Tigurana cilicitas (NL. fem. n. *cilicitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5216 sp902825845*. The type genome for the species is the GenBank assembly GCA_902825845.1. The GC content of the type genome is 62.12 % and the genome length is 6.04 Mbp.

Description of *Candidatus* Tigurana gen. nov.

Candidatus Tigurana (NL. fem. n. *Tigurana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5216*. The type species for the genus is *Candidatus* Tigurana cilicitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludanaceae.

Description of *Candidatus* Tigurana colutilega sp. nov.

Candidatus Tigurana colutilega (NL. fem. n. *colutilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5216 sp009885185*. The type genome for the species is the GenBank assembly GCA_009885185.1. The GC content of the type genome is 59.9 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Tigurana levifitia sp. nov.

Candidatus Tigurana levifitia (NL. fem. n. *levifitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5216 sp005800795*. The type genome for the species is the GenBank assembly GCA_005800795.1. The GC content of the type genome is 59.23 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Tigurana maheligena sp. nov.

Candidatus Tigurana maheligena (NL. fem. n. *maheligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5216 sp002412495*. The type genome for the species is the GenBank assembly GCA_002412495.1. The GC content of the type genome is 59.78 % and the genome length is 6.07 Mbp.

Description of *Candidatus* Tigurana nocumetta sp. nov.

Candidatus Tigurana nocumetta (NL. fem. n. *nocumetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5216 sp900299145*. The type genome for the species is the GenBank assembly GCA_900299145.1. The GC content of the type genome is 59.76 % and the genome length is 5.51 Mbp.

Description of *Candidatus* Tigurana sitelimonas sp. nov.

Candidatus Tigurana sitelimonas (NL. fem. n. *sitelimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5216 sp903893565*. The type genome for the species is the GenBank assembly GCA_903825485.1. The GC content of the type genome is 47.56 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Tigurella abmaticella sp. nov.

Candidatus Tigurella abmaticella (NL. fem. n. *abmaticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002684695 sp002684695*. The type genome for the species is the GenBank assembly GCA_002684695.1. The GC content of the type genome is 31.92 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Tigurella gen. nov.

Candidatus Tigurella (NL. fem. n. *Tigurella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002684695*. The type species for the genus is *Candidatus* Tigurella abmaticella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002684695*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tigurellaceae.

Description of *Candidatus* Tigurellaceae fam. nov.

Candidatus Tigurellaceae (NL. fem. n. *Tigurellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002684695.* The type genus for the taxon is *Candidatus* Tigurella .

According to GTDB R06-RS202, this family belongs to the order *Puniceispirillales*.

Description of *Candidatus* Tigurella agnomitoga sp. nov.

Candidatus Tigurella agnomitoga (NL. fem. n. *agnomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002684695 sp902539295*. The type genome for the species is the GenBank assembly GCA_902539295.1. The GC content of the type genome is 31.86 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Tigurella baropatio sp. nov.

Candidatus Tigurella baropatio (NL. fem. n. *baropatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-002684695 sp902612965*. The type genome for the species is the GenBank assembly GCA_902612965.1. The GC content of the type genome is 31.55 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Tigurella terebitoga sp. nov.

Candidatus Tigurella terebitoga (NL. fem. n. *terebitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002684695 sp902522415*. The type genome for the species is the GenBank assembly GCA_902522415.1. The GC content of the type genome is 31.68 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Tigurella vitigago sp. nov.

Candidatus Tigurella vitigago (NL. fem. n. *vitigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002684695 sp902532475*. The type genome for the species is the GenBank assembly GCA_902532475.1. The GC content of the type genome is 33.58 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Tiguria bipalitrix sp. nov.

Candidatus Tiguria bipalitrix (NL. fem. n. *bipalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILNN01 sp903864375*. The type genome for the species is the GenBank assembly GCA_903864375.1. The GC content of the type genome is 59.82 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Tiguria gen. nov.

Candidatus Tiguria (NL. fem. n. *Tiguria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILNN01*. The type species for the genus is *Candidatus* Tiguria bipalitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9464*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Vatilariaceae.

Description of *Candidatus* Tiguria bisaciforma sp. nov.

Candidatus Tiguria bisaciforma (NL. fem. n. *bisaciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILNN01 sp903896505*. The type genome for the species is the GenBank assembly GCA_903896505.1. The GC content of the type genome is 57.97 % and the genome length is 5.36 Mbp.

Description of *Candidatus* Tiguria seleciforma sp. nov.

Candidatus Tiguria seleciforma (NL. fem. n. *seleciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILNN01 sp903835555*. The type genome for the species is the GenBank assembly GCA_903845535.1. The GC content of the type genome is 56.0 % and the genome length is 5.2 Mbp.

Description of *Candidatus* Tigurida turibax sp. nov.

Candidatus Tigurida turibax (NL. fem. n. *turibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLJK01 sp007135125*. The type genome for the species is the GenBank assembly GCA_007126665.1. The GC content of the type genome is 45.81 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Tigurida gen. nov.

Candidatus Tigurida (NL. fem. n. *Tigurida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLJK01*. The type species for the genus is *Candidatus* Tigurida turibax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubiaceae.

Description of *Candidatus* Tigurosa benepigena sp. nov.

Candidatus Tigurosa benepigena (NL. fem. n. *benepigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *1-14-0-10-47-16 sp002773395*. The type genome for the species is the GenBank assembly GCA_009991995.1. The GC content of the type genome is 47.21 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Tigurosa gen. nov.

Candidatus Tigurosa (NL. fem. n. *Tigurosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *1-14-0-10-47-16*. The type species for the genus is *Candidatus* Tigurosa benepigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Tigurula coticitica sp. nov.

Candidatus Tigurula coticitica (NL. fem. n. *coticitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2693335 sp002724895*. The type genome for the species is the GenBank assembly GCA_002717005.1. The GC content of the type genome is 27.82 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Tigurula gen. nov.

Candidatus Tigurula (NL. fem. n. *Tigurula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2693335*. The type species for the genus is *Candidatus* Tigurula coticitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BACL11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Duricidaceae.

Description of *Candidatus* Timefana apoplentia sp. nov.

Candidatus Timefana apoplentia (NL. fem. n. *apoplentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2595 sp002339745*. The type genome for the species is the GenBank assembly GCA_002339745.1. The GC content of the type genome is 48.58 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Timefana gen. nov.

Candidatus Timefana (NL. fem. n. *Timefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2595*. The type species for the genus is *Candidatus* Timefana apoplentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefanaceae.

Description of *Candidatus* Timefanaceae fam. nov.

Candidatus Timefanaceae (NL. fem. n. *Timefanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2595.* The type genus for the taxon is *Candidatus* Timefana .

According to GTDB R06-RS202, this family belongs to the order *Thermincolales*.

Description of *Candidatus* Timefaria peribessa sp. nov.

Candidatus Timefaria peribessa (NL. fem. n. *peribessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOJG01 sp903858555*. The type genome for the species is the GenBank assembly GCA_903841295.1. The GC content of the type genome is 39.56 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Timefaria gen. nov.

Candidatus Timefaria (NL. fem. n. *Timefaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOJG01*. The type species for the genus is *Candidatus* Timefaria peribessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-37-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nosocariaceae.

Description of *Candidatus* Timefaria sanabousia sp. nov.

Candidatus Timefaria sanabousia (NL. fem. n. *sanabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOJG01 sp903853785*. The type genome for the species is the GenBank assembly GCA_903853785.1. The GC content of the type genome is 36.29 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Timefella fetifetta sp. nov.

Candidatus Timefella fetifetta (NL. fem. n. *fetifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS61 sp001577185*. The type genome for the species is the GenBank assembly GCA_001577125.1. The GC content of the type genome is 33.2 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biofilm from deap sea brine pool".

Description of *Candidatus* Timefella gen. nov.

Candidatus Timefella (NL. fem. n. *Timefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TCS61*. The type species for the genus is *Candidatus* Timefella fetifetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS61*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefellaceae.

Description of *Candidatus* Timefellaceae fam. nov.

Candidatus Timefellaceae (NL. fem. n. *Timefellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TCS61*. The type genus for the taxon is *Candidatus* Timefella .

According to GTDB R06-RS202, this family belongs to the order *Cloacimonadales*.

Description of *Candidatus* Timefia colipitudo sp. nov.

Candidatus Timefia colipitudo (NL. fem. n. *colipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9732 sp003456855*. The type genome for the species is the GenBank assembly GCA_003456855.1. The GC content of the type genome is 50.66 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Timefia gen. nov.

Candidatus Timefia (NL. fem. n. *Timefia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9732*. The type species for the genus is *Candidatus* Timefia colipitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Timefia galacicella sp. nov.

Candidatus Timefia galacicella (NL. fem. n. *galacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9732 sp900321635*. The type genome for the species is the GenBank assembly GCA_900321635.1. The GC content of the type genome is 48.05 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Timefia infatilega sp. nov.

Candidatus Timefia infatilega (NL. fem. n. *infatilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9732 sp902781545*. The type genome for the species is the GenBank assembly GCA_902781545.1. The GC content of the type genome is 51.83 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Timefia inlusimonas sp. nov.

Candidatus Timefia inlusimonas (NL. fem. n. *inlusimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9732 sp902796335*. The type genome for the species is the GenBank assembly GCA_902796335.1. The GC content of the type genome is 51.85 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Timefia masocatica sp. nov.

Candidatus Timefia masocatica (NL. fem. n. *masocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9732 sp001940825*. The type genome for the species is the GenBank assembly GCA_001940825.1. The GC content of the type genome is 48.12 % and the genome length is 2.36 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "feces from Phil the wombat".

Description of *Candidatus* Timefida decenago sp. nov.

Candidatus Timefida decenago (NL. fem. n. *decenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZYY01 sp012516825*. The type genome for the species is the GenBank assembly GCA_012516825.1. The GC content of the type genome is 38.14 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Timefida gen. nov.

Candidatus Timefida (NL. fem. n. *Timefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *RZYY01*. The type species for the genus is *Candidatus* Timefida decenago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-276*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicubosaceae.

Description of *Candidatus* Timefida impugimonia sp. nov.

Candidatus Timefida impugimonia (NL. fem. n. *impugimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZYY01 sp009930115*. The type genome for the species is the GenBank assembly GCA_009930115.1. The GC content of the type genome is 40.6 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Timefosa decinitio sp. nov.

Candidatus Timefosa decinitio (NL. fem. n. *decinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-39-13 sp002782365*. The type genome for the species is the GenBank assembly GCA_009993695.1. The GC content of the type genome is 39.07 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Timefosa gen. nov.

Candidatus Timefosa (NL. fem. n. *Timefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-39-13*. The type species for the genus is *Candidatus* Timefosa decinitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-42-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monodidaceae.

Description of *Candidatus* Timefosa purulivita sp. nov.

Candidatus Timefosa purulivita (NL. fem. n. *purulivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-39-13 sp001783595*. The type genome for the species is the GenBank assembly GCA_001783595.1. The GC content of the type genome is 38.95 % and the genome length is 0.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Timefula avuncitas sp. nov.

Candidatus Timefula avuncitas (NL. fem. n. *avuncitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1414 sp003486795*. The type genome for the species is the GenBank assembly GCA_003486795.1. The GC content of the type genome is 34.36 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Timefula gen. nov.

Candidatus Timefula (NL. fem. n. *Timefula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1414*. The type species for the genus is *Candidatus* Timefula avuncitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1414*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Timefulaceae.

Description of *Candidatus* Timefulaceae fam. nov.

Candidatus Timefulaceae (NL. fem. n. *Timefulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1414.* The type genus for the taxon is *Candidatus* Timefula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1414*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Timefulales.

Description of *Candidatus* Timefulales ord. nov.

Candidatus Timefulales (NL. fem. n. *Timefulales* a name created from the name of the

type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1414.* The type genus for the taxon is *Candidatus* Timefula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA1414*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Timefulae.

Description of *Candidatus* Timefulae class. nov.

Candidatus Timefulae (NL. fem. n. *c__Timefulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1414.* The type genus for the taxon is *Candidatus* Timefula .

According to GTDB R06-RS202, this class belongs to the phylum *Actinobacteriota*.

Description of *Candidatus* Timefula depubilenta sp. nov.

Candidatus Timefula depubilenta (NL. fem. n. *depubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1414 sp002304935*. The type genome for the species is the GenBank assembly GCA_002304935.1. The GC content of the type genome is 34.82 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Timefula obnunicella sp. nov.

Candidatus Timefula obnunicella (NL. fem. n. *obnunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1414 sp012837825*. The type genome for the species is the GenBank assembly GCA_012837825.1. The GC content of the type genome is 36.02 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Timonella cepurentia sp. nov.

Candidatus Timonella cepurentia (NL. fem. n. *cepurentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Timonella sp002376595*. The type genome for the species is the GenBank assembly GCA_002376595.1. The GC content of the type genome is 55.62 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Tindallia adtumivita sp. nov.

Candidatus Tindallia adtumivita (NL. fem. n. *adtumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tindallia sp003838145*. The type genome for the species is the GenBank assembly GCA_003838145.1. The GC content of the type genome is 42.28 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Tindallia relecilenta sp. nov.

Candidatus Tindallia relecilenta (NL. fem. n. *relecilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tindallia sp007134225*. The type genome for the species is the GenBank assembly GCA_007126525.1. The GC content of the type genome is 43.73 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Tirocana milifivita sp. nov.

Candidatus Tirocana milifivita (NL. fem. n. *milifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-39-32 sp001800135*. The type genome for the species is the GenBank assembly GCA_001800165.1. The GC content of the type genome is 38.3 % and the genome length is 2.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Tirocana gen. nov.

Candidatus Tirocana (NL. fem. n. *Tirocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-39-32*. The type species for the genus is *Candidatus*

Tirocana milifivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirocanaceae.

Description of *Candidatus* Tirocanaceae fam. nov.

Candidatus Tirocanaceae (NL. fem. n. *Tirocanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-39-32.* The type genus for the taxon is *Candidatus* Tirocana .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-39-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tirocanales.

Description of *Candidatus* Tirocanales ord. nov.

Candidatus Tirocanales (NL. fem. n. *Tirocanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-39-32.* The type genus for the taxon is *Candidatus* Tirocana .

According to the GTDB R06-RS202, this order belongs to the class *Elusimicrobia*.

Description of *Candidatus* Tirocaria semimetta sp. nov.

Candidatus Tirocaria semimetta (NL. fem. n. *semimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B26-G9 sp003645745*. The type genome for the species is the GenBank assembly GCA_003645745.1. The GC content of the type genome is 35.26 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Tirocaria gen. nov.

Candidatus Tirocaria (NL. fem. n. *Tirocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *B26-G9*. The type species for the genus is *Candidatus* Tirocaria semimetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B26-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirocariaceae.

Description of *Candidatus* Tirocariaceae fam. nov.

Candidatus Tirocariaceae (NL. fem. n. *Tirocariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B26-G9.* The type genus for the taxon is *Candidatus* Tirocaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *B26-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tirocariales.

Description of *Candidatus* Tirocariales ord. nov.

Candidatus Tirocariales (NL. fem. n. *Tirocariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B26-G9.* The type genus for the taxon is *Candidatus* Tirocaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *Koll11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Resalellae.

Description of *Candidatus* Tirocella culilicula sp. nov.

Candidatus Tirocella culilicula (NL. fem. n. *culilicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM003 sp002868855*. The type genome for the species is the GenBank assembly GCA_002868855.1. The GC content of the type genome is 60.59 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Tirocella gen. nov.

Candidatus Tirocella (NL. fem. n. *Tirocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM003*. The type species for the genus is *Candidatus* Tirocella culilicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM003*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirocellaceae.

Description of *Candidatus* Tirocellaceae fam. nov.

Candidatus Tirocellaceae (NL. fem. n. *Tirocellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM003.* The type genus for the taxon is *Candidatus* Tirocella .

According to the original version of GTDB R06-RS202, this family belongs to the order *BM003*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tirocellales.

Description of *Candidatus* Tirocellales ord. nov.

Candidatus Tirocellales (NL. fem. n. *Tirocellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM003.* The type genus for the taxon is *Candidatus* Tirocella .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Tirocia cicilitura sp. nov.

Candidatus Tirocia cicilitura (NL. fem. n. *cicilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10002 sp001004005*. The type genome for the species is the GenBank assembly GCA_001004005.1. The GC content of the type genome is 49.01 % and the genome length is 0.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Tirocia gen. nov.

Candidatus Tirocia (NL. fem. n. *Tirocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10002*. The type species for the genus is *Candidatus* Tirocia cicilitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Tirocia immadicella sp. nov.

Candidatus Tirocia immadicella (NL. fem. n. *immadicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10002 sp009694955*. The type genome for the species is the GenBank assembly GCA_009694955.1. The GC content of the type genome is 49.77 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Tirocia inordastra sp. nov.

Candidatus Tirocia inordastra (NL. fem. n. *inordastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10002 sp001820935*. The type genome for the species is the GenBank assembly GCA_001820935.1. The GC content of the type genome is 50.83 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Tirocia pocilastra sp. nov.

Candidatus Tirocia pocilastra (NL. fem. n. *pocilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10002 sp001003605*. The type genome for the species is the GenBank assembly GCA_003514705.1. The GC content of the type genome is 48.07 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Tirocia refociforma sp. nov.

Candidatus Tirocia refociforma (NL. fem. n. *refociforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10002 sp001821155*. The type genome for the species is the GenBank assembly GCA_003519245.1. The GC content of the type genome is 49.93 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Tirocida defesitudo sp. nov.

Candidatus Tirocida defesitudo (NL. fem. n. *defesitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9337 sp003056165*. The type genome for the species is the GenBank assembly GCA_003056105.1. The GC content of the type genome is 31.79 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Tirocida gen. nov.

Candidatus Tirocida (NL. fem. n. *Tirocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9337*. The type species for the genus is *Candidatus* Tirocida defesitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9337*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirocidaceae.

Description of *Candidatus* Tirocidaceae fam. nov.

Candidatus Tirocidaceae (NL. fem. n. *Tirocidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9337.* The type genus for the taxon is *Candidatus* Tirocida .

According to GTDB R06-RS202, this family belongs to the order *Moranbacterales*.

Description of *Candidatus* Tirocida dimadatica sp. nov.

Candidatus Tirocida dimadatica (NL. fem. n. *dimadatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9337 sp000990945*. The type genome for the species is the GenBank assembly GCA_000990945.1. The GC content of the type genome is 35.18 % and the genome length is 1.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Tirocida gerunatio sp. nov.

Candidatus Tirocida gerunatio (NL. fem. n. *gerunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9337 sp003510795*. The type genome for the species is the GenBank assembly GCA_003510795.1. The GC content of the type genome is 34.69 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Tirocida monocatio sp. nov.

Candidatus Tirocida monocatio (NL. fem. n. *monocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9337 sp003507475*. The type genome for the species is the GenBank assembly GCA_000990175.1. The GC content of the type genome is 34.04 % and the genome length is 1.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Tirocosa intoritoga sp. nov.

Candidatus Tirocosa intoritoga (NL. fem. n. *intoritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDHS01 sp013820875*. The type genome for the species is the GenBank assembly GCA_013820875.1. The GC content of the type genome is 52.67 % and the genome length is 5.7 Mbp.

Description of *Candidatus* Tirocosa gen. nov.

Candidatus Tirocosa (NL. fem. n. *Tirocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDHS01*. The type species for the genus is *Candidatus* Tirocosa

intoritoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACDHS01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirocosaceae.

Description of *Candidatus* Tirocosaceae fam. nov.

Candidatus Tirocosaceae (NL. fem. n. *Tirocosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACDHS01.* The type genus for the taxon is *Candidatus* Tirocosa .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Tirocula inlecimonia sp. nov.

Candidatus Tirocula inlecimonia (NL. fem. n. *inlecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHCF01 sp003244275*. The type genome for the species is the GenBank assembly GCA_003244275.1. The GC content of the type genome is 68.26 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Tirocula gen. nov.

Candidatus Tirocula (NL. fem. n. *Tirocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHCF01*. The type species for the genus is *Candidatus* Tirocula inlecimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHCF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tiroculaceae.

Description of *Candidatus* Tiroculaceae fam. nov.

Candidatus Tiroculaceae (NL. fem. n. *Tiroculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QHCF01.* The type genus for the taxon is *Candidatus* Tirocula .

According to GTDB R06-RS202, this family belongs to the order *Acidimicrobiales*.

Description of *Candidatus* Tirunana nugigugo sp. nov.

Candidatus Tirunana nugigugo (NL. fem. n. *nugigugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBC074 sp902825875*. The type genome for the species is the GenBank assembly GCA_902825875.1. The GC content of the type genome is 53.45 % and the genome length is 7.32 Mbp.

Description of *Candidatus* Tirunana gen. nov.

Candidatus Tirunana (NL. fem. n. *Tirunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBC074*. The type species for the genus is *Candidatus* Tirunana nugigugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBC074*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirunanaceae.

Description of *Candidatus* Tirunanaceae fam. nov.

Candidatus Tirunanaceae (NL. fem. n. *Tirunanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBC074.* The type genus for the taxon is *Candidatus* Tirunana .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBC074*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tirunanales.

Description of *Candidatus* Tirunanales ord. nov.

Candidatus Tirunanales (NL. fem. n. *Tirunanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBC074.* The type genus for the taxon is *Candidatus* Tirunana .

According to the GTDB R06-RS202, this order belongs to the class *Blastocatellia*.

Description of *Candidatus* Tirunaria lucififorma sp. nov.

Candidatus Tirunaria lucififorma (NL. fem. n. *lucififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CADBOM01 sp902796325*. The type genome for the species is the GenBank assembly GCA_902796325.1. The GC content of the type genome is 54.41 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Tirunaria gen. nov.

Candidatus Tirunaria (NL. fem. n. *Tirunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CADBOM01*. The type species for the genus is *Candidatus* Tirunaria lucififorma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CADBOM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirunariaceae.

Description of *Candidatus* Tirunariaceae fam. nov.

Candidatus Tirunariaceae (NL. fem. n. *Tirunariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CADBOM01*. The type genus for the taxon is *Candidatus* Tirunaria .

According to GTDB R06-RS202, this family belongs to the order *Coriobacteriales*.

Description of *Candidatus* Tirunella relenibra sp. nov.

Candidatus Tirunella relenibra (NL. fem. n. *relenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA2-45-9 sp001779535*. The type genome for the species is the GenBank assembly GCA_001779555.1. The GC content of the type genome is 45.08 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Tirunella gen. nov.

Candidatus Tirunella (NL. fem. n. *Tirunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA2-45-9*. The type species for the genus is *Candidatus* Tirunella relenibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Tirunia malagitudo sp. nov.

Candidatus Tirunia malagitudo (NL. fem. n. *malagitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-205 sp011058435*. The type genome for the species is the GenBank assembly GCA_011058435.1. The GC content of the type genome is 58.08 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Tirunia gen. nov.

Candidatus Tirunia (NL. fem. n. *Tirunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SpSt-205*. The type species for the genus is *Candidatus* Tirunia malagitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-205*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tiruniaceae.

Description of *Candidatus* Tiruniaceae fam. nov.

Candidatus Tiruniaceae (NL. fem. n. *Tiruniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-205.* The type genus for the taxon is *Candidatus* Tirunia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SpSt-205*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Tiruniales.

Description of *Candidatus* Tiruniales ord. nov.

Candidatus Tiruniales (NL. fem. n. *Tiruniales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-205.* The type genus for the taxon is *Candidatus* Tirunia .

According to the GTDB R06-RS202, this order belongs to the class *Bacteroidia*.

Description of *Candidatus* Tirunia obmutitura sp. nov.

Candidatus Tirunia obmutitura (NL. fem. n. *obmutitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-205 sp011373465*. The type genome for the species is the GenBank assembly GCA_011373465.1. The GC content of the type genome is 53.66 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Tirunosa ludibatio sp. nov.

Candidatus Tirunosa ludibatio (NL. fem. n. *ludibatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VYFG01 sp009842505*. The type genome for the species is the GenBank assembly GCA_009842505.1. The GC content of the type genome is 62.41 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Tirunosa gen. nov.

Candidatus Tirunosa (NL. fem. n. *Tirunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VYFG01*. The type species for the genus is *Candidatus* Tirunosa ludibatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LS-SOB*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repeciaceae.

Description of *Candidatus* Tirunula tenemetta sp. nov.

Candidatus Tirunula tenemetta (NL. fem. n. *tenemetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B32-G16 sp003645645*. The type genome for the species is the GenBank assembly GCA_003645645.1. The GC content of the type genome is 43.82 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Tirunula gen. nov.

Candidatus Tirunula (NL. fem. n. *Tirunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B32-G16*. The type species for the genus is *Candidatus* Tirunula tenemetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B32-G16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tirunulaceae.

Description of *Candidatus* Tirunulaceae fam. nov.

Candidatus Tirunulaceae (NL. fem. n. *Tirunulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B32-G16.* The type genus for the taxon is *Candidatus* Tirunula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SPDA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Semimellales.

Description of *Candidatus* Tissierella cosiditoga sp. nov.

Candidatus Tissierella cosiditoga (NL. fem. n. *cosiditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tissierella sp002266425*. The type genome for the species is the GenBank assembly RS_GCF_002266425.1. The GC content of the type genome is 31.34 % and the genome length is 4.39 Mbp.

Description of *Candidatus* Tokpelaia adnumitoga sp. nov.

Candidatus Tokpelaia adnumitoga (NL. fem. n. *adnumitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tokpelaia_A sp003331005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003331005.1. The GC content of the type genome is 42.88 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Tokpelaia genufisca sp. nov.

Candidatus Tokpelaia genufisca (NL. fem. n. *genufisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tokpelaia_A sp003331105*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003331105.1. The GC content of the type genome is 38.55 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Tokpelaia nehalilega sp. nov.

Candidatus Tokpelaia nehalilega (NL. fem. n. *nehalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tokpelaia_A sp003331065*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003331065.1. The GC content of the type genome is 39.97 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Tokpelaia peribisca sp. nov.

Candidatus Tokpelaia peribisca (NL. fem. n. *peribisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tokpelaia_A sp003331045*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003331045.1. The GC content of the type genome is 43.54 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Tolumonas adsicicella sp. nov.

Candidatus Tolumonas adsicicella (NL. fem. n. *adsicicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tolumonas sp008015085*. The type genome for the species is the GenBank assembly GCA_008015085.1. The GC content of the type genome is 47.93 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Tolumonas obmurimonas sp. nov.

Candidatus Tolumonas obmurimonas (NL. fem. n. *obmurimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tolumonas sp003251455*. The type genome for the species is the GenBank assembly GCA_003251455.1. The GC content of the type genome is 45.36 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Tolumonas obtenousia sp. nov.

Candidatus Tolumonas obtenousia (NL. fem. n. *obtenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tolumonas sp903931645*. The type genome for the species is the GenBank assembly GCA_903931645.1. The GC content of the type genome is 47.36 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Tolutana genufiforma sp. nov.

Candidatus Tolutana genufiforma (NL. fem. n. *genufiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2862545 sp002862545*. The type genome for the species is the GenBank assembly GCA_002862545.1. The GC content of the type genome is 68.19 % and the genome length is 6.19 Mbp.

Description of *Candidatus* Tolutana gen. nov.

Candidatus Tolutana (NL. fem. n. *Tolutana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2862545*. The type species for the genus is *Candidatus* Tolutana genufiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2862545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tolutanaceae.

Description of *Candidatus* Tolutanaceae fam. nov.

Candidatus Tolutanaceae (NL. fem. n. *Tolutanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2862545.* The type genus for the taxon is *Candidatus* Tolutana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA796*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Melilanales.

Description of *Candidatus* Tolutaria cadavigena sp. nov.

Candidatus Tolutaria cadavigena (NL. fem. n. *cadavigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED211 sp002169685*. The type genome for the species is the GenBank assembly GCA_002169685.1. The GC content of the type genome is 31.1 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Tolutaria gen. nov.

Candidatus Tolutaria (NL. fem. n. *Tolutaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED211*. The type species for the genus is *Candidatus* Tolutaria cadavigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Tolutia homulibula sp. nov.

Candidatus Tolutia homulibula (NL. fem. n. *homulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRHc4a sp000802095*. The type genome for the species is the GenBank assembly GCA_003514655.1. The GC content of the type genome is 49.46 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Tolutia gen. nov.

Candidatus Tolutia (NL. fem. n. *Tolutia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BRHc4a*. The type species for the genus is *Candidatus* Tolutia homulibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tolutia impuditoga sp. nov.

Candidatus Tolutia impuditoga (NL. fem. n. *impuditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BRHc4a sp000961585*. The type genome for the species is the GenBank assembly GCA_000961585.1. The GC content of the type genome is 49.87 % and the genome length is 3.49 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Opalinus Clay rock porewater BRC-3 borehole".

Description of *Candidatus* Tolutida bimoticula sp. nov.

Candidatus Tolutida bimoticula (NL. fem. n. *bimoticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS2069 sp900557695*. The type genome for the species is the GenBank assembly GCA_900557695.1. The GC content of the type genome is 35.31 %

and the genome length is 0.94 Mbp.

Description of *Candidatus* Tolutida gen. nov.

Candidatus Tolutida (NL. fem. n. *Tolutida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS2069*. The type species for the genus is *Candidatus* Tolutida bimoticula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1242*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Macilulaceae.

Description of *Candidatus* Tolutida capabifica sp. nov.

Candidatus Tolutida capabifica (NL. fem. n. *capabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS2069 sp900554955*. The type genome for the species is the GenBank assembly RS_GCF_900767535.1. The GC content of the type genome is 33.69 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Tolutida inoffedo sp. nov.

Candidatus Tolutida inoffedo (NL. fem. n. *inoffedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS2069 sp900557585*. The type genome for the species is the GenBank assembly GCA_900557585.1. The GC content of the type genome is 35.45 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Tolutosa acrotitrix sp. nov.

Candidatus Tolutosa acrotitrix (NL. fem. n. *acrotitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902546095*. The type genome for the species is the GenBank assembly GCA_902546095.1. The GC content of the type genome is 29.86 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Tolutosa gen. nov.

Candidatus Tolutosa (NL. fem. n. *Tolutosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G14*. The type species for the genus is *Candidatus* Tolutosa acrotitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tolutosa bifaricella sp. nov.

Candidatus Tolutosa bifaricella (NL. fem. n. *bifaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902597545*. The type genome for the species is the GenBank assembly GCA_902614725.1. The GC content of the type genome is 29.74 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Tolutosa capucitura sp. nov.

Candidatus Tolutosa capucitura (NL. fem. n. *capucitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902595555*. The type genome for the species is the GenBank assembly GCA_902581505.1. The GC content of the type genome is 30.14 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Tolutosa cosidimonas sp. nov.

Candidatus Tolutosa cosidimonas (NL. fem. n. *cosidimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp003331885*. The type genome for the species is the GenBank assembly GCA_003331885.1. The GC content of the type genome is 28.37 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Tolutosa delubitura sp. nov.

Candidatus Tolutosa delubitura (NL. fem. n. *delubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902544085*. The type genome for the species is the GenBank assembly GCA_902544085.1. The GC content of the type genome is 31.26 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Tolutosa denigatio sp. nov.

Candidatus Tolutosa denigatio (NL. fem. n. *denigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902586095*. The type genome for the species is the GenBank assembly GCA_902586095.1. The GC content of the type genome is 31.03 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Tolutosa desonessa sp. nov.

Candidatus Tolutosa desonessa (NL. fem. n. *desonessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp003331875*. The type genome for the species is the GenBank assembly GCA_003331875.1. The GC content of the type genome is 30.26 % and the genome length is 1.08 Mbp.

Description of *Candidatus* Tolutosa ectenigena sp. nov.

Candidatus Tolutosa ectenigena (NL. fem. n. *ectenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp002702385*. The type genome for the species is the GenBank assembly GCA_002702385.1. The GC content of the type genome is 28.7 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Tolutosa forinitio sp. nov.

Candidatus Tolutosa forinitio (NL. fem. n. *forinitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MED-G14 sp002693085*. The type genome for the species is the GenBank assembly GCA_002693085.1. The GC content of the type genome is 28.67 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Tolutosa galacimonas sp. nov.

Candidatus Tolutosa galacimonas (NL. fem. n. *galacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp004321735*. The type genome for the species is the GenBank assembly GCA_004321735.1. The GC content of the type genome is 29.46 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Tolutosa gasifatio sp. nov.

Candidatus Tolutosa gasifatio (NL. fem. n. *gasifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp002691165*. The type genome for the species is the GenBank assembly GCA_902528705.1. The GC content of the type genome is 30.79 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Tolutosa immusivita sp. nov.

Candidatus Tolutosa immusivita (NL. fem. n. *immusivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902609185*. The type genome for the species is the GenBank assembly GCA_902609185.1. The GC content of the type genome is 30.68 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Tolutosa impudax sp. nov.

Candidatus Tolutosa impudax (NL. fem. n. *impudax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp002703065*. The type genome for the species is the GenBank assembly GCA_002703065.1. The GC content of the type genome is 29.64 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Tolutosa infunousia sp. nov.

Candidatus Tolutosa infunousia (NL. fem. n. *infunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902550325*. The type genome for the species is the GenBank assembly GCA_902550325.1. The GC content of the type genome is 30.99 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Tolutosa inpinilega sp. nov.

Candidatus Tolutosa inpinilega (NL. fem. n. *inpinilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902574335*. The type genome for the species is the GenBank assembly GCA_902574335.1. The GC content of the type genome is 29.91 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Tolutosa luculedo sp. nov.

Candidatus Tolutosa luculedo (NL. fem. n. *luculedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902598295*. The type genome for the species is the GenBank assembly GCA_902598295.1. The GC content of the type genome is 30.95 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Tolutosa lugubitica sp. nov.

Candidatus Tolutosa lugubitica (NL. fem. n. *lugubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp002697465*. The type genome for the species is the GenBank assembly GCA_002728635.1. The GC content of the type genome is 31.03 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Tolutosa lupanimonas sp. nov.

Candidatus Tolutosa lupanimonas (NL. fem. n. *lupanimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902616635*. The type genome for the species is the GenBank assembly GCA_902616635.1. The GC content of the type genome is 28.82 % and the genome length is 1.0 Mbp.

Description of *Candidatus* Tolutosa lupanitas sp. nov.

Candidatus Tolutosa lupanitas (NL. fem. n. *lupanitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902610105*. The type genome for the species is the GenBank assembly GCA_902610105.1. The GC content of the type genome is 30.11 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Tolutosa monimetta sp. nov.

Candidatus Tolutosa monimetta (NL. fem. n. *monimetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902526165*. The type genome for the species is the GenBank assembly GCA_902609165.1. The GC content of the type genome is 30.88 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Tolutosa obtoritia sp. nov.

Candidatus Tolutosa obtoritia (NL. fem. n. *obtoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902606555*. The type genome for the species is the GenBank assembly GCA_902606555.1. The GC content of the type genome is 30.24 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Tolutosa peripedo sp. nov.

Candidatus Tolutosa peripedo (NL. fem. n. *peripedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *MED-G14 sp902587325*. The type genome for the species is the GenBank assembly GCA_902541795.1. The GC content of the type genome is 28.93 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Tolutosa resacitrix sp. nov.

Candidatus Tolutosa resacitrix (NL. fem. n. *resacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902520835*. The type genome for the species is the GenBank assembly GCA_902520835.1. The GC content of the type genome is 29.0 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Tolutosa rubefivita sp. nov.

Candidatus Tolutosa rubefivita (NL. fem. n. *rubefivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902622575*. The type genome for the species is the GenBank assembly GCA_902622575.1. The GC content of the type genome is 30.94 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Tolutosa sacomago sp. nov.

Candidatus Tolutosa sacomago (NL. fem. n. *sacomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902535165*. The type genome for the species is the GenBank assembly GCA_902535165.1. The GC content of the type genome is 29.75 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Tolutosa siticetta sp. nov.

Candidatus Tolutosa siticetta (NL. fem. n. *siticetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp002457715*. The type genome for the species is the GenBank assembly GCA_002457715.1. The GC content of the type genome is 28.55 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Tolutosa siticifica sp. nov.

Candidatus Tolutosa siticifica (NL. fem. n. *siticifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902515405*. The type genome for the species is the GenBank assembly GCA_902515405.1. The GC content of the type genome is 28.41 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Tolutosa visocitudo sp. nov.

Candidatus Tolutosa visocitudo (NL. fem. n. *visocitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G14 sp902554655*. The type genome for the species is the GenBank assembly GCA_902554655.1. The GC content of the type genome is 29.1 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Tolutula abrepedo sp. nov.

Candidatus Tolutula abrepedo (NL. fem. n. *abrepedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1392 sp013815325*. The type genome for the species is the GenBank assembly GCA_013815325.1. The GC content of the type genome is 59.34 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Tolutula gen. nov.

Candidatus Tolutula (NL. fem. n. *Tolutula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1392*. The type species for the genus is *Candidatus* Tolutula abrepedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10450*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cuticariaceae.

Description of *Candidatus* Tolutula faticitas sp. nov.

Candidatus Tolutula faticitas (NL. fem. n. *faticitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1392 sp013821455*. The type genome for the species is the GenBank assembly GCA_013821455.1. The GC content of the type genome is 58.27 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Tolutula inrevigena sp. nov.

Candidatus Tolutula inrevigena (NL. fem. n. *inrevigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1392 sp013695925*. The type genome for the species is the GenBank assembly GCA_013695925.1. The GC content of the type genome is 60.31 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Tolutula maxumimonas sp. nov.

Candidatus Tolutula maxumimonas (NL. fem. n. *maxumimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1392 sp003169975*. The type genome for the species is the GenBank assembly GCA_003169975.1. The GC content of the type genome is 59.91 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Tolypothrix nehalicella sp. nov.

Candidatus Tolypothrix nehalicella (NL. fem. n. *nehalicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tolypothrix_A sp009725235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009725235.1. The GC content of the type genome is 41.56 % and the genome length is 14.05 Mbp.

Description of *Candidatus* Tolypothrix cetarugo sp. nov.

Candidatus Tolypothrix cetarugo (NL. fem. n. *cetarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tolypothrix_B sp002368435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_002368435.1. The GC content of the type genome is 43.43 % and the genome length is 9.85 Mbp.

Description of *Candidatus* Tolypothrix tubicivita sp. nov.

Candidatus Tolypothrix tubicivita (NL. fem. n. *tubicivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tolypothrix_B sp002368235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_001904675.1. The GC content of the type genome is 43.71 % and the genome length is 9.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Tomacana armipilenta sp. nov.

Candidatus Tomacana armipilenta (NL. fem. n. *armipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3663 sp902776605*. The type genome for the species is the GenBank assembly GCA_902776605.1. The GC content of the type genome is 50.34 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Tomacana gen. nov.

Candidatus Tomacana (NL. fem. n. *Tomacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3663*. The type species for the genus is *Candidatus* Tomacana armipilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3663*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomacanaceae.

Description of *Candidatus* Tomacanaceae fam. nov.

Candidatus Tomacanaceae (NL. fem. n. *Tomacanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3663.* The type genus for the taxon is *Candidatus* Tomacana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Tomacana depelousia sp. nov.

Candidatus Tomacana depelousia (NL. fem. n. *depelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3663 sp902779265*. The type genome for the species is the GenBank assembly GCA_902779265.1. The GC content of the type genome is 54.62 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Tomacana innupigena sp. nov.

Candidatus Tomacana innupigena (NL. fem. n. *innupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3663 sp002315795*. The type genome for the species is the GenBank assembly GCA_002315795.1. The GC content of the type genome is 47.58 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Tomacana penecitica sp. nov.

Candidatus Tomacana penecitica (NL. fem. n. *penecitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3663 sp900319235*. The type genome for the species is the GenBank assembly GCA_900319235.1. The GC content of the type genome is 51.19 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Tomacana semilastra sp. nov.

Candidatus Tomacana semilastra (NL. fem. n. *semilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3663 sp004557315*. The type genome for the species is the GenBank assembly GCA_004557315.1. The GC content of the type genome is 48.81 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Tomacana unetvimonia sp. nov.

Candidatus Tomacana unetvimonia (NL. fem. n. *unetvimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3663 sp002373755*. The type genome for the species is the GenBank assembly GCA_002373755.1. The GC content of the type genome is 54.08 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Tomacella monimatio sp. nov.

Candidatus Tomacella monimatio (NL. fem. n. *monimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4085 sp002383325*. The type genome for the species is the GenBank assembly GCA_002383325.1. The GC content of the type genome is 65.29 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Tomacella gen. nov.

Candidatus Tomacella (NL. fem. n. *Tomacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4085*. The type species for the genus is *Candidatus* Tomacella monimatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4085*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomacellaceae.

Description of *Candidatus* Tomacellaceae fam. nov.

Candidatus Tomacellaceae (NL. fem. n. *Tomacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA4085*. The type genus for the taxon is *Candidatus* Tomacella .

According to GTDB R06-RS202, this family belongs to the order *Aminicenantales*.

Description of *Candidatus* Tomacella salubitica sp. nov.

Candidatus Tomacella salubitica (NL. fem. n. *salubitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4085 sp003154255*. The type genome for the species is the GenBank assembly GCA_003154255.1. The GC content of the type genome is 61.49 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Tomacia sitelousia sp. nov.

Candidatus Tomacia sitelousia (NL. fem. n. *sitelousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-336 sp003247575*. The type genome for the species is the GenBank assembly GCA_003247575.1. The GC content of the type genome is 64.74 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Tomacia gen. nov.

Candidatus Tomacia (NL. fem. n. *Tomacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-336*. The type species for the genus is *Candidatus* Tomacia sitelousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomaciaceae.

Description of *Candidatus* Tomaciaceae fam. nov.

Candidatus Tomaciaceae (NL. fem. n. *Tomaciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-336.* The type genus for the taxon is *Candidatus* Tomacia .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tomaciales.

Description of *Candidatus* Tomaciales ord. nov.

Candidatus Tomaciales (NL. fem. n. *Tomaciales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-336.* The type genus for the taxon is *Candidatus* Tomacia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9160*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Buxifiae.

Description of *Candidatus* Tomacida cocibicella sp. nov.

Candidatus Tomacida cocibicella (NL. fem. n. *cocibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino5 sp002501485*. The type genome for the species is the GenBank assembly GCA_002714225.1. The GC content of the type genome is 56.63 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Tomacida gen. nov.

Candidatus Tomacida (NL. fem. n. *Tomacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Casp-actino5*. The type species for the genus is *Candidatus* Tomacida cocibicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tomacida defacessa sp. nov.

Candidatus Tomacida defacessa (NL. fem. n. *defacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino5 sp002727235*. The type genome for the species is the

GenBank assembly GCA_002693375.1. The GC content of the type genome is 56.53 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Tomacida depocessa sp. nov.

Candidatus Tomacida depocessa (NL. fem. n. *depocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino5 sp009923855*. The type genome for the species is the GenBank assembly GCA_009923855.1. The GC content of the type genome is 64.15 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Tomacida dibapitrix sp. nov.

Candidatus Tomacida dibapitrix (NL. fem. n. *dibapitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino5 sp012269985*. The type genome for the species is the GenBank assembly GCA_012269985.1. The GC content of the type genome is 56.82 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Tomacida nubifax sp. nov.

Candidatus Tomacida nubifax (NL. fem. n. *nubifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino5 sp010024485*. The type genome for the species is the GenBank assembly GCA_010024485.1. The GC content of the type genome is 68.61 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Tomacida occenibra sp. nov.

Candidatus Tomacida occenibra (NL. fem. n. *occenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino5 sp001510385*. The type genome for the species is the GenBank assembly GCA_001510385.1. The GC content of the type genome is 55.86 % and the genome length is 1.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Capian Sea".

Description of *Candidatus* Tomacida panopousia sp. nov.

Candidatus Tomacida panopousia (NL. fem. n. *panopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Casp-actino5 sp009924875*. The type genome for the species is the GenBank assembly GCA_009924875.1. The GC content of the type genome is 66.65 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Tomacosa obmutitudo sp. nov.

Candidatus Tomacosa obmutitudo (NL. fem. n. *obmutitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSL01 sp003552825*. The type genome for the species is the GenBank assembly GCA_003552825.1. The GC content of the type genome is 36.24 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Tomacosa gen. nov.

Candidatus Tomacosa (NL. fem. n. *Tomacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLSL01*. The type species for the genus is *Candidatus* Tomacosa obmutitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tomacosa velifitudo sp. nov.

Candidatus Tomacosa velifitudo (NL. fem. n. *velifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLSL01 sp007130465*. The type genome for the species is the GenBank assembly GCA_003551095.1. The GC content of the type genome is 35.41 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Tomitella manomilenta sp. nov.

Candidatus Tomitella manomilenta (NL. fem. n. *manomilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tomitella sp007559025*. The type genome for the species is the GenBank assembly RS_GCF_007559025.1. The GC content of the type genome is 70.9 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Tomitella podagilenta sp. nov.

Candidatus Tomitella podagilenta (NL. fem. n. *podagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tomitella sp014126825*. The type genome for the species is the GenBank assembly RS_GCF_014126825.1. The GC content of the type genome is 70.94 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Tomogana bicipitoga sp. nov.

Candidatus Tomogana bicipitoga (NL. fem. n. *bicipitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11549 sp002440235*. The type genome for the species is the GenBank assembly GCA_002297115.1. The GC content of the type genome is 57.01 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Tomogana gen. nov.

Candidatus Tomogana (NL. fem. n. *Tomogana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11549*. The type species for the genus is *Candidatus* Tomogana bicipitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-977*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benemariaceae.

Description of *Candidatus* Tomogana cisalitas sp. nov.

Candidatus Tomogana cisalitas (NL. fem. n. *cisalitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11549 sp002439085*. The type genome for the species is the GenBank assembly GCA_002405015.1. The GC content of the type genome is 55.27 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Tomogana egregitura sp. nov.

Candidatus Tomogana egregitura (NL. fem. n. *egregitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11549 sp902777205*. The type genome for the species is the GenBank assembly GCA_902777205.1. The GC content of the type genome is 55.85 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Tomogana sicinugo sp. nov.

Candidatus Tomogana sicinugo (NL. fem. n. *sicinugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11549 sp900768185*. The type genome for the species is the GenBank assembly RS_GCF_900768185.1. The GC content of the type genome is 53.4 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Tomogana volubatio sp. nov.

Candidatus Tomogana volubatio (NL. fem. n. *volubatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11549 sp900550445*. The type genome for the species is the GenBank assembly GCA_900550445.1. The GC content of the type genome is 48.15 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Tomogaria cocibentia sp. nov.

Candidatus Tomogaria cocibentia (NL. fem. n. *cocibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-534 sp003250355*. The type genome for the species is the GenBank assembly GCA_003250355.1. The GC content of the type genome is 35.35 %

and the genome length is 3.7 Mbp.

Description of *Candidatus* Tomogaria gen. nov.

Candidatus Tomogaria (NL. fem. n. *Tomogaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-534*. The type species for the genus is *Candidatus* Tomogaria cocibentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-534*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tomogariaceae.

Description of *Candidatus* Tomogariaceae fam. nov.

Candidatus Tomogariaceae (NL. fem. n. *Tomogariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-534.* The type genus for the taxon is *Candidatus* Tomogaria .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Tomogella semodimonas sp. nov.

Candidatus Tomogella semodimonas (NL. fem. n. *semodimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QEVD01 sp013359425*. The type genome for the species is the GenBank assembly GCA_013359425.1. The GC content of the type genome is 59.33 % and the genome length is 7.05 Mbp.

Description of *Candidatus* Tomogella gen. nov.

Candidatus Tomogella (NL. fem. n. *Tomogella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QEVD01*. The type species for the genus is *Candidatus* Tomogella semodimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QEVD01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Tomogellaceae.

Description of *Candidatus* Tomogellaceae fam. nov.

Candidatus Tomogellaceae (NL. fem. n. *Tomogellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QEVD01*. The type genus for the taxon is *Candidatus* Tomogella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRLW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Forinellales.

Description of *Candidatus* Tomogella tolutitas sp. nov.

Candidatus Tomogella tolutitas (NL. fem. n. *tolutitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QEVD01 sp003576975*. The type genome for the species is the GenBank assembly GCA_003576975.1. The GC content of the type genome is 52.87 % and the genome length is 7.25 Mbp.

Description of *Candidatus* Tomogosa pudibicella sp. nov.

Candidatus Tomogosa pudibicella (NL. fem. n. *pudibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3072 sp002215665*. The type genome for the species is the GenBank assembly GCA_002215665.1. The GC content of the type genome is 38.18 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Tomogosa gen. nov.

Candidatus Tomogosa (NL. fem. n. *Tomogosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3072*. The type species for the genus is *Candidatus* Tomogosa pudibicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Tomogosaceae.

Description of *Candidatus* Tomogosaceae fam. nov.

Candidatus Tomogosaceae (NL. fem. n. *Tomogosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3072.* The type genus for the taxon is *Candidatus* Tomogosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tomogosales.

Description of *Candidatus* Tomogosales ord. nov.

Candidatus Tomogosales (NL. fem. n. *Tomogosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3072.* The type genus for the taxon is *Candidatus* Tomogosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA3072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Tomogosae.

Description of *Candidatus* Tomogosae class. nov.

Candidatus Tomogosae (NL. fem. n. *c__Tomogosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3072.* The type genus for the taxon is *Candidatus* Tomogosa .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *WOR-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Tigurariota.

Description of *Candidatus* Tomogula absocentia sp. nov.

Candidatus Tomogula absocentia (NL. fem. n. *absocentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp900551105*. The type genome for the species is the

GenBank assembly GCA_900551105.1. The GC content of the type genome is 28.4 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Tomogula gen. nov.

Candidatus Tomogula (NL. fem. n. *Tomogula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-533*. The type species for the genus is *Candidatus* Tomogula absocentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Tomogula demuliforma sp. nov.

Candidatus Tomogula demuliforma (NL. fem. n. *demuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp902783555*. The type genome for the species is the GenBank assembly GCA_902783555.1. The GC content of the type genome is 25.47 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Tomogula desucessa sp. nov.

Candidatus Tomogula desucessa (NL. fem. n. *desucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp902767375*. The type genome for the species is the GenBank assembly GCA_902767375.1. The GC content of the type genome is 27.66 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Tomogula futatimonas sp. nov.

Candidatus Tomogula futatimonas (NL. fem. n. *futatimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp902783345*. The type genome for the species is the GenBank assembly GCA_902783345.1. The GC content of the type genome is 25.75 %

and the genome length is 0.97 Mbp.

Description of *Candidatus* Tomogula loripatica sp. nov.

Candidatus Tomogula loripatica (NL. fem. n. *loripatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp900553855*. The type genome for the species is the GenBank assembly RS_GCF_900770155.1. The GC content of the type genome is 25.15 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Tomogula lugubilenta sp. nov.

Candidatus Tomogula lugubilenta (NL. fem. n. *lugubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp902766545*. The type genome for the species is the GenBank assembly GCA_902766545.1. The GC content of the type genome is 26.48 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Tomogula malivitio sp. nov.

Candidatus Tomogula malivitio (NL. fem. n. *malivitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp000434495*. The type genome for the species is the GenBank assembly GCA_902766065.1. The GC content of the type genome is 29.62 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Tomogula oblanimonas sp. nov.

Candidatus Tomogula oblanimonas (NL. fem. n. *oblanimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp003150195*. The type genome for the species is the GenBank assembly GCA_003150195.1. The GC content of the type genome is 38.07 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Tomogula vitabetta sp. nov.

Candidatus Tomogula vitabetta (NL. fem. n. *vitabetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp004563275*. The type genome for the species is the GenBank assembly GCA_004563275.1. The GC content of the type genome is 26.56 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Tomogula xenoditura sp. nov.

Candidatus Tomogula xenoditura (NL. fem. n. *xenoditura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-533 sp002438065*. The type genome for the species is the GenBank assembly GCA_002438065.1. The GC content of the type genome is 24.98 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Totidana appagax sp. nov.

Candidatus Totidana appagax (NL. fem. n. *appagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLR01 sp003561875*. The type genome for the species is the GenBank assembly GCA_003561875.1. The GC content of the type genome is 58.23 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Totidana gen. nov.

Candidatus Totidana (NL. fem. n. *Totidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLLR01*. The type species for the genus is *Candidatus* Totidana appagax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Totidana robigilega sp. nov.

Candidatus Totidana robigilega (NL. fem. n. *robigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLR01 sp007134025*. The type genome for the species is the GenBank assembly GCA_007134025.1. The GC content of the type genome is 58.5 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Totidaria immacax sp. nov.

Candidatus Totidaria immacax (NL. fem. n. *immacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CACEW01 sp902563055*. The type genome for the species is the GenBank assembly GCA_902563055.1. The GC content of the type genome is 39.17 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Totidaria gen. nov.

Candidatus Totidaria (NL. fem. n. *Totidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CACEW01*. The type species for the genus is *Candidatus* Totidaria immacax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CACEW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidariaceae.

Description of *Candidatus* Totidariaceae fam. nov.

Candidatus Totidariaceae (NL. fem. n. *Totidariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACEW01.* The type genus for the taxon is *Candidatus* Totidaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *CACEW01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Totidariales.

Description of *Candidatus* Totidariales ord. nov.

Candidatus Totidariales (NL. fem. n. *Totidariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CACEW01*. The type genus for the taxon is *Candidatus* Totidaria .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Totidella tametitia sp. nov.

Candidatus Totidella tametitia (NL. fem. n. *tametitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDKJ01 sp013002285*. The type genome for the species is the GenBank assembly GCA_013002285.1. The GC content of the type genome is 39.95 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Totidella gen. nov.

Candidatus Totidella (NL. fem. n. *Totidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDKJ01*. The type species for the genus is *Candidatus* Totidella tametitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABDKJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidellaceae.

Description of *Candidatus* Totidellaceae fam. nov.

Candidatus Totidellaceae (NL. fem. n. *Totidellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABDKJ01*. The type genus for the taxon is *Candidatus* Totidella .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Totidia solacentia sp. nov.

Candidatus Totidia solacentia (NL. fem. n. *solacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *PWKZ01 sp003559575*. The type genome for the species is the GenBank assembly GCA_007127155.1. The GC content of the type genome is 64.45 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Totidia gen. nov.

Candidatus Totidia (NL. fem. n. *Totidia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWKZ01*. The type species for the genus is *Candidatus* Totidia solacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWKZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidiaceae.

Description of *Candidatus* Totidiaceae fam. nov.

Candidatus Totidiaceae (NL. fem. n. *Totidiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWKZ01.* The type genus for the taxon is *Candidatus* Totidia .

According to the original version of GTDB R06-RS202, this family belongs to the order *PWKZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Totidiales.

Description of *Candidatus* Totidiales ord. nov.

Candidatus Totidiales (NL. fem. n. *Totidiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWKZ01.* The type genus for the taxon is *Candidatus* Totidia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Rubigariae.

Description of *Candidatus* Totidida bucelisca sp. nov.

Candidatus Totidida bucelisca (NL. fem. n. *bucelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-872 sp003139695*. The type genome for the species is the GenBank assembly GCA_003131745.1. The GC content of the type genome is 64.53 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Totidida gen. nov.

Candidatus Totidida (NL. fem. n. *Totidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-872*. The type species for the genus is *Candidatus* Totidida bucelisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Totidida salubilenta sp. nov.

Candidatus Totidida salubilenta (NL. fem. n. *salubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-872 sp005880945*. The type genome for the species is the GenBank assembly GCA_005880205.1. The GC content of the type genome is 65.84 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Totidida secunimonas sp. nov.

Candidatus Totidida secunimonas (NL. fem. n. *secunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-872 sp003151665*. The type genome for the species is the GenBank assembly GCA_003151665.1. The GC content of the type genome is 64.49 % and the genome length is 3.32 Mbp.

Description of *Candidatus* Totidosa ablacugo sp. nov.

Candidatus Totidosa ablacugo (NL. fem. n. *ablacugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ZC4RG35 sp003242515*. The type genome for the species is the GenBank assembly GCA_003242515.1. The GC content of the type genome is 70.06 %

and the genome length is 2.06 Mbp.

Description of *Candidatus* Totidosa gen. nov.

Candidatus Totidosa (NL. fem. n. *Totidosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ZC4RG35*. The type species for the genus is *Candidatus* Totidosa ablacugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ZC4RG35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidosaceae.

Description of *Candidatus* Totidosaceae fam. nov.

Candidatus Totidosaceae (NL. fem. n. *Totidosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ZC4RG35.* The type genus for the taxon is *Candidatus* Totidosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rudicellales.

Description of *Candidatus* Totidula demigessa sp. nov.

Candidatus Totidula demigessa (NL. fem. n. *demigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2196 sp002328025*. The type genome for the species is the GenBank assembly GCA_002328025.1. The GC content of the type genome is 36.04 % and the genome length is 0.75 Mbp.

Description of *Candidatus* Totidula gen. nov.

Candidatus Totidula (NL. fem. n. *Totidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2196*. The type species for the genus is *Candidatus* Totidula demigessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2196*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Totidulaceae.

Description of *Candidatus* Totidulaceae fam. nov.

Candidatus Totidulaceae (NL. fem. n. *Totidulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2196.* The type genus for the taxon is *Candidatus* Totidula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2196*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Totidulales.

Description of *Candidatus* Totidulales ord. nov.

Candidatus Totidulales (NL. fem. n. *Totidulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2196.* The type genus for the taxon is *Candidatus* Totidula .

According to the original version of GTDB R06-RS202, this family belongs to the class *ABY1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defunanae.

Description of *Candidatus* Tranquillimonas oblucago sp. nov.

Candidatus Tranquillimonas oblucago (NL. fem. n. *oblucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tranquillimonas sp004011175*. The type genome for the species is the GenBank assembly RS_GCF_004011175.1. The GC content of the type genome is 68.13 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Tranvaria ammuretta sp. nov.

Candidatus Tranvaria ammuretta (NL. fem. n. *ammuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *AC-50 sp005883235*. The type genome for the species is the GenBank assembly GCA_005883235.1. The GC content of the type genome is 70.88 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Tranvaria gen. nov.

Candidatus Tranvaria (NL. fem. n. *Tranvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-50*. The type species for the genus is *Candidatus* Tranvaria ammuretta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tranvaria documibra sp. nov.

Candidatus Tranvaria documibra (NL. fem. n. *documibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-50 sp005885565*. The type genome for the species is the GenBank assembly GCA_005885565.1. The GC content of the type genome is 71.47 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Tranvella ablepitoga sp. nov.

Candidatus Tranvella ablepitoga (NL. fem. n. *ablepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002787175 sp002787175*. The type genome for the species is the GenBank assembly GCA_002787175.1. The GC content of the type genome is 39.47 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Tranvella gen. nov.

Candidatus Tranvella (NL. fem. n. *Tranvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002787175*. The type species for the genus is *Candidatus* Tranvella ablepitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11359_A*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Noviliaceae.

Description of *Candidatus* Tranvida horomousia sp. nov.

Candidatus Tranvida horomousia (NL. fem. n. *horomousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSNW01 sp011047095*. The type genome for the species is the GenBank assembly GCA_011047095.1. The GC content of the type genome is 55.85 % and the genome length is 4.64 Mbp.

Description of *Candidatus* Tranvida gen. nov.

Candidatus Tranvida (NL. fem. n. *Tranvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSNW01*. The type species for the genus is *Candidatus* Tranvida horomousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6663*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hibisosaceae.

Description of *Candidatus* Tranvula serotimonia sp. nov.

Candidatus Tranvula serotimonia (NL. fem. n. *serotimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILKP01 sp903834785*. The type genome for the species is the GenBank assembly GCA_903834785.1. The GC content of the type genome is 65.92 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Tranvula gen. nov.

Candidatus Tranvula (NL. fem. n. *Tranvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILKP01*. The type species for the genus is *Candidatus* Tranvula serotimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family

SM1A02. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Trebonia gasifilenta sp. nov.

Candidatus Trebonia gasifilenta (NL. fem. n. *gasifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trebonia sp009784565*. The type genome for the species is the GenBank assembly GCA_009784565.1. The GC content of the type genome is 70.79 % and the genome length is 6.2 Mbp.

Description of *Candidatus* Treponema papilentia sp. nov.

Candidatus Treponema papilentia (NL. fem. n. *papilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema sp010365865*. The type genome for the species is the GenBank assembly RS_GCF_010365865.1. The GC content of the type genome is 44.32 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Treponema vatilitura sp. nov.

Candidatus Treponema vatilitura (NL. fem. n. *vatilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema sp000775995*. The type genome for the species is the GenBank assembly RS_GCF_000775995.1. The GC content of the type genome is 44.58 % and the genome length is 2.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "acute necrotizing ulcerative gingivitis lesion".

Description of *Candidatus* Treponema aciscatio sp. nov.

Candidatus Treponema aciscatio (NL. fem. n. *aciscatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902773215*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-

formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902773215.1. The GC content of the type genome is 56.77 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Treponema ammixatio sp. nov.

Candidatus Treponema ammixatio (NL. fem. n. *ammixatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002394465*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002394465.1. The GC content of the type genome is 43.5 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Treponema anarrivita sp. nov.

Candidatus Treponema anarrivita (NL. fem. n. *anarrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902772605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902772605.1. The GC content of the type genome is 45.97 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Treponema ascalimonia sp. nov.

Candidatus Treponema ascalimonia (NL. fem. n. *ascalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900770075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900770075.1. The GC content of the type genome is 44.91 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Treponema assubetta sp. nov.

Candidatus Treponema assubetta (NL. fem. n. *assubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002392275*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002392275.1. The GC content of the type genome is 45.41 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Treponema betacicella sp. nov.

Candidatus Treponema betacicella (NL. fem. n. *betacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902785455*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902785455.1. The GC content of the type genome is 43.07 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Treponema bonifimonas sp. nov.

Candidatus Treponema bonifimonas (NL. fem. n. *bonifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp000619925*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000619925.1. The GC content of the type genome is 40.7 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Treponema calipitudo sp. nov.

Candidatus Treponema calipitudo (NL. fem. n. *calipitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002315375*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002315375.1. The GC content of the type genome is 39.99 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Treponema catalifica sp. nov.

Candidatus Treponema catalifica (NL. fem. n. *catalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002391235*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002391235.1. The GC content of the type genome is 49.02 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Treponema cataligena sp. nov.

Candidatus Treponema cataligena (NL. fem. n. *cataligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002392405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002392405.1. The GC content of the type genome is 40.23 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Treponema categastra sp. nov.

Candidatus Treponema categastra (NL. fem. n. *categastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp003455655*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003455655.1. The GC content of the type genome is 40.08 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Treponema cenacifica sp. nov.

Candidatus Treponema cenacifica (NL. fem. n. *cenacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002314445*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002314445.1. The GC content of the type genome is 45.35 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Treponema ciminetta sp. nov.

Candidatus Treponema ciminetta (NL. fem. n. *ciminetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002350445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002350445.1. The GC content of the type genome is 38.64 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Treponema citivitrix sp. nov.

Candidatus Treponema citivitrix (NL. fem. n. *citivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900319625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902793765.1. The GC content of the type genome is 42.36 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Treponema colubedo sp. nov.

Candidatus Treponema colubedo (NL. fem. n. *colubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902766125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902766125.1. The GC content of the type genome is 44.19 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Treponema cosigilega sp. nov.

Candidatus Treponema cosigilega (NL. fem. n. *cosigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002393865*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002393865.1. The GC content of the type genome is 57.29 % and the genome length is 2.76 Mbp.

Description of *Candidatus* Treponema dapifitudo sp. nov.

Candidatus Treponema dapifitudo (NL. fem. n. *dapifitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002449305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003543735.1. The GC content of the type genome is 38.85 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Treponema decinimonas sp. nov.

Candidatus Treponema decinimonas (NL. fem. n. *decinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900769985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900769985.1. The GC content of the type genome is 37.0 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Treponema dedigitica sp. nov.

Candidatus Treponema dedigitica (NL. fem. n. *dedigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002373325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002373325.1. The GC content of the type genome is 46.65 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Treponema dehonisca sp. nov.

Candidatus Treponema dehonisca (NL. fem. n. *dehonisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002477955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002476655.1. The GC content of the type genome is 39.72 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Treponema denaviforma sp. nov.

Candidatus Treponema denaviforma (NL. fem. n. *denaviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902783155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902783155.1. The GC content of the type genome is 45.96 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Treponema denupitudo sp. nov.

Candidatus Treponema denupitudo (NL. fem. n. *denupitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902799665*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902764405.1. The GC content of the type genome is 49.85 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Treponema depubivita sp. nov.

Candidatus Treponema depubivita (NL. fem. n. *depubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900541945*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900541945.1. The GC content of the type genome is 41.02 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Treponema derunugo sp. nov.

Candidatus Treponema derunugo (NL. fem. n. *derunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900316905*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902792365.1. The GC content of the type genome is 50.07 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Treponema feficicella sp. nov.

Candidatus Treponema feficicella (NL. fem. n. *feficicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp004554075*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_004554075.1. The GC content of the type genome is 40.07 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Treponema fibicitio sp. nov.

Candidatus Treponema fibicitio (NL. fem. n. *fibicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902783245*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902783245.1. The GC content of the type genome is 51.38 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Treponema fiducisca sp. nov.

Candidatus Treponema fiducisca (NL. fem. n. *fiducisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902796985*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902796985.1. The GC content of the type genome is 56.61 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Treponema genocivita sp. nov.

Candidatus Treponema genocivita (NL. fem. n. *genocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002309195*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002309195.1. The GC content of the type genome is 38.0 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Treponema hiruditrix sp. nov.

Candidatus Treponema hiruditrix (NL. fem. n. *hiruditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002437725*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002435505.1. The GC content of the type genome is 36.8 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Treponema inargitudo sp. nov.

Candidatus Treponema inargitudo (NL. fem. n. *inargitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp014334335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014334335.1. The GC content of the type genome is 38.23 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Treponema ineffetta sp. nov.

Candidatus Treponema ineffetta (NL. fem. n. *ineffetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp014334325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_014334325.1. The GC content of the type genome is 49.23 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Treponema inmodivita sp. nov.

Candidatus Treponema inmodivita (NL. fem. n. *inmodivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902766345*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902766345.1. The GC content of the type genome is 37.67 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Treponema insicisca sp. nov.

Candidatus Treponema insicisca (NL. fem. n. *insicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902802305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902802305.1. The GC content of the type genome is 36.92 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Treponema inurbibula sp. nov.

Candidatus Treponema inurbibula (NL. fem. n. *inurbibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002393835*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002393835.1. The GC content of the type genome is 44.17 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Treponema lapilitoga sp. nov.

Candidatus Treponema lapilitoga (NL. fem. n. *lapilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002396325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003520435.1. The GC content of the type genome is 47.06 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Treponema loripimonas sp. nov.

Candidatus Treponema loripimonas (NL. fem. n. *loripimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002399405*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002399405.1. The GC content of the type genome is 49.43 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Treponema loripugo sp. nov.

Candidatus Treponema loripugo (NL. fem. n. *loripugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002309305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002309305.1. The GC content of the type genome is 43.28 % and the genome length is 3.11 Mbp.

Description of *Candidatus* Treponema manubifica sp. nov.

Candidatus Treponema manubifica (NL. fem. n. *manubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002448445*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003453665.1. The GC content of the type genome is 46.4 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Treponema monopessa sp. nov.

Candidatus Treponema monopessa (NL. fem. n. *monopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002395155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002395445.1. The GC content of the type genome is 35.75 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Treponema murilicella sp. nov.

Candidatus Treponema murilicella (NL. fem. n. *murilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902792795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902792795.1. The GC content of the type genome is 50.17 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Treponema nidifetta sp. nov.

Candidatus Treponema nidifetta (NL. fem. n. *nidifetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900767955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900767955.1. The GC content of the type genome is 31.4 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Treponema nimiritura sp. nov.

Candidatus Treponema nimiritura (NL. fem. n. *nimiritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902778325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902778325.1. The GC content of the type genome is 43.57 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Treponema nugigilega sp. nov.

Candidatus Treponema nugigilega (NL. fem. n. *nugigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002373205*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002369335.1. The GC content of the type genome is 44.64 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Treponema oblanitia sp. nov.

Candidatus Treponema oblanitia (NL. fem. n. *oblanitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002368605*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002368605.1. The GC content of the type genome is 43.86 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Treponema orgetitrix sp. nov.

Candidatus Treponema orgetitrix (NL. fem. n. *orgetitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp000260795*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_000260795.1. The GC content of the type genome is 40.34 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Treponema pabilessa sp. nov.

Candidatus Treponema pabilessa (NL. fem. n. *pabilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902799965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902799965.1. The GC content of the type genome is 50.56 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Treponema paralax sp. nov.

Candidatus Treponema paralax (NL. fem. n. *paralax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900317625*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002350235.1. The GC content of the type genome is 38.38 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Treponema pericivita sp. nov.

Candidatus Treponema pericivita (NL. fem. n. *pericivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902803415*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902803415.1. The GC content of the type genome is 54.73 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Treponema petulitas sp. nov.

Candidatus Treponema petulitas (NL. fem. n. *petulitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902803735*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902803735.1. The GC content of the type genome is 41.4 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Treponema recogilega sp. nov.

Candidatus Treponema recogilega (NL. fem. n. *recogilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp003447785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003447785.1. The GC content of the type genome is 43.3 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Treponema relenivita sp. nov.

Candidatus Treponema relenivita (NL. fem. n. *relenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002394685*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002372885.1. The GC content of the type genome is 37.69 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Treponema repepilega sp. nov.

Candidatus Treponema repepilega (NL. fem. n. *repepilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902772975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902772975.1. The GC content of the type genome is 42.71 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Treponema rutabitas sp. nov.

Candidatus Treponema rutabitas (NL. fem. n. *rutabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900769325*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900769325.1. The GC content of the type genome is 35.69 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Treponema senipousia sp. nov.

Candidatus Treponema senipousia (NL. fem. n. *senipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900541995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900541995.1. The GC content of the type genome is 41.96 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Treponema sicarigena sp. nov.

Candidatus Treponema sicarigena (NL. fem. n. *sicarigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002369025*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797365.1. The GC content of the type genome is 46.2 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Treponema sonipitio sp. nov.

Candidatus Treponema sonipitio (NL. fem. n. *sonipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902789325*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902789325.1. The GC content of the type genome is 38.71 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Treponema terebitica sp. nov.

Candidatus Treponema terebitica (NL. fem. n. *terebitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902797305*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797305.1. The GC content of the type genome is 36.0 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Treponema tirocibula sp. nov.

Candidatus Treponema tirocibula (NL. fem. n. *tirocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002404895*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002404895.1. The GC content of the type genome is 43.97 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Treponema utraritia sp. nov.

Candidatus Treponema utraritia (NL. fem. n. *utraritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp902797055*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_902797055.1. The GC content of the type genome is 47.7 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Treponema utrolastra sp. nov.

Candidatus Treponema utrolastra (NL. fem. n. *utrolastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp012513125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012513125.1. The GC content of the type genome is 31.56 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Treponema venunimonas sp. nov.

Candidatus Treponema venunimonas (NL. fem. n. *venunimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002296965*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002296965.1. The GC content of the type genome is 50.75 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Treponema viripitrix sp. nov.

Candidatus Treponema viripitrix (NL. fem. n. *viripitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp900769975*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900769975.1. The GC content of the type genome is 36.1 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Treponema vocamatica sp. nov.

Candidatus Treponema vocamatica (NL. fem. n. *vocamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002319875*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002319875.1. The GC content of the type genome is 44.22 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Treponema xeropitio sp. nov.

Candidatus Treponema xeropitio (NL. fem. n. *xeropitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_D sp002478955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_002478955.1. The GC content of the type genome is 39.54 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Treponema lutulibra sp. nov.

Candidatus Treponema lutulibra (NL. fem. n. *lutulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_G sp012517385*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_012517385.1. The GC content of the type genome is 48.98 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Treponema cerimessa sp. nov.

Candidatus Treponema cerimessa (NL. fem. n. *cerimessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_H sp009777335*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009777335.1. The GC content of the type genome is 54.49 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Treponema excaletta sp. nov.

Candidatus Treponema excaletta (NL. fem. n. *excaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_H sp009780855*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009780855.1. The GC content of the type genome is 46.41 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Treponema expopitrix sp. nov.

Candidatus Treponema expopitrix (NL. fem. n. *expopitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_H sp009780595*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009780595.1. The GC content of the type genome is 52.44 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Treponema halucitio sp. nov.

Candidatus Treponema halucitio (NL. fem. n. *halucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_H sp009777995*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009777995.1. The GC content of the type genome is 43.97 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Treponema indipedo sp. nov.

Candidatus Treponema indipedo (NL. fem. n. *indipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_H sp009786615*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009786615.1. The GC content of the type genome is 48.53 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Treponema manibivita sp. nov.

Candidatus Treponema manibivita (NL. fem. n. *manibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Treponema_H sp009781915*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_009781915.1. The GC content of the type genome is 53.16 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Tresvaria idipsousia sp. nov.

Candidatus Tresvaria idipsousia (NL. fem. n. *idipsousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLA3 sp003576875*. The type genome for the species is the GenBank assembly GCA_003576875.1. The GC content of the type genome is 63.47 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Tresvaria gen. nov.

Candidatus Tresvaria (NL. fem. n. *Tresvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PLA3*. The type species for the genus is *Candidatus* Tresvaria idipsousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UTPLA1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumidaceae.

Description of *Candidatus* Tresvaria ossifitio sp. nov.

Candidatus Tresvaria ossifitio (NL. fem. n. *ossifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PLA3 sp007753915*. The type genome for the species is the GenBank assembly RS_GCF_007753915.1. The GC content of the type genome is 62.59 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Tresvella exsufatio sp. nov.

Candidatus Tresvella exsufatio (NL. fem. n. *exsufatio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3775 sp002369525*. The type genome for the species is the GenBank assembly GCA_002369525.1. The GC content of the type genome is 45.1 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Tresvella gen. nov.

Candidatus Tresvella (NL. fem. n. *Tresvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3775*. The type species for the genus is *Candidatus* Tresvella exsufatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tresvella sifunicula sp. nov.

Candidatus Tresvella sifunicula (NL. fem. n. *sifunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3775 sp902772565*. The type genome for the species is the GenBank assembly GCA_902772565.1. The GC content of the type genome is 44.64 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Tresvia acrolatio sp. nov.

Candidatus Tresvia acrolatio (NL. fem. n. *acrolatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUOA01 sp012839095*. The type genome for the species is the GenBank assembly GCA_012839095.1. The GC content of the type genome is 45.16 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Tresvia gen. nov.

Candidatus Tresvia (NL. fem. n. *Tresvia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DUOA01*. The type species for the genus is *Candidatus* Tresvia acrolatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU083*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Petulellaceae.

Description of *Candidatus* Tresvida velivilega sp. nov.

Candidatus Tresvida velivilega (NL. fem. n. *velivilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYFZ01 sp012727965*. The type genome for the species is the GenBank assembly GCA_012727965.1. The GC content of the type genome is 44.91 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Tresvida gen. nov.

Candidatus Tresvida (NL. fem. n. *Tresvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYFZ01*. The type species for the genus is *Candidatus* Tresvida velivilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5734*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropulaceae.

Description of *Candidatus* Tresvosa allibitas sp. nov.

Candidatus Tresvosa allibitas (NL. fem. n. *allibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *G11 sp900103495*. The type genome for the species is the GenBank assembly RS_GCF_900103495.1. The GC content of the type genome is 43.45 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Tresvosa gen. nov.

Candidatus Tresvosa (NL. fem. n. *Tresvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *G11*. The type species for the genus is *Candidatus* Tresvosa allibitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tresvula indotitia sp. nov.

Candidatus Tresvula indotitia (NL. fem. n. *indotitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYN01 sp013696465*. The type genome for the species is the GenBank assembly GCA_013696465.1. The GC content of the type genome is 56.57 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Tresvula gen. nov.

Candidatus Tresvula (NL. fem. n. *Tresvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCYN01*. The type species for the genus is *Candidatus* Tresvula indotitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tresvula inturitrix sp. nov.

Candidatus Tresvula inturitrix (NL. fem. n. *inturitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCYN01 sp013695245*. The type genome for the species is the GenBank assembly GCA_013695245.1. The GC content of the type genome is 55.02 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Tribrana camilatio sp. nov.

Candidatus Tribrana camilatio (NL. fem. n. *camilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFJN01 sp009886035*. The type genome for the species is the GenBank assembly GCA_009886035.1. The GC content of the type genome is 66.23 %

and the genome length is 2.7 Mbp.

Description of *Candidatus* Tribrana gen. nov.

Candidatus Tribrana (NL. fem. n. *Tribrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VFJN01*. The type species for the genus is *Candidatus* Tribrana camilatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACDCH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Gerunulaceae.

Description of *Candidatus* Tribrana depecentia sp. nov.

Candidatus Tribrana depecentia (NL. fem. n. *depecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VFJN01 sp009694375*. The type genome for the species is the GenBank assembly GCA_009694375.1. The GC content of the type genome is 66.11 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Tribraria chernimonas sp. nov.

Candidatus Tribraria chernimonas (NL. fem. n. *chernimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLJN01 sp007131535*. The type genome for the species is the GenBank assembly GCA_007131535.1. The GC content of the type genome is 47.14 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Tribraria gen. nov.

Candidatus Tribraria (NL. fem. n. *Tribraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLJN01*. The type species for the genus is *Candidatus* Tribraria chernimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Dehinulaceae.

Description of *Candidatus* Tribraria conibastra sp. nov.

Candidatus Tribraria conibastra (NL. fem. n. *conibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLJN01 sp007135115*. The type genome for the species is the GenBank assembly GCA_007135115.1. The GC content of the type genome is 46.52 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Tribria lavacatio sp. nov.

Candidatus Tribria lavacatio (NL. fem. n. *lavacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RDZE01 sp004293905*. The type genome for the species is the GenBank assembly GCA_004293905.1. The GC content of the type genome is 37.74 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Tribria gen. nov.

Candidatus Tribria (NL. fem. n. *Tribria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RDZE01*. The type species for the genus is *Candidatus* Tribria lavacatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tribrida tenilitura sp. nov.

Candidatus Tribrida tenilitura (NL. fem. n. *tenilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKGZ01 sp007117175*. The type genome for the species is the GenBank assembly GCA_007117175.1. The GC content of the type genome is 39.66 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Tribrida gen. nov.

Candidatus Tribrida (NL. fem. n. *Tribrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKGZ01*. The type species for the genus is *Candidatus* Tribrida tenilitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tribrosa lanigigena sp. nov.

Candidatus Tribrosa lanigigena (NL. fem. n. *lanigigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KBS-96 sp000381625*. The type genome for the species is the GenBank assembly RS_GCF_000381625.1. The GC content of the type genome is 57.17 % and the genome length is 6.69 Mbp.

Description of *Candidatus* Tribrosa gen. nov.

Candidatus Tribrosa (NL. fem. n. *Tribrosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KBS-96*. The type species for the genus is *Candidatus* Tribrosa lanigigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Trichlorobacter absurifica sp. nov.

Candidatus Trichlorobacter absurifica (NL. fem. n. *absurifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichlorobacter sp002383415*. The type genome for the species is the GenBank assembly GCA_002383415.1. The GC content of the type genome is 59.03 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Trichlorobacter cerebitia sp. nov.

Candidatus Trichlorobacter cerebitia (NL. fem. n. *cerebitia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichlorobacter sp002422265*. The type genome for the species is the GenBank assembly GCA_012027095.1. The GC content of the type genome is 55.72 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Trichlorobacter dehonessa sp. nov.

Candidatus Trichlorobacter dehonessa (NL. fem. n. *dehonessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichlorobacter sp002423105*. The type genome for the species is the GenBank assembly GCA_002423105.1. The GC content of the type genome is 54.59 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Trichlorobacter feculilenta sp. nov.

Candidatus Trichlorobacter feculilenta (NL. fem. n. *feculilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichlorobacter sp002419465*. The type genome for the species is the GenBank assembly GCA_002422585.1. The GC content of the type genome is 57.02 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Trichlorobacter hirudentia sp. nov.

Candidatus Trichlorobacter hirudentia (NL. fem. n. *hirudentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichlorobacter sp002424705*. The type genome for the species is the GenBank assembly GCA_002424705.1. The GC content of the type genome is 60.01 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Trichlorobacter lugubimonas sp. nov.

Candidatus Trichlorobacter lugubimonas (NL. fem. n. *lugubimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichlorobacter sp002452325*. The type genome for the species is the GenBank assembly GCA_002452325.1. The GC content of the type genome is 54.85 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Trichlorobacter ornitedo sp. nov.

Candidatus Trichlorobacter ornitedo (NL. fem. n. *ornitedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichlorobacter sp002328035*. The type genome for the species is the GenBank assembly GCA_002328035.1. The GC content of the type genome is 46.95 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Trichloromonas affamastra sp. nov.

Candidatus Trichloromonas affamastra (NL. fem. n. *affamastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichloromonas sp001825565*. The type genome for the species is the GenBank assembly GCA_001825565.1. The GC content of the type genome is 58.03 % and the genome length is 3.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 3 / C; 5m depth; 0.2 filter".

Description of *Candidatus* Trichloromonas viragitura sp. nov.

Candidatus Trichloromonas viragitura (NL. fem. n. *viragitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichloromonas sp002423365*. The type genome for the species is the GenBank assembly GCA_002423365.1. The GC content of the type genome is 61.42 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Trichococcus diminetta sp. nov.

Candidatus Trichococcus diminetta (NL. fem. n. *diminetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichococcus sp002155105*. The type genome for the species is the

GenBank assembly RS_GCF_002155105.1. The GC content of the type genome is 46.8 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Trichodesmium refinedo sp. nov.

Candidatus Trichodesmium refinedo (NL. fem. n. *refinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichodesmium sp010672085*. The type genome for the species is the GenBank assembly GCA_010672085.1. The GC content of the type genome is 36.22 % and the genome length is 10.55 Mbp.

Description of *Candidatus* Trichormus andabibula sp. nov.

Candidatus Trichormus andabibula (NL. fem. n. *andabibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichormus sp002896875*. The type genome for the species is the GenBank assembly RS_GCF_002896875.1. The GC content of the type genome is 40.84 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Trichormus cohoritica sp. nov.

Candidatus Trichormus cohoritica (NL. fem. n. *cohoritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichormus sp001597745*. The type genome for the species is the GenBank assembly RS_GCF_001597745.1. The GC content of the type genome is 41.41 % and the genome length is 5.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Estuarial environment".

Description of *Candidatus* Trichormus desulitio sp. nov.

Candidatus Trichormus desulitio (NL. fem. n. *desulitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichormus sp000009705*. The type genome for the species is the GenBank assembly RS_GCF_000009705.1. The GC content of the type genome is 41.27 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Trichormus episcimonia sp. nov.

Candidatus Trichormus episcimonia (NL. fem. n. *episcimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichormus sp000316645*. The type genome for the species is the GenBank assembly RS_GCF_000316645.1. The GC content of the type genome is 41.53 % and the genome length is 6.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "moderate hot spring".

Description of *Candidatus* Trichormus gerunilenta sp. nov.

Candidatus Trichormus gerunilenta (NL. fem. n. *gerunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichormus sp011332035*. The type genome for the species is the GenBank assembly GCA_011332035.1. The GC content of the type genome is 40.87 % and the genome length is 7.19 Mbp.

Description of *Candidatus* Trichormus inlacousia sp. nov.

Candidatus Trichormus inlacousia (NL. fem. n. *inlacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichormus sp013393945*. The type genome for the species is the GenBank assembly RS_GCF_013393945.1. The GC content of the type genome is 41.06 % and the genome length is 7.39 Mbp.

Description of *Candidatus* Trichormus retunitio sp. nov.

Candidatus Trichormus retunitio (NL. fem. n. *retunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trichormus sp001548375*. The type genome for the species is the GenBank assembly RS_GCF_002368215.1. The GC content of the type genome is 40.57 % and the genome length is 7.88 Mbp.

Description of *Candidatus* Triclana cilibousia sp. nov.

Candidatus Triclana cilibousia (NL. fem. n. *cilibousia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11957 sp003542935*. The type genome for the species is the GenBank assembly GCA_003542935.1. The GC content of the type genome is 51.55 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Triclana gen. nov.

Candidatus Triclana (NL. fem. n. *Triclana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11957*. The type species for the genus is *Candidatus* Triclana cilibousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Triclia insibimonas sp. nov.

Candidatus Triclia insibimonas (NL. fem. n. *insibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LCPA01 sp001003385*. The type genome for the species is the GenBank assembly GCA_001003385.1. The GC content of the type genome is 47.04 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Triclia gen. nov.

Candidatus Triclia (NL. fem. n. *Triclia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LCPA01*. The type species for the genus is *Candidatus* Triclia insibimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12108*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ranunidaceae.

Description of *Candidatus* Triclosa calipitas sp. nov.

Candidatus Triclosa calipitas (NL. fem. n. *calipitas* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2753565 sp002753565*. The type genome for the species is the GenBank assembly GCA_002753565.1. The GC content of the type genome is 52.3 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Triclosa gen. nov.

Candidatus Triclosa (NL. fem. n. *Triclosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2753565*. The type species for the genus is *Candidatus* Triclosa calipitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8363*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Conopidaceae.

Description of *Candidatus* Triclula veridentia sp. nov.

Candidatus Triclula veridentia (NL. fem. n. *veridentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPUJ01 sp903868205*. The type genome for the species is the GenBank assembly GCA_903868205.1. The GC content of the type genome is 34.43 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Triclula gen. nov.

Candidatus Triclula (NL. fem. n. *Triclula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPUJ01*. The type species for the genus is *Candidatus* Triclula veridentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA1-40-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunariaceae.

Description of *Candidatus* Trinickia absegibula sp. nov.

Candidatus Trinickia absegibula (NL. fem. n. *absegibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trinickia sp005144415*. The type genome for the species is the GenBank assembly RS_GCF_005144415.1. The GC content of the type genome is 64.59 % and the genome length is 7.24 Mbp.

Description of *Candidatus* Trinickia betacessa sp. nov.

Candidatus Trinickia betacessa (NL. fem. n. *betacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trinickia sp003390925*. The type genome for the species is the GenBank assembly RS_GCF_003390925.1. The GC content of the type genome is 63.32 % and the genome length is 6.7 Mbp.

Description of *Candidatus* Trinickia bicinisca sp. nov.

Candidatus Trinickia bicinisca (NL. fem. n. *bicinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trinickia sp004322045*. The type genome for the species is the GenBank assembly GCA_004322045.1. The GC content of the type genome is 62.91 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Trinickia depacitudo sp. nov.

Candidatus Trinickia depacitudo (NL. fem. n. *depacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trinickia sp013282575*. The type genome for the species is the GenBank assembly RS_GCF_013282575.1. The GC content of the type genome is 62.86 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Trinickia epiclatica sp. nov.

Candidatus Trinickia epiclatica (NL. fem. n. *epiclatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trinickia sp003367175*. The type genome for the species is the GenBank assembly RS_GCF_003367175.1. The GC content of the type genome is 63.24 % and the genome length is 7.37 Mbp.

Description of *Candidatus* Trinickia expenicula sp. nov.

Candidatus Trinickia expenicula (NL. fem. n. *expenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trinickia sp005280735*. The type genome for the species is the GenBank assembly RS_GCF_005280735.1. The GC content of the type genome is 63.08 % and the genome length is 8.58 Mbp.

Description of *Candidatus* Trinickia inmematica sp. nov.

Candidatus Trinickia inmematica (NL. fem. n. *inmematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trinickia sp003628145*. The type genome for the species is the GenBank assembly RS_GCF_003628145.1. The GC content of the type genome is 63.47 % and the genome length is 6.1 Mbp.

Description of *Candidatus* Triscella prognigena sp. nov.

Candidatus Triscella prognigena (NL. fem. n. *prognigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *62-47 sp001899255*. The type genome for the species is the GenBank assembly GCA_001899255.1. The GC content of the type genome is 61.94 % and the genome length is 4.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Triscella gen. nov.

Candidatus Triscella (NL. fem. n. *Triscella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *62-47*. The type species for the genus is *Candidatus* Triscella prognigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Triscia ignigatio sp. nov.

Candidatus Triscia ignigatio (NL. fem. n. *ignigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDAD01 sp013289335*. The type genome for the species is the GenBank assembly GCA_013289335.1. The GC content of the type genome is 33.04 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Triscia gen. nov.

Candidatus Triscia (NL. fem. n. *Triscia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDAD01*. The type species for the genus is *Candidatus* Triscia ignigatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Triscida affamitia sp. nov.

Candidatus Triscida affamitia (NL. fem. n. *affamitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACAED01 sp013389025*. The type genome for the species is the GenBank assembly GCA_013389025.1. The GC content of the type genome is 57.58 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Triscida gen. nov.

Candidatus Triscida (NL. fem. n. *Triscida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACAED01*. The type species for the genus is *Candidatus* Triscida affamitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Triscula assucimonia sp. nov.

Candidatus Triscula assucimonia (NL. fem. n. *assucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUK01 sp009773415*. The type genome for the species is the GenBank assembly GCA_009773415.1. The GC content of the type genome is 53.35 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Triscula gen. nov.

Candidatus Triscula (NL. fem. n. *Triscula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUK01*. The type species for the genus is *Candidatus* Triscula assucimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9935*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramosaceae.

Description of *Candidatus* Triscula manibicella sp. nov.

Candidatus Triscula manibicella (NL. fem. n. *manibicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUK01 sp012517735*. The type genome for the species is the GenBank assembly GCA_012517735.1. The GC content of the type genome is 55.42 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Troclana oblucatica sp. nov.

Candidatus Troclana oblucatica (NL. fem. n. *oblucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VEXF01 sp009391275*. The type genome for the species is the GenBank assembly GCA_009391275.1. The GC content of the type genome is 46.46 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Troclana gen. nov.

Candidatus Troclana (NL. fem. n. *Troclana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VEXF01*. The type species for the genus is *Candidatus* Troclana oblucatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2712585*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Soniparaceae.

Description of *Candidatus* Troclaria indiditoga sp. nov.

Candidatus Troclaria indiditoga (NL. fem. n. *indiditoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKPY01 sp007119305*. The type genome for the species is the GenBank assembly GCA_007119305.1. The GC content of the type genome is 72.58 % and the genome length is 3.4 Mbp.

Description of *Candidatus* Troclaria gen. nov.

Candidatus Troclaria (NL. fem. n. *Troclaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKPY01*. The type species for the genus is *Candidatus* Troclaria indiditoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Troclella tresvivita sp. nov.

Candidatus Troclella tresvivita (NL. fem. n. *tresvivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-11 sp005877525*. The type genome for the species is the GenBank assembly GCA_005877525.1. The GC content of the type genome is 57.73 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Troclella gen. nov.

Candidatus Troclella (NL. fem. n. *Troclella* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NS-11*. The type species for the genus is *Candidatus* Troclella tresvivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NS-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cadavulaceae.

Description of *Candidatus* Troclia expenugo sp. nov.

Candidatus Troclia expenugo (NL. fem. n. *expenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM11616 sp900761075*. The type genome for the species is the GenBank assembly RS_GCF_900761075.1. The GC content of the type genome is 41.99 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Troclia gen. nov.

Candidatus Troclia (NL. fem. n. *Troclia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM11616*. The type species for the genus is *Candidatus* Troclia expenugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Troclida revecastra sp. nov.

Candidatus Troclida revecastra (NL. fem. n. *revecastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSXZ01 sp011367735*. The type genome for the species is the GenBank assembly GCA_011367735.1. The GC content of the type genome is 55.54 % and the genome length is 4.68 Mbp.

Description of *Candidatus* Troclida gen. nov.

Candidatus Troclida (NL. fem. n. *Troclida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSXZ01*. The type species for the genus is *Candidatus* Troclida revecastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGW-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dapifulaceae.

Description of *Candidatus* Troclula pericicula sp. nov.

Candidatus Troclula pericicula (NL. fem. n. *pericicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABMNI01 sp013204605*. The type genome for the species is the GenBank assembly GCA_013204605.1. The GC content of the type genome is 46.12 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Troclula gen. nov.

Candidatus Troclula (NL. fem. n. *Troclula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABMNI01*. The type species for the genus is *Candidatus* Troclula pericicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tropicibacter imbelilenta sp. nov.

Candidatus Tropicibacter imbelilenta (NL. fem. n. *imbelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tropicibacter sp003667315*. The type genome for the species is the GenBank assembly RS_GCF_003667315.2. The GC content of the type genome is 64.07 % and the genome length is 5.04 Mbp.

Description of *Candidatus* Tropicimonas regififorma sp. nov.

Candidatus Tropicimonas regififorma (NL. fem. n. *regififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tropicimonas sp004146235*. The type genome for the species is the GenBank assembly RS_GCF_004146235.1. The GC content of the type genome is 64.83 % and the genome length is 5.46 Mbp.

Description of *Candidatus* Tropicimonas revecitrix sp. nov.

Candidatus Tropicimonas revecitrix (NL. fem. n. *revecitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tropicimonas sp003390845*. The type genome for the species is the GenBank assembly RS_GCF_003390845.1. The GC content of the type genome is 65.55 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Truepera benevago sp. nov.

Candidatus Truepera benevago (NL. fem. n. *benevago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Truepera sp902806425*. The type genome for the species is the GenBank assembly GCA_902806425.1. The GC content of the type genome is 62.04 % and the genome length is 3.84 Mbp.

Description of *Candidatus* Trueperella innulastra sp. nov.

Candidatus Trueperella innulastra (NL. fem. n. *innulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Trueperella sp012727825*. The type genome for the species is the GenBank assembly GCA_012727825.1. The GC content of the type genome is 58.96 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Tsukamurella anatrigena sp. nov.

Candidatus Tsukamurella anatrigena (NL. fem. n. *anatrigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tsukamurella sp000312385*. The type genome for the species is the GenBank assembly RS_GCF_000312385.1. The GC content of the type genome is 71.12

% and the genome length is 4.5 Mbp.

Description of *Candidatus* Tsukamurella femelilenta sp. nov.

Candidatus Tsukamurella femelilenta (NL. fem. n. *femelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tsukamurella sp903970215*. The type genome for the species is the GenBank assembly GCA_903970215.1. The GC content of the type genome is 68.29 % and the genome length is 4.99 Mbp.

Description of *Candidatus* Tsuneonella adtagisca sp. nov.

Candidatus Tsuneonella adtagisca (NL. fem. n. *adtagisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tsuneonella sp003626915*. The type genome for the species is the GenBank assembly RS_GCF_003626915.1. The GC content of the type genome is 67.01 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Tsuneonella inobsitica sp. nov.

Candidatus Tsuneonella inobsitica (NL. fem. n. *inobsitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tsuneonella sp007065885*. The type genome for the species is the GenBank assembly RS_GCF_007065885.1. The GC content of the type genome is 65.63 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Tsuneonella intenatica sp. nov.

Candidatus Tsuneonella intenatica (NL. fem. n. *intenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tsuneonella sp003605755*. The type genome for the species is the GenBank assembly RS_GCF_003605755.1. The GC content of the type genome is 60.87 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Tubicana inmoredo sp. nov.

Candidatus Tubicana inmoredo (NL. fem. n. *inmoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BR149 sp011812965*. The type genome for the species is the GenBank assembly RS_GCF_011812965.1. The GC content of the type genome is 40.39 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Tubicana gen. nov.

Candidatus Tubicana (NL. fem. n. *Tubicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BR149*. The type species for the genus is *Candidatus* Tubicana inmoredo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRBN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Repurellaceae.

Description of *Candidatus* Tubicana notabifica sp. nov.

Candidatus Tubicana notabifica (NL. fem. n. *notabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BR149 sp011813005*. The type genome for the species is the GenBank assembly RS_GCF_011813005.1. The GC content of the type genome is 45.77 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Tubicana siticibra sp. nov.

Candidatus Tubicana siticibra (NL. fem. n. *siticibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BR149 sp011812995*. The type genome for the species is the GenBank assembly RS_GCF_011812995.1. The GC content of the type genome is 38.52 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Tubicella bicapivita sp. nov.

Candidatus Tubicella bicapivita (NL. fem. n. *bicapivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQEU01 sp903870905*. The type genome for the species is the GenBank assembly GCA_903870375.1. The GC content of the type genome is 64.26 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Tubicella gen. nov.

Candidatus Tubicella (NL. fem. n. *Tubicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQEU01*. The type species for the genus is *Candidatus* Tubicella bicapivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RAAP-2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Buxifanaceae.

Description of *Candidatus* Tubicella bicodivita sp. nov.

Candidatus Tubicella bicodivita (NL. fem. n. *bicodivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQEU01 sp903918025*. The type genome for the species is the GenBank assembly GCA_903834385.1. The GC content of the type genome is 57.82 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Tubicella inaspitia sp. nov.

Candidatus Tubicella inaspitia (NL. fem. n. *inaspitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQEU01 sp903874965*. The type genome for the species is the GenBank assembly GCA_903874965.1. The GC content of the type genome is 57.56 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Tubicia mirifentia sp. nov.

Candidatus Tubicia mirifentia (NL. fem. n. *mirifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-194 sp000432915*. The type genome for the species is the GenBank assembly GCA_003539645.1. The GC content of the type genome is 44.09 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Tubicia gen. nov.

Candidatus Tubicia (NL. fem. n. *Tubicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-194*. The type species for the genus is *Candidatus* Tubicia mirifentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Tubicia remuletta sp. nov.

Candidatus Tubicia remuletta (NL. fem. n. *remuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-194 sp002441865*. The type genome for the species is the GenBank assembly GCA_002441865.1. The GC content of the type genome is 44.79 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Tubicida curabilenta sp. nov.

Candidatus Tubicida curabilenta (NL. fem. n. *curabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1875 sp002338125*. The type genome for the species is the GenBank assembly GCA_002338125.1. The GC content of the type genome is 37.78 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Tubicida gen. nov.

Candidatus Tubicida (NL. fem. n. *Tubicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1875*. The type species for the genus is *Candidatus* Tubicida

curabilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1875*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicidaceae.

Description of *Candidatus* Tubicidaceae fam. nov.

Candidatus Tubicidaceae (NL. fem. n. *Tubicidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1875.* The type genus for the taxon is *Candidatus* Tubicida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1875*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tubicidales.

Description of *Candidatus* Tubicidales ord. nov.

Candidatus Tubicidales (NL. fem. n. *Tubicidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1875.* The type genus for the taxon is *Candidatus* Tubicida .

According to the original version of GTDB R06-RS202, this family belongs to the class *CPR2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defanosae.

Description of *Candidatus* Tubicosa cohonivita sp. nov.

Candidatus Tubicosa cohonivita (NL. fem. n. *cohonivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8317 sp002469865*. The type genome for the species is the GenBank assembly GCA_003332025.1. The GC content of the type genome is 51.17 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Tubicosa gen. nov.

Candidatus Tubicosa (NL. fem. n. *Tubicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA8317*. The type species for the genus is *Candidatus* Tubicosa cohonivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8317*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicosaceae.

Description of *Candidatus* Tubicosaceae fam. nov.

Candidatus Tubicosaceae (NL. fem. n. *Tubicosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8317.* The type genus for the taxon is *Candidatus* Tubicosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8317*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tubicosales.

Description of *Candidatus* Tubicosales ord. nov.

Candidatus Tubicosales (NL. fem. n. *Tubicosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8317.* The type genus for the taxon is *Candidatus* Tubicosa .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Tubicula conamivita sp. nov.

Candidatus Tubicula conamivita (NL. fem. n. *conamivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKPH01 sp007119615*. The type genome for the species is the GenBank assembly GCA_007124665.1. The GC content of the type genome is 49.27 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Tubicula gen. nov.

Candidatus Tubicula (NL. fem. n. *Tubicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKPH01*. The type species for the genus is *Candidatus* Tubicula

conamivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Tubicula evangedo sp. nov.

Candidatus Tubicula evangedo (NL. fem. n. *evangedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKPH01 sp003562605*. The type genome for the species is the GenBank assembly GCA_003562605.1. The GC content of the type genome is 46.6 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Tumebacillus cerifugo sp. nov.

Candidatus Tumebacillus cerifugo (NL. fem. n. *cerifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Tumebacillus_A sp004340785*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004340785.1. The GC content of the type genome is 57.95 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Tumefana immatiforma sp. nov.

Candidatus Tumefana immatiforma (NL. fem. n. *immatiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEN01 sp011176545*. The type genome for the species is the GenBank assembly GCA_011176545.1. The GC content of the type genome is 61.78 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Tumefana gen. nov.

Candidatus Tumefana (NL. fem. n. *Tumefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *DUEN01*. The type species for the genus is *Candidatus* Tumefana immatiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUEN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefanaceae.

Description of *Candidatus* Tumefanaceae fam. nov.

Candidatus Tumefanaceae (NL. fem. n. *Tumefanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUEN01*. The type genus for the taxon is *Candidatus* Tumefana .

According to the original version of GTDB R06-RS202, this family belongs to the order *DUEN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tumefanales.

Description of *Candidatus* Tumefanales ord. nov.

Candidatus Tumefanales (NL. fem. n. *Tumefanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUEN01*. The type genus for the taxon is *Candidatus* Tumefana .

According to the GTDB R06-RS202, this order belongs to the class *Anaerolineae*.

Description of *Candidatus* Tumefana penecitura sp. nov.

Candidatus Tumefana penecitura (NL. fem. n. *penecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUEN01 sp013152435*. The type genome for the species is the GenBank assembly GCA_013152435.1. The GC content of the type genome is 64.26 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Tumefella curotibra sp. nov.

Candidatus Tumefella curotibra (NL. fem. n. *curotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GWA1-39-11 sp001782675*. The type genome for the species is the GenBank assembly GCA_001782255.1. The GC content of the type genome is 38.95 % and the genome length is 0.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Tumefella gen. nov.

Candidatus Tumefella (NL. fem. n. *Tumefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-39-11*. The type species for the genus is *Candidatus* Tumefella curotibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA1-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefellaceae.

Description of *Candidatus* Tumefellaceae fam. nov.

Candidatus Tumefellaceae (NL. fem. n. *Tumefellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWA1-39-11.* The type genus for the taxon is *Candidatus* Tumefella .

According to GTDB R06-RS202, this family belongs to the order *Levybacterales*.

Description of *Candidatus* Tumefella genufitrix sp. nov.

Candidatus Tumefella genufitrix (NL. fem. n. *genufitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-39-11 sp001782235*. The type genome for the species is the GenBank assembly GCA_001782345.1. The GC content of the type genome is 39.96 % and the genome length is 1.0 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Tumefida hexagitia sp. nov.

Candidatus Tumefida hexagitia (NL. fem. n. *hexagitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA890 sp002731215*. The type genome for the species is the GenBank assembly GCA_002731215.1. The GC content of the type genome is 54.48 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Tumefida gen. nov.

Candidatus Tumefida (NL. fem. n. *Tumefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA890*. The type species for the genus is *Candidatus* Tumefida hexagitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA890*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefidaceae.

Description of *Candidatus* Tumefidaceae fam. nov.

Candidatus Tumefidaceae (NL. fem. n. *Tumefidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA890.* The type genus for the taxon is *Candidatus* Tumefida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA890*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Tumefidales.

Description of *Candidatus* Tumefidales ord. nov.

Candidatus Tumefidales (NL. fem. n. *Tumefidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA890.* The type genus for the taxon is *Candidatus* Tumefida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA890*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Tumefidae.

Description of *Candidatus* Tumefidae class. nov.

Candidatus Tumefidae (NL. fem. n. *c__Tumefidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA890.* The type genus for the taxon is *Candidatus* Tumefida .

According to GTDB R06-RS202, this class belongs to the phylum *Acidobacteriota*.

Description of *Candidatus* Tumefida levifivita sp. nov.

Candidatus Tumefida levifivita (NL. fem. n. *levifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA890 sp002722645*. The type genome for the species is the GenBank assembly GCA_002722645.1. The GC content of the type genome is 55.76 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Tumefosa accomedo sp. nov.

Candidatus Tumefosa accomedo (NL. fem. n. *accomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-128 sp011056645*. The type genome for the species is the GenBank assembly GCA_011056645.1. The GC content of the type genome is 35.13 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Tumefosa gen. nov.

Candidatus Tumefosa (NL. fem. n. *Tumefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *34-128*. The type species for the genus is *Candidatus* Tumefosa accomedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *34-128*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefosaceae.

Description of *Candidatus* Tumefosaceae fam. nov.

Candidatus Tumefosaceae (NL. fem. n. *Tumefosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *34-128.* The type genus for the taxon is *Candidatus* Tumefosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SB-45*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nidifidales.

Description of *Candidatus* Tumefosa adoscigena sp. nov.

Candidatus Tumefosa adoscigena (NL. fem. n. *adoscigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-128 sp003451675*. The type genome for the species is the GenBank assembly GCA_003451675.1. The GC content of the type genome is 34.25 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Tumefosa decenugo sp. nov.

Candidatus Tumefosa decenugo (NL. fem. n. *decenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-128 sp003527405*. The type genome for the species is the GenBank assembly GCA_003527405.1. The GC content of the type genome is 34.81 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Tumefosa femelitura sp. nov.

Candidatus Tumefosa femelitura (NL. fem. n. *femelitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-128 sp002849045*. The type genome for the species is the GenBank assembly GCA_002849045.2. The GC content of the type genome is 34.83 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Tumefosa inmemimonas sp. nov.

Candidatus Tumefosa inmemimonas (NL. fem. n. *inmemimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-128 sp000405345*. The type genome for the species is the GenBank

assembly GCA_000405345.1. The GC content of the type genome is 34.95 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Tumefosa letifedo sp. nov.

Candidatus Tumefosa letifedo (NL. fem. n. *letifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-128 sp001773955*. The type genome for the species is the GenBank assembly GCA_001773955.1. The GC content of the type genome is 35.36 % and the genome length is 1.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 19ft depth".

Description of *Candidatus* Tumefosa regigessa sp. nov.

Candidatus Tumefosa regigessa (NL. fem. n. *regigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-128 sp002084865*. The type genome for the species is the GenBank assembly GCA_002084865.1. The GC content of the type genome is 35.12 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Tumefosa smegmitoga sp. nov.

Candidatus Tumefosa smegmitoga (NL. fem. n. *smegmitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-128 sp000405605*. The type genome for the species is the GenBank assembly GCA_000405605.1. The GC content of the type genome is 34.58 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Tumefosa vatilatio sp. nov.

Candidatus Tumefosa vatilatio (NL. fem. n. *vatilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *34-128 sp003575245*. The type genome for the species is the GenBank assembly GCA_003575245.1. The GC content of the type genome is 35.2 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Tumefula cotenimonia sp. nov.

Candidatus Tumefula cotenimonia (NL. fem. n. *cotenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA966 sp002737585*. The type genome for the species is the GenBank assembly GCA_002737585.1. The GC content of the type genome is 59.81 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Tumefula gen. nov.

Candidatus Tumefula (NL. fem. n. *Tumefula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA966*. The type species for the genus is *Candidatus* Tumefula cotenimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Tumefula luceritica sp. nov.

Candidatus Tumefula luceritica (NL. fem. n. *luceritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA966 sp002292895*. The type genome for the species is the GenBank assembly GCA_003669765.1. The GC content of the type genome is 60.15 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Turibaria carecitia sp. nov.

Candidatus Turibaria carecitia (NL. fem. n. *carecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp002361365*. The type genome for the species is the GenBank assembly GCA_002361365.1. The GC content of the type genome is 39.7 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Turibaria gen. nov.

Candidatus Turibaria (NL. fem. n. *Turibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG410*. The type species for the genus is *Candidatus* Turibaria carecitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-239*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobosaceae.

Description of *Candidatus* Turibaria casigibula sp. nov.

Candidatus Turibaria casigibula (NL. fem. n. *casigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp900313155*. The type genome for the species is the GenBank assembly GCA_900313155.1. The GC content of the type genome is 41.14 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Turibaria depopitica sp. nov.

Candidatus Turibaria depopitica (NL. fem. n. *depopitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp902763905*. The type genome for the species is the GenBank assembly GCA_902803525.1. The GC content of the type genome is 40.88 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Turibaria domigitoga sp. nov.

Candidatus Turibaria domigitoga (NL. fem. n. *domigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp902796625*. The type genome for the species is the GenBank assembly GCA_902796625.1. The GC content of the type genome is 39.4 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Turibaria hegumitio sp. nov.

Candidatus Turibaria hegumitio (NL. fem. n. *hegumitio* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp900320035*. The type genome for the species is the GenBank assembly GCA_902796765.1. The GC content of the type genome is 40.23 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Turibaria loripitas sp. nov.

Candidatus Turibaria loripitas (NL. fem. n. *loripitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp900769705*. The type genome for the species is the GenBank assembly RS_GCF_900769705.1. The GC content of the type genome is 40.38 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Turibaria mahemitoga sp. nov.

Candidatus Turibaria mahemitoga (NL. fem. n. *mahemitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp902763155*. The type genome for the species is the GenBank assembly GCA_902763155.1. The GC content of the type genome is 40.01 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Turibaria navifibra sp. nov.

Candidatus Turibaria navifibra (NL. fem. n. *navifibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp900318605*. The type genome for the species is the GenBank assembly GCA_900318605.1. The GC content of the type genome is 39.46 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Turibaria omnifimonia sp. nov.

Candidatus Turibaria omnifimonia (NL. fem. n. *omnifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp902793695*. The type genome for the species is the GenBank assembly GCA_902793695.1. The GC content of the type genome is 42.74 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Turibaria recogiforma sp. nov.

Candidatus Turibaria recogiforma (NL. fem. n. *recogiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp902788365*. The type genome for the species is the GenBank assembly GCA_902777665.1. The GC content of the type genome is 42.53 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Turibaria reforitica sp. nov.

Candidatus Turibaria reforitica (NL. fem. n. *reforitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp900313185*. The type genome for the species is the GenBank assembly GCA_900313185.1. The GC content of the type genome is 38.33 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Turibaria salubitura sp. nov.

Candidatus Turibaria salubitura (NL. fem. n. *salubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp900553115*. The type genome for the species is the GenBank assembly GCA_900553115.1. The GC content of the type genome is 40.65 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Turibaria vocametta sp. nov.

Candidatus Turibaria vocametta (NL. fem. n. *vocametta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG410 sp902795745*. The type genome for the species is the GenBank assembly GCA_902795745.1. The GC content of the type genome is 38.8 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Turibella cosigetta sp. nov.

Candidatus Turibella cosigetta (NL. fem. n. *cosigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12472 sp003487265*. The type genome for the species is the GenBank assembly GCA_001788675.1. The GC content of the type genome is 43.27 % and the genome length is 0.85 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Turibella gen. nov.

Candidatus Turibella (NL. fem. n. *Turibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12472*. The type species for the genus is *Candidatus* Turibella cosigetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12028*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semimidaceae.

Description of *Candidatus* Turibia capabousia sp. nov.

Candidatus Turibia capabousia (NL. fem. n. *capabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp004555855*. The type genome for the species is the GenBank assembly GCA_004555855.1. The GC content of the type genome is 49.85 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Turibia gen. nov.

Candidatus Turibia (NL. fem. n. *Turibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-115*. The type species for the genus is *Candidatus* Turibia capabousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Turibia divoritio sp. nov.

Candidatus Turibia divoritio (NL. fem. n. *divoritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp900768705*. The type genome for the species is the GenBank assembly RS_GCF_900768705.1. The GC content of the type genome is 46.39 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Turibia excoritura sp. nov.

Candidatus Turibia excoritura (NL. fem. n. *excoritura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp900766795*. The type genome for the species is the GenBank assembly RS_GCF_900766795.1. The GC content of the type genome is 51.92 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Turibia infucedo sp. nov.

Candidatus Turibia infucedo (NL. fem. n. *infucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp900768125*. The type genome for the species is the GenBank assembly RS_GCF_900768125.1. The GC content of the type genome is 53.37 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Turibia innoxivita sp. nov.

Candidatus Turibia innoxivita (NL. fem. n. *innoxivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp004555635*. The type genome for the species is the GenBank assembly GCA_004555635.1. The GC content of the type genome is 53.23 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Turibia inredilega sp. nov.

Candidatus Turibia inredilega (NL. fem. n. *inredilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp002304735*. The type genome for the species is the GenBank assembly GCA_002304735.1. The GC content of the type genome is 49.26 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Turibia loripitrix sp. nov.

Candidatus Turibia loripitrix (NL. fem. n. *loripitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp000432175*. The type genome for the species is the GenBank assembly GCA_000432175.1. The GC content of the type genome is 52.16 % and the genome length is 2.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Turibia nosocedo sp. nov.

Candidatus Turibia nosocedo (NL. fem. n. *nosocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp002425305*. The type genome for the species is the GenBank assembly GCA_002425305.1. The GC content of the type genome is 48.93 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Turibia subucibula sp. nov.

Candidatus Turibia subucibula (NL. fem. n. *subucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp002492075*. The type genome for the species is the GenBank assembly GCA_002492075.1. The GC content of the type genome is 49.16 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Turibia tegimiforma sp. nov.

Candidatus Turibia tegimiforma (NL. fem. n. *tegimiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp004554555*. The type genome for the species is the GenBank assembly GCA_004554555.1. The GC content of the type genome is 50.73 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Turibia venucessa sp. nov.

Candidatus Turibia venucessa (NL. fem. n. *venucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp003516865*. The type genome for the species is the GenBank assembly RS_GCF_900754575.1. The GC content of the type genome is 48.72 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Turibia videlugo sp. nov.

Candidatus Turibia videlugo (NL. fem. n. *videlugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp003507295*. The type genome for the species is the GenBank assembly GCA_003507295.1. The GC content of the type genome is 54.62 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Turibia viginentia sp. nov.

Candidatus Turibia viginentia (NL. fem. n. *viginentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-115 sp003531585*. The type genome for the species is the GenBank assembly GCA_900539355.1. The GC content of the type genome is 52.78 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Turibida detoribra sp. nov.

Candidatus Turibida detoribra (NL. fem. n. *detoribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABWBH01 sp013360585*. The type genome for the species is the GenBank assembly GCA_013360585.1. The GC content of the type genome is 65.5 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Turibida gen. nov.

Candidatus Turibida (NL. fem. n. *Turibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABWBH01*. The type species for the genus is *Candidatus* Turibida detoribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1845*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cacomariaceae.

Description of *Candidatus* Turicana resuletta sp. nov.

Candidatus Turicana resuletta (NL. fem. n. *resuletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACDDA01 sp013817245*. The type genome for the species is the GenBank assembly GCA_013817245.1. The GC content of the type genome is 43.86 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Turicana gen. nov.

Candidatus Turicana (NL. fem. n. *Turicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACDDA01*. The type species for the genus is *Candidatus* Turicana resuletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC5015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semiganaceae.

Description of *Candidatus* Turicaria didacedo sp. nov.

Candidatus Turicaria didacedo (NL. fem. n. *didacedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-36-17 sp000992345*. The type genome for the species is the GenBank assembly GCA_000991445.1. The GC content of the type genome is 37.31 % and the genome length is 0.68 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Turicaria gen. nov.

Candidatus Turicaria (NL. fem. n. *Turicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-36-17*. The type species for the genus is *Candidatus* Turicaria didacedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-36-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turicariaceae.

Description of *Candidatus* Turicariaceae fam. nov.

Candidatus Turicariaceae (NL. fem. n. *Turicariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-36-17.* The type genus for the taxon is *Candidatus* Turicaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWC2-36-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Turicariales.

Description of *Candidatus* Turicariales ord. nov.

Candidatus Turicariales (NL. fem. n. *Turicariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-36-17.* The type genus for the taxon is *Candidatus* Turicaria .

According to the GTDB R06-RS202, this order belongs to the class *Paceibacteria*.

Description of *Candidatus* Turicia armifastra sp. nov.

Candidatus Turicia armifastra (NL. fem. n. *armifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TCS56 sp001577055*. The type genome for the species is the GenBank assembly GCA_001577055.1. The GC content of the type genome is 50.55 % and the genome length is 1.94 Mbp. The isolation source for the NCBI BioSample associated

with the type genome is descibed as "biofilm from deap sea brine pool".

Description of *Candidatus* Turicia gen. nov.

Candidatus Turicia (NL. fem. n. *Turicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TCS56*. The type species for the genus is *Candidatus* Turicia armifastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS56*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turiciaceae.

Description of *Candidatus* Turiciaceae fam. nov.

Candidatus Turiciaceae (NL. fem. n. *Turiciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TCS56.* The type genus for the taxon is *Candidatus* Turicia .

According to GTDB R06-RS202, this family belongs to the order *Marinisomatales*.

Description of *Candidatus* Turicibacter derelilenta sp. nov.

Candidatus Turicibacter derelilenta (NL. fem. n. *derelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Turicibacter sp001543345*. The type genome for the species is the GenBank assembly RS_GCF_001405075.1. The GC content of the type genome is 34.23 % and the genome length is 2.73 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Turicibacter dicimastra sp. nov.

Candidatus Turicibacter dicimastra (NL. fem. n. *dicimastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Turicibacter sp003486705*. The type genome for the species is the GenBank assembly GCA_003486705.1. The GC content of the type genome is 34.79 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Turicibacter malivicella sp. nov.

Candidatus Turicibacter malivicella (NL. fem. n. *malivicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Turicibacter sp002493395*. The type genome for the species is the GenBank assembly GCA_002493395.1. The GC content of the type genome is 36.4 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Turicibacter nubecentia sp. nov.

Candidatus Turicibacter nubecentia (NL. fem. n. *nubecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Turicibacter sp002311155*. The type genome for the species is the GenBank assembly RS_GCF_009935875.1. The GC content of the type genome is 36.85 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Turicida denigessa sp. nov.

Candidatus Turicida denigessa (NL. fem. n. *denigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002772895 sp002772895*. The type genome for the species is the GenBank assembly GCA_002772895.1. The GC content of the type genome is 35.8 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Turicida gen. nov.

Candidatus Turicida (NL. fem. n. *Turicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002772895*. The type species for the genus is *Candidatus* Turicida denigessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002772895*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turicidaceae.

Description of *Candidatus* Turicidaceae fam. nov.

Candidatus Turicidaceae (NL. fem. n. *Turicidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002772895.* The type genus for the taxon is *Candidatus* Turicida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SG8-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Labecellales.

Description of *Candidatus* Turicimonas mahelugo sp. nov.

Candidatus Turicimonas mahelugo (NL. fem. n. *mahelugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Turicimonas sp900542195*. The type genome for the species is the GenBank assembly GCA_900542195.1. The GC content of the type genome is 44.35 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Turicosa bipinentia sp. nov.

Candidatus Turicosa bipinentia (NL. fem. n. *bipinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-51 sp005885035*. The type genome for the species is the GenBank assembly GCA_005883145.1. The GC content of the type genome is 68.57 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Turicosa gen. nov.

Candidatus Turicosa (NL. fem. n. *Turicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-51*. The type species for the genus is *Candidatus* Turicosa bipinentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Navifellaceae.

Description of *Candidatus* Turicosa nubigitas sp. nov.

Candidatus Turicosa nubigitas (NL. fem. n. *nubigitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-51 sp005884925*. The type genome for the species is the GenBank assembly GCA_005884925.1. The GC content of the type genome is 68.58 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Turicosa vepalifica sp. nov.

Candidatus Turicosa vepalifica (NL. fem. n. *vepalifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-51 sp005883885*. The type genome for the species is the GenBank assembly GCA_005883885.1. The GC content of the type genome is 68.97 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Turicula adessimonas sp. nov.

Candidatus Turicula adessimonas (NL. fem. n. *adessimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-267 sp900551865*. The type genome for the species is the GenBank assembly GCA_900551865.1. The GC content of the type genome is 46.16 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Turicula gen. nov.

Candidatus Turicula (NL. fem. n. *Turicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-267*. The type species for the genus is *Candidatus* Turicula adessimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-239*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catobosaceae.

Description of *Candidatus* Turicula figilitura sp. nov.

Candidatus Turicula figilitura (NL. fem. n. *figilitura* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-267 sp001917135*. The type genome for the species is the GenBank assembly GCA_000434135.1. The GC content of the type genome is 46.91 % and the genome length is 1.72 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Turicula inambilenta sp. nov.

Candidatus Turicula inambilenta (NL. fem. n. *inambilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-267 sp002353835*. The type genome for the species is the GenBank assembly GCA_002353835.1. The GC content of the type genome is 39.16 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Turicula solipimonia sp. nov.

Candidatus Turicula solipimonia (NL. fem. n. *solipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-267 sp902763185*. The type genome for the species is the GenBank assembly GCA_902763185.1. The GC content of the type genome is 39.6 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Turifana vocifitio sp. nov.

Candidatus Turifana vocifitio (NL. fem. n. *vocifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-337 sp011050235*. The type genome for the species is the GenBank assembly GCA_011050225.1. The GC content of the type genome is 63.71 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Turifana gen. nov.

Candidatus Turifana (NL. fem. n. *Turifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HyVt-337*. The type species for the genus is *Candidatus* Turifana vocifitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-33*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Megalanaceae.

Description of *Candidatus* Turifaria cimitousia sp. nov.

Candidatus Turifaria cimitousia (NL. fem. n. *cimitousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin89 sp013202615*. The type genome for the species is the GenBank assembly GCA_013202615.1. The GC content of the type genome is 53.74 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Turifaria gen. nov.

Candidatus Turifaria (NL. fem. n. *Turifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin89*. The type species for the genus is *Candidatus* Turifaria cimitousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-60-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunidaceae.

Description of *Candidatus* Turifaria cosigimonia sp. nov.

Candidatus Turifaria cosigimonia (NL. fem. n. *cosigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin89 sp004375725*. The type genome for the species is the GenBank assembly GCA_004375725.1. The GC content of the type genome is 53.92 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Turifaria revulatio sp. nov.

Candidatus Turifaria revulatio (NL. fem. n. *revulatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin89 sp011174815*. The type genome for the species is the GenBank assembly GCA_011174815.1. The GC content of the type genome is 53.95 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Turifella fetifivita sp. nov.

Candidatus Turifella fetifivita (NL. fem. n. *fetifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUUT01 sp903902445*. The type genome for the species is the GenBank assembly GCA_903835355.1. The GC content of the type genome is 37.8 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Turifella gen. nov.

Candidatus Turifella (NL. fem. n. *Turifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUUT01*. The type species for the genus is *Candidatus* Turifella fetifivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWF2-35-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refuliaceae.

Description of *Candidatus* Turifia tribrousia sp. nov.

Candidatus Turifia tribrousia (NL. fem. n. *tribrousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ga0077523 sp001464695*. The type genome for the species is the GenBank assembly GCA_001464695.1. The GC content of the type genome is 65.88 % and the genome length is 4.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Turifia gen. nov.

Candidatus Turifia (NL. fem. n. *Turifia* a name created arbitrarily, while preserving the

phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ga0077523*. The type species for the genus is *Candidatus* Turifia tribrousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ga0077523*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turifiaceae.

Description of *Candidatus* Turifiaceae fam. nov.

Candidatus Turifiaceae (NL. fem. n. *Turifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ga0077523.* The type genus for the taxon is *Candidatus* Turifia .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Turifida artilentia sp. nov.

Candidatus Turifida artilentia (NL. fem. n. *artilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp903821415*. The type genome for the species is the GenBank assembly GCA_903821415.1. The GC content of the type genome is 34.57 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Turifida gen. nov.

Candidatus Turifida (NL. fem. n. *Turifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8515*. The type species for the genus is *Candidatus* Turifida artilentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9973*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relaposaceae.

Description of *Candidatus* Turifida bimotitas sp. nov.

Candidatus Turifida bimotitas (NL. fem. n. *bimotitas* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp903929735*. The type genome for the species is the GenBank assembly GCA_903929735.1. The GC content of the type genome is 31.57 % and the genome length is 0.76 Mbp.

Description of *Candidatus* Turifida coticitudo sp. nov.

Candidatus Turifida coticitudo (NL. fem. n. *coticitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp000505065*. The type genome for the species is the GenBank assembly GCA_003543255.1. The GC content of the type genome is 31.17 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Turifida decatatio sp. nov.

Candidatus Turifida decatatio (NL. fem. n. *decatatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp003155695*. The type genome for the species is the GenBank assembly GCA_003155695.1. The GC content of the type genome is 37.48 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Turifida demulicula sp. nov.

Candidatus Turifida demulicula (NL. fem. n. *demulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp903834665*. The type genome for the species is the GenBank assembly GCA_903834665.1. The GC content of the type genome is 31.17 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Turifida detotitica sp. nov.

Candidatus Turifida detotitica (NL. fem. n. *detotitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp903854645*. The type genome for the species is the GenBank assembly GCA_903854645.1. The GC content of the type genome is 35.1 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Turifida detunax sp. nov.

Candidatus Turifida detunax (NL. fem. n. *detunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp903862375*. The type genome for the species is the GenBank assembly GCA_903820225.1. The GC content of the type genome is 31.38 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Turifida dupunifica sp. nov.

Candidatus Turifida dupunifica (NL. fem. n. *dupunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp000990325*. The type genome for the species is the GenBank assembly GCA_003542455.1. The GC content of the type genome is 34.1 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Turifida offirimonia sp. nov.

Candidatus Turifida offirimonia (NL. fem. n. *offirimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp903891365*. The type genome for the species is the GenBank assembly GCA_903891365.1. The GC content of the type genome is 37.82 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Turifida regifatica sp. nov.

Candidatus Turifida regifatica (NL. fem. n. *regifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp000991405*. The type genome for the species is the GenBank assembly GCA_000991405.1. The GC content of the type genome is 36.19 % and the genome length is 0.8 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Turifida saxifigena sp. nov.

Candidatus Turifida saxifigena (NL. fem. n. *saxifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8515 sp903825265*. The type genome for the species is the GenBank assembly GCA_903825265.1. The GC content of the type genome is 31.15 % and the genome length is 0.52 Mbp.

Description of *Candidatus* Turifosa hemidago sp. nov.

Candidatus Turifosa hemidago (NL. fem. n. *hemidago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8248 sp002685755*. The type genome for the species is the GenBank assembly GCA_002685755.1. The GC content of the type genome is 60.1 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Turifosa gen. nov.

Candidatus Turifosa (NL. fem. n. *Turifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8248*. The type species for the genus is *Candidatus* Turifosa hemidago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turifosaceae.

Description of *Candidatus* Turifosaceae fam. nov.

Candidatus Turifosaceae (NL. fem. n. *Turifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8248.* The type genus for the taxon is *Candidatus* Turifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Turifosales.

Description of *Candidatus* Turifosales ord. nov.

Candidatus Turifosales (NL. fem. n. *Turifosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8248.* The type genus for the taxon is *Candidatus* Turifosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Turifosae.

Description of *Candidatus* Turifosae class. nov.

Candidatus Turifosae (NL. fem. n. *c__Turifosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8248.* The type genus for the taxon is *Candidatus* Turifosa .

According to GTDB R06-RS202, this class belongs to the phylum *Nitrospinota_A*.

Description of *Candidatus* Turifula cilotedo sp. nov.

Candidatus Turifula cilotedo (NL. fem. n. *cilotedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPFQ01 sp903864395*. The type genome for the species is the GenBank assembly GCA_903864395.1. The GC content of the type genome is 45.4 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Turifula gen. nov.

Candidatus Turifula (NL. fem. n. *Turifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIPFQ01*. The type species for the genus is *Candidatus* Turifula cilotedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Turifula omnimousia sp. nov.

Candidatus Turifula omnimousia (NL. fem. n. *omnimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIPFQ01 sp013285585*. The type genome for the species is the GenBank assembly GCA_013285585.1. The GC content of the type genome is 48.18 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Turilana aclasitio sp. nov.

Candidatus Turilana aclasitio (NL. fem. n. *aclasitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1100 sp002718935*. The type genome for the species is the GenBank assembly GCA_002718935.1. The GC content of the type genome is 57.62 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Turilana gen. nov.

Candidatus Turilana (NL. fem. n. *Turilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1100*. The type species for the genus is *Candidatus* Turilana aclasitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1100*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turilanaceae.

Description of *Candidatus* Turilanaceae fam. nov.

Candidatus Turilanaceae (NL. fem. n. *Turilanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1100.* The type genus for the taxon is *Candidatus* Turilana .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Turilana acrolibula sp. nov.

Candidatus Turilana acrolibula (NL. fem. n. *acrolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1100 sp002719595*. The type genome for the species is the GenBank assembly GCA_002719595.1. The GC content of the type genome is 46.15 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Turilana citipatio sp. nov.

Candidatus Turilana citipatio (NL. fem. n. *citipatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1100 sp003509725*. The type genome for the species is the GenBank assembly GCA_002313555.1. The GC content of the type genome is 46.94 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Turilana dececatio sp. nov.

Candidatus Turilana dececatio (NL. fem. n. *dececatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1100 sp002710335*. The type genome for the species is the GenBank assembly GCA_002710335.1. The GC content of the type genome is 45.55 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Turilana demogitrix sp. nov.

Candidatus Turilana demogitrix (NL. fem. n. *demogitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1100 sp011523245*. The type genome for the species is the GenBank assembly GCA_011523245.1. The GC content of the type genome is 55.93 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Turilana telegigena sp. nov.

Candidatus Turilana telegigena (NL. fem. n. *telegigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1100 sp902551155*. The type genome for the species is the GenBank assembly GCA_902551155.1. The GC content of the type genome is 46.24 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Turilana uberretta sp. nov.

Candidatus Turilana uberretta (NL. fem. n. *uberretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1100 sp003517285*. The type genome for the species is the GenBank assembly GCA_003517285.1. The GC content of the type genome is 55.85 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Turilaria ecfunicula sp. nov.

Candidatus Turilaria ecfunicula (NL. fem. n. *ecfunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8349 sp003501375*. The type genome for the species is the GenBank assembly GCA_003501375.1. The GC content of the type genome is 51.99 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Turilaria gen. nov.

Candidatus Turilaria (NL. fem. n. *Turilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8349*. The type species for the genus is *Candidatus* Turilaria ecfunicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8349*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turilariaceae.

Description of *Candidatus* Turilariaceae fam. nov.

Candidatus Turilariaceae (NL. fem. n. *Turilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8349.* The type genus for the taxon is *Candidatus* Turilaria .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA8349. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Turilariales.

Description of *Candidatus* Turilariales ord. nov.

Candidatus Turilariales (NL. fem. n. *Turilariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8349.* The type genus for the taxon is *Candidatus* Turilaria .

According to the GTDB R06-RS202, this order belongs to the class *Sumerlaeia*.

Description of *Candidatus* Turilella insurisca sp. nov.

Candidatus Turilella insurisca (NL. fem. n. *insurisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YA12-FULL-48-11 sp001804885*. The type genome for the species is the GenBank assembly GCA_001804885.1. The GC content of the type genome is 48.01 % and the genome length is 5.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Turilella gen. nov.

Candidatus Turilella (NL. fem. n. *Turilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YA12-FULL-48-11*. The type species for the genus is *Candidatus* Turilella insurisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *YA12-FULL-48-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turilellaceae.

Description of *Candidatus* Turilellaceae fam. nov.

Candidatus Turilellaceae (NL. fem. n. *Turilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *YA12-FULL-48-11.* The type genus for the taxon is *Candidatus* Turilella

.

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8416*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depupellales.

Description of *Candidatus* Turilia biparitica sp. nov.

Candidatus Turilia biparitica (NL. fem. n. *biparitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA668 sp009702045*. The type genome for the species is the GenBank assembly GCA_009702045.1. The GC content of the type genome is 65.86 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Turilia gen. nov.

Candidatus Turilia (NL. fem. n. *Turilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA668*. The type species for the genus is *Candidatus* Turilia biparitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Turilia fatifitica sp. nov.

Candidatus Turilia fatifitica (NL. fem. n. *fatifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA668 sp005778215*. The type genome for the species is the GenBank assembly GCA_005778215.1. The GC content of the type genome is 69.41 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Turilia maxumugo sp. nov.

Candidatus Turilia maxumugo (NL. fem. n. *maxumugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA668 sp903919215*. The type genome for the species is the

GenBank assembly GCA_903919215.1. The GC content of the type genome is 66.08 % and the genome length is 3.59 Mbp.

Description of *Candidatus* Turilia oblanilenta sp. nov.

Candidatus Turilia oblanilenta (NL. fem. n. *oblanilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA668 sp002299395*. The type genome for the species is the GenBank assembly GCA_002299395.1. The GC content of the type genome is 68.51 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Turilia pomifitrix sp. nov.

Candidatus Turilia pomifitrix (NL. fem. n. *pomifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA668 sp003154135*. The type genome for the species is the GenBank assembly GCA_003154135.1. The GC content of the type genome is 69.46 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Turilia semiventia sp. nov.

Candidatus Turilia semiventia (NL. fem. n. *semiventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA668 sp903919455*. The type genome for the species is the GenBank assembly GCA_903919455.1. The GC content of the type genome is 65.88 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Turilida rubecitia sp. nov.

Candidatus Turilida rubecitia (NL. fem. n. *rubecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCAELEC01 sp004282745*. The type genome for the species is the GenBank assembly GCA_004282745.1. The GC content of the type genome is 41.07 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Turilida gen. nov.

Candidatus Turilida (NL. fem. n. *Turilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCAELEC01*. The type species for the genus is *Candidatus* Turilida rubecitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Turilosa depeticella sp. nov.

Candidatus Turilosa depeticella (NL. fem. n. *depeticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD2-FULL-41-8 sp001771545*. The type genome for the species is the GenBank assembly GCA_001771545.1. The GC content of the type genome is 41.59 % and the genome length is 1.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Turilosa gen. nov.

Candidatus Turilosa (NL. fem. n. *Turilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD2-FULL-41-8*. The type species for the genus is *Candidatus* Turilosa depeticella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-12-FULL-45-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fuligariaceae.

Description of *Candidatus* Turilula cicaticula sp. nov.

Candidatus Turilula cicaticula (NL. fem. n. *cicaticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJLM01 sp900299305*. The type genome for the species is the GenBank assembly GCA_900299305.1. The GC content of the type genome is 52.57 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Turilula gen. nov.

Candidatus Turilula (NL. fem. n. *Turilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJLM01*. The type species for the genus is *Candidatus* Turilula cicaticula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Turilula maxililenta sp. nov.

Candidatus Turilula maxililenta (NL. fem. n. *maxililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJLM01 sp903821495*. The type genome for the species is the GenBank assembly GCA_903821495.1. The GC content of the type genome is 55.24 % and the genome length is 5.37 Mbp.

Description of *Candidatus* Uberrana actaritrix sp. nov.

Candidatus Uberrana actaritrix (NL. fem. n. *actaritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABDBV01 sp013288395*. The type genome for the species is the GenBank assembly GCA_013288395.1. The GC content of the type genome is 41.44 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Uberrana gen. nov.

Candidatus Uberrana (NL. fem. n. *Uberrana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABDBV01*. The type species for the genus is *Candidatus* Uberrana actaritrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-16500*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Monopellaceae.

Description of *Candidatus* Uberraria navifax sp. nov.

Candidatus Uberraria navifax (NL. fem. n. *navifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBR01 sp012730045*. The type genome for the species is the GenBank assembly GCA_012730045.1. The GC content of the type genome is 68.27 % and the genome length is 4.46 Mbp.

Description of *Candidatus* Uberraria gen. nov.

Candidatus Uberraria (NL. fem. n. *Uberraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBR01*. The type species for the genus is *Candidatus* Uberraria navifax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITNO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fatilulaceae.

Description of *Candidatus* Uberrella ellipigena sp. nov.

Candidatus Uberrella ellipigena (NL. fem. n. *ellipigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AM-0621 sp900299185*. The type genome for the species is the GenBank assembly GCA_900299185.1. The GC content of the type genome is 56.53 % and the genome length is 7.87 Mbp.

Description of *Candidatus* Uberrella gen. nov.

Candidatus Uberrella (NL. fem. n. *Uberrella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AM-0621*. The type species for the genus is *Candidatus* Uberrella ellipigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Uberrida exsatugo sp. nov.

Candidatus Uberrida exsatugo (NL. fem. n. *exsatugo* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYSV01 sp012518215*. The type genome for the species is the GenBank assembly GCA_012518215.1. The GC content of the type genome is 50.41 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Uberrida gen. nov.

Candidatus Uberrida (NL. fem. n. *Uberrida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYSV01*. The type species for the genus is *Candidatus* Uberrida exsatugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWGO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenodiaceae.

Description of *Candidatus* Uberrula abascitica sp. nov.

Candidatus Uberrula abascitica (NL. fem. n. *abascitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTZC01 sp012961565*. The type genome for the species is the GenBank assembly GCA_012961565.1. The GC content of the type genome is 50.35 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Uberrula gen. nov.

Candidatus Uberrula (NL. fem. n. *Uberrula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTZC01*. The type species for the genus is *Candidatus* Uberrula abascitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5620*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Semaposaceae.

Description of *Candidatus* Udaeobacter abambimonia sp. nov.

Candidatus Udaeobacter abambimonia (NL. fem. n. *abambimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp013372845*. The type genome for the species is the GenBank assembly GCA_013372845.1. The GC content of the type genome is 55.16 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Udaeobacter adpicitudo sp. nov.

Candidatus Udaeobacter adpicitudo (NL. fem. n. *adpicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003219435*. The type genome for the species is the GenBank assembly GCA_003219435.1. The GC content of the type genome is 55.19 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Udaeobacter ceromimonia sp. nov.

Candidatus Udaeobacter ceromimonia (NL. fem. n. *ceromimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218885*. The type genome for the species is the GenBank assembly GCA_003221275.1. The GC content of the type genome is 55.29 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Udaeobacter cicilugo sp. nov.

Candidatus Udaeobacter cicilugo (NL. fem. n. *cicilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218535*. The type genome for the species is the GenBank assembly GCA_003218535.1. The GC content of the type genome is 54.5 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Udaeobacter cimelitas sp. nov.

Candidatus Udaeobacter cimelitas (NL. fem. n. *cimelitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218815*. The type genome for the species is the GenBank assembly GCA_003218605.1. The GC content of the type genome is 54.53 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Udaeobacter cnestentia sp. nov.

Candidatus Udaeobacter cnestentia (NL. fem. n. *cnestentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003219465*. The type genome for the species is the GenBank assembly GCA_003219465.1. The GC content of the type genome is 55.2 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Udaeobacter colepilenta sp. nov.

Candidatus Udaeobacter colepilenta (NL. fem. n. *colepilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003221375*. The type genome for the species is the GenBank assembly GCA_003219035.1. The GC content of the type genome is 54.19 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Udaeobacter coninibra sp. nov.

Candidatus Udaeobacter coninibra (NL. fem. n. *coninibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003219005*. The type genome for the species is the GenBank assembly GCA_003218575.1. The GC content of the type genome is 55.1 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Udaeobacter curabitio sp. nov.

Candidatus Udaeobacter curabitio (NL. fem. n. *curabitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003221195*. The type genome for the species is the GenBank assembly GCA_003221195.1. The GC content of the type genome is 54.34 %

and the genome length is 3.1 Mbp.

Description of *Candidatus* Udaeobacter dehonago sp. nov.

Candidatus Udaeobacter dehonago (NL. fem. n. *dehonago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003219945*. The type genome for the species is the GenBank assembly GCA_003219945.1. The GC content of the type genome is 54.92 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Udaeobacter denicatica sp. nov.

Candidatus Udaeobacter denicatica (NL. fem. n. *denicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003217895*. The type genome for the species is the GenBank assembly GCA_003219725.1. The GC content of the type genome is 54.97 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Udaeobacter divolibra sp. nov.

Candidatus Udaeobacter divolibra (NL. fem. n. *divolibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218735*. The type genome for the species is the GenBank assembly GCA_003218735.1. The GC content of the type genome is 54.5 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Udaeobacter futativita sp. nov.

Candidatus Udaeobacter futativita (NL. fem. n. *futativita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp005887825*. The type genome for the species is the GenBank assembly GCA_005887825.1. The GC content of the type genome is 55.03 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Udaeobacter hemiditio sp. nov.

Candidatus Udaeobacter hemiditio (NL. fem. n. *hemiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003219695*. The type genome for the species is the GenBank assembly GCA_003219695.1. The GC content of the type genome is 55.64 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Udaeobacter ignobitoga sp. nov.

Candidatus Udaeobacter ignobitoga (NL. fem. n. *ignobitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003217835*. The type genome for the species is the GenBank assembly GCA_003217835.1. The GC content of the type genome is 54.57 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Udaeobacter lanugitudo sp. nov.

Candidatus Udaeobacter lanugitudo (NL. fem. n. *lanugitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003219355*. The type genome for the species is the GenBank assembly GCA_003219355.1. The GC content of the type genome is 54.5 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Udaeobacter lapicousia sp. nov.

Candidatus Udaeobacter lapicousia (NL. fem. n. *lapicousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218345*. The type genome for the species is the GenBank assembly GCA_003218345.1. The GC content of the type genome is 54.51 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Udaeobacter locupibra sp. nov.

Candidatus Udaeobacter locupibra (NL. fem. n. *locupibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218615*. The type genome for the species is the GenBank assembly GCA_003218615.1. The GC content of the type genome is 55.25 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Udaeobacter manupitas sp. nov.

Candidatus Udaeobacter manupitas (NL. fem. n. *manupitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218755*. The type genome for the species is the GenBank assembly GCA_003218755.1. The GC content of the type genome is 54.87 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Udaeobacter modifitas sp. nov.

Candidatus Udaeobacter modifitas (NL. fem. n. *modifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218945*. The type genome for the species is the GenBank assembly GCA_003218945.1. The GC content of the type genome is 55.0 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Udaeobacter nocumago sp. nov.

Candidatus Udaeobacter nocumago (NL. fem. n. *nocumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218265*. The type genome for the species is the GenBank assembly GCA_003218265.1. The GC content of the type genome is 55.02 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Udaeobacter perexousia sp. nov.

Candidatus Udaeobacter perexousia (NL. fem. n. *perexousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218915*. The type genome for the species is the GenBank assembly GCA_003218915.1. The GC content of the type genome is 54.62 %

and the genome length is 2.91 Mbp.

Description of *Candidatus* Udaeobacter purulitura sp. nov.

Candidatus Udaeobacter purulitura (NL. fem. n. *purulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218135*. The type genome for the species is the GenBank assembly GCA_003218175.1. The GC content of the type genome is 54.86 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Udaeobacter refocitio sp. nov.

Candidatus Udaeobacter refocitio (NL. fem. n. *refocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp005887855*. The type genome for the species is the GenBank assembly GCA_005887855.1. The GC content of the type genome is 55.14 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Udaeobacter reforibra sp. nov.

Candidatus Udaeobacter reforibra (NL. fem. n. *reforibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218415*. The type genome for the species is the GenBank assembly GCA_003218415.1. The GC content of the type genome is 55.25 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Udaeobacter resulibula sp. nov.

Candidatus Udaeobacter resulibula (NL. fem. n. *resulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003220005*. The type genome for the species is the GenBank assembly GCA_003220005.1. The GC content of the type genome is 54.95 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Udaeobacter resurastra sp. nov.

Candidatus Udaeobacter resurastra (NL. fem. n. *resurastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218975*. The type genome for the species is the GenBank assembly GCA_003218875.1. The GC content of the type genome is 55.1 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Udaeobacter rorulifica sp. nov.

Candidatus Udaeobacter rorulifica (NL. fem. n. *rorulifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218475*. The type genome for the species is the GenBank assembly GCA_003218475.1. The GC content of the type genome is 54.77 % and the genome length is 3.16 Mbp.

Description of *Candidatus* Udaeobacter rurigifica sp. nov.

Candidatus Udaeobacter rurigifica (NL. fem. n. *rurigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218395*. The type genome for the species is the GenBank assembly GCA_003218395.1. The GC content of the type genome is 54.86 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Udaeobacter sacomatio sp. nov.

Candidatus Udaeobacter sacomatio (NL. fem. n. *sacomatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003218785*. The type genome for the species is the GenBank assembly GCA_003218495.1. The GC content of the type genome is 54.8 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Udaeobacter sarabigena sp. nov.

Candidatus Udaeobacter sarabigena (NL. fem. n. *sarabigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003219335*. The type genome for the species is the GenBank assembly GCA_003219335.1. The GC content of the type genome is 55.02 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Udaeobacter satacentia sp. nov.

Candidatus Udaeobacter satacentia (NL. fem. n. *satacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003219415*. The type genome for the species is the GenBank assembly GCA_001914875.1. The GC content of the type genome is 54.17 % and the genome length is 1.52 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 2; 20cm depth; 2 days after second rain event (91mm)".

Description of *Candidatus* Udaeobacter sugilago sp. nov.

Candidatus Udaeobacter sugilago (NL. fem. n. *sugilago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003217875*. The type genome for the species is the GenBank assembly GCA_003218255.1. The GC content of the type genome is 54.61 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Udaeobacter vinacimonia sp. nov.

Candidatus Udaeobacter vinacimonia (NL. fem. n. *vinacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Udaeobacter sp003219395*. The type genome for the species is the GenBank assembly GCA_003219395.1. The GC content of the type genome is 54.46 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Ulcisana abnepessa sp. nov.

Candidatus Ulcisana abnepessa (NL. fem. n. *abnepessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA4658 sp002405485*. The type genome for the species is the GenBank assembly GCA_002405485.1. The GC content of the type genome is 66.83 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Ulcisana gen. nov.

Candidatus Ulcisana (NL. fem. n. *Ulcisana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4658*. The type species for the genus is *Candidatus* Ulcisana abnepessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Ulcisaria bipatentia sp. nov.

Candidatus Ulcisaria bipatentia (NL. fem. n. *bipatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-39-12 sp001805125*. The type genome for the species is the GenBank assembly GCA_001805125.1. The GC content of the type genome is 39.49 % and the genome length is 2.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Ulcisaria gen. nov.

Candidatus Ulcisaria (NL. fem. n. *Ulcisaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-39-12*. The type species for the genus is *Candidatus* Ulcisaria bipatentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-35*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peridulaceae.

Description of *Candidatus* Ulcisella aggesimonia sp. nov.

Candidatus Ulcisella aggesimonia (NL. fem. n. *aggesimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSQH01 sp013213745*. The type genome for the species is the GenBank assembly GCA_013213745.1. The GC content of the type genome is 64.95 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Ulcisella gen. nov.

Candidatus Ulcisella (NL. fem. n. *Ulcisella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSQH01*. The type species for the genus is *Candidatus* Ulcisella aggesimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ulcisia inmititrix sp. nov.

Candidatus Ulcisia inmititrix (NL. fem. n. *inmititrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA710 sp002298905*. The type genome for the species is the GenBank assembly GCA_002298905.1. The GC content of the type genome is 23.14 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Ulcisia gen. nov.

Candidatus Ulcisia (NL. fem. n. *Ulcisia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA710*. The type species for the genus is *Candidatus* Ulcisia inmititrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ulcisosa adsecibula sp. nov.

Candidatus Ulcisosa adsecibula (NL. fem. n. *adsecibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBZ01 sp012744445*. The type genome for the species is the GenBank assembly GCA_012744445.1. The GC content of the type genome is 70.4 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Ulcisosa gen. nov.

Candidatus Ulcisosa (NL. fem. n. *Ulcisosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBZ01*. The type species for the genus is *Candidatus* Ulcisosa adsecibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-38*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benivosaceae.

Description of *Candidatus* Ulcisosa inlecitas sp. nov.

Candidatus Ulcisosa inlecitas (NL. fem. n. *inlecitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBZ01 sp012514415*. The type genome for the species is the GenBank assembly GCA_012514415.1. The GC content of the type genome is 61.9 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Ulcisula inmolilega sp. nov.

Candidatus Ulcisula inmolilega (NL. fem. n. *inmolilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JN-9 sp004103695*. The type genome for the species is the GenBank assembly RS_GCF_004103695.1. The GC content of the type genome is 32.26 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Ulcisula gen. nov.

Candidatus Ulcisula (NL. fem. n. *Ulcisula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JN-9*. The type species for the genus is *Candidatus* Ulcisula inmolilega .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Uliginosibacterium pepenibra sp. nov.

Candidatus Uliginosibacterium pepenibra (NL. fem. n. *pepenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Uliginosibacterium sp002307175*. The type genome for the species is the GenBank assembly GCA_002307175.1. The GC content of the type genome is 58.46 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Uliginosibacterium sonabousia sp. nov.

Candidatus Uliginosibacterium sonabousia (NL. fem. n. *sonabousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Uliginosibacterium sp002855595*. The type genome for the species is the GenBank assembly RS_GCF_012972705.2. The GC content of the type genome is 62.38 % and the genome length is 4.09 Mbp.

Description of *Candidatus* Ulvibacter admigilega sp. nov.

Candidatus Ulvibacter admigilega (NL. fem. n. *admigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ulvibacter_B sp009014635*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_009014635.1. The GC content of the type genome is 33.39 % and the genome length is 3.34 Mbp.

Description of *Candidatus* Ulvibacter carunessa sp. nov.

Candidatus Ulvibacter carunessa (NL. fem. n. *carunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ulvibacter_B sp000170815*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly GCA_000170815.1. The GC content of the type genome is 34.04 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Ulvibacter exculilenta sp. nov.

Candidatus Ulvibacter exculilenta (NL. fem. n. *exculilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ulvibacter_B sp003450155*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003450155.1. The GC content of the type genome is 36.66 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Umbilana peropedo sp. nov.

Candidatus Umbilana peropedo (NL. fem. n. *peropedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WS-8 sp005893295*. The type genome for the species is the GenBank assembly GCA_005893295.1. The GC content of the type genome is 68.66 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Umbilana gen. nov.

Candidatus Umbilana (NL. fem. n. *Umbilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WS-8*. The type species for the genus is *Candidatus* Umbilana peropedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-71-46*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sonabidaceae.

Description of *Candidatus* Umbilaria exsanedo sp. nov.

Candidatus Umbilaria exsanedo (NL. fem. n. *exsanedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SZUA-540 sp009731355*. The type genome for the species is the GenBank assembly RS_GCF_009731355.1. The GC content of the type genome is 56.43 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Umbilaria gen. nov.

Candidatus Umbilaria (NL. fem. n. *Umbilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-540*. The type species for the genus is *Candidatus* Umbilaria exsanedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Umbilaria subofibula sp. nov.

Candidatus Umbilaria subofibula (NL. fem. n. *subofibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-540 sp003250235*. The type genome for the species is the GenBank assembly GCA_003250235.1. The GC content of the type genome is 57.64 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Umbilida octupimonas sp. nov.

Candidatus Umbilida octupimonas (NL. fem. n. *octupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5757 sp002418965*. The type genome for the species is the GenBank assembly GCA_002418965.1. The GC content of the type genome is 43.77 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Umbilida gen. nov.

Candidatus Umbilida (NL. fem. n. *Umbilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5757*. The type species for the genus is *Candidatus* Umbilida octupimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4068*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Divulosaceae.

Description of *Candidatus* Umbilosa adnaritas sp. nov.

Candidatus Umbilosa adnaritas (NL. fem. n. *adnaritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSSC01 sp011331305*. The type genome for the species is the GenBank assembly GCA_011331305.1. The GC content of the type genome is 67.7 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Umbilosa gen. nov.

Candidatus Umbilosa (NL. fem. n. *Umbilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSSC01*. The type species for the genus is *Candidatus* Umbilosa adnaritas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHET01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pavimulaceae.

Description of *Candidatus* Umbilula refulessa sp. nov.

Candidatus Umbilula refulessa (NL. fem. n. *refulessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-448 sp011051615*. The type genome for the species is the GenBank assembly GCA_011051615.1. The GC content of the type genome is 61.38 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Umbilula gen. nov.

Candidatus Umbilula (NL. fem. n. *Umbilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HyVt-448*. The type species for the genus is *Candidatus* Umbilula refulessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA6429. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubosaceae.

Description of *Candidatus* Umboniibacter metapicella sp. nov.

Candidatus Umboniibacter metapicella (NL. fem. n. *metapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Umboniibacter sp013372965*. The type genome for the species is the GenBank assembly GCA_013372965.1. The GC content of the type genome is 49.97 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Undevana denunetta sp. nov.

Candidatus Undevana denunetta (NL. fem. n. *denunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746365 sp013138755*. The type genome for the species is the GenBank assembly GCA_013138755.1. The GC content of the type genome is 43.13 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Undevana gen. nov.

Candidatus Undevana (NL. fem. n. *Undevana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746365*. The type species for the genus is *Candidatus* Undevana denunetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-229*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunanaceae.

Description of *Candidatus* Undevana encomago sp. nov.

Candidatus Undevana encomago (NL. fem. n. *encomago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746365 sp011321985*. The type genome for the species is the

GenBank assembly GCA_011321985.1. The GC content of the type genome is 47.4 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Undevana leviditrix sp. nov.

Candidatus Undevana leviditrix (NL. fem. n. *leviditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746365 sp013041745*. The type genome for the species is the GenBank assembly GCA_013041745.1. The GC content of the type genome is 48.42 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Undevana loripatio sp. nov.

Candidatus Undevana loripatio (NL. fem. n. *loripatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746365 sp002401185*. The type genome for the species is the GenBank assembly GCA_002401185.1. The GC content of the type genome is 42.44 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Undevana mahelessa sp. nov.

Candidatus Undevana mahelessa (NL. fem. n. *mahelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746365 sp011051475*. The type genome for the species is the GenBank assembly GCA_011051475.1. The GC content of the type genome is 54.69 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Undevana nosocitrix sp. nov.

Candidatus Undevana nosocitrix (NL. fem. n. *nosocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746365 sp002746365*. The type genome for the species is the GenBank assembly GCA_002746365.1. The GC content of the type genome is 42.28 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Undevella rubefetta sp. nov.

Candidatus Undevella rubefetta (NL. fem. n. *rubefetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *KS4 sp007747445*. The type genome for the species is the GenBank assembly RS_GCF_007747445.1. The GC content of the type genome is 48.75 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Undevella gen. nov.

Candidatus Undevella (NL. fem. n. *Undevella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *KS4*. The type species for the genus is *Candidatus* Undevella rubefetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Undevida exindatio sp. nov.

Candidatus Undevida exindatio (NL. fem. n. *exindatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HyVt-539 sp011321845*. The type genome for the species is the GenBank assembly GCA_011321845.1. The GC content of the type genome is 60.74 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Undevida gen. nov.

Candidatus Undevida (NL. fem. n. *Undevida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HyVt-539*. The type species for the genus is *Candidatus* Undevida exindatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002748355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisiaceae.

Description of *Candidatus* Undevosa inguricula sp. nov.

Candidatus Undevosa inguricula (NL. fem. n. *inguricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPA01 sp012838515*. The type genome for the species is the GenBank assembly GCA_012838515.1. The GC content of the type genome is 41.1 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Undevosa gen. nov.

Candidatus Undevosa (NL. fem. n. *Undevosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPA01*. The type species for the genus is *Candidatus* Undevosa inguricula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU010*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Ducilidaceae.

Description of *Candidatus* Undevula loripitudo sp. nov.

Candidatus Undevula loripitudo (NL. fem. n. *loripitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PXTQ01 sp003022505*. The type genome for the species is the GenBank assembly GCA_003022505.1. The GC content of the type genome is 63.64 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Undevula gen. nov.

Candidatus Undevula (NL. fem. n. *Undevula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PXTQ01*. The type species for the genus is *Candidatus* Undevula loripitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Undibacterium arnacitas sp. nov.

Candidatus Undibacterium arnacitas (NL. fem. n. *arnacitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp014284235*. The type genome for the species is the GenBank assembly RS_GCF_014284235.1. The GC content of the type genome is 51.85 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Undibacterium bicinifica sp. nov.

Candidatus Undibacterium bicinifica (NL. fem. n. *bicinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp014284115*. The type genome for the species is the GenBank assembly RS_GCF_014284155.1. The GC content of the type genome is 46.92 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Undibacterium cinefitio sp. nov.

Candidatus Undibacterium cinefitio (NL. fem. n. *cinefitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp014284195*. The type genome for the species is the GenBank assembly RS_GCF_014284195.1. The GC content of the type genome is 53.33 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Undibacterium conubilega sp. nov.

Candidatus Undibacterium conubilega (NL. fem. n. *conubilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp014284265*. The type genome for the species is the GenBank assembly RS_GCF_014284265.1. The GC content of the type genome is 49.85 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Undibacterium demagimonas sp. nov.

Candidatus Undibacterium demagimonas (NL. fem. n. *demagimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp014284335*. The type genome for the species is the GenBank assembly RS_GCF_014284335.1. The GC content of the type genome is 51.55

% and the genome length is 6.28 Mbp.

Description of *Candidatus* Undibacterium domicimonas sp. nov.

Candidatus Undibacterium domicimonas (NL. fem. n. *domicimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp014284365*. The type genome for the species is the GenBank assembly RS_GCF_014284365.1. The GC content of the type genome is 51.66 % and the genome length is 4.07 Mbp.

Description of *Candidatus* Undibacterium indidatio sp. nov.

Candidatus Undibacterium indidatio (NL. fem. n. *indidatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp013287275*. The type genome for the species is the GenBank assembly GCA_013287275.1. The GC content of the type genome is 56.68 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Undibacterium inhonitura sp. nov.

Candidatus Undibacterium inhonitura (NL. fem. n. *inhonitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp009937975*. The type genome for the species is the GenBank assembly RS_GCF_009937975.1. The GC content of the type genome is 51.2 % and the genome length is 6.66 Mbp.

Description of *Candidatus* Undibacterium inmemicula sp. nov.

Candidatus Undibacterium inmemicula (NL. fem. n. *inmemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp014284175*. The type genome for the species is the GenBank assembly RS_GCF_014284175.1. The GC content of the type genome is 45.88 % and the genome length is 5.17 Mbp.

Description of *Candidatus* Undibacterium irrefedo sp. nov.

Candidatus Undibacterium irrefedo (NL. fem. n. *irrefedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp010078235*. The type genome for the species is the GenBank assembly RS_GCF_010078235.1. The GC content of the type genome is 51.68 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Undibacterium irrefigena sp. nov.

Candidatus Undibacterium irrefigena (NL. fem. n. *irrefigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp009937955*. The type genome for the species is the GenBank assembly RS_GCF_009937955.1. The GC content of the type genome is 50.98 % and the genome length is 6.69 Mbp.

Description of *Candidatus* Undibacterium milipentia sp. nov.

Candidatus Undibacterium milipentia (NL. fem. n. *milipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp002482715*. The type genome for the species is the GenBank assembly GCA_002482715.1. The GC content of the type genome is 45.41 % and the genome length is 4.02 Mbp.

Description of *Candidatus* Undibacterium progrisca sp. nov.

Candidatus Undibacterium progrisca (NL. fem. n. *progrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp014284125*. The type genome for the species is the GenBank assembly RS_GCF_014284125.1. The GC content of the type genome is 50.43 % and the genome length is 6.46 Mbp.

Description of *Candidatus* Undibacterium semunedo sp. nov.

Candidatus Undibacterium semunedo (NL. fem. n. *semunedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Undibacterium sp014376575*. The type genome for the species is the GenBank assembly GCA_014376575.1. The GC content of the type genome is 46.37 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Unetvaria arancilenta sp. nov.

Candidatus Unetvaria arancilenta (NL. fem. n. *arancilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B1SED10-173 sp003551865*. The type genome for the species is the GenBank assembly GCA_003551865.1. The GC content of the type genome is 51.47 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Unetvaria gen. nov.

Candidatus Unetvaria (NL. fem. n. *Unetvaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B1SED10-173*. The type species for the genus is *Candidatus* Unetvaria arancilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depelidaceae.

Description of *Candidatus* Unetvella derecibra sp. nov.

Candidatus Unetvella derecibra (NL. fem. n. *derecibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWHG01 sp003554785*. The type genome for the species is the GenBank assembly GCA_003554785.1. The GC content of the type genome is 35.05 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Unetvella gen. nov.

Candidatus Unetvella (NL. fem. n. *Unetvella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *PWHG01*. The type species for the genus is *Candidatus* Unetvella derecibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12465*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manomosaceae.

Description of *Candidatus* Unetvia inexcitoga sp. nov.

Candidatus Unetvia inexcitoga (NL. fem. n. *inexcitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HGM12669 sp900761935*. The type genome for the species is the GenBank assembly RS_GCF_900761935.1. The GC content of the type genome is 46.36 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Unetvia gen. nov.

Candidatus Unetvia (NL. fem. n. *Unetvia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HGM12669*. The type species for the genus is *Candidatus* Unetvia inexcitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Unetvida camililega sp. nov.

Candidatus Unetvida camililega (NL. fem. n. *camililega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADGP01 sp013152315*. The type genome for the species is the GenBank assembly GCA_013152315.1. The GC content of the type genome is 48.34 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Unetvida gen. nov.

Candidatus Unetvida (NL. fem. n. *Unetvida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADGP01*. The type species for the genus is *Candidatus* Unetvida camililega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *J089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabiaceae.

Description of *Candidatus* Unetvosa obnunifica sp. nov.

Candidatus Unetvosa obnunifica (NL. fem. n. *obnunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WN38 sp003185655*. The type genome for the species is the GenBank assembly RS_GCF_003185655.1. The GC content of the type genome is 54.69 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Unetvosa gen. nov.

Candidatus Unetvosa (NL. fem. n. *Unetvosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WN38*. The type species for the genus is *Candidatus* Unetvosa obnunifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSM-45221*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Celamiaceae.

Description of *Candidatus* Unetvosa omnivessa sp. nov.

Candidatus Unetvosa omnivessa (NL. fem. n. *omnivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WN38 sp003566795*. The type genome for the species is the GenBank assembly GCA_003566795.1. The GC content of the type genome is 56.41 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Unetvula binocitura sp. nov.

Candidatus Unetvula binocitura (NL. fem. n. *binocitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAFJH01 sp013298875*. The type genome for the species is the GenBank assembly GCA_013298875.1. The GC content of the type genome is 32.65 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Unetvula gen. nov.

Candidatus Unetvula (NL. fem. n. *Unetvula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAFJH01*. The type species for the genus is *Candidatus* Unetvula binocitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Urbicana inmolifica sp. nov.

Candidatus Urbicana inmolifica (NL. fem. n. *inmolifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5203 sp002412765*. The type genome for the species is the GenBank assembly GCA_002412765.1. The GC content of the type genome is 46.47 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Urbicana gen. nov.

Candidatus Urbicana (NL. fem. n. *Urbicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5203*. The type species for the genus is *Candidatus* Urbicana inmolifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Urbicella ruricilenta sp. nov.

Candidatus Urbicella ruricilenta (NL. fem. n. *ruricilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUPU01 sp012838175*. The type genome for the species is the GenBank assembly GCA_012838175.1. The GC content of the type genome is 42.09 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Urbicella gen. nov.

Candidatus Urbicella (NL. fem. n. *Urbicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUPU01*. The type species for the genus is *Candidatus* Urbicella ruricilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Urbicia diponibula sp. nov.

Candidatus Urbicia diponibula (NL. fem. n. *diponibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TH-plancto1 sp003669575*. The type genome for the species is the GenBank assembly GCA_003669575.1. The GC content of the type genome is 58.47 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Urbicia gen. nov.

Candidatus Urbicia (NL. fem. n. *Urbicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TH-plancto1*. The type species for the genus is *Candidatus* Urbicia diponibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Urbicia innulitrix sp. nov.

Candidatus Urbicia innulitrix (NL. fem. n. *innulitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TH-plancto1 sp003671275*. The type genome for the species is the GenBank assembly GCA_003671275.1. The GC content of the type genome is 59.46 %

and the genome length is 5.03 Mbp.

Description of *Candidatus* Urbicida abveritudo sp. nov.

Candidatus Urbicida abveritudo (NL. fem. n. *abveritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MHLB01 sp001818895*. The type genome for the species is the GenBank assembly GCA_001818895.1. The GC content of the type genome is 52.47 % and the genome length is 0.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Urbicida gen. nov.

Candidatus Urbicida (NL. fem. n. *Urbicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MHLB01*. The type species for the genus is *Candidatus* Urbicida abveritudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-01-FULL-56-20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Socagosaceae.

Description of *Candidatus* Urbicula abrepicella sp. nov.

Candidatus Urbicula abrepicella (NL. fem. n. *abrepicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AWTP1-18 sp003963315*. The type genome for the species is the GenBank assembly GCA_003963315.1. The GC content of the type genome is 61.11 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Urbicula gen. nov.

Candidatus Urbicula (NL. fem. n. *Urbicula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AWTP1-18*. The type species for the genus is *Candidatus* Urbicula abrepicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Ureaplasma citocivita sp. nov.

Candidatus Ureaplasma citocivita (NL. fem. n. *citocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ureaplasma sp900544585*. The type genome for the species is the GenBank assembly RS_GCF_900772055.1. The GC content of the type genome is 28.27 % and the genome length is 0.55 Mbp.

Description of *Candidatus* Urechidicola adsenax sp. nov.

Candidatus Urechidicola adsenax (NL. fem. n. *adsenax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Urechidicola sp001874265*. The type genome for the species is the GenBank assembly GCA_001874265.1. The GC content of the type genome is 33.46 % and the genome length is 2.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mediterranean seawater enriched with a specific particulate matter".

Description of *Candidatus* Urechidicola obmutigena sp. nov.

Candidatus Urechidicola obmutigena (NL. fem. n. *obmutigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Urechidicola sp002401215*. The type genome for the species is the GenBank assembly GCA_002401215.1. The GC content of the type genome is 33.54 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Urechidicola sicubedo sp. nov.

Candidatus Urechidicola sicubedo (NL. fem. n. *sicubedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Urechidicola sp002733665*. The type genome for the species is the GenBank assembly GCA_002733665.1. The GC content of the type genome is 31.5 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Ureibacillus effosentia sp. nov.

Candidatus Ureibacillus effosentia (NL. fem. n. *effosentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ureibacillus sp012735355*. The type genome for the species is the GenBank assembly GCA_012735355.1. The GC content of the type genome is 36.2 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Ureibacillus subabatica sp. nov.

Candidatus Ureibacillus subabatica (NL. fem. n. *subabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Ureibacillus sp005491425*. The type genome for the species is the GenBank assembly RS_GCF_005491425.1. The GC content of the type genome is 36.68 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Urinicoccus depicago sp. nov.

Candidatus Urinicoccus depicago (NL. fem. n. *depicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Urinicoccus sp000221565*. The type genome for the species is the GenBank assembly RS_GCF_000221565.1. The GC content of the type genome is 41.39 % and the genome length is 1.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "biological product [ENVO:02000043]".

Description of *Candidatus* Urinicoccus perabedo sp. nov.

Candidatus Urinicoccus perabedo (NL. fem. n. *perabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Urinicoccus sp001299455*. The type genome for the species is the GenBank assembly RS_GCF_001299455.1. The GC content of the type genome is 42.72 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Utillana voragicella sp. nov.

Candidatus Utillana voragicella (NL. fem. n. *voragicella* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7707 sp002482435*. The type genome for the species is the GenBank assembly GCA_002482435.1. The GC content of the type genome is 53.73 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Utillana gen. nov.

Candidatus Utillana (NL. fem. n. *Utillana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7707*. The type species for the genus is *Candidatus* Utillana voragicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Utillaria ficeditia sp. nov.

Candidatus Utillaria ficeditia (NL. fem. n. *ficeditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUNJ01 sp012518955*. The type genome for the species is the GenBank assembly GCA_012518955.1. The GC content of the type genome is 33.09 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Utillaria gen. nov.

Candidatus Utillaria (NL. fem. n. *Utillaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUNJ01*. The type species for the genus is *Candidatus* Utillaria ficeditia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utillaria inlibilega sp. nov.

Candidatus Utillaria inlibilega (NL. fem. n. *inlibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUNJ01 sp012518745*. The type genome for the species is the GenBank assembly GCA_012518745.1. The GC content of the type genome is 40.93 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Utillaria peropimonas sp. nov.

Candidatus Utillaria peropimonas (NL. fem. n. *peropimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUNJ01 sp012839395*. The type genome for the species is the GenBank assembly GCA_012839395.1. The GC content of the type genome is 37.91 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Utillella exsuficula sp. nov.

Candidatus Utillella exsuficula (NL. fem. n. *exsuficula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSVM01 sp011368405*. The type genome for the species is the GenBank assembly GCA_011368405.1. The GC content of the type genome is 63.15 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Utillella gen. nov.

Candidatus Utillella (NL. fem. n. *Utillella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSVM01*. The type species for the genus is *Candidatus* Utillella exsuficula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demululaceae.

Description of *Candidatus* Utillida reteciforma sp. nov.

Candidatus Utillida reteciforma (NL. fem. n. *reteciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYAY01 sp012719125*. The type genome for the species is the GenBank assembly GCA_012719125.1. The GC content of the type genome is 61.57 % and the genome length is 10.65 Mbp.

Description of *Candidatus* Utillida gen. nov.

Candidatus Utillida (NL. fem. n. *Utillida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYAY01*. The type species for the genus is *Candidatus* Utillida reteciforma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utillosa artocibula sp. nov.

Candidatus Utillosa artocibula (NL. fem. n. *artocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYVX01 sp903929765*. The type genome for the species is the GenBank assembly GCA_903929765.1. The GC content of the type genome is 62.58 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Utillosa gen. nov.

Candidatus Utillosa (NL. fem. n. *Utillosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYVX01*. The type species for the genus is *Candidatus* Utillosa artocibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACEH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenotiaceae.

Description of *Candidatus* Utpotana bicorastra sp. nov.

Candidatus Utpotana bicorastra (NL. fem. n. *bicorastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAAOZ01 sp009908585*. The type genome for the species is the GenBank assembly GCA_009908585.1. The GC content of the type genome is 58.17 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Utpotana gen. nov.

Candidatus Utpotana (NL. fem. n. *Utpotana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAAOZ01*. The type species for the genus is *Candidatus* Utpotana bicorastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLSP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Decamosaceae.

Description of *Candidatus* Utpotaria perabatio sp. nov.

Candidatus Utpotaria perabatio (NL. fem. n. *perabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-80-MAGs062 sp005809115*. The type genome for the species is the GenBank assembly GCA_005809115.1. The GC content of the type genome is 60.88 % and the genome length is 5.09 Mbp.

Description of *Candidatus* Utpotaria gen. nov.

Candidatus Utpotaria (NL. fem. n. *Utpotaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-80-MAGs062*. The type species for the genus is *Candidatus* Utpotaria perabatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utpotella cucurilenta sp. nov.

Candidatus Utpotella cucurilenta (NL. fem. n. *cucurilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SZUA-124 sp003230965*. The type genome for the species is the GenBank assembly GCA_003230965.1. The GC content of the type genome is 35.65 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Utpotella gen. nov.

Candidatus Utpotella (NL. fem. n. *Utpotella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-124*. The type species for the genus is *Candidatus* Utpotella cucurilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Utpotida occumago sp. nov.

Candidatus Utpotida occumago (NL. fem. n. *occumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIO2C1 sp010672925*. The type genome for the species is the GenBank assembly GCA_010672925.1. The GC content of the type genome is 42.77 % and the genome length is 8.67 Mbp.

Description of *Candidatus* Utpotida gen. nov.

Candidatus Utpotida (NL. fem. n. *Utpotida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIO2C1*. The type species for the genus is *Candidatus* Utpotida occumago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utpotida sicunifica sp. nov.

Candidatus Utpotida sicunifica (NL. fem. n. *sicunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIO2C1 sp010692635*. The type genome for the species is the

GenBank assembly GCA_010692635.1. The GC content of the type genome is 42.7 % and the genome length is 8.17 Mbp.

Description of *Candidatus* Utpotula coninitoga sp. nov.

Candidatus Utpotula coninitoga (NL. fem. n. *coninitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733465 sp002401655*. The type genome for the species is the GenBank assembly GCA_002401655.1. The GC content of the type genome is 36.87 % and the genome length is 2.95 Mbp.

Description of *Candidatus* Utpotula gen. nov.

Candidatus Utpotula (NL. fem. n. *Utpotula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002733465*. The type species for the genus is *Candidatus* Utpotula coninitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utpotula inlecatica sp. nov.

Candidatus Utpotula inlecatica (NL. fem. n. *inlecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002733465 sp002733465*. The type genome for the species is the GenBank assembly GCA_002733465.1. The GC content of the type genome is 36.77 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Utputana adnilisca sp. nov.

Candidatus Utputana adnilisca (NL. fem. n. *adnilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADCO01 sp013154385*. The type genome for the species is the GenBank assembly GCA_013154385.1. The GC content of the type genome is 61.53 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Utputana gen. nov.

Candidatus Utputana (NL. fem. n. *Utputana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADCO01*. The type species for the genus is *Candidatus* Utputana adnilisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utputaria recucago sp. nov.

Candidatus Utputaria recucago (NL. fem. n. *recucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWA1-44-24 sp001001115*. The type genome for the species is the GenBank assembly GCA_001001115.1. The GC content of the type genome is 41.81 % and the genome length is 0.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Utputaria gen. nov.

Candidatus Utputaria (NL. fem. n. *Utputaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWA1-44-24*. The type species for the genus is *Candidatus* Utputaria recucago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9933*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Capilanaceae.

Description of *Candidatus* Utputella cicilastra sp. nov.

Candidatus Utputella cicilastra (NL. fem. n. *cicilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNLL01 sp014381545*. The type genome for the species is the GenBank assembly GCA_014381545.1. The GC content of the type genome is 42.11 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Utputella gen. nov.

Candidatus Utputella (NL. fem. n. *Utputella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACNLL01*. The type species for the genus is *Candidatus* Utputella cicilastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ETH-SRB1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Benevulaceae.

Description of *Candidatus* Utputella susicilega sp. nov.

Candidatus Utputella susicilega (NL. fem. n. *susicilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACNLL01 sp013202725*. The type genome for the species is the GenBank assembly GCA_013202725.1. The GC content of the type genome is 42.21 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Utputida abligicella sp. nov.

Candidatus Utputida abligicella (NL. fem. n. *abligicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUN01 sp013044385*. The type genome for the species is the GenBank assembly GCA_013044385.1. The GC content of the type genome is 55.05 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Utputida gen. nov.

Candidatus Utputida (NL. fem. n. *Utputida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABEUN01*. The type species for the genus is *Candidatus* Utputida abligicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utputida indecetta sp. nov.

Candidatus Utputida indecetta (NL. fem. n. *indecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUN01 sp013044415*. The type genome for the species is the GenBank assembly GCA_013044415.1. The GC content of the type genome is 53.28 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Utputida pavicatica sp. nov.

Candidatus Utputida pavicatica (NL. fem. n. *pavicatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABEUN01 sp013044475*. The type genome for the species is the GenBank assembly GCA_013044475.1. The GC content of the type genome is 52.93 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Utputula pabiledo sp. nov.

Candidatus Utputula pabiledo (NL. fem. n. *pabiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-37-14 sp001804735*. The type genome for the species is the GenBank assembly GCA_001804735.1. The GC content of the type genome is 37.27 % and the genome length is 1.9 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Utputula gen. nov.

Candidatus Utputula (NL. fem. n. *Utputula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-37-14*. The type species for the genus is *Candidatus* Utputula pabiledo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utralia octopibra sp. nov.

Candidatus Utralia octopibra (NL. fem. n. *octopibra* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NIOZ-UU35 sp014382605*. The type genome for the species is the GenBank assembly GCA_014382605.1. The GC content of the type genome is 52.5 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Utralia gen. nov.

Candidatus Utralia (NL. fem. n. *Utralia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NIOZ-UU35*. The type species for the genus is *Candidatus* Utralia octopibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11858*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Malifellaceae.

Description of *Candidatus* Utralida inmacifica sp. nov.

Candidatus Utralida inmacifica (NL. fem. n. *inmacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WOUP01 sp009772895*. The type genome for the species is the GenBank assembly GCA_009772895.1. The GC content of the type genome is 62.32 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Utralida gen. nov.

Candidatus Utralida (NL. fem. n. *Utralida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WOUP01*. The type species for the genus is *Candidatus* Utralida inmacifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Verruco-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigidaceae.

Description of *Candidatus* Utralosa antipastra sp. nov.

Candidatus Utralosa antipastra (NL. fem. n. *antipastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSAD01 sp011372875*. The type genome for the species is the GenBank assembly GCA_011372875.1. The GC content of the type genome is 49.09 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Utralosa gen. nov.

Candidatus Utralosa (NL. fem. n. *Utralosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSAD01*. The type species for the genus is *Candidatus* Utralosa antipastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1062*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hexapariaceae.

Description of *Candidatus* Utralula ecligessa sp. nov.

Candidatus Utralula ecligessa (NL. fem. n. *ecligessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCN-57-10 sp001725215*. The type genome for the species is the GenBank assembly GCA_001725215.1. The GC content of the type genome is 56.71 % and the genome length is 1.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate bioreactor".

Description of *Candidatus* Utralula gen. nov.

Candidatus Utralula (NL. fem. n. *Utralula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCN-57-10*. The type species for the genus is *Candidatus* Utralula ecligessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utrarana asbesitas sp. nov.

Candidatus Utrarana asbesitas (NL. fem. n. *asbesitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5553 sp002425825*. The type genome for the species is the GenBank assembly GCA_002425825.1. The GC content of the type genome is 45.04 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Utrarana gen. nov.

Candidatus Utrarana (NL. fem. n. *Utrarana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5553*. The type species for the genus is *Candidatus* Utrarana asbesitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utrarana indifousia sp. nov.

Candidatus Utrarana indifousia (NL. fem. n. *indifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5553 sp002428685*. The type genome for the species is the GenBank assembly GCA_002428685.1. The GC content of the type genome is 44.37 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Utrarana turifimonas sp. nov.

Candidatus Utrarana turifimonas (NL. fem. n. *turifimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5553 sp002840645*. The type genome for the species is the GenBank assembly GCA_002840645.1. The GC content of the type genome is 45.34 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Utrarella pabilifica sp. nov.

Candidatus Utrarella pabilifica (NL. fem. n. *pabilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRVG01 sp011374125*. The type genome for the species is the GenBank assembly GCA_011374125.1. The GC content of the type genome is 51.67 % and the genome length is 2.78 Mbp.

Description of *Candidatus* Utrarella gen. nov.

Candidatus Utrarella (NL. fem. n. *Utrarella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRVG01*. The type species for the genus is *Candidatus* Utrarella pabilifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utrarida resupimonas sp. nov.

Candidatus Utrarida resupimonas (NL. fem. n. *resupimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6092 sp002428565*. The type genome for the species is the GenBank assembly GCA_002428565.1. The GC content of the type genome is 60.23 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Utrarida gen. nov.

Candidatus Utrarida (NL. fem. n. *Utrarida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6092*. The type species for the genus is *Candidatus* Utrarida resupimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Utrarosa caravitas sp. nov.

Candidatus Utrarosa caravitas (NL. fem. n. *caravitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM521 sp002869205*. The type genome for the species is the GenBank assembly GCA_002869205.1. The GC content of the type genome is 39.17 % and the genome length is 1.06 Mbp.

Description of *Candidatus* Utrarosa gen. nov.

Candidatus Utrarosa (NL. fem. n. *Utrarosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM521*. The type species for the genus is *Candidatus* Utrarosa caravitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA922*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cilibidaceae.

Description of *Candidatus* Utrarula atrusitrix sp. nov.

Candidatus Utrarula atrusitrix (NL. fem. n. *atrusitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NSJ-38 sp014337195*. The type genome for the species is the GenBank assembly GCA_014337195.1. The GC content of the type genome is 49.22 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Utrarula gen. nov.

Candidatus Utrarula (NL. fem. n. *Utrarula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NSJ-38*. The type species for the genus is *Candidatus* Utrarula atrusitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utrarula buxifax sp. nov.

Candidatus Utrarula buxifax (NL. fem. n. *buxifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *NSJ-38 sp902363445*. The type genome for the species is the GenBank assembly RS_GCF_902363445.1. The GC content of the type genome is 49.05 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Utricana lanigitudo sp. nov.

Candidatus Utricana lanigitudo (NL. fem. n. *lanigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4656 sp002405525*. The type genome for the species is the GenBank assembly GCA_002405525.1. The GC content of the type genome is 70.85 % and the genome length is 4.06 Mbp.

Description of *Candidatus* Utricana gen. nov.

Candidatus Utricana (NL. fem. n. *Utricana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4656*. The type species for the genus is *Candidatus* Utricana lanigitudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utricaria incenibra sp. nov.

Candidatus Utricaria incenibra (NL. fem. n. *incenibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RPPU01 sp003819975*. The type genome for the species is the GenBank assembly GCA_003819975.1. The GC content of the type genome is 48.48 % and the genome length is 5.14 Mbp.

Description of *Candidatus* Utricaria gen. nov.

Candidatus Utricaria (NL. fem. n. *Utricaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RPPU01*. The type species for the genus is *Candidatus* Utricaria incenibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGW-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Dapifulaceae.

Description of *Candidatus* Utricella adtenilenta sp. nov.

Candidatus Utricella adtenilenta (NL. fem. n. *adtenilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Marseille-P3106 sp900169975*. The type genome for the species is the GenBank assembly RS_GCF_900169975.1. The GC content of the type genome is 58.19 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Utricella gen. nov.

Candidatus Utricella (NL. fem. n. *Utricella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Marseille-P3106*. The type species for the genus is *Candidatus* Utricella adtenilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utricella epiclicella sp. nov.

Candidatus Utricella epiclicella (NL. fem. n. *epiclicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Marseille-P3106 sp900543935*. The type genome for the species is the GenBank assembly GCA_900543935.1. The GC content of the type genome is 62.98 % and the genome length is 2.68 Mbp.

Description of *Candidatus* Utricia direcitica sp. nov.

Candidatus Utricia direcitica (NL. fem. n. *direcitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYOP01 sp012523085*. The type genome for the species is the GenBank assembly GCA_012523085.1. The GC content of the type genome is 48.17 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Utricia gen. nov.

Candidatus Utricia (NL. fem. n. *Utricia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYOP01*. The type species for the genus is *Candidatus* Utricia direcitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utricia halucessa sp. nov.

Candidatus Utricia halucessa (NL. fem. n. *halucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYOP01 sp012520295*. The type genome for the species is the GenBank assembly GCA_012520295.1. The GC content of the type genome is 46.59 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Utricosa inmemitia sp. nov.

Candidatus Utricosa inmemitia (NL. fem. n. *inmemitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-580 sp003249585*. The type genome for the species is the GenBank assembly GCA_003249585.1. The GC content of the type genome is 62.82 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Utricosa gen. nov.

Candidatus Utricosa (NL. fem. n. *Utricosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-580*. The type species for the genus is *Candidatus* Utricosa inmemitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HGW-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curacellaceae.

Description of *Candidatus* Utricula caduritudo sp. nov.

Candidatus Utricula caduritudo (NL. fem. n. *caduritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *FEN-1160 sp003142835*. The type genome for the species is the GenBank assembly GCA_003142835.1. The GC content of the type genome is 44.35 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Utricula gen. nov.

Candidatus Utricula (NL. fem. n. *Utricula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *FEN-1160*. The type species for the genus is *Candidatus* Utricula caduritudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utrinana cicatax sp. nov.

Candidatus Utrinana cicatax (NL. fem. n. *cicatax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-12-FULL-36-22 sp001771315*. The type genome for the species is the GenBank assembly GCA_001771315.1. The GC content of the type genome is 35.93 % and the genome length is 0.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Utrinana gen. nov.

Candidatus Utrinana (NL. fem. n. *Utrinana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-12-FULL-36-22*. The type species for the genus is *Candidatus* Utrinana cicatax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12409*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Demulanaceae.

Description of *Candidatus* Utrinaria oscilessa sp. nov.

Candidatus Utrinaria oscilessa (NL. fem. n. *oscilessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *E44-bin46 sp004376105*. The type genome for the species is the GenBank assembly GCA_004376105.1. The GC content of the type genome is 47.16 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Utrinaria gen. nov.

Candidatus Utrinaria (NL. fem. n. *Utrinaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *E44-bin46*. The type species for the genus is *Candidatus* Utrinaria oscilessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5760*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisellaceae.

Description of *Candidatus* Utrinella depacitia sp. nov.

Candidatus Utrinella depacitia (NL. fem. n. *depacitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11986 sp003541875*. The type genome for the species is the GenBank assembly GCA_003541875.1. The GC content of the type genome is 52.08 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Utrinella gen. nov.

Candidatus Utrinella (NL. fem. n. *Utrinella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11986*. The type species for the genus is *Candidatus* Utrinella depacitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6906*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Culibellaceae.

Description of *Candidatus* Utrinia allibitoga sp. nov.

Candidatus Utrinia allibitoga (NL. fem. n. *allibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DT-110 sp013214265*. The type genome for the species is the GenBank assembly GCA_013214265.1. The GC content of the type genome is 41.15 % and the genome length is 5.07 Mbp.

Description of *Candidatus* Utrinia gen. nov.

Candidatus Utrinia (NL. fem. n. *Utrinia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DT-110*. The type species for the genus is *Candidatus* Utrinia allibitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utrinosa scaccentia sp. nov.

Candidatus Utrinosa scaccentia (NL. fem. n. *scaccentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQTY01 sp009786045*. The type genome for the species is the GenBank assembly GCA_009786045.1. The GC content of the type genome is 54.52 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Utrinosa gen. nov.

Candidatus Utrinosa (NL. fem. n. *Utrinosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQTY01*. The type species for the genus is *Candidatus* Utrinosa scaccentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4248*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sicarulaceae.

Description of *Candidatus* Utrinula absegousia sp. nov.

Candidatus Utrinula absegousia (NL. fem. n. *absegousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DULF01 sp012840535*. The type genome for the species is the GenBank assembly GCA_012840535.1. The GC content of the type genome is 39.86 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Utrinula gen. nov.

Candidatus Utrinula (NL. fem. n. *Utrinula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DULF01*. The type species for the genus is *Candidatus* Utrinula absegousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMB01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bacifiaceae.

Description of *Candidatus* Utrolana catalivita sp. nov.

Candidatus Utrolana catalivita (NL. fem. n. *catalivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCRE01 sp004297935*. The type genome for the species is the GenBank assembly GCA_004297935.1. The GC content of the type genome is 65.18 % and the genome length is 3.95 Mbp.

Description of *Candidatus* Utrolana gen. nov.

Candidatus Utrolana (NL. fem. n. *Utrolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCRE01*. The type species for the genus is *Candidatus* Utrolana catalivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utrolaria egrititoga sp. nov.

Candidatus Utrolaria egrititoga (NL. fem. n. *egrititoga* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYBG01 sp012718985*. The type genome for the species is the GenBank assembly GCA_012718985.1. The GC content of the type genome is 32.97 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Utrolaria gen. nov.

Candidatus Utrolaria (NL. fem. n. *Utrolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYBG01*. The type species for the genus is *Candidatus* Utrolaria egrititoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Utrolella adpacatio sp. nov.

Candidatus Utrolella adpacatio (NL. fem. n. *adpacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-120 sp005881425*. The type genome for the species is the GenBank assembly GCA_005881425.1. The GC content of the type genome is 69.13 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Utrolella gen. nov.

Candidatus Utrolella (NL. fem. n. *Utrolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-120*. The type species for the genus is *Candidatus* Utrolella adpacatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CF-121*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Haluculaceae.

Description of *Candidatus* Utrolia expasitio sp. nov.

Candidatus Utrolia expasitio (NL. fem. n. *expasitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYQL01 sp007280915*. The type genome for the species is the GenBank assembly GCA_007280915.1. The GC content of the type genome is 59.57 % and the genome length is 3.56 Mbp.

Description of *Candidatus* Utrolia gen. nov.

Candidatus Utrolia (NL. fem. n. *Utrolia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QYQL01*. The type species for the genus is *Candidatus* Utrolia expasitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Utrolula dilecitia sp. nov.

Candidatus Utrolula dilecitia (NL. fem. n. *dilecitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUAG01 sp012960925*. The type genome for the species is the GenBank assembly GCA_012960925.1. The GC content of the type genome is 49.85 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Utrolula gen. nov.

Candidatus Utrolula (NL. fem. n. *Utrolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUAG01*. The type species for the genus is *Candidatus* Utrolula dilecitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADHI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragulaceae.

Description of *Candidatus* Uxorcaria ignositura sp. nov.

Candidatus Uxorcaria ignositura (NL. fem. n. *ignositura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWTU01 sp903915655*. The type genome for the species is the GenBank assembly GCA_903915655.1. The GC content of the type genome is 50.53 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Uxorcaria gen. nov.

Candidatus Uxorcaria (NL. fem. n. *Uxorcaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWTU01*. The type species for the genus is *Candidatus* Uxorcaria ignositura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Uxorcella ammodilenta sp. nov.

Candidatus Uxorcella ammodilenta (NL. fem. n. *ammodilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1784 sp002315455*. The type genome for the species is the GenBank assembly GCA_002315455.1. The GC content of the type genome is 59.88 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Uxorcella gen. nov.

Candidatus Uxorcella (NL. fem. n. *Uxorcella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1784*. The type species for the genus is *Candidatus* Uxorcella ammodilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Uxorcella lenunilega sp. nov.

Candidatus Uxorcella lenunilega (NL. fem. n. *lenunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1784 sp002314455*. The type genome for the species is the GenBank assembly GCA_002314455.1. The GC content of the type genome is 56.51 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Uxorcella renavilega sp. nov.

Candidatus Uxorcella renavilega (NL. fem. n. *renavilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1784 sp902783135*. The type genome for the species is the GenBank assembly GCA_902783135.1. The GC content of the type genome is 61.92 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Uxorcia repepago sp. nov.

Candidatus Uxorcia repepago (NL. fem. n. *repepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-41-12 sp001805765*. The type genome for the species is the GenBank assembly GCA_001805765.1. The GC content of the type genome is 41.56 % and the genome length is 0.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Uxorcia gen. nov.

Candidatus Uxorcia (NL. fem. n. *Uxorcia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-41-12*. The type species for the genus is *Candidatus* Uxorcia repepago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6249*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Refacosaceae.

Description of *Candidatus* Uxorcida colapastra sp. nov.

Candidatus Uxorcida colapastra (NL. fem. n. *colapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *S120 sp011192075*. The type genome for the species is the GenBank assembly GCA_011192075.1. The GC content of the type genome is 46.62 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Uxorcida gen. nov.

Candidatus Uxorcida (NL. fem. n. *Uxorcida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *S120*. The type species for the genus is *Candidatus* Uxorcida colapastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5760*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisellaceae.

Description of *Candidatus* Uxorcosa penicitio sp. nov.

Candidatus Uxorcosa penicitio (NL. fem. n. *penicitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RGMU01 sp010021705*. The type genome for the species is the GenBank assembly GCA_010021705.1. The GC content of the type genome is 41.7 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Uxorcosa gen. nov.

Candidatus Uxorcosa (NL. fem. n. *Uxorcosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RGMU01*. The type species for the genus is *Candidatus* Uxorcosa penicitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Uxorcula sicubilenta sp. nov.

Candidatus Uxorcula sicubilenta (NL. fem. n. *sicubilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-68-21 sp001767695*. The type genome for the species is the GenBank assembly GCA_001767695.1. The GC content of the type genome is 67.91 % and the genome length is 2.03 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Uxorcula gen. nov.

Candidatus Uxorcula (NL. fem. n. *Uxorcula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-68-21*. The type species for the genus is *Candidatus* Uxorcula sicubilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11373*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bigaranaceae.

Description of *Candidatus* Vacilana cacalax sp. nov.

Candidatus Vacilana cacalax (NL. fem. n. *cacalax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMQJ01 sp014377055*. The type genome for the species is the GenBank assembly GCA_014377055.1. The GC content of the type genome is 29.05 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Vacilana gen. nov.

Candidatus Vacilana (NL. fem. n. *Vacilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMQJ01*. The type species for the genus is *Candidatus* Vacilana cacalax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACMQJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vacilanaceae.

Description of *Candidatus* Vacilanaceae fam. nov.

Candidatus Vacilanaceae (NL. fem. n. *Vacilanaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACMQJ01*. The type genus for the taxon is *Candidatus* Vacilana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7694*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bicoridales.

Description of *Candidatus* Vacilia incunifica sp. nov.

Candidatus Vacilia incunifica (NL. fem. n. *incunifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMP01 sp012839755*. The type genome for the species is the GenBank assembly GCA_012839755.1. The GC content of the type genome is 63.03 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Vacilia gen. nov.

Candidatus Vacilia (NL. fem. n. *Vacilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMP01*. The type species for the genus is *Candidatus* Vacilia incunifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vaciliaceae.

Description of *Candidatus* Vaciliaceae fam. nov.

Candidatus Vaciliaceae (NL. fem. n. *Vaciliaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMP01*. The type genus for the taxon is *Candidatus* Vacilia .

According to the original version of GTDB R06-RS202, this family belongs to the order *DUMP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vaciliales.

Description of *Candidatus* Vaciliales ord. nov.

Candidatus Vaciliales (NL. fem. n. *Vaciliales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMP01*. The type genus for the taxon is *Candidatus* Vacilia .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Defarosae.

Description of *Candidatus* Vacilida affanitoga sp. nov.

Candidatus Vacilida affanitoga (NL. fem. n. *affanitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp004558025*. The type genome for the species is the GenBank assembly GCA_004558025.1. The GC content of the type genome is 54.53 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Vacilida gen. nov.

Candidatus Vacilida (NL. fem. n. *Vacilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F23-B02*. The type species for the genus is *Candidatus* Vacilida affanitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vacilida alismitia sp. nov.

Candidatus Vacilida alismitia (NL. fem. n. *alismitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp900772725*. The type genome for the species is the GenBank assembly GCA_900772725.1. The GC content of the type genome is 54.83 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Vacilida bacifitio sp. nov.

Candidatus Vacilida bacifitio (NL. fem. n. *bacifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp900545805*. The type genome for the species is the GenBank assembly GCA_900545805.1. The GC content of the type genome is 54.06 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Vacilida ceromatica sp. nov.

Candidatus Vacilida ceromatica (NL. fem. n. *ceromatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp000431075*. The type genome for the species is the GenBank assembly GCA_004552505.1. The GC content of the type genome is 53.5 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Vacilida cicilatio sp. nov.

Candidatus Vacilida cicilatio (NL. fem. n. *cicilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp004557075*. The type genome for the species is the GenBank assembly GCA_004557075.1. The GC content of the type genome is 52.62 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Vacilida demigifica sp. nov.

Candidatus Vacilida demigifica (NL. fem. n. *demigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp002472405*. The type genome for the species is the GenBank assembly GCA_002472405.1. The GC content of the type genome is 53.27 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Vacilida depasibra sp. nov.

Candidatus Vacilida depasibra (NL. fem. n. *depasibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *F23-B02 sp002314685*. The type genome for the species is the GenBank assembly GCA_002314685.1. The GC content of the type genome is 49.68 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Vacilida indomugo sp. nov.

Candidatus Vacilida indomugo (NL. fem. n. *indomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp900760205*. The type genome for the species is the GenBank assembly GCA_900760205.1. The GC content of the type genome is 55.27 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Vacilida laxititas sp. nov.

Candidatus Vacilida laxititas (NL. fem. n. *laxititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp900556535*. The type genome for the species is the GenBank assembly GCA_900556535.1. The GC content of the type genome is 56.3 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Vacilida letifatio sp. nov.

Candidatus Vacilida letifatio (NL. fem. n. *letifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp004556755*. The type genome for the species is the GenBank assembly GCA_900772805.1. The GC content of the type genome is 54.92 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Vacilida pinigatio sp. nov.

Candidatus Vacilida pinigatio (NL. fem. n. *pinigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp003533405*. The type genome for the species is the GenBank assembly GCA_900762055.1. The GC content of the type genome is 52.81 % and the genome length is 1.99 Mbp.

Description of *Candidatus* Vacilida tegimibula sp. nov.

Candidatus Vacilida tegimibula (NL. fem. n. *tegimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp004553495*. The type genome for the species is the GenBank assembly GCA_900765295.1. The GC content of the type genome is 53.76 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Vacilida turilousia sp. nov.

Candidatus Vacilida turilousia (NL. fem. n. *turilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F23-B02 sp001916715*. The type genome for the species is the GenBank assembly GCA_000436275.1. The GC content of the type genome is 53.56 % and the genome length is 1.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Vacilosa foricitrix sp. nov.

Candidatus Vacilosa foricitrix (NL. fem. n. *foricitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2746535 sp002746535*. The type genome for the species is the GenBank assembly GCA_002746535.1. The GC content of the type genome is 33.58 % and the genome length is 6.76 Mbp.

Description of *Candidatus* Vacilosa gen. nov.

Candidatus Vacilosa (NL. fem. n. *Vacilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2746535*. The type species for the genus is *Candidatus* Vacilosa foricitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2746535*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vacilosaceae.

Description of *Candidatus* Vacilosaceae fam. nov.

Candidatus Vacilosaceae (NL. fem. n. *Vacilosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2746535.* The type genus for the taxon is *Candidatus* Vacilosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2746535*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vacilosales.

Description of *Candidatus* Vacilosales ord. nov.

Candidatus Vacilosales (NL. fem. n. *Vacilosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2746535.* The type genus for the taxon is *Candidatus* Vacilosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA11346*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cisorariae.

Description of *Candidatus* Vacilula agripitas sp. nov.

Candidatus Vacilula agripitas (NL. fem. n. *agripitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED161 sp002591605*. The type genome for the species is the GenBank assembly GCA_002591605.1. The GC content of the type genome is 30.83 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Vacilula gen. nov.

Candidatus Vacilula (NL. fem. n. *Vacilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED161*. The type species for the genus is *Candidatus* Vacilula agripitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vacilulaceae.

Description of *Candidatus* Vacilulaceae fam. nov.

Candidatus Vacilulaceae (NL. fem. n. *Vacilulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TMED161*. The type genus for the taxon is *Candidatus* Vacilula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SCGC-AAA003-L08*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Redaciales.

Description of *Candidatus* Vacilula bucolifica sp. nov.

Candidatus Vacilula bucolifica (NL. fem. n. *bucolifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED161 sp002731795*. The type genome for the species is the GenBank assembly GCA_002731795.1. The GC content of the type genome is 31.46 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Vacilula buxanedo sp. nov.

Candidatus Vacilula buxanedo (NL. fem. n. *buxanedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED161 sp002703645*. The type genome for the species is the GenBank assembly GCA_002703645.1. The GC content of the type genome is 29.77 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Vacilula ornitatica sp. nov.

Candidatus Vacilula ornitatica (NL. fem. n. *ornitatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED161 sp002171125*. The type genome for the species is the GenBank assembly GCA_002171125.1. The GC content of the type genome is 30.97 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Vagabana lenunifica sp. nov.

Candidatus Vagabana lenunifica (NL. fem. n. *lenunifica* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10030 sp003453835*. The type genome for the species is the GenBank assembly GCA_003453835.1. The GC content of the type genome is 54.44 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Vagabana gen. nov.

Candidatus Vagabana (NL. fem. n. *Vagabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10030*. The type species for the genus is *Candidatus* Vagabana lenunifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabanaceae.

Description of *Candidatus* Vagabanaceae fam. nov.

Candidatus Vagabanaceae (NL. fem. n. *Vagabanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10030.* The type genus for the taxon is *Candidatus* Vagabana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vagabanales.

Description of *Candidatus* Vagabanales ord. nov.

Candidatus Vagabanales (NL. fem. n. *Vagabanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10030.* The type genus for the taxon is *Candidatus* Vagabana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Vagabanae.

Description of *Candidatus* Vagabanae class. nov.

Candidatus Vagabanae (NL. fem. n. *c__Vagabanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10030.* The type genus for the taxon is *Candidatus* Vagabana .

According to GTDB R06-RS202, this class belongs to the phylum *Bacteroidota*.

Description of *Candidatus* Vagabaria ephematica sp. nov.

Candidatus Vagabaria ephematica (NL. fem. n. *ephematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WVXP01 sp011773445*. The type genome for the species is the GenBank assembly GCA_011773445.1. The GC content of the type genome is 51.12 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Vagabaria gen. nov.

Candidatus Vagabaria (NL. fem. n. *Vagabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WVXP01*. The type species for the genus is *Candidatus* Vagabaria ephematica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WVXP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabariaceae.

Description of *Candidatus* Vagabariaceae fam. nov.

Candidatus Vagabariaceae (NL. fem. n. *Vagabariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WVXP01.* The type genus for the taxon is *Candidatus* Vagabaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *BSN033*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Debucellales.

Description of *Candidatus* Vagabella fiducivita sp. nov.

Candidatus Vagabella fiducivita (NL. fem. n. *fiducivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2211 sp002327845*. The type genome for the species is the GenBank assembly GCA_002402885.1. The GC content of the type genome is 32.51 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Vagabella gen. nov.

Candidatus Vagabella (NL. fem. n. *Vagabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2211*. The type species for the genus is *Candidatus* Vagabella fiducivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5633*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carecosaceae.

Description of *Candidatus* Vagabia abhinimonas sp. nov.

Candidatus Vagabia abhinimonas (NL. fem. n. *abhinimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA969 sp005786805*. The type genome for the species is the GenBank assembly GCA_005786805.1. The GC content of the type genome is 46.57 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Vagabia gen. nov.

Candidatus Vagabia (NL. fem. n. *Vagabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA969*. The type species for the genus is *Candidatus* Vagabia abhinimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vagabia dupunibula sp. nov.

Candidatus Vagabia dupunibula (NL. fem. n. *dupunibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA969 sp003671255*. The type genome for the species is the GenBank assembly GCA_003671255.1. The GC content of the type genome is 43.98 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Vagabia mirabatio sp. nov.

Candidatus Vagabia mirabatio (NL. fem. n. *mirabatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA969 sp002303765*. The type genome for the species is the GenBank assembly GCA_003669795.1. The GC content of the type genome is 44.47 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Vagabia refocitrix sp. nov.

Candidatus Vagabia refocitrix (NL. fem. n. *refocitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA969 sp009920765*. The type genome for the species is the GenBank assembly GCA_009920765.1. The GC content of the type genome is 44.24 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Vagabia socagilega sp. nov.

Candidatus Vagabia socagilega (NL. fem. n. *socagilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA969 sp903960945*. The type genome for the species is the GenBank assembly GCA_903960945.1. The GC content of the type genome is 43.89 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Vagabida taraxitudo sp. nov.

Candidatus Vagabida taraxitudo (NL. fem. n. *taraxitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA6532 sp002434805*. The type genome for the species is the GenBank assembly GCA_002434805.1. The GC content of the type genome is 36.43 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Vagabida gen. nov.

Candidatus Vagabida (NL. fem. n. *Vagabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6532*. The type species for the genus is *Candidatus* Vagabida taraxitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6532*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabidaceae.

Description of *Candidatus* Vagabidaceae fam. nov.

Candidatus Vagabidaceae (NL. fem. n. *Vagabidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6532.* The type genus for the taxon is *Candidatus* Vagabida .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Vagabosa conipimonia sp. nov.

Candidatus Vagabosa conipimonia (NL. fem. n. *conipimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM512 sp002869005*. The type genome for the species is the GenBank assembly GCA_002869005.1. The GC content of the type genome is 55.06 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Vagabosa gen. nov.

Candidatus Vagabosa (NL. fem. n. *Vagabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BM512*. The type species for the genus is *Candidatus* Vagabosa conipimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BM512*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabosaceae.

Description of *Candidatus* Vagabosaceae fam. nov.

Candidatus Vagabosaceae (NL. fem. n. *Vagabosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BM512*. The type genus for the taxon is *Candidatus* Vagabosa .

According to GTDB R06-RS202, this family belongs to the order *Deferrisomatales*.

Description of *Candidatus* Vagabosa monopitio sp. nov.

Candidatus Vagabosa monopitio (NL. fem. n. *monopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BM512 sp002869015*. The type genome for the species is the GenBank assembly GCA_002869015.1. The GC content of the type genome is 54.08 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Vagabula ficeditudo sp. nov.

Candidatus Vagabula ficeditudo (NL. fem. n. *ficeditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *54-24 sp001508935*. The type genome for the species is the GenBank assembly GCA_001508935.1. The GC content of the type genome is 53.96 % and the genome length is 1.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "oil reservoir sample K3".

Description of *Candidatus* Vagabula gen. nov.

Candidatus Vagabula (NL. fem. n. *Vagabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *54-24*. The type species for the genus is *Candidatus* Vagabula ficeditudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family

54-24. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vagabulaceae.

Description of *Candidatus* Vagabulaceae fam. nov.

Candidatus Vagabulaceae (NL. fem. n. *Vagabulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *54-24.* The type genus for the taxon is *Candidatus* Vagabula .

According to GTDB R06-RS202, this family belongs to the order *Synergistales*.

Description of *Candidatus* Vagococcus absuritoga sp. nov.

Candidatus Vagococcus absuritoga (NL. fem. n. *absuritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vagococcus sp003950515*. The type genome for the species is the GenBank assembly RS_GCF_003950515.1. The GC content of the type genome is 34.65 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Vagococcus delapugo sp. nov.

Candidatus Vagococcus delapugo (NL. fem. n. *delapugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vagococcus sp003462485*. The type genome for the species is the GenBank assembly RS_GCF_003462485.1. The GC content of the type genome is 33.54 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Vagococcus haricisca sp. nov.

Candidatus Vagococcus haricisca (NL. fem. n. *haricisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vagococcus sp011304195*. The type genome for the species is the GenBank assembly RS_GCF_011304195.1. The GC content of the type genome is 34.35 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Vagococcus nefaressa sp. nov.

Candidatus Vagococcus nefaressa (NL. fem. n. *nefaressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vagococcus sp003950315*. The type genome for the species is the GenBank assembly RS_GCF_003950315.1. The GC content of the type genome is 33.59 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Vagococcus cululisca sp. nov.

Candidatus Vagococcus cululisca (NL. fem. n. *cululisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vagococcus_A sp005145005*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_005863195.1. The GC content of the type genome is 36.61 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Vagococcus diludimonia sp. nov.

Candidatus Vagococcus diludimonia (NL. fem. n. *diludimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vagococcus_A sp004792515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_004684045.1. The GC content of the type genome is 35.28 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Vagococcus irrefitas sp. nov.

Candidatus Vagococcus irrefitas (NL. fem. n. *irrefitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vagococcus_D sp011303955*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The

type genome for the species is the GenBank assembly RS_GCF_011303955.1. The GC content of the type genome is 36.59 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Valefana cicatitas sp. nov.

Candidatus Valefana cicatitas (NL. fem. n. *cicatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKZZ01 sp903832085*. The type genome for the species is the GenBank assembly GCA_903832085.1. The GC content of the type genome is 55.23 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Valefana gen. nov.

Candidatus Valefana (NL. fem. n. *Valefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKZZ01*. The type species for the genus is *Candidatus* Valefana cicatitas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Valefella catiledo sp. nov.

Candidatus Valefella catiledo (NL. fem. n. *catiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1732 sp900320095*. The type genome for the species is the GenBank assembly GCA_900321125.1. The GC content of the type genome is 60.38 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Valefella gen. nov.

Candidatus Valefella (NL. fem. n. *Valefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1732*. The type species for the genus is *Candidatus* Valefella catiledo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenodidaceae.

Description of *Candidatus* Valefella desacitoga sp. nov.

Candidatus Valefella desacitoga (NL. fem. n. *desacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1732 sp902762495*. The type genome for the species is the GenBank assembly GCA_902779045.1. The GC content of the type genome is 58.93 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Valefella inpinivita sp. nov.

Candidatus Valefella inpinivita (NL. fem. n. *inpinivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1732 sp902774245*. The type genome for the species is the GenBank assembly GCA_902774245.1. The GC content of the type genome is 59.37 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Valefella melilitudo sp. nov.

Candidatus Valefella melilitudo (NL. fem. n. *melilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1732 sp902802585*. The type genome for the species is the GenBank assembly GCA_902802585.1. The GC content of the type genome is 59.92 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Valefella pimenimonia sp. nov.

Candidatus Valefella pimenimonia (NL. fem. n. *pimenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1732 sp902778895*. The type genome for the species is the GenBank assembly GCA_902778895.1. The GC content of the type genome is 58.16 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Valefella terebitas sp. nov.

Candidatus Valefella terebitas (NL. fem. n. *terebitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1732 sp902780135*. The type genome for the species is the GenBank assembly GCA_902780135.1. The GC content of the type genome is 61.24 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Valefella vicatitas sp. nov.

Candidatus Valefella vicatitas (NL. fem. n. *vicatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1732 sp002315855*. The type genome for the species is the GenBank assembly GCA_002315855.1. The GC content of the type genome is 49.83 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Valefia licenibula sp. nov.

Candidatus Valefia licenibula (NL. fem. n. *licenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN32 sp011053555*. The type genome for the species is the GenBank assembly GCA_011388395.1. The GC content of the type genome is 70.85 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Valefia gen. nov.

Candidatus Valefia (NL. fem. n. *Valefia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HRBIN32*. The type species for the genus is *Candidatus* Valefia licenibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HRBIN32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Valefiaceae.

Description of *Candidatus* Valefiaceae fam. nov.

Candidatus Valefiaceae (NL. fem. n. *Valefiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HRBIN32.* The type genus for the taxon is *Candidatus* Valefia .

According to the original version of GTDB R06-RS202, this family belongs to the order *CSP1-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Minagiales.

Description of *Candidatus* Valefia milifago sp. nov.

Candidatus Valefia milifago (NL. fem. n. *milifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HRBIN32 sp002898935*. The type genome for the species is the GenBank assembly GCA_002898935.1. The GC content of the type genome is 71.34 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Valefida enharedo sp. nov.

Candidatus Valefida enharedo (NL. fem. n. *enharedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSM-21351 sp012839035*. The type genome for the species is the GenBank assembly GCA_012839035.1. The GC content of the type genome is 67.26 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Valefida gen. nov.

Candidatus Valefida (NL. fem. n. *Valefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSM-21351*. The type species for the genus is *Candidatus* Valefida enharedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Valefida nosocibra sp. nov.

Candidatus Valefida nosocibra (NL. fem. n. *nosocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *DSM-21351 sp004362375*. The type genome for the species is the GenBank assembly RS_GCF_002250605.1. The GC content of the type genome is 69.37 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Valefida relapessa sp. nov.

Candidatus Valefida relapessa (NL. fem. n. *relapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSM-21351 sp002250625*. The type genome for the species is the GenBank assembly RS_GCF_002250625.1. The GC content of the type genome is 69.56 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Valefosa vagabimonia sp. nov.

Candidatus Valefosa vagabimonia (NL. fem. n. *vagabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-FULL-39-9 sp001793155*. The type genome for the species is the GenBank assembly GCA_001792385.1. The GC content of the type genome is 38.88 % and the genome length is 1.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Valefosa gen. nov.

Candidatus Valefosa (NL. fem. n. *Valefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-FULL-39-9*. The type species for the genus is *Candidatus* Valefosa vagabimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Vampirococcus dibuciforma sp. nov.

Candidatus Vampirococcus dibuciforma (NL. fem. n. *dibuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vampirococcus sp002421805*. The type genome for the species is the GenBank assembly GCA_002421805.1. The GC content of the type genome is 53.4 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Vampirovibrio detotax sp. nov.

Candidatus Vampirovibrio detotax (NL. fem. n. *detotax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vampirovibrio sp902168245*. The type genome for the species is the GenBank assembly RS_GCF_902168245.1. The GC content of the type genome is 52.14 % and the genome length is 4.63 Mbp.

Description of *Candidatus* Vanidana lanugisca sp. nov.

Candidatus Vanidana lanugisca (NL. fem. n. *lanugisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3937 sp002385735*. The type genome for the species is the GenBank assembly GCA_012843035.1. The GC content of the type genome is 48.75 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Vanidana gen. nov.

Candidatus Vanidana (NL. fem. n. *Vanidana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3937*. The type species for the genus is *Candidatus* Vanidana lanugisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Taraxidaceae.

Description of *Candidatus* Vanidaria xenopousia sp. nov.

Candidatus Vanidaria xenopousia (NL. fem. n. *xenopousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *QNYZ01 sp003973265*. The type genome for the species is the GenBank assembly GCA_003973275.1. The GC content of the type genome is 52.75 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Vanidaria gen. nov.

Candidatus Vanidaria (NL. fem. n. *Vanidaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNYZ01*. The type species for the genus is *Candidatus* Vanidaria xenopousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QNYZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vanidariaceae.

Description of *Candidatus* Vanidariaceae fam. nov.

Candidatus Vanidariaceae (NL. fem. n. *Vanidariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QNYZ01.* The type genus for the taxon is *Candidatus* Vanidaria .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Vanidella venunitrix sp. nov.

Candidatus Vanidella venunitrix (NL. fem. n. *venunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAILDB01 sp903832855*. The type genome for the species is the GenBank assembly GCA_903866945.1. The GC content of the type genome is 36.96 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Vanidella gen. nov.

Candidatus Vanidella (NL. fem. n. *Vanidella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAILDB01*. The type species for the genus is *Candidatus* Vanidella venunitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA1-40-21*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Carunariaceae.

Description of *Candidatus* Vanidia peripentia sp. nov.

Candidatus Vanidia peripentia (NL. fem. n. *peripentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSNY01 sp011056935*. The type genome for the species is the GenBank assembly GCA_011056935.1. The GC content of the type genome is 68.63 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Vanidia gen. nov.

Candidatus Vanidia (NL. fem. n. *Vanidia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSNY01*. The type species for the genus is *Candidatus* Vanidia peripentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vanidida adessitura sp. nov.

Candidatus Vanidida adessitura (NL. fem. n. *adessitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7428 sp011526275*. The type genome for the species is the GenBank assembly GCA_011526275.1. The GC content of the type genome is 43.7 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Vanidida gen. nov.

Candidatus Vanidida (NL. fem. n. *Vanidida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7428*. The type species for the genus is *Candidatus* Vanidida adessitura .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vanidida casabugo sp. nov.

Candidatus Vanidida casabugo (NL. fem. n. *casabugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7428 sp011526285*. The type genome for the species is the GenBank assembly GCA_011526285.1. The GC content of the type genome is 39.85 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Vanidida conaritio sp. nov.

Candidatus Vanidida conaritio (NL. fem. n. *conaritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7428 sp003023645*. The type genome for the species is the GenBank assembly GCA_003023645.1. The GC content of the type genome is 37.62 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Vanidida culibivita sp. nov.

Candidatus Vanidida culibivita (NL. fem. n. *culibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7428 sp002708445*. The type genome for the species is the GenBank assembly GCA_002708445.1. The GC content of the type genome is 35.79 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Vanidida excocax sp. nov.

Candidatus Vanidida excocax (NL. fem. n. *excocax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7428 sp002477625*. The type genome for the species is the GenBank assembly GCA_002477625.1. The GC content of the type genome is 38.79 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Vanidida exsupitia sp. nov.

Candidatus Vanidida exsupitia (NL. fem. n. *exsupitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7428 sp011526265*. The type genome for the species is the GenBank assembly GCA_011526265.1. The GC content of the type genome is 45.04 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Vanidida feditousia sp. nov.

Candidatus Vanidida feditousia (NL. fem. n. *feditousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7428 sp011526335*. The type genome for the species is the GenBank assembly GCA_011526335.1. The GC content of the type genome is 41.18 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Vanidula decatentia sp. nov.

Candidatus Vanidula decatentia (NL. fem. n. *decatentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5429 sp009787485*. The type genome for the species is the GenBank assembly GCA_009787485.1. The GC content of the type genome is 39.73 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Vanidula gen. nov.

Candidatus Vanidula (NL. fem. n. *Vanidula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5429*. The type species for the genus is *Candidatus* Vanidula decatentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WCHB1-69*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Turibosaceae.

Description of *Candidatus* Vanidula invicitoga sp. nov.

Candidatus Vanidula invicitoga (NL. fem. n. *invicitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5429 sp009787675*. The type genome for the species is the GenBank assembly GCA_009787675.1. The GC content of the type genome is 38.5 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Vanidula lugubentia sp. nov.

Candidatus Vanidula lugubentia (NL. fem. n. *lugubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5429 sp009787115*. The type genome for the species is the GenBank assembly GCA_009787115.1. The GC content of the type genome is 38.39 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Vanidula sacomigena sp. nov.

Candidatus Vanidula sacomigena (NL. fem. n. *sacomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5429 sp009786185*. The type genome for the species is the GenBank assembly GCA_009786115.1. The GC content of the type genome is 38.14 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Vanidula scintastra sp. nov.

Candidatus Vanidula scintastra (NL. fem. n. *scintastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5429 sp009776395*. The type genome for the species is the GenBank assembly GCA_009776395.1. The GC content of the type genome is 36.33 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Vanidula vinoledo sp. nov.

Candidatus Vanidula vinoledo (NL. fem. n. *vinoledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5429 sp002427605*. The type genome for the species is the GenBank assembly GCA_002427605.1. The GC content of the type genome is 37.7 %

and the genome length is 2.11 Mbp.

Description of *Candidatus* Vanitana dicabessa sp. nov.

Candidatus Vanitana dicabessa (NL. fem. n. *dicabessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS731 sp900544985*. The type genome for the species is the GenBank assembly GCA_900544985.1. The GC content of the type genome is 42.65 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Vanitana gen. nov.

Candidatus Vanitana (NL. fem. n. *Vanitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS731*. The type species for the genus is *Candidatus* Vanitana dicabessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-272*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Colipariaceae.

Description of *Candidatus* Vanitaria dedigibra sp. nov.

Candidatus Vanitaria dedigibra (NL. fem. n. *dedigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QS-8-64-10 sp003023275*. The type genome for the species is the GenBank assembly GCA_003022585.1. The GC content of the type genome is 67.56 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Vanitaria gen. nov.

Candidatus Vanitaria (NL. fem. n. *Vanitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QS-8-64-10*. The type species for the genus is *Candidatus* Vanitaria dedigibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vanitaria dicibentia sp. nov.

Candidatus Vanitaria dicibentia (NL. fem. n. *dicibentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QS-8-64-10 sp003023245*. The type genome for the species is the GenBank assembly GCA_003023245.1. The GC content of the type genome is 67.69 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Vanitaria obvolimonia sp. nov.

Candidatus Vanitaria obvolimonia (NL. fem. n. *obvolimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QS-8-64-10 sp003022485*. The type genome for the species is the GenBank assembly GCA_003022485.1. The GC content of the type genome is 67.81 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Vanitaria siminousia sp. nov.

Candidatus Vanitaria siminousia (NL. fem. n. *siminousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QS-8-64-10 sp003022535*. The type genome for the species is the GenBank assembly GCA_003022535.1. The GC content of the type genome is 68.3 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Vanitia bicodilenta sp. nov.

Candidatus Vanitia bicodilenta (NL. fem. n. *bicodilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-49-40 sp001780035*. The type genome for the species is the GenBank assembly GCA_001777855.1. The GC content of the type genome is 48.86 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Vanitia gen. nov.

Candidatus Vanitia (NL. fem. n. *Vanitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-49-40*. The type species for the genus is *Candidatus* Vanitia bicodilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *O2-02-FULL-48-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Susicariaceae.

Description of *Candidatus* Vanitida colepibra sp. nov.

Candidatus Vanitida colepibra (NL. fem. n. *colepibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA923 sp002387735*. The type genome for the species is the GenBank assembly GCA_002387735.1. The GC content of the type genome is 48.08 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Vanitida gen. nov.

Candidatus Vanitida (NL. fem. n. *Vanitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA923*. The type species for the genus is *Candidatus* Vanitida colepibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA923*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vanitidaceae.

Description of *Candidatus* Vanitidaceae fam. nov.

Candidatus Vanitidaceae (NL. fem. n. *Vanitidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA923.* The type genus for the taxon is *Candidatus* Vanitida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desorariales.

Description of *Candidatus* Vanitula feculitia sp. nov.

Candidatus Vanitula feculitia (NL. fem. n. *feculitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-320 sp003246755*. The type genome for the species is the GenBank assembly GCA_003246755.1. The GC content of the type genome is 63.04 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Vanitula gen. nov.

Candidatus Vanitula (NL. fem. n. *Vanitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-320*. The type species for the genus is *Candidatus* Vanitula feculitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-71-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Relenulaceae.

Description of *Candidatus* Vannielia offirifica sp. nov.

Candidatus Vannielia offirifica (NL. fem. n. *offirifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vannielia sp006351965*. The type genome for the species is the GenBank assembly RS_GCF_006351965.1. The GC content of the type genome is 64.47 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Variovorax abhinax sp. nov.

Candidatus Variovorax abhinax (NL. fem. n. *abhinax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp001984055*. The type genome for the species is the GenBank assembly RS_GCF_001984055.1. The GC content of the type genome is 67.47 % and the genome length is 7.19 Mbp.

Description of *Candidatus* Variovorax adlapifica sp. nov.

Candidatus Variovorax adlapifica (NL. fem. n. *adlapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900107745*. The type genome for the species is the GenBank assembly RS_GCF_900107745.1. The GC content of the type genome is 66.22 % and the genome length is 7.37 Mbp.

Description of *Candidatus* Variovorax antacimonia sp. nov.

Candidatus Variovorax antacimonia (NL. fem. n. *antacimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp009765735*. The type genome for the species is the GenBank assembly RS_GCF_009765735.1. The GC content of the type genome is 68.6 % and the genome length is 6.92 Mbp.

Description of *Candidatus* Variovorax argitivita sp. nov.

Candidatus Variovorax argitivita (NL. fem. n. *argitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp001541225*. The type genome for the species is the GenBank assembly RS_GCF_001541225.1. The GC content of the type genome is 66.46 % and the genome length is 8.15 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Variovorax arrugatio sp. nov.

Candidatus Variovorax arrugatio (NL. fem. n. *arrugatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp001425205*. The type genome for the species is the GenBank assembly RS_GCF_001425205.1. The GC content of the type genome is 66.64 % and the genome length is 6.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Variovorax artilifica sp. nov.

Candidatus Variovorax artilifica (NL. fem. n. *artilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp003984645*. The type genome for the species is the GenBank assembly RS_GCF_003984645.1. The GC content of the type genome is 67.06 % and the genome length is 5.88 Mbp.

Description of *Candidatus* Variovorax astapifica sp. nov.

Candidatus Variovorax astapifica (NL. fem. n. *astapifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900115685*. The type genome for the species is the GenBank assembly RS_GCF_900115685.1. The GC content of the type genome is 67.05 % and the genome length is 7.45 Mbp.

Description of *Candidatus* Variovorax benematio sp. nov.

Candidatus Variovorax benematio (NL. fem. n. *benematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp003014875*. The type genome for the species is the GenBank assembly RS_GCF_003014875.1. The GC content of the type genome is 67.22 % and the genome length is 8.56 Mbp.

Description of *Candidatus* Variovorax benivetta sp. nov.

Candidatus Variovorax benivetta (NL. fem. n. *benivetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp003019815*. The type genome for the species is the GenBank assembly RS_GCF_003019815.1. The GC content of the type genome is 67.61 % and the genome length is 7.02 Mbp.

Description of *Candidatus* Variovorax capuditica sp. nov.

Candidatus Variovorax capuditica (NL. fem. n. *capuditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Variovorax sp000282635*. The type genome for the species is the GenBank assembly RS_GCF_001426595.1. The GC content of the type genome is 66.92 % and the genome length is 6.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Variovorax colopentia sp. nov.

Candidatus Variovorax colopentia (NL. fem. n. *colopentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp901827185*. The type genome for the species is the GenBank assembly RS_GCF_901827165.1. The GC content of the type genome is 66.49 % and the genome length is 7.67 Mbp.

Description of *Candidatus* Variovorax decunibra sp. nov.

Candidatus Variovorax decunibra (NL. fem. n. *decunibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900114785*. The type genome for the species is the GenBank assembly RS_GCF_900114785.1. The GC content of the type genome is 67.82 % and the genome length is 6.31 Mbp.

Description of *Candidatus* Variovorax defunatio sp. nov.

Candidatus Variovorax defunatio (NL. fem. n. *defunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900106655*. The type genome for the species is the GenBank assembly RS_GCF_900106655.1. The GC content of the type genome is 66.4 % and the genome length is 7.16 Mbp.

Description of *Candidatus* Variovorax delubicula sp. nov.

Candidatus Variovorax delubicula (NL. fem. n. *delubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp004217005*. The type genome for the species is the GenBank assembly RS_GCF_004217005.1. The GC content of the type genome is 68.52 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Variovorax dimacastra sp. nov.

Candidatus Variovorax dimacastra (NL. fem. n. *dimacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp001899795*. The type genome for the species is the GenBank assembly GCA_001725035.1. The GC content of the type genome is 67.38 % and the genome length is 7.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Cyanide and thiocyanate bioreactor".

Description of *Candidatus* Variovorax effigetta sp. nov.

Candidatus Variovorax effigetta (NL. fem. n. *effigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp014302995*. The type genome for the species is the GenBank assembly RS_GCF_014302995.1. The GC content of the type genome is 66.0 % and the genome length is 7.39 Mbp.

Description of *Candidatus* Variovorax exhilitudo sp. nov.

Candidatus Variovorax exhilitudo (NL. fem. n. *exhilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp003852515*. The type genome for the species is the GenBank assembly RS_GCF_003852515.1. The GC content of the type genome is 66.83 % and the genome length is 7.18 Mbp.

Description of *Candidatus* Variovorax hirudago sp. nov.

Candidatus Variovorax hirudago (NL. fem. n. *hirudago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp002754375*. The type genome for the species is the GenBank assembly RS_GCF_002849325.1. The GC content of the type genome is 67.37 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Variovorax immadessa sp. nov.

Candidatus Variovorax immadessa (NL. fem. n. *immadessa* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp004216615*. The type genome for the species is the GenBank assembly RS_GCF_004216615.1. The GC content of the type genome is 67.12 % and the genome length is 6.54 Mbp.

Description of *Candidatus* Variovorax inargibula sp. nov.

Candidatus Variovorax inargibula (NL. fem. n. *inargibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp014170375*. The type genome for the species is the GenBank assembly RS_GCF_014170375.1. The GC content of the type genome is 68.71 % and the genome length is 7.14 Mbp.

Description of *Candidatus* Variovorax incocitio sp. nov.

Candidatus Variovorax incocitio (NL. fem. n. *incocitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp004340105*. The type genome for the species is the GenBank assembly RS_GCF_004340105.1. The GC content of the type genome is 66.07 % and the genome length is 5.62 Mbp.

Description of *Candidatus* Variovorax incunitica sp. nov.

Candidatus Variovorax incunitica (NL. fem. n. *incunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp003984625*. The type genome for the species is the GenBank assembly RS_GCF_003984625.1. The GC content of the type genome is 65.84 % and the genome length is 5.25 Mbp.

Description of *Candidatus* Variovorax indipibra sp. nov.

Candidatus Variovorax indipibra (NL. fem. n. *indipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp902506565*. The type genome for the species is the GenBank assembly RS_GCF_902506565.1. The GC content of the type genome is 66.52 % and the genome length is 4.79 Mbp.

Description of *Candidatus* Variovorax infinilenta sp. nov.

Candidatus Variovorax infinilenta (NL. fem. n. *infinilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp004211245*. The type genome for the species is the GenBank assembly GCA_004211245.1. The GC content of the type genome is 67.25 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Variovorax inlacitrix sp. nov.

Candidatus Variovorax inlacitrix (NL. fem. n. *inlacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp901827205*. The type genome for the species is the GenBank assembly RS_GCF_901827205.1. The GC content of the type genome is 66.75 % and the genome length is 6.65 Mbp.

Description of *Candidatus* Variovorax insaliforma sp. nov.

Candidatus Variovorax insaliforma (NL. fem. n. *insaliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp013376015*. The type genome for the species is the GenBank assembly RS_GCF_013376015.1. The GC content of the type genome is 66.67 % and the genome length is 6.92 Mbp.

Description of *Candidatus* Variovorax invinitas sp. nov.

Candidatus Variovorax invinitas (NL. fem. n. *invinitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900090195*. The type genome for the species is the GenBank assembly RS_GCF_900090195.1. The GC content of the type genome is 66.53 % and the genome length is 7.73 Mbp.

Description of *Candidatus* Variovorax lanifitio sp. nov.

Candidatus Variovorax lanifitio (NL. fem. n. *lanifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp001424835*. The type genome for the species is the GenBank assembly RS_GCF_001424835.1. The GC content of the type genome is 65.8 % and the genome length is 5.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Variovorax lapicisca sp. nov.

Candidatus Variovorax lapicisca (NL. fem. n. *lapicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900099805*. The type genome for the species is the GenBank assembly RS_GCF_900099805.1. The GC content of the type genome is 65.69 % and the genome length is 6.48 Mbp.

Description of *Candidatus* Variovorax loripigena sp. nov.

Candidatus Variovorax loripigena (NL. fem. n. *loripigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp002157355*. The type genome for the species is the GenBank assembly RS_GCF_002157355.1. The GC content of the type genome is 68.03 % and the genome length is 7.32 Mbp.

Description of *Candidatus* Variovorax meridilega sp. nov.

Candidatus Variovorax meridilega (NL. fem. n. *meridilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp014192585*. The type genome for the species is the GenBank assembly RS_GCF_014192585.1. The GC content of the type genome is 65.11 % and the genome length is 7.13 Mbp.

Description of *Candidatus* Variovorax milifitia sp. nov.

Candidatus Variovorax milifitia (NL. fem. n. *milifitia* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp014303735*. The type genome for the species is the GenBank assembly GCA_014376455.1. The GC content of the type genome is 64.07 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Variovorax pacifimonia sp. nov.

Candidatus Variovorax pacifimonia (NL. fem. n. *pacifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp001577265*. The type genome for the species is the GenBank assembly RS_GCF_001577265.1. The GC content of the type genome is 65.97 % and the genome length is 4.32 Mbp.

Description of *Candidatus* Variovorax panopessa sp. nov.

Candidatus Variovorax panopessa (NL. fem. n. *panopessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp001426505*. The type genome for the species is the GenBank assembly RS_GCF_001426505.1. The GC content of the type genome is 67.84 % and the genome length is 5.75 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "root".

Description of *Candidatus* Variovorax panopibula sp. nov.

Candidatus Variovorax panopibula (NL. fem. n. *panopibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp901827155*. The type genome for the species is the GenBank assembly RS_GCF_901827155.1. The GC content of the type genome is 66.24 % and the genome length is 6.87 Mbp.

Description of *Candidatus* Variovorax progniforma sp. nov.

Candidatus Variovorax progniforma (NL. fem. n. *progniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp901827175*. The type genome for the species is the GenBank assembly RS_GCF_901827175.1. The GC content of the type genome is 66.86 % and the genome length is 7.42 Mbp.

Description of *Candidatus* Variovorax resacibula sp. nov.

Candidatus Variovorax resacibula (NL. fem. n. *resacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp003952185*. The type genome for the species is the GenBank assembly RS_GCF_003950725.1. The GC content of the type genome is 67.26 % and the genome length is 7.21 Mbp.

Description of *Candidatus* Variovorax risibibra sp. nov.

Candidatus Variovorax risibibra (NL. fem. n. *risibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900101545*. The type genome for the species is the GenBank assembly RS_GCF_900101545.1. The GC content of the type genome is 66.97 % and the genome length is 6.85 Mbp.

Description of *Candidatus* Variovorax rumifimonia sp. nov.

Candidatus Variovorax rumifimonia (NL. fem. n. *rumifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900112425*. The type genome for the species is the GenBank assembly RS_GCF_900115445.1. The GC content of the type genome is 68.13 % and the genome length is 8.72 Mbp.

Description of *Candidatus* Variovorax semunivita sp. nov.

Candidatus Variovorax semunivita (NL. fem. n. *semunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900115375*. The type genome for the species is the GenBank assembly RS_GCF_001399565.1. The GC content of the type genome is 69.18

% and the genome length is 9.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Drinking Water".

Description of *Candidatus* Variovorax solipicula sp. nov.

Candidatus Variovorax solipicula (NL. fem. n. *solipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp013376045*. The type genome for the species is the GenBank assembly RS_GCF_013376045.1. The GC content of the type genome is 67.67 % and the genome length is 7.42 Mbp.

Description of *Candidatus* Variovorax suboditia sp. nov.

Candidatus Variovorax suboditia (NL. fem. n. *suboditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp000620225*. The type genome for the species is the GenBank assembly RS_GCF_000620225.1. The GC content of the type genome is 64.58 % and the genome length is 6.63 Mbp.

Description of *Candidatus* Variovorax tabitifica sp. nov.

Candidatus Variovorax tabitifica (NL. fem. n. *tabitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp003053685*. The type genome for the species is the GenBank assembly RS_GCF_004345975.1. The GC content of the type genome is 69.32 % and the genome length is 7.46 Mbp.

Description of *Candidatus* Variovorax utraricella sp. nov.

Candidatus Variovorax utraricella (NL. fem. n. *utraricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp004210915*. The type genome for the species is the GenBank assembly GCA_004210915.1. The GC content of the type genome is 66.92 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Variovorax vinacilega sp. nov.

Candidatus Variovorax vinacilega (NL. fem. n. *vinacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp900100965*. The type genome for the species is the GenBank assembly RS_GCF_900100965.1. The GC content of the type genome is 66.7 % and the genome length is 7.0 Mbp.

Description of *Candidatus* Variovorax volunitia sp. nov.

Candidatus Variovorax volunitia (NL. fem. n. *volunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Variovorax sp003096925*. The type genome for the species is the GenBank assembly RS_GCF_004341565.1. The GC content of the type genome is 68.11 % and the genome length is 8.61 Mbp.

Description of *Candidatus* Vatilana exoscicella sp. nov.

Candidatus Vatilana exoscicella (NL. fem. n. *exoscicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1433 sp002423395*. The type genome for the species is the GenBank assembly GCA_002423395.1. The GC content of the type genome is 36.13 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Vatilana gen. nov.

Candidatus Vatilana (NL. fem. n. *Vatilana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1433*. The type species for the genus is *Candidatus* Vatilana exoscicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1433*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilanaceae.

Description of *Candidatus* Vatilanaceae fam. nov.

Candidatus Vatilanaceae (NL. fem. n. *Vatilanaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1433.* The type genus for the taxon is *Candidatus* Vatilana .

According to GTDB R06-RS202, this family belongs to the order *Eubacteriales*.

Description of *Candidatus* Vatilana facunitia sp. nov.

Candidatus Vatilana facunitia (NL. fem. n. *facunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1433 sp012797825*. The type genome for the species is the GenBank assembly GCA_012797825.1. The GC content of the type genome is 36.02 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Vatilana sacopitoga sp. nov.

Candidatus Vatilana sacopitoga (NL. fem. n. *sacopitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1433 sp002329295*. The type genome for the species is the GenBank assembly GCA_012520465.1. The GC content of the type genome is 42.19 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Vatilaria opercitura sp. nov.

Candidatus Vatilaria opercitura (NL. fem. n. *opercitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9464 sp005801385*. The type genome for the species is the GenBank assembly GCA_005801385.1. The GC content of the type genome is 65.37 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Vatilaria gen. nov.

Candidatus Vatilaria (NL. fem. n. *Vatilaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9464*. The type species for the genus is *Candidatus* Vatilaria

opercitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9464*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilariaceae.

Description of *Candidatus* Vatilariaceae fam. nov.

Candidatus Vatilariaceae (NL. fem. n. *Vatilariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9464.* The type genus for the taxon is *Candidatus* Vatilaria .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Vatilaria semilax sp. nov.

Candidatus Vatilaria semilax (NL. fem. n. *semilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9464 sp003445095*. The type genome for the species is the GenBank assembly GCA_003445095.1. The GC content of the type genome is 59.49 % and the genome length is 6.02 Mbp.

Description of *Candidatus* Vatilella favilimonia sp. nov.

Candidatus Vatilella favilimonia (NL. fem. n. *favilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2719675 sp002719675*. The type genome for the species is the GenBank assembly GCA_002719675.1. The GC content of the type genome is 32.62 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Vatilella gen. nov.

Candidatus Vatilella (NL. fem. n. *Vatilella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2719675*. The type species for the genus is *Candidatus* Vatilella favilimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2719675*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilellaceae.

Description of *Candidatus* Vatilellaceae fam. nov.

Candidatus Vatilellaceae (NL. fem. n. *Vatilellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2719675.* The type genus for the taxon is *Candidatus* Vatilella .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defulidales.

Description of *Candidatus* Vatilella nubigatio sp. nov.

Candidatus Vatilella nubigatio (NL. fem. n. *nubigatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2719675 sp009392295*. The type genome for the species is the GenBank assembly GCA_009392295.1. The GC content of the type genome is 32.03 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Vatilia docibetta sp. nov.

Candidatus Vatilia docibetta (NL. fem. n. *docibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SMWF01 sp004357385*. The type genome for the species is the GenBank assembly GCA_004356365.1. The GC content of the type genome is 61.59 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Vatilia gen. nov.

Candidatus Vatilia (NL. fem. n. *Vatilia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SMWF01*. The type species for the genus is *Candidatus* Vatilia docibetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Vatilida defosibra sp. nov.

Candidatus Vatilida defosibra (NL. fem. n. *defosibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1318 sp002307015*. The type genome for the species is the GenBank assembly GCA_002307015.1. The GC content of the type genome is 61.46 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Vatilida gen. nov.

Candidatus Vatilida (NL. fem. n. *Vatilida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1318*. The type species for the genus is *Candidatus* Vatilida defosibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1318*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilidaceae.

Description of *Candidatus* Vatilidaceae fam. nov.

Candidatus Vatilidaceae (NL. fem. n. *Vatilidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1318.* The type genus for the taxon is *Candidatus* Vatilida .

According to GTDB R06-RS202, this family belongs to the order *Treponematales*.

Description of *Candidatus* Vatilosa catocousia sp. nov.

Candidatus Vatilosa catocousia (NL. fem. n. *catocousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002390615*. The type genome for the species is the GenBank

assembly GCA_003491685.1. The GC content of the type genome is 49.69 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Vatilosa gen. nov.

Candidatus Vatilosa (NL. fem. n. *Vatilosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UA16*. The type species for the genus is *Candidatus* Vatilosa catocousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UA16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilosaceae.

Description of *Candidatus* Vatilosaceae fam. nov.

Candidatus Vatilosaceae (NL. fem. n. *Vatilosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UA16.* The type genus for the taxon is *Candidatus* Vatilosa .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Vatilosa depubentia sp. nov.

Candidatus Vatilosa depubentia (NL. fem. n. *depubentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002292325*. The type genome for the species is the GenBank assembly GCA_002292325.1. The GC content of the type genome is 49.75 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Vatilosa divulastra sp. nov.

Candidatus Vatilosa divulastra (NL. fem. n. *divulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002420235*. The type genome for the species is the GenBank assembly GCA_002348525.1. The GC content of the type genome is 48.88 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Vatilosa domigisca sp. nov.

Candidatus Vatilosa domigisca (NL. fem. n. *domigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002323795*. The type genome for the species is the GenBank assembly GCA_002731615.1. The GC content of the type genome is 48.12 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Vatilosa effosivita sp. nov.

Candidatus Vatilosa effosivita (NL. fem. n. *effosivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002336085*. The type genome for the species is the GenBank assembly GCA_002336085.1. The GC content of the type genome is 47.97 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Vatilosa funamitas sp. nov.

Candidatus Vatilosa funamitas (NL. fem. n. *funamitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002448555*. The type genome for the species is the GenBank assembly GCA_002448555.1. The GC content of the type genome is 56.03 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Vatilosa furibastra sp. nov.

Candidatus Vatilosa furibastra (NL. fem. n. *furibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002477505*. The type genome for the species is the GenBank assembly GCA_002389585.1. The GC content of the type genome is 50.71 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Vatilosa inlacibula sp. nov.

Candidatus Vatilosa inlacibula (NL. fem. n. *inlacibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002390405*. The type genome for the species is the GenBank assembly GCA_002390405.1. The GC content of the type genome is 50.78 % and the genome length is 2.27 Mbp.

Description of *Candidatus* Vatilosa pedifivita sp. nov.

Candidatus Vatilosa pedifivita (NL. fem. n. *pedifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002690915*. The type genome for the species is the GenBank assembly GCA_002725055.1. The GC content of the type genome is 52.64 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Vatilosa retecax sp. nov.

Candidatus Vatilosa retecax (NL. fem. n. *retecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UA16 sp002863125*. The type genome for the species is the GenBank assembly GCA_002323545.1. The GC content of the type genome is 56.53 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Vatilula pragmastra sp. nov.

Candidatus Vatilula pragmastra (NL. fem. n. *pragmastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VENG01 sp009711705*. The type genome for the species is the GenBank assembly GCA_009711705.1. The GC content of the type genome is 43.93 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Vatilula gen. nov.

Candidatus Vatilula (NL. fem. n. *Vatilula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VENG01*. The type species for the genus is *Candidatus* Vatilula

pragmastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VENG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilulaceae.

Description of *Candidatus* Vatilulaceae fam. nov.

Candidatus Vatilulaceae (NL. fem. n. *Vatilulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VENG01.* The type genus for the taxon is *Candidatus* Vatilula .

According to GTDB R06-RS202, this family belongs to the order *Desulfotomaculales*.

Description of *Candidatus* Vavasana attesitura sp. nov.

Candidatus Vavasana attesitura (NL. fem. n. *attesitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4408 sp002389785*. The type genome for the species is the GenBank assembly GCA_002389785.1. The GC content of the type genome is 36.76 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Vavasana gen. nov.

Candidatus Vavasana (NL. fem. n. *Vavasana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4408*. The type species for the genus is *Candidatus* Vavasana attesitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4408*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vavasanaceae.

Description of *Candidatus* Vavasanaceae fam. nov.

Candidatus Vavasanaceae (NL. fem. n. *Vavasanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4408.* The type genus for the taxon is *Candidatus* Vavasana .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Satacosales.

Description of *Candidatus* Vavasaria metabentia sp. nov.

Candidatus Vavasaria metabentia (NL. fem. n. *metabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HO2-45-13 sp001821765*. The type genome for the species is the GenBank assembly GCA_001819835.1. The GC content of the type genome is 44.14 % and the genome length is 0.89 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Vavasaria gen. nov.

Candidatus Vavasaria (NL. fem. n. *Vavasaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HO2-45-13*. The type species for the genus is *Candidatus* Vavasaria metabentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-47-10b*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipatanaceae.

Description of *Candidatus* Vavasella bipinousia sp. nov.

Candidatus Vavasella bipinousia (NL. fem. n. *bipinousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQBG01 sp903870055*. The type genome for the species is the GenBank assembly GCA_903870055.1. The GC content of the type genome is 53.28 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Vavasella gen. nov.

Candidatus Vavasella (NL. fem. n. *Vavasella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIQBG01*. The type species for the genus is *Candidatus* Vavasella bipinousia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vavasella cuticitio sp. nov.

Candidatus Vavasella cuticitio (NL. fem. n. *cuticitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIQBG01 sp009938325*. The type genome for the species is the GenBank assembly RS_GCF_009938325.1. The GC content of the type genome is 54.2 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Vavasia halucitica sp. nov.

Candidatus Vavasia halucitica (NL. fem. n. *halucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3946 sp002385755*. The type genome for the species is the GenBank assembly GCA_002385755.1. The GC content of the type genome is 47.63 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Vavasia gen. nov.

Candidatus Vavasia (NL. fem. n. *Vavasia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3946*. The type species for the genus is *Candidatus* Vavasia halucitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-698*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sataciaceae.

Description of *Candidatus* Vavasia relenimonas sp. nov.

Candidatus Vavasia relenimonas (NL. fem. n. *relenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3946 sp002385575*. The type genome for the species is the GenBank assembly GCA_002385575.1. The GC content of the type genome is 52.28 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Vavasida obnoxago sp. nov.

Candidatus Vavasida obnoxago (NL. fem. n. *obnoxago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PHAN01 sp002841695*. The type genome for the species is the GenBank assembly GCA_002841695.1. The GC content of the type genome is 52.72 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Vavasida gen. nov.

Candidatus Vavasida (NL. fem. n. *Vavasida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PHAN01*. The type species for the genus is *Candidatus* Vavasida obnoxago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PHAN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vavasidaceae.

Description of *Candidatus* Vavasidaceae fam. nov.

Candidatus Vavasidaceae (NL. fem. n. *Vavasidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PHAN01*. The type genus for the taxon is *Candidatus* Vavasida .

According to the original version of GTDB R06-RS202, this family belongs to the order *PHAN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vavasidales.

Description of *Candidatus* Vavasidales ord. nov.

Candidatus Vavasidales (NL. fem. n. *Vavasidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *PHAN01*. The type genus for the taxon is *Candidatus* Vavasida .

According to the GTDB R06-RS202, this order belongs to the class *Endomicrobia*.

Description of *Candidatus* Vavasosa impavastra sp. nov.

Candidatus Vavasosa impavastra (NL. fem. n. *impavastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-53-11 sp002788775*. The type genome for the species is the GenBank assembly GCA_002788775.1. The GC content of the type genome is 53.04 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Vavasosa gen. nov.

Candidatus Vavasosa (NL. fem. n. *Vavasosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-53-11*. The type species for the genus is *Candidatus* Vavasosa impavastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-53-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vavasosaceae.

Description of *Candidatus* Vavasosaceae fam. nov.

Candidatus Vavasosaceae (NL. fem. n. *Vavasosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-53-11*. The type genus for the taxon is *Candidatus* Vavasosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1369*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogiales.

Description of *Candidatus* Vavasula ensigitica sp. nov.

Candidatus Vavasula ensigitica (NL. fem. n. *ensigitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11618 sp003539915*. The type genome for the species is the GenBank assembly GCA_003539915.1. The GC content of the type genome is 38.23 % and the genome length is 0.42 Mbp.

Description of *Candidatus* Vavasula gen. nov.

Candidatus Vavasula (NL. fem. n. *Vavasula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11618*. The type species for the genus is *Candidatus* Vavasula ensigitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11618*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vavasulaceae.

Description of *Candidatus* Vavasulaceae fam. nov.

Candidatus Vavasulaceae (NL. fem. n. *Vavasulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11618.* The type genus for the taxon is *Candidatus* Vavasula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Vecoraria abantitio sp. nov.

Candidatus Vecoraria abantitio (NL. fem. n. *abantitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6053 sp003565815*. The type genome for the species is the GenBank assembly GCA_003565815.1. The GC content of the type genome is 57.31 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Vecoraria gen. nov.

Candidatus Vecoraria (NL. fem. n. *Vecoraria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA6053*. The type species for the genus is *Candidatus* Vecoraria abantitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6053*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vecorariaceae.

Description of *Candidatus* Vecorariaceae fam. nov.

Candidatus Vecorariaceae (NL. fem. n. *Vecorariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6053.* The type genus for the taxon is *Candidatus* Vecoraria .

According to the original version of GTDB R06-RS202, this family belongs to the order *SS1-B-03-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Nutamidales.

Description of *Candidatus* Vecoraria holovago sp. nov.

Candidatus Vecoraria holovago (NL. fem. n. *holovago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6053 sp003565035*. The type genome for the species is the GenBank assembly GCA_003565035.1. The GC content of the type genome is 58.19 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Vecoraria mahemilega sp. nov.

Candidatus Vecoraria mahemilega (NL. fem. n. *mahemilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6053 sp002429005*. The type genome for the species is the GenBank assembly GCA_002429005.1. The GC content of the type genome is 54.81 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Vecoraria offuligena sp. nov.

Candidatus Vecoraria offuligena (NL. fem. n. *offuligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6053 sp002429065*. The type genome for the species is the GenBank assembly GCA_002429065.1. The GC content of the type genome is 54.98 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Vecorella adnumago sp. nov.

Candidatus Vecorella adnumago (NL. fem. n. *adnumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NAK19 sp003130835*. The type genome for the species is the GenBank assembly GCA_003130835.1. The GC content of the type genome is 51.18 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Vecorella gen. nov.

Candidatus Vecorella (NL. fem. n. *Vecorella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NAK19*. The type species for the genus is *Candidatus* Vecorella adnumago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Habacidaceae.

Description of *Candidatus* Vecorella nicotigena sp. nov.

Candidatus Vecorella nicotigena (NL. fem. n. *nicotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NAK19 sp003327455*. The type genome for the species is the GenBank assembly GCA_003327455.1. The GC content of the type genome is 51.4 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Vecoria feficimonas sp. nov.

Candidatus Vecoria feficimonas (NL. fem. n. *feficimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Spiro-02 sp001604275*. The type genome for the species is the GenBank assembly GCA_002306015.1. The GC content of the type genome is 55.1 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Vecoria gen. nov.

Candidatus Vecoria (NL. fem. n. *Vecoria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Spiro-02*. The type species for the genus is *Candidatus* Vecoria feficimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vecorida nubifilenta sp. nov.

Candidatus Vecorida nubifilenta (NL. fem. n. *nubifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMDI01 sp008080915*. The type genome for the species is the GenBank assembly GCA_009920215.1. The GC content of the type genome is 36.8 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Vecorida gen. nov.

Candidatus Vecorida (NL. fem. n. *Vecorida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMDI01*. The type species for the genus is *Candidatus* Vecorida nubifilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vecorosa fidenitura sp. nov.

Candidatus Vecorosa fidenitura (NL. fem. n. *fidenitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002791395 sp002771355*. The type genome for the species is the GenBank assembly GCA_002771355.1. The GC content of the type genome is 39.26 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Vecorosa gen. nov.

Candidatus Vecorosa (NL. fem. n. *Vecorosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002791395*. The type species for the genus is *Candidatus* Vecorosa fidenitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002791395*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vecorosaceae.

Description of *Candidatus* Vecorosaceae fam. nov.

Candidatus Vecorosaceae (NL. fem. n. *Vecorosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002791395.* The type genus for the taxon is *Candidatus* Vecorosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *4484-211*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Delapellales.

Description of *Candidatus* Vecorula aclasimonia sp. nov.

Candidatus Vecorula aclasimonia (NL. fem. n. *aclasimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4733 sp002404055*. The type genome for the species is the GenBank assembly GCA_002404055.1. The GC content of the type genome is 64.95 % and the genome length is 7.56 Mbp.

Description of *Candidatus* Vecorula gen. nov.

Candidatus Vecorula (NL. fem. n. *Vecorula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4733*. The type species for the genus is *Candidatus* Vecorula aclasimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4733*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Vecorulaceae.

Description of *Candidatus* Vecorulaceae fam. nov.

Candidatus Vecorulaceae (NL. fem. n. *Vecorulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4733.* The type genus for the taxon is *Candidatus* Vecorula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4733*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vecorulales.

Description of *Candidatus* Vecorulales ord. nov.

Candidatus Vecorulales (NL. fem. n. *Vecorulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4733.* The type genus for the taxon is *Candidatus* Vecorula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4733*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Vecorulae.

Description of *Candidatus* Vecorulae class. nov.

Candidatus Vecorulae (NL. fem. n. *c__Vecorulae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4733.* The type genus for the taxon is *Candidatus* Vecorula .

According to GTDB R06-RS202, this class belongs to the phylum *Chloroflexota*.

Description of *Candidatus* Vehemana divulilenta sp. nov.

Candidatus Vehemana divulilenta (NL. fem. n. *divulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4675 sp002405165*. The type genome for the species is the GenBank assembly GCA_002436875.1. The GC content of the type genome is 35.42 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Vehemana gen. nov.

Candidatus Vehemana (NL. fem. n. *Vehemana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4675*. The type species for the genus is *Candidatus* Vehemana divulilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vehemaria catocivita sp. nov.

Candidatus Vehemaria catocivita (NL. fem. n. *catocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXK01 sp003669615*. The type genome for the species is the GenBank assembly GCA_003669615.1. The GC content of the type genome is 54.81 % and the genome length is 3.77 Mbp.

Description of *Candidatus* Vehemaria gen. nov.

Candidatus Vehemaria (NL. fem. n. *Vehemaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXXK01*. The type species for the genus is *Candidatus* Vehemaria catocivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vehemaria conibetta sp. nov.

Candidatus Vehemaria conibetta (NL. fem. n. *conibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXK01 sp903896675*. The type genome for the species is the GenBank assembly GCA_903872835.1. The GC content of the type genome is 59.38 % and the genome length is 5.38 Mbp.

Description of *Candidatus* Vehemaria decomitura sp. nov.

Candidatus Vehemaria decomitura (NL. fem. n. *decomitura* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXK01 sp005791255*. The type genome for the species is the GenBank assembly GCA_014192315.1. The GC content of the type genome is 59.44 % and the genome length is 6.34 Mbp.

Description of *Candidatus* Vehemaria denavitoga sp. nov.

Candidatus Vehemaria denavitoga (NL. fem. n. *denavitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXK01 sp003670925*. The type genome for the species is the GenBank assembly GCA_003670925.1. The GC content of the type genome is 53.77 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Vehemaria dilecax sp. nov.

Candidatus Vehemaria dilecax (NL. fem. n. *dilecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXK01 sp903924405*. The type genome for the species is the GenBank assembly GCA_903857035.1. The GC content of the type genome is 57.76 % and the genome length is 6.43 Mbp.

Description of *Candidatus* Vehemaria fuligatio sp. nov.

Candidatus Vehemaria fuligatio (NL. fem. n. *fuligatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXK01 sp903871805*. The type genome for the species is the GenBank assembly GCA_903924375.1. The GC content of the type genome is 55.26 % and the genome length is 6.74 Mbp.

Description of *Candidatus* Vehemaria subinitudo sp. nov.

Candidatus Vehemaria subinitudo (NL. fem. n. *subinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXXK01 sp903858815*. The type genome for the species is the GenBank assembly GCA_903847555.1. The GC content of the type genome is 57.98 % and the genome length is 6.86 Mbp.

Description of *Candidatus* Vehemia cinipifica sp. nov.

Candidatus Vehemia cinipifica (NL. fem. n. *cinipifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11073 sp013289145*. The type genome for the species is the GenBank assembly GCA_013289145.1. The GC content of the type genome is 52.84 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Vehemia gen. nov.

Candidatus Vehemia (NL. fem. n. *Vehemia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA11073*. The type species for the genus is *Candidatus* Vehemia cinipifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehemiaceae.

Description of *Candidatus* Vehemiaceae fam. nov.

Candidatus Vehemiaceae (NL. fem. n. *Vehemiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA11073.* The type genus for the taxon is *Candidatus* Vehemia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA11073*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vehemiales.

Description of *Candidatus* Vehemiales ord. nov.

Candidatus Vehemiales (NL. fem. n. *Vehemiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *UBA11073*. The type genus for the taxon is *Candidatus* Vehemia .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Vehemia loripitio sp. nov.

Candidatus Vehemia loripitio (NL. fem. n. *loripitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA11073 sp003536545*. The type genome for the species is the GenBank assembly GCA_003536545.1. The GC content of the type genome is 50.72 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Vehemida algifivita sp. nov.

Candidatus Vehemida algifivita (NL. fem. n. *algifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6098 sp002428525*. The type genome for the species is the GenBank assembly GCA_002428525.1. The GC content of the type genome is 53.52 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Vehemida gen. nov.

Candidatus Vehemida (NL. fem. n. *Vehemida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6098*. The type species for the genus is *Candidatus* Vehemida algifivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6098*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehemidaceae.

Description of *Candidatus* Vehemidaceae fam. nov.

Candidatus Vehemidaceae (NL. fem. n. *Vehemidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6098*. The type genus for the taxon is *Candidatus* Vehemida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6098*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vehemidales.

Description of *Candidatus* Vehemidales ord. nov.

Candidatus Vehemidales (NL. fem. n. *Vehemidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6098.* The type genus for the taxon is *Candidatus* Vehemida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA6098*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Vehemidae.

Description of *Candidatus* Vehemidae class. nov.

Candidatus Vehemidae (NL. fem. n. *c__Vehemidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6098.* The type genus for the taxon is *Candidatus* Vehemida .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBP14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Nutamellota.

Description of *Candidatus* Vehemida perabisca sp. nov.

Candidatus Vehemida perabisca (NL. fem. n. *perabisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6098 sp011388305*. The type genome for the species is the GenBank assembly GCA_011388305.1. The GC content of the type genome is 54.45 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Vehemosa actarifica sp. nov.

Candidatus Vehemosa actarifica (NL. fem. n. *actarifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *JACMKV01 sp014379915*. The type genome for the species is the GenBank assembly GCA_014379915.1. The GC content of the type genome is 59.27 % and the genome length is 2.56 Mbp.

Description of *Candidatus* Vehemosa gen. nov.

Candidatus Vehemosa (NL. fem. n. *Vehemosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMKV01*. The type species for the genus is *Candidatus* Vehemosa actarifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACMKV01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehemosaceae.

Description of *Candidatus* Vehemosaceae fam. nov.

Candidatus Vehemosaceae (NL. fem. n. *Vehemosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACMKV01.* The type genus for the taxon is *Candidatus* Vehemosa .

According to GTDB R06-RS202, this family belongs to the order *Burkholderiales*.

Description of *Candidatus* Vehemosa lanugitia sp. nov.

Candidatus Vehemosa lanugitia (NL. fem. n. *lanugitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMKV01 sp013695435*. The type genome for the species is the GenBank assembly GCA_013695435.1. The GC content of the type genome is 59.98 % and the genome length is 2.97 Mbp.

Description of *Candidatus* Vehemula pecunessa sp. nov.

Candidatus Vehemula pecunessa (NL. fem. n. *pecunessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA956 sp903878115*. The type genome for the species is the GenBank assembly GCA_903878115.1. The GC content of the type genome is 49.67 %

and the genome length is 4.41 Mbp.

Description of *Candidatus* Vehemula gen. nov.

Candidatus Vehemula (NL. fem. n. *Vehemula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA956*. The type species for the genus is *Candidatus* Vehemula pecunessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vehemula plostibra sp. nov.

Candidatus Vehemula plostibra (NL. fem. n. *plostibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA956 sp004293285*. The type genome for the species is the GenBank assembly GCA_004293285.1. The GC content of the type genome is 53.82 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Vehemula velivitrix sp. nov.

Candidatus Vehemula velivitrix (NL. fem. n. *velivitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA956 sp002293145*. The type genome for the species is the GenBank assembly GCA_002293145.1. The GC content of the type genome is 51.9 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Vehicana risibitio sp. nov.

Candidatus Vehicana risibitio (NL. fem. n. *risibitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Pla86 sp007751255*. The type genome for the species is the GenBank assembly RS_GCF_007748095.1. The GC content of the type genome is 70.31 % and the genome length is 6.95 Mbp.

Description of *Candidatus* Vehicana gen. nov.

Candidatus Vehicana (NL. fem. n. *Vehicana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Pla86*. The type species for the genus is *Candidatus* Vehicana risibitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002686595*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Domabosaceae.

Description of *Candidatus* Vehicaria catocastra sp. nov.

Candidatus Vehicaria catocastra (NL. fem. n. *catocastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1484 sp900552285*. The type genome for the species is the GenBank assembly GCA_900552285.1. The GC content of the type genome is 50.1 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Vehicaria gen. nov.

Candidatus Vehicaria (NL. fem. n. *Vehicaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1484*. The type species for the genus is *Candidatus* Vehicaria catocastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vehicaria selibibula sp. nov.

Candidatus Vehicaria selibibula (NL. fem. n. *selibibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1484 sp902388225*. The type genome for the species is the GenBank assembly GCA_902388225.1. The GC content of the type genome is 47.4 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Vehicella biparousia sp. nov.

Candidatus Vehicella biparousia (NL. fem. n. *biparousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIUKV01 sp903899845*. The type genome for the species is the GenBank assembly GCA_903845245.1. The GC content of the type genome is 74.04 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Vehicella gen. nov.

Candidatus Vehicella (NL. fem. n. *Vehicella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIUKV01*. The type species for the genus is *Candidatus* Vehicella biparousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PALSA-555*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pocilulaceae.

Description of *Candidatus* Vehicia defaribra sp. nov.

Candidatus Vehicia defaribra (NL. fem. n. *defaribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB10 sp002455375*. The type genome for the species is the GenBank assembly GCA_003522815.1. The GC content of the type genome is 36.79 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Vehicia gen. nov.

Candidatus Vehicia (NL. fem. n. *Vehicia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB10*. The type species for the genus is *Candidatus* Vehicia defaribra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehiciaceae.

Description of *Candidatus* Vehiciaceae fam. nov.

Candidatus Vehiciaceae (NL. fem. n. *Vehiciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OLB10.* The type genus for the taxon is *Candidatus* Vehicia .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lenunanales.

Description of *Candidatus* Vehicia dilacax sp. nov.

Candidatus Vehicia dilacax (NL. fem. n. *dilacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB10 sp001567275*. The type genome for the species is the GenBank assembly GCA_001567275.1. The GC content of the type genome is 38.94 % and the genome length is 2.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Vehicida semibetta sp. nov.

Candidatus Vehicida semibetta (NL. fem. n. *semibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4664 sp002415345*. The type genome for the species is the GenBank assembly GCA_002415345.1. The GC content of the type genome is 54.63 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Vehicida gen. nov.

Candidatus Vehicida (NL. fem. n. *Vehicida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4664*. The type species for the genus is *Candidatus* Vehicida semibetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4664*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehicidaceae.

Description of *Candidatus* Vehicidaceae fam. nov.

Candidatus Vehicidaceae (NL. fem. n. *Vehicidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4664.* The type genus for the taxon is *Candidatus* Vehicida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4664*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vehicidales.

Description of *Candidatus* Vehicidales ord. nov.

Candidatus Vehicidales (NL. fem. n. *Vehicidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA4664.* The type genus for the taxon is *Candidatus* Vehicida .

According to the GTDB R06-RS202, this order belongs to the class *Saccharimonadia*.

Description of *Candidatus* Vehicosa bifaritica sp. nov.

Candidatus Vehicosa bifaritica (NL. fem. n. *bifaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp902591645*. The type genome for the species is the GenBank assembly GCA_902591645.1. The GC content of the type genome is 43.17 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Vehicosa gen. nov.

Candidatus Vehicosa (NL. fem. n. *Vehicosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *EC70*. The type species for the genus is *Candidatus* Vehicosa bifaritica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DEV007*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragosaceae.

Description of *Candidatus* Vehicosa caselitia sp. nov.

Candidatus Vehicosa caselitia (NL. fem. n. *caselitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp002696885*. The type genome for the species is the GenBank assembly GCA_002696885.1. The GC content of the type genome is 38.29 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Vehicosa ceromigena sp. nov.

Candidatus Vehicosa ceromigena (NL. fem. n. *ceromigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp002708885*. The type genome for the species is the GenBank assembly GCA_002448655.1. The GC content of the type genome is 43.41 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Vehicosa coninessa sp. nov.

Candidatus Vehicosa coninessa (NL. fem. n. *coninessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp002712205*. The type genome for the species is the GenBank assembly GCA_002712205.1. The GC content of the type genome is 38.68 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Vehicosa estovatio sp. nov.

Candidatus Vehicosa estovatio (NL. fem. n. *estovatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp013213965*. The type genome for the species is the GenBank assembly GCA_013213965.1. The GC content of the type genome is 43.07 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Vehicosa filififorma sp. nov.

Candidatus Vehicosa filififorma (NL. fem. n. *filififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *EC70 sp002705125*. The type genome for the species is the GenBank assembly GCA_002705125.1. The GC content of the type genome is 38.82 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Vehicosa fumifitica sp. nov.

Candidatus Vehicosa fumifitica (NL. fem. n. *fumifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp014239335*. The type genome for the species is the GenBank assembly GCA_009937305.1. The GC content of the type genome is 42.75 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Vehicosa indotatio sp. nov.

Candidatus Vehicosa indotatio (NL. fem. n. *indotatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp004211885*. The type genome for the species is the GenBank assembly GCA_004211885.1. The GC content of the type genome is 42.76 % and the genome length is 3.33 Mbp.

Description of *Candidatus* Vehicosa laxitatio sp. nov.

Candidatus Vehicosa laxitatio (NL. fem. n. *laxitatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp013911195*. The type genome for the species is the GenBank assembly GCA_013911195.1. The GC content of the type genome is 38.62 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Vehicosa niteledo sp. nov.

Candidatus Vehicosa niteledo (NL. fem. n. *niteledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp012960505*. The type genome for the species is the GenBank assembly GCA_012960505.1. The GC content of the type genome is 43.57 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Vehicosa perabibra sp. nov.

Candidatus Vehicosa perabibra (NL. fem. n. *perabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp902510815*. The type genome for the species is the GenBank assembly GCA_902510815.1. The GC content of the type genome is 39.07 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Vehicosa seposousia sp. nov.

Candidatus Vehicosa seposousia (NL. fem. n. *seposousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp002731805*. The type genome for the species is the GenBank assembly GCA_002731805.1. The GC content of the type genome is 38.68 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Vehicosa sicaritica sp. nov.

Candidatus Vehicosa sicaritica (NL. fem. n. *sicaritica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *EC70 sp002684575*. The type genome for the species is the GenBank assembly GCA_002709265.1. The GC content of the type genome is 38.43 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Veillonella acontitica sp. nov.

Candidatus Veillonella acontitica (NL. fem. n. *acontitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900550175*. The type genome for the species is the GenBank assembly GCA_900550175.1. The GC content of the type genome is 38.38 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Veillonella alcalimonia sp. nov.

Candidatus Veillonella alcalimonia (NL. fem. n. *alcalimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900556785*. The type genome for the species is the GenBank assembly GCA_900556785.1. The GC content of the type genome is 38.49 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Veillonella alsidugo sp. nov.

Candidatus Veillonella alsidugo (NL. fem. n. *alsidugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900549805*. The type genome for the species is the GenBank assembly GCA_900549805.1. The GC content of the type genome is 45.03 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Veillonella bisulitudo sp. nov.

Candidatus Veillonella bisulitudo (NL. fem. n. *bisulitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900766125*. The type genome for the species is the GenBank assembly GCA_900766125.1. The GC content of the type genome is 37.51 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Veillonella cibaricella sp. nov.

Candidatus Veillonella cibaricella (NL. fem. n. *cibaricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp003463825*. The type genome for the species is the GenBank assembly RS_GCF_902365095.1. The GC content of the type genome is 38.75 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Veillonella colimitia sp. nov.

Candidatus Veillonella colimitia (NL. fem. n. *colimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Veillonella sp900549845*. The type genome for the species is the GenBank assembly GCA_900549845.1. The GC content of the type genome is 38.73 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Veillonella denupessa sp. nov.

Candidatus Veillonella denupessa (NL. fem. n. *denupessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900757715*. The type genome for the species is the GenBank assembly GCA_900757715.1. The GC content of the type genome is 38.58 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Veillonella depelilenta sp. nov.

Candidatus Veillonella depelilenta (NL. fem. n. *depelilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900550455*. The type genome for the species is the GenBank assembly GCA_900764795.1. The GC content of the type genome is 44.19 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Veillonella figiledo sp. nov.

Candidatus Veillonella figiledo (NL. fem. n. *figiledo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900538355*. The type genome for the species is the GenBank assembly GCA_900538355.1. The GC content of the type genome is 38.83 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Veillonella monogifica sp. nov.

Candidatus Veillonella monogifica (NL. fem. n. *monogifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900765235*. The type genome for the species is the GenBank assembly GCA_900765235.1. The GC content of the type genome is 39.06 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Veillonella optumilega sp. nov.

Candidatus Veillonella optumilega (NL. fem. n. *optumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp002959755*. The type genome for the species is the GenBank assembly RS_GCF_002959755.1. The GC content of the type genome is 38.86 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Veillonella releniforma sp. nov.

Candidatus Veillonella releniforma (NL. fem. n. *releniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900552445*. The type genome for the species is the GenBank assembly GCA_900552445.1. The GC content of the type genome is 40.55 % and the genome length is 1.36 Mbp.

Description of *Candidatus* Veillonella ridibibra sp. nov.

Candidatus Veillonella ridibibra (NL. fem. n. *ridibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900545205*. The type genome for the species is the GenBank assembly GCA_902406255.1. The GC content of the type genome is 38.77 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Veillonella sanabimonas sp. nov.

Candidatus Veillonella sanabimonas (NL. fem. n. *sanabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp900552715*. The type genome for the species is the GenBank assembly GCA_900552715.1. The GC content of the type genome is 38.66 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Veillonella semivax sp. nov.

Candidatus Veillonella semivax (NL. fem. n. *semivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella sp009929605*. The type genome for the species is the GenBank assembly GCA_009929605.1. The GC content of the type genome is 39.93 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Veillonella curabibra sp. nov.

Candidatus Veillonella curabibra (NL. fem. n. *curabibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella_A sp900545795*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_900545795.1. The GC content of the type genome is 38.94 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Veillonella necubisca sp. nov.

Candidatus Veillonella necubisca (NL. fem. n. *necubisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella_A sp010093125*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_010093125.1. The GC content of the type genome is 39.6 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Veillonella nubigimonia sp. nov.

Candidatus Veillonella nubigimonia (NL. fem. n. *nubigimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella_A sp000431435*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_008658315.1. The GC content of the type genome is 42.77 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Veillonella risibivita sp. nov.

Candidatus Veillonella risibivita (NL. fem. n. *risibivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Veillonella_A sp900765165*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900765165.1. The GC content of the type genome is 47.73 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Velifana bipenigena sp. nov.

Candidatus Velifana bipenigena (NL. fem. n. *bipenigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2716065 sp002716065*. The type genome for the species is the GenBank assembly GCA_002716065.1. The GC content of the type genome is 32.62 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Velifana gen. nov.

Candidatus Velifana (NL. fem. n. *Velifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2716065*. The type species for the genus is *Candidatus* Velifana bipenigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10066*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favonellaceae.

Description of *Candidatus* Velifaria invorax sp. nov.

Candidatus Velifaria invorax (NL. fem. n. *invorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701945 sp002701945*. The type genome for the species is the GenBank assembly GCA_002701945.1. The GC content of the type genome is 32.49 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Velifaria gen. nov.

Candidatus Velifaria (NL. fem. n. *Velifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002701945*. The type species for the genus is *Candidatus* Velifaria invorax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TCS55*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Manufidaceae.

Description of *Candidatus* Velifaria monodilenta sp. nov.

Candidatus Velifaria monodilenta (NL. fem. n. *monodilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701945 sp002701785*. The type genome for the species is the GenBank assembly GCA_002701785.1. The GC content of the type genome is 32.8 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Velifaria obsoriforma sp. nov.

Candidatus Velifaria obsoriforma (NL. fem. n. *obsoriforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701945 sp004321715*. The type genome for the species is the GenBank assembly GCA_004321715.1. The GC content of the type genome is 33.63 % and the genome length is 1.63 Mbp.

Description of *Candidatus* Velifaria redunisca sp. nov.

Candidatus Velifaria redunisca (NL. fem. n. *redunisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002701945 sp012964215*. The type genome for the species is the GenBank assembly GCA_012964215.1. The GC content of the type genome is 41.08 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Velifella colimivita sp. nov.

Candidatus Velifella colimivita (NL. fem. n. *colimivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LPB0142 sp001856665*. The type genome for the species is the GenBank assembly RS_GCF_001856665.1. The GC content of the type genome is 66.9 % and the genome length is 3.78 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea water".

Description of *Candidatus* Velifella gen. nov.

Candidatus Velifella (NL. fem. n. *Velifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LPB0142*. The type species for the genus is *Candidatus* Velifella colimivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Velifia inpudibra sp. nov.

Candidatus Velifia inpudibra (NL. fem. n. *inpudibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *0-14-0-80-59-12 sp002779395*. The type genome for the species is the GenBank assembly GCA_002779395.1. The GC content of the type genome is 59.07 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Velifia gen. nov.

Candidatus Velifia (NL. fem. n. *Velifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *0-14-0-80-59-12*. The type species for the genus is *Candidatus* Velifia inpudibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *0-14-0-80-59-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velifiaceae.

Description of *Candidatus* Velifiaceae fam. nov.

Candidatus Velifiaceae (NL. fem. n. *Velifiaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *0-14-0-80-59-12.* The type genus for the taxon is *Candidatus* Velifia .

According to the original version of GTDB R06-RS202, this family belongs to the order *0-14-0-80-59-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Velifiales.

Description of *Candidatus* Velifiales ord. nov.

Candidatus Velifiales (NL. fem. n. *Velifiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *0-14-0-80-59-12.* The type genus for the taxon is *Candidatus* Velifia .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA10030*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Vagabanae.

Description of *Candidatus* Velifida imbelastra sp. nov.

Candidatus Velifida imbelastra (NL. fem. n. *imbelastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABSQK01 sp013215875*. The type genome for the species is the GenBank assembly GCA_013215875.1. The GC content of the type genome is 42.29 % and the genome length is 5.49 Mbp.

Description of *Candidatus* Velifida gen. nov.

Candidatus Velifida (NL. fem. n. *Velifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABSQK01*. The type species for the genus is *Candidatus* Velifida imbelastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JABSQK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velifidaceae.

Description of *Candidatus* Velifidaceae fam. nov.

Candidatus Velifidaceae (NL. fem. n. *Velifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABSQK01.* The type genus for the taxon is *Candidatus* Velifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *JABSQK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Velifidales.

Description of *Candidatus* Velifidales ord. nov.

Candidatus Velifidales (NL. fem. n. *Velifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JABSQK01.* The type genus for the taxon is *Candidatus* Velifida .

According to the GTDB R06-RS202, this order belongs to the class *Lentisphaeria*.

Description of *Candidatus* Velifosa munififorma sp. nov.

Candidatus Velifosa munififorma (NL. fem. n. *munififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2708265 sp002708265*. The type genome for the species is the GenBank assembly GCA_002708265.1. The GC content of the type genome is 42.77 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Velifosa gen. nov.

Candidatus Velifosa (NL. fem. n. *Velifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2708265*. The type species for the genus is *Candidatus* Velifosa munififorma .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Velifula adfamimonas sp. nov.

Candidatus Velifula adfamimonas (NL. fem. n. *adfamimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902778995*. The type genome for the species is the GenBank assembly GCA_902778995.1. The GC content of the type genome is 60.03 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Velifula gen. nov.

Candidatus Velifula (NL. fem. n. *Velifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2862*. The type species for the genus is *Candidatus* Velifula adfamimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Velifula admulitica sp. nov.

Candidatus Velifula admulitica (NL. fem. n. *admulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902777335*. The type genome for the species is the GenBank assembly GCA_902777335.1. The GC content of the type genome is 63.05 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Velifula bicoricula sp. nov.

Candidatus Velifula bicoricula (NL. fem. n. *bicoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902790525*. The type genome for the species is the GenBank assembly GCA_902790525.1. The GC content of the type genome is 62.03 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Velifula bigariforma sp. nov.

Candidatus Velifula bigariforma (NL. fem. n. *bigariforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902798105*. The type genome for the species is the GenBank assembly GCA_902798105.1. The GC content of the type genome is 60.74 % and the genome length is 3.24 Mbp.

Description of *Candidatus* Velifula buxifitoga sp. nov.

Candidatus Velifula buxifitoga (NL. fem. n. *buxifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp900315585*. The type genome for the species is the GenBank assembly GCA_900315585.1. The GC content of the type genome is 62.8 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Velifula carucitica sp. nov.

Candidatus Velifula carucitica (NL. fem. n. *carucitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902799045*. The type genome for the species is the GenBank assembly GCA_902799045.1. The GC content of the type genome is 63.32 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Velifula cenoditudo sp. nov.

Candidatus Velifula cenoditudo (NL. fem. n. *cenoditudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902778045*. The type genome for the species is the GenBank assembly GCA_902778045.1. The GC content of the type genome is 63.65 % and the genome length is 2.91 Mbp.

Description of *Candidatus* Velifula decinitura sp. nov.

Candidatus Velifula decinitura (NL. fem. n. *decinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp900318045*. The type genome for the species is the GenBank assembly GCA_902770545.1. The GC content of the type genome is 59.35 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Velifula depopitio sp. nov.

Candidatus Velifula depopitio (NL. fem. n. *depopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902799465*. The type genome for the species is the GenBank assembly GCA_902799465.1. The GC content of the type genome is 62.77 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Velifula fatifigena sp. nov.

Candidatus Velifula fatifigena (NL. fem. n. *fatifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902793325*. The type genome for the species is the GenBank assembly GCA_902793325.1. The GC content of the type genome is 65.01 % and the genome length is 3.23 Mbp.

Description of *Candidatus* Velifula herinibra sp. nov.

Candidatus Velifula herinibra (NL. fem. n. *herinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp002350605*. The type genome for the species is the GenBank assembly GCA_902765735.1. The GC content of the type genome is 62.98 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Velifula indevimonas sp. nov.

Candidatus Velifula indevimonas (NL. fem. n. *indevimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902765395*. The type genome for the species is the GenBank assembly GCA_902765395.1. The GC content of the type genome is 62.5 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Velifula infisivita sp. nov.

Candidatus Velifula infisivita (NL. fem. n. *infisivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902764285*. The type genome for the species is the GenBank assembly GCA_902764285.1. The GC content of the type genome is 63.24 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Velifula inpelitoga sp. nov.

Candidatus Velifula inpelitoga (NL. fem. n. *inpelitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902785105*. The type genome for the species is the GenBank assembly GCA_902785105.1. The GC content of the type genome is 59.68 % and the genome length is 3.44 Mbp.

Description of *Candidatus* Velifula levififica sp. nov.

Candidatus Velifula levififica (NL. fem. n. *levififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902801165*. The type genome for the species is the GenBank assembly GCA_902801165.1. The GC content of the type genome is 63.31 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Velifula lutulitia sp. nov.

Candidatus Velifula lutulitia (NL. fem. n. *lutulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902765305*. The type genome for the species is the GenBank assembly GCA_902765305.1. The GC content of the type genome is 60.53 % and the genome length is 3.88 Mbp.

Description of *Candidatus* Velifula retecimonas sp. nov.

Candidatus Velifula retecimonas (NL. fem. n. *retecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2862 sp902790175*. The type genome for the species is the GenBank assembly GCA_902790175.1. The GC content of the type genome is 64.27 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Velifula rubicitia sp. nov.

Candidatus Velifula rubicitia (NL. fem. n. *rubicitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902800625*. The type genome for the species is the GenBank assembly GCA_902800625.1. The GC content of the type genome is 61.98 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Velifula taraxitura sp. nov.

Candidatus Velifula taraxitura (NL. fem. n. *taraxitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp900317565*. The type genome for the species is the GenBank assembly GCA_902787545.1. The GC content of the type genome is 63.49 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Velifula tumefitudo sp. nov.

Candidatus Velifula tumefitudo (NL. fem. n. *tumefitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2862 sp902773515*. The type genome for the species is the GenBank assembly GCA_902773515.1. The GC content of the type genome is 64.49 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Velivana abhinitia sp. nov.

Candidatus Velivana abhinitia (NL. fem. n. *abhinitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5550 sp002418835*. The type genome for the species is the GenBank assembly GCA_002418835.1. The GC content of the type genome is 41.04 % and the genome length is 4.44 Mbp.

Description of *Candidatus* Velivana gen. nov.

Candidatus Velivana (NL. fem. n. *Velivana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5550*. The type species for the genus is *Candidatus* Velivana abhinitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5550*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velivanaceae.

Description of *Candidatus* Velivanaceae fam. nov.

Candidatus Velivanaceae (NL. fem. n. *Velivanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5550.* The type genus for the taxon is *Candidatus* Velivana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4802*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Curabanales.

Description of *Candidatus* Velivana ampenimonia sp. nov.

Candidatus Velivana ampenimonia (NL. fem. n. *ampenimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5550 sp002069965*. The type genome for the species is the GenBank assembly GCA_002069965.1. The GC content of the type genome is 35.95 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Velivana tigurigena sp. nov.

Candidatus Velivana tigurigena (NL. fem. n. *tigurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5550 sp002425885*. The type genome for the species is the GenBank assembly GCA_002425885.1. The GC content of the type genome is 41.56 % and the genome length is 4.11 Mbp.

Description of *Candidatus* Velivaria camiligena sp. nov.

Candidatus Velivaria camiligena (NL. fem. n. *camiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SABY01 sp009928785*. The type genome for the species is the GenBank assembly GCA_009928785.1. The GC content of the type genome is 46.56 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Velivaria gen. nov.

Candidatus Velivaria (NL. fem. n. *Velivaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SABY01*. The type species for the genus is *Candidatus* Velivaria camiligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-276*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicubosaceae.

Description of *Candidatus* Velivaria mutabitura sp. nov.

Candidatus Velivaria mutabitura (NL. fem. n. *mutabitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SABY01 sp012523265*. The type genome for the species is the GenBank assembly GCA_010014445.1. The GC content of the type genome is 47.78 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Velivella conibilega sp. nov.

Candidatus Velivella conibilega (NL. fem. n. *conibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYTX01 sp012523635*. The type genome for the species is the GenBank assembly GCA_012523635.1. The GC content of the type genome is 59.2 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Velivella gen. nov.

Candidatus Velivella (NL. fem. n. *Velivella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYTX01*. The type species for the genus is *Candidatus* Velivella conibilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYTX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velivellaceae.

Description of *Candidatus* Velivellaceae fam. nov.

Candidatus Velivellaceae (NL. fem. n. *Velivellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYTX01*. The type genus for the taxon is *Candidatus* Velivella .

According to GTDB R06-RS202, this family belongs to the order *Elusimicrobiales*.

Description of *Candidatus* Velivia purulisca sp. nov.

Candidatus Velivia purulisca (NL. fem. n. *purulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS693 sp900544555*. The type genome for the species is the GenBank assembly GCA_900544555.1. The GC content of the type genome is 50.54 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Velivia gen. nov.

Candidatus Velivia (NL. fem. n. *Velivia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS693*. The type species for the genus is *Candidatus* Velivia purulisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-138*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Selecellaceae.

Description of *Candidatus* Velivida betacicula sp. nov.

Candidatus Velivida betacicula (NL. fem. n. *betacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAG01 sp009780345*. The type genome for the species is the GenBank assembly GCA_009780345.1. The GC content of the type genome is 45.84 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Velivida gen. nov.

Candidatus Velivida (NL. fem. n. *Velivida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAG01*. The type species for the genus is *Candidatus* Velivida betacicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRAG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velividaceae.

Description of *Candidatus* Velividaceae fam. nov.

Candidatus Velividaceae (NL. fem. n. *Velividaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRAG01.* The type genus for the taxon is *Candidatus* Velivida .

According to GTDB R06-RS202, this family belongs to the order *Monoglobales*.

Description of *Candidatus* Velivosa dicabimonia sp. nov.

Candidatus Velivosa dicabimonia (NL. fem. n. *dicabimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4419 sp002336245*. The type genome for the species is the GenBank assembly GCA_002390065.1. The GC content of the type genome is 44.59 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Velivosa gen. nov.

Candidatus Velivosa (NL. fem. n. *Velivosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4419*. The type species for the genus is *Candidatus* Velivosa dicabimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Velivula adgesedo sp. nov.

Candidatus Velivula adgesedo (NL. fem. n. *adgesedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-219 sp003645965*. The type genome for the species is the GenBank assembly GCA_003645965.1. The GC content of the type genome is 43.02 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Velivula gen. nov.

Candidatus Velivula (NL. fem. n. *Velivula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4484-219*. The type species for the genus is *Candidatus* Velivula adgesedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4484-219*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Velivulaceae.

Description of *Candidatus* Velivulaceae fam. nov.

Candidatus Velivulaceae (NL. fem. n. *Velivulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4484-219.* The type genus for the taxon is *Candidatus* Velivula .

According to the original version of GTDB R06-RS202, this family belongs to the order *JdFR-76*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Malogidales.

Description of *Candidatus* Velivula volunatica sp. nov.

Candidatus Velivula volunatica (NL. fem. n. *volunatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4484-219 sp002085035*. The type genome for the species is the GenBank assembly GCA_003644765.1. The GC content of the type genome is 43.24 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Venabana regigentia sp. nov.

Candidatus Venabana regigentia (NL. fem. n. *regigentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCPG02 sp013333195*. The type genome for the species is the GenBank assembly GCA_013333165.2. The GC content of the type genome is 53.48 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Venabana gen. nov.

Candidatus Venabana (NL. fem. n. *Venabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCPG02*. The type species for the genus is *Candidatus* Venabana regigentia .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Venabaria culibitudo sp. nov.

Candidatus Venabaria culibitudo (NL. fem. n. *culibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp002309115*. The type genome for the species is the GenBank assembly GCA_902778555.1. The GC content of the type genome is 48.15 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Venabaria gen. nov.

Candidatus Venabaria (NL. fem. n. *Venabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1232*. The type species for the genus is *Candidatus* Venabaria

culibitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA932*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenobanaceae.

Description of *Candidatus* Venabaria decupigena sp. nov.

Candidatus Venabaria decupigena (NL. fem. n. *decupigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp002315995*. The type genome for the species is the GenBank assembly GCA_002315995.1. The GC content of the type genome is 44.99 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Venabaria dibapentia sp. nov.

Candidatus Venabaria dibapentia (NL. fem. n. *dibapentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp900769385*. The type genome for the species is the GenBank assembly RS_GCF_900769385.1. The GC content of the type genome is 43.82 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Venabaria dilecitoga sp. nov.

Candidatus Venabaria dilecitoga (NL. fem. n. *dilecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp900316795*. The type genome for the species is the GenBank assembly GCA_902766375.1. The GC content of the type genome is 47.8 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Venabaria expanago sp. nov.

Candidatus Venabaria expanago (NL. fem. n. *expanago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp902797895*. The type genome for the species is the

GenBank assembly GCA_902797895.1. The GC content of the type genome is 43.44 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Venabaria milipimonas sp. nov.

Candidatus Venabaria milipimonas (NL. fem. n. *milipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp002372015*. The type genome for the species is the GenBank assembly GCA_002372015.1. The GC content of the type genome is 40.62 % and the genome length is 1.77 Mbp.

Description of *Candidatus* Venabaria nubigitoga sp. nov.

Candidatus Venabaria nubigitoga (NL. fem. n. *nubigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp902780455*. The type genome for the species is the GenBank assembly GCA_902780455.1. The GC content of the type genome is 48.4 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Venabaria obsuritia sp. nov.

Candidatus Venabaria obsuritia (NL. fem. n. *obsuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp902797115*. The type genome for the species is the GenBank assembly GCA_902797115.1. The GC content of the type genome is 38.9 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Venabaria pavimilega sp. nov.

Candidatus Venabaria pavimilega (NL. fem. n. *pavimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp900322025*. The type genome for the species is the GenBank assembly GCA_900322025.1. The GC content of the type genome is 40.66 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Venabaria sicunugo sp. nov.

Candidatus Venabaria sicunugo (NL. fem. n. *sicunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp900544815*. The type genome for the species is the GenBank assembly GCA_900544815.1. The GC content of the type genome is 40.46 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Venabaria socagigena sp. nov.

Candidatus Venabaria socagigena (NL. fem. n. *socagigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp902769525*. The type genome for the species is the GenBank assembly GCA_902771025.1. The GC content of the type genome is 49.06 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Venabaria tolutimonia sp. nov.

Candidatus Venabaria tolutimonia (NL. fem. n. *tolutimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp004561775*. The type genome for the species is the GenBank assembly GCA_004561775.1. The GC content of the type genome is 48.35 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Venabaria viragitia sp. nov.

Candidatus Venabaria viragitia (NL. fem. n. *viragitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1232 sp900769735*. The type genome for the species is the GenBank assembly RS_GCF_900769735.1. The GC content of the type genome is 43.59 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Venabella camilifica sp. nov.

Candidatus Venabella camilifica (NL. fem. n. *camilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RCC307 sp002168155*. The type genome for the species is the GenBank assembly GCA_002168155.1. The GC content of the type genome is 60.28 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Venabella gen. nov.

Candidatus Venabella (NL. fem. n. *Venabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RCC307*. The type species for the genus is *Candidatus* Venabella camilifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Venabella ciminastra sp. nov.

Candidatus Venabella ciminastra (NL. fem. n. *ciminastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RCC307 sp002470305*. The type genome for the species is the GenBank assembly GCA_002171075.2. The GC content of the type genome is 62.88 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Venabella sonabivita sp. nov.

Candidatus Venabella sonabivita (NL. fem. n. *sonabivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RCC307 sp012270465*. The type genome for the species is the GenBank assembly GCA_012270465.1. The GC content of the type genome is 62.22 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Venabella tumefivita sp. nov.

Candidatus Venabella tumefivita (NL. fem. n. *tumefivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RCC307 sp000063525*. The type genome for the species is the

GenBank assembly RS_GCF_000063525.1. The GC content of the type genome is 60.84 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Venabia cadavitica sp. nov.

Candidatus Venabia cadavitica (NL. fem. n. *cadavitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWF1-31-35 sp001029755*. The type genome for the species is the GenBank assembly GCA_000990335.1. The GC content of the type genome is 30.75 % and the genome length is 0.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Venabia gen. nov.

Candidatus Venabia (NL. fem. n. *Venabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWF1-31-35*. The type species for the genus is *Candidatus* Venabia cadavitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Venabida bicodugo sp. nov.

Candidatus Venabida bicodugo (NL. fem. n. *bicodugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-47 sp003562845*. The type genome for the species is the GenBank assembly GCA_003562845.1. The GC content of the type genome is 62.89 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Venabida gen. nov.

Candidatus Venabida (NL. fem. n. *Venabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T3SED10-47*. The type species for the genus is *Candidatus* Venabida bicodugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Venabida noninetta sp. nov.

Candidatus Venabida noninetta (NL. fem. n. *noninetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-47 sp003566155*. The type genome for the species is the GenBank assembly GCA_003566155.1. The GC content of the type genome is 61.21 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Venabida rorulitica sp. nov.

Candidatus Venabida rorulitica (NL. fem. n. *rorulitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T3SED10-47 sp003567155*. The type genome for the species is the GenBank assembly GCA_003567155.1. The GC content of the type genome is 60.09 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Venabosa manupatica sp. nov.

Candidatus Venabosa manupatica (NL. fem. n. *manupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3869 sp002392285*. The type genome for the species is the GenBank assembly GCA_002392285.1. The GC content of the type genome is 43.61 % and the genome length is 0.71 Mbp.

Description of *Candidatus* Venabosa gen. nov.

Candidatus Venabosa (NL. fem. n. *Venabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3869*. The type species for the genus is *Candidatus* Venabosa manupatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9783*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Holisanaceae.

Description of *Candidatus* Venefana biveritudo sp. nov.

Candidatus Venefana biveritudo (NL. fem. n. *biveritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-51-21 sp001781435*. The type genome for the species is the GenBank assembly GCA_001781435.1. The GC content of the type genome is 50.5 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Venefana gen. nov.

Candidatus Venefana (NL. fem. n. *Venefana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-51-21*. The type species for the genus is *Candidatus* Venefana biveritudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2163*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Legifariaceae.

Description of *Candidatus* Venefaria proscitudo sp. nov.

Candidatus Venefaria proscitudo (NL. fem. n. *proscitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHBO01 sp003243965*. The type genome for the species is the GenBank assembly GCA_003243965.1. The GC content of the type genome is 69.62 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Venefaria gen. nov.

Candidatus Venefaria (NL. fem. n. *Venefaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHBO01*. The type species for the genus is *Candidatus* Venefaria proscitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHBO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Venefariaceae.

Description of *Candidatus* Venefariaceae fam. nov.

Candidatus Venefariaceae (NL. fem. n. *Venefariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QHBO01.* The type genus for the taxon is *Candidatus* Venefaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *QHBO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venefariales.

Description of *Candidatus* Venefariales ord. nov.

Candidatus Venefariales (NL. fem. n. *Venefariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QHBO01.* The type genus for the taxon is *Candidatus* Venefaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *Ellin6529*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Remedellae.

Description of *Candidatus* Venefella benemicula sp. nov.

Candidatus Venefella benemicula (NL. fem. n. *benemicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2588 sp003523055*. The type genome for the species is the GenBank assembly GCA_003523055.1. The GC content of the type genome is 37.42 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Venefella gen. nov.

Candidatus Venefella (NL. fem. n. *Venefella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2588*. The type species for the genus is *Candidatus* Venefella benemicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family

UBA2588. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefellaceae.

Description of *Candidatus* Venefellaceae fam. nov.

Candidatus Venefellaceae (NL. fem. n. *Venefellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2588.* The type genus for the taxon is *Candidatus* Venefella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3495*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bicipellales.

Description of *Candidatus* Venefella decamimonas sp. nov.

Candidatus Venefella decamimonas (NL. fem. n. *decamimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2588 sp002723125*. The type genome for the species is the GenBank assembly GCA_002697635.1. The GC content of the type genome is 40.06 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Venefella vinolastra sp. nov.

Candidatus Venefella vinolastra (NL. fem. n. *vinolastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2588 sp002339805*. The type genome for the species is the GenBank assembly GCA_002339805.1. The GC content of the type genome is 39.57 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Venefia alcalitoga sp. nov.

Candidatus Venefia alcalitoga (NL. fem. n. *alcalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-39-11 sp001779195*. The type genome for the species is the GenBank assembly GCA_001779195.1. The GC content of the type genome is 38.35

% and the genome length is 1.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Venefia gen. nov.

Candidatus Venefia (NL. fem. n. *Venefia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-39-11*. The type species for the genus is *Candidatus* Venefia alcalitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefiaceae.

Description of *Candidatus* Venefiaceae fam. nov.

Candidatus Venefiaceae (NL. fem. n. *Venefiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-39-11.* The type genus for the taxon is *Candidatus* Venefia .

According to the original version of GTDB R06-RS202, this family belongs to the order *2-02-FULL-39-11*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venefiales.

Description of *Candidatus* Venefiales ord. nov.

Candidatus Venefiales (NL. fem. n. *Venefiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2-02-FULL-39-11.* The type genus for the taxon is *Candidatus* Venefia .

According to the GTDB R06-RS202, this order belongs to the class *Microgenomatia*.

Description of *Candidatus* Venefida affunitas sp. nov.

Candidatus Venefida affunitas (NL. fem. n. *affunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VBWP01 sp005771635*. The type genome for the species is the

GenBank assembly RS_GCF_005771635.1. The GC content of the type genome is 38.73 % and the genome length is 2.5 Mbp.

Description of *Candidatus* Venefida gen. nov.

Candidatus Venefida (NL. fem. n. *Venefida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VBWP01*. The type species for the genus is *Candidatus* Venefida affunitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VBWP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefidaceae.

Description of *Candidatus* Venefidaceae fam. nov.

Candidatus Venefidaceae (NL. fem. n. *Venefidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VBWP01*. The type genus for the taxon is *Candidatus* Venefida .

According to the original version of GTDB R06-RS202, this family belongs to the order *ZOR0006*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Megalulales.

Description of *Candidatus* Venefosa tametitrix sp. nov.

Candidatus Venefosa tametitrix (NL. fem. n. *tametitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLND01 sp007133205*. The type genome for the species is the GenBank assembly GCA_007133205.1. The GC content of the type genome is 63.07 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Venefosa gen. nov.

Candidatus Venefosa (NL. fem. n. *Venefosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLND01*. The type species for the genus is *Candidatus* Venefosa tametitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SLND01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefosaceae.

Description of *Candidatus* Venefosaceae fam. nov.

Candidatus Venefosaceae (NL. fem. n. *Venefosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLND01*. The type genus for the taxon is *Candidatus* Venefosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SLND01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venefosales.

Description of *Candidatus* Venefosales ord. nov.

Candidatus Venefosales (NL. fem. n. *Venefosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SLND01*. The type genus for the taxon is *Candidatus* Venefosa .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Venefula detesiforma sp. nov.

Candidatus Venefula detesiforma (NL. fem. n. *detesiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWB1-50-10 sp001004105*. The type genome for the species is the GenBank assembly GCA_001003525.1. The GC content of the type genome is 48.71 % and the genome length is 0.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Venefula gen. nov.

Candidatus Venefula (NL. fem. n. *Venefula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWB1-50-10*. The type species for the genus is *Candidatus* Venefula

detesiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWB1-50-10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venefulaceae.

Description of *Candidatus* Venefulaceae fam. nov.

Candidatus Venefulaceae (NL. fem. n. *Venefulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWB1-50-10.* The type genus for the taxon is *Candidatus* Venefula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Venucana carecivita sp. nov.

Candidatus Venucana carecivita (NL. fem. n. *carecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWE2-29-8 sp001768555*. The type genome for the species is the GenBank assembly GCA_001768555.1. The GC content of the type genome is 29.06 % and the genome length is 2.82 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at time point 6 / F; 5m depth; 0.2 filter".

Description of *Candidatus* Venucana gen. nov.

Candidatus Venucana (NL. fem. n. *Venucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWE2-29-8*. The type species for the genus is *Candidatus* Venucana carecivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWE2-29-8*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venucanaceae.

Description of *Candidatus* Venucanaceae fam. nov.

Candidatus Venucanaceae (NL. fem. n. *Venucanaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWE2-29-8.* The type genus for the taxon is *Candidatus* Venucana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Venucaria catilifica sp. nov.

Candidatus Venucaria catilifica (NL. fem. n. *catilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SCTI01 sp004297735*. The type genome for the species is the GenBank assembly GCA_004297735.1. The GC content of the type genome is 51.79 % and the genome length is 0.77 Mbp.

Description of *Candidatus* Venucaria gen. nov.

Candidatus Venucaria (NL. fem. n. *Venucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SCTI01*. The type species for the genus is *Candidatus* Venucaria catilifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SCTI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venucariaceae.

Description of *Candidatus* Venucariaceae fam. nov.

Candidatus Venucariaceae (NL. fem. n. *Venucariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SCTI01.* The type genus for the taxon is *Candidatus* Venucaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA4664*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vehicidales.

Description of *Candidatus* Venucella aspilitoga sp. nov.

Candidatus Venucella aspilitoga (NL. fem. n. *aspilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-68-19 sp005879095*. The type genome for the species is the GenBank assembly GCA_005879095.1. The GC content of the type genome is 67.96 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Venucella gen. nov.

Candidatus Venucella (NL. fem. n. *Venucella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40CM-4-68-19*. The type species for the genus is *Candidatus* Venucella aspilitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *40CM-4-68-19*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venucellaceae.

Description of *Candidatus* Venucellaceae fam. nov.

Candidatus Venucellaceae (NL. fem. n. *Venucellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *40CM-4-68-19.* The type genus for the taxon is *Candidatus* Venucella .

According to GTDB R06-RS202, this family belongs to the order *Myxococcales*.

Description of *Candidatus* Venucella citocitia sp. nov.

Candidatus Venucella citocitia (NL. fem. n. *citocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-68-19 sp005888115*. The type genome for the species is the GenBank assembly GCA_005888115.1. The GC content of the type genome is 69.97 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Venucella dapifousia sp. nov.

Candidatus Venucella dapifousia (NL. fem. n. *dapifousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-68-19 sp001918155*. The type genome for the species is the GenBank assembly GCA_005879355.1. The GC content of the type genome is 68.2 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Venucella lenunitica sp. nov.

Candidatus Venucella lenunitica (NL. fem. n. *lenunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-68-19 sp005879315*. The type genome for the species is the GenBank assembly GCA_005879315.1. The GC content of the type genome is 68.21 % and the genome length is 4.43 Mbp.

Description of *Candidatus* Venucella menapibula sp. nov.

Candidatus Venucella menapibula (NL. fem. n. *menapibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-68-19 sp005879505*. The type genome for the species is the GenBank assembly GCA_005879115.1. The GC content of the type genome is 68.05 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Venucella risibitura sp. nov.

Candidatus Venucella risibitura (NL. fem. n. *risibitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-68-19 sp005879535*. The type genome for the species is the GenBank assembly GCA_005879305.1. The GC content of the type genome is 68.26 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Venucella vitigifica sp. nov.

Candidatus Venucella vitigifica (NL. fem. n. *vitigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-68-19 sp005879805*. The type genome for the species is the GenBank assembly GCA_005879875.1. The GC content of the type genome is 68.33 %

and the genome length is 4.37 Mbp.

Description of *Candidatus* Venucida accumedo sp. nov.

Candidatus Venucida accumedo (NL. fem. n. *accumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2653 sp003489505*. The type genome for the species is the GenBank assembly GCA_003489505.1. The GC content of the type genome is 37.03 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Venucida gen. nov.

Candidatus Venucida (NL. fem. n. *Venucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2653*. The type species for the genus is *Candidatus* Venucida accumedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Venucida bipatifica sp. nov.

Candidatus Venucida bipatifica (NL. fem. n. *bipatifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2653 sp002342175*. The type genome for the species is the GenBank assembly GCA_009926915.1. The GC content of the type genome is 37.31 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Venucida giganifica sp. nov.

Candidatus Venucida giganifica (NL. fem. n. *giganifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2653 sp010030245*. The type genome for the species is the GenBank assembly GCA_010030245.1. The GC content of the type genome is 38.9 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Venucida inlusigena sp. nov.

Candidatus Venucida inlusigena (NL. fem. n. *inlusigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2653 sp002403515*. The type genome for the species is the GenBank assembly GCA_002403515.1. The GC content of the type genome is 36.57 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Venucosa adtacatica sp. nov.

Candidatus Venucosa adtacatica (NL. fem. n. *adtacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002709645*. The type genome for the species is the GenBank assembly GCA_002709645.1. The GC content of the type genome is 44.25 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Venucosa gen. nov.

Candidatus Venucosa (NL. fem. n. *Venucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MedAcidi-G2A*. The type species for the genus is *Candidatus* Venucosa adtacatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8592*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Pepenidaceae.

Description of *Candidatus* Venucosa buxifitica sp. nov.

Candidatus Venucosa buxifitica (NL. fem. n. *buxifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002712325*. The type genome for the species is the GenBank assembly GCA_002712325.1. The GC content of the type genome is 44.27 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Venucosa cocodessa sp. nov.

Candidatus Venucosa cocodessa (NL. fem. n. *cocodessa* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002341185*. The type genome for the species is the GenBank assembly GCA_002341185.1. The GC content of the type genome is 43.6 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Venucosa colipago sp. nov.

Candidatus Venucosa colipago (NL. fem. n. *colipago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002713485*. The type genome for the species is the GenBank assembly GCA_002713485.1. The GC content of the type genome is 44.22 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Venucosa conifisca sp. nov.

Candidatus Venucosa conifisca (NL. fem. n. *conifisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002295705*. The type genome for the species is the GenBank assembly GCA_002380725.1. The GC content of the type genome is 44.67 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Venucosa depocitia sp. nov.

Candidatus Venucosa depocitia (NL. fem. n. *depocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002712415*. The type genome for the species is the GenBank assembly GCA_002320315.1. The GC content of the type genome is 44.75 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Venucosa dicibiforma sp. nov.

Candidatus Venucosa dicibiforma (NL. fem. n. *dicibiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002500385*. The type genome for the species is the GenBank assembly GCA_002500385.1. The GC content of the type genome is 44.07 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Venucosa dilibatica sp. nov.

Candidatus Venucosa dilibatica (NL. fem. n. *dilibatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002380145*. The type genome for the species is the GenBank assembly GCA_011523005.1. The GC content of the type genome is 45.0 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Venucosa manufitura sp. nov.

Candidatus Venucosa manufitura (NL. fem. n. *manufitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp000817095*. The type genome for the species is the GenBank assembly GCA_000817095.1. The GC content of the type genome is 43.08 % and the genome length is 1.37 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "deep chlorophyll maximum in the Mediterranean off the coast of Alicante; Spain; 75m below sea surface".

Description of *Candidatus* Venucosa peraditio sp. nov.

Candidatus Venucosa peraditio (NL. fem. n. *peraditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002713605*. The type genome for the species is the GenBank assembly GCA_002713605.1. The GC content of the type genome is 41.98 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Venucosa refunitica sp. nov.

Candidatus Venucosa refunitica (NL. fem. n. *refunitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002719235*. The type genome for the species is the

GenBank assembly GCA_002295815.1. The GC content of the type genome is 44.83 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Venucosa semipibra sp. nov.

Candidatus Venucosa semipibra (NL. fem. n. *semipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MedAcidi-G2A sp002171605*. The type genome for the species is the GenBank assembly GCA_002713525.1. The GC content of the type genome is 43.36 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Venucula denigago sp. nov.

Candidatus Venucula denigago (NL. fem. n. *denigago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-39 sp005882255*. The type genome for the species is the GenBank assembly GCA_005882255.1. The GC content of the type genome is 68.62 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Venucula gen. nov.

Candidatus Venucula (NL. fem. n. *Venucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-39*. The type species for the genus is *Candidatus* Venucula denigago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *P2-11E*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Curotosaceae.

Description of *Candidatus* Venucula dicimitura sp. nov.

Candidatus Venucula dicimitura (NL. fem. n. *dicimitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-39 sp005887995*. The type genome for the species is the GenBank assembly GCA_005879625.1. The GC content of the type genome is 68.01 % and the

genome length is 3.1 Mbp.

Description of *Candidatus* Venucula hegumatica sp. nov.

Candidatus Venucula hegumatica (NL. fem. n. *hegumatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-39 sp005889405*. The type genome for the species is the GenBank assembly GCA_005889405.1. The GC content of the type genome is 67.88 % and the genome length is 3.05 Mbp.

Description of *Candidatus* Venunana arnogitio sp. nov.

Candidatus Venunana arnogitio (NL. fem. n. *arnogitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-49-7 sp013152385*. The type genome for the species is the GenBank assembly GCA_013152385.1. The GC content of the type genome is 49.56 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Venunana gen. nov.

Candidatus Venunana (NL. fem. n. *Venunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-49-7*. The type species for the genus is *Candidatus* Venunana arnogitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UM-FILTER-49-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venunanaceae.

Description of *Candidatus* Venunanaceae fam. nov.

Candidatus Venunanaceae (NL. fem. n. *Venunanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-49-7.* The type genus for the taxon is *Candidatus* Venunana .

According to the original version of GTDB R06-RS202, this family belongs to the order *UM-FILTER-49-7*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the order *Candidatus* Venunanales.

Description of *Candidatus* Venunanales ord. nov.

Candidatus Venunanales (NL. fem. n. *Venunanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UM-FILTER-49-7.* The type genus for the taxon is *Candidatus* Venunana .

According to the GTDB R06-RS202, this order belongs to the class *Holophagae*.

Description of *Candidatus* Venunana inregitia sp. nov.

Candidatus Venunana inregitia (NL. fem. n. *inregitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-49-7 sp013151025*. The type genome for the species is the GenBank assembly GCA_013151025.1. The GC content of the type genome is 48.93 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Venunana inturentia sp. nov.

Candidatus Venunana inturentia (NL. fem. n. *inturentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-49-7 sp002789615*. The type genome for the species is the GenBank assembly GCA_002789615.1. The GC content of the type genome is 49.1 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Venunana navicibra sp. nov.

Candidatus Venunana navicibra (NL. fem. n. *navicibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-49-7 sp003650445*. The type genome for the species is the GenBank assembly GCA_003650445.1. The GC content of the type genome is 49.41 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Venunaria abagmatio sp. nov.

Candidatus Venunaria abagmatio (NL. fem. n. *abagmatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2177 sp012511375*. The type genome for the species is the GenBank assembly GCA_012511375.1. The GC content of the type genome is 34.36 % and the genome length is 0.59 Mbp.

Description of *Candidatus* Venunaria gen. nov.

Candidatus Venunaria (NL. fem. n. *Venunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2177*. The type species for the genus is *Candidatus* Venunaria abagmatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bipenellaceae.

Description of *Candidatus* Venunaria bisacentia sp. nov.

Candidatus Venunaria bisacentia (NL. fem. n. *bisacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2177 sp002328805*. The type genome for the species is the GenBank assembly GCA_002403195.1. The GC content of the type genome is 36.04 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Venunaria diluvivita sp. nov.

Candidatus Venunaria diluvivita (NL. fem. n. *diluvivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2177 sp002402455*. The type genome for the species is the GenBank assembly GCA_002402455.1. The GC content of the type genome is 35.98 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Venunella absegedo sp. nov.

Candidatus Venunella absegedo (NL. fem. n. *absegedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3054 sp002308555*. The type genome for the species is the GenBank assembly GCA_002308555.1. The GC content of the type genome is 59.07 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Venunella gen. nov.

Candidatus Venunella (NL. fem. n. *Venunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3054*. The type species for the genus is *Candidatus* Venunella absegedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3054*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venunellaceae.

Description of *Candidatus* Venunellaceae fam. nov.

Candidatus Venunellaceae (NL. fem. n. *Venunellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3054.* The type genus for the taxon is *Candidatus* Venunella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3054*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venunellales.

Description of *Candidatus* Venunellales ord. nov.

Candidatus Venunellales (NL. fem. n. *Venunellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3054.* The type genus for the taxon is *Candidatus* Venunella .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA3054*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Venunellae.

Description of *Candidatus* Venunellae class. nov.

Candidatus Venunellae (NL. fem. n. *c__Venunellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3054.* The type genus for the taxon is *Candidatus* Venunella .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *UBA3054*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Venunellota.

Description of *Candidatus* Venunellota phyl. nov.

Candidatus Venunellota (NL. fem. n. *Venunellota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3054.* The type genus for the taxon is *Candidatus* Venunella .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Venunella arremilega sp. nov.

Candidatus Venunella arremilega (NL. fem. n. *arremilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3054 sp002366995*. The type genome for the species is the GenBank assembly GCA_002366995.1. The GC content of the type genome is 55.85 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Venunia noninibra sp. nov.

Candidatus Venunia noninibra (NL. fem. n. *noninibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7916 sp002320385*. The type genome for the species is the GenBank assembly GCA_002320385.1. The GC content of the type genome is 42.04 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Venunia gen. nov.

Candidatus Venunia (NL. fem. n. *Venunia* a name created arbitrarily, while preserving

the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7916*. The type species for the genus is *Candidatus* Venunia noninibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7916*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Venuniaceae.

Description of *Candidatus* Venuniaceae fam. nov.

Candidatus Venuniaceae (NL. fem. n. *Venuniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7916.* The type genus for the taxon is *Candidatus* Venunia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA7916*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Venuniales.

Description of *Candidatus* Venuniales ord. nov.

Candidatus Venuniales (NL. fem. n. *Venuniales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7916.* The type genus for the taxon is *Candidatus* Venunia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Venunia repagifica sp. nov.

Candidatus Venunia repagifica (NL. fem. n. *repagifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7916 sp002722435*. The type genome for the species is the GenBank assembly GCA_002722435.1. The GC content of the type genome is 43.09 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Venunia senacitrix sp. nov.

Candidatus Venunia senacitrix (NL. fem. n. *senacitrix* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7916 sp002308435*. The type genome for the species is the GenBank assembly GCA_002308435.1. The GC content of the type genome is 44.18 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Venunida dicanibra sp. nov.

Candidatus Venunida dicanibra (NL. fem. n. *dicanibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-44-22 sp001795975*. The type genome for the species is the GenBank assembly GCA_001794065.1. The GC content of the type genome is 41.51 % and the genome length is 0.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Venunida gen. nov.

Candidatus Venunida (NL. fem. n. *Venunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-01-FULL-44-22*. The type species for the genus is *Candidatus* Venunida dicanibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Venunida semimitio sp. nov.

Candidatus Venunida semimitio (NL. fem. n. *semimitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-01-FULL-44-22 sp001794205*. The type genome for the species is the GenBank assembly GCA_001794205.1. The GC content of the type genome is 44.28 % and the genome length is 0.44 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Venunosa carucugo sp. nov.

Candidatus Venunosa carucugo (NL. fem. n. *carucugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UM-FILTER-45-8 sp002781785*. The type genome for the species is the GenBank assembly GCA_002790455.1. The GC content of the type genome is 45.33 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Venunosa gen. nov.

Candidatus Venunosa (NL. fem. n. *Venunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UM-FILTER-45-8*. The type species for the genus is *Candidatus* Venunosa carucugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-38-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viripidaceae.

Description of *Candidatus* Venunula morigilenta sp. nov.

Candidatus Venunula morigilenta (NL. fem. n. *morigilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SFLA01 sp004553575*. The type genome for the species is the GenBank assembly GCA_004553575.1. The GC content of the type genome is 53.17 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Venunula gen. nov.

Candidatus Venunula (NL. fem. n. *Venunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SFLA01*. The type species for the genus is *Candidatus* Venunula morigilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Doxolulaceae.

Description of *Candidatus* Vepalana annubatica sp. nov.

Candidatus Vepalana annubatica (NL. fem. n. *annubatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCM-19038 sp000698185*. The type genome for the species is the GenBank assembly RS_GCF_000698185.1. The GC content of the type genome is 41.53 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Vepalana gen. nov.

Candidatus Vepalana (NL. fem. n. *Vepalana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JCM-19038*. The type species for the genus is *Candidatus* Vepalana annubatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vepalana denunentia sp. nov.

Candidatus Vepalana denunentia (NL. fem. n. *denunentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCM-19038 sp000698145*. The type genome for the species is the GenBank assembly RS_GCF_000698145.1. The GC content of the type genome is 44.2 % and the genome length is 4.17 Mbp.

Description of *Candidatus* Vepalana luxuritia sp. nov.

Candidatus Vepalana luxuritia (NL. fem. n. *luxuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCM-19038 sp000698125*. The type genome for the species is the GenBank assembly RS_GCF_000698125.1. The GC content of the type genome is 41.78 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Vepalana recogugo sp. nov.

Candidatus Vepalana recogugo (NL. fem. n. *recogugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JCM-19038 sp012970285*. The type genome for the species is the GenBank assembly RS_GCF_012970285.1. The GC content of the type genome is 41.54 % and the genome length is 4.12 Mbp.

Description of *Candidatus* Vepalaria adpenitas sp. nov.

Candidatus Vepalaria adpenitas (NL. fem. n. *adpenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin95 sp002238885*. The type genome for the species is the GenBank assembly GCA_002238885.1. The GC content of the type genome is 66.27 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Vepalaria gen. nov.

Candidatus Vepalaria (NL. fem. n. *Vepalaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin95*. The type species for the genus is *Candidatus* Vepalaria adpenitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin95*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalariaceae.

Description of *Candidatus* Vepalariaceae fam. nov.

Candidatus Vepalariaceae (NL. fem. n. *Vepalariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin95.* The type genus for the taxon is *Candidatus* Vepalaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *Bin95*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vepalariales.

Description of *Candidatus* Vepalariales ord. nov.

Candidatus Vepalariales (NL. fem. n. *Vepalariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin95*. The type genus for the taxon is *Candidatus* Vepalaria .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Vepalella adhorago sp. nov.

Candidatus Vepalella adhorago (NL. fem. n. *adhorago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7312 sp002471645*. The type genome for the species is the GenBank assembly GCA_002471645.1. The GC content of the type genome is 35.72 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Vepalella gen. nov.

Candidatus Vepalella (NL. fem. n. *Vepalella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7312*. The type species for the genus is *Candidatus* Vepalella adhorago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7312*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalellaceae.

Description of *Candidatus* Vepalellaceae fam. nov.

Candidatus Vepalellaceae (NL. fem. n. *Vepalellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA7312*. The type genus for the taxon is *Candidatus* Vepalella .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Vepalella divoricella sp. nov.

Candidatus Vepalella divoricella (NL. fem. n. *divoricella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA7312 sp902580855*. The type genome for the species is the GenBank assembly GCA_902580855.1. The GC content of the type genome is 34.93 % and the genome length is 1.34 Mbp.

Description of *Candidatus* Vepalella impaventia sp. nov.

Candidatus Vepalella impaventia (NL. fem. n. *impaventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7312 sp002306655*. The type genome for the species is the GenBank assembly GCA_002306655.1. The GC content of the type genome is 36.26 % and the genome length is 0.9 Mbp.

Description of *Candidatus* Vepalella inlusisca sp. nov.

Candidatus Vepalella inlusisca (NL. fem. n. *inlusisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7312 sp002715345*. The type genome for the species is the GenBank assembly GCA_002715345.1. The GC content of the type genome is 36.13 % and the genome length is 1.21 Mbp.

Description of *Candidatus* Vepalia ascisibula sp. nov.

Candidatus Vepalia ascisibula (NL. fem. n. *ascisibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1032 sp013813905*. The type genome for the species is the GenBank assembly GCA_013813905.1. The GC content of the type genome is 69.58 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Vepalia gen. nov.

Candidatus Vepalia (NL. fem. n. *Vepalia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-1032*. The type species for the genus is *Candidatus* Vepalia ascisibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Vepalia pinifitica sp. nov.

Candidatus Vepalia pinifitica (NL. fem. n. *pinifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1032 sp013696275*. The type genome for the species is the GenBank assembly GCA_013696275.1. The GC content of the type genome is 67.87 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Vepalia rarefentia sp. nov.

Candidatus Vepalia rarefentia (NL. fem. n. *rarefentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1032 sp003169735*. The type genome for the species is the GenBank assembly GCA_003169735.1. The GC content of the type genome is 68.62 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Vepalia tabitigena sp. nov.

Candidatus Vepalia tabitigena (NL. fem. n. *tabitigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-1032 sp013696945*. The type genome for the species is the GenBank assembly GCA_013696945.1. The GC content of the type genome is 69.77 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Vepalosa bacifugo sp. nov.

Candidatus Vepalosa bacifugo (NL. fem. n. *bacifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKMY01 sp007120815*. The type genome for the species is the GenBank assembly GCA_007120815.1. The GC content of the type genome is 49.48 % and the genome length is 1.92 Mbp.

Description of *Candidatus* Vepalosa gen. nov.

Candidatus Vepalosa (NL. fem. n. *Vepalosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKMY01*. The type species for the genus is *Candidatus* Vepalosa bacifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8154*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depubiaceae.

Description of *Candidatus* Vepalosa hirudax sp. nov.

Candidatus Vepalosa hirudax (NL. fem. n. *hirudax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKMY01 sp003556225*. The type genome for the species is the GenBank assembly GCA_007129265.1. The GC content of the type genome is 53.32 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Vepalosa sarabedo sp. nov.

Candidatus Vepalosa sarabedo (NL. fem. n. *sarabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKMY01 sp007126455*. The type genome for the species is the GenBank assembly GCA_007126455.1. The GC content of the type genome is 53.73 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Vepalosa vavasitura sp. nov.

Candidatus Vepalosa vavasitura (NL. fem. n. *vavasitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKMY01 sp003561325*. The type genome for the species is the GenBank assembly GCA_003561325.1. The GC content of the type genome is 54.66 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Vepalula saxopibra sp. nov.

Candidatus Vepalula saxopibra (NL. fem. n. *saxopibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PJMF01 sp003173865*. The type genome for the species is the GenBank assembly GCA_003173865.1. The GC content of the type genome is 41.45 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Vepalula gen. nov.

Candidatus Vepalula (NL. fem. n. *Vepalula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PJMF01*. The type species for the genus is *Candidatus* Vepalula saxopibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PJMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vepalulaceae.

Description of *Candidatus* Vepalulaceae fam. nov.

Candidatus Vepalulaceae (NL. fem. n. *Vepalulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PJMF01.* The type genus for the taxon is *Candidatus* Vepalula .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1400*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bucolulales.

Description of *Candidatus* Verecana apoplitia sp. nov.

Candidatus Verecana apoplitia (NL. fem. n. *apoplitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp001899395*. The type genome for the species is the GenBank assembly GCA_001899395.1. The GC content of the type genome is 36.75 % and the genome length is 2.21 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Fecal samples from a 12-year-old male koala named Zagget".

Description of *Candidatus* Verecana gen. nov.

Candidatus Verecana (NL. fem. n. *Verecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Zag111*. The type species for the genus is *Candidatus* Verecana apoplitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Verecana butubetta sp. nov.

Candidatus Verecana butubetta (NL. fem. n. *butubetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp002438405*. The type genome for the species is the GenBank assembly GCA_002439905.1. The GC content of the type genome is 32.03 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Verecana documastra sp. nov.

Candidatus Verecana documastra (NL. fem. n. *documastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp002405805*. The type genome for the species is the GenBank assembly GCA_002405805.1. The GC content of the type genome is 34.22 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Verecana giganatica sp. nov.

Candidatus Verecana giganatica (NL. fem. n. *giganatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp002103105*. The type genome for the species is the GenBank assembly GCA_000438055.1. The GC content of the type genome is 32.13 % and the genome length is 1.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Verecana hirudibra sp. nov.

Candidatus Verecana hirudibra (NL. fem. n. *hirudibra* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp902766105*. The type genome for the species is the GenBank assembly GCA_902766105.1. The GC content of the type genome is 32.95 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Verecana licenitas sp. nov.

Candidatus Verecana licenitas (NL. fem. n. *licenitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp004558955*. The type genome for the species is the GenBank assembly GCA_004558955.1. The GC content of the type genome is 34.97 % and the genome length is 2.33 Mbp.

Description of *Candidatus* Verecana malifax sp. nov.

Candidatus Verecana malifax (NL. fem. n. *malifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp002102825*. The type genome for the species is the GenBank assembly GCA_002102735.1. The GC content of the type genome is 32.19 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Verecana obsatitrix sp. nov.

Candidatus Verecana obsatitrix (NL. fem. n. *obsatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp900555325*. The type genome for the species is the GenBank assembly GCA_900555325.1. The GC content of the type genome is 31.89 % and the genome length is 2.13 Mbp.

Description of *Candidatus* Verecana ossicastra sp. nov.

Candidatus Verecana ossicastra (NL. fem. n. *ossicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp900551965*. The type genome for the species is the GenBank assembly GCA_900551965.1. The GC content of the type genome is 34.41 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Verecana velifivita sp. nov.

Candidatus Verecana velifivita (NL. fem. n. *velifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Zag111 sp003258735*. The type genome for the species is the GenBank assembly GCA_900555145.1. The GC content of the type genome is 33.28 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Verecaria nugivitia sp. nov.

Candidatus Verecaria nugivitia (NL. fem. n. *nugivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-24 sp003599415*. The type genome for the species is the GenBank assembly GCA_003599415.1. The GC content of the type genome is 35.45 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Verecaria gen. nov.

Candidatus Verecaria (NL. fem. n. *Verecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-24*. The type species for the genus is *Candidatus* Verecaria nugivitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-24*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecariaceae.

Description of *Candidatus* Verecariaceae fam. nov.

Candidatus Verecariaceae (NL. fem. n. *Verecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-24.* The type genus for the taxon is *Candidatus* Verecaria .

According to GTDB R06-RS202, this family belongs to the order *Ignavibacteriales*.

Description of *Candidatus* Verecella remulibra sp. nov.

Candidatus Verecella remulibra (NL. fem. n. *remulibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG2-30-59-28 sp001872605*. The type genome for the species is the GenBank assembly GCA_002784925.1. The GC content of the type genome is 58.78 % and the genome length is 5.32 Mbp.

Description of *Candidatus* Verecella gen. nov.

Candidatus Verecella (NL. fem. n. *Verecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG2-30-59-28*. The type species for the genus is *Candidatus* Verecella remulibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG2-30-59-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecellaceae.

Description of *Candidatus* Verecellaceae fam. nov.

Candidatus Verecellaceae (NL. fem. n. *Verecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-59-28.* The type genus for the taxon is *Candidatus* Verecella .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG2-30-59-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Verecellales.

Description of *Candidatus* Verecellales ord. nov.

Candidatus Verecellales (NL. fem. n. *Verecellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG2-30-59-28.* The type genus for the taxon is *Candidatus* Verecella .

According to the GTDB R06-RS202, this order belongs to the class *Abditibacteria*.

Description of *Candidatus* Verecia bisacastra sp. nov.

Candidatus Verecia bisacastra (NL. fem. n. *bisacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10324 sp003455275*. The type genome for the species is the GenBank assembly GCA_003455275.1. The GC content of the type genome is 39.05 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Verecia gen. nov.

Candidatus Verecia (NL. fem. n. *Verecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10324*. The type species for the genus is *Candidatus* Verecia bisacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10324*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vereciaceae.

Description of *Candidatus* Vereciaceae fam. nov.

Candidatus Vereciaceae (NL. fem. n. *Vereciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10324.* The type genus for the taxon is *Candidatus* Verecia .

According to GTDB R06-RS202, this family belongs to the order *Chitinophagales*.

Description of *Candidatus* Verecia innoxibra sp. nov.

Candidatus Verecia innoxibra (NL. fem. n. *innoxibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10324 sp014190575*. The type genome for the species is the GenBank assembly GCA_014190575.1. The GC content of the type genome is 36.72 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Verecosa cotenitia sp. nov.

Candidatus Verecosa cotenitia (NL. fem. n. *cotenitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3943 sp002385625*. The type genome for the species is the GenBank assembly GCA_012843085.1. The GC content of the type genome is 52.21 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Verecosa gen. nov.

Candidatus Verecosa (NL. fem. n. *Verecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3943*. The type species for the genus is *Candidatus* Verecosa cotenitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3943*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verecosaceae.

Description of *Candidatus* Verecosaceae fam. nov.

Candidatus Verecosaceae (NL. fem. n. *Verecosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3943.* The type genus for the taxon is *Candidatus* Verecosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Valefulales.

Description of *Candidatus* Verecula fatilatica sp. nov.

Candidatus Verecula fatilatica (NL. fem. n. *fatilatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJOT01 sp903822335*. The type genome for the species is the GenBank assembly GCA_903847165.1. The GC content of the type genome is 43.19 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Verecula gen. nov.

Candidatus Verecula (NL. fem. n. *Verecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJOT01*. The type species for the genus is *Candidatus* Verecula fatilatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Veridana detepisca sp. nov.

Candidatus Veridana detepisca (NL. fem. n. *detepisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-568 sp002399765*. The type genome for the species is the GenBank assembly GCA_002399765.1. The GC content of the type genome is 51.85 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Veridana gen. nov.

Candidatus Veridana (NL. fem. n. *Veridana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-568*. The type species for the genus is *Candidatus* Veridana detepisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-288*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropellaceae.

Description of *Candidatus* Veridana hirudugo sp. nov.

Candidatus Veridana hirudugo (NL. fem. n. *hirudugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-568 sp002437105*. The type genome for the species is the GenBank assembly GCA_002437105.1. The GC content of the type genome is 53.22 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Veridana semunisca sp. nov.

Candidatus Veridana semunisca (NL. fem. n. *semunisca* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-568 sp000434395*. The type genome for the species is the GenBank assembly GCA_000434395.1. The GC content of the type genome is 34.9 % and the genome length is 1.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Veridaria maxilicella sp. nov.

Candidatus Veridaria maxilicella (NL. fem. n. *maxilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1715 sp002317135*. The type genome for the species is the GenBank assembly GCA_002317135.1. The GC content of the type genome is 36.42 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Veridaria gen. nov.

Candidatus Veridaria (NL. fem. n. *Veridaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1715*. The type species for the genus is *Candidatus* Veridaria maxilicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1715*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Veridariaceae.

Description of *Candidatus* Veridariaceae fam. nov.

Candidatus Veridariaceae (NL. fem. n. *Veridariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1715.* The type genus for the taxon is *Candidatus* Veridaria .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Veridaria sitelitica sp. nov.

Candidatus Veridaria sitelitica (NL. fem. n. *sitelitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1715 sp002371705*. The type genome for the species is the GenBank assembly GCA_002371705.1. The GC content of the type genome is 41.09 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Veridella senipimonas sp. nov.

Candidatus Veridella senipimonas (NL. fem. n. *senipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QXCW01 sp003550275*. The type genome for the species is the GenBank assembly RS_GCF_003550275.1. The GC content of the type genome is 35.87 % and the genome length is 3.41 Mbp.

Description of *Candidatus* Veridella gen. nov.

Candidatus Veridella (NL. fem. n. *Veridella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QXCW01*. The type species for the genus is *Candidatus* Veridella senipimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Veridia aphoredo sp. nov.

Candidatus Veridia aphoredo (NL. fem. n. *aphoredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ETT8 sp003443995*. The type genome for the species is the GenBank assembly RS_GCF_003443995.1. The GC content of the type genome is 62.86 % and the genome length is 4.61 Mbp.

Description of *Candidatus* Veridia gen. nov.

Candidatus Veridia (NL. fem. n. *Veridia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ETT8*. The type species for the genus is *Candidatus* Veridia aphoredo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Veridia citocatica sp. nov.

Candidatus Veridia citocatica (NL. fem. n. *citocatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ETT8 sp004745575*. The type genome for the species is the GenBank assembly RS_GCF_004745575.1. The GC content of the type genome is 62.99 % and the genome length is 4.04 Mbp.

Description of *Candidatus* Veridia lanugitio sp. nov.

Candidatus Veridia lanugitio (NL. fem. n. *lanugitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ETT8 sp002794355*. The type genome for the species is the GenBank assembly RS_GCF_002794355.1. The GC content of the type genome is 63.75 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Veridia miracago sp. nov.

Candidatus Veridia miracago (NL. fem. n. *miracago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ETT8 sp002900965*. The type genome for the species is the GenBank assembly RS_GCF_002900965.1. The GC content of the type genome is 63.42 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Veridia obliviforma sp. nov.

Candidatus Veridia obliviforma (NL. fem. n. *obliviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ETT8 sp010915705*. The type genome for the species is the GenBank assembly RS_GCF_010915705.1. The GC content of the type genome is 64.39 % and the genome length is 4.49 Mbp.

Description of *Candidatus* Veridida adtematica sp. nov.

Candidatus Veridida adtematica (NL. fem. n. *adtematica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005880755*. The type genome for the species is the GenBank assembly GCA_005880755.1. The GC content of the type genome is 66.06 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Veridida gen. nov.

Candidatus Veridida (NL. fem. n. *Veridida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *40CM-4-65-16*. The type species for the genus is *Candidatus* Veridida adtematica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Veridida affulitia sp. nov.

Candidatus Veridida affulitia (NL. fem. n. *affulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005887735*. The type genome for the species is the GenBank assembly GCA_005887735.1. The GC content of the type genome is 65.82 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Veridida culigetta sp. nov.

Candidatus Veridida culigetta (NL. fem. n. *culigetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005881335*. The type genome for the species is the GenBank assembly GCA_005881335.1. The GC content of the type genome is 66.38 % and the genome length is 2.2 Mbp.

Description of *Candidatus* Veridida culigitrix sp. nov.

Candidatus Veridida culigitrix (NL. fem. n. *culigitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005881275*. The type genome for the species is the GenBank assembly GCA_005881275.1. The GC content of the type genome is 65.62 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Veridida deforilenta sp. nov.

Candidatus Veridida deforilenta (NL. fem. n. *deforilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005887685*. The type genome for the species is the GenBank assembly GCA_005887675.1. The GC content of the type genome is 66.0 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Veridida detorax sp. nov.

Candidatus Veridida detorax (NL. fem. n. *detorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005880345*. The type genome for the species is the GenBank assembly GCA_005880345.1. The GC content of the type genome is 66.88 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Veridida ellipedo sp. nov.

Candidatus Veridida ellipedo (NL. fem. n. *ellipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005889085*. The type genome for the species is the GenBank assembly GCA_005889085.1. The GC content of the type genome is 65.91 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Veridida esculousia sp. nov.

Candidatus Veridida esculousia (NL. fem. n. *esculousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005879675*. The type genome for the species is the GenBank assembly GCA_005879675.1. The GC content of the type genome is 67.78 %

and the genome length is 2.74 Mbp.

Description of *Candidatus* Veridida hemidibra sp. nov.

Candidatus Veridida hemidibra (NL. fem. n. *hemidibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005883575*. The type genome for the species is the GenBank assembly GCA_005880665.1. The GC content of the type genome is 65.76 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Veridida meridivita sp. nov.

Candidatus Veridida meridivita (NL. fem. n. *meridivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005889495*. The type genome for the species is the GenBank assembly GCA_005889495.1. The GC content of the type genome is 67.88 % and the genome length is 2.73 Mbp.

Description of *Candidatus* Veridida papilax sp. nov.

Candidatus Veridida papilax (NL. fem. n. *papilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005888075*. The type genome for the species is the GenBank assembly GCA_005888075.1. The GC content of the type genome is 65.15 % and the genome length is 2.0 Mbp.

Description of *Candidatus* Veridida proslax sp. nov.

Candidatus Veridida proslax (NL. fem. n. *proslax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005880915*. The type genome for the species is the GenBank assembly GCA_005880915.1. The GC content of the type genome is 65.94 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Veridida recumentia sp. nov.

Candidatus Veridida recumentia (NL. fem. n. *recumentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005882545*. The type genome for the species is the GenBank assembly GCA_005882545.1. The GC content of the type genome is 65.66 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Veridida resuritas sp. nov.

Candidatus Veridida resuritas (NL. fem. n. *resuritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005889135*. The type genome for the species is the GenBank assembly GCA_005887695.1. The GC content of the type genome is 68.32 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Veridida tetenousia sp. nov.

Candidatus Veridida tetenousia (NL. fem. n. *tetenousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005882135*. The type genome for the species is the GenBank assembly GCA_005882135.1. The GC content of the type genome is 66.15 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Veridida vacilimonia sp. nov.

Candidatus Veridida vacilimonia (NL. fem. n. *vacilimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp001917775*. The type genome for the species is the GenBank assembly GCA_001917775.1. The GC content of the type genome is 66.01 % and the genome length is 1.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; pre rain".

Description of *Candidatus* Veridida visibitas sp. nov.

Candidatus Veridida visibitas (NL. fem. n. *visibitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *40CM-4-65-16 sp005880795*. The type genome for the species is the GenBank assembly GCA_005882655.1. The GC content of the type genome is 65.78 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Veridosa dibucibula sp. nov.

Candidatus Veridosa dibucibula (NL. fem. n. *dibucibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *J007 sp003695985*. The type genome for the species is the GenBank assembly RS_GCF_012295525.1. The GC content of the type genome is 51.45 % and the genome length is 6.36 Mbp.

Description of *Candidatus* Veridosa gen. nov.

Candidatus Veridosa (NL. fem. n. *Veridosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *J007*. The type species for the genus is *Candidatus* Veridosa dibucibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Verifana aphoritrix sp. nov.

Candidatus Verifana aphoritrix (NL. fem. n. *aphoritrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp002309075*. The type genome for the species is the GenBank assembly GCA_002309075.1. The GC content of the type genome is 40.95 % and the genome length is 0.61 Mbp.

Description of *Candidatus* Verifana gen. nov.

Candidatus Verifana (NL. fem. n. *Verifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2866*. The type species for the genus is *Candidatus* Verifana

aphoritrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Verifana cenobetta sp. nov.

Candidatus Verifana cenobetta (NL. fem. n. *cenobetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp003979185*. The type genome for the species is the GenBank assembly GCA_013316035.1. The GC content of the type genome is 43.67 % and the genome length is 0.88 Mbp.

Description of *Candidatus* Verifana colutibula sp. nov.

Candidatus Verifana colutibula (NL. fem. n. *colutibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp013316435*. The type genome for the species is the GenBank assembly GCA_013316435.1. The GC content of the type genome is 45.12 % and the genome length is 0.69 Mbp.

Description of *Candidatus* Verifana depasitura sp. nov.

Candidatus Verifana depasitura (NL. fem. n. *depasitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp004138405*. The type genome for the species is the GenBank assembly RS_GCF_004138405.1. The GC content of the type genome is 40.3 % and the genome length is 0.56 Mbp.

Description of *Candidatus* Verifana detosessa sp. nov.

Candidatus Verifana detosessa (NL. fem. n. *detosessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp004138395*. The type genome for the species is the GenBank assembly RS_GCF_004138395.1. The GC content of the type genome is 43.27 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Verifana encepatio sp. nov.

Candidatus Verifana encepatio (NL. fem. n. *encepatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp013333135*. The type genome for the species is the GenBank assembly GCA_013333135.2. The GC content of the type genome is 40.9 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Verifana excamugo sp. nov.

Candidatus Verifana excamugo (NL. fem. n. *excamugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp007845165*. The type genome for the species is the GenBank assembly RS_GCF_007845165.1. The GC content of the type genome is 41.14 % and the genome length is 0.62 Mbp.

Description of *Candidatus* Verifana hexamitio sp. nov.

Candidatus Verifana hexamitio (NL. fem. n. *hexamitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp902761145*. The type genome for the species is the GenBank assembly GCA_902761145.1. The GC content of the type genome is 42.31 % and the genome length is 0.87 Mbp.

Description of *Candidatus* Verifana inperitica sp. nov.

Candidatus Verifana inperitica (NL. fem. n. *inperitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp002393165*. The type genome for the species is the GenBank assembly GCA_002393165.1. The GC content of the type genome is 48.52 % and the genome length is 0.66 Mbp.

Description of *Candidatus* Verifana irrefatio sp. nov.

Candidatus Verifana irrefatio (NL. fem. n. *irrefatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp002363125*. The type genome for the species is the GenBank assembly GCA_002363125.1. The GC content of the type genome is 39.69 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Verifana ludimitoga sp. nov.

Candidatus Verifana ludimitoga (NL. fem. n. *ludimitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp013332965*. The type genome for the species is the GenBank assembly GCA_013333205.2. The GC content of the type genome is 41.35 % and the genome length is 0.74 Mbp.

Description of *Candidatus* Verifana nehalitio sp. nov.

Candidatus Verifana nehalitio (NL. fem. n. *nehalitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp013332955*. The type genome for the species is the GenBank assembly GCA_013332955.2. The GC content of the type genome is 41.09 % and the genome length is 0.73 Mbp.

Description of *Candidatus* Verifana nugigitudo sp. nov.

Candidatus Verifana nugigitudo (NL. fem. n. *nugigitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp002350545*. The type genome for the species is the GenBank assembly GCA_002350545.1. The GC content of the type genome is 41.86 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Verifana paralitoga sp. nov.

Candidatus Verifana paralitoga (NL. fem. n. *paralitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2866 sp013333375*. The type genome for the species is the GenBank assembly GCA_013333375.2. The GC content of the type genome is 41.2 % and the genome length is 0.64 Mbp.

Description of *Candidatus* Verifana rubecentia sp. nov.

Candidatus Verifana rubecentia (NL. fem. n. *rubecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp002315165*. The type genome for the species is the GenBank assembly GCA_002315165.1. The GC content of the type genome is 42.25 % and the genome length is 0.58 Mbp.

Description of *Candidatus* Verifana visocibra sp. nov.

Candidatus Verifana visocibra (NL. fem. n. *visocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2866 sp002371235*. The type genome for the species is the GenBank assembly GCA_002371235.1. The GC content of the type genome is 42.19 % and the genome length is 0.72 Mbp.

Description of *Candidatus* Verifaria agrimibra sp. nov.

Candidatus Verifaria agrimibra (NL. fem. n. *agrimibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMJ01 sp007695115*. The type genome for the species is the GenBank assembly GCA_007695115.1. The GC content of the type genome is 58.74 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Verifaria gen. nov.

Candidatus Verifaria (NL. fem. n. *Verifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLMJ01*. The type species for the genus is *Candidatus* Verifaria agrimibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Verifaria colepibula sp. nov.

Candidatus Verifaria colepibula (NL. fem. n. *colepibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMJ01 sp007123655*. The type genome for the species is the GenBank assembly GCA_007123655.1. The GC content of the type genome is 61.04 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Verifaria domipatica sp. nov.

Candidatus Verifaria domipatica (NL. fem. n. *domipatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMJ01 sp007133615*. The type genome for the species is the GenBank assembly GCA_007124015.1. The GC content of the type genome is 58.96 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Verifaria mirifitrix sp. nov.

Candidatus Verifaria mirifitrix (NL. fem. n. *mirifitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMJ01 sp007122555*. The type genome for the species is the GenBank assembly GCA_007122555.1. The GC content of the type genome is 59.57 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Verifaria sonabitudo sp. nov.

Candidatus Verifaria sonabitudo (NL. fem. n. *sonabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMJ01 sp007124395*. The type genome for the species is the GenBank assembly GCA_007124395.1. The GC content of the type genome is 58.8 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Verifella viginitudo sp. nov.

Candidatus Verifella viginitudo (NL. fem. n. *viginitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAC01 sp009780415*. The type genome for the species is the GenBank assembly GCA_009780415.1. The GC content of the type genome is 50.6 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Verifella gen. nov.

Candidatus Verifella (NL. fem. n. *Verifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAC01*. The type species for the genus is *Candidatus* Verifella viginitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRAX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibulaceae.

Description of *Candidatus* Verifia adnarivita sp. nov.

Candidatus Verifia adnarivita (NL. fem. n. *adnarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp002716165*. The type genome for the species is the GenBank assembly GCA_002716165.1. The GC content of the type genome is 35.99 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Verifia gen. nov.

Candidatus Verifia (NL. fem. n. *Verifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Arctic96AD-7*. The type species for the genus is *Candidatus* Verifia adnarivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *NAC60-12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Peripidaceae.

Description of *Candidatus* Verifia advinessa sp. nov.

Candidatus Verifia advinessa (NL. fem. n. *advinessa* a species epithet created arbitrarily,

while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp014382365*. The type genome for the species is the GenBank assembly GCA_014382365.1. The GC content of the type genome is 41.87 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Verifia debucibra sp. nov.

Candidatus Verifia debucibra (NL. fem. n. *debucibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp003212435*. The type genome for the species is the GenBank assembly GCA_003212435.1. The GC content of the type genome is 38.98 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Verifia decacitudo sp. nov.

Candidatus Verifia decacitudo (NL. fem. n. *decacitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp001627865*. The type genome for the species is the GenBank assembly GCA_001627755.1. The GC content of the type genome is 42.4 % and the genome length is 2.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Red Sea water column Station 34 - depth 258m".

Description of *Candidatus* Verifia demigedo sp. nov.

Candidatus Verifia demigedo (NL. fem. n. *demigedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp002704555*. The type genome for the species is the GenBank assembly GCA_002704555.1. The GC content of the type genome is 39.07 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Verifia denupibula sp. nov.

Candidatus Verifia denupibula (NL. fem. n. *denupibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp002685535*. The type genome for the species is the GenBank assembly GCA_002687455.1. The GC content of the type genome is 42.79 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Verifia inculitrix sp. nov.

Candidatus Verifia inculitrix (NL. fem. n. *inculitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp902562015*. The type genome for the species is the GenBank assembly GCA_902562015.1. The GC content of the type genome is 37.55 % and the genome length is 1.65 Mbp.

Description of *Candidatus* Verifia innecatio sp. nov.

Candidatus Verifia innecatio (NL. fem. n. *innecatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp902575715*. The type genome for the species is the GenBank assembly GCA_902575715.1. The GC content of the type genome is 32.37 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Verifia macilax sp. nov.

Candidatus Verifia macilax (NL. fem. n. *macilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp002082305*. The type genome for the species is the GenBank assembly GCA_003973155.1. The GC content of the type genome is 42.36 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Verifia mutabitoga sp. nov.

Candidatus Verifia mutabitoga (NL. fem. n. *mutabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp902513935*. The type genome for the species is the GenBank assembly GCA_902513935.1. The GC content of the type genome is 40.79 %

and the genome length is 1.85 Mbp.

Description of *Candidatus* Verifia refocitica sp. nov.

Candidatus Verifia refocitica (NL. fem. n. *refocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp012964265*. The type genome for the species is the GenBank assembly GCA_012963935.1. The GC content of the type genome is 42.41 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Verifia utpotigena sp. nov.

Candidatus Verifia utpotigena (NL. fem. n. *utpotigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp014381795*. The type genome for the species is the GenBank assembly GCA_014381795.1. The GC content of the type genome is 42.33 % and the genome length is 2.23 Mbp.

Description of *Candidatus* Verifia venuciforma sp. nov.

Candidatus Verifia venuciforma (NL. fem. n. *venuciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp000213335*. The type genome for the species is the GenBank assembly GCA_000213335.2. The GC content of the type genome is 41.11 % and the genome length is 2.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "South Atlantic sub-tropical gyre (station KN192-5-11)".

Description of *Candidatus* Verifia vitifivita sp. nov.

Candidatus Verifia vitifivita (NL. fem. n. *vitifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp902564345*. The type genome for the species is the GenBank assembly GCA_902561915.1. The GC content of the type genome is 35.97 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Verifia vocamicella sp. nov.

Candidatus Verifia vocamicella (NL. fem. n. *vocamicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Arctic96AD-7 sp902590435*. The type genome for the species is the GenBank assembly GCA_902590435.1. The GC content of the type genome is 32.55 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Verifida milipitura sp. nov.

Candidatus Verifida milipitura (NL. fem. n. *milipitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DUMF01 sp012840015*. The type genome for the species is the GenBank assembly GCA_012840015.1. The GC content of the type genome is 54.18 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Verifida gen. nov.

Candidatus Verifida (NL. fem. n. *Verifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DUMF01*. The type species for the genus is *Candidatus* Verifida milipitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DUMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Verifidaceae.

Description of *Candidatus* Verifidaceae fam. nov.

Candidatus Verifidaceae (NL. fem. n. *Verifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMF01*. The type genus for the taxon is *Candidatus* Verifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *DUMF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Verifidales.

Description of *Candidatus* Verifidales ord. nov.

Candidatus Verifidales (NL. fem. n. *Verifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DUMF01*. The type genus for the taxon is *Candidatus* Verifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTU015*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Cetariae.

Description of *Candidatus* Verifula cemenitio sp. nov.

Candidatus Verifula cemenitio (NL. fem. n. *cemenitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CFX15 sp013112575*. The type genome for the species is the GenBank assembly GCA_008501685.1. The GC content of the type genome is 51.34 % and the genome length is 5.5 Mbp.

Description of *Candidatus* Verifula gen. nov.

Candidatus Verifula (NL. fem. n. *Verifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CFX15*. The type species for the genus is *Candidatus* Verifula cemenitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA11579*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Mirabosaceae.

Description of *Candidatus* Verrucomicrobium fatilicella sp. nov.

Candidatus Verrucomicrobium fatilicella (NL. fem. n. *fatilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Verrucomicrobium sp000739655*. The type genome for the species is the GenBank assembly RS_GCF_000739655.1. The GC content of the type genome is 60.78 % and the genome length is 8.69 Mbp.

Description of *Candidatus* Verrucomicrobium fetutatio sp. nov.

Candidatus Verrucomicrobium fetutatio (NL. fem. n. *fetutatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Verrucomicrobium sp000739635*. The type genome for the species is the GenBank assembly RS_GCF_000739635.1. The GC content of the type genome is 60.51 % and the genome length is 8.58 Mbp.

Description of *Candidatus* Verrucomicrobium hecatitas sp. nov.

Candidatus Verrucomicrobium hecatitas (NL. fem. n. *hecatitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Verrucomicrobium sp009885275*. The type genome for the species is the GenBank assembly GCA_009885275.1. The GC content of the type genome is 49.79 % and the genome length is 2.54 Mbp.

Description of *Candidatus* Vibrio abascigena sp. nov.

Candidatus Vibrio abascigena (NL. fem. n. *abascigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp011306175*. The type genome for the species is the GenBank assembly RS_GCF_011306175.1. The GC content of the type genome is 47.11 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Vibrio adoscedo sp. nov.

Candidatus Vibrio adoscedo (NL. fem. n. *adoscedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp004804295*. The type genome for the species is the GenBank assembly RS_GCF_004804295.1. The GC content of the type genome is 50.31 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Vibrio ambififica sp. nov.

Candidatus Vibrio ambififica (NL. fem. n. *ambififica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp011064285*. The type genome for the species is the GenBank assembly RS_GCF_011064285.1. The GC content of the type genome is 42.81 % and the genome length is 4.65 Mbp.

Description of *Candidatus* Vibrio apsuritio sp. nov.

Candidatus Vibrio apsuritio (NL. fem. n. *apsuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp009874545*. The type genome for the species is the GenBank assembly RS_GCF_009874545.1. The GC content of the type genome is 42.47 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Vibrio arcelisca sp. nov.

Candidatus Vibrio arcelisca (NL. fem. n. *arcelisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp013114595*. The type genome for the species is the GenBank assembly RS_GCF_013114595.1. The GC content of the type genome is 41.94 % and the genome length is 4.85 Mbp.

Description of *Candidatus* Vibrio armiditica sp. nov.

Candidatus Vibrio armiditica (NL. fem. n. *armiditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp002342685*. The type genome for the species is the GenBank assembly GCA_002342685.1. The GC content of the type genome is 41.69 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Vibrio bacifatio sp. nov.

Candidatus Vibrio bacifatio (NL. fem. n. *bacifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Vibrio sp000272145*. The type genome for the species is the GenBank assembly RS_GCF_000272145.2. The GC content of the type genome is 42.27 % and the genome length is 4.24 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "filtered seawater (<1um filter)".

Description of *Candidatus* Vibrio bipalilega sp. nov.

Candidatus Vibrio bipalilega (NL. fem. n. *bipalilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp000287055*. The type genome for the species is the GenBank assembly RS_GCF_000287055.2. The GC content of the type genome is 43.32 % and the genome length is 4.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "filtered seawater (64um filter)".

Description of *Candidatus* Vibrio bulapicula sp. nov.

Candidatus Vibrio bulapicula (NL. fem. n. *bulapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp002812955*. The type genome for the species is the GenBank assembly RS_GCF_002812955.1. The GC content of the type genome is 45.36 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Vibrio citipimonas sp. nov.

Candidatus Vibrio citipimonas (NL. fem. n. *citipimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp014596725*. The type genome for the species is the GenBank assembly RS_GCF_014596725.1. The GC content of the type genome is 43.12 % and the genome length is 4.69 Mbp.

Description of *Candidatus* Vibrio colubivita sp. nov.

Candidatus Vibrio colubivita (NL. fem. n. *colubivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp001676025*. The type genome for the species is the GenBank assembly RS_GCF_001675945.1. The GC content of the type genome is 41.95 % and the

genome length is 3.59 Mbp.

Description of *Candidatus* Vibrio crusmitas sp. nov.

Candidatus Vibrio crusmitas (NL. fem. n. *crusmitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp009601765*. The type genome for the species is the GenBank assembly RS_GCF_009601765.2. The GC content of the type genome is 42.33 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Vibrio cunabicella sp. nov.

Candidatus Vibrio cunabicella (NL. fem. n. *cunabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp012641465*. The type genome for the species is the GenBank assembly RS_GCF_012641465.1. The GC content of the type genome is 46.49 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Vibrio dehonitudo sp. nov.

Candidatus Vibrio dehonitudo (NL. fem. n. *dehonitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp007858795*. The type genome for the species is the GenBank assembly RS_GCF_007858795.1. The GC content of the type genome is 44.07 % and the genome length is 5.41 Mbp.

Description of *Candidatus* Vibrio depicessa sp. nov.

Candidatus Vibrio depicessa (NL. fem. n. *depicessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp013369335*. The type genome for the species is the GenBank assembly RS_GCF_013369335.1. The GC content of the type genome is 47.07 % and the genome length is 4.14 Mbp.

Description of *Candidatus* Vibrio derecentia sp. nov.

Candidatus Vibrio derecentia (NL. fem. n. *derecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp007124475*. The type genome for the species is the GenBank assembly GCA_007116955.1. The GC content of the type genome is 43.6 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Vibrio desonibra sp. nov.

Candidatus Vibrio desonibra (NL. fem. n. *desonibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp002608565*. The type genome for the species is the GenBank assembly RS_GCF_003584965.1. The GC content of the type genome is 45.09 % and the genome length is 4.1 Mbp.

Description of *Candidatus* Vibrio effulisca sp. nov.

Candidatus Vibrio effulisca (NL. fem. n. *effulisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp000316985*. The type genome for the species is the GenBank assembly RS_GCF_000316985.1. The GC content of the type genome is 44.41 % and the genome length is 5.47 Mbp.

Description of *Candidatus* Vibrio egregentia sp. nov.

Candidatus Vibrio egregentia (NL. fem. n. *egregentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp013369385*. The type genome for the species is the GenBank assembly RS_GCF_013369385.1. The GC content of the type genome is 46.7 % and the genome length is 4.47 Mbp.

Description of *Candidatus* Vibrio ensifitica sp. nov.

Candidatus Vibrio ensifitica (NL. fem. n. *ensifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp001506075*. The type genome for the species is the GenBank assembly RS_GCF_001506075.1. The GC content of the type genome is 45.7 % and the genome length is 4.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine sediment".

Description of *Candidatus* Vibrio epigratio sp. nov.

Candidatus Vibrio epigratio (NL. fem. n. *epigratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp002342735*. The type genome for the species is the GenBank assembly GCA_002342735.1. The GC content of the type genome is 41.9 % and the genome length is 4.6 Mbp.

Description of *Candidatus* Vibrio feditastra sp. nov.

Candidatus Vibrio feditastra (NL. fem. n. *feditastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp013114545*. The type genome for the species is the GenBank assembly RS_GCF_013114545.1. The GC content of the type genome is 44.75 % and the genome length is 4.58 Mbp.

Description of *Candidatus* Vibrio herinitudo sp. nov.

Candidatus Vibrio herinitudo (NL. fem. n. *herinitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp001874155*. The type genome for the species is the GenBank assembly GCA_001874155.1. The GC content of the type genome is 44.52 % and the genome length is 2.57 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Mediterranean seawater enriched with a specific particulate matter".

Description of *Candidatus* Vibrio inambatio sp. nov.

Candidatus Vibrio inambatio (NL. fem. n. *inambatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp014050145*. The type genome for the species is the GenBank assembly RS_GCF_014050145.1. The GC content of the type genome is 44.12 % and the genome length is 4.59 Mbp.

Description of *Candidatus* Vibrio inbecetta sp. nov.

Candidatus Vibrio inbecetta (NL. fem. n. *inbecetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp000960595*. The type genome for the species is the GenBank assembly RS_GCF_000960595.1. The GC content of the type genome is 48.01 % and the genome length is 4.91 Mbp.

Description of *Candidatus* Vibrio indepentia sp. nov.

Candidatus Vibrio indepentia (NL. fem. n. *indepentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp002877365*. The type genome for the species is the GenBank assembly RS_GCF_002877365.1. The GC content of the type genome is 44.16 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Vibrio inhabitudo sp. nov.

Candidatus Vibrio inhabitudo (NL. fem. n. *inhabitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp003144035*. The type genome for the species is the GenBank assembly RS_GCF_003144035.1. The GC content of the type genome is 46.08 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Vibrio inmemimonia sp. nov.

Candidatus Vibrio inmemimonia (NL. fem. n. *inmemimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp013114625*. The type genome for the species is the GenBank assembly RS_GCF_013114625.1. The GC content of the type genome is 41.29 % and the genome length is 5.05 Mbp.

Description of *Candidatus* Vibrio inredentia sp. nov.

Candidatus Vibrio inredentia (NL. fem. n. *inredentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp006124995*. The type genome for the species is the GenBank assembly RS_GCF_006124995.1. The GC content of the type genome is 44.82 % and the genome length is 4.31 Mbp.

Description of *Candidatus* Vibrio insurigena sp. nov.

Candidatus Vibrio insurigena (NL. fem. n. *insurigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp000169995*. The type genome for the species is the GenBank assembly RS_GCF_000169995.1. The GC content of the type genome is 44.48 % and the genome length is 5.84 Mbp.

Description of *Candidatus* Vibrio manufimonia sp. nov.

Candidatus Vibrio manufimonia (NL. fem. n. *manufimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp002100145*. The type genome for the species is the GenBank assembly RS_GCF_002100145.1. The GC content of the type genome is 45.46 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Vibrio momoricula sp. nov.

Candidatus Vibrio momoricula (NL. fem. n. *momoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp002875705*. The type genome for the species is the GenBank assembly RS_GCF_001974575.1. The GC content of the type genome is 43.96 % and the genome length is 5.78 Mbp.

Description of *Candidatus* Vibrio munimedo sp. nov.

Candidatus Vibrio munimedo (NL. fem. n. *munimedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp013113835*. The type genome for the species is the GenBank assembly RS_GCF_013113835.1. The GC content of the type genome is 45.85 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Vibrio notabedo sp. nov.

Candidatus Vibrio notabedo (NL. fem. n. *notabedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp003716875*. The type genome for the species is the GenBank assembly RS_GCF_003716875.1. The GC content of the type genome is 45.44 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Vibrio oblocivita sp. nov.

Candidatus Vibrio oblocivita (NL. fem. n. *oblocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp000171815*. The type genome for the species is the GenBank assembly RS_GCF_000171815.1. The GC content of the type genome is 44.66 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Vibrio petulilega sp. nov.

Candidatus Vibrio petulilega (NL. fem. n. *petulilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp903986855*. The type genome for the species is the GenBank assembly RS_GCF_903986855.1. The GC content of the type genome is 44.88 % and the genome length is 4.73 Mbp.

Description of *Candidatus* Vibrio sacomatica sp. nov.

Candidatus Vibrio sacomatica (NL. fem. n. *sacomatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Vibrio sp002873335*. The type genome for the species is the GenBank assembly RS_GCF_002874415.1. The GC content of the type genome is 44.37 % and the genome length is 5.16 Mbp.

Description of *Candidatus* Vibrio sarabatica sp. nov.

Candidatus Vibrio sarabatica (NL. fem. n. *sarabatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp013394185*. The type genome for the species is the GenBank assembly RS_GCF_013376745.1. The GC content of the type genome is 44.61 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Vibrio scellastra sp. nov.

Candidatus Vibrio scellastra (NL. fem. n. *scellastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp002563795*. The type genome for the species is the GenBank assembly RS_GCF_002563795.1. The GC content of the type genome is 44.68 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Vibrio siticessa sp. nov.

Candidatus Vibrio siticessa (NL. fem. n. *siticessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp001635455*. The type genome for the species is the GenBank assembly RS_GCF_001635455.1. The GC content of the type genome is 43.9 % and the genome length is 5.32 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "sea water".

Description of *Candidatus* Vibrio solipitica sp. nov.

Candidatus Vibrio solipitica (NL. fem. n. *solipitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp000176715*. The type genome for the species is the GenBank assembly RS_GCF_000176715.1. The GC content of the type genome is 46.46 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Vibrio triclilenta sp. nov.

Candidatus Vibrio triclilenta (NL. fem. n. *triclilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vibrio sp002873395*. The type genome for the species is the GenBank assembly RS_GCF_002873395.1. The GC content of the type genome is 41.09 % and the genome length is 3.78 Mbp.

Description of *Candidatus* Viburaria novilastra sp. nov.

Candidatus Viburaria novilastra (NL. fem. n. *novilastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2717485 sp002717485*. The type genome for the species is the GenBank assembly GCA_002717485.1. The GC content of the type genome is 29.49 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Viburaria gen. nov.

Candidatus Viburaria (NL. fem. n. *Viburaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2717485*. The type species for the genus is *Candidatus* Viburaria novilastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002718135*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defululaceae.

Description of *Candidatus* Viburella denunicula sp. nov.

Candidatus Viburella denunicula (NL. fem. n. *denunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTGP01 sp011334905*. The type genome for the species is the GenBank assembly GCA_011334905.1. The GC content of the type genome is 64.94 % and the genome length is 3.76 Mbp.

Description of *Candidatus* Viburella gen. nov.

Candidatus Viburella (NL. fem. n. *Viburella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTGP01*. The type species for the genus is *Candidatus* Viburella denunicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTGP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viburellaceae.

Description of *Candidatus* Viburellaceae fam. nov.

Candidatus Viburellaceae (NL. fem. n. *Viburellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTGP01.* The type genus for the taxon is *Candidatus* Viburella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTGP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Viburellales.

Description of *Candidatus* Viburellales ord. nov.

Candidatus Viburellales (NL. fem. n. *Viburellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTGP01.* The type genus for the taxon is *Candidatus* Viburella .

According to the original version of GTDB R06-RS202, this family belongs to the class *DTGP01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Viburellae.

Description of *Candidatus* Viburellae class. nov.

Candidatus Viburellae (NL. fem. n. *c__Viburellae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTGP01.* The type genus for the taxon is *Candidatus* Viburella .

According to GTDB R06-RS202, this class belongs to the phylum *Armatimonadota*.

Description of *Candidatus* Viburia laxitugo sp. nov.

Candidatus Viburia laxitugo (NL. fem. n. *laxitugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WLWT01 sp012103455*. The type genome for the species is the GenBank assembly GCA_011087615.1. The GC content of the type genome is 58.16 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Viburia gen. nov.

Candidatus Viburia (NL. fem. n. *Viburia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WLWT01*. The type species for the genus is *Candidatus* Viburia laxitugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HK1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rumifiaceae.

Description of *Candidatus* Viburida arcifibula sp. nov.

Candidatus Viburida arcifibula (NL. fem. n. *arcifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-739 sp005883365*. The type genome for the species is the GenBank assembly GCA_005883365.1. The GC content of the type genome is 70.14 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Viburida gen. nov.

Candidatus Viburida (NL. fem. n. *Viburida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-739*. The type species for the genus is *Candidatus* Viburida arcifibula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Viburida detepivita sp. nov.

Candidatus Viburida detepivita (NL. fem. n. *detepivita* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-739 sp003152275*. The type genome for the species is the GenBank assembly GCA_003152275.1. The GC content of the type genome is 67.64 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Viburida irremago sp. nov.

Candidatus Viburida irremago (NL. fem. n. *irremago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-739 sp003161615*. The type genome for the species is the GenBank assembly GCA_003161615.1. The GC content of the type genome is 69.25 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Viburida refulitia sp. nov.

Candidatus Viburida refulitia (NL. fem. n. *refulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-739 sp003139545*. The type genome for the species is the GenBank assembly GCA_003139545.1. The GC content of the type genome is 68.82 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Viburosa cinefifica sp. nov.

Candidatus Viburosa cinefifica (NL. fem. n. *cinefifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB114 sp002692055*. The type genome for the species is the GenBank assembly GCA_002171215.1. The GC content of the type genome is 28.98 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Viburosa gen. nov.

Candidatus Viburosa (NL. fem. n. *Viburosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *HIMB114*. The type species for the genus is *Candidatus* Viburosa cinefifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Viburosa dibucessa sp. nov.

Candidatus Viburosa dibucessa (NL. fem. n. *dibucessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB114 sp008638005*. The type genome for the species is the GenBank assembly GCA_008638005.1. The GC content of the type genome is 30.49 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Viburosa diritousia sp. nov.

Candidatus Viburosa diritousia (NL. fem. n. *diritousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB114 sp003209195*. The type genome for the species is the GenBank assembly GCA_003209195.1. The GC content of the type genome is 28.63 % and the genome length is 0.97 Mbp.

Description of *Candidatus* Viburosa fragmisca sp. nov.

Candidatus Viburosa fragmisca (NL. fem. n. *fragmisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB114 sp000163555*. The type genome for the species is the GenBank assembly RS_GCF_000163555.2. The GC content of the type genome is 29.59 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Viburosa licenimonas sp. nov.

Candidatus Viburosa licenimonas (NL. fem. n. *licenimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB114 sp902524955*. The type genome for the species is the GenBank assembly GCA_902524955.1. The GC content of the type genome is 29.7 %

and the genome length is 0.97 Mbp.

Description of *Candidatus* Viburosa terebugo sp. nov.

Candidatus Viburosa terebugo (NL. fem. n. *terebugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB114 sp002684895*. The type genome for the species is the GenBank assembly GCA_004321785.1. The GC content of the type genome is 29.85 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Viburosa xeropitoga sp. nov.

Candidatus Viburosa xeropitoga (NL. fem. n. *xeropitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HIMB114 sp002171085*. The type genome for the species is the GenBank assembly GCA_002703205.1. The GC content of the type genome is 29.53 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Viburula cibarivita sp. nov.

Candidatus Viburula cibarivita (NL. fem. n. *cibarivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-632 sp900539185*. The type genome for the species is the GenBank assembly GCA_900539185.1. The GC content of the type genome is 44.87 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Viburula gen. nov.

Candidatus Viburula (NL. fem. n. *Viburula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-632*. The type species for the genus is *Candidatus* Viburula cibarivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Viburula desucicula sp. nov.

Candidatus Viburula desucicula (NL. fem. n. *desucicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-632 sp000431515*. The type genome for the species is the GenBank assembly GCA_000431515.1. The GC content of the type genome is 44.32 % and the genome length is 2.46 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Viburula dicabitas sp. nov.

Candidatus Viburula dicabitas (NL. fem. n. *dicabitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-632 sp902783585*. The type genome for the species is the GenBank assembly GCA_902783585.1. The GC content of the type genome is 45.81 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Viburula pavimimonia sp. nov.

Candidatus Viburula pavimimonia (NL. fem. n. *pavimimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-632 sp002406015*. The type genome for the species is the GenBank assembly GCA_002406015.1. The GC content of the type genome is 41.76 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Vicatana anecliforma sp. nov.

Candidatus Vicatana anecliforma (NL. fem. n. *anecliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJHT01 sp014193395*. The type genome for the species is the GenBank assembly GCA_014193395.1. The GC content of the type genome is 64.2 % and the genome length is 7.89 Mbp.

Description of *Candidatus* Vicatana gen. nov.

Candidatus Vicatana (NL. fem. n. *Vicatana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJHT01*. The type species for the genus is *Candidatus* Vicatana anecliforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *BJHT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicatanaceae.

Description of *Candidatus* Vicatanaceae fam. nov.

Candidatus Vicatanaceae (NL. fem. n. *Vicatanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *BJHT01.* The type genus for the taxon is *Candidatus* Vicatana .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Vicataria metucigena sp. nov.

Candidatus Vicataria metucigena (NL. fem. n. *metucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS268 sp900540705*. The type genome for the species is the GenBank assembly GCA_900540705.1. The GC content of the type genome is 35.53 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Vicataria gen. nov.

Candidatus Vicataria (NL. fem. n. *Vicataria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS268*. The type species for the genus is *Candidatus* Vicataria metucigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vicataria ossarugo sp. nov.

Candidatus Vicataria ossarugo (NL. fem. n. *ossarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS268 sp900540175*. The type genome for the species is the GenBank assembly GCA_900540175.1. The GC content of the type genome is 40.07 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Vicatella inremago sp. nov.

Candidatus Vicatella inremago (NL. fem. n. *inremago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWM01 sp011373655*. The type genome for the species is the GenBank assembly GCA_011373655.1. The GC content of the type genome is 38.34 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Vicatella gen. nov.

Candidatus Vicatella (NL. fem. n. *Vicatella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWM01*. The type species for the genus is *Candidatus* Vicatella inremago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRWM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicatellaceae.

Description of *Candidatus* Vicatellaceae fam. nov.

Candidatus Vicatellaceae (NL. fem. n. *Vicatellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRWM01.* The type genus for the taxon is *Candidatus* Vicatella .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRWM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vicatellales.

Description of *Candidatus* Vicatellales ord. nov.

Candidatus Vicatellales (NL. fem. n. *Vicatellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *DRWM01*. The type genus for the taxon is *Candidatus* Vicatella .

According to the GTDB R06-RS202, this order belongs to the class *Polyangia*.

Description of *Candidatus* Vicatida benifugo sp. nov.

Candidatus Vicatida benifugo (NL. fem. n. *benifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *VMFF01 sp007375915*. The type genome for the species is the GenBank assembly GCA_007375915.1. The GC content of the type genome is 37.56 % and the genome length is 0.6 Mbp.

Description of *Candidatus* Vicatida gen. nov.

Candidatus Vicatida (NL. fem. n. *Vicatida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *VMFF01*. The type species for the genus is *Candidatus* Vicatida benifugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *VMFF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicatidaceae.

Description of *Candidatus* Vicatidaceae fam. nov.

Candidatus Vicatidaceae (NL. fem. n. *Vicatidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *VMFF01*. The type genus for the taxon is *Candidatus* Vicatida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA920*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denicosales.

Description of *Candidatus* Vicatula curacatio sp. nov.

Candidatus Vicatula curacatio (NL. fem. n. *curacatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *RUG841 sp902783835*. The type genome for the species is the GenBank assembly GCA_902783835.1. The GC content of the type genome is 35.55 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Vicatula gen. nov.

Candidatus Vicatula (NL. fem. n. *Vicatula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG841*. The type species for the genus is *Candidatus* Vicatula curacatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vicatula novilitrix sp. nov.

Candidatus Vicatula novilitrix (NL. fem. n. *novilitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG841 sp900772035*. The type genome for the species is the GenBank assembly RS_GCF_900772035.1. The GC content of the type genome is 38.31 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Vicatula paralimonia sp. nov.

Candidatus Vicatula paralimonia (NL. fem. n. *paralimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG841 sp900313795*. The type genome for the species is the GenBank assembly GCA_900313795.1. The GC content of the type genome is 37.29 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Vicecana cenotitia sp. nov.

Candidatus Vicecana cenotitia (NL. fem. n. *cenotitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYTF01 sp903929035*. The type genome for the species is the GenBank assembly GCA_903929035.1. The GC content of the type genome is 38.61 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Vicecana gen. nov.

Candidatus Vicecana (NL. fem. n. *Vicecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIYTF01*. The type species for the genus is *Candidatus* Vicecana cenotitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vicecana vivifibula sp. nov.

Candidatus Vicecana vivifibula (NL. fem. n. *vivifibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIYTF01 sp903915485*. The type genome for the species is the GenBank assembly GCA_903915485.1. The GC content of the type genome is 37.78 % and the genome length is 3.7 Mbp.

Description of *Candidatus* Vicecaria megalousia sp. nov.

Candidatus Vicecaria megalousia (NL. fem. n. *megalousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU072 sp001512685*. The type genome for the species is the GenBank assembly GCA_002385905.1. The GC content of the type genome is 42.75 % and the genome length is 1.4 Mbp.

Description of *Candidatus* Vicecaria gen. nov.

Candidatus Vicecaria (NL. fem. n. *Vicecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU072*. The type species for the genus is *Candidatus* Vicecaria megalousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DTU072*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecariaceae.

Description of *Candidatus* Vicecariaceae fam. nov.

Candidatus Vicecariaceae (NL. fem. n. *Vicecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DTU072*. The type genus for the taxon is *Candidatus* Vicecaria .

According to GTDB R06-RS202, this family belongs to the order *Christensenellales*.

Description of *Candidatus* Vicecaria oblucilega sp. nov.

Candidatus Vicecaria oblucilega (NL. fem. n. *oblucilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU072 sp012838805*. The type genome for the species is the GenBank assembly GCA_012838805.1. The GC content of the type genome is 41.15 % and the genome length is 1.69 Mbp.

Description of *Candidatus* Vicecella adnubastra sp. nov.

Candidatus Vicecella adnubastra (NL. fem. n. *adnubastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-295 sp013287135*. The type genome for the species is the GenBank assembly GCA_013287135.1. The GC content of the type genome is 54.65 % and the genome length is 4.38 Mbp.

Description of *Candidatus* Vicecella gen. nov.

Candidatus Vicecella (NL. fem. n. *Vicecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-295*. The type species for the genus is *Candidatus* Vicecella adnubastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7541*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dilicellaceae.

Description of *Candidatus* Vicecella assibimonas sp. nov.

Candidatus Vicecella assibimonas (NL. fem. n. *assibimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-295 sp003131705*. The type genome for the species is the GenBank assembly GCA_003131705.1. The GC content of the type genome is 57.65 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Vicecella deparessa sp. nov.

Candidatus Vicecella deparessa (NL. fem. n. *deparessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-295 sp003156635*. The type genome for the species is the GenBank assembly GCA_003156635.1. The GC content of the type genome is 58.8 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Vicecella depopitas sp. nov.

Candidatus Vicecella depopitas (NL. fem. n. *depopitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-295 sp003131985*. The type genome for the species is the GenBank assembly GCA_003166995.1. The GC content of the type genome is 56.21 % and the genome length is 3.94 Mbp.

Description of *Candidatus* Vicecella ensifigena sp. nov.

Candidatus Vicecella ensifigena (NL. fem. n. *ensifigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-295 sp013289715*. The type genome for the species is the GenBank assembly GCA_013289715.1. The GC content of the type genome is 58.78 % and the genome length is 4.94 Mbp.

Description of *Candidatus* Vicecella irroticella sp. nov.

Candidatus Vicecella irroticella (NL. fem. n. *irroticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Palsa-295 sp013286165*. The type genome for the species is the GenBank assembly GCA_013286165.1. The GC content of the type genome is 59.9 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Vicecella malagentia sp. nov.

Candidatus Vicecella malagentia (NL. fem. n. *malagentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-295 sp003167215*. The type genome for the species is the GenBank assembly GCA_003132885.1. The GC content of the type genome is 56.55 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Vicecella manibilega sp. nov.

Candidatus Vicecella manibilega (NL. fem. n. *manibilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-295 sp003166795*. The type genome for the species is the GenBank assembly GCA_003132965.1. The GC content of the type genome is 59.86 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Vicecella recocibula sp. nov.

Candidatus Vicecella recocibula (NL. fem. n. *recocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-295 sp003153585*. The type genome for the species is the GenBank assembly GCA_003153585.1. The GC content of the type genome is 56.57 % and the genome length is 3.28 Mbp.

Description of *Candidatus* Vicecella tirunicula sp. nov.

Candidatus Vicecella tirunicula (NL. fem. n. *tirunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-295 sp013289695*. The type genome for the species is the GenBank assembly GCA_013289695.1. The GC content of the type genome is 58.84 % and the genome length is 4.52 Mbp.

Description of *Candidatus* Vicecia denomitoga sp. nov.

Candidatus Vicecia denomitoga (NL. fem. n. *denomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-232 sp003229305*. The type genome for the species is the GenBank assembly GCA_003229305.1. The GC content of the type genome is 61.14 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Vicecia gen. nov.

Candidatus Vicecia (NL. fem. n. *Vicecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-232*. The type species for the genus is *Candidatus* Vicecia denomitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-232*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viceciaceae.

Description of *Candidatus* Viceciaceae fam. nov.

Candidatus Viceciaceae (NL. fem. n. *Viceciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-232.* The type genus for the taxon is *Candidatus* Vicecia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA5794*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Rudicellales.

Description of *Candidatus* Vicecida dapifitas sp. nov.

Candidatus Vicecida dapifitas (NL. fem. n. *dapifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQUG01 sp009781115*. The type genome for the species is the GenBank assembly GCA_009781115.1. The GC content of the type genome is 56.89 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Vicecida gen. nov.

Candidatus Vicecida (NL. fem. n. *Vicecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WQUG01*. The type species for the genus is *Candidatus* Vicecida dapifitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WQUG01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecidaceae.

Description of *Candidatus* Vicecidaceae fam. nov.

Candidatus Vicecidaceae (NL. fem. n. *Vicecidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WQUG01.* The type genus for the taxon is *Candidatus* Vicecida .

According to the original version of GTDB R06-RS202, this family belongs to the order *WRKU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Volubellales.

Description of *Candidatus* Vicecida insoritas sp. nov.

Candidatus Vicecida insoritas (NL. fem. n. *insoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQUG01 sp009785855*. The type genome for the species is the GenBank assembly GCA_009785855.1. The GC content of the type genome is 63.87 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Vicecida voluniforma sp. nov.

Candidatus Vicecida voluniforma (NL. fem. n. *voluniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WQUG01 sp009778715*. The type genome for the species is the GenBank assembly GCA_009778715.1. The GC content of the type genome is 56.18 % and the genome length is 1.73 Mbp.

Description of *Candidatus* Vicecosa sonivousia sp. nov.

Candidatus Vicecosa sonivousia (NL. fem. n. *sonivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-55-9 sp001778455*. The type genome for the species is the GenBank assembly GCA_001778455.1. The GC content of the type genome is 55.68 % and the genome length is 1.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Vicecosa gen. nov.

Candidatus Vicecosa (NL. fem. n. *Vicecosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-55-9*. The type species for the genus is *Candidatus* Vicecosa sonivousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-55-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vicecosaceae.

Description of *Candidatus* Vicecosaceae fam. nov.

Candidatus Vicecosaceae (NL. fem. n. *Vicecosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-55-9.* The type genus for the taxon is *Candidatus* Vicecosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-16-55-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vicecosales.

Description of *Candidatus* Vicecosales ord. nov.

Candidatus Vicecosales (NL. fem. n. *Vicecosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-55-9.* The type genus for the taxon is *Candidatus* Vicecosa .

According to the GTDB R06-RS202, this order belongs to the class *Bipolaricaulia*.

Description of *Candidatus* Vicecula anancitica sp. nov.

Candidatus Vicecula anancitica (NL. fem. n. *anancitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-45 sp002299665*. The type genome for the species is the GenBank assembly GCA_002299665.1. The GC content of the type genome is 38.23 % and the genome length is 2.66 Mbp.

Description of *Candidatus* Vicecula gen. nov.

Candidatus Vicecula (NL. fem. n. *Vicecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-45*. The type species for the genus is *Candidatus* Vicecula anancitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vicecula malivifica sp. nov.

Candidatus Vicecula malivifica (NL. fem. n. *malivifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-45 sp900771955*. The type genome for the species is the GenBank assembly RS_GCF_900771955.1. The GC content of the type genome is 45.54 % and the genome length is 3.58 Mbp.

Description of *Candidatus* Vicecula nicomitio sp. nov.

Candidatus Vicecula nicomitio (NL. fem. n. *nicomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-45 sp000438375*. The type genome for the species is the GenBank assembly GCA_004552925.1. The GC content of the type genome is 47.98 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Victivallis adtesatica sp. nov.

Candidatus Victivallis adtesatica (NL. fem. n. *adtesatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Victivallis sp900551245*. The type genome for the species is the GenBank assembly GCA_900551245.1. The GC content of the type genome is 59.43 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Victivallis aphorax sp. nov.

Candidatus Victivallis aphorax (NL. fem. n. *aphorax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Victivallis sp900550905*. The type genome for the species is the GenBank assembly GCA_900550905.1. The GC content of the type genome is 59.39 % and the genome length is 4.18 Mbp.

Description of *Candidatus* Victivallis effarilega sp. nov.

Candidatus Victivallis effarilega (NL. fem. n. *effarilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Victivallis sp900768515*. The type genome for the species is the GenBank assembly RS_GCF_900768515.1. The GC content of the type genome is 61.04 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Victivallis emancisca sp. nov.

Candidatus Victivallis emancisca (NL. fem. n. *emancisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Victivallis sp900761715*. The type genome for the species is the GenBank assembly RS_GCF_900761715.1. The GC content of the type genome is 56.99 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Victivallis retecifica sp. nov.

Candidatus Victivallis retecifica (NL. fem. n. *retecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation

for this species is *Victivallis sp002998355*. The type genome for the species is the GenBank assembly RS_GCF_002998355.1. The GC content of the type genome is 59.96 % and the genome length is 5.24 Mbp.

Description of *Candidatus* Videlana homunitio sp. nov.

Candidatus Videlana homunitio (NL. fem. n. *homunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-48-25 sp001773695*. The type genome for the species is the GenBank assembly GCA_001773615.1. The GC content of the type genome is 47.48 % and the genome length is 0.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Videlana gen. nov.

Candidatus Videlana (NL. fem. n. *Videlana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-48-25*. The type species for the genus is *Candidatus* Videlana homunitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Videlaria bimetatica sp. nov.

Candidatus Videlaria bimetatica (NL. fem. n. *bimetatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-38-15 sp001777055*. The type genome for the species is the GenBank assembly GCA_001777055.1. The GC content of the type genome is 38.75 % and the genome length is 0.83 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Videlaria gen. nov.

Candidatus Videlaria (NL. fem. n. *Videlaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *2-02-FULL-38-15*. The type species for the genus is *Candidatus* Videlaria bimetatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10151*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Sugiliaceae.

Description of *Candidatus* Videlella bipatimonas sp. nov.

Candidatus Videlella bipatimonas (NL. fem. n. *bipatimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2009 sp002706025*. The type genome for the species is the GenBank assembly GCA_002324005.1. The GC content of the type genome is 52.58 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Videlella gen. nov.

Candidatus Videlella (NL. fem. n. *Videlella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2009*. The type species for the genus is *Candidatus* Videlella bipatimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Videlella habacicula sp. nov.

Candidatus Videlella habacicula (NL. fem. n. *habacicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2009 sp002314145*. The type genome for the species is the GenBank assembly GCA_002294235.1. The GC content of the type genome is 53.27 % and the genome length is 4.21 Mbp.

Description of *Candidatus* Videlella infucigena sp. nov.

Candidatus Videlella infucigena (NL. fem. n. *infucigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2009 sp002733205*. The type genome for the species is the GenBank assembly GCA_002733205.1. The GC content of the type genome is 52.22 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Videlella sifunivita sp. nov.

Candidatus Videlella sifunivita (NL. fem. n. *sifunivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2009 sp002335285*. The type genome for the species is the GenBank assembly GCA_002340685.1. The GC content of the type genome is 53.18 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Videlia ducilicella sp. nov.

Candidatus Videlia ducilicella (NL. fem. n. *ducilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQVM01 sp004295015*. The type genome for the species is the GenBank assembly GCA_004295015.1. The GC content of the type genome is 39.44 % and the genome length is 3.87 Mbp.

Description of *Candidatus* Videlia gen. nov.

Candidatus Videlia (NL. fem. n. *Videlia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QQVM01*. The type species for the genus is *Candidatus* Videlia ducilicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2013-40CM-41-45*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vocifellaceae.

Description of *Candidatus* Videlia rubigifica sp. nov.

Candidatus Videlia rubigifica (NL. fem. n. *rubigifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QQVM01 sp003389385*. The type genome for the species is the

GenBank assembly GCA_003389315.1. The GC content of the type genome is 41.81 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Videlida aterrisca sp. nov.

Candidatus Videlida aterrisca (NL. fem. n. *aterrisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp900555005*. The type genome for the species is the GenBank assembly GCA_900555005.1. The GC content of the type genome is 52.73 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Videlida gen. nov.

Candidatus Videlida (NL. fem. n. *Videlida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2856*. The type species for the genus is *Candidatus* Videlida aterrisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Videlida avoncitura sp. nov.

Candidatus Videlida avoncitura (NL. fem. n. *avoncitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp002394165*. The type genome for the species is the GenBank assembly GCA_002394165.1. The GC content of the type genome is 54.47 % and the genome length is 2.51 Mbp.

Description of *Candidatus* Videlida ceracifica sp. nov.

Candidatus Videlida ceracifica (NL. fem. n. *ceracifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp009696445*. The type genome for the species is the GenBank assembly GCA_902786005.1. The GC content of the type genome is 53.64 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Videlida cerucisca sp. nov.

Candidatus Videlida cerucisca (NL. fem. n. *cerucisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp002371345*. The type genome for the species is the GenBank assembly GCA_902797605.1. The GC content of the type genome is 52.4 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Videlida defunilega sp. nov.

Candidatus Videlida defunilega (NL. fem. n. *defunilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902800805*. The type genome for the species is the GenBank assembly GCA_002395635.1. The GC content of the type genome is 53.56 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Videlida detoritia sp. nov.

Candidatus Videlida detoritia (NL. fem. n. *detoritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902767065*. The type genome for the species is the GenBank assembly GCA_902767065.1. The GC content of the type genome is 54.23 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Videlida dibapicula sp. nov.

Candidatus Videlida dibapicula (NL. fem. n. *dibapicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902803065*. The type genome for the species is the GenBank assembly GCA_902803065.1. The GC content of the type genome is 51.88 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Videlida expecax sp. nov.

Candidatus Videlida expecax (NL. fem. n. *expecax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp002392705*. The type genome for the species is the GenBank assembly GCA_002392705.1. The GC content of the type genome is 54.56 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Videlida futatitrix sp. nov.

Candidatus Videlida futatitrix (NL. fem. n. *futatitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp900313765*. The type genome for the species is the GenBank assembly GCA_902768775.1. The GC content of the type genome is 52.87 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Videlida gemebatica sp. nov.

Candidatus Videlida gemebatica (NL. fem. n. *gemebatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp900318615*. The type genome for the species is the GenBank assembly GCA_002350005.1. The GC content of the type genome is 49.87 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Videlida habacessa sp. nov.

Candidatus Videlida habacessa (NL. fem. n. *habacessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp900319065*. The type genome for the species is the GenBank assembly GCA_003523315.1. The GC content of the type genome is 53.92 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Videlida hegumousia sp. nov.

Candidatus Videlida hegumousia (NL. fem. n. *hegumousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2856 sp002482005*. The type genome for the species is the GenBank assembly GCA_002482005.1. The GC content of the type genome is 52.64 % and the genome length is 3.27 Mbp.

Description of *Candidatus* Videlida linigatica sp. nov.

Candidatus Videlida linigatica (NL. fem. n. *linigatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp900321365*. The type genome for the species is the GenBank assembly GCA_900321365.1. The GC content of the type genome is 54.6 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Videlida monacifica sp. nov.

Candidatus Videlida monacifica (NL. fem. n. *monacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902779575*. The type genome for the species is the GenBank assembly GCA_902777405.1. The GC content of the type genome is 54.08 % and the genome length is 2.69 Mbp.

Description of *Candidatus* Videlida obrigisca sp. nov.

Candidatus Videlida obrigisca (NL. fem. n. *obrigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902803155*. The type genome for the species is the GenBank assembly GCA_902803155.1. The GC content of the type genome is 53.05 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Videlida parocibula sp. nov.

Candidatus Videlida parocibula (NL. fem. n. *parocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902799015*. The type genome for the species is the GenBank assembly GCA_902799015.1. The GC content of the type genome is 53.32 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Videlida periditas sp. nov.

Candidatus Videlida periditas (NL. fem. n. *periditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902797665*. The type genome for the species is the GenBank assembly GCA_902797665.1. The GC content of the type genome is 53.83 % and the genome length is 3.8 Mbp.

Description of *Candidatus* Videlida resulatica sp. nov.

Candidatus Videlida resulatica (NL. fem. n. *resulatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902781455*. The type genome for the species is the GenBank assembly GCA_902781455.1. The GC content of the type genome is 53.36 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Videlida rudecentia sp. nov.

Candidatus Videlida rudecentia (NL. fem. n. *rudecentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902785635*. The type genome for the species is the GenBank assembly GCA_902785635.1. The GC content of the type genome is 50.98 % and the genome length is 3.64 Mbp.

Description of *Candidatus* Videlida sarabitia sp. nov.

Candidatus Videlida sarabitia (NL. fem. n. *sarabitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902767335*. The type genome for the species is the GenBank assembly GCA_902767335.1. The GC content of the type genome is 53.8 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Videlida subodedo sp. nov.

Candidatus Videlida subodedo (NL. fem. n. *subodedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp002350685*. The type genome for the species is the GenBank assembly GCA_002350685.1. The GC content of the type genome is 54.23 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Videlida viripigena sp. nov.

Candidatus Videlida viripigena (NL. fem. n. *viripigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2856 sp902801515*. The type genome for the species is the GenBank assembly GCA_902801515.1. The GC content of the type genome is 50.82 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Videlosa immusatio sp. nov.

Candidatus Videlosa immusatio (NL. fem. n. *immusatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADED01 sp013153605*. The type genome for the species is the GenBank assembly GCA_013153605.1. The GC content of the type genome is 51.77 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Videlosa gen. nov.

Candidatus Videlosa (NL. fem. n. *Videlosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADED01*. The type species for the genus is *Candidatus* Videlosa immusatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADED01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Videlosaceae.

Description of *Candidatus* Videlosaceae fam. nov.

Candidatus Videlosaceae (NL. fem. n. *Videlosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADED01*. The type genus for the taxon is *Candidatus* Videlosa .

According to GTDB R06-RS202, this family belongs to the order *Flavobacteriales*.

Description of *Candidatus* Videlosa nucifentia sp. nov.

Candidatus Videlosa nucifentia (NL. fem. n. *nucifentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADED01 sp013153655*. The type genome for the species is the GenBank assembly GCA_013153655.1. The GC content of the type genome is 48.04 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Videlula nutamatio sp. nov.

Candidatus Videlula nutamatio (NL. fem. n. *nutamatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CG1-02-37-114 sp001871125*. The type genome for the species is the GenBank assembly GCA_002785445.1. The GC content of the type genome is 37.1 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Videlula gen. nov.

Candidatus Videlula (NL. fem. n. *Videlula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CG1-02-37-114*. The type species for the genus is *Candidatus* Videlula nutamatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CG1-02-37-114*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Videlulaceae.

Description of *Candidatus* Videlulaceae fam. nov.

Candidatus Videlulaceae (NL. fem. n. *Videlulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG1-02-37-114*. The type genus for the taxon is *Candidatus* Videlula .

According to the original version of GTDB R06-RS202, this family belongs to the order *CG1-02-37-114*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Videlulales.

Description of *Candidatus* Videlulales ord. nov.

Candidatus Videlulales (NL. fem. n. *Videlulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CG1-02-37-114.* The type genus for the taxon is *Candidatus* Videlula .

According to the GTDB R06-RS202, this order belongs to the class *Endomicrobia*.

Description of *Candidatus* Vigenana ludimifica sp. nov.

Candidatus Vigenana ludimifica (NL. fem. n. *ludimifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1146 sp002311345*. The type genome for the species is the GenBank assembly GCA_002402035.1. The GC content of the type genome is 56.88 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Vigenana gen. nov.

Candidatus Vigenana (NL. fem. n. *Vigenana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1146*. The type species for the genus is *Candidatus* Vigenana ludimifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1146*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenanaceae.

Description of *Candidatus* Vigenanaceae fam. nov.

Candidatus Vigenanaceae (NL. fem. n. *Vigenanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1146.* The type genus for the taxon is *Candidatus* Vigenana .

According to the original version of GTDB R06-RS202, this family belongs to the order

UBA1146. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vigenanales.

Description of *Candidatus* Vigenanales ord. nov.

Candidatus Vigenanales (NL. fem. n. *Vigenanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1146.* The type genus for the taxon is *Candidatus* Vigenana .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA8108*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Decomariae.

Description of *Candidatus* Vigenana sicinibula sp. nov.

Candidatus Vigenana sicinibula (NL. fem. n. *sicinibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1146 sp002711105*. The type genome for the species is the GenBank assembly GCA_002711105.1. The GC content of the type genome is 55.43 % and the genome length is 3.71 Mbp.

Description of *Candidatus* Vigenaria anagnatio sp. nov.

Candidatus Vigenaria anagnatio (NL. fem. n. *anagnatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYNR01 sp012520735*. The type genome for the species is the GenBank assembly GCA_012520735.1. The GC content of the type genome is 53.48 % and the genome length is 2.77 Mbp.

Description of *Candidatus* Vigenaria gen. nov.

Candidatus Vigenaria (NL. fem. n. *Vigenaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYNR01*. The type species for the genus is *Candidatus* Vigenaria anagnatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family

JAAYNR01. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenariaceae.

Description of *Candidatus* Vigenariaceae fam. nov.

Candidatus Vigenariaceae (NL. fem. n. *Vigenariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYNR01.* The type genus for the taxon is *Candidatus* Vigenaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *RFP12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Capudanales.

Description of *Candidatus* Vigenella denunicella sp. nov.

Candidatus Vigenella denunicella (NL. fem. n. *denunicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2387 sp002343445*. The type genome for the species is the GenBank assembly GCA_002343025.1. The GC content of the type genome is 64.12 % and the genome length is 3.6 Mbp.

Description of *Candidatus* Vigenella gen. nov.

Candidatus Vigenella (NL. fem. n. *Vigenella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2387*. The type species for the genus is *Candidatus* Vigenella denunicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vigenia lucubago sp. nov.

Candidatus Vigenia lucubago (NL. fem. n. *lucubago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9988 sp001823095*. The type genome for the species is the GenBank assembly GCA_003489415.1. The GC content of the type genome is 52.07 %

and the genome length is 0.61 Mbp.

Description of *Candidatus* Vigenia gen. nov.

Candidatus Vigenia (NL. fem. n. *Vigenia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9988*. The type species for the genus is *Candidatus* Vigenia lucubago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9988*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigeniaceae.

Description of *Candidatus* Vigeniaceae fam. nov.

Candidatus Vigeniaceae (NL. fem. n. *Vigeniaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9988.* The type genus for the taxon is *Candidatus* Vigenia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Vigenida citipilenta sp. nov.

Candidatus Vigenida citipilenta (NL. fem. n. *citipilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp000990565*. The type genome for the species is the GenBank assembly GCA_000990565.1. The GC content of the type genome is 34.91 % and the genome length is 1.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Vigenida gen. nov.

Candidatus Vigenida (NL. fem. n. *Vigenida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GWC2-37-13*. The type species for the genus is *Candidatus* Vigenida citipilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-13*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenidaceae.

Description of *Candidatus* Vigenidaceae fam. nov.

Candidatus Vigenidaceae (NL. fem. n. *Vigenidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GWC2-37-13.* The type genus for the taxon is *Candidatus* Vigenida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1406*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Molecanales.

Description of *Candidatus* Vigenida decamessa sp. nov.

Candidatus Vigenida decamessa (NL. fem. n. *decamessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp002788805*. The type genome for the species is the GenBank assembly GCA_002786575.1. The GC content of the type genome is 35.19 % and the genome length is 0.91 Mbp.

Description of *Candidatus* Vigenida demadilenta sp. nov.

Candidatus Vigenida demadilenta (NL. fem. n. *demadilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp002050095*. The type genome for the species is the GenBank assembly GCA_002050095.1. The GC content of the type genome is 37.73 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Vigenida detesilenta sp. nov.

Candidatus Vigenida detesilenta (NL. fem. n. *detesilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp002440905*. The type genome for the species is the

GenBank assembly GCA_002440905.1. The GC content of the type genome is 41.58 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Vigenida diluditica sp. nov.

Candidatus Vigenida diluditica (NL. fem. n. *diluditica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp002786595*. The type genome for the species is the GenBank assembly GCA_002786595.1. The GC content of the type genome is 33.63 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Vigenida extunitura sp. nov.

Candidatus Vigenida extunitura (NL. fem. n. *extunitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp000990305*. The type genome for the species is the GenBank assembly GCA_000990305.1. The GC content of the type genome is 33.7 % and the genome length is 0.71 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Vigenida fidenatica sp. nov.

Candidatus Vigenida fidenatica (NL. fem. n. *fidenatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp000991135*. The type genome for the species is the GenBank assembly GCA_000991135.1. The GC content of the type genome is 36.9 % and the genome length is 0.99 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Vigenida inrecitoga sp. nov.

Candidatus Vigenida inrecitoga (NL. fem. n. *inrecitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp001789855*. The type genome for the species is the GenBank assembly GCA_001789855.1. The GC content of the type genome is 43.85 % and the genome length is 0.47 Mbp. The isolation source for the NCBI BioSample

associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Vigenida penecifica sp. nov.

Candidatus Vigenida penecifica (NL. fem. n. *penecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp002779665*. The type genome for the species is the GenBank assembly GCA_002779665.1. The GC content of the type genome is 33.75 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Vigenida refacitura sp. nov.

Candidatus Vigenida refacitura (NL. fem. n. *refacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GWC2-37-13 sp002792355*. The type genome for the species is the GenBank assembly GCA_002792355.1. The GC content of the type genome is 35.49 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Vigenosa depocatio sp. nov.

Candidatus Vigenosa depocatio (NL. fem. n. *depocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SBBA01 sp005239925*. The type genome for the species is the GenBank assembly GCA_005239925.1. The GC content of the type genome is 49.5 % and the genome length is 2.37 Mbp.

Description of *Candidatus* Vigenosa gen. nov.

Candidatus Vigenosa (NL. fem. n. *Vigenosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SBBA01*. The type species for the genus is *Candidatus* Vigenosa depocatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SBBA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vigenosaceae.

Description of *Candidatus* Vigenosaceae fam. nov.

Candidatus Vigenosaceae (NL. fem. n. *Vigenosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SBBA01*. The type genus for the taxon is *Candidatus* Vigenosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBBL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ceraridales.

Description of *Candidatus* Vigenula manomitoga sp. nov.

Candidatus Vigenula manomitoga (NL. fem. n. *manomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4592 sp002390705*. The type genome for the species is the GenBank assembly GCA_002390705.1. The GC content of the type genome is 53.46 % and the genome length is 2.07 Mbp.

Description of *Candidatus* Vigenula gen. nov.

Candidatus Vigenula (NL. fem. n. *Vigenula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4592*. The type species for the genus is *Candidatus* Vigenula manomitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *S36-B12*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Categidaceae.

Description of *Candidatus* Vigenula maxilibra sp. nov.

Candidatus Vigenula maxilibra (NL. fem. n. *maxilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4592 sp002469525*. The type genome for the species is the GenBank assembly GCA_002469525.1. The GC content of the type genome is 53.57 % and the genome length is 2.02 Mbp.

Description of *Candidatus* Vigenula sicaritia sp. nov.

Candidatus Vigenula sicaritia (NL. fem. n. *sicaritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4592 sp002365735*. The type genome for the species is the GenBank assembly GCA_002365735.1. The GC content of the type genome is 54.19 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Viginana cobalicula sp. nov.

Candidatus Viginana cobalicula (NL. fem. n. *cobalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6984 sp900550295*. The type genome for the species is the GenBank assembly GCA_900550295.1. The GC content of the type genome is 32.65 % and the genome length is 1.67 Mbp.

Description of *Candidatus* Viginana gen. nov.

Candidatus Viginana (NL. fem. n. *Viginana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6984*. The type species for the genus is *Candidatus* Viginana cobalicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Viginana colopitio sp. nov.

Candidatus Viginana colopitio (NL. fem. n. *colopitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6984 sp900321735*. The type genome for the species is the GenBank assembly GCA_902774585.1. The GC content of the type genome is 29.73 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Viginana detesedo sp. nov.

Candidatus Viginana detesedo (NL. fem. n. *detesedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6984 sp002450015*. The type genome for the species is the GenBank assembly GCA_002450015.1. The GC content of the type genome is 30.81 % and the genome length is 1.43 Mbp.

Description of *Candidatus* Viginana inlocatio sp. nov.

Candidatus Viginana inlocatio (NL. fem. n. *inlocatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6984 sp002369055*. The type genome for the species is the GenBank assembly GCA_002369055.1. The GC content of the type genome is 31.2 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Viginana venucedo sp. nov.

Candidatus Viginana venucedo (NL. fem. n. *venucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6984 sp003258725*. The type genome for the species is the GenBank assembly GCA_003258725.1. The GC content of the type genome is 32.51 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Viginaria peridisca sp. nov.

Candidatus Viginaria peridisca (NL. fem. n. *peridisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LLD-282 sp009927065*. The type genome for the species is the GenBank assembly GCA_009926025.1. The GC content of the type genome is 36.03 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Viginaria gen. nov.

Candidatus Viginaria (NL. fem. n. *Viginaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LLD-282*. The type species for the genus is *Candidatus* Viginaria

peridisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LLD-282*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viginariaceae.

Description of *Candidatus* Viginariaceae fam. nov.

Candidatus Viginariaceae (NL. fem. n. *Viginariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *LLD-282.* The type genus for the taxon is *Candidatus* Viginaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *LLD-282*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Viginariales.

Description of *Candidatus* Viginariales ord. nov.

Candidatus Viginariales (NL. fem. n. *Viginariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *LLD-282.* The type genus for the taxon is *Candidatus* Viginaria .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Viginella bigemago sp. nov.

Candidatus Viginella bigemago (NL. fem. n. *bigemago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5026 sp900557305*. The type genome for the species is the GenBank assembly RS_GCF_900752905.1. The GC content of the type genome is 24.94 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Viginella gen. nov.

Candidatus Viginella (NL. fem. n. *Viginella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5026*. The type species for the genus is *Candidatus* Viginella

bigemago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Viginella ciminedo sp. nov.

Candidatus Viginella ciminedo (NL. fem. n. *ciminedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5026 sp900550255*. The type genome for the species is the GenBank assembly GCA_900550255.1. The GC content of the type genome is 25.69 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Viginella pavimibula sp. nov.

Candidatus Viginella pavimibula (NL. fem. n. *pavimibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5026 sp900546745*. The type genome for the species is the GenBank assembly GCA_900546745.1. The GC content of the type genome is 26.84 % and the genome length is 1.31 Mbp.

Description of *Candidatus* Viginella penecatica sp. nov.

Candidatus Viginella penecatica (NL. fem. n. *penecatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5026 sp900313725*. The type genome for the species is the GenBank assembly GCA_902793505.1. The GC content of the type genome is 24.35 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Viginella repagicula sp. nov.

Candidatus Viginella repagicula (NL. fem. n. *repagicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5026 sp900552335*. The type genome for the species is the

GenBank assembly GCA_900552335.1. The GC content of the type genome is 27.27 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Viginella xeramigena sp. nov.

Candidatus Viginella xeramigena (NL. fem. n. *xeramigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5026 sp002416285*. The type genome for the species is the GenBank assembly GCA_002416285.1. The GC content of the type genome is 30.38 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Viginia hemitilega sp. nov.

Candidatus Viginia hemitilega (NL. fem. n. *hemitilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8106 sp003509065*. The type genome for the species is the GenBank assembly GCA_003509065.1. The GC content of the type genome is 49.15 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Viginia gen. nov.

Candidatus Viginia (NL. fem. n. *Viginia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8106*. The type species for the genus is *Candidatus* Viginia hemitilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA823*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Metapiaceae.

Description of *Candidatus* Viginia resalicula sp. nov.

Candidatus Viginia resalicula (NL. fem. n. *resalicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8106 sp002696705*. The type genome for the species is the GenBank assembly GCA_002696705.1. The GC content of the type genome is 49.94 %

and the genome length is 1.72 Mbp.

Description of *Candidatus* Viginida insibisca sp. nov.

Candidatus Viginida insibisca (NL. fem. n. *insibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB7 sp001567195*. The type genome for the species is the GenBank assembly GCA_001567195.1. The GC content of the type genome is 57.37 % and the genome length is 3.91 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Viginida gen. nov.

Candidatus Viginida (NL. fem. n. *Viginida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB7*. The type species for the genus is *Candidatus* Viginida insibisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *OLB7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viginidaceae.

Description of *Candidatus* Viginidaceae fam. nov.

Candidatus Viginidaceae (NL. fem. n. *Viginidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OLB7*. The type genus for the taxon is *Candidatus* Viginida .

According to the original version of GTDB R06-RS202, this family belongs to the order *OLB7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Viginidales.

Description of *Candidatus* Viginidales ord. nov.

Candidatus Viginidales (NL. fem. n. *Viginidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OLB7*. The type genus for the taxon is *Candidatus* Viginida .

According to the GTDB R06-RS202, this order belongs to the class *Kapabacteria*.

Description of *Candidatus* Viginosa apperousia sp. nov.

Candidatus Viginosa apperousia (NL. fem. n. *apperousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV2 sp003218935*. The type genome for the species is the GenBank assembly GCA_003218935.1. The GC content of the type genome is 58.81 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Viginosa gen. nov.

Candidatus Viginosa (NL. fem. n. *Viginosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AV2*. The type species for the genus is *Candidatus* Viginosa apperousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AV2*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viginosaceae.

Description of *Candidatus* Viginosaceae fam. nov.

Candidatus Viginosaceae (NL. fem. n. *Viginosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AV2.* The type genus for the taxon is *Candidatus* Viginosa .

According to GTDB R06-RS202, this family belongs to the order *Pedosphaerales*.

Description of *Candidatus* Viginosa argimatio sp. nov.

Candidatus Viginosa argimatio (NL. fem. n. *argimatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV2 sp003219345*. The type genome for the species is the GenBank assembly GCA_003219345.1. The GC content of the type genome is 58.61 % and the genome length is 5.74 Mbp.

Description of *Candidatus* Viginosa cilibessa sp. nov.

Candidatus Viginosa cilibessa (NL. fem. n. *cilibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV2 sp003218515*. The type genome for the species is the GenBank assembly GCA_003218515.1. The GC content of the type genome is 58.77 % and the genome length is 5.89 Mbp.

Description of *Candidatus* Viginosa intolax sp. nov.

Candidatus Viginosa intolax (NL. fem. n. *intolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AV2 sp003219675*. The type genome for the species is the GenBank assembly GCA_003219675.1. The GC content of the type genome is 59.57 % and the genome length is 4.71 Mbp.

Description of *Candidatus* Viginula aggubessa sp. nov.

Candidatus Viginula aggubessa (NL. fem. n. *aggubessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp012963975*. The type genome for the species is the GenBank assembly GCA_012963975.1. The GC content of the type genome is 42.82 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Viginula gen. nov.

Candidatus Viginula (NL. fem. n. *Viginula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA974*. The type species for the genus is *Candidatus* Viginula aggubessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UA16*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vatilosaceae.

Description of *Candidatus* Viginula amnigessa sp. nov.

Candidatus Viginula amnigessa (NL. fem. n. *amnigessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp002722795*. The type genome for the species is the GenBank assembly GCA_002722795.1. The GC content of the type genome is 38.5 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Viginula aterritudo sp. nov.

Candidatus Viginula aterritudo (NL. fem. n. *aterritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp002717605*. The type genome for the species is the GenBank assembly GCA_002717605.1. The GC content of the type genome is 39.7 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Viginula attubitrix sp. nov.

Candidatus Viginula attubitrix (NL. fem. n. *attubitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp902578505*. The type genome for the species is the GenBank assembly GCA_902578505.1. The GC content of the type genome is 38.72 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Viginula conamimonas sp. nov.

Candidatus Viginula conamimonas (NL. fem. n. *conamimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp002700285*. The type genome for the species is the GenBank assembly GCA_002359775.1. The GC content of the type genome is 43.46 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Viginula denixax sp. nov.

Candidatus Viginula denixax (NL. fem. n. *denixax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp002746975*. The type genome for the species is the GenBank assembly GCA_002746975.1. The GC content of the type genome is 39.55 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Viginula denomigena sp. nov.

Candidatus Viginula denomigena (NL. fem. n. *denomigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp002723115*. The type genome for the species is the GenBank assembly GCA_002723115.1. The GC content of the type genome is 41.2 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Viginula halucimonia sp. nov.

Candidatus Viginula halucimonia (NL. fem. n. *halucimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp002292405*. The type genome for the species is the GenBank assembly GCA_002292405.1. The GC content of the type genome is 40.34 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Viginula imbecifica sp. nov.

Candidatus Viginula imbecifica (NL. fem. n. *imbecifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp002336655*. The type genome for the species is the GenBank assembly GCA_002336655.1. The GC content of the type genome is 43.58 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Viginula maciliforma sp. nov.

Candidatus Viginula maciliforma (NL. fem. n. *maciliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp002693775*. The type genome for the species is the GenBank assembly GCA_002693775.1. The GC content of the type genome is 40.59 %

and the genome length is 1.87 Mbp.

Description of *Candidatus* Viginula omnimitia sp. nov.

Candidatus Viginula omnimitia (NL. fem. n. *omnimitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA974 sp002339135*. The type genome for the species is the GenBank assembly GCA_002339135.1. The GC content of the type genome is 42.52 % and the genome length is 1.95 Mbp.

Description of *Candidatus* Vilipana denomifica sp. nov.

Candidatus Vilipana denomifica (NL. fem. n. *denomifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYQG01 sp005790965*. The type genome for the species is the GenBank assembly GCA_005790965.1. The GC content of the type genome is 60.11 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Vilipana gen. nov.

Candidatus Vilipana (NL. fem. n. *Vilipana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QYQG01*. The type species for the genus is *Candidatus* Vilipana denomifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vilipana ecligivita sp. nov.

Candidatus Vilipana ecligivita (NL. fem. n. *ecligivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYQG01 sp007280375*. The type genome for the species is the GenBank assembly GCA_007280375.1. The GC content of the type genome is 60.27 % and the genome length is 1.38 Mbp.

Description of *Candidatus* Vilipana fibicibula sp. nov.

Candidatus Vilipana fibicibula (NL. fem. n. *fibicibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QYQG01 sp005793645*. The type genome for the species is the GenBank assembly GCA_005793645.1. The GC content of the type genome is 58.56 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Viliparia artufax sp. nov.

Candidatus Viliparia artufax (NL. fem. n. *artufax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCXJ01 sp013697045*. The type genome for the species is the GenBank assembly GCA_013697045.1. The GC content of the type genome is 63.94 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Viliparia gen. nov.

Candidatus Viliparia (NL. fem. n. *Viliparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCXJ01*. The type species for the genus is *Candidatus* Viliparia artufax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACCXJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vilipariaceae.

Description of *Candidatus* Vilipariaceae fam. nov.

Candidatus Vilipariaceae (NL. fem. n. *Vilipariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCXJ01*. The type genus for the taxon is *Candidatus* Viliparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *JACCXJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vilipariales.

Description of *Candidatus* Vilipariales ord. nov.

Candidatus Viliparіales (NL. fem. n. *Vilipariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACCXJ01*. The type genus for the taxon is *Candidatus* Viliparia .

According to the GTDB R06-RS202, this order belongs to the class *Gammaproteobacteria*.

Description of *Candidatus* Vilipella fatilifica sp. nov.

Candidatus Vilipella fatilifica (NL. fem. n. *fatilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SAAU01 sp009929265*. The type genome for the species is the GenBank assembly GCA_009929265.1. The GC content of the type genome is 37.05 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Vilipella gen. nov.

Candidatus Vilipella (NL. fem. n. *Vilipella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SAAU01*. The type species for the genus is *Candidatus* Vilipella fatilifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SAAU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vilipellaceae.

Description of *Candidatus* Vilipellaceae fam. nov.

Candidatus Vilipellaceae (NL. fem. n. *Vilipellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SAAU01*. The type genus for the taxon is *Candidatus* Vilipella .

According to the original version of GTDB R06-RS202, this family belongs to the order *RF32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Resaculales.

Description of *Candidatus* Vilipia detesatica sp. nov.

Candidatus Vilipia detesatica (NL. fem. n. *detesatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-521 sp003248125*. The type genome for the species is the GenBank assembly GCA_003251285.1. The GC content of the type genome is 62.63 % and the genome length is 3.97 Mbp.

Description of *Candidatus* Vilipia gen. nov.

Candidatus Vilipia (NL. fem. n. *Vilipia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-521*. The type species for the genus is *Candidatus* Vilipia detesatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Vilipida adsudatica sp. nov.

Candidatus Vilipida adsudatica (NL. fem. n. *adsudatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QS-5-54-17 sp003022365*. The type genome for the species is the GenBank assembly GCA_003022365.1. The GC content of the type genome is 53.63 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Vilipida gen. nov.

Candidatus Vilipida (NL. fem. n. *Vilipida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QS-5-54-17*. The type species for the genus is *Candidatus* Vilipida adsudatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QS-5-54-17*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vilipidaceae.

Description of *Candidatus* Vilipidaceae fam. nov.

Candidatus Vilipidaceae (NL. fem. n. *Vilipidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QS-5-54-17.* The type genus for the taxon is *Candidatus* Vilipida .

According to GTDB R06-RS202, this family belongs to the order *Saccharimonadales*.

Description of *Candidatus* Viliposa catagax sp. nov.

Candidatus Viliposa catagax (NL. fem. n. *catagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMF01 sp007124535*. The type genome for the species is the GenBank assembly GCA_007124535.1. The GC content of the type genome is 62.82 % and the genome length is 4.26 Mbp.

Description of *Candidatus* Viliposa gen. nov.

Candidatus Viliposa (NL. fem. n. *Viliposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLMF01*. The type species for the genus is *Candidatus* Viliposa catagax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Viliposa ossicitrix sp. nov.

Candidatus Viliposa ossicitrix (NL. fem. n. *ossicitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLMF01 sp007133715*. The type genome for the species is the GenBank assembly GCA_007133715.1. The GC content of the type genome is 62.48 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Vilipula cobalitrix sp. nov.

Candidatus Vilipula cobalitrix (NL. fem. n. *cobalitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-988 sp003149915*. The type genome for the species is the GenBank assembly GCA_900542725.1. The GC content of the type genome is 34.05 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Vilipula gen. nov.

Candidatus Vilipula (NL. fem. n. *Vilipula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-988*. The type species for the genus is *Candidatus* Vilipula cobalitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Vilitana pedepifica sp. nov.

Candidatus Vilitana pedepifica (NL. fem. n. *pedepifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIOSF01 sp903860855*. The type genome for the species is the GenBank assembly GCA_903878005.1. The GC content of the type genome is 40.01 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Vilitana gen. nov.

Candidatus Vilitana (NL. fem. n. *Vilitana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIOSF01*. The type species for the genus is *Candidatus* Vilitana pedepifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vilitaria monogigena sp. nov.

Candidatus Vilitaria monogigena (NL. fem. n. *monogigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB8 sp001567405*. The type genome for the species is the GenBank assembly GCA_002344555.1. The GC content of the type genome is 41.48 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Vilitaria gen. nov.

Candidatus Vilitaria (NL. fem. n. *Vilitaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB8*. The type species for the genus is *Candidatus* Vilitaria monogigena .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vilitella pericimonia sp. nov.

Candidatus Vilitella pericimonia (NL. fem. n. *pericimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1351 sp002342805*. The type genome for the species is the GenBank assembly GCA_002342805.1. The GC content of the type genome is 36.05 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Vilitella gen. nov.

Candidatus Vilitella (NL. fem. n. *Vilitella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1351*. The type species for the genus is *Candidatus* Vilitella pericimonia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vilitella venunitia sp. nov.

Candidatus Vilitella venunitia (NL. fem. n. *venunitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1351 sp002382805*. The type genome for the species is the

GenBank assembly GCA_002306455.1. The GC content of the type genome is 36.95 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Vilitia genufitura sp. nov.

Candidatus Vilitia genufitura (NL. fem. n. *genufitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2770975 sp002783405*. The type genome for the species is the GenBank assembly GCA_002770975.1. The GC content of the type genome is 48.57 % and the genome length is 5.99 Mbp.

Description of *Candidatus* Vilitia gen. nov.

Candidatus Vilitia (NL. fem. n. *Vilitia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2770975*. The type species for the genus is *Candidatus* Vilitia genufitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7694*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Bicoridaceae.

Description of *Candidatus* Vilitida ciminitia sp. nov.

Candidatus Vilitida ciminitia (NL. fem. n. *ciminitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11420 sp902769055*. The type genome for the species is the GenBank assembly GCA_902798325.1. The GC content of the type genome is 40.58 % and the genome length is 0.83 Mbp.

Description of *Candidatus* Vilitida gen. nov.

Candidatus Vilitida (NL. fem. n. *Vilitida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG11420*. The type species for the genus is *Candidatus* Vilitida ciminitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family

RUG11792. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Desepulaceae.

Description of *Candidatus* Vilitida expisugo sp. nov.

Candidatus Vilitida expisugo (NL. fem. n. *expisugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11420 sp902798535*. The type genome for the species is the GenBank assembly GCA_902798535.1. The GC content of the type genome is 37.45 % and the genome length is 0.95 Mbp.

Description of *Candidatus* Vilitida laxitifica sp. nov.

Candidatus Vilitida laxitifica (NL. fem. n. *laxitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11420 sp902773285*. The type genome for the species is the GenBank assembly GCA_902773285.1. The GC content of the type genome is 38.22 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Vilitida letifimonia sp. nov.

Candidatus Vilitida letifimonia (NL. fem. n. *letifimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG11420 sp902796745*. The type genome for the species is the GenBank assembly GCA_902796745.1. The GC content of the type genome is 37.32 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Vilitosa obnupatica sp. nov.

Candidatus Vilitosa obnupatica (NL. fem. n. *obnupatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAZZY01 sp014239035*. The type genome for the species is the GenBank assembly GCA_014239035.1. The GC content of the type genome is 38.26 % and the genome length is 1.54 Mbp.

Description of *Candidatus* Vilitosa gen. nov.

Candidatus Vilitosa (NL. fem. n. *Vilitosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAZZY01*. The type species for the genus is *Candidatus* Vilitosa obnupatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAZZY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vilitosaceae.

Description of *Candidatus* Vilitosaceae fam. nov.

Candidatus Vilitosaceae (NL. fem. n. *Vilitosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAZZY01.* The type genus for the taxon is *Candidatus* Vilitosa .

According to GTDB R06-RS202, this family belongs to the order *Chlamydiales*.

Description of *Candidatus* Vilitula antacastra sp. nov.

Candidatus Vilitula antacastra (NL. fem. n. *antacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRWO01 sp011375965*. The type genome for the species is the GenBank assembly GCA_011375965.1. The GC content of the type genome is 64.4 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Vilitula gen. nov.

Candidatus Vilitula (NL. fem. n. *Vilitula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRWO01*. The type species for the genus is *Candidatus* Vilitula antacastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRWO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vilitulaceae.

Description of *Candidatus* Vilitulaceae fam. nov.

Candidatus Vilitulaceae (NL. fem. n. *Vilitulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRWO01*. The type genus for the taxon is *Candidatus* Vilitula .

According to the original version of GTDB R06-RS202, this family belongs to the order *DRWO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vilitulales.

Description of *Candidatus* Vilitulales ord. nov.

Candidatus Vilitulales (NL. fem. n. *Vilitulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRWO01*. The type genus for the taxon is *Candidatus* Vilitula .

According to the GTDB R06-RS202, this order belongs to the class *Synergistia*.

Description of *Candidatus* Vinacana retunigena sp. nov.

Candidatus Vinacana retunigena (NL. fem. n. *retunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5169 sp002429485*. The type genome for the species is the GenBank assembly GCA_002413465.1. The GC content of the type genome is 54.74 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Vinacana gen. nov.

Candidatus Vinacana (NL. fem. n. *Vinacana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5169*. The type species for the genus is *Candidatus* Vinacana retunigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA4664*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vehicidaceae.

Description of *Candidatus* Vinacaria celumedo sp. nov.

Candidatus Vinacaria celumedo (NL. fem. n. *celumedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7803 sp003476445*. The type genome for the species is the GenBank assembly GCA_003476445.1. The GC content of the type genome is 64.01 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Vinacaria gen. nov.

Candidatus Vinacaria (NL. fem. n. *Vinacaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA7803*. The type species for the genus is *Candidatus* Vinacaria celumedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HTCC2089*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tegumosaceae.

Description of *Candidatus* Vinacaria diluvibula sp. nov.

Candidatus Vinacaria diluvibula (NL. fem. n. *diluvibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA7803 sp002480525*. The type genome for the species is the GenBank assembly GCA_002720645.1. The GC content of the type genome is 68.76 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Vinacella faticifica sp. nov.

Candidatus Vinacella faticifica (NL. fem. n. *faticifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WO2-44-18 sp001817915*. The type genome for the species is the GenBank assembly GCA_001817875.1. The GC content of the type genome is 43.51 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Vinacella gen. nov.

Candidatus Vinacella (NL. fem. n. *Vinacella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WO2-44-18*. The type species for the genus is *Candidatus* Vinacella faticifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WO2-44-18*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinacellaceae.

Description of *Candidatus* Vinacellaceae fam. nov.

Candidatus Vinacellaceae (NL. fem. n. *Vinacellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WO2-44-18.* The type genus for the taxon is *Candidatus* Vinacella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA6257*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Denomulales.

Description of *Candidatus* Vinacia rinocibra sp. nov.

Candidatus Vinacia rinocibra (NL. fem. n. *rinocibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-40-10 sp001779115*. The type genome for the species is the GenBank assembly GCA_001779265.1. The GC content of the type genome is 39.5 % and the genome length is 1.29 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Vinacia gen. nov.

Candidatus Vinacia (NL. fem. n. *Vinacia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-40-10*. The type species for the genus is *Candidatus* Vinacia rinocibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2-02-FULL-39-11*. According to the renamed version of GTDB R06-RS202, this taxon

belongs to the family *Candidatus* Venefiaceae.

Description of *Candidatus* Vinacida pabilentia sp. nov.

Candidatus Vinacida pabilentia (NL. fem. n. *pabilentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2863045 sp002863045*. The type genome for the species is the GenBank assembly GCA_002433445.1. The GC content of the type genome is 39.59 % and the genome length is 1.79 Mbp.

Description of *Candidatus* Vinacida gen. nov.

Candidatus Vinacida (NL. fem. n. *Vinacida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2863045*. The type species for the genus is *Candidatus* Vinacida pabilentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vinacosa ambadugo sp. nov.

Candidatus Vinacosa ambadugo (NL. fem. n. *ambadugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFX01 sp011064865*. The type genome for the species is the GenBank assembly GCA_011064865.1. The GC content of the type genome is 29.65 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Vinacosa gen. nov.

Candidatus Vinacosa (NL. fem. n. *Vinacosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAKFX01*. The type species for the genus is *Candidatus* Vinacosa ambadugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM23-39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Levifiaceae.

Description of *Candidatus* Vinacosa bicapessa sp. nov.

Candidatus Vinacosa bicapessa (NL. fem. n. *bicapessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFX01 sp011065175*. The type genome for the species is the GenBank assembly GCA_011065175.1. The GC content of the type genome is 29.32 % and the genome length is 1.59 Mbp.

Description of *Candidatus* Vinacosa duponivita sp. nov.

Candidatus Vinacosa duponivita (NL. fem. n. *duponivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFX01 sp011064875*. The type genome for the species is the GenBank assembly GCA_011064875.1. The GC content of the type genome is 29.43 % and the genome length is 1.58 Mbp.

Description of *Candidatus* Vinacosa perabicula sp. nov.

Candidatus Vinacosa perabicula (NL. fem. n. *perabicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFX01 sp011065045*. The type genome for the species is the GenBank assembly GCA_011065045.1. The GC content of the type genome is 30.16 % and the genome length is 1.76 Mbp.

Description of *Candidatus* Vinacosa volucitas sp. nov.

Candidatus Vinacosa volucitas (NL. fem. n. *volucitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAKFX01 sp011064905*. The type genome for the species is the GenBank assembly GCA_011064905.1. The GC content of the type genome is 30.25 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Vinacula tomacilega sp. nov.

Candidatus Vinacula tomacilega (NL. fem. n. *tomacilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWTM01 sp003563855*. The type genome for the species is the GenBank assembly GCA_003567235.1. The GC content of the type genome is 70.01 % and the genome length is 1.72 Mbp.

Description of *Candidatus* Vinacula gen. nov.

Candidatus Vinacula (NL. fem. n. *Vinacula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWTM01*. The type species for the genus is *Candidatus* Vinacula tomacilega .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWTM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinaculaceae.

Description of *Candidatus* Vinaculaceae fam. nov.

Candidatus Vinaculaceae (NL. fem. n. *Vinaculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWTM01.* The type genus for the taxon is *Candidatus* Vinacula .

According to the original version of GTDB R06-RS202, this family belongs to the order *B70-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Retuniales.

Description of *Candidatus* Vinolana peribicella sp. nov.

Candidatus Vinolana peribicella (NL. fem. n. *peribicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ATN2 sp003577145*. The type genome for the species is the GenBank assembly GCA_003577145.1. The GC content of the type genome is 67.24 % and the genome length is 4.05 Mbp.

Description of *Candidatus* Vinolana gen. nov.

Candidatus Vinolana (NL. fem. n. *Vinolana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ATN2*. The type species for the genus is *Candidatus* Vinolana peribicella .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vinolaria gerunugo sp. nov.

Candidatus Vinolaria gerunugo (NL. fem. n. *gerunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3575 sp002375925*. The type genome for the species is the GenBank assembly GCA_004367365.1. The GC content of the type genome is 55.37 % and the genome length is 2.75 Mbp.

Description of *Candidatus* Vinolaria gen. nov.

Candidatus Vinolaria (NL. fem. n. *Vinolaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3575*. The type species for the genus is *Candidatus* Vinolaria gerunugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA3575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolariaceae.

Description of *Candidatus* Vinolariaceae fam. nov.

Candidatus Vinolariaceae (NL. fem. n. *Vinolariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3575.* The type genus for the taxon is *Candidatus* Vinolaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA3575*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vinolariales.

Description of *Candidatus* Vinolariales ord. nov.

Candidatus Vinolariales (NL. fem. n. *Vinolariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA3575.* The type genus for the taxon is *Candidatus* Vinolaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA3569*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Fuliganae.

Description of *Candidatus* Vinolella adgesitia sp. nov.

Candidatus Vinolella adgesitia (NL. fem. n. *adgesitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LZORAL124-64-63 sp003646045*. The type genome for the species is the GenBank assembly GCA_003646045.1. The GC content of the type genome is 63.5 % and the genome length is 3.2 Mbp.

Description of *Candidatus* Vinolella gen. nov.

Candidatus Vinolella (NL. fem. n. *Vinolella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *LZORAL124-64-63*. The type species for the genus is *Candidatus* Vinolella adgesitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *LZORAL124-64-63*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolellaceae.

Description of *Candidatus* Vinolellaceae fam. nov.

Candidatus Vinolellaceae (NL. fem. n. *Vinolellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *LZORAL124-64-63.* The type genus for the taxon is *Candidatus* Vinolella .

According to the original version of GTDB R06-RS202, this family belongs to the order *LZORAL124-64-63*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vinolellales.

Description of *Candidatus* Vinolellales ord. nov.

Candidatus Vinolellales (NL. fem. n. *Vinolellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *LZORAL124-64-63.* The type genus for the taxon is *Candidatus* Vinolella .

According to the GTDB R06-RS202, this order belongs to the class *Krumholzibacteria*.

Description of *Candidatus* Vinolella biverilega sp. nov.

Candidatus Vinolella biverilega (NL. fem. n. *biverilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LZORAL124-64-63 sp002790835*. The type genome for the species is the GenBank assembly GCA_002790835.1. The GC content of the type genome is 64.67 % and the genome length is 3.39 Mbp.

Description of *Candidatus* Vinolella domipicula sp. nov.

Candidatus Vinolella domipicula (NL. fem. n. *domipicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *LZORAL124-64-63 sp002747875*. The type genome for the species is the GenBank assembly GCA_002747875.1. The GC content of the type genome is 63.93 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Vinolida gerunitio sp. nov.

Candidatus Vinolida gerunitio (NL. fem. n. *gerunitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA10190 sp001817065*. The type genome for the species is the GenBank assembly GCA_003501005.1. The GC content of the type genome is 45.5 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Vinolida gen. nov.

Candidatus Vinolida (NL. fem. n. *Vinolida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA10190*. The type species for the genus is *Candidatus* Vinolida gerunitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA10190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolidaceae.

Description of *Candidatus* Vinolidaceae fam. nov.

Candidatus Vinolidaceae (NL. fem. n. *Vinolidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10190.* The type genus for the taxon is *Candidatus* Vinolida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA10190*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vinolidales.

Description of *Candidatus* Vinolidales ord. nov.

Candidatus Vinolidales (NL. fem. n. *Vinolidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA10190.* The type genus for the taxon is *Candidatus* Vinolida .

According to the GTDB R06-RS202, this order belongs to the class *Andersenbacteria*.

Description of *Candidatus* Vinolosa arancastra sp. nov.

Candidatus Vinolosa arancastra (NL. fem. n. *arancastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G10 sp902590895*. The type genome for the species is the GenBank assembly GCA_902590895.1. The GC content of the type genome is 29.8 % and the genome length is 1.07 Mbp.

Description of *Candidatus* Vinolosa gen. nov.

Candidatus Vinolosa (NL. fem. n. *Vinolosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *MED-G10*. The type species for the genus is *Candidatus* Vinolosa arancastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TMED127*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tubicariaceae.

Description of *Candidatus* Vinolosa bulapousia sp. nov.

Candidatus Vinolosa bulapousia (NL. fem. n. *bulapousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G10 sp002457065*. The type genome for the species is the GenBank assembly GCA_002702805.1. The GC content of the type genome is 29.81 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Vinolosa rudicisca sp. nov.

Candidatus Vinolosa rudicisca (NL. fem. n. *rudicisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G10 sp902547955*. The type genome for the species is the GenBank assembly GCA_902547955.1. The GC content of the type genome is 29.8 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Vinolosa sitelibula sp. nov.

Candidatus Vinolosa sitelibula (NL. fem. n. *sitelibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G10 sp002712255*. The type genome for the species is the GenBank assembly GCA_002712255.1. The GC content of the type genome is 28.55 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Vinolula adalgitia sp. nov.

Candidatus Vinolula adalgitia (NL. fem. n. *adalgitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1321 sp002304345*. The type genome for the species is the GenBank assembly GCA_002304345.1. The GC content of the type genome is 57.29 % and the genome length is 4.28 Mbp.

Description of *Candidatus* Vinolula gen. nov.

Candidatus Vinolula (NL. fem. n. *Vinolula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1321*. The type species for the genus is *Candidatus* Vinolula adalgitia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1321*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinolulaceae.

Description of *Candidatus* Vinolulaceae fam. nov.

Candidatus Vinolulaceae (NL. fem. n. *Vinolulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1321.* The type genus for the taxon is *Candidatus* Vinolula .

According to GTDB R06-RS202, this family belongs to the order *Methylacidiphilales*.

Description of *Candidatus* Vinolula podagibula sp. nov.

Candidatus Vinolula podagibula (NL. fem. n. *podagibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1321 sp002306945*. The type genome for the species is the GenBank assembly GCA_002306945.1. The GC content of the type genome is 56.15 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Vinulana agnomitica sp. nov.

Candidatus Vinulana agnomitica (NL. fem. n. *agnomitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903916775*. The type genome for the species is the GenBank assembly GCA_903916775.1. The GC content of the type genome is 49.87 %

and the genome length is 1.23 Mbp.

Description of *Candidatus* Vinulana gen. nov.

Candidatus Vinulana (NL. fem. n. *Vinulana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-747*. The type species for the genus is *Candidatus* Vinulana agnomitica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vinulana arrugedo sp. nov.

Candidatus Vinulana arrugedo (NL. fem. n. *arrugedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903854185*. The type genome for the species is the GenBank assembly GCA_903854185.1. The GC content of the type genome is 50.77 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Vinulana catilicella sp. nov.

Candidatus Vinulana catilicella (NL. fem. n. *catilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903838295*. The type genome for the species is the GenBank assembly GCA_903834265.1. The GC content of the type genome is 47.47 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Vinulana celamatica sp. nov.

Candidatus Vinulana celamatica (NL. fem. n. *celamatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903928395*. The type genome for the species is the GenBank assembly GCA_903875365.1. The GC content of the type genome is 48.34 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Vinulana defenicula sp. nov.

Candidatus Vinulana defenicula (NL. fem. n. *defenicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903907665*. The type genome for the species is the GenBank assembly GCA_903910395.1. The GC content of the type genome is 46.52 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Vinulana deforitrix sp. nov.

Candidatus Vinulana deforitrix (NL. fem. n. *deforitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903916385*. The type genome for the species is the GenBank assembly GCA_903906785.1. The GC content of the type genome is 52.15 % and the genome length is 1.37 Mbp.

Description of *Candidatus* Vinulana delebilenta sp. nov.

Candidatus Vinulana delebilenta (NL. fem. n. *delebilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903844115*. The type genome for the species is the GenBank assembly GCA_903844115.1. The GC content of the type genome is 46.59 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Vinulana democilega sp. nov.

Candidatus Vinulana democilega (NL. fem. n. *democilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903867285*. The type genome for the species is the GenBank assembly GCA_903923855.1. The GC content of the type genome is 50.76 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Vinulana denupastra sp. nov.

Candidatus Vinulana denupastra (NL. fem. n. *denupastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903843225*. The type genome for the species is the GenBank assembly GCA_903906585.1. The GC content of the type genome is 50.74 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Vinulana deparetta sp. nov.

Candidatus Vinulana deparetta (NL. fem. n. *deparetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903834515*. The type genome for the species is the GenBank assembly GCA_903834515.1. The GC content of the type genome is 49.78 % and the genome length is 1.48 Mbp.

Description of *Candidatus* Vinulana dibapatio sp. nov.

Candidatus Vinulana dibapatio (NL. fem. n. *dibapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903898555*. The type genome for the species is the GenBank assembly GCA_903840965.1. The GC content of the type genome is 46.66 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Vinulana enigmatio sp. nov.

Candidatus Vinulana enigmatio (NL. fem. n. *enigmatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp003151395*. The type genome for the species is the GenBank assembly GCA_003151395.1. The GC content of the type genome is 48.6 % and the genome length is 1.85 Mbp.

Description of *Candidatus* Vinulana ensicedo sp. nov.

Candidatus Vinulana ensicedo (NL. fem. n. *ensicedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903932705*. The type genome for the species is the GenBank assembly GCA_903932705.1. The GC content of the type genome is 48.95 %

and the genome length is 1.36 Mbp.

Description of *Candidatus* Vinulana figiligena sp. nov.

Candidatus Vinulana figiligena (NL. fem. n. *figiligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903932695*. The type genome for the species is the GenBank assembly GCA_903909715.1. The GC content of the type genome is 52.3 % and the genome length is 1.18 Mbp.

Description of *Candidatus* Vinulana homilousia sp. nov.

Candidatus Vinulana homilousia (NL. fem. n. *homilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903899375*. The type genome for the species is the GenBank assembly GCA_903893985.1. The GC content of the type genome is 50.12 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Vinulana maligitica sp. nov.

Candidatus Vinulana maligitica (NL. fem. n. *maligitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903897155*. The type genome for the species is the GenBank assembly GCA_903830995.1. The GC content of the type genome is 45.5 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Vinulana mimogedo sp. nov.

Candidatus Vinulana mimogedo (NL. fem. n. *mimogedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903842855*. The type genome for the species is the GenBank assembly GCA_903842855.1. The GC content of the type genome is 49.68 % and the genome length is 1.44 Mbp.

Description of *Candidatus* Vinulana omnigitia sp. nov.

Candidatus Vinulana omnigitia (NL. fem. n. *omnigitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903899145*. The type genome for the species is the GenBank assembly GCA_903899145.1. The GC content of the type genome is 44.83 % and the genome length is 0.85 Mbp.

Description of *Candidatus* Vinulana petuliforma sp. nov.

Candidatus Vinulana petuliforma (NL. fem. n. *petuliforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903821145*. The type genome for the species is the GenBank assembly GCA_903825115.1. The GC content of the type genome is 51.08 % and the genome length is 1.14 Mbp.

Description of *Candidatus* Vinulana podagax sp. nov.

Candidatus Vinulana podagax (NL. fem. n. *podagax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903839355*. The type genome for the species is the GenBank assembly GCA_903839355.1. The GC content of the type genome is 49.95 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Vinulana siligilenta sp. nov.

Candidatus Vinulana siligilenta (NL. fem. n. *siligilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903825945*. The type genome for the species is the GenBank assembly GCA_903858505.1. The GC content of the type genome is 49.97 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Vinulana sonipentia sp. nov.

Candidatus Vinulana sonipentia (NL. fem. n. *sonipentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903852585*. The type genome for the species is the GenBank assembly GCA_903836015.1. The GC content of the type genome is 47.19 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Vinulana televigena sp. nov.

Candidatus Vinulana televigena (NL. fem. n. *televigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903827345*. The type genome for the species is the GenBank assembly GCA_903827345.1. The GC content of the type genome is 50.6 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Vinulana tomacifica sp. nov.

Candidatus Vinulana tomacifica (NL. fem. n. *tomacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903933585*. The type genome for the species is the GenBank assembly GCA_903933585.1. The GC content of the type genome is 51.33 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Vinulana turibastra sp. nov.

Candidatus Vinulana turibastra (NL. fem. n. *turibastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903895995*. The type genome for the species is the GenBank assembly GCA_903897395.1. The GC content of the type genome is 48.83 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Vinulana turilibra sp. nov.

Candidatus Vinulana turilibra (NL. fem. n. *turilibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903827945*. The type genome for the species is the GenBank assembly GCA_903842195.1. The GC content of the type genome is 46.65 %

and the genome length is 1.5 Mbp.

Description of *Candidatus* Vinulana verecimonas sp. nov.

Candidatus Vinulana verecimonas (NL. fem. n. *verecimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903891755*. The type genome for the species is the GenBank assembly GCA_903891755.1. The GC content of the type genome is 49.26 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Vinulana vinolitudo sp. nov.

Candidatus Vinulana vinolitudo (NL. fem. n. *vinolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-747 sp903953805*. The type genome for the species is the GenBank assembly GCA_903839835.1. The GC content of the type genome is 50.32 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Vinularia munifago sp. nov.

Candidatus Vinularia munifago (NL. fem. n. *munifago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5920 sp002452215*. The type genome for the species is the GenBank assembly GCA_002405955.1. The GC content of the type genome is 39.66 % and the genome length is 1.97 Mbp.

Description of *Candidatus* Vinularia gen. nov.

Candidatus Vinularia (NL. fem. n. *Vinularia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5920*. The type species for the genus is *Candidatus* Vinularia munifago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vinularia purulago sp. nov.

Candidatus Vinularia purulago (NL. fem. n. *purulago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5920 sp002406055*. The type genome for the species is the GenBank assembly GCA_002406055.1. The GC content of the type genome is 35.56 % and the genome length is 1.96 Mbp.

Description of *Candidatus* Vinulella bisulastra sp. nov.

Candidatus Vinulella bisulastra (NL. fem. n. *bisulastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIZIN01 sp903933085*. The type genome for the species is the GenBank assembly GCA_903912475.1. The GC content of the type genome is 35.71 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Vinulella gen. nov.

Candidatus Vinulella (NL. fem. n. *Vinulella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIZIN01*. The type species for the genus is *Candidatus* Vinulella bisulastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIZIN01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vinulellaceae.

Description of *Candidatus* Vinulellaceae fam. nov.

Candidatus Vinulellaceae (NL. fem. n. *Vinulellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIZIN01.* The type genus for the taxon is *Candidatus* Vinulella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ficedanales.

Description of *Candidatus* Vinulia bacififorma sp. nov.

Candidatus Vinulia bacififorma (NL. fem. n. *bacififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-46-19 sp001795795*. The type genome for the species is the GenBank assembly GCA_001795665.1. The GC content of the type genome is 45.37 % and the genome length is 0.61 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Vinulia gen. nov.

Candidatus Vinulia (NL. fem. n. *Vinulia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-46-19*. The type species for the genus is *Candidatus* Vinulia bacififorma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWA2-44-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Beniviaceae.

Description of *Candidatus* Vinulida tabifitio sp. nov.

Candidatus Vinulida tabifitio (NL. fem. n. *tabifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYB2-FULL-50-12 sp001800355*. The type genome for the species is the GenBank assembly GCA_001800525.1. The GC content of the type genome is 49.95 % and the genome length is 2.16 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Vinulida gen. nov.

Candidatus Vinulida (NL. fem. n. *Vinulida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYB2-FULL-50-12*. The type species for the genus is *Candidatus* Vinulida tabifitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family

XYA2-FULL-47-53. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Defalidaceae.

Description of *Candidatus* Vinulosa decucatica sp. nov.

Candidatus Vinulosa decucatica (NL. fem. n. *decucatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXRM01 sp009692465*. The type genome for the species is the GenBank assembly GCA_009692465.1. The GC content of the type genome is 61.16 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Vinulosa gen. nov.

Candidatus Vinulosa (NL. fem. n. *Vinulosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SXRM01*. The type species for the genus is *Candidatus* Vinulosa decucatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9042*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rubigariaceae.

Description of *Candidatus* Vinulosa fumififorma sp. nov.

Candidatus Vinulosa fumififorma (NL. fem. n. *fumififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXRM01 sp903883645*. The type genome for the species is the GenBank assembly GCA_903860385.1. The GC content of the type genome is 64.25 % and the genome length is 6.28 Mbp.

Description of *Candidatus* Vinulosa ontolitudo sp. nov.

Candidatus Vinulosa ontolitudo (NL. fem. n. *ontolitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXRM01 sp903919145*. The type genome for the species is the

GenBank assembly GCA_903919145.1. The GC content of the type genome is 66.16 % and the genome length is 6.97 Mbp.

Description of *Candidatus* Vinulosa redacicella sp. nov.

Candidatus Vinulosa redacicella (NL. fem. n. *redacicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SXRM01 sp005792545*. The type genome for the species is the GenBank assembly GCA_005792545.1. The GC content of the type genome is 66.51 % and the genome length is 7.03 Mbp.

Description of *Candidatus* Vinulula culibitoga sp. nov.

Candidatus Vinulula culibitoga (NL. fem. n. *culibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALS01 sp900555925*. The type genome for the species is the GenBank assembly RS_GCF_900760435.1. The GC content of the type genome is 48.32 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Vinulula gen. nov.

Candidatus Vinulula (NL. fem. n. *Vinulula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QALS01*. The type species for the genus is *Candidatus* Vinulula culibitoga .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vinulula ensicentia sp. nov.

Candidatus Vinulula ensicentia (NL. fem. n. *ensicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALS01 sp900769545*. The type genome for the species is the GenBank assembly RS_GCF_900769545.1. The GC content of the type genome is 43.22 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Vinulula rinocimonia sp. nov.

Candidatus Vinulula rinocimonia (NL. fem. n. *rinocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALS01 sp003150575*. The type genome for the species is the GenBank assembly GCA_003150575.1. The GC content of the type genome is 50.52 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Vinulula turifitio sp. nov.

Candidatus Vinulula turifitio (NL. fem. n. *turifitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QALS01 sp900552625*. The type genome for the species is the GenBank assembly GCA_900552625.1. The GC content of the type genome is 52.92 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Viragana documitio sp. nov.

Candidatus Viragana documitio (NL. fem. n. *documitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5201 sp002412775*. The type genome for the species is the GenBank assembly GCA_002412775.1. The GC content of the type genome is 41.34 % and the genome length is 3.17 Mbp.

Description of *Candidatus* Viragana gen. nov.

Candidatus Viragana (NL. fem. n. *Viragana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5201*. The type species for the genus is *Candidatus* Viragana documitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Viragana labecitura sp. nov.

Candidatus Viragana labecitura (NL. fem. n. *labecitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5201 sp002441045*. The type genome for the species is the GenBank assembly GCA_002441045.1. The GC content of the type genome is 36.96 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Viragana robigivita sp. nov.

Candidatus Viragana robigivita (NL. fem. n. *robigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5201 sp001897605*. The type genome for the species is the GenBank assembly GCA_001897605.1. The GC content of the type genome is 37.59 % and the genome length is 3.42 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate stock biobioreactor".

Description of *Candidatus* Viragana volunastra sp. nov.

Candidatus Viragana volunastra (NL. fem. n. *volunastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5201 sp003482695*. The type genome for the species is the GenBank assembly GCA_003482695.1. The GC content of the type genome is 41.21 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Viragaria resupatio sp. nov.

Candidatus Viragaria resupatio (NL. fem. n. *resupatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DG-74-3 sp001302985*. The type genome for the species is the GenBank assembly GCA_001302985.1. The GC content of the type genome is 36.86 % and the genome length is 0.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Methane-rich estuary sediments 52-54 cm".

Description of *Candidatus* Viragaria gen. nov.

Candidatus Viragaria (NL. fem. n. *Viragaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DG-74-3*. The type species for the genus is *Candidatus* Viragaria resupatio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DG-74-3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viragariaceae.

Description of *Candidatus* Viragariaceae fam. nov.

Candidatus Viragariaceae (NL. fem. n. *Viragariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DG-74-3.* The type genus for the taxon is *Candidatus* Viragaria .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Viragella visocimonas sp. nov.

Candidatus Viragella visocimonas (NL. fem. n. *visocimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AA29 sp003222295*. The type genome for the species is the GenBank assembly GCA_003222295.1. The GC content of the type genome is 70.27 % and the genome length is 5.28 Mbp.

Description of *Candidatus* Viragella gen. nov.

Candidatus Viragella (NL. fem. n. *Viragella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AA29*. The type species for the genus is *Candidatus* Viragella visocimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Fen-336*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Exsanellaceae.

Description of *Candidatus* Viragia categitrix sp. nov.

Candidatus Viragia categitrix (NL. fem. n. *categitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1Sed10-49 sp003553795*. The type genome for the species is the GenBank assembly GCA_007134975.1. The GC content of the type genome is 74.35 % and the genome length is 2.12 Mbp.

Description of *Candidatus* Viragia gen. nov.

Candidatus Viragia (NL. fem. n. *Viragia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *T1Sed10-49*. The type species for the genus is *Candidatus* Viragia categitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Viragia manomitas sp. nov.

Candidatus Viragia manomitas (NL. fem. n. *manomitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *T1Sed10-49 sp007133145*. The type genome for the species is the GenBank assembly GCA_007133145.1. The GC content of the type genome is 73.88 % and the genome length is 2.44 Mbp.

Description of *Candidatus* Viragida ablacentia sp. nov.

Candidatus Viragida ablacentia (NL. fem. n. *ablacentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902550555*. The type genome for the species is the GenBank assembly GCA_902550555.1. The GC content of the type genome is 29.23 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Viragida gen. nov.

Candidatus Viragida (NL. fem. n. *Viragida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TMED54*. The type species for the genus is *Candidatus* Viragida

ablacentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AAA536-G10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Depicosaceae.

Description of *Candidatus* Viragida adrumivita sp. nov.

Candidatus Viragida adrumivita (NL. fem. n. *adrumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902618195*. The type genome for the species is the GenBank assembly GCA_902618195.1. The GC content of the type genome is 29.19 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Viragida adverousia sp. nov.

Candidatus Viragida adverousia (NL. fem. n. *adverousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902590245*. The type genome for the species is the GenBank assembly GCA_902590245.1. The GC content of the type genome is 29.36 % and the genome length is 1.56 Mbp.

Description of *Candidatus* Viragida antacetta sp. nov.

Candidatus Viragida antacetta (NL. fem. n. *antacetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp004213885*. The type genome for the species is the GenBank assembly GCA_004213885.1. The GC content of the type genome is 28.69 % and the genome length is 1.41 Mbp.

Description of *Candidatus* Viragida cenotibra sp. nov.

Candidatus Viragida cenotibra (NL. fem. n. *cenotibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp003210115*. The type genome for the species is the

GenBank assembly GCA_902575355.1. The GC content of the type genome is 29.71 % and the genome length is 1.33 Mbp.

Description of *Candidatus* Viragida cohorugo sp. nov.

Candidatus Viragida cohorugo (NL. fem. n. *cohorugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp002691795*. The type genome for the species is the GenBank assembly GCA_002167275.2. The GC content of the type genome is 28.81 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Viragida denavatio sp. nov.

Candidatus Viragida denavatio (NL. fem. n. *denavatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902615025*. The type genome for the species is the GenBank assembly GCA_902615025.1. The GC content of the type genome is 29.26 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Viragida detunitas sp. nov.

Candidatus Viragida detunitas (NL. fem. n. *detunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902630555*. The type genome for the species is the GenBank assembly GCA_902630555.1. The GC content of the type genome is 28.8 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Viragida egregetta sp. nov.

Candidatus Viragida egregetta (NL. fem. n. *egregetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902524215*. The type genome for the species is the GenBank assembly GCA_902524215.1. The GC content of the type genome is 29.04 % and the genome length is 1.24 Mbp.

Description of *Candidatus* Viragida inrelicula sp. nov.

Candidatus Viragida inrelicula (NL. fem. n. *inrelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902615325*. The type genome for the species is the GenBank assembly GCA_902615325.1. The GC content of the type genome is 29.07 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Viragida lapilitudo sp. nov.

Candidatus Viragida lapilitudo (NL. fem. n. *lapilitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902616005*. The type genome for the species is the GenBank assembly GCA_902616005.1. The GC content of the type genome is 28.95 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Viragida malogetta sp. nov.

Candidatus Viragida malogetta (NL. fem. n. *malogetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902615995*. The type genome for the species is the GenBank assembly GCA_902615995.1. The GC content of the type genome is 28.62 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Viragida proprugo sp. nov.

Candidatus Viragida proprugo (NL. fem. n. *proprugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TMED54 sp902622745*. The type genome for the species is the GenBank assembly GCA_902622745.1. The GC content of the type genome is 29.24 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Viragosa adnepibra sp. nov.

Candidatus Viragosa adnepibra (NL. fem. n. *adnepibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DG-74-1 sp001303125*. The type genome for the species is the GenBank assembly GCA_001303125.1. The GC content of the type genome is 38.45 % and the genome length is 0.58 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Methane-rich estuary sediments 52-54 cm".

Description of *Candidatus* Viragosa gen. nov.

Candidatus Viragosa (NL. fem. n. *Viragosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DG-74-1*. The type species for the genus is *Candidatus* Viragosa adnepibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DG-74-1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viragosaceae.

Description of *Candidatus* Viragosaceae fam. nov.

Candidatus Viragosaceae (NL. fem. n. *Viragosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DG-74-1*. The type genus for the taxon is *Candidatus* Viragosa .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Viragula exceritia sp. nov.

Candidatus Viragula exceritia (NL. fem. n. *exceritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SURF-47 sp003599235*. The type genome for the species is the GenBank assembly GCA_003599235.1. The GC content of the type genome is 40.27 % and the genome length is 1.52 Mbp.

Description of *Candidatus* Viragula gen. nov.

Candidatus Viragula (NL. fem. n. *Viragula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SURF-47*. The type species for the genus is *Candidatus* Viragula exceritia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SURF-47*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viragulaceae.

Description of *Candidatus* Viragulaceae fam. nov.

Candidatus Viragulaceae (NL. fem. n. *Viragulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-47.* The type genus for the taxon is *Candidatus* Viragula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SURF-47*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Viragulales.

Description of *Candidatus* Viragulales ord. nov.

Candidatus Viragulales (NL. fem. n. *Viragulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SURF-47.* The type genus for the taxon is *Candidatus* Viragula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9087*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Monocellae.

Description of *Candidatus* Virecana velifedo sp. nov.

Candidatus Virecana velifedo (NL. fem. n. *velifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG114 sp900315615*. The type genome for the species is the GenBank assembly GCA_902797045.1. The GC content of the type genome is 48.28 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Virecana gen. nov.

Candidatus Virecana (NL. fem. n. *Virecana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG114*. The type species for the genus is *Candidatus* Virecana velifedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Virecaria arcelitudo sp. nov.

Candidatus Virecaria arcelitudo (NL. fem. n. *arcelitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *ATN3 sp003577105*. The type genome for the species is the GenBank assembly GCA_003577105.1. The GC content of the type genome is 59.93 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Virecaria gen. nov.

Candidatus Virecaria (NL. fem. n. *Virecaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *ATN3*. The type species for the genus is *Candidatus* Virecaria arcelitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *ATN3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Virecariaceae.

Description of *Candidatus* Virecariaceae fam. nov.

Candidatus Virecariaceae (NL. fem. n. *Virecariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ATN3.* The type genus for the taxon is *Candidatus* Virecaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *ATN3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Virecariales.

Description of *Candidatus* Virecariales ord. nov.

Candidatus Virecariales (NL. fem. n. *Virecariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *ATN3.* The type genus for the taxon is *Candidatus* Virecaria .

According to the GTDB R06-RS202, this order belongs to the class *Acidimicrobiia*.

Description of *Candidatus* Virecella redunicula sp. nov.

Candidatus Virecella redunicula (NL. fem. n. *redunicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZYC01 sp009930475*. The type genome for the species is the GenBank assembly GCA_009930475.1. The GC content of the type genome is 49.94 % and the genome length is 4.77 Mbp.

Description of *Candidatus* Virecella gen. nov.

Candidatus Virecella (NL. fem. n. *Virecella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RZYC01*. The type species for the genus is *Candidatus* Virecella redunicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RZYC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Virecellaceae.

Description of *Candidatus* Virecellaceae fam. nov.

Candidatus Virecellaceae (NL. fem. n. *Virecellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RZYC01.* The type genus for the taxon is *Candidatus* Virecella .

According to the original version of GTDB R06-RS202, this family belongs to the order *RZYC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Virecellales.

Description of *Candidatus* Virecellales ord. nov.

Candidatus Virecellales (NL. fem. n. *Virecellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RZYC01*. The type genus for the taxon is *Candidatus* Virecella .

According to the GTDB R06-RS202, this order belongs to the class *Kiritimatiellae*.

Description of *Candidatus* Virecia caselitio sp. nov.

Candidatus Virecia caselitio (NL. fem. n. *caselitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6022 sp002404195*. The type genome for the species is the GenBank assembly GCA_002404265.1. The GC content of the type genome is 49.4 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Virecia gen. nov.

Candidatus Virecia (NL. fem. n. *Virecia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6022*. The type species for the genus is *Candidatus* Virecia caselitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Virecida benepax sp. nov.

Candidatus Virecida benepax (NL. fem. n. *benepax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB5 sp013140565*. The type genome for the species is the GenBank assembly GCA_013140565.1. The GC content of the type genome is 38.56 % and the genome length is 3.73 Mbp.

Description of *Candidatus* Virecida gen. nov.

Candidatus Virecida (NL. fem. n. *Virecida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB5*. The type species for the genus is *Candidatus* Virecida benepax .

According to the original version of GTDB R06-RS202, this genus belongs to the family

OLB5. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Virecidaceae.

Description of *Candidatus* Virecidaceae fam. nov.

Candidatus Virecidaceae (NL. fem. n. *Virecidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *OLB5.* The type genus for the taxon is *Candidatus* Virecida .

According to the original version of GTDB R06-RS202, this family belongs to the order *SJA-28*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Panopidales.

Description of *Candidatus* Virecida dilemifica sp. nov.

Candidatus Virecida dilemifica (NL. fem. n. *dilemifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB5 sp001567545*. The type genome for the species is the GenBank assembly GCA_001567545.1. The GC content of the type genome is 37.14 % and the genome length is 3.27 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Virecida nugigibula sp. nov.

Candidatus Virecida nugigibula (NL. fem. n. *nugigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB5 sp002344125*. The type genome for the species is the GenBank assembly GCA_002425085.1. The GC content of the type genome is 39.9 % and the genome length is 3.51 Mbp.

Description of *Candidatus* Virecula conibisca sp. nov.

Candidatus Virecula conibisca (NL. fem. n. *conibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2722315 sp012272825*. The type genome for the species is the GenBank assembly RS_GCF_012272825.1. The GC content of the type genome is 67.85 % and the genome length is 3.75 Mbp.

Description of *Candidatus* Virecula gen. nov.

Candidatus Virecula (NL. fem. n. *Virecula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2722315*. The type species for the genus is *Candidatus* Virecula conibisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Virecula hegumibula sp. nov.

Candidatus Virecula hegumibula (NL. fem. n. *hegumibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2722315 sp002722315*. The type genome for the species is the GenBank assembly GCA_002480365.1. The GC content of the type genome is 64.03 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Virgibacillus attesivita sp. nov.

Candidatus Virgibacillus attesivita (NL. fem. n. *attesivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Virgibacillus sp000725285*. The type genome for the species is the GenBank assembly RS_GCF_000725285.1. The GC content of the type genome is 37.62 % and the genome length is 3.84 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "1 month-old fish sauce mash".

Description of *Candidatus* Virgibacillus betacitica sp. nov.

Candidatus Virgibacillus betacitica (NL. fem. n. *betacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Virgibacillus sp003612345*. The type genome for the species is the

GenBank assembly RS_GCF_003612345.1. The GC content of the type genome is 37.32 % and the genome length is 4.54 Mbp.

Description of *Candidatus* Virgibacillus impigibra sp. nov.

Candidatus Virgibacillus impigibra (NL. fem. n. *impigibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Virgibacillus sp010994035*. The type genome for the species is the GenBank assembly RS_GCF_010994035.1. The GC content of the type genome is 40.41 % and the genome length is 4.08 Mbp.

Description of *Candidatus* Virgibacillus curacitoga sp. nov.

Candidatus Virgibacillus curacitoga (NL. fem. n. *curacitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Virgibacillus_E sp900258515*. Although GTDB has assigned a genus name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly RS_GCF_900258515.1. The GC content of the type genome is 38.52 % and the genome length is 3.93 Mbp.

Description of *Candidatus* Viridibacillus reforitoga sp. nov.

Candidatus Viridibacillus reforitoga (NL. fem. n. *reforitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Viridibacillus sp002813185*. The type genome for the species is the GenBank assembly RS_GCF_002813185.1. The GC content of the type genome is 36.7 % and the genome length is 4.76 Mbp.

Description of *Candidatus* Viridilinea redacatica sp. nov.

Candidatus Viridilinea redacatica (NL. fem. n. *redacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Viridilinea sp903915775*. The type genome for the species is the GenBank assembly GCA_903861755.1. The GC content of the type genome is 60.58 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Viripana buxififorma sp. nov.

Candidatus Viripana buxififorma (NL. fem. n. *buxififorma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-567 sp003249795*. The type genome for the species is the GenBank assembly GCA_003249795.1. The GC content of the type genome is 51.58 % and the genome length is 3.81 Mbp.

Description of *Candidatus* Viripana gen. nov.

Candidatus Viripana (NL. fem. n. *Viripana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-567*. The type species for the genus is *Candidatus* Viripana buxififorma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-567*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viripanaceae.

Description of *Candidatus* Viripanaceae fam. nov.

Candidatus Viripanaceae (NL. fem. n. *Viripanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-567.* The type genus for the taxon is *Candidatus* Viripana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-567*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Viripanales.

Description of *Candidatus* Viripanales ord. nov.

Candidatus Viripanales (NL. fem. n. *Viripanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-567.* The type genus for the taxon is *Candidatus* Viripana .

According to the original version of GTDB R06-RS202, this family belongs to the class *SZUA-567*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Viripanae.

Description of *Candidatus* Viripanae class. nov.

Candidatus Viripanae (NL. fem. n. *c__Viripanae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-567.* The type genus for the taxon is *Candidatus* Viripana .

According to GTDB R06-RS202, this class belongs to the phylum *Planctomycetota*.

Description of *Candidatus* Viriparia demagitio sp. nov.

Candidatus Viriparia demagitio (NL. fem. n. *demagitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-55-15 sp003223875*. The type genome for the species is the GenBank assembly GCA_003222765.1. The GC content of the type genome is 55.19 % and the genome length is 6.01 Mbp.

Description of *Candidatus* Viriparia gen. nov.

Candidatus Viriparia (NL. fem. n. *Viriparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *20CM-2-55-15*. The type species for the genus is *Candidatus* Viriparia demagitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *20CM-2-55-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viripariaceae.

Description of *Candidatus* Viripariaceae fam. nov.

Candidatus Viripariaceae (NL. fem. n. *Viripariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *20CM-2-55-15.* The type genus for the taxon is *Candidatus* Viriparia .

According to the original version of GTDB R06-RS202, this family belongs to the order *20CM-2-55-15*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Viripariales.

Description of *Candidatus* Viripariales ord. nov.

Candidatus Viripariales (NL. fem. n. *Viripariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *20CM-2-55-15.* The type genus for the taxon is *Candidatus* Viriparia .

According to the GTDB R06-RS202, this order belongs to the class *Acidobacteriae*.

Description of *Candidatus* Viriparia dimadago sp. nov.

Candidatus Viriparia dimadago (NL. fem. n. *dimadago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-55-15 sp001920875*. The type genome for the species is the GenBank assembly GCA_001919455.1. The GC content of the type genome is 55.8 % and the genome length is 3.18 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Soil sample from Angelo meadow plot 1; 40cm depth; 4 days after first rain event (27mm)".

Description of *Candidatus* Viriparia risibitia sp. nov.

Candidatus Viriparia risibitia (NL. fem. n. *risibitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *20CM-2-55-15 sp003222815*. The type genome for the species is the GenBank assembly GCA_003222815.1. The GC content of the type genome is 56.13 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Viripella bisacisca sp. nov.

Candidatus Viripella bisacisca (NL. fem. n. *bisacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKLX01 sp007121375*. The type genome for the species is the GenBank assembly GCA_003563435.1. The GC content of the type genome is 44.53 % and the genome length is 1.42 Mbp.

Description of *Candidatus* Viripella gen. nov.

Candidatus Viripella (NL. fem. n. *Viripella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKLX01*. The type species for the genus is *Candidatus* Viripella bisacisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Rudiciaceae.

Description of *Candidatus* Viripia cerifitas sp. nov.

Candidatus Viripia cerifitas (NL. fem. n. *cerifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMNF01 sp903845155*. The type genome for the species is the GenBank assembly GCA_903845155.1. The GC content of the type genome is 43.85 % and the genome length is 4.29 Mbp.

Description of *Candidatus* Viripia gen. nov.

Candidatus Viripia (NL. fem. n. *Viripia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIMNF01*. The type species for the genus is *Candidatus* Viripia cerifitas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIMNF01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viripiaceae.

Description of *Candidatus* Viripiaceae fam. nov.

Candidatus Viripiaceae (NL. fem. n. *Viripiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIMNF01*. The type genus for the taxon is *Candidatus* Viripia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA1018*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Desorariales.

Description of *Candidatus* Viripia democibra sp. nov.

Candidatus Viripia democibra (NL. fem. n. *democibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMNF01 sp903858975*. The type genome for the species is the GenBank assembly GCA_903858975.1. The GC content of the type genome is 46.39 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Viripia dimacitura sp. nov.

Candidatus Viripia dimacitura (NL. fem. n. *dimacitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMNF01 sp903842755*. The type genome for the species is the GenBank assembly GCA_903842755.1. The GC content of the type genome is 45.63 % and the genome length is 3.43 Mbp.

Description of *Candidatus* Viripia furibago sp. nov.

Candidatus Viripia furibago (NL. fem. n. *furibago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIMNF01 sp903831745*. The type genome for the species is the GenBank assembly GCA_903869685.1. The GC content of the type genome is 47.69 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Viripida murelentia sp. nov.

Candidatus Viripida murelentia (NL. fem. n. *murelentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYC2-FULL-38-9 sp001818355*. The type genome for the species is the GenBank assembly GCA_001818815.1. The GC content of the type genome is 38.29 % and the genome length is 1.22 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Viripida gen. nov.

Candidatus Viripida (NL. fem. n. *Viripida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYC2-FULL-38-9*. The type species for the genus is *Candidatus* Viripida murelentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *XYC2-FULL-38-9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viripidaceae.

Description of *Candidatus* Viripidaceae fam. nov.

Candidatus Viripidaceae (NL. fem. n. *Viripidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *XYC2-FULL-38-9.* The type genus for the taxon is *Candidatus* Viripida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9570*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Pecunellales.

Description of *Candidatus* Viriposa domigitio sp. nov.

Candidatus Viriposa domigitio (NL. fem. n. *domigitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVDV01 sp903904755*. The type genome for the species is the GenBank assembly GCA_903857425.1. The GC content of the type genome is 62.6 % and the genome length is 4.0 Mbp.

Description of *Candidatus* Viriposa gen. nov.

Candidatus Viriposa (NL. fem. n. *Viriposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVDV01*. The type species for the genus is *Candidatus* Viriposa domigitio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Viriposa pavimicella sp. nov.

Candidatus Viriposa pavimicella (NL. fem. n. *pavimicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVDV01 sp903832055*. The type genome for the species is the GenBank assembly GCA_903832055.1. The GC content of the type genome is 58.71 % and the genome length is 4.57 Mbp.

Description of *Candidatus* Viriposa refacigena sp. nov.

Candidatus Viriposa refacigena (NL. fem. n. *refacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVDV01 sp903832475*. The type genome for the species is the GenBank assembly GCA_903832475.1. The GC content of the type genome is 59.62 % and the genome length is 5.3 Mbp.

Description of *Candidatus* Viripula labecugo sp. nov.

Candidatus Viripula labecugo (NL. fem. n. *labecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-67 sp005883175*. The type genome for the species is the GenBank assembly GCA_005883465.1. The GC content of the type genome is 66.51 % and the genome length is 2.16 Mbp.

Description of *Candidatus* Viripula gen. nov.

Candidatus Viripula (NL. fem. n. *Viripula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *AC-67*. The type species for the genus is *Candidatus* Viripula labecugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AC-67*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Viripulaceae.

Description of *Candidatus* Viripulaceae fam. nov.

Candidatus Viripulaceae (NL. fem. n. *Viripulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *AC-67*. The type genus for the taxon is *Candidatus* Viripula .

According to the original version of GTDB R06-RS202, this family belongs to the order *AC-67*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Viripulales.

Description of *Candidatus* Viripulales ord. nov.

Candidatus Viripulales (NL. fem. n. *Viripulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *AC-67*. The type genus for the taxon is *Candidatus* Viripula .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA4738*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Bisacosae.

Description of *Candidatus* Viripula ossifatica sp. nov.

Candidatus Viripula ossifatica (NL. fem. n. *ossifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *AC-67 sp005884515*. The type genome for the species is the GenBank assembly GCA_005884515.1. The GC content of the type genome is 66.24 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Visibana carunugo sp. nov.

Candidatus Visibana carunugo (NL. fem. n. *carunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002694895 sp002715665*. The type genome for the species is the GenBank assembly GCA_002715665.1. The GC content of the type genome is 30.2 % and the genome length is 0.96 Mbp.

Description of *Candidatus* Visibana gen. nov.

Candidatus Visibana (NL. fem. n. *Visibana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002694895*. The type species for the genus is *Candidatus* Visibana

carunugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002694895*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibanaceae.

Description of *Candidatus* Visibanaceae fam. nov.

Candidatus Visibanaceae (NL. fem. n. *Visibanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002694895.* The type genus for the taxon is *Candidatus* Visibana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SAR202*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defulidales.

Description of *Candidatus* Visibana ceracitio sp. nov.

Candidatus Visibana ceracitio (NL. fem. n. *ceracitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002694895 sp002711005*. The type genome for the species is the GenBank assembly GCA_002711005.1. The GC content of the type genome is 30.56 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Visibana exsanibra sp. nov.

Candidatus Visibana exsanibra (NL. fem. n. *exsanibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002694895 sp002724435*. The type genome for the species is the GenBank assembly GCA_002724435.1. The GC content of the type genome is 30.42 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Visibana homunitas sp. nov.

Candidatus Visibana homunitas (NL. fem. n. *homunitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *GCA-002694895 sp009391605*. The type genome for the species is the GenBank assembly GCA_009391605.1. The GC content of the type genome is 30.01 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Visibana perexigena sp. nov.

Candidatus Visibana perexigena (NL. fem. n. *perexigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002694895 sp002694895*. The type genome for the species is the GenBank assembly GCA_002694895.1. The GC content of the type genome is 30.19 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Visibaria delacitrix sp. nov.

Candidatus Visibaria delacitrix (NL. fem. n. *delacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GAS188 sp900104855*. The type genome for the species is the GenBank assembly RS_GCF_900103895.1. The GC content of the type genome is 64.34 % and the genome length is 10.29 Mbp.

Description of *Candidatus* Visibaria gen. nov.

Candidatus Visibaria (NL. fem. n. *Visibaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GAS188*. The type species for the genus is *Candidatus* Visibaria delacitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Visibella dapifastra sp. nov.

Candidatus Visibella dapifastra (NL. fem. n. *dapifastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *B11-G9 sp003641695*. The type genome for the species is the GenBank assembly GCA_003641695.1. The GC content of the type genome is 43.1 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Visibella gen. nov.

Candidatus Visibella (NL. fem. n. *Visibella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *B11-G9*. The type species for the genus is *Candidatus* Visibella dapifastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *B11-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibellaceae.

Description of *Candidatus* Visibellaceae fam. nov.

Candidatus Visibellaceae (NL. fem. n. *Visibellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B11-G9.* The type genus for the taxon is *Candidatus* Visibella .

According to the original version of GTDB R06-RS202, this family belongs to the order *B11-G9*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Visibellales.

Description of *Candidatus* Visibellales ord. nov.

Candidatus Visibellales (NL. fem. n. *Visibellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *B11-G9.* The type genus for the taxon is *Candidatus* Visibella .

According to the GTDB R06-RS202, this order belongs to the class *Spirochaetia*.

Description of *Candidatus* Visibia cicarugo sp. nov.

Candidatus Visibia cicarugo (NL. fem. n. *cicarugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8260 sp003141695*. The type genome for the species is the GenBank assembly GCA_003141695.1. The GC content of the type genome is 70.1 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Visibia gen. nov.

Candidatus Visibia (NL. fem. n. *Visibia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8260*. The type species for the genus is *Candidatus* Visibia cicarugo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibiaceae.

Description of *Candidatus* Visibiaceae fam. nov.

Candidatus Visibiaceae (NL. fem. n. *Visibiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8260.* The type genus for the taxon is *Candidatus* Visibia .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA8260*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Visibiales.

Description of *Candidatus* Visibiales ord. nov.

Candidatus Visibiales (NL. fem. n. *Visibiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8260.* The type genus for the taxon is *Candidatus* Visibia .

According to the GTDB R06-RS202, this order belongs to the class *Dormibacteria*.

Description of *Candidatus* Visibia conubitura sp. nov.

Candidatus Visibia conubitura (NL. fem. n. *conubitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8260 sp003135255*. The type genome for the species is the GenBank assembly GCA_003164555.1. The GC content of the type genome is 70.6 % and the genome length is 2.19 Mbp.

Description of *Candidatus* Visibia excarimonia sp. nov.

Candidatus Visibia excarimonia (NL. fem. n. *excarimonia* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8260 sp003153215*. The type genome for the species is the GenBank assembly GCA_003153215.1. The GC content of the type genome is 69.96 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Visibia forinedo sp. nov.

Candidatus Visibia forinedo (NL. fem. n. *forinedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8260 sp003170875*. The type genome for the species is the GenBank assembly GCA_003170875.1. The GC content of the type genome is 70.13 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Visibia gabinitrix sp. nov.

Candidatus Visibia gabinitrix (NL. fem. n. *gabinitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8260 sp003142035*. The type genome for the species is the GenBank assembly GCA_003142035.1. The GC content of the type genome is 70.23 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Visibia galacago sp. nov.

Candidatus Visibia galacago (NL. fem. n. *galacago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8260 sp003134115*. The type genome for the species is the GenBank assembly GCA_003154955.1. The GC content of the type genome is 70.71 % and the genome length is 2.32 Mbp.

Description of *Candidatus* Visibia mimogetta sp. nov.

Candidatus Visibia mimogetta (NL. fem. n. *mimogetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8260 sp003491925*. The type genome for the species is the GenBank assembly GCA_003491925.1. The GC content of the type genome is 70.86 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Visibida adnubitia sp. nov.

Candidatus Visibida adnubitia (NL. fem. n. *adnubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp003223975*. The type genome for the species is the GenBank assembly GCA_003223975.1. The GC content of the type genome is 52.36 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Visibida gen. nov.

Candidatus Visibida (NL. fem. n. *Visibida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *OLB17*. The type species for the genus is *Candidatus* Visibida adnubitia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Visibida appugifica sp. nov.

Candidatus Visibida appugifica (NL. fem. n. *appugifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp002360555*. The type genome for the species is the GenBank assembly GCA_002360555.1. The GC content of the type genome is 51.94 % and the genome length is 3.36 Mbp.

Description of *Candidatus* Visibida assubitia sp. nov.

Candidatus Visibida assubitia (NL. fem. n. *assubitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp014379075*. The type genome for the species is the GenBank assembly GCA_014379075.1. The GC content of the type genome is 50.42 % and the

genome length is 3.38 Mbp.

Description of *Candidatus* Visibida bipalitoga sp. nov.

Candidatus Visibida bipalitoga (NL. fem. n. *bipalitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp013695495*. The type genome for the species is the GenBank assembly GCA_013695495.1. The GC content of the type genome is 54.82 % and the genome length is 2.48 Mbp.

Description of *Candidatus* Visibida cilotiforma sp. nov.

Candidatus Visibida cilotiforma (NL. fem. n. *cilotiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp013695195*. The type genome for the species is the GenBank assembly GCA_013695195.1. The GC content of the type genome is 48.96 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Visibida depopilenta sp. nov.

Candidatus Visibida depopilenta (NL. fem. n. *depopilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp902826795*. The type genome for the species is the GenBank assembly GCA_902826795.1. The GC content of the type genome is 53.71 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Visibida ecfacitica sp. nov.

Candidatus Visibida ecfacitica (NL. fem. n. *ecfacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp013140875*. The type genome for the species is the GenBank assembly GCA_013140875.1. The GC content of the type genome is 52.68 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Visibida excerilega sp. nov.

Candidatus Visibida excerilega (NL. fem. n. *excerilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp001464455*. The type genome for the species is the GenBank assembly GCA_001464455.1. The GC content of the type genome is 53.13 % and the genome length is 4.2 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Visibida exsusitura sp. nov.

Candidatus Visibida exsusitura (NL. fem. n. *exsusitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp902826385*. The type genome for the species is the GenBank assembly GCA_902826385.1. The GC content of the type genome is 52.39 % and the genome length is 3.69 Mbp.

Description of *Candidatus* Visibida minagitica sp. nov.

Candidatus Visibida minagitica (NL. fem. n. *minagitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp002333435*. The type genome for the species is the GenBank assembly GCA_003501905.1. The GC content of the type genome is 53.52 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Visibida minagitrix sp. nov.

Candidatus Visibida minagitrix (NL. fem. n. *minagitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp003223025*. The type genome for the species is the GenBank assembly GCA_003223025.1. The GC content of the type genome is 53.4 % and the genome length is 4.34 Mbp.

Description of *Candidatus* Visibida minuretta sp. nov.

Candidatus Visibida minuretta (NL. fem. n. *minuretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp003577445*. The type genome for the species is the GenBank assembly GCA_003577445.1. The GC content of the type genome is 54.67 % and the genome length is 2.8 Mbp.

Description of *Candidatus* Visibida opporimonia sp. nov.

Candidatus Visibida opporimonia (NL. fem. n. *opporimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp011388875*. The type genome for the species is the GenBank assembly GCA_011388875.1. The GC content of the type genome is 48.04 % and the genome length is 2.83 Mbp.

Description of *Candidatus* Visibida ossucitia sp. nov.

Candidatus Visibida ossucitia (NL. fem. n. *ossucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp002483395*. The type genome for the species is the GenBank assembly GCA_002483395.1. The GC content of the type genome is 51.35 % and the genome length is 4.45 Mbp.

Description of *Candidatus* Visibida peripivita sp. nov.

Candidatus Visibida peripivita (NL. fem. n. *peripivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp001567505*. The type genome for the species is the GenBank assembly GCA_001567505.1. The GC content of the type genome is 56.31 % and the genome length is 2.97 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "partial-nitritation anammox (PNA) reactor; full scale (600m3) reactor for the removal of ammonium from wastewater from the potato processing industry".

Description of *Candidatus* Visibida rinocetta sp. nov.

Candidatus Visibida rinocetta (NL. fem. n. *rinocetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *OLB17 sp001464665*. The type genome for the species is the GenBank assembly GCA_001464665.1. The GC content of the type genome is 55.14 % and the genome length is 3.96 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "dual media filters at the Ann Arbor; Michigan drinking water treatment plant".

Description of *Candidatus* Visibosa adnecivita sp. nov.

Candidatus Visibosa adnecivita (NL. fem. n. *adnecivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVJ01 sp003562555*. The type genome for the species is the GenBank assembly GCA_003562555.1. The GC content of the type genome is 58.73 % and the genome length is 1.86 Mbp.

Description of *Candidatus* Visibosa gen. nov.

Candidatus Visibosa (NL. fem. n. *Visibosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKVJ01*. The type species for the genus is *Candidatus* Visibosa adnecivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *AB-539-J10*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nubigidaceae.

Description of *Candidatus* Visibosa beneventia sp. nov.

Candidatus Visibosa beneventia (NL. fem. n. *beneventia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVJ01 sp003552125*. The type genome for the species is the GenBank assembly GCA_003552125.1. The GC content of the type genome is 57.63 % and the genome length is 2.09 Mbp.

Description of *Candidatus* Visibosa obtemitia sp. nov.

Candidatus Visibosa obtemitia (NL. fem. n. *obtemitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVJ01 sp003562475*. The type genome for the species is the GenBank assembly GCA_003562475.1. The GC content of the type genome is 58.02 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Visibosa rorifitas sp. nov.

Candidatus Visibosa rorifitas (NL. fem. n. *rorifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKVJ01 sp007129495*. The type genome for the species is the GenBank assembly GCA_007120635.1. The GC content of the type genome is 56.37 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Visibula accucitio sp. nov.

Candidatus Visibula accucitio (NL. fem. n. *accucitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAX01 sp009787945*. The type genome for the species is the GenBank assembly GCA_009787945.1. The GC content of the type genome is 45.41 % and the genome length is 1.78 Mbp.

Description of *Candidatus* Visibula gen. nov.

Candidatus Visibula (NL. fem. n. *Visibula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRAX01*. The type species for the genus is *Candidatus* Visibula accucitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRAX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visibulaceae.

Description of *Candidatus* Visibulaceae fam. nov.

Candidatus Visibulaceae (NL. fem. n. *Visibulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this taxon is *WRAX01*. The type genus for the taxon is *Candidatus* Visibula .

According to GTDB R06-RS202, this family belongs to the order *Lachnospirales*.

Description of *Candidatus* Visibula benivessa sp. nov.

Candidatus Visibula benivessa (NL. fem. n. *benivessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAX01 sp009780485*. The type genome for the species is the GenBank assembly GCA_009780485.1. The GC content of the type genome is 43.35 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Visibula volunetta sp. nov.

Candidatus Visibula volunetta (NL. fem. n. *volunetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRAX01 sp009779935*. The type genome for the species is the GenBank assembly GCA_009779935.1. The GC content of the type genome is 45.76 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Visifana femelessa sp. nov.

Candidatus Visifana femelessa (NL. fem. n. *femelessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA954 sp002293155*. The type genome for the species is the GenBank assembly GCA_903905495.1. The GC content of the type genome is 53.85 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Visifana gen. nov.

Candidatus Visifana (NL. fem. n. *Visifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA954*. The type species for the genus is *Candidatus* Visifana femelessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Visifana nicoticula sp. nov.

Candidatus Visifana nicoticula (NL. fem. n. *nicoticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA954 sp009924525*. The type genome for the species is the GenBank assembly GCA_009924525.1. The GC content of the type genome is 55.89 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Visifaria emancibra sp. nov.

Candidatus Visifaria emancibra (NL. fem. n. *emancibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D5 sp014385025*. The type genome for the species is the GenBank assembly GCA_014385025.1. The GC content of the type genome is 56.29 % and the genome length is 3.26 Mbp.

Description of *Candidatus* Visifaria gen. nov.

Candidatus Visifaria (NL. fem. n. *Visifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *D5*. The type species for the genus is *Candidatus* Visifaria emancibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Visifaria papavifica sp. nov.

Candidatus Visifaria papavifica (NL. fem. n. *papavifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *D5 sp900113995*. The type genome for the species is the GenBank assembly GCA_004557345.1. The GC content of the type genome is 58.01 % and the genome length is 2.34 Mbp.

Description of *Candidatus* Visifella novililenta sp. nov.

Candidatus Visifella novililenta (NL. fem. n. *novililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2-02-FULL-37-13 sp001782195*. The type genome for the species is the GenBank assembly GCA_001782195.1. The GC content of the type genome is 36.63 % and the genome length is 1.09 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 0.2 micron filter; full assembly".

Description of *Candidatus* Visifella gen. nov.

Candidatus Visifella (NL. fem. n. *Visifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2-02-FULL-37-13*. The type species for the genus is *Candidatus* Visifella novililenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Visifia indilicella sp. nov.

Candidatus Visifia indilicella (NL. fem. n. *indilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MHMH01 sp001819335*. The type genome for the species is the GenBank assembly GCA_001819335.1. The GC content of the type genome is 43.25 % and the genome length is 0.55 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 0.1 micron filter; full assembly".

Description of *Candidatus* Visifia gen. nov.

Candidatus Visifia (NL. fem. n. *Visifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MHMH01*. The type species for the genus is *Candidatus* Visifia indilicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *MHMH01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visifiaceae.

Description of *Candidatus* Visifiaceae fam. nov.

Candidatus Visifiaceae (NL. fem. n. *Visifiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *MHMH01*. The type genus for the taxon is *Candidatus* Visifia .

According to GTDB R06-RS202, this family belongs to the order *Paceibacterales*.

Description of *Candidatus* Visifida cohurivita sp. nov.

Candidatus Visifida cohurivita (NL. fem. n. *cohurivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *63-22 sp900465915*. The type genome for the species is the GenBank assembly GCA_900465915.1. The GC content of the type genome is 66.07 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Visifida gen. nov.

Candidatus Visifida (NL. fem. n. *Visifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *63-22*. The type species for the genus is *Candidatus* Visifida cohurivita .

According to GTDB R06-RS202, this genus belongs to the family _A.

Description of *Candidatus* Visifida momorousia sp. nov.

Candidatus Visifida momorousia (NL. fem. n. *momorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *63-22 sp001898995*. The type genome for the species is the GenBank assembly GCA_001898995.1. The GC content of the type genome is 62.66 % and the genome length is 4.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Ammonium sulfate bioreactor".

Description of *Candidatus* Visifosa feficitura sp. nov.

Candidatus Visifosa feficitura (NL. fem. n. *feficitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2023 sp002335145*. The type genome for the species is the GenBank assembly GCA_002335145.1. The GC content of the type genome is 53.45 % and the genome length is 1.1 Mbp.

Description of *Candidatus* Visifosa gen. nov.

Candidatus Visifosa (NL. fem. n. *Visifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2023*. The type species for the genus is *Candidatus* Visifosa feficitura .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2023*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visifosaceae.

Description of *Candidatus* Visifosaceae fam. nov.

Candidatus Visifosaceae (NL. fem. n. *Visifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2023.* The type genus for the taxon is *Candidatus* Visifosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *BD1-5*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Fusifellales.

Description of *Candidatus* Visifula cemenatio sp. nov.

Candidatus Visifula cemenatio (NL. fem. n. *cemenatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *66-474 sp004299705*. The type genome for the species is the GenBank assembly GCA_004299705.1. The GC content of the type genome is 64.62 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Visifula gen. nov.

Candidatus Visifula (NL. fem. n. *Visifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *66-474*. The type species for the genus is *Candidatus* Visifula cemenatio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Visifula dehinimonia sp. nov.

Candidatus Visifula dehinimonia (NL. fem. n. *dehinimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *66-474 sp001899805*. The type genome for the species is the GenBank assembly GCA_001725765.1. The GC content of the type genome is 65.79 % and the genome length is 3.54 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate bioreactor".

Description of *Candidatus* Visifula pocilitoga sp. nov.

Candidatus Visifula pocilitoga (NL. fem. n. *pocilitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *66-474 sp004299555*. The type genome for the species is the GenBank assembly GCA_004299555.1. The GC content of the type genome is 66.04 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Visocana lapilivita sp. nov.

Candidatus Visocana lapilivita (NL. fem. n. *lapilivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002793355 sp002793355*. The type genome for the species is the GenBank assembly GCA_002793355.1. The GC content of the type genome is 41.39 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Visocana gen. nov.

Candidatus Visocana (NL. fem. n. *Visocana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *GCA-002793355*. The type species for the genus is *Candidatus* Visocana lapilivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-002793355*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocanaceae.

Description of *Candidatus* Visocanaceae fam. nov.

Candidatus Visocanaceae (NL. fem. n. *Visocanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-002793355.* The type genus for the taxon is *Candidatus* Visocana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SC72*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Bipenellales.

Description of *Candidatus* Visocaria adremax sp. nov.

Candidatus Visocaria adremax (NL. fem. n. *adremax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2241 sp002347645*. The type genome for the species is the GenBank assembly GCA_002347645.1. The GC content of the type genome is 70.13 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Visocaria gen. nov.

Candidatus Visocaria (NL. fem. n. *Visocaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2241*. The type species for the genus is *Candidatus* Visocaria adremax .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2241*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocariaceae.

Description of *Candidatus* Visocariaceae fam. nov.

Candidatus Visocariaceae (NL. fem. n. *Visocariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2241*. The type genus for the taxon is *Candidatus* Visocaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2241*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Visocariales.

Description of *Candidatus* Visocariales ord. nov.

Candidatus Visocariales (NL. fem. n. *Visocariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2241*. The type genus for the taxon is *Candidatus* Visocaria .

According to the GTDB R06-RS202, this order belongs to the class *Thermoleophilia*.

Description of *Candidatus* Visocella cunabifica sp. nov.

Candidatus Visocella cunabifica (NL. fem. n. *cunabifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *YD0425bin50 sp002753105*. The type genome for the species is the GenBank assembly GCA_002753105.1. The GC content of the type genome is 36.91 % and the genome length is 4.97 Mbp.

Description of *Candidatus* Visocella gen. nov.

Candidatus Visocella (NL. fem. n. *Visocella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *YD0425bin50*. The type species for the genus is *Candidatus* Visocella cunabifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *YD0425bin50*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocellaceae.

Description of *Candidatus* Visocellaceae fam. nov.

Candidatus Visocellaceae (NL. fem. n. *Visocellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *YD0425bin50.* The type genus for the taxon is *Candidatus* Visocella .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Visocia penuritia sp. nov.

Candidatus Visocia penuritia (NL. fem. n. *penuritia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRMI01 sp009777175*. The type genome for the species is the GenBank assembly GCA_009777175.1. The GC content of the type genome is 34.08 % and the genome length is 3.09 Mbp.

Description of *Candidatus* Visocia gen. nov.

Candidatus Visocia (NL. fem. n. *Visocia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRMI01*. The type species for the genus is *Candidatus* Visocia penuritia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Visocida alcibessa sp. nov.

Candidatus Visocida alcibessa (NL. fem. n. *alcibessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UASB340 sp001468925*. The type genome for the species is the GenBank assembly GCA_001468925.1. The GC content of the type genome is 28.7 % and the genome length is 1.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "wastewater sludge from a upflow anaerobic sludge blanket reactor".

Description of *Candidatus* Visocida gen. nov.

Candidatus Visocida (NL. fem. n. *Visocida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UASB340*. The type species for the genus is *Candidatus* Visocida

alcibessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UASB340*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocidaceae.

Description of *Candidatus* Visocidaceae fam. nov.

Candidatus Visocidaceae (NL. fem. n. *Visocidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UASB340.* The type genus for the taxon is *Candidatus* Visocida .

According to GTDB R06-RS202, this family belongs to the order *Babeliales*.

Description of *Candidatus* Visocida expuritio sp. nov.

Candidatus Visocida expuritio (NL. fem. n. *expuritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UASB340 sp000989185*. The type genome for the species is the GenBank assembly GCA_000989185.1. The GC content of the type genome is 27.58 % and the genome length is 1.06 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Visocosa obtoritudo sp. nov.

Candidatus Visocosa obtoritudo (NL. fem. n. *obtoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSUL01 sp011329005*. The type genome for the species is the GenBank assembly GCA_011329005.1. The GC content of the type genome is 63.92 % and the genome length is 3.52 Mbp.

Description of *Candidatus* Visocosa gen. nov.

Candidatus Visocosa (NL. fem. n. *Visocosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSUL01*. The type species for the genus is *Candidatus* Visocosa obtoritudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSUL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Visocosaceae.

Description of *Candidatus* Visocosaceae fam. nov.

Candidatus Visocosaceae (NL. fem. n. *Visocosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSUL01*. The type genus for the taxon is *Candidatus* Visocosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *DSUL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Visocosales.

Description of *Candidatus* Visocosales ord. nov.

Candidatus Visocosales (NL. fem. n. *Visocosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSUL01*. The type genus for the taxon is *Candidatus* Visocosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA5829*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Susicellae.

Description of *Candidatus* Visocula capucilenta sp. nov.

Candidatus Visocula capucilenta (NL. fem. n. *capucilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU098 sp001512635*. The type genome for the species is the GenBank assembly GCA_012728715.1. The GC content of the type genome is 50.16 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Visocula gen. nov.

Candidatus Visocula (NL. fem. n. *Visocula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DTU098*. The type species for the genus is *Candidatus* Visocula

capucilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Visocula furibibra sp. nov.

Candidatus Visocula furibibra (NL. fem. n. *furibibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU098 sp002408725*. The type genome for the species is the GenBank assembly GCA_002408725.1. The GC content of the type genome is 50.13 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Visocula medimousia sp. nov.

Candidatus Visocula medimousia (NL. fem. n. *medimousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DTU098 sp002305915*. The type genome for the species is the GenBank assembly GCA_012839155.1. The GC content of the type genome is 50.01 % and the genome length is 2.72 Mbp.

Description of *Candidatus* Vitabana acrocivita sp. nov.

Candidatus Vitabana acrocivita (NL. fem. n. *acrocivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902797195*. The type genome for the species is the GenBank assembly GCA_902797195.1. The GC content of the type genome is 49.03 % and the genome length is 1.55 Mbp.

Description of *Candidatus* Vitabana gen. nov.

Candidatus Vitabana (NL. fem. n. *Vitabana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1191*. The type species for the genus is *Candidatus* Vitabana acrocivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vitabana badititas sp. nov.

Candidatus Vitabana badititas (NL. fem. n. *badititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902772685*. The type genome for the species is the GenBank assembly GCA_902772685.1. The GC content of the type genome is 49.86 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Vitabana brasmax sp. nov.

Candidatus Vitabana brasmax (NL. fem. n. *brasmax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902796875*. The type genome for the species is the GenBank assembly GCA_902796875.1. The GC content of the type genome is 57.99 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Vitabana debucedo sp. nov.

Candidatus Vitabana debucedo (NL. fem. n. *debucedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp002310095*. The type genome for the species is the GenBank assembly GCA_002310095.1. The GC content of the type genome is 52.32 % and the genome length is 1.45 Mbp.

Description of *Candidatus* Vitabana defarousia sp. nov.

Candidatus Vitabana defarousia (NL. fem. n. *defarousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902797095*. The type genome for the species is the GenBank assembly GCA_902797095.1. The GC content of the type genome is 54.68 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Vitabana divoritas sp. nov.

Candidatus Vitabana divoritas (NL. fem. n. *divoritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp012513435*. The type genome for the species is the GenBank assembly GCA_012513435.1. The GC content of the type genome is 42.3 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Vitabana exsatitura sp. nov.

Candidatus Vitabana exsatitura (NL. fem. n. *exsatitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902766185*. The type genome for the species is the GenBank assembly GCA_902766185.1. The GC content of the type genome is 57.3 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Vitabana illapastra sp. nov.

Candidatus Vitabana illapastra (NL. fem. n. *illapastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902786815*. The type genome for the species is the GenBank assembly GCA_902786815.1. The GC content of the type genome is 52.18 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Vitabana illibetta sp. nov.

Candidatus Vitabana illibetta (NL. fem. n. *illibetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902783525*. The type genome for the species is the GenBank assembly GCA_902783525.1. The GC content of the type genome is 49.38 % and the genome length is 1.51 Mbp.

Description of *Candidatus* Vitabana impuditrix sp. nov.

Candidatus Vitabana impuditrix (NL. fem. n. *impuditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1191 sp900542385*. The type genome for the species is the GenBank assembly GCA_900542385.1. The GC content of the type genome is 43.1 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Vitabana malifilenta sp. nov.

Candidatus Vitabana malifilenta (NL. fem. n. *malifilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902787725*. The type genome for the species is the GenBank assembly GCA_902787725.1. The GC content of the type genome is 51.03 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Vitabana oblocimonia sp. nov.

Candidatus Vitabana oblocimonia (NL. fem. n. *oblocimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902763505*. The type genome for the species is the GenBank assembly GCA_902763505.1. The GC content of the type genome is 48.5 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Vitabana panifatica sp. nov.

Candidatus Vitabana panifatica (NL. fem. n. *panifatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp900066305*. The type genome for the species is the GenBank assembly GCA_900066305.1. The GC content of the type genome is 47.78 % and the genome length is 2.65 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "faeces".

Description of *Candidatus* Vitabana recomedo sp. nov.

Candidatus Vitabana recomedo (NL. fem. n. *recomedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp900543485*. The type genome for the species is the GenBank assembly GCA_900543485.1. The GC content of the type genome is 49.19 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Vitabana refacax sp. nov.

Candidatus Vitabana refacax (NL. fem. n. *refacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp902795135*. The type genome for the species is the GenBank assembly GCA_902795135.1. The GC content of the type genome is 48.34 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Vitabana refocitia sp. nov.

Candidatus Vitabana refocitia (NL. fem. n. *refocitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp900549125*. The type genome for the species is the GenBank assembly RS_GCF_900758185.1. The GC content of the type genome is 47.8 % and the genome length is 1.71 Mbp.

Description of *Candidatus* Vitabana sugilousia sp. nov.

Candidatus Vitabana sugilousia (NL. fem. n. *sugilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1191 sp900545775*. The type genome for the species is the GenBank assembly GCA_900545775.1. The GC content of the type genome is 39.77 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Vitabaria inhonivita sp. nov.

Candidatus Vitabaria inhonivita (NL. fem. n. *inhonivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD12-FULL-36-8 sp013388515*. The type genome for the species is the GenBank assembly GCA_013388515.1. The GC content of the type genome is 35.35 % and the genome length is 3.89 Mbp.

Description of *Candidatus* Vitabaria gen. nov.

Candidatus Vitabaria (NL. fem. n. *Vitabaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYD12-FULL-36-8*. The type species for the genus is *Candidatus* Vitabaria inhonivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vitabaria maligitudo sp. nov.

Candidatus Vitabaria maligitudo (NL. fem. n. *maligitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYD12-FULL-36-8 sp001803045*. The type genome for the species is the GenBank assembly GCA_001803055.1. The GC content of the type genome is 35.33 % and the genome length is 4.1 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.2 micron filter at time point B".

Description of *Candidatus* Vitabella allacibra sp. nov.

Candidatus Vitabella allacibra (NL. fem. n. *allacibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin106 sp002238945*. The type genome for the species is the GenBank assembly GCA_002238945.1. The GC content of the type genome is 39.61 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Vitabella gen. nov.

Candidatus Vitabella (NL. fem. n. *Vitabella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin106*. The type species for the genus is *Candidatus* Vitabella allacibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Bin106*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitabellaceae.

Description of *Candidatus* Vitabellaceae fam. nov.

Candidatus Vitabellaceae (NL. fem. n. *Vitabellaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Bin106.* The type genus for the taxon is *Candidatus* Vitabella .

According to GTDB R06-RS202, this family belongs to the order *Oligoflexales*.

Description of *Candidatus* Vitabia menapiforma sp. nov.

Candidatus Vitabia menapiforma (NL. fem. n. *menapiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAACET01 sp011682385*. The type genome for the species is the GenBank assembly GCA_011682385.1. The GC content of the type genome is 53.06 % and the genome length is 2.35 Mbp.

Description of *Candidatus* Vitabia gen. nov.

Candidatus Vitabia (NL. fem. n. *Vitabia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAACET01*. The type species for the genus is *Candidatus* Vitabia menapiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAACET01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitabiaceae.

Description of *Candidatus* Vitabiaceae fam. nov.

Candidatus Vitabiaceae (NL. fem. n. *Vitabiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAACET01.* The type genus for the taxon is *Candidatus* Vitabia .

According to the original version of GTDB R06-RS202, this family belongs to the order *JAACET01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vitabiales.

Description of *Candidatus* Vitabiales ord. nov.

Candidatus Vitabiales (NL. fem. n. *Vitabiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAACET01*. The type genus for the taxon is *Candidatus* Vitabia .

According to the GTDB R06-RS202, this order belongs to the class *Phycisphaerae*.

Description of *Candidatus* Vitabida adcubifica sp. nov.

Candidatus Vitabida adcubifica (NL. fem. n. *adcubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-006 sp009694965*. The type genome for the species is the GenBank assembly GCA_009694965.1. The GC content of the type genome is 38.45 % and the genome length is 0.53 Mbp.

Description of *Candidatus* Vitabida gen. nov.

Candidatus Vitabida (NL. fem. n. *Vitabida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *C7867-006*. The type species for the genus is *Candidatus* Vitabida adcubifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vitabida direcisca sp. nov.

Candidatus Vitabida direcisca (NL. fem. n. *direcisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-006 sp001824295*. The type genome for the species is the GenBank assembly GCA_000994025.1. The GC content of the type genome is 39.64 % and the genome length is 0.64 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Vitabida direpigena sp. nov.

Candidatus Vitabida direpigena (NL. fem. n. *direpigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *C7867-006 sp000996025*. The type genome for the species is the GenBank assembly GCA_001825405.1. The GC content of the type genome is 38.69 % and the genome length is 0.63 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Vitabida horomimonia sp. nov.

Candidatus Vitabida horomimonia (NL. fem. n. *horomimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-006 sp013816135*. The type genome for the species is the GenBank assembly GCA_013816135.1. The GC content of the type genome is 36.94 % and the genome length is 0.79 Mbp.

Description of *Candidatus* Vitabida inrefilenta sp. nov.

Candidatus Vitabida inrefilenta (NL. fem. n. *inrefilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-006 sp003173855*. The type genome for the species is the GenBank assembly GCA_003173855.1. The GC content of the type genome is 36.82 % and the genome length is 0.65 Mbp.

Description of *Candidatus* Vitabida procritoga sp. nov.

Candidatus Vitabida procritoga (NL. fem. n. *procritoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *C7867-006 sp001189155*. The type genome for the species is the GenBank assembly GCA_001189155.1. The GC content of the type genome is 36.44 % and the genome length is 0.67 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Hanford 300 Area IFRC 399-1-60 Groundwater".

Description of *Candidatus* Vitabida rumifitoga sp. nov.

Candidatus Vitabida rumifitoga (NL. fem. n. *rumifitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *C7867-006 sp001825395*. The type genome for the species is the GenBank assembly GCA_001823845.1. The GC content of the type genome is 39.09 % and the genome length is 0.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under high O2 conditions; 1.2 micron filter; full assembly".

Description of *Candidatus* Vitabosa genufilenta sp. nov.

Candidatus Vitabosa genufilenta (NL. fem. n. *genufilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp13-AA77 sp003224635*. The type genome for the species is the GenBank assembly GCA_003224585.1. The GC content of the type genome is 61.15 % and the genome length is 5.15 Mbp.

Description of *Candidatus* Vitabosa gen. nov.

Candidatus Vitabosa (NL. fem. n. *Vitabosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp13-AA77*. The type species for the genus is *Candidatus* Vitabosa genufilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA7540*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Maxumariaceae.

Description of *Candidatus* Vitabula locupetta sp. nov.

Candidatus Vitabula locupetta (NL. fem. n. *locupetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2040 sp002384725*. The type genome for the species is the GenBank assembly GCA_002384725.1. The GC content of the type genome is 38.27 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Vitabula gen. nov.

Candidatus Vitabula (NL. fem. n. *Vitabula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *UBA2040*. The type species for the genus is *Candidatus* Vitabula locupetta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vitabula murilugo sp. nov.

Candidatus Vitabula murilugo (NL. fem. n. *murilugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2040 sp002332715*. The type genome for the species is the GenBank assembly GCA_002332715.1. The GC content of the type genome is 37.96 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Vitifana cicilisca sp. nov.

Candidatus Vitifana cicilisca (NL. fem. n. *cicilisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIKAH01 sp903825355*. The type genome for the species is the GenBank assembly GCA_903887405.1. The GC content of the type genome is 42.04 % and the genome length is 1.32 Mbp.

Description of *Candidatus* Vitifana gen. nov.

Candidatus Vitifana (NL. fem. n. *Vitifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIKAH01*. The type species for the genus is *Candidatus* Vitifana cicilisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RVW-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Direpanaceae.

Description of *Candidatus* Vitifana medimitica sp. nov.

Candidatus Vitifana medimitica (NL. fem. n. *medimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CAIKAH01 sp010027825*. The type genome for the species is the GenBank assembly GCA_010027825.1. The GC content of the type genome is 50.14 % and the genome length is 3.03 Mbp.

Description of *Candidatus* Vitifaria antipousia sp. nov.

Candidatus Vitifaria antipousia (NL. fem. n. *antipousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *TC1 sp001584725*. The type genome for the species is the GenBank assembly RS_GCF_001584725.1. The GC content of the type genome is 32.75 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Vitifaria gen. nov.

Candidatus Vitifaria (NL. fem. n. *Vitifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *TC1*. The type species for the genus is *Candidatus* Vitifaria antipousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *TC1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitifariaceae.

Description of *Candidatus* Vitifariaceae fam. nov.

Candidatus Vitifariaceae (NL. fem. n. *Vitifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TC1*. The type genus for the taxon is *Candidatus* Vitifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *TC1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vitifariales.

Description of *Candidatus* Vitifariales ord. nov.

Candidatus Vitifariales (NL. fem. n. *Vitifariales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TC1*. The type genus for the taxon is *Candidatus* Vitifaria .

According to the original version of GTDB R06-RS202, this family belongs to the class *TC1*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Vitifariae.

Description of *Candidatus* Vitifariae class. nov.

Candidatus Vitifariae (NL. fem. n. *c__Vitifariae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *TC1*. The type genus for the taxon is *Candidatus* Vitifaria .

According to GTDB R06-RS202, this class belongs to the phylum *Firmicutes_B*.

Description of *Candidatus* Vitifella benepago sp. nov.

Candidatus Vitifella benepago (NL. fem. n. *benepago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXZV01 sp903925955*. The type genome for the species is the GenBank assembly GCA_903931025.1. The GC content of the type genome is 68.72 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Vitifella gen. nov.

Candidatus Vitifella (NL. fem. n. *Vitifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIXZV01*. The type species for the genus is *Candidatus* Vitifella benepago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CSP1-4*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Hecatiaceae.

Description of *Candidatus* Vitifella pecunitrix sp. nov.

Candidatus Vitifella pecunitrix (NL. fem. n. *pecunitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXZV01 sp903924005*. The type genome for the species is the

GenBank assembly GCA_903891385.1. The GC content of the type genome is 68.91 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Vitifella supeletta sp. nov.

Candidatus Vitifella supeletta (NL. fem. n. *supeletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIXZV01 sp903930745*. The type genome for the species is the GenBank assembly GCA_903930745.1. The GC content of the type genome is 71.79 % and the genome length is 3.72 Mbp.

Description of *Candidatus* Vitifia desucago sp. nov.

Candidatus Vitifia desucago (NL. fem. n. *desucago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WM-009 sp013822085*. The type genome for the species is the GenBank assembly GCA_013822085.1. The GC content of the type genome is 73.14 % and the genome length is 2.26 Mbp.

Description of *Candidatus* Vitifia gen. nov.

Candidatus Vitifia (NL. fem. n. *Vitifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WM-009*. The type species for the genus is *Candidatus* Vitifia desucago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SM1A02*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Cenaciaceae.

Description of *Candidatus* Vitifida coticilenta sp. nov.

Candidatus Vitifida coticilenta (NL. fem. n. *coticilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs160 sp009705225*. The type genome for the species is the GenBank assembly GCA_009705225.1. The GC content of the type genome is 63.23 %

and the genome length is 2.59 Mbp.

Description of *Candidatus* Vitifida gen. nov.

Candidatus Vitifida (NL. fem. n. *Vitifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *F1-20-MAGs160*. The type species for the genus is *Candidatus* Vitifida coticilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8139*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Recocellaceae.

Description of *Candidatus* Vitifida decenedo sp. nov.

Candidatus Vitifida decenedo (NL. fem. n. *decenedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs160 sp903827085*. The type genome for the species is the GenBank assembly GCA_903827085.1. The GC content of the type genome is 58.39 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Vitifida dilacatica sp. nov.

Candidatus Vitifida dilacatica (NL. fem. n. *dilacatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs160 sp009699125*. The type genome for the species is the GenBank assembly GCA_009699125.1. The GC content of the type genome is 58.59 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Vitifida inculedo sp. nov.

Candidatus Vitifida inculedo (NL. fem. n. *inculedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs160 sp903867185*. The type genome for the species is the GenBank assembly GCA_903867185.1. The GC content of the type genome is 57.56 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Vitifida lenimilega sp. nov.

Candidatus Vitifida lenimilega (NL. fem. n. *lenimilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs160 sp009703275*. The type genome for the species is the GenBank assembly GCA_009702555.1. The GC content of the type genome is 58.14 % and the genome length is 1.91 Mbp.

Description of *Candidatus* Vitifida pavicetta sp. nov.

Candidatus Vitifida pavicetta (NL. fem. n. *pavicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs160 sp009700115*. The type genome for the species is the GenBank assembly GCA_009706085.1. The GC content of the type genome is 57.57 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Vitifida rubicastra sp. nov.

Candidatus Vitifida rubicastra (NL. fem. n. *rubicastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs160 sp005787345*. The type genome for the species is the GenBank assembly GCA_005787345.1. The GC content of the type genome is 57.62 % and the genome length is 2.29 Mbp.

Description of *Candidatus* Vitifida semivitia sp. nov.

Candidatus Vitifida semivitia (NL. fem. n. *semivitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *F1-20-MAGs160 sp009703925*. The type genome for the species is the GenBank assembly GCA_009703925.1. The GC content of the type genome is 63.74 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Vitifosa aggesax sp. nov.

Candidatus Vitifosa aggesax (NL. fem. n. *aggesax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed10-48 sp007121175*. The type genome for the species is the GenBank assembly GCA_007121175.1. The GC content of the type genome is 70.68 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Vitifosa gen. nov.

Candidatus Vitifosa (NL. fem. n. *Vitifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CSSed10-48*. The type species for the genus is *Candidatus* Vitifosa aggesax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vitifosa defetilega sp. nov.

Candidatus Vitifosa defetilega (NL. fem. n. *defetilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed10-48 sp003556805*. The type genome for the species is the GenBank assembly GCA_003561545.1. The GC content of the type genome is 70.61 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Vitifosa detotitudo sp. nov.

Candidatus Vitifosa detotitudo (NL. fem. n. *detotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed10-48 sp007130445*. The type genome for the species is the GenBank assembly GCA_007126295.1. The GC content of the type genome is 71.4 % and the genome length is 2.84 Mbp.

Description of *Candidatus* Vitifosa immatitia sp. nov.

Candidatus Vitifosa immatitia (NL. fem. n. *immatitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *CSSed10-48 sp007695125*. The type genome for the species is the GenBank assembly GCA_007695125.1. The GC content of the type genome is 71.21 % and the genome length is 3.68 Mbp.

Description of *Candidatus* Vitifosa nefanitura sp. nov.

Candidatus Vitifosa nefanitura (NL. fem. n. *nefanitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed10-48 sp003567075*. The type genome for the species is the GenBank assembly GCA_003562635.1. The GC content of the type genome is 70.62 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Vitifosa relecugo sp. nov.

Candidatus Vitifosa relecugo (NL. fem. n. *relecugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed10-48 sp007130855*. The type genome for the species is the GenBank assembly GCA_007118245.1. The GC content of the type genome is 70.91 % and the genome length is 3.1 Mbp.

Description of *Candidatus* Vitifosa vivificula sp. nov.

Candidatus Vitifosa vivificula (NL. fem. n. *vivificula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CSSed10-48 sp007122815*. The type genome for the species is the GenBank assembly GCA_007132035.1. The GC content of the type genome is 69.18 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Vitifula linigicula sp. nov.

Candidatus Vitifula linigicula (NL. fem. n. *linigicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1188 sp900318975*. The type genome for the species is the GenBank assembly GCA_902759855.1. The GC content of the type genome is 31.64 % and the genome length is 1.3 Mbp.

Description of *Candidatus* Vitifula gen. nov.

Candidatus Vitifula (NL. fem. n. *Vitifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1188*. The type species for the genus is *Candidatus* Vitifula linigicula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1188*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitifulaceae.

Description of *Candidatus* Vitifulaceae fam. nov.

Candidatus Vitifulaceae (NL. fem. n. *Vitifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1188.* The type genus for the taxon is *Candidatus* Vitifula .

According to GTDB R06-RS202, this family belongs to the order *Izemoplasmatales*.

Description of *Candidatus* Vitifula monacousia sp. nov.

Candidatus Vitifula monacousia (NL. fem. n. *monacousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1188 sp002310135*. The type genome for the species is the GenBank assembly GCA_002310135.1. The GC content of the type genome is 29.22 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Vitigana colipibra sp. nov.

Candidatus Vitigana colipibra (NL. fem. n. *colipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCPE02 sp013333875*. The type genome for the species is the GenBank assembly GCA_013333875.2. The GC content of the type genome is 36.48 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Vitigana gen. nov.

Candidatus Vitigana (NL. fem. n. *Vitigana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JABCPE02*. The type species for the genus is *Candidatus* Vitigana colipibra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vitigana medimago sp. nov.

Candidatus Vitigana medimago (NL. fem. n. *medimago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JABCPE02 sp013333255*. The type genome for the species is the GenBank assembly GCA_013333255.2. The GC content of the type genome is 36.92 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Vitigaria semunigena sp. nov.

Candidatus Vitigaria semunigena (NL. fem. n. *semunigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-545 sp003250175*. The type genome for the species is the GenBank assembly GCA_003250175.1. The GC content of the type genome is 54.49 % and the genome length is 2.06 Mbp.

Description of *Candidatus* Vitigaria gen. nov.

Candidatus Vitigaria (NL. fem. n. *Vitigaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-545*. The type species for the genus is *Candidatus* Vitigaria semunigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-545*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigariaceae.

Description of *Candidatus* Vitigariaceae fam. nov.

Candidatus Vitigariaceae (NL. fem. n. *Vitigariaceae* a name created from the name of the

type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-545.* The type genus for the taxon is *Candidatus* Vitigaria .

According to GTDB R06-RS202, this family belongs to the order *Campylobacterales*.

Description of *Candidatus* Vitigella cilicetta sp. nov.

Candidatus Vitigella cilicetta (NL. fem. n. *cilicetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA660 sp002299475*. The type genome for the species is the GenBank assembly GCA_002299475.1. The GC content of the type genome is 27.97 % and the genome length is 0.89 Mbp.

Description of *Candidatus* Vitigella gen. nov.

Candidatus Vitigella (NL. fem. n. *Vitigella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA660*. The type species for the genus is *Candidatus* Vitigella cilicetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Vitigellaceae fam. nov.

Candidatus Vitigellaceae (NL. fem. n. *Vitigellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA660.* The type genus for the taxon is *Candidatus* Vitigella .

According to the original version of GTDB R06-RS202, this family belongs to the order *RF39*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Defenosales.

Description of *Candidatus* Vitigella indidifica sp. nov.

Candidatus Vitigella indidifica (NL. fem. n. *indidifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA660 sp002304855*. The type genome for the species is the GenBank assembly GCA_002304855.1. The GC content of the type genome is 29.37 % and the genome length is 0.41 Mbp.

Description of *Candidatus* Vitigia caduressa sp. nov.

Candidatus Vitigia caduressa (NL. fem. n. *caduressa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1383 sp002305415*. The type genome for the species is the GenBank assembly GCA_002305415.1. The GC content of the type genome is 71.25 % and the genome length is 3.06 Mbp.

Description of *Candidatus* Vitigia gen. nov.

Candidatus Vitigia (NL. fem. n. *Vitigia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1383*. The type species for the genus is *Candidatus* Vitigia caduressa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vitigia delucimonas sp. nov.

Candidatus Vitigia delucimonas (NL. fem. n. *delucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1383 sp002304945*. The type genome for the species is the GenBank assembly GCA_002304945.1. The GC content of the type genome is 70.86 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Vitigia venabitoga sp. nov.

Candidatus Vitigia venabitoga (NL. fem. n. *venabitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA1383 sp009930425*. The type genome for the species is the GenBank assembly GCA_009930425.1. The GC content of the type genome is 70.16 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Vitigida duponimonia sp. nov.

Candidatus Vitigida duponimonia (NL. fem. n. *duponimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Verruco-01 sp001604585*. The type genome for the species is the GenBank assembly GCA_001604585.1. The GC content of the type genome is 58.82 % and the genome length is 2.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Vitigida gen. nov.

Candidatus Vitigida (NL. fem. n. *Vitigida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Verruco-01*. The type species for the genus is *Candidatus* Vitigida duponimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Verruco-01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigidaceae.

Description of *Candidatus* Vitigidaceae fam. nov.

Candidatus Vitigidaceae (NL. fem. n. *Vitigidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Verruco-01*. The type genus for the taxon is *Candidatus* Vitigida .

According to GTDB R06-RS202, this family belongs to the order *Opitutales*.

Description of *Candidatus* Vitigida salubigena sp. nov.

Candidatus Vitigida salubigena (NL. fem. n. *salubigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Verruco-01 sp001604565*. The type genome for the species is the GenBank assembly GCA_001604565.1. The GC content of the type genome is 62.96 % and the genome length is 2.5 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "3 replicate cellulose-degrading anaerobic digesters sampled at day 96 and day 362".

Description of *Candidatus* Vitigosa detenago sp. nov.

Candidatus Vitigosa detenago (NL. fem. n. *detenago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RUG13160 sp902786275*. The type genome for the species is the GenBank assembly GCA_902781785.1. The GC content of the type genome is 26.83 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Vitigosa gen. nov.

Candidatus Vitigosa (NL. fem. n. *Vitigosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RUG13160*. The type species for the genus is *Candidatus* Vitigosa detenago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Vitigula dedigitoga sp. nov.

Candidatus Vitigula dedigitoga (NL. fem. n. *dedigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QWOQ01 sp003669585*. The type genome for the species is the GenBank assembly GCA_003669585.1. The GC content of the type genome is 52.46 % and the genome length is 4.27 Mbp.

Description of *Candidatus* Vitigula gen. nov.

Candidatus Vitigula (NL. fem. n. *Vitigula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *QWOQ01*. The type species for the genus is *Candidatus* Vitigula dedigitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1268*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subinellaceae.

Description of *Candidatus* Vitiosangium energastra sp. nov.

Candidatus Vitiosangium energastra (NL. fem. n. *energastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vitiosangium sp003044305*. The type genome for the species is the GenBank assembly RS_GCF_003044305.1. The GC content of the type genome is 68.31 % and the genome length is 14.08 Mbp.

Description of *Candidatus* Vitupana catilousia sp. nov.

Candidatus Vitupana catilousia (NL. fem. n. *catilousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12053 sp001003855*. The type genome for the species is the GenBank assembly GCA_001003065.1. The GC content of the type genome is 47.12 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Vitupana gen. nov.

Candidatus Vitupana (NL. fem. n. *Vitupana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA12053*. The type species for the genus is *Candidatus* Vitupana catilousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GWC2-37-73*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Camilariaceae.

Description of *Candidatus* Vitupana hegumivita sp. nov.

Candidatus Vitupana hegumivita (NL. fem. n. *hegumivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA12053 sp001001345*. The type genome for the species is the GenBank assembly GCA_003484185.1. The GC content of the type genome is 45.2 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Vituparia acricicula sp. nov.

Candidatus Vituparia acricicula (NL. fem. n. *acricicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-870 sp003151935*. The type genome for the species is the GenBank assembly GCA_003151935.1. The GC content of the type genome is 65.5 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Vituparia gen. nov.

Candidatus Vituparia (NL. fem. n. *Vituparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Palsa-870*. The type species for the genus is *Candidatus* Vituparia acricicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vituparia bigaredo sp. nov.

Candidatus Vituparia bigaredo (NL. fem. n. *bigaredo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Palsa-870 sp003169845*. The type genome for the species is the GenBank assembly GCA_003134635.1. The GC content of the type genome is 65.27 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Vituparia offunatio sp. nov.

Candidatus Vituparia offunatio (NL. fem. n. *offunatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *Palsa-870 sp004299235*. The type genome for the species is the GenBank assembly GCA_004299235.1. The GC content of the type genome is 67.19 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Vitupella decupentia sp. nov.

Candidatus Vitupella decupentia (NL. fem. n. *decupentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWX01 sp903916755*. The type genome for the species is the GenBank assembly GCA_903916755.1. The GC content of the type genome is 67.98 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Vitupella gen. nov.

Candidatus Vitupella (NL. fem. n. *Vitupella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWX01*. The type species for the genus is *Candidatus* Vitupella decupentia .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vitupia aneclimonas sp. nov.

Candidatus Vitupia aneclimonas (NL. fem. n. *aneclimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6136 sp002423305*. The type genome for the species is the GenBank assembly GCA_002423305.1. The GC content of the type genome is 57.14 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Vitupia gen. nov.

Candidatus Vitupia (NL. fem. n. *Vitupia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6136*. The type species for the genus is *Candidatus* Vitupia aneclimonas .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vitupia nimiritio sp. nov.

Candidatus Vitupia nimiritio (NL. fem. n. *nimiritio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6136 sp009922685*. The type genome for the species is the GenBank assembly GCA_010031535.1. The GC content of the type genome is 53.1 % and the genome length is 2.3 Mbp.

Description of *Candidatus* Vitupia rosaratica sp. nov.

Candidatus Vitupia rosaratica (NL. fem. n. *rosaratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6136 sp005792805*. The type genome for the species is the GenBank assembly GCA_005792805.1. The GC content of the type genome is 56.93 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Vitupia serotetta sp. nov.

Candidatus Vitupia serotetta (NL. fem. n. *serotetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6136 sp903835265*. The type genome for the species is the GenBank assembly GCA_903835265.1. The GC content of the type genome is 53.69 % and the genome length is 2.45 Mbp.

Description of *Candidatus* Vitupia timefibula sp. nov.

Candidatus Vitupia timefibula (NL. fem. n. *timefibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6136 sp007280285*. The type genome for the species is the GenBank assembly GCA_007280285.1. The GC content of the type genome is 54.02 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Vitupida ranunousia sp. nov.

Candidatus Vitupida ranunousia (NL. fem. n. *ranunousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch104c sp013426185*. The type genome for the species is the GenBank assembly GCA_013426185.1. The GC content of the type genome is 37.12 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Vitupida gen. nov.

Candidatus Vitupida (NL. fem. n. *Vitupida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch104c*. The type species for the genus is *Candidatus* Vitupida ranunousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Vitupida refinibra sp. nov.

Candidatus Vitupida refinibra (NL. fem. n. *refinibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch104c sp013374855*. The type genome for the species is the GenBank assembly GCA_013374855.1. The GC content of the type genome is 36.23 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Vituposa coturisca sp. nov.

Candidatus Vituposa coturisca (NL. fem. n. *coturisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Ch115 sp013178415*. The type genome for the species is the GenBank assembly GCA_012842525.1. The GC content of the type genome is 51.41 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Vituposa gen. nov.

Candidatus Vituposa (NL. fem. n. *Vituposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Ch115*. The type species for the genus is *Candidatus* Vituposa coturisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *Ch115*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vituposaceae.

Description of *Candidatus* Vituposaceae fam. nov.

Candidatus Vituposaceae (NL. fem. n. *Vituposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch115.* The type genus for the taxon is *Candidatus* Vituposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *Ch115*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vituposales.

Description of *Candidatus* Vituposales ord. nov.

Candidatus Vituposales (NL. fem. n. *Vituposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *Ch115.* The type genus for the taxon is *Candidatus* Vituposa .

According to the original version of GTDB R06-RS202, this family belongs to the class *SHA-98*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Taxilidae.

Description of *Candidatus* Vitupula decinifica sp. nov.

Candidatus Vitupula decinifica (NL. fem. n. *decinifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2731375 sp002731375*. The type genome for the species is the GenBank assembly GCA_002500465.1. The GC content of the type genome is 58.92 % and the genome length is 4.35 Mbp.

Description of *Candidatus* Vitupula gen. nov.

Candidatus Vitupula (NL. fem. n. *Vitupula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2731375*. The type species for the genus is *Candidatus* Vitupula decinifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *GCA-2731375*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitupulaceae.

Description of *Candidatus* Vitupulaceae fam. nov.

Candidatus Vitupulaceae (NL. fem. n. *Vitupulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2731375.* The type genus for the taxon is *Candidatus* Vitupula .

According to the original version of GTDB R06-RS202, this family belongs to the order *GCA-2731375*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vitupulales.

Description of *Candidatus* Vitupulales ord. nov.

Candidatus Vitupulales (NL. fem. n. *Vitupulales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *GCA-2731375.* The type genus for the taxon is *Candidatus* Vitupula .

According to the GTDB R06-RS202, this order belongs to the class *Alphaproteobacteria*.

Description of *Candidatus* Vivifana defarisca sp. nov.

Candidatus Vivifana defarisca (NL. fem. n. *defarisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3571 sp002011425*. The type genome for the species is the GenBank assembly GCA_002011425.1. The GC content of the type genome is 61.22 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Vivifana gen. nov.

Candidatus Vivifana (NL. fem. n. *Vivifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3571*. The type species for the genus is *Candidatus* Vivifana defarisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vivifana inobsigena sp. nov.

Candidatus Vivifana inobsigena (NL. fem. n. *inobsigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3571 sp013151115*. The type genome for the species is the GenBank assembly GCA_013151115.1. The GC content of the type genome is 67.76 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Vivifana irremitoga sp. nov.

Candidatus Vivifana irremitoga (NL. fem. n. *irremitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3571 sp002010365*. The type genome for the species is the GenBank assembly GCA_002010365.1. The GC content of the type genome is 61.9 % and the genome length is 1.29 Mbp.

Description of *Candidatus* Vivifana paralatio sp. nov.

Candidatus Vivifana paralatio (NL. fem. n. *paralatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3571 sp002375995*. The type genome for the species is the GenBank assembly GCA_002375995.1. The GC content of the type genome is 62.81 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Vivifaria bisacimonas sp. nov.

Candidatus Vivifaria bisacimonas (NL. fem. n. *bisacimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DRUE01 sp011388515*. The type genome for the species is the

GenBank assembly GCA_011388515.1. The GC content of the type genome is 43.06 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Vivifaria gen. nov.

Candidatus Vivifaria (NL. fem. n. *Vivifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DRUE01*. The type species for the genus is *Candidatus* Vivifaria bisacimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DRUE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vivifariaceae.

Description of *Candidatus* Vivifariaceae fam. nov.

Candidatus Vivifariaceae (NL. fem. n. *Vivifariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DRUE01*. The type genus for the taxon is *Candidatus* Vivifaria .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-13-61-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Volubiales.

Description of *Candidatus* Vivifella intacastra sp. nov.

Candidatus Vivifella intacastra (NL. fem. n. *intacastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5884 sp900551505*. The type genome for the species is the GenBank assembly GCA_900551505.1. The GC content of the type genome is 40.32 % and the genome length is 1.57 Mbp.

Description of *Candidatus* Vivifella gen. nov.

Candidatus Vivifella (NL. fem. n. *Vivifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5884*. The type species for the genus is *Candidatus* Vivifella intacastra .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vivifella milipedo sp. nov.

Candidatus Vivifella milipedo (NL. fem. n. *milipedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5884 sp002431975*. The type genome for the species is the GenBank assembly GCA_003503815.1. The GC content of the type genome is 37.5 % and the genome length is 1.83 Mbp.

Description of *Candidatus* Vivifida homagilenta sp. nov.

Candidatus Vivifida homagilenta (NL. fem. n. *homagilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9942 sp003489165*. The type genome for the species is the GenBank assembly GCA_003489165.1. The GC content of the type genome is 38.89 % and the genome length is 2.03 Mbp.

Description of *Candidatus* Vivifida gen. nov.

Candidatus Vivifida (NL. fem. n. *Vivifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9942*. The type species for the genus is *Candidatus* Vivifida homagilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9942*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vivifidaceae.

Description of *Candidatus* Vivifidaceae fam. nov.

Candidatus Vivifidaceae (NL. fem. n. *Vivifidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9942.* The type genus for the taxon is *Candidatus* Vivifida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9942*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Vivifidales.

Description of *Candidatus* Vivifidales ord. nov.

Candidatus Vivifidales (NL. fem. n. *Vivifidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9942.* The type genus for the taxon is *Candidatus* Vivifida .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9942*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Vivifidae.

Description of *Candidatus* Vivifidae class. nov.

Candidatus Vivifidae (NL. fem. n. *c__Vivifidae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9942.* The type genus for the taxon is *Candidatus* Vivifida .

According to GTDB R06-RS202, this class belongs to the phylum *Nitrospinota*.

Description of *Candidatus* Vivifida nubifica sp. nov.

Candidatus Vivifida nubifica (NL. fem. n. *nubifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9942 sp001805005*. The type genome for the species is the GenBank assembly GCA_001805005.1. The GC content of the type genome is 38.8 % and the genome length is 1.88 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well FP-101 under low O2 conditions; 1.2 micron filter; 10% subassembly".

Description of *Candidatus* Vivifosa vicecisca sp. nov.

Candidatus Vivifosa vicecisca (NL. fem. n. *vicecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PP17-6a sp900095615*. The type genome for the species is the GenBank assembly RS_GCF_900183705.1. The GC content of the type genome is 33.43

% and the genome length is 3.32 Mbp.

Description of *Candidatus* Vivifosa gen. nov.

Candidatus Vivifosa (NL. fem. n. *Vivifosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PP17-6a*. The type species for the genus is *Candidatus* Vivifosa vicecisca .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PP17-6a*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vivifosaceae.

Description of *Candidatus* Vivifosaceae fam. nov.

Candidatus Vivifosaceae (NL. fem. n. *Vivifosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PP17-6a.* The type genus for the taxon is *Candidatus* Vivifosa .

According to GTDB R06-RS202, this family belongs to the order *Tissierellales*.

Description of *Candidatus* Vivifula vigenibula sp. nov.

Candidatus Vivifula vigenibula (NL. fem. n. *vigenibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIVSY01 sp903908715*. The type genome for the species is the GenBank assembly GCA_903858955.1. The GC content of the type genome is 60.2 % and the genome length is 3.29 Mbp.

Description of *Candidatus* Vivifula gen. nov.

Candidatus Vivifula (NL. fem. n. *Vivifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIVSY01*. The type species for the genus is *Candidatus* Vivifula vigenibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAITUY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the family *Candidatus* Dupunosaceae.

Description of *Candidatus* Vocamana incomitio sp. nov.

Candidatus Vocamana incomitio (NL. fem. n. *incomitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QHYA01 sp003223995*. The type genome for the species is the GenBank assembly GCA_003223995.1. The GC content of the type genome is 65.87 % and the genome length is 2.89 Mbp.

Description of *Candidatus* Vocamana gen. nov.

Candidatus Vocamana (NL. fem. n. *Vocamana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QHYA01*. The type species for the genus is *Candidatus* Vocamana incomitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *QHYA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vocamanaceae.

Description of *Candidatus* Vocamanaceae fam. nov.

Candidatus Vocamanaceae (NL. fem. n. *Vocamanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QHYA01.* The type genus for the taxon is *Candidatus* Vocamana .

According to the original version of GTDB R06-RS202, this family belongs to the order *QHYA01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Vocamanales.

Description of *Candidatus* Vocamanales ord. nov.

Candidatus Vocamanales (NL. fem. n. *Vocamanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *QHYA01.* The type genus for the taxon is *Candidatus* Vocamana .

According to the original version of GTDB R06-RS202, this family belongs to the class

Mor1. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Ceracosae.

Description of *Candidatus* Vocamaria monodifica sp. nov.

Candidatus Vocamaria monodifica (NL. fem. n. *monodifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-002784865 sp002788395*. The type genome for the species is the GenBank assembly GCA_002784865.1. The GC content of the type genome is 34.98 % and the genome length is 0.93 Mbp.

Description of *Candidatus* Vocamaria gen. nov.

Candidatus Vocamaria (NL. fem. n. *Vocamaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-002784865*. The type species for the genus is *Candidatus* Vocamaria monodifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Vocamella furibitoga sp. nov.

Candidatus Vocamella furibitoga (NL. fem. n. *furibitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-163 sp005880075*. The type genome for the species is the GenBank assembly GCA_005880075.1. The GC content of the type genome is 62.5 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Vocamella gen. nov.

Candidatus Vocamella (NL. fem. n. *Vocamella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-163*. The type species for the genus is *Candidatus* Vocamella furibitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-64-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dedigellaceae.

Description of *Candidatus* Vocamella recumitica sp. nov.

Candidatus Vocamella recumitica (NL. fem. n. *recumitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-163 sp005882985*. The type genome for the species is the GenBank assembly GCA_005889375.1. The GC content of the type genome is 62.83 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Vocamella vehicugo sp. nov.

Candidatus Vocamella vehicugo (NL. fem. n. *vehicugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-163 sp005882715*. The type genome for the species is the GenBank assembly GCA_005882195.1. The GC content of the type genome is 62.81 % and the genome length is 2.52 Mbp.

Description of *Candidatus* Vocamia patibilenta sp. nov.

Candidatus Vocamia patibilenta (NL. fem. n. *patibilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-375 sp003164035*. The type genome for the species is the GenBank assembly GCA_003164035.1. The GC content of the type genome is 62.84 % and the genome length is 8.01 Mbp.

Description of *Candidatus* Vocamia gen. nov.

Candidatus Vocamia (NL. fem. n. *Vocamia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bog-375*. The type species for the genus is *Candidatus* Vocamia patibilenta .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vocamia recoratica sp. nov.

Candidatus Vocamia recoratica (NL. fem. n. *recoratica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-375 sp003157745*. The type genome for the species is the GenBank assembly GCA_003157745.1. The GC content of the type genome is 63.26 % and the genome length is 5.82 Mbp.

Description of *Candidatus* Vocamia viburitio sp. nov.

Candidatus Vocamia viburitio (NL. fem. n. *viburitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bog-375 sp003142185*. The type genome for the species is the GenBank assembly GCA_003167885.1. The GC content of the type genome is 62.4 % and the genome length is 5.65 Mbp.

Description of *Candidatus* Vocamida catocifica sp. nov.

Candidatus Vocamida catocifica (NL. fem. n. *catocifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *GCA-2719775 sp002719775*. The type genome for the species is the GenBank assembly GCA_002719775.1. The GC content of the type genome is 41.54 % and the genome length is 1.28 Mbp.

Description of *Candidatus* Vocamida gen. nov.

Candidatus Vocamida (NL. fem. n. *Vocamida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *GCA-2719775*. The type species for the genus is *Candidatus* Vocamida catocifica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2963*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Nimirellaceae.

Description of *Candidatus* Vocamosa adrementia sp. nov.

Candidatus Vocamosa adrementia (NL. fem. n. *adrementia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACMMQ01 sp014378955*. The type genome for the species is the GenBank assembly GCA_014378955.1. The GC content of the type genome is 41.93 % and the genome length is 1.53 Mbp.

Description of *Candidatus* Vocamosa gen. nov.

Candidatus Vocamosa (NL. fem. n. *Vocamosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACMMQ01*. The type species for the genus is *Candidatus* Vocamosa adrementia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JACMMQ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vocamosaceae.

Description of *Candidatus* Vocamosaceae fam. nov.

Candidatus Vocamosaceae (NL. fem. n. *Vocamosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JACMMQ01*. The type genus for the taxon is *Candidatus* Vocamosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SK-Y3*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Legifanales.

Description of *Candidatus* Vocamula arillentia sp. nov.

Candidatus Vocamula arillentia (NL. fem. n. *arillentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYUY01 sp012517435*. The type genome for the species is the GenBank assembly GCA_012517435.1. The GC content of the type genome is 39.27 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Vocamula gen. nov.

Candidatus Vocamula (NL. fem. n. *Vocamula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYUY01*. The type species for the genus is *Candidatus* Vocamula arillentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYUY01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vocamulaceae.

Description of *Candidatus* Vocamulaceae fam. nov.

Candidatus Vocamulaceae (NL. fem. n. *Vocamulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYUY01*. The type genus for the taxon is *Candidatus* Vocamula .

According to the original version of GTDB R06-RS202, this family belongs to the order *CAILMK01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Dicimosales.

Description of *Candidatus* Vocifana bicodibula sp. nov.

Candidatus Vocifana bicodibula (NL. fem. n. *bicodibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *XYA2-FULL-43-15 sp001784815*. The type genome for the species is the GenBank assembly GCA_001784815.1. The GC content of the type genome is 43.55 % and the genome length is 0.76 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 1.2 micron filter at time point A".

Description of *Candidatus* Vocifana gen. nov.

Candidatus Vocifana (NL. fem. n. *Vocifana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *XYA2-FULL-43-15*. The type species for the genus is *Candidatus* Vocifana bicodibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2206*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the family *Candidatus* Colimulaceae.

Description of *Candidatus* Vocifaria diritivita sp. nov.

Candidatus Vocifaria diritivita (NL. fem. n. *diritivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3913 sp002391425*. The type genome for the species is the GenBank assembly GCA_002391425.1. The GC content of the type genome is 64.87 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Vocifaria gen. nov.

Candidatus Vocifaria (NL. fem. n. *Vocifaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3913*. The type species for the genus is *Candidatus* Vocifaria diritivita .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Vocifella triscitrix sp. nov.

Candidatus Vocifella triscitrix (NL. fem. n. *triscitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *2013-40CM-41-45 sp002215675*. The type genome for the species is the GenBank assembly GCA_002215675.1. The GC content of the type genome is 41.3 % and the genome length is 3.38 Mbp.

Description of *Candidatus* Vocifella gen. nov.

Candidatus Vocifella (NL. fem. n. *Vocifella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *2013-40CM-41-45*. The type species for the genus is *Candidatus* Vocifella triscitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *2013-40CM-41-45*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vocifellaceae.

Description of *Candidatus* Vocifellaceae fam. nov.

Candidatus Vocifellaceae (NL. fem. n. *Vocifellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *2013-40CM-41-45.* The type genus for the taxon is *Candidatus* Vocifella .

According to the original version of GTDB R06-RS202, this family belongs to the order *AKYH767-A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Lenunanales.

Description of *Candidatus* Vocifia baditessa sp. nov.

Candidatus Vocifia baditessa (NL. fem. n. *baditessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLW01 sp007133875*. The type genome for the species is the GenBank assembly GCA_003554765.1. The GC content of the type genome is 49.24 % and the genome length is 3.45 Mbp.

Description of *Candidatus* Vocifia gen. nov.

Candidatus Vocifia (NL. fem. n. *Vocifia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SLLW01*. The type species for the genus is *Candidatus* Vocifia baditessa .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SKNL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Dehinulaceae.

Description of *Candidatus* Vocifia exindax sp. nov.

Candidatus Vocifia exindax (NL. fem. n. *exindax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SLLW01 sp007132495*. The type genome for the species is the GenBank assembly GCA_007132495.1. The GC content of the type genome is 50.58 % and the genome length is 3.37 Mbp.

Description of *Candidatus* Vocifida refulitoga sp. nov.

Candidatus Vocifida refulitoga (NL. fem. n. *refulitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *BJGZ01 sp014191195*. The type genome for the species is the GenBank assembly GCA_014191195.1. The GC content of the type genome is 33.04 % and the genome length is 2.41 Mbp.

Description of *Candidatus* Vocifida gen. nov.

Candidatus Vocifida (NL. fem. n. *Vocifida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *BJGZ01*. The type species for the genus is *Candidatus* Vocifida refulitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA961*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Citipellaceae.

Description of *Candidatus* Vocifula agratimonia sp. nov.

Candidatus Vocifula agratimonia (NL. fem. n. *agratimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAABRE01 sp011391125*. The type genome for the species is the GenBank assembly GCA_011391125.1. The GC content of the type genome is 35.65 % and the genome length is 4.81 Mbp.

Description of *Candidatus* Vocifula gen. nov.

Candidatus Vocifula (NL. fem. n. *Vocifula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAABRE01*. The type species for the genus is *Candidatus* Vocifula agratimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAABRE01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vocifulaceae.

Description of *Candidatus* Vocifulaceae fam. nov.

Candidatus Vocifulaceae (NL. fem. n. *Vocifulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAABRE01.* The type genus for the taxon is *Candidatus* Vocifula .

According to GTDB R06-RS202, this family belongs to the order *Cyanobacteriales*.

Description of *Candidatus* Vogesella aneclicula sp. nov.

Candidatus Vogesella aneclicula (NL. fem. n. *aneclicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vogesella sp900090205*. The type genome for the species is the GenBank assembly RS_GCF_900090205.1. The GC content of the type genome is 63.88 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Vogesella ornitivita sp. nov.

Candidatus Vogesella ornitivita (NL. fem. n. *ornitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vogesella sp000335715*. The type genome for the species is the GenBank assembly RS_GCF_000335715.1. The GC content of the type genome is 61.34 % and the genome length is 3.77 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Little Long Lake".

Description of *Candidatus* Volubana decamitoga sp. nov.

Candidatus Volubana decamitoga (NL. fem. n. *decamitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5448 sp002427425*. The type genome for the species is the GenBank assembly GCA_002397605.1. The GC content of the type genome is 45.93 % and the genome length is 1.98 Mbp.

Description of *Candidatus* Volubana gen. nov.

Candidatus Volubana (NL. fem. n. *Volubana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5448*. The type species for the genus is *Candidatus* Volubana decamitoga .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-382_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Regiganaceae.

Description of *Candidatus* Volubaria scammitudo sp. nov.

Candidatus Volubaria scammitudo (NL. fem. n. *scammitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *REEL01 sp007695095*. The type genome for the species is the GenBank assembly GCA_007695095.1. The GC content of the type genome is 35.42 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Volubaria gen. nov.

Candidatus Volubaria (NL. fem. n. *Volubaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *REEL01*. The type species for the genus is *Candidatus* Volubaria scammitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *REEL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubariaceae.

Description of *Candidatus* Volubariaceae fam. nov.

Candidatus Volubariaceae (NL. fem. n. *Volubariaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *REEL01*. The type genus for the taxon is *Candidatus* Volubaria .

According to GTDB R06-RS202, this family belongs to the order *Chitinophagales*.

Description of *Candidatus* Volubella telegentia sp. nov.

Candidatus Volubella telegentia (NL. fem. n. *telegentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *WRKU01 sp009777935*. The type genome for the species is the GenBank assembly GCA_009777935.1. The GC content of the type genome is 55.69 % and the genome length is 1.11 Mbp.

Description of *Candidatus* Volubella gen. nov.

Candidatus Volubella (NL. fem. n. *Volubella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *WRKU01*. The type species for the genus is *Candidatus* Volubella telegentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *WRKU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubellaceae.

Description of *Candidatus* Volubellaceae fam. nov.

Candidatus Volubellaceae (NL. fem. n. *Volubellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRKU01.* The type genus for the taxon is *Candidatus* Volubella .

According to the original version of GTDB R06-RS202, this family belongs to the order *WRKU01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Volubellales.

Description of *Candidatus* Volubellales ord. nov.

Candidatus Volubellales (NL. fem. n. *Volubellales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *WRKU01.* The type genus for the taxon is *Candidatus* Volubella .

According to the GTDB R06-RS202, this order belongs to the class *Coriobacteriia*.

Description of *Candidatus* Volubia colimentia sp. nov.

Candidatus Volubia colimentia (NL. fem. n. *colimentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-13-61-14 sp001797815*. The type genome for the species is the GenBank assembly GCA_001797815.1. The GC content of the type genome is 61.15 % and the genome length is 4.74 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 13ft depth".

Description of *Candidatus* Volubia gen. nov.

Candidatus Volubia (NL. fem. n. *Volubia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-13-61-14*. The type species for the genus is *Candidatus* Volubia colimentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-13-61-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubiaceae.

Description of *Candidatus* Volubiaceae fam. nov.

Candidatus Volubiaceae (NL. fem. n. *Volubiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-61-14.* The type genus for the taxon is *Candidatus* Volubia .

According to the original version of GTDB R06-RS202, this family belongs to the order *RBG-13-61-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Volubiales.

Description of *Candidatus* Volubiales ord. nov.

Candidatus Volubiales (NL. fem. n. *Volubiales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-61-14.* The type genus for the taxon is *Candidatus* Volubia .

According to the original version of GTDB R06-RS202, this family belongs to the class *RBG-13-61-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Volubiae.

Description of *Candidatus* Volubiae class. nov.

Candidatus Volubiae (NL. fem. n. *c__Volubiae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-61-14.* The type genus for the taxon is *Candidatus* Volubia .

According to the original version of GTDB R06-RS202, this family belongs to the phylum *RBG-13-61-14*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the phylum *Candidatus* Volubiota.

Description of *Candidatus* Volubiota phyl. nov.

Candidatus Volubiota (NL. fem. n. *Volubiota* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-13-61-14.* The type genus for the taxon is *Candidatus* Volubia .

According to GTDB R06-RS202, this phylum belongs to the domain *Bacteria* .

Description of *Candidatus* Volubida holisitrix sp. nov.

Candidatus Volubida holisitrix (NL. fem. n. *holisitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS966 sp900547185*. The type genome for the species is the GenBank assembly RS_GCF_900762305.1. The GC content of the type genome is 57.54 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Volubida gen. nov.

Candidatus Volubida (NL. fem. n. *Volubida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS966*. The type species for the genus is *Candidatus* Volubida holisitrix .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Volubida valefitudo sp. nov.

Candidatus Volubida valefitudo (NL. fem. n. *valefitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS966 sp900761965*. The type genome for the species is the GenBank assembly RS_GCF_900761965.1. The GC content of the type genome is 57.97 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Volubula aprugivita sp. nov.

Candidatus Volubula aprugivita (NL. fem. n. *aprugivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *HT1-32 sp009649675*. The type genome for the species is the GenBank assembly RS_GCF_009649675.1. The GC content of the type genome is 57.6 % and the genome length is 4.42 Mbp.

Description of *Candidatus* Volubula gen. nov.

Candidatus Volubula (NL. fem. n. *Volubula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *HT1-32*. The type species for the genus is *Candidatus* Volubula aprugivita .

According to the original version of GTDB R06-RS202, this genus belongs to the family *HT1-32*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volubulaceae.

Description of *Candidatus* Volubulaceae fam. nov.

Candidatus Volubulaceae (NL. fem. n. *Volubulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *HT1-32.* The type genus for the taxon is *Candidatus* Volubula .

According to GTDB R06-RS202, this family belongs to the order *Rhodospirillales*.

Description of *Candidatus* Volucana excorousia sp. nov.

Candidatus Volucana excorousia (NL. fem. n. *excorousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *SZUA-6 sp013151965*. The type genome for the species is the GenBank assembly GCA_013151965.1. The GC content of the type genome is 41.74 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Volucana gen. nov.

Candidatus Volucana (NL. fem. n. *Volucana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SZUA-6*. The type species for the genus is *Candidatus* Volucana excorousia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SZUA-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volucanaceae.

Description of *Candidatus* Volucanaceae fam. nov.

Candidatus Volucanaceae (NL. fem. n. *Volucanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-6.* The type genus for the taxon is *Candidatus* Volucana .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-6*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Volucanales.

Description of *Candidatus* Volucanales ord. nov.

Candidatus Volucanales (NL. fem. n. *Volucanales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SZUA-6.* The type genus for the taxon is *Candidatus* Volucana .

According to the GTDB R06-RS202, this order belongs to the class *Spirochaetia*.

Description of *Candidatus* Volucana infaticula sp. nov.

Candidatus Volucana infaticula (NL. fem. n. *infaticula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-6 sp003641675*. The type genome for the species is the

GenBank assembly GCA_003641675.1. The GC content of the type genome is 39.92 % and the genome length is 2.59 Mbp.

Description of *Candidatus* Volucana maxilitura sp. nov.

Candidatus Volucana maxilitura (NL. fem. n. *maxilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SZUA-6 sp003233545*. The type genome for the species is the GenBank assembly GCA_003233545.1. The GC content of the type genome is 41.44 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Volucaria domicago sp. nov.

Candidatus Volucaria domicago (NL. fem. n. *domicago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Marseille-P4683 sp900232885*. The type genome for the species is the GenBank assembly RS_GCF_900067065.1. The GC content of the type genome is 50.21 % and the genome length is 2.49 Mbp.

Description of *Candidatus* Volucaria gen. nov.

Candidatus Volucaria (NL. fem. n. *Volucaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Marseille-P4683*. The type species for the genus is *Candidatus* Volucaria domicago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Volucia artolitio sp. nov.

Candidatus Volucia artolitio (NL. fem. n. *artolitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *4572-123 sp002084545*. The type genome for the species is the GenBank assembly GCA_002084545.1. The GC content of the type genome is 47.51 % and the genome length is 3.18 Mbp.

Description of *Candidatus* Volucia gen. nov.

Candidatus Volucia (NL. fem. n. *Volucia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *4572-123*. The type species for the genus is *Candidatus* Volucia artolitio .

According to the original version of GTDB R06-RS202, this genus belongs to the family *4572-123*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voluciaceae.

Description of *Candidatus* Voluciaceae fam. nov.

Candidatus Voluciaceae (NL. fem. n. *Voluciaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *4572-123.* The type genus for the taxon is *Candidatus* Volucia .

According to GTDB R06-RS202, this family belongs to the order *Desulfobacterales*.

Description of *Candidatus* Volucida bonitifica sp. nov.

Candidatus Volucida bonitifica (NL. fem. n. *bonitifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA145 sp003224755*. The type genome for the species is the GenBank assembly GCA_003224755.1. The GC content of the type genome is 55.35 % and the genome length is 5.68 Mbp.

Description of *Candidatus* Volucida gen. nov.

Candidatus Volucida (NL. fem. n. *Volucida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Gp1-AA145*. The type species for the genus is *Candidatus* Volucida bonitifica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Volucida cimelivita sp. nov.

Candidatus Volucida cimelivita (NL. fem. n. *cimelivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA145 sp003224785*. The type genome for the species is the GenBank assembly GCA_003224785.1. The GC content of the type genome is 55.26 % and the genome length is 2.61 Mbp.

Description of *Candidatus* Volucida denuniforma sp. nov.

Candidatus Volucida denuniforma (NL. fem. n. *denuniforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA145 sp003224835*. The type genome for the species is the GenBank assembly GCA_003224835.1. The GC content of the type genome is 54.38 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Volucida intemitica sp. nov.

Candidatus Volucida intemitica (NL. fem. n. *intemitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Gp1-AA145 sp003224815*. The type genome for the species is the GenBank assembly GCA_003224815.1. The GC content of the type genome is 55.22 % and the genome length is 4.55 Mbp.

Description of *Candidatus* Volucosa novilicella sp. nov.

Candidatus Volucosa novilicella (NL. fem. n. *novilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA9217 sp003454665*. The type genome for the species is the GenBank assembly GCA_003454665.1. The GC content of the type genome is 54.65 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Volucosa gen. nov.

Candidatus Volucosa (NL. fem. n. *Volucosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA9217*. The type species for the genus is *Candidatus* Volucosa novilicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA9217*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volucosaceae.

Description of *Candidatus* Volucosaceae fam. nov.

Candidatus Volucosaceae (NL. fem. n. *Volucosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9217*. The type genus for the taxon is *Candidatus* Volucosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9217*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Volucosales.

Description of *Candidatus* Volucosales ord. nov.

Candidatus Volucosales (NL. fem. n. *Volucosales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9217*. The type genus for the taxon is *Candidatus* Volucosa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA9217*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Volucosae.

Description of *Candidatus* Volucosae class. nov.

Candidatus Volucosae (NL. fem. n. *c__Volucosae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA9217*. The type genus for the taxon is *Candidatus* Volucosa .

According to GTDB R06-RS202, this class belongs to the phylum *Nitrospirota*.

Description of *Candidatus* Volucula vicatiforma sp. nov.

Candidatus Volucula vicatiforma (NL. fem. n. *vicatiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWNZ01 sp003564135*. The type genome for the species is the GenBank assembly GCA_003564135.1. The GC content of the type genome is 40.36 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Volucula gen. nov.

Candidatus Volucula (NL. fem. n. *Volucula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWNZ01*. The type species for the genus is *Candidatus* Volucula vicatiforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWNZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voluculaceae.

Description of *Candidatus* Voluculaceae fam. nov.

Candidatus Voluculaceae (NL. fem. n. *Voluculaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWNZ01.* The type genus for the taxon is *Candidatus* Volucula .

According to GTDB R06-RS202, this family belongs to the order *Cloacimonadales*.

Description of *Candidatus* Volunana curotitudo sp. nov.

Candidatus Volunana curotitudo (NL. fem. n. *curotitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-245 sp900552135*. The type genome for the species is the GenBank assembly GCA_900552135.1. The GC content of the type genome is 29.83 % and the genome length is 1.47 Mbp.

Description of *Candidatus* Volunana gen. nov.

Candidatus Volunana (NL. fem. n. *Volunana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-245*. The type species for the genus is *Candidatus* Volunana

curotitudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-508*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Fidenidaceae.

Description of *Candidatus* Volunana istinatio sp. nov.

Candidatus Volunana istinatio (NL. fem. n. *istinatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-245 sp900761475*. The type genome for the species is the GenBank assembly RS_GCF_900761475.1. The GC content of the type genome is 30.03 % and the genome length is 1.49 Mbp.

Description of *Candidatus* Volunana recumilega sp. nov.

Candidatus Volunana recumilega (NL. fem. n. *recumilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-245 sp000435175*. The type genome for the species is the GenBank assembly GCA_003150745.1. The GC content of the type genome is 32.4 % and the genome length is 2.63 Mbp.

Description of *Candidatus* Volunana sugilitura sp. nov.

Candidatus Volunana sugilitura (NL. fem. n. *sugilitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-245 sp000434195*. The type genome for the species is the GenBank assembly GCA_900553275.1. The GC content of the type genome is 29.92 % and the genome length is 1.26 Mbp.

Description of *Candidatus* Volunana vinolax sp. nov.

Candidatus Volunana vinolax (NL. fem. n. *vinolax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-245 sp900758165*. The type genome for the species is the

GenBank assembly RS_GCF_900758165.1. The GC content of the type genome is 27.15 % and the genome length is 1.6 Mbp.

Description of *Candidatus* Volunaria desacisca sp. nov.

Candidatus Volunaria desacisca (NL. fem. n. *desacisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin5 sp009840225*. The type genome for the species is the GenBank assembly GCA_009840225.1. The GC content of the type genome is 59.86 % and the genome length is 5.6 Mbp.

Description of *Candidatus* Volunaria gen. nov.

Candidatus Volunaria (NL. fem. n. *Volunaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *Bin5*. The type species for the genus is *Candidatus* Volunaria desacisca .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Volunaria monumitas sp. nov.

Candidatus Volunaria monumitas (NL. fem. n. *monumitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin5 sp011523365*. The type genome for the species is the GenBank assembly GCA_011523365.1. The GC content of the type genome is 59.73 % and the genome length is 5.67 Mbp.

Description of *Candidatus* Volunaria sonivitura sp. nov.

Candidatus Volunaria sonivitura (NL. fem. n. *sonivitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin5 sp009838625*. The type genome for the species is the GenBank assembly GCA_009845725.1. The GC content of the type genome is 59.62 % and the genome length is 4.3 Mbp.

Description of *Candidatus* Volunaria stercilenta sp. nov.

Candidatus Volunaria stercilenta (NL. fem. n. *stercilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin5 sp002238445*. The type genome for the species is the GenBank assembly GCA_002238445.1. The GC content of the type genome is 58.5 % and the genome length is 5.55 Mbp.

Description of *Candidatus* Volunaria vinacax sp. nov.

Candidatus Volunaria vinacax (NL. fem. n. *vinacax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *Bin5 sp009841235*. The type genome for the species is the GenBank assembly GCA_009837805.1. The GC content of the type genome is 60.33 % and the genome length is 5.03 Mbp.

Description of *Candidatus* Volunella exaspatica sp. nov.

Candidatus Volunella exaspatica (NL. fem. n. *exaspatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA6109 sp002428445*. The type genome for the species is the GenBank assembly GCA_002428445.1. The GC content of the type genome is 58.99 % and the genome length is 4.19 Mbp.

Description of *Candidatus* Volunella gen. nov.

Candidatus Volunella (NL. fem. n. *Volunella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA6109*. The type species for the genus is *Candidatus* Volunella exaspatica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6109*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunellaceae.

Description of *Candidatus* Volunellaceae fam. nov.

Candidatus Volunellaceae (NL. fem. n. *Volunellaceae* a name created from the name of

the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA6109*. The type genus for the taxon is *Candidatus* Volunella .

According to GTDB R06-RS202, this family belongs to the order *Syntrophales*.

Description of *Candidatus* Volunia binocessa sp. nov.

Candidatus Volunia binocessa (NL. fem. n. *binocessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-118 sp005880525*. The type genome for the species is the GenBank assembly GCA_005880525.1. The GC content of the type genome is 66.82 % and the genome length is 2.28 Mbp.

Description of *Candidatus* Volunia gen. nov.

Candidatus Volunia (NL. fem. n. *Volunia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CF-118*. The type species for the genus is *Candidatus* Volunia binocessa .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Volunia siligedo sp. nov.

Candidatus Volunia siligedo (NL. fem. n. *siligedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CF-118 sp005879985*. The type genome for the species is the GenBank assembly GCA_005880815.1. The GC content of the type genome is 66.94 % and the genome length is 2.67 Mbp.

Description of *Candidatus* Volunida delucastra sp. nov.

Candidatus Volunida delucastra (NL. fem. n. *delucastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RBG-16-60-22 sp001796935*. The type genome for the species is the GenBank assembly GCA_001796935.1. The GC content of the type genome is 61.23 % and the genome length is 1.87 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle background sediment; well D04 at 16ft depth".

Description of *Candidatus* Volunida gen. nov.

Candidatus Volunida (NL. fem. n. *Volunida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RBG-16-60-22*. The type species for the genus is *Candidatus* Volunida delucastra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RBG-16-60-22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunidaceae.

Description of *Candidatus* Volunidaceae fam. nov.

Candidatus Volunidaceae (NL. fem. n. *Volunidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RBG-16-60-22.* The type genus for the taxon is *Candidatus* Volunida .

According to GTDB R06-RS202, this family belongs to the order *Dehalococcoidales*.

Description of *Candidatus* Volunosa haricentia sp. nov.

Candidatus Volunosa haricentia (NL. fem. n. *haricentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SpSt-899 sp011358905*. The type genome for the species is the GenBank assembly GCA_011358905.1. The GC content of the type genome is 59.11 % and the genome length is 2.36 Mbp.

Description of *Candidatus* Volunosa gen. nov.

Candidatus Volunosa (NL. fem. n. *Volunosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *SpSt-899*. The type species for the genus is *Candidatus* Volunosa haricentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SpSt-899*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Volunosaceae.

Description of *Candidatus* Volunosaceae fam. nov.

Candidatus Volunosaceae (NL. fem. n. *Volunosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *SpSt-899.* The type genus for the taxon is *Candidatus* Volunosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *SZUA-161*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Corocosales.

Description of *Candidatus* Volunula dinupitrix sp. nov.

Candidatus Volunula dinupitrix (NL. fem. n. *dinupitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SIBS01 sp009695045*. The type genome for the species is the GenBank assembly GCA_014190945.1. The GC content of the type genome is 31.54 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Volunula gen. nov.

Candidatus Volunula (NL. fem. n. *Volunula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SIBS01*. The type species for the genus is *Candidatus* Volunula dinupitrix .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA12049*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Catecariaceae.

Description of *Candidatus* Voragana pinifedo sp. nov.

Candidatus Voragana pinifedo (NL. fem. n. *pinifedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *QNES01 sp003645255*. The type genome for the species is the GenBank assembly GCA_003645175.1. The GC content of the type genome is 39.24 % and the genome length is 3.54 Mbp.

Description of *Candidatus* Voragana gen. nov.

Candidatus Voragana (NL. fem. n. *Voragana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *QNES01*. The type species for the genus is *Candidatus* Voragana pinifedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Voragaria asceligena sp. nov.

Candidatus Voragaria asceligena (NL. fem. n. *asceligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1004 sp003153455*. The type genome for the species is the GenBank assembly GCA_003153455.1. The GC content of the type genome is 60.83 % and the genome length is 6.69 Mbp.

Description of *Candidatus* Voragaria gen. nov.

Candidatus Voragaria (NL. fem. n. *Voragaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PALSA-1004*. The type species for the genus is *Candidatus* Voragaria asceligena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *SG8-41*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Diludanaceae.

Description of *Candidatus* Voragaria recucimonas sp. nov.

Candidatus Voragaria recucimonas (NL. fem. n. *recucimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1004 sp903913965*. The type genome for the species is the GenBank assembly GCA_903866315.1. The GC content of the type genome is 58.08 % and the genome length is 3.25 Mbp.

Description of *Candidatus* Voragaria regigibula sp. nov.

Candidatus Voragaria regigibula (NL. fem. n. *regigibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1004 sp903889565*. The type genome for the species is the GenBank assembly GCA_903861245.1. The GC content of the type genome is 62.47 % and the genome length is 4.25 Mbp.

Description of *Candidatus* Voragaria vilitago sp. nov.

Candidatus Voragaria vilitago (NL. fem. n. *vilitago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PALSA-1004 sp903905655*. The type genome for the species is the GenBank assembly GCA_903905655.1. The GC content of the type genome is 62.69 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Voragella apoplago sp. nov.

Candidatus Voragella apoplago (NL. fem. n. *apoplago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZJ01 sp013696065*. The type genome for the species is the GenBank assembly GCA_013696065.1. The GC content of the type genome is 65.09 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Voragella gen. nov.

Candidatus Voragella (NL. fem. n. *Voragella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JACCZJ01*. The type species for the genus is *Candidatus* Voragella apoplago .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Voragella luceratio sp. nov.

Candidatus Voragella luceratio (NL. fem. n. *luceratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZJ01 sp013813125*. The type genome for the species is the GenBank assembly GCA_013813125.1. The GC content of the type genome is 65.24 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Voragella plascentia sp. nov.

Candidatus Voragella plascentia (NL. fem. n. *plascentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JACCZJ01 sp013696975*. The type genome for the species is the GenBank assembly GCA_013696975.1. The GC content of the type genome is 65.34 % and the genome length is 1.88 Mbp.

Description of *Candidatus* Voragia subacigena sp. nov.

Candidatus Voragia subacigena (NL. fem. n. *subacigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PNKZ01 sp013822735*. The type genome for the species is the GenBank assembly GCA_013822735.1. The GC content of the type genome is 61.45 % and the genome length is 6.88 Mbp.

Description of *Candidatus* Voragia gen. nov.

Candidatus Voragia (NL. fem. n. *Voragia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PNKZ01*. The type species for the genus is *Candidatus* Voragia subacigena .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PNKZ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragiaceae.

Description of *Candidatus* Voragiaceae fam. nov.

Candidatus Voragiaceae (NL. fem. n. *Voragiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PNKZ01*. The type genus for the taxon is *Candidatus* Voragia .

According to GTDB R06-RS202, this family belongs to the order *Pirellulales*.

Description of *Candidatus* Voragida careciforma sp. nov.

Candidatus Voragida careciforma (NL. fem. n. *careciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2201 sp002327305*. The type genome for the species is the GenBank assembly GCA_002327305.1. The GC content of the type genome is 65.51 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Voragida gen. nov.

Candidatus Voragida (NL. fem. n. *Voragida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2201*. The type species for the genus is *Candidatus* Voragida careciforma .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2201*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragidaceae.

Description of *Candidatus* Voragidaceae fam. nov.

Candidatus Voragidaceae (NL. fem. n. *Voragidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2201*. The type genus for the taxon is *Candidatus* Voragida .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2201*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Voragidales.

Description of *Candidatus* Voragidales ord. nov.

Candidatus Voragidales (NL. fem. n. *Voragidales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2201*. The type genus for the taxon is *Candidatus* Voragida .

According to the GTDB R06-RS202, this order belongs to the class *Thermoanaerobaculia*.

Description of *Candidatus* Voragula ontolibula sp. nov.

Candidatus Voragula ontolibula (NL. fem. n. *ontolibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAADHI01 sp013151935*. The type genome for the species is the GenBank assembly GCA_013151935.1. The GC content of the type genome is 45.75 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Voragula gen. nov.

Candidatus Voragula (NL. fem. n. *Voragula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAADHI01*. The type species for the genus is *Candidatus* Voragula ontolibula .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAADHI01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Voragulaceae.

Description of *Candidatus* Voragulaceae fam. nov.

Candidatus Voragulaceae (NL. fem. n. *Voragulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAADHI01*. The type genus for the taxon is *Candidatus* Voragula .

According to the original version of GTDB R06-RS202, this family belongs to the order *SBBL01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Ceraridales.

Description of *Candidatus* Vulcanococcus alticivita sp. nov.

Candidatus Vulcanococcus alticivita (NL. fem. n. *alticivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vulcanococcus sp014654725*. The type genome for the species is the GenBank assembly GCA_014654725.1. The GC content of the type genome is 63.93 % and the genome length is 2.96 Mbp.

Description of *Candidatus* Vulcanococcus decatimonia sp. nov.

Candidatus Vulcanococcus decatimonia (NL. fem. n. *decatimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vulcanococcus sp000179255*. The type genome for the species is the GenBank assembly RS_GCF_000179255.1. The GC content of the type genome is 62.97 % and the genome length is 2.43 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Chesapeake Bay".

Description of *Candidatus* Vulcanococcus decinisca sp. nov.

Candidatus Vulcanococcus decinisca (NL. fem. n. *decinisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vulcanococcus sp903934375*. The type genome for the species is the GenBank assembly GCA_903940705.1. The GC content of the type genome is 67.92 % and the genome length is 2.46 Mbp.

Description of *Candidatus* Vulcanococcus defacivita sp. nov.

Candidatus Vulcanococcus defacivita (NL. fem. n. *defacivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vulcanococcus sp014191535*. The type genome for the species is the GenBank assembly GCA_014191535.1. The GC content of the type genome is 68.85 % and the genome length is 1.94 Mbp.

Description of *Candidatus* Vulcanococcus encolisca sp. nov.

Candidatus Vulcanococcus encolisca (NL. fem. n. *encolisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vulcanococcus sp014217875*. The type genome for the species is the GenBank assembly RS_GCF_014217875.1. The GC content of the type genome is 62.56 % and the genome length is 2.42 Mbp.

Description of *Candidatus* Vulcanococcus ignipibra sp. nov.

Candidatus Vulcanococcus ignipibra (NL. fem. n. *ignipibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vulcanococcus sp009926195*. The type genome for the species is the GenBank assembly GCA_009926195.1. The GC content of the type genome is 67.71 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Vulcanococcus morigilega sp. nov.

Candidatus Vulcanococcus morigilega (NL. fem. n. *morigilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vulcanococcus sp000179235*. The type genome for the species is the GenBank assembly RS_GCF_000179235.2. The GC content of the type genome is 64.06 % and the genome length is 2.79 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Chesapeake Bay".

Description of *Candidatus* Vulcanococcus risibigena sp. nov.

Candidatus Vulcanococcus risibigena (NL. fem. n. *risibigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vulcanococcus sp010029175*. The type genome for the species is the GenBank assembly GCA_010029175.1. The GC content of the type genome is 67.84 % and the genome length is 2.24 Mbp.

Description of *Candidatus* Vulcanococcus vitigitoga sp. nov.

Candidatus Vulcanococcus vitigitoga (NL. fem. n. *vitigitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Vulcanococcus sp010030955*. The type genome for the species is the

GenBank assembly GCA_010030765.1. The GC content of the type genome is 69.79 % and the genome length is 1.89 Mbp.

Description of *Candidatus* Wagnerdoeblera siticiforma sp. nov.

Candidatus Wagnerdoeblera siticiforma (NL. fem. n. *siticiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wagnerdoeblera sp003863335*. The type genome for the species is the GenBank assembly RS_GCF_003863335.1. The GC content of the type genome is 63.05 % and the genome length is 4.24 Mbp.

Description of *Candidatus* Weimerbacter aprugetta sp. nov.

Candidatus Weimerbacter aprugetta (NL. fem. n. *aprugetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Weimerbacter sp902803645*. The type genome for the species is the GenBank assembly GCA_902803645.1. The GC content of the type genome is 47.42 % and the genome length is 2.21 Mbp.

Description of *Candidatus* Weimerbacter denomicella sp. nov.

Candidatus Weimerbacter denomicella (NL. fem. n. *denomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Weimerbacter sp900316165*. The type genome for the species is the GenBank assembly GCA_003455175.1. The GC content of the type genome is 44.69 % and the genome length is 1.74 Mbp.

Description of *Candidatus* Weimerbacter funamitia sp. nov.

Candidatus Weimerbacter funamitia (NL. fem. n. *funamitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Weimerbacter sp002480925*. The type genome for the species is the GenBank assembly GCA_002481745.1. The GC content of the type genome is 46.28 % and the genome length is 1.93 Mbp.

Description of *Candidatus* Weimerbacter hemitiforma sp. nov.

Candidatus Weimerbacter hemitiforma (NL. fem. n. *hemitiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Weimerbacter sp900317825*. The type genome for the species is the GenBank assembly GCA_002481975.1. The GC content of the type genome is 47.14 % and the genome length is 2.05 Mbp.

Description of *Candidatus* Weimerbacter pavicitudo sp. nov.

Candidatus Weimerbacter pavicitudo (NL. fem. n. *pavicitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Weimerbacter sp900315505*. The type genome for the species is the GenBank assembly GCA_002474355.1. The GC content of the type genome is 47.13 % and the genome length is 1.81 Mbp.

Description of *Candidatus* Weimerbacter subucitia sp. nov.

Candidatus Weimerbacter subucitia (NL. fem. n. *subucitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Weimerbacter sp900100095*. The type genome for the species is the GenBank assembly RS_GCF_900106615.1. The GC content of the type genome is 43.88 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Weissella manibitudo sp. nov.

Candidatus Weissella manibitudo (NL. fem. n. *manibitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Weissella sp011304355*. The type genome for the species is the GenBank assembly RS_GCF_011304355.1. The GC content of the type genome is 37.22 % and the genome length is 1.62 Mbp.

Description of *Candidatus* Weizmannia secunax sp. nov.

Candidatus Weizmannia secunax (NL. fem. n. *secunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Weizmannia sp008974185*. The type genome for the species is the GenBank assembly RS_GCF_008974185.1. The GC content of the type genome is 45.86 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Wenxinia cicaratio sp. nov.

Candidatus Wenxinia cicaratio (NL. fem. n. *cicaratio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenxinia sp012070395*. The type genome for the species is the GenBank assembly RS_GCF_012070395.1. The GC content of the type genome is 69.56 % and the genome length is 3.85 Mbp.

Description of *Candidatus* Wenzhouxiangella antevitica sp. nov.

Candidatus Wenzhouxiangella antevitica (NL. fem. n. *antevitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp003560975*. The type genome for the species is the GenBank assembly GCA_003560975.1. The GC content of the type genome is 65.21 % and the genome length is 3.08 Mbp.

Description of *Candidatus* Wenzhouxiangella assefimonia sp. nov.

Candidatus Wenzhouxiangella assefimonia (NL. fem. n. *assefimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007694885*. The type genome for the species is the GenBank assembly GCA_007694885.1. The GC content of the type genome is 65.03 % and the genome length is 2.6 Mbp.

Description of *Candidatus* Wenzhouxiangella bulapatio sp. nov.

Candidatus Wenzhouxiangella bulapatio (NL. fem. n. *bulapatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007123575*. The type genome for the species is the GenBank assembly GCA_007123575.1. The GC content of the type genome is 61.68

% and the genome length is 2.84 Mbp.

Description of *Candidatus* Wenzhouxiangella bulapetta sp. nov.

Candidatus Wenzhouxiangella bulapetta (NL. fem. n. *bulapetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007695005*. The type genome for the species is the GenBank assembly GCA_007695005.1. The GC content of the type genome is 62.59 % and the genome length is 3.31 Mbp.

Description of *Candidatus* Wenzhouxiangella dapifax sp. nov.

Candidatus Wenzhouxiangella dapifax (NL. fem. n. *dapifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp003567685*. The type genome for the species is the GenBank assembly GCA_003567685.1. The GC content of the type genome is 61.74 % and the genome length is 2.74 Mbp.

Description of *Candidatus* Wenzhouxiangella decomentia sp. nov.

Candidatus Wenzhouxiangella decomentia (NL. fem. n. *decomentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007131235*. The type genome for the species is the GenBank assembly GCA_007131235.1. The GC content of the type genome is 62.26 % and the genome length is 3.3 Mbp.

Description of *Candidatus* Wenzhouxiangella demigivita sp. nov.

Candidatus Wenzhouxiangella demigivita (NL. fem. n. *demigivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp013285445*. The type genome for the species is the GenBank assembly GCA_013285445.1. The GC content of the type genome is 63.85 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Wenzhouxiangella desomitia sp. nov.

Candidatus Wenzhouxiangella desomitia (NL. fem. n. *desomitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007123055*. The type genome for the species is the GenBank assembly GCA_007123055.1. The GC content of the type genome is 63.17 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Wenzhouxiangella diponugo sp. nov.

Candidatus Wenzhouxiangella diponugo (NL. fem. n. *diponugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp003417465*. The type genome for the species is the GenBank assembly RS_GCF_003417465.1. The GC content of the type genome is 62.88 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Wenzhouxiangella disiditas sp. nov.

Candidatus Wenzhouxiangella disiditas (NL. fem. n. *disiditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp003561495*. The type genome for the species is the GenBank assembly GCA_003561495.1. The GC content of the type genome is 60.22 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Wenzhouxiangella gerunax sp. nov.

Candidatus Wenzhouxiangella gerunax (NL. fem. n. *gerunax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp009908385*. The type genome for the species is the GenBank assembly GCA_009908385.1. The GC content of the type genome is 66.63 % and the genome length is 2.94 Mbp.

Description of *Candidatus* Wenzhouxiangella immatifica sp. nov.

Candidatus Wenzhouxiangella immatifica (NL. fem. n. *immatifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp003565625*. The type genome for the species is the GenBank assembly GCA_003565625.1. The GC content of the type genome is 63.63 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Wenzhouxiangella ineffilenta sp. nov.

Candidatus Wenzhouxiangella ineffilenta (NL. fem. n. *ineffilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007135935*. The type genome for the species is the GenBank assembly GCA_007135935.1. The GC content of the type genome is 61.06 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Wenzhouxiangella lapicilenta sp. nov.

Candidatus Wenzhouxiangella lapicilenta (NL. fem. n. *lapicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp010499265*. The type genome for the species is the GenBank assembly RS_GCF_010499265.1. The GC content of the type genome is 63.71 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Wenzhouxiangella letifitas sp. nov.

Candidatus Wenzhouxiangella letifitas (NL. fem. n. *letifitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007135355*. The type genome for the species is the GenBank assembly GCA_003562715.1. The GC content of the type genome is 62.62 % and the genome length is 1.82 Mbp.

Description of *Candidatus* Wenzhouxiangella manomugo sp. nov.

Candidatus Wenzhouxiangella manomugo (NL. fem. n. *manomugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007128175*. The type genome for the species is the GenBank assembly GCA_003556165.1. The GC content of the type genome is 62.62

% and the genome length is 1.95 Mbp.

Description of *Candidatus* Wenzhouxiangella modifugo sp. nov.

Candidatus Wenzhouxiangella modifugo (NL. fem. n. *modifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007116585*. The type genome for the species is the GenBank assembly GCA_007116585.1. The GC content of the type genome is 63.23 % and the genome length is 1.9 Mbp.

Description of *Candidatus* Wenzhouxiangella obnoxastra sp. nov.

Candidatus Wenzhouxiangella obnoxastra (NL. fem. n. *obnoxastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007127425*. The type genome for the species is the GenBank assembly GCA_007127425.1. The GC content of the type genome is 62.05 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Wenzhouxiangella perexicula sp. nov.

Candidatus Wenzhouxiangella perexicula (NL. fem. n. *perexicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007119095*. The type genome for the species is the GenBank assembly GCA_007119095.1. The GC content of the type genome is 60.79 % and the genome length is 2.43 Mbp.

Description of *Candidatus* Wenzhouxiangella refulibula sp. nov.

Candidatus Wenzhouxiangella refulibula (NL. fem. n. *refulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007121485*. The type genome for the species is the GenBank assembly GCA_007134315.1. The GC content of the type genome is 65.76 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Wenzhouxiangella relapimonia sp. nov.

Candidatus Wenzhouxiangella relapimonia (NL. fem. n. *relapimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007134485*. The type genome for the species is the GenBank assembly GCA_007134485.1. The GC content of the type genome is 60.46 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Wenzhouxiangella saburastra sp. nov.

Candidatus Wenzhouxiangella saburastra (NL. fem. n. *saburastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp011008905*. The type genome for the species is the GenBank assembly RS_GCF_011008905.1. The GC content of the type genome is 63.07 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Wenzhouxiangella semifitura sp. nov.

Candidatus Wenzhouxiangella semifitura (NL. fem. n. *semifitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wenzhouxiangella sp007694055*. The type genome for the species is the GenBank assembly GCA_007694055.1. The GC content of the type genome is 62.4 % and the genome length is 4.15 Mbp.

Description of *Candidatus* Williamsia figilicella sp. nov.

Candidatus Williamsia figilicella (NL. fem. n. *figilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Williamsia sp002095395*. The type genome for the species is the GenBank assembly RS_GCF_002095395.1. The GC content of the type genome is 64.72 % and the genome length is 5.98 Mbp.

Description of *Candidatus* Williamsia melopivita sp. nov.

Candidatus Williamsia melopivita (NL. fem. n. *melopivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Williamsia sp002095435*. The type genome for the species is the GenBank assembly GCA_013822805.1. The GC content of the type genome is 64.75 % and the genome length is 6.42 Mbp.

Description of *Candidatus* Winkia demadimonas sp. nov.

Candidatus Winkia demadimonas (NL. fem. n. *demadimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winkia sp002849225*. The type genome for the species is the GenBank assembly RS_GCF_002872055.1. The GC content of the type genome is 56.63 % and the genome length is 2.18 Mbp.

Description of *Candidatus* Winogradskyella abmatax sp. nov.

Candidatus Winogradskyella abmatax (NL. fem. n. *abmatax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013213975*. The type genome for the species is the GenBank assembly GCA_013213975.1. The GC content of the type genome is 34.3 % and the genome length is 3.13 Mbp.

Description of *Candidatus* Winogradskyella adpicilenta sp. nov.

Candidatus Winogradskyella adpicilenta (NL. fem. n. *adpicilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013002225*. The type genome for the species is the GenBank assembly GCA_013002225.1. The GC content of the type genome is 34.37 % and the genome length is 2.99 Mbp.

Description of *Candidatus* Winogradskyella anaplifica sp. nov.

Candidatus Winogradskyella anaplifica (NL. fem. n. *anaplifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp002682935*. The type genome for the species is the GenBank assembly GCA_002682935.1. The GC content of the type genome is 33.53 %

and the genome length is 3.48 Mbp.

Description of *Candidatus* Winogradskyella assicicula sp. nov.

Candidatus Winogradskyella assicicula (NL. fem. n. *assicicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp001971725*. The type genome for the species is the GenBank assembly RS_GCF_001971725.1. The GC content of the type genome is 34.43 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Winogradskyella attelax sp. nov.

Candidatus Winogradskyella attelax (NL. fem. n. *attelax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp002706045*. The type genome for the species is the GenBank assembly GCA_002706045.1. The GC content of the type genome is 33.38 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Winogradskyella bucolitia sp. nov.

Candidatus Winogradskyella bucolitia (NL. fem. n. *bucolitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013394675*. The type genome for the species is the GenBank assembly RS_GCF_013394675.1. The GC content of the type genome is 33.2 % and the genome length is 4.53 Mbp.

Description of *Candidatus* Winogradskyella cacopago sp. nov.

Candidatus Winogradskyella cacopago (NL. fem. n. *cacopago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013042245*. The type genome for the species is the GenBank assembly GCA_013042245.1. The GC content of the type genome is 33.41 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Winogradskyella cocolicula sp. nov.

Candidatus Winogradskyella cocolicula (NL. fem. n. *cocolicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013003655*. The type genome for the species is the GenBank assembly GCA_013043525.1. The GC content of the type genome is 34.88 % and the genome length is 2.15 Mbp.

Description of *Candidatus* Winogradskyella colepatica sp. nov.

Candidatus Winogradskyella colepatica (NL. fem. n. *colepatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp002163855*. The type genome for the species is the GenBank assembly GCA_004211875.1. The GC content of the type genome is 33.05 % and the genome length is 1.75 Mbp.

Description of *Candidatus* Winogradskyella cosiditia sp. nov.

Candidatus Winogradskyella cosiditia (NL. fem. n. *cosiditia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp004211785*. The type genome for the species is the GenBank assembly GCA_004211785.1. The GC content of the type genome is 33.24 % and the genome length is 2.9 Mbp.

Description of *Candidatus* Winogradskyella culilatio sp. nov.

Candidatus Winogradskyella culilatio (NL. fem. n. *culilatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013213835*. The type genome for the species is the GenBank assembly GCA_013213835.1. The GC content of the type genome is 33.23 % and the genome length is 3.55 Mbp.

Description of *Candidatus* Winogradskyella defulibula sp. nov.

Candidatus Winogradskyella defulibula (NL. fem. n. *defulibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013394635*. The type genome for the species is the GenBank assembly RS_GCF_013394595.1. The GC content of the type genome is 34.73 % and the genome length is 4.51 Mbp.

Description of *Candidatus* Winogradskyella doxolitoga sp. nov.

Candidatus Winogradskyella doxolitoga (NL. fem. n. *doxolitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp000828715*. The type genome for the species is the GenBank assembly RS_GCF_000828715.1. The GC content of the type genome is 32.18 % and the genome length is 3.81 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Marine Agar 2216".

Description of *Candidatus* Winogradskyella eccisisca sp. nov.

Candidatus Winogradskyella eccisisca (NL. fem. n. *eccisisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013403925*. The type genome for the species is the GenBank assembly RS_GCF_013403925.1. The GC content of the type genome is 32.28 % and the genome length is 3.9 Mbp.

Description of *Candidatus* Winogradskyella fibicitica sp. nov.

Candidatus Winogradskyella fibicitica (NL. fem. n. *fibicitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp002722255*. The type genome for the species is the GenBank assembly GCA_002722255.1. The GC content of the type genome is 33.77 % and the genome length is 3.21 Mbp.

Description of *Candidatus* Winogradskyella ficedatica sp. nov.

Candidatus Winogradskyella ficedatica (NL. fem. n. *ficedatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013403865*. The type genome for the species is the

GenBank assembly RS_GCF_013403865.1. The GC content of the type genome is 33.4 % and the genome length is 4.13 Mbp.

Description of *Candidatus* Winogradskyella homulicula sp. nov.

Candidatus Winogradskyella homulicula (NL. fem. n. *homulicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp002364335*. The type genome for the species is the GenBank assembly GCA_002364335.1. The GC content of the type genome is 32.36 % and the genome length is 3.42 Mbp.

Description of *Candidatus* Winogradskyella inhorigena sp. nov.

Candidatus Winogradskyella inhorigena (NL. fem. n. *inhorigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp009709615*. The type genome for the species is the GenBank assembly RS_GCF_009709615.1. The GC content of the type genome is 35.48 % and the genome length is 3.57 Mbp.

Description of *Candidatus* Winogradskyella inlibousia sp. nov.

Candidatus Winogradskyella inlibousia (NL. fem. n. *inlibousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp009741275*. The type genome for the species is the GenBank assembly RS_GCF_009741275.1. The GC content of the type genome is 31.9 % and the genome length is 3.61 Mbp.

Description of *Candidatus* Winogradskyella innumifica sp. nov.

Candidatus Winogradskyella innumifica (NL. fem. n. *innumifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013403985*. The type genome for the species is the GenBank assembly RS_GCF_013403985.1. The GC content of the type genome is 32.45 % and the genome length is 4.01 Mbp.

Description of *Candidatus* Winogradskyella inrecigena sp. nov.

Candidatus Winogradskyella inrecigena (NL. fem. n. *inrecigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013403975*. The type genome for the species is the GenBank assembly RS_GCF_013403975.1. The GC content of the type genome is 35.01 % and the genome length is 3.48 Mbp.

Description of *Candidatus* Winogradskyella irraditas sp. nov.

Candidatus Winogradskyella irraditas (NL. fem. n. *irraditas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013394655*. The type genome for the species is the GenBank assembly RS_GCF_013394655.1. The GC content of the type genome is 34.63 % and the genome length is 4.56 Mbp.

Description of *Candidatus* Winogradskyella maxumago sp. nov.

Candidatus Winogradskyella maxumago (NL. fem. n. *maxumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp003712105*. The type genome for the species is the GenBank assembly GCA_003712105.1. The GC content of the type genome is 33.78 % and the genome length is 3.15 Mbp.

Description of *Candidatus* Winogradskyella murilax sp. nov.

Candidatus Winogradskyella murilax (NL. fem. n. *murilax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp000171875*. The type genome for the species is the GenBank assembly RS_GCF_000171875.1. The GC content of the type genome is 32.4 % and the genome length is 3.83 Mbp.

Description of *Candidatus* Winogradskyella peradousia sp. nov.

Candidatus Winogradskyella peradousia (NL. fem. n. *peradousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp003335675*. The type genome for the species is the GenBank assembly RS_GCF_003335675.1. The GC content of the type genome is 33.32 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Winogradskyella vicatifica sp. nov.

Candidatus Winogradskyella vicatifica (NL. fem. n. *vicatifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Winogradskyella sp013403955*. The type genome for the species is the GenBank assembly RS_GCF_013403955.1. The GC content of the type genome is 33.4 % and the genome length is 4.33 Mbp.

Description of *Candidatus* Woeseia miracessa sp. nov.

Candidatus Woeseia miracessa (NL. fem. n. *miracessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Woeseia sp013003155*. The type genome for the species is the GenBank assembly GCA_013043285.1. The GC content of the type genome is 57.26 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Wohlfahrtiimonas foricitio sp. nov.

Candidatus Wohlfahrtiimonas foricitio (NL. fem. n. *foricitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wohlfahrtiimonas sp002252155*. The type genome for the species is the GenBank assembly RS_GCF_002252155.1. The GC content of the type genome is 43.82 % and the genome length is 2.1 Mbp.

Description of *Candidatus* Wolbachia adnepitoga sp. nov.

Candidatus Wolbachia adnepitoga (NL. fem. n. *adnepitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp013365435*. The type genome for the species is the GenBank assembly RS_GCF_013365435.1. The GC content of the type genome is 32.12

% and the genome length is 1.05 Mbp.

Description of *Candidatus* Wolbachia arcipibula sp. nov.

Candidatus Wolbachia arcipibula (NL. fem. n. *arcipibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp013365455*. The type genome for the species is the GenBank assembly RS_GCF_013365455.1. The GC content of the type genome is 32.7 % and the genome length is 0.92 Mbp.

Description of *Candidatus* Wolbachia baditibula sp. nov.

Candidatus Wolbachia baditibula (NL. fem. n. *baditibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp013366805*. The type genome for the species is the GenBank assembly RS_GCF_013366805.1. The GC content of the type genome is 34.51 % and the genome length is 1.05 Mbp.

Description of *Candidatus* Wolbachia citocibula sp. nov.

Candidatus Wolbachia citocibula (NL. fem. n. *citocibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp000306885*. The type genome for the species is the GenBank assembly GCA_902646795.1. The GC content of the type genome is 32.07 % and the genome length is 1.09 Mbp.

Description of *Candidatus* Wolbachia deculicula sp. nov.

Candidatus Wolbachia deculicula (NL. fem. n. *deculicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp902636535*. The type genome for the species is the GenBank assembly GCA_902636385.1. The GC content of the type genome is 35.09 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Wolbachia exhonedo sp. nov.

Candidatus Wolbachia exhonedo (NL. fem. n. *exhonedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp013365475*. The type genome for the species is the GenBank assembly RS_GCF_013365475.1. The GC content of the type genome is 32.28 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Wolbachia funamilega sp. nov.

Candidatus Wolbachia funamilega (NL. fem. n. *funamilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp000008385*. The type genome for the species is the GenBank assembly GCA_902646465.1. The GC content of the type genome is 33.83 % and the genome length is 1.35 Mbp.

Description of *Candidatus* Wolbachia herinentia sp. nov.

Candidatus Wolbachia herinentia (NL. fem. n. *herinentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp001931755*. The type genome for the species is the GenBank assembly RS_GCF_001931755.2. The GC content of the type genome is 34.35 % and the genome length is 1.8 Mbp.

Description of *Candidatus* Wolbachia illapilega sp. nov.

Candidatus Wolbachia illapilega (NL. fem. n. *illapilega* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp012277315*. The type genome for the species is the GenBank assembly RS_GCF_012277315.1. The GC content of the type genome is 35.57 % and the genome length is 1.2 Mbp.

Description of *Candidatus* Wolbachia immacitrix sp. nov.

Candidatus Wolbachia immacitrix (NL. fem. n. *immacitrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp012277295*. The type genome for the species is the GenBank assembly RS_GCF_012277295.1. The GC content of the type genome is 35.18 % and the genome length is 1.5 Mbp.

Description of *Candidatus* Wolbachia legifivita sp. nov.

Candidatus Wolbachia legifivita (NL. fem. n. *legifivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp001439985*. The type genome for the species is the GenBank assembly RS_GCF_001439985.1. The GC content of the type genome is 33.68 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Wolbachia meriditrix sp. nov.

Candidatus Wolbachia meriditrix (NL. fem. n. *meriditrix* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp000829315*. The type genome for the species is the GenBank assembly RS_GCF_013366855.1. The GC content of the type genome is 36.09 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Wolbachia milifitica sp. nov.

Candidatus Wolbachia milifitica (NL. fem. n. *milifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp013365495*. The type genome for the species is the GenBank assembly RS_GCF_013365495.1. The GC content of the type genome is 28.22 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Wolbachia obfusilenta sp. nov.

Candidatus Wolbachia obfusilenta (NL. fem. n. *obfusilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp902636395*. The type genome for the species is the GenBank assembly GCA_902636395.1. The GC content of the type genome is 35.95 %

and the genome length is 1.23 Mbp.

Description of *Candidatus* Wolbachia rorulimonas sp. nov.

Candidatus Wolbachia rorulimonas (NL. fem. n. *rorulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp003344345*. The type genome for the species is the GenBank assembly RS_GCF_001027565.1. The GC content of the type genome is 34.49 % and the genome length is 1.66 Mbp.

Description of *Candidatus* Wolbachia semifica sp. nov.

Candidatus Wolbachia semifica (NL. fem. n. *semifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp000376585*. The type genome for the species is the GenBank assembly GCA_902646185.1. The GC content of the type genome is 34.04 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Wolbachia sonabicella sp. nov.

Candidatus Wolbachia sonabicella (NL. fem. n. *sonabicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp003516275*. The type genome for the species is the GenBank assembly RS_GCF_014534705.1. The GC content of the type genome is 34.09 % and the genome length is 1.46 Mbp.

Description of *Candidatus* Wolbachia venabimonas sp. nov.

Candidatus Wolbachia venabimonas (NL. fem. n. *venabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Wolbachia sp001648025*. The type genome for the species is the GenBank assembly GCA_001648025.1. The GC content of the type genome is 35.14 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Xanthobacter cerimugo sp. nov.

Candidatus Xanthobacter cerimugo (NL. fem. n. *cerimugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthobacter sp000702385*. The type genome for the species is the GenBank assembly RS_GCF_000526175.1. The GC content of the type genome is 67.8 % and the genome length is 5.47 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "not provided; submitted under MIGS 2.1".

Description of *Candidatus* Xanthobacter delecessa sp. nov.

Candidatus Xanthobacter delecessa (NL. fem. n. *delecessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthobacter sp012275355*. The type genome for the species is the GenBank assembly RS_GCF_012275355.1. The GC content of the type genome is 67.96 % and the genome length is 5.58 Mbp.

Description of *Candidatus* Xanthobacter immigousia sp. nov.

Candidatus Xanthobacter immigousia (NL. fem. n. *immigousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthobacter sp012932745*. The type genome for the species is the GenBank assembly RS_GCF_012932745.1. The GC content of the type genome is 68.16 % and the genome length is 5.21 Mbp.

Description of *Candidatus* Xanthobacter obambifica sp. nov.

Candidatus Xanthobacter obambifica (NL. fem. n. *obambifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthobacter sp008364685*. The type genome for the species is the GenBank assembly RS_GCF_008364685.1. The GC content of the type genome is 67.92 % and the genome length is 5.31 Mbp.

Description of *Candidatus* Xanthomarina butubicula sp. nov.

Candidatus Xanthomarina butubicula (NL. fem. n. *butubicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in

apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthomarina sp002366675*. The type genome for the species is the GenBank assembly GCA_002366675.1. The GC content of the type genome is 31.33 % and the genome length is 2.55 Mbp.

Description of *Candidatus* Xanthomarina diludago sp. nov.

Candidatus Xanthomarina diludago (NL. fem. n. *diludago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthomarina sp003144015*. The type genome for the species is the GenBank assembly RS_GCF_003144015.1. The GC content of the type genome is 32.24 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Xanthomonas cibaricula sp. nov.

Candidatus Xanthomonas cibaricula (NL. fem. n. *cibaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthomonas sp014199795*. The type genome for the species is the GenBank assembly RS_GCF_014199735.1. The GC content of the type genome is 68.94 % and the genome length is 4.86 Mbp.

Description of *Candidatus* Xanthomonas lugubitio sp. nov.

Candidatus Xanthomonas lugubitio (NL. fem. n. *lugubitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthomonas sp001043115*. The type genome for the species is the GenBank assembly RS_GCF_001043115.1. The GC content of the type genome is 68.89 % and the genome length is 4.95 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Phaseolus vulgaris".

Description of *Candidatus* Xanthomonas lutulimonas sp. nov.

Candidatus Xanthomonas lutulimonas (NL. fem. n. *lutulimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthomonas sp000963005*. The type genome for the species is the GenBank assembly RS_GCF_000963005.1. The GC content of the type genome is 62.84 % and the genome length is 3.53 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "water droplets on sugarcane leaves".

Description of *Candidatus* Xanthomonas penuribra sp. nov.

Candidatus Xanthomonas penuribra (NL. fem. n. *penuribra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthomonas sp001423495*. The type genome for the species is the GenBank assembly RS_GCF_001423495.1. The GC content of the type genome is 64.03 % and the genome length is 5.17 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Xanthomonas vanititas sp. nov.

Candidatus Xanthomonas vanititas (NL. fem. n. *vanititas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthomonas sp001423585*. The type genome for the species is the GenBank assembly RS_GCF_003364095.1. The GC content of the type genome is 64.29 % and the genome length is 5.26 Mbp.

Description of *Candidatus* Xanthomonas vitabentia sp. nov.

Candidatus Xanthomonas vitabentia (NL. fem. n. *vitabentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthomonas sp014236855*. The type genome for the species is the GenBank assembly RS_GCF_014236835.1. The GC content of the type genome is 68.55 % and the genome length is 5.19 Mbp.

Description of *Candidatus* Xanthomonas decomitoga sp. nov.

Candidatus Xanthomonas decomitoga (NL. fem. n. *decomitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xanthomonas_B sp003449195*. Although GTDB has assigned a genus

name with an alphabetic suffix, this genus designation cannot be incorporated into a well-formed binomial, so in naming this species, we have used the basonym for the genus. The type genome for the species is the GenBank assembly GCA_003449195.1. The GC content of the type genome is 66.75 % and the genome length is 1.84 Mbp.

Description of *Candidatus* Xenobium moleciforma sp. nov.

Candidatus Xenobium moleciforma (NL. fem. n. *moleciforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xenobium sp012799975*. The type genome for the species is the GenBank assembly GCA_012799975.1. The GC content of the type genome is 64.92 % and the genome length is 3.65 Mbp.

Description of *Candidatus* Xenococcus progrivita sp. nov.

Candidatus Xenococcus progrivita (NL. fem. n. *progrivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xenococcus sp000332055*. The type genome for the species is the GenBank assembly RS_GCF_000332055.1. The GC content of the type genome is 39.68 % and the genome length is 5.93 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "marine aquarium".

Description of *Candidatus* Xenodana divoritudo sp. nov.

Candidatus Xenodana divoritudo (NL. fem. n. *divoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWGV01 sp903912365*. The type genome for the species is the GenBank assembly GCA_903821485.1. The GC content of the type genome is 44.89 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Xenodana gen. nov.

Candidatus Xenodana (NL. fem. n. *Xenodana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWGV01*. The type species for the genus is *Candidatus* Xenodana divoritudo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5542*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Favilidaceae.

Description of *Candidatus* Xenodaria dilematio sp. nov.

Candidatus Xenodaria dilematio (NL. fem. n. *dilematio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3263 sp001689615*. The type genome for the species is the GenBank assembly GCA_002491865.1. The GC content of the type genome is 52.15 % and the genome length is 1.87 Mbp.

Description of *Candidatus* Xenodaria gen. nov.

Candidatus Xenodaria (NL. fem. n. *Xenodaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA3263*. The type species for the genus is *Candidatus* Xenodaria dilematio .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xenodaria nefaricula sp. nov.

Candidatus Xenodaria nefaricula (NL. fem. n. *nefaricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3263 sp002490725*. The type genome for the species is the GenBank assembly GCA_002490725.1. The GC content of the type genome is 56.62 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Xenodaria obmutitas sp. nov.

Candidatus Xenodaria obmutitas (NL. fem. n. *obmutitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA3263 sp900759865*. The type genome for the species is the GenBank assembly GCA_900759865.1. The GC content of the type genome is 57.3 %

and the genome length is 2.22 Mbp.

Description of *Candidatus* Xenodia mirifitica sp. nov.

Candidatus Xenodia mirifitica (NL. fem. n. *mirifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *PWGO01 sp003554525*. The type genome for the species is the GenBank assembly GCA_003554525.1. The GC content of the type genome is 46.24 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Xenodia gen. nov.

Candidatus Xenodia (NL. fem. n. *Xenodia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *PWGO01*. The type species for the genus is *Candidatus* Xenodia mirifitica .

According to the original version of GTDB R06-RS202, this genus belongs to the family *PWGO01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenodiaceae.

Description of *Candidatus* Xenodiaceae fam. nov.

Candidatus Xenodiaceae (NL. fem. n. *Xenodiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *PWGO01*. The type genus for the taxon is *Candidatus* Xenodia .

According to the original version of GTDB R06-RS202, this family belongs to the order *DTU022*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Depelidales.

Description of *Candidatus* Xenodida codifugo sp. nov.

Candidatus Xenodida codifugo (NL. fem. n. *codifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5861 sp002432635*. The type genome for the species is the GenBank assembly GCA_002432635.1. The GC content of the type genome is 49.18 %

and the genome length is 3.25 Mbp.

Description of *Candidatus* Xenodida gen. nov.

Candidatus Xenodida (NL. fem. n. *Xenodida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5861*. The type species for the genus is *Candidatus* Xenodida codifugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xenodosa colutibra sp. nov.

Candidatus Xenodosa colutibra (NL. fem. n. *colutibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RZZM01 sp009929845*. The type genome for the species is the GenBank assembly GCA_009929845.1. The GC content of the type genome is 56.7 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Xenodosa gen. nov.

Candidatus Xenodosa (NL. fem. n. *Xenodosa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RZZM01*. The type species for the genus is *Candidatus* Xenodosa colutibra .

According to the original version of GTDB R06-RS202, this genus belongs to the family *RZZM01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenodosaceae.

Description of *Candidatus* Xenodosaceae fam. nov.

Candidatus Xenodosaceae (NL. fem. n. *Xenodosaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *RZZM01.* The type genus for the taxon is *Candidatus* Xenodosa .

According to the original version of GTDB R06-RS202, this family belongs to the order *RZYC01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to

the order *Candidatus* Virecellales.

Description of *Candidatus* Xenodula algebatica sp. nov.

Candidatus Xenodula algebatica (NL. fem. n. *algebatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFN01 sp010024875*. The type genome for the species is the GenBank assembly GCA_010024875.1. The GC content of the type genome is 56.88 % and the genome length is 3.02 Mbp.

Description of *Candidatus* Xenodula gen. nov.

Candidatus Xenodula (NL. fem. n. *Xenodula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SYFN01*. The type species for the genus is *Candidatus* Xenodula algebatica .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xenodula culilifica sp. nov.

Candidatus Xenodula culilifica (NL. fem. n. *culilifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFN01 sp900299005*. The type genome for the species is the GenBank assembly GCA_900299005.1. The GC content of the type genome is 56.89 % and the genome length is 2.92 Mbp.

Description of *Candidatus* Xenodula dehinitura sp. nov.

Candidatus Xenodula dehinitura (NL. fem. n. *dehinitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFN01 sp903872555*. The type genome for the species is the GenBank assembly GCA_903894555.1. The GC content of the type genome is 53.6 % and the genome length is 2.25 Mbp.

Description of *Candidatus* Xenodula derecisca sp. nov.

Candidatus Xenodula derecisca (NL. fem. n. *derecisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFN01 sp005800405*. The type genome for the species is the GenBank assembly GCA_005803965.1. The GC content of the type genome is 54.54 % and the genome length is 2.08 Mbp.

Description of *Candidatus* Xenodula parocitica sp. nov.

Candidatus Xenodula parocitica (NL. fem. n. *parocitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFN01 sp903904635*. The type genome for the species is the GenBank assembly GCA_903904635.1. The GC content of the type genome is 49.32 % and the genome length is 2.47 Mbp.

Description of *Candidatus* Xenodula sicunilenta sp. nov.

Candidatus Xenodula sicunilenta (NL. fem. n. *sicunilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SYFN01 sp903846425*. The type genome for the species is the GenBank assembly GCA_903924935.1. The GC content of the type genome is 48.75 % and the genome length is 2.38 Mbp.

Description of *Candidatus* Xenopana cituvedo sp. nov.

Candidatus Xenopana cituvedo (NL. fem. n. *cituvedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *RYZV01 sp004011965*. The type genome for the species is the GenBank assembly RS_GCF_004011945.1. The GC content of the type genome is 42.72 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Xenopana gen. nov.

Candidatus Xenopana (NL. fem. n. *Xenopana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *RYZV01*. The type species for the genus is *Candidatus* Xenopana cituvedo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xenoparia cacopicula sp. nov.

Candidatus Xenoparia cacopicula (NL. fem. n. *cacopicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2137 sp002695035*. The type genome for the species is the GenBank assembly GCA_002695035.1. The GC content of the type genome is 44.38 % and the genome length is 2.14 Mbp.

Description of *Candidatus* Xenoparia gen. nov.

Candidatus Xenoparia (NL. fem. n. *Xenoparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2137*. The type species for the genus is *Candidatus* Xenoparia cacopicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xenoparia cerebivita sp. nov.

Candidatus Xenoparia cerebivita (NL. fem. n. *cerebivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2137 sp002701555*. The type genome for the species is the GenBank assembly GCA_002701555.1. The GC content of the type genome is 42.56 % and the genome length is 1.39 Mbp.

Description of *Candidatus* Xenoparia supelatica sp. nov.

Candidatus Xenoparia supelatica (NL. fem. n. *supelatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this species is *UBA2137 sp002328415*. The type genome for the species is the GenBank assembly GCA_002471725.1. The GC content of the type genome is 44.93 % and the genome length is 1.61 Mbp.

Description of *Candidatus* Xenopella diritimonas sp. nov.

Candidatus Xenopella diritimonas (NL. fem. n. *diritimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1600 sp900553315*. The type genome for the species is the GenBank assembly RS_GCF_900756615.1. The GC content of the type genome is 57.64 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Xenopella gen. nov.

Candidatus Xenopella (NL. fem. n. *Xenopella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UMGS1600*. The type species for the genus is *Candidatus* Xenopella diritimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-74*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Subabosaceae.

Description of *Candidatus* Xenopella monimatica sp. nov.

Candidatus Xenopella monimatica (NL. fem. n. *monimatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UMGS1600 sp900553295*. The type genome for the species is the GenBank assembly RS_GCF_900758145.1. The GC content of the type genome is 59.58 % and the genome length is 2.4 Mbp.

Description of *Candidatus* Xenopia tirocedo sp. nov.

Candidatus Xenopia tirocedo (NL. fem. n. *tirocedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *DSKJ01 sp011051445*. The type genome for the species is the

GenBank assembly GCA_011051445.1. The GC content of the type genome is 69.89 % and the genome length is 3.35 Mbp.

Description of *Candidatus* Xenopia gen. nov.

Candidatus Xenopia (NL. fem. n. *Xenopia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *DSKJ01*. The type species for the genus is *Candidatus* Xenopia tirocedo .

According to the original version of GTDB R06-RS202, this genus belongs to the family *DSKJ01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenopiaceae.

Description of *Candidatus* Xenopiaceae fam. nov.

Candidatus Xenopiaceae (NL. fem. n. *Xenopiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *DSKJ01*. The type genus for the taxon is *Candidatus* Xenopia .

According to the original version of GTDB R06-RS202, this family belongs to the order *FW602-bin22*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Colipulales.

Description of *Candidatus* Xenopida absuribula sp. nov.

Candidatus Xenopida absuribula (NL. fem. n. *absuribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902560025*. The type genome for the species is the GenBank assembly GCA_902560025.1. The GC content of the type genome is 30.44 % and the genome length is 0.82 Mbp.

Description of *Candidatus* Xenopida gen. nov.

Candidatus Xenopida (NL. fem. n. *Xenopida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *MED-G11*. The type species for the genus is *Candidatus* Xenopida absuribula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xenopida adcometta sp. nov.

Candidatus Xenopida adcometta (NL. fem. n. *adcometta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp014239665*. The type genome for the species is the GenBank assembly GCA_014239665.1. The GC content of the type genome is 29.83 % and the genome length is 1.27 Mbp.

Description of *Candidatus* Xenopida ancepigena sp. nov.

Candidatus Xenopida ancepigena (NL. fem. n. *ancepigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp014239615*. The type genome for the species is the GenBank assembly GCA_014239615.1. The GC content of the type genome is 29.68 % and the genome length is 1.22 Mbp.

Description of *Candidatus* Xenopida cacomicella sp. nov.

Candidatus Xenopida cacomicella (NL. fem. n. *cacomicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902593165*. The type genome for the species is the GenBank assembly GCA_902593165.1. The GC content of the type genome is 30.57 % and the genome length is 1.23 Mbp.

Description of *Candidatus* Xenopida cicarilenta sp. nov.

Candidatus Xenopida cicarilenta (NL. fem. n. *cicarilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902594745*. The type genome for the species is the GenBank assembly GCA_902635655.1. The GC content of the type genome is 30.49 % and the genome length is 1.25 Mbp.

Description of *Candidatus* Xenopida cocibax sp. nov.

Candidatus Xenopida cocibax (NL. fem. n. *cocibax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp002729755*. The type genome for the species is the GenBank assembly GCA_004214195.1. The GC content of the type genome is 28.62 % and the genome length is 0.57 Mbp.

Description of *Candidatus* Xenopida cucuricula sp. nov.

Candidatus Xenopida cucuricula (NL. fem. n. *cucuricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp004214015*. The type genome for the species is the GenBank assembly GCA_004214015.1. The GC content of the type genome is 29.64 % and the genome length is 0.81 Mbp.

Description of *Candidatus* Xenopida decomibra sp. nov.

Candidatus Xenopida decomibra (NL. fem. n. *decomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902516925*. The type genome for the species is the GenBank assembly GCA_902516925.1. The GC content of the type genome is 30.62 % and the genome length is 0.99 Mbp.

Description of *Candidatus* Xenopida defesilenta sp. nov.

Candidatus Xenopida defesilenta (NL. fem. n. *defesilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902519955*. The type genome for the species is the GenBank assembly GCA_902519955.1. The GC content of the type genome is 30.23 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Xenopida exentibula sp. nov.

Candidatus Xenopida exentibula (NL. fem. n. *exentibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902509805*. The type genome for the species is the GenBank assembly GCA_902509805.1. The GC content of the type genome is 30.25 % and the genome length is 0.78 Mbp.

Description of *Candidatus* Xenopida exforastra sp. nov.

Candidatus Xenopida exforastra (NL. fem. n. *exforastra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902517365*. The type genome for the species is the GenBank assembly GCA_902517365.1. The GC content of the type genome is 30.05 % and the genome length is 0.68 Mbp.

Description of *Candidatus* Xenopida filifitica sp. nov.

Candidatus Xenopida filifitica (NL. fem. n. *filifitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp002457075*. The type genome for the species is the GenBank assembly GCA_002705625.1. The GC content of the type genome is 29.91 % and the genome length is 1.12 Mbp.

Description of *Candidatus* Xenopida hibisibra sp. nov.

Candidatus Xenopida hibisibra (NL. fem. n. *hibisibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902594485*. The type genome for the species is the GenBank assembly GCA_902592695.1. The GC content of the type genome is 30.5 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Xenopida innasigena sp. nov.

Candidatus Xenopida innasigena (NL. fem. n. *innasigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902597925*. The type genome for the species is the GenBank assembly GCA_902597925.1. The GC content of the type genome is 30.66 %

and the genome length is 0.99 Mbp.

Description of *Candidatus* Xenopida intolilenta sp. nov.

Candidatus Xenopida intolilenta (NL. fem. n. *intolilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902523665*. The type genome for the species is the GenBank assembly GCA_902523665.1. The GC content of the type genome is 30.27 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Xenopida lanigiforma sp. nov.

Candidatus Xenopida lanigiforma (NL. fem. n. *lanigiforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902577515*. The type genome for the species is the GenBank assembly GCA_902577515.1. The GC content of the type genome is 30.12 % and the genome length is 1.16 Mbp.

Description of *Candidatus* Xenopida linigisca sp. nov.

Candidatus Xenopida linigisca (NL. fem. n. *linigisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902583445*. The type genome for the species is the GenBank assembly GCA_902615235.1. The GC content of the type genome is 30.19 % and the genome length is 1.02 Mbp.

Description of *Candidatus* Xenopida maligessa sp. nov.

Candidatus Xenopida maligessa (NL. fem. n. *maligessa* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902586435*. The type genome for the species is the GenBank assembly GCA_902591115.1. The GC content of the type genome is 30.27 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Xenopida maxumilenta sp. nov.

Candidatus Xenopida maxumilenta (NL. fem. n. *maxumilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902514615*. The type genome for the species is the GenBank assembly GCA_902514615.1. The GC content of the type genome is 30.12 % and the genome length is 1.03 Mbp.

Description of *Candidatus* Xenopida navifugo sp. nov.

Candidatus Xenopida navifugo (NL. fem. n. *navifugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902620455*. The type genome for the species is the GenBank assembly GCA_902540755.1. The GC content of the type genome is 30.36 % and the genome length is 1.13 Mbp.

Description of *Candidatus* Xenopida pedifax sp. nov.

Candidatus Xenopida pedifax (NL. fem. n. *pedifax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902629505*. The type genome for the species is the GenBank assembly GCA_902629505.1. The GC content of the type genome is 31.06 % and the genome length is 0.86 Mbp.

Description of *Candidatus* Xenopida pragmitura sp. nov.

Candidatus Xenopida pragmitura (NL. fem. n. *pragmitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902510395*. The type genome for the species is the GenBank assembly GCA_902510395.1. The GC content of the type genome is 29.83 % and the genome length is 0.98 Mbp.

Description of *Candidatus* Xenopida secunugo sp. nov.

Candidatus Xenopida secunugo (NL. fem. n. *secunugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp004213645*. The type genome for the species is the GenBank assembly GCA_902518175.1. The GC content of the type genome is 29.97 % and the genome length is 1.04 Mbp.

Description of *Candidatus* Xenopida tumefibra sp. nov.

Candidatus Xenopida tumefibra (NL. fem. n. *tumefibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902617285*. The type genome for the species is the GenBank assembly GCA_902617285.1. The GC content of the type genome is 30.22 % and the genome length is 1.19 Mbp.

Description of *Candidatus* Xenopida vacilicella sp. nov.

Candidatus Xenopida vacilicella (NL. fem. n. *vacilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902622595*. The type genome for the species is the GenBank assembly GCA_902540315.1. The GC content of the type genome is 30.52 % and the genome length is 0.8 Mbp.

Description of *Candidatus* Xenopida vilipitio sp. nov.

Candidatus Xenopida vilipitio (NL. fem. n. *vilipitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *MED-G11 sp902598525*. The type genome for the species is the GenBank assembly GCA_902598525.1. The GC content of the type genome is 30.28 % and the genome length is 1.17 Mbp.

Description of *Candidatus* Xenoposa delapicella sp. nov.

Candidatus Xenoposa delapicella (NL. fem. n. *delapicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8517 sp003484955*. The type genome for the species is the GenBank assembly GCA_003484955.1. The GC content of the type genome is 40.07 %

and the genome length is 0.75 Mbp.

Description of *Candidatus* Xenoposa gen. nov.

Candidatus Xenoposa (NL. fem. n. *Xenoposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA8517*. The type species for the genus is *Candidatus* Xenoposa delapicella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA8517*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xenoposaceae.

Description of *Candidatus* Xenoposaceae fam. nov.

Candidatus Xenoposaceae (NL. fem. n. *Xenoposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA8517.* The type genus for the taxon is *Candidatus* Xenoposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *GWA2-44-7*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Notacellales.

Description of *Candidatus* Xenoposa desacitica sp. nov.

Candidatus Xenoposa desacitica (NL. fem. n. *desacitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8517 sp001001045*. The type genome for the species is the GenBank assembly GCA_001001045.1. The GC content of the type genome is 43.73 % and the genome length is 0.6 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "aquifer sediment".

Description of *Candidatus* Xenoposa musulitura sp. nov.

Candidatus Xenoposa musulitura (NL. fem. n. *musulitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA8517 sp000997405*. The type genome for the species is the

GenBank assembly GCA_001793455.1. The GC content of the type genome is 40.5 % and the genome length is 0.68 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Rifle well CD01 at 16ft depth; 0.1 micron filter at time point B".

Description of *Candidatus* Xenopula mahelicula sp. nov.

Candidatus Xenopula mahelicula (NL. fem. n. *mahelicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWHR01 sp010365205*. The type genome for the species is the GenBank assembly GCA_010365205.1. The GC content of the type genome is 66.3 % and the genome length is 3.04 Mbp.

Description of *Candidatus* Xenopula gen. nov.

Candidatus Xenopula (NL. fem. n. *Xenopula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIWHR01*. The type species for the genus is *Candidatus* Xenopula mahelicula .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xenopula roraribula sp. nov.

Candidatus Xenopula roraribula (NL. fem. n. *roraribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIWHR01 sp903912485*. The type genome for the species is the GenBank assembly GCA_903912485.1. The GC content of the type genome is 69.09 % and the genome length is 5.27 Mbp.

Description of *Candidatus* Xeramana cocodax sp. nov.

Candidatus Xeramana cocodax (NL. fem. n. *cocodax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-102 sp003075435*. The type genome for the species is the GenBank assembly GCA_001899605.1. The GC content of the type genome is 40.06 % and the

genome length is 6.14 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Xeramana gen. nov.

Candidatus Xeramana (NL. fem. n. *Xeramana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *NS-102*. The type species for the genus is *Candidatus* Xeramana cocodax .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xeramana laxitivita sp. nov.

Candidatus Xeramana laxitivita (NL. fem. n. *laxitivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-102 sp001899685*. The type genome for the species is the GenBank assembly GCA_001899685.1. The GC content of the type genome is 44.03 % and the genome length is 6.01 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Thiocyanate ramp bioreactor".

Description of *Candidatus* Xeramana vicecitudo sp. nov.

Candidatus Xeramana vicecitudo (NL. fem. n. *vicecitudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *NS-102 sp009192765*. The type genome for the species is the GenBank assembly RS_GCF_009192765.1. The GC content of the type genome is 41.8 % and the genome length is 5.69 Mbp.

Description of *Candidatus* Xeramaria refunimonia sp. nov.

Candidatus Xeramaria refunimonia (NL. fem. n. *refunimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4082 sp002383355*. The type genome for the species is the GenBank assembly GCA_002383355.1. The GC content of the type genome is 37.44 % and the genome length is 1.68 Mbp.

Description of *Candidatus* Xeramaria gen. nov.

Candidatus Xeramaria (NL. fem. n. *Xeramaria* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4082*. The type species for the genus is *Candidatus* Xeramaria refunimonia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *34-128*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Tumefosaceae.

Description of *Candidatus* Xeramella coluticella sp. nov.

Candidatus Xeramella coluticella (NL. fem. n. *coluticella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA1539 sp002788135*. The type genome for the species is the GenBank assembly GCA_002771095.1. The GC content of the type genome is 46.51 % and the genome length is 0.84 Mbp.

Description of *Candidatus* Xeramella gen. nov.

Candidatus Xeramella (NL. fem. n. *Xeramella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA1539*. The type species for the genus is *Candidatus* Xeramella coluticella .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA1539*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramellaceae.

Description of *Candidatus* Xeramellaceae fam. nov.

Candidatus Xeramellaceae (NL. fem. n. *Xeramellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA1539.* The type genus for the taxon is *Candidatus* Xeramella .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA9983_A*. According to the renamed version of GTDB R06-RS202, this taxon belongs

to the order *Candidatus* Ficedanales.

Description of *Candidatus* Xeramia tibicentia sp. nov.

Candidatus Xeramia tibicentia (NL. fem. n. *tibicentia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAIJLX01 sp903821695*. The type genome for the species is the GenBank assembly GCA_903821695.1. The GC content of the type genome is 47.97 % and the genome length is 2.11 Mbp.

Description of *Candidatus* Xeramia gen. nov.

Candidatus Xeramia (NL. fem. n. *Xeramia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAIJLX01*. The type species for the genus is *Candidatus* Xeramia tibicentia .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAIJLX01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeramiaceae.

Description of *Candidatus* Xeramiaceae fam. nov.

Candidatus Xeramiaceae (NL. fem. n. *Xeramiaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAIJLX01*. The type genus for the taxon is *Candidatus* Xeramia .

According to GTDB R06-RS202, this family belongs to the order *Rickettsiales*.

Description of *Candidatus* Xeramida bicoritudo sp. nov.

Candidatus Xeramida bicoritudo (NL. fem. n. *bicoritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4036 sp002382325*. The type genome for the species is the GenBank assembly GCA_002306465.1. The GC content of the type genome is 33.23 % and the genome length is 2.64 Mbp.

Description of *Candidatus* Xeramida gen. nov.

Candidatus Xeramida (NL. fem. n. *Xeramida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA4036*. The type species for the genus is *Candidatus* Xeramida bicoritudo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xeramida pericitura sp. nov.

Candidatus Xeramida pericitura (NL. fem. n. *pericitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA4036 sp004116335*. The type genome for the species is the GenBank assembly RS_GCF_004116335.1. The GC content of the type genome is 34.94 % and the genome length is 2.53 Mbp.

Description of *Candidatus* Xeramula adgenugo sp. nov.

Candidatus Xeramula adgenugo (NL. fem. n. *adgenugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-882 sp900545455*. The type genome for the species is the GenBank assembly GCA_900545455.1. The GC content of the type genome is 45.29 % and the genome length is 2.7 Mbp.

Description of *Candidatus* Xeramula gen. nov.

Candidatus Xeramula (NL. fem. n. *Xeramula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-882*. The type species for the genus is *Candidatus* Xeramula adgenugo .

According to GTDB R06-RS202, this genus belongs to the family .

Description of *Candidatus* Xeramula decamicula sp. nov.

Candidatus Xeramula decamicula (NL. fem. n. *decamicula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-882 sp900545175*. The type genome for the species is the GenBank assembly RS_GCF_900755825.1. The GC content of the type genome is 41.4 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Xeramula socagugo sp. nov.

Candidatus Xeramula socagugo (NL. fem. n. *socagugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-882 sp003486385*. The type genome for the species is the GenBank assembly RS_GCF_900753995.1. The GC content of the type genome is 43.61 % and the genome length is 2.71 Mbp.

Description of *Candidatus* Xeramula tametatio sp. nov.

Candidatus Xeramula tametatio (NL. fem. n. *tametatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-882 sp000435595*. The type genome for the species is the GenBank assembly GCA_900538415.1. The GC content of the type genome is 43.75 % and the genome length is 2.98 Mbp.

Description of *Candidatus* Xeropana cisaletta sp. nov.

Candidatus Xeropana cisaletta (NL. fem. n. *cisaletta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W3P20-009 sp004552385*. The type genome for the species is the GenBank assembly GCA_004552385.1. The GC content of the type genome is 56.61 % and the genome length is 2.04 Mbp.

Description of *Candidatus* Xeropana gen. nov.

Candidatus Xeropana (NL. fem. n. *Xeropana* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation

for this genus is *W3P20-009*. The type species for the genus is *Candidatus* Xeropana cisaletta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *W3P20-009*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropanaceae.

Description of *Candidatus* Xeropanaceae fam. nov.

Candidatus Xeropanaceae (NL. fem. n. *Xeropanaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *W3P20-009.* The type genus for the taxon is *Candidatus* Xeropana .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Xeropana infiribula sp. nov.

Candidatus Xeropana infiribula (NL. fem. n. *infiribula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *W3P20-009 sp900766825*. The type genome for the species is the GenBank assembly RS_GCF_900766825.1. The GC content of the type genome is 49.72 % and the genome length is 2.82 Mbp.

Description of *Candidatus* Xeroparia subabimonas sp. nov.

Candidatus Xeroparia subabimonas (NL. fem. n. *subabimonas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *SKZC01 sp007127575*. The type genome for the species is the GenBank assembly GCA_007127575.1. The GC content of the type genome is 66.63 % and the genome length is 3.19 Mbp.

Description of *Candidatus* Xeroparia gen. nov.

Candidatus Xeroparia (NL. fem. n. *Xeroparia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *SKZC01*. The type species for the genus is *Candidatus* Xeroparia subabimonas .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA6960*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Caravidaceae.

Description of *Candidatus* Xeropella hegumago sp. nov.

Candidatus Xeropella hegumago (NL. fem. n. *hegumago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-288 sp000437395*. The type genome for the species is the GenBank assembly GCA_900539125.1. The GC content of the type genome is 30.4 % and the genome length is 1.7 Mbp.

Description of *Candidatus* Xeropella gen. nov.

Candidatus Xeropella (NL. fem. n. *Xeropella* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-288*. The type species for the genus is *Candidatus* Xeropella hegumago .

According to the original version of GTDB R06-RS202, this genus belongs to the family *CAG-288*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropellaceae.

Description of *Candidatus* Xeropellaceae fam. nov.

Candidatus Xeropellaceae (NL. fem. n. *Xeropellaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *CAG-288.* The type genus for the taxon is *Candidatus* Xeropella .

According to the original version of GTDB R06-RS202, this family belongs to the order *RFN20*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Cerofellales.

Description of *Candidatus* Xeropia macililenta sp. nov.

Candidatus Xeropia macililenta (NL. fem. n. *macililenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-628 sp900553835*. The type genome for the species is the GenBank assembly GCA_900553835.1. The GC content of the type genome is 26.32 % and the genome length is 0.94 Mbp.

Description of *Candidatus* Xeropia gen. nov.

Candidatus Xeropia (NL. fem. n. *Xeropia* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *CAG-628*. The type species for the genus is *Candidatus* Xeropia macililenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA660*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Vitigellaceae.

Description of *Candidatus* Xeropia semimitica sp. nov.

Candidatus Xeropia semimitica (NL. fem. n. *semimitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-628 sp000438415*. The type genome for the species is the GenBank assembly GCA_000438415.1. The GC content of the type genome is 26.22 % and the genome length is 1.08 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "derived from human gut metagenome".

Description of *Candidatus* Xeropia tenilicella sp. nov.

Candidatus Xeropia tenilicella (NL. fem. n. *tenilicella* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *CAG-628 sp003524085*. The type genome for the species is the GenBank assembly RS_GCF_900758665.1. The GC content of the type genome is 28.0 % and the genome length is 1.15 Mbp.

Description of *Candidatus* Xeropida innabilenta sp. nov.

Candidatus Xeropida innabilenta (NL. fem. n. *innabilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *JAAYJT01 sp012522795*. The type genome for the species is the GenBank assembly GCA_012522795.1. The GC content of the type genome is 37.15 % and the genome length is 2.88 Mbp.

Description of *Candidatus* Xeropida gen. nov.

Candidatus Xeropida (NL. fem. n. *Xeropida* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *JAAYJT01*. The type species for the genus is *Candidatus* Xeropida innabilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *JAAYJT01*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropidaceae.

Description of *Candidatus* Xeropidaceae fam. nov.

Candidatus Xeropidaceae (NL. fem. n. *Xeropidaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *JAAYJT01.* The type genus for the taxon is *Candidatus* Xeropida .

According to GTDB R06-RS202, this family belongs to the order *Bacteroidales*.

Description of *Candidatus* Xeroposa exsisetta sp. nov.

Candidatus Xeroposa exsisetta (NL. fem. n. *exsisetta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA2394 sp002343335*. The type genome for the species is the GenBank assembly GCA_002343335.1. The GC content of the type genome is 48.43 % and the genome length is 2.65 Mbp.

Description of *Candidatus* Xeroposa gen. nov.

Candidatus Xeroposa (NL. fem. n. *Xeroposa* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA2394*. The type species for the genus is *Candidatus* Xeroposa exsisetta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA2394*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeroposaceae.

Description of *Candidatus* Xeroposaceae fam. nov.

Candidatus Xeroposaceae (NL. fem. n. *Xeroposaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2394.* The type genus for the taxon is *Candidatus* Xeroposa .

According to the original version of GTDB R06-RS202, this family belongs to the order *UBA2394*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the order *Candidatus* Xeroposales.

Description of *Candidatus* Xeroposales ord. nov.

Candidatus Xeroposales (NL. fem. n. *Xeroposales* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2394.* The type genus for the taxon is *Candidatus* Xeroposa .

According to the original version of GTDB R06-RS202, this family belongs to the class *UBA2394*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the class *Candidatus* Xeroposae.

Description of *Candidatus* Xeroposae class. nov.

Candidatus Xeroposae (NL. fem. n. *c__Xeroposae* a name created from the name of the type genus by addition of the appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA2394.* The type genus for the taxon is *Candidatus* Xeroposa .

According to GTDB R06-RS202, this class belongs to the phylum *Bdellovibrionota*.

Description of *Candidatus* Xeropula offulilenta sp. nov.

Candidatus Xeropula offulilenta (NL. fem. n. *offulilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5734 sp009928985*. The type genome for the species is the

GenBank assembly GCA_009928985.1. The GC content of the type genome is 55.27 % and the genome length is 3.01 Mbp.

Description of *Candidatus* Xeropula gen. nov.

Candidatus Xeropula (NL. fem. n. *Xeropula* a name created arbitrarily, while preserving the phonotactics and morphology of Latin).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this genus is *UBA5734*. The type species for the genus is *Candidatus* Xeropula offulilenta .

According to the original version of GTDB R06-RS202, this genus belongs to the family *UBA5734*. According to the renamed version of GTDB R06-RS202, this taxon belongs to the family *Candidatus* Xeropulaceae.

Description of *Candidatus* Xeropulaceae fam. nov.

Candidatus Xeropulaceae (NL. fem. n. *Xeropulaceae* a name created from the name of the type genus by addition of an appropriate suffix).

A taxon identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this taxon is *UBA5734.* The type genus for the taxon is *Candidatus* Xeropula .

According to GTDB R06-RS202, this family belongs to the order *Saccharofermentanales*.

Description of *Candidatus* Xeropula rudecago sp. nov.

Candidatus Xeropula rudecago (NL. fem. n. *rudecago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5734 sp002419145*. The type genome for the species is the GenBank assembly GCA_002419145.1. The GC content of the type genome is 54.7 % and the genome length is 2.31 Mbp.

Description of *Candidatus* Xeropula televisca sp. nov.

Candidatus Xeropula televisca (NL. fem. n. *televisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202. The GTDB R06-RS202 placeholder designation for this species is *UBA5734 sp002419365*. The type genome for the species is the GenBank assembly GCA_002419365.1. The GC content of the type genome is 55.51 %

and the genome length is 2.7 Mbp.

Description of *Candidatus* Xiphinematobacter nimiritas sp. nov.

Candidatus Xiphinematobacter nimiritas (NL. fem. n. *nimiritas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xiphinematobacter sp001318295*. The type genome for the species is the GenBank assembly RS_GCF_001318295.1. The GC content of the type genome is 47.73 % and the genome length is 0.92 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "roots of grapevine in Idaho".

Description of *Candidatus* Xylanimonas antecimonia sp. nov.

Candidatus Xylanimonas antecimonia (NL. fem. n. *antecimonia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xylanimonas sp009780755*. The type genome for the species is the GenBank assembly GCA_009780755.1. The GC content of the type genome is 63.05 % and the genome length is 2.39 Mbp.

Description of *Candidatus* Xylanimonas bisacifica sp. nov.

Candidatus Xylanimonas bisacifica (NL. fem. n. *bisacifica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xylanimonas sp009782865*. The type genome for the species is the GenBank assembly GCA_009782865.1. The GC content of the type genome is 68.69 % and the genome length is 2.01 Mbp.

Description of *Candidatus* Xylanimonas lanugitica sp. nov.

Candidatus Xylanimonas lanugitica (NL. fem. n. *lanugitica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xylanimonas sp009783295*. The type genome for the species is the GenBank assembly GCA_009783295.1. The GC content of the type genome is 73.12 % and the genome length is 3.98 Mbp.

Description of *Candidatus* Xylanimonas luticousia sp. nov.

Candidatus Xylanimonas luticousia (NL. fem. n. *luticousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xylanimonas sp009846865*. The type genome for the species is the GenBank assembly RS_GCF_009846865.1. The GC content of the type genome is 75.03 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Xylanimonas remulitia sp. nov.

Candidatus Xylanimonas remulitia (NL. fem. n. *remulitia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xylanimonas sp004135385*. The type genome for the species is the GenBank assembly RS_GCF_004135385.1. The GC content of the type genome is 73.41 % and the genome length is 3.86 Mbp.

Description of *Candidatus* Xylophilus acceritudo sp. nov.

Candidatus Xylophilus acceritudo (NL. fem. n. *acceritudo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xylophilus sp001421705*. The type genome for the species is the GenBank assembly RS_GCF_001421705.1. The GC content of the type genome is 69.43 % and the genome length is 4.48 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "leaf".

Description of *Candidatus* Xylophilus obtemedo sp. nov.

Candidatus Xylophilus obtemedo (NL. fem. n. *obtemedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Xylophilus sp009906855*. The type genome for the species is the GenBank assembly RS_GCF_009906855.1. The GC content of the type genome is 68.37 % and the genome length is 5.87 Mbp.

Description of *Candidatus* Yaniella excinatica sp. nov.

Candidatus Yaniella excinatica (NL. fem. n. *excinatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yaniella sp002358975*. The type genome for the species is the GenBank assembly GCA_002358975.1. The GC content of the type genome is 53.37 % and the genome length is 2.58 Mbp.

Description of *Candidatus* Yaniella indiditio sp. nov.

Candidatus Yaniella indiditio (NL. fem. n. *indiditio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yaniella sp013393415*. The type genome for the species is the GenBank assembly GCA_013393415.1. The GC content of the type genome is 56.51 % and the genome length is 3.14 Mbp.

Description of *Candidatus* Yeosuana manubitas sp. nov.

Candidatus Yeosuana manubitas (NL. fem. n. *manubitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yeosuana sp002441545*. The type genome for the species is the GenBank assembly GCA_002441545.1. The GC content of the type genome is 31.56 % and the genome length is 3.62 Mbp.

Description of *Candidatus* Yeosuana obfenivita sp. nov.

Candidatus Yeosuana obfenivita (NL. fem. n. *obfenivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yeosuana sp011762485*. The type genome for the species is the GenBank assembly RS_GCF_011762485.1. The GC content of the type genome is 32.6 % and the genome length is 4.16 Mbp.

Description of *Candidatus* Yeosuana terebibula sp. nov.

Candidatus Yeosuana terebibula (NL. fem. n. *terebibula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yeosuana sp002784145*. The type genome for the species is the GenBank assembly GCA_009994285.1. The GC content of the type genome is 33.19 %

and the genome length is 3.13 Mbp.

Description of *Candidatus* Yimella abinvilenta sp. nov.

Candidatus Yimella abinvilenta (NL. fem. n. *abinvilenta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yimella sp014530045*. The type genome for the species is the GenBank assembly RS_GCF_014530045.1. The GC content of the type genome is 66.65 % and the genome length is 3.22 Mbp.

Description of *Candidatus* Yimella desonitura sp. nov.

Candidatus Yimella desonitura (NL. fem. n. *desonitura* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yimella sp013135345*. The type genome for the species is the GenBank assembly RS_GCF_013135345.1. The GC content of the type genome is 69.35 % and the genome length is 3.49 Mbp.

Description of *Candidatus* Yonghaparkia bipinitoga sp. nov.

Candidatus Yonghaparkia bipinitoga (NL. fem. n. *bipinitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yonghaparkia sp001425665*. The type genome for the species is the GenBank assembly RS_GCF_001429705.1. The GC content of the type genome is 71.9 % and the genome length is 2.59 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "soil".

Description of *Candidatus* Yonghaparkia recoricula sp. nov.

Candidatus Yonghaparkia recoricula (NL. fem. n. *recoricula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yonghaparkia sp005502445*. The type genome for the species is the GenBank assembly RS_GCF_005502445.1. The GC content of the type genome is 70.57 % and the genome length is 2.57 Mbp.

Description of *Candidatus* Yonghaparkia thessax sp. nov.

Candidatus Yonghaparkia thessax (NL. fem. n. *thessax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yonghaparkia sp012530535*. The type genome for the species is the GenBank assembly RS_GCF_012530535.1. The GC content of the type genome is 72.36 % and the genome length is 2.62 Mbp.

Description of *Candidatus* Yoonia aminnivita sp. nov.

Candidatus Yoonia aminnivita (NL. fem. n. *aminnivita* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yoonia sp900143545*. The type genome for the species is the GenBank assembly RS_GCF_900143545.1. The GC content of the type genome is 56.78 % and the genome length is 3.91 Mbp.

Description of *Candidatus* Yoonia appicigena sp. nov.

Candidatus Yoonia appicigena (NL. fem. n. *appicigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yoonia sp001419985*. The type genome for the species is the GenBank assembly RS_GCF_001419985.1. The GC content of the type genome is 57.83 % and the genome length is 3.7 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "Surface seawater".

Description of *Candidatus* Yoonia benivax sp. nov.

Candidatus Yoonia benivax (NL. fem. n. *benivax* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yoonia sp002378665*. The type genome for the species is the GenBank assembly GCA_002333375.1. The GC content of the type genome is 55.61 % and the genome length is 2.81 Mbp.

Description of *Candidatus* Yoonia inconedo sp. nov.

Candidatus Yoonia inconedo (NL. fem. n. *inconedo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yoonia sp003201935*. The type genome for the species is the GenBank assembly RS_GCF_003201935.1. The GC content of the type genome is 57.81 % and the genome length is 3.92 Mbp.

Description of *Candidatus* Yoonia inoblitio sp. nov.

Candidatus Yoonia inoblitio (NL. fem. n. *inoblitio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yoonia sp003318235*. The type genome for the species is the GenBank assembly RS_GCF_003318235.1. The GC content of the type genome is 54.37 % and the genome length is 3.66 Mbp.

Description of *Candidatus* Yoonia irrotitas sp. nov.

Candidatus Yoonia irrotitas (NL. fem. n. *irrotitas* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yoonia sp000169435*. The type genome for the species is the GenBank assembly RS_GCF_000169435.1. The GC content of the type genome is 55.47 % and the genome length is 3.5 Mbp.

Description of *Candidatus* Yoonia nimiretta sp. nov.

Candidatus Yoonia nimiretta (NL. fem. n. *nimiretta* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yoonia sp000967725*. The type genome for the species is the GenBank assembly RS_GCF_000967725.1. The GC content of the type genome is 54.34 % and the genome length is 3.56 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "wood".

Description of *Candidatus* Yoonia vitifatio sp. nov.

Candidatus Yoonia vitifatio (NL. fem. n. *vitifatio* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Yoonia sp003551805*. The type genome for the species is the GenBank

assembly GCA_003551805.1. The GC content of the type genome is 59.05 % and the genome length is 3.12 Mbp.

Description of *Candidatus* Youhaiella puruligena sp. nov.

Candidatus Youhaiella puruligena (NL. fem. n. *puruligena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Youhaiella sp000689495*. The type genome for the species is the GenBank assembly RS_GCF_000689495.1. The GC content of the type genome is 64.01 % and the genome length is 4.67 Mbp.

Description of *Candidatus* Youngiibacter paropatica sp. nov.

Candidatus Youngiibacter paropatica (NL. fem. n. *paropatica* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Youngiibacter sp002428415*. The type genome for the species is the GenBank assembly GCA_002428415.1. The GC content of the type genome is 46.14 % and the genome length is 2.87 Mbp.

Description of *Candidatus* Youngiibacter sifunago sp. nov.

Candidatus Youngiibacter sifunago (NL. fem. n. *sifunago* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Youngiibacter sp002428605*. The type genome for the species is the GenBank assembly GCA_002402305.1. The GC content of the type genome is 46.89 % and the genome length is 2.79 Mbp.

Description of *Candidatus* Zavarzinia feculugo sp. nov.

Candidatus Zavarzinia feculugo (NL. fem. n. *feculugo* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zavarzinia sp003590945*. The type genome for the species is the GenBank assembly RS_GCF_003590945.1. The GC content of the type genome is 66.67 % and the genome length is 5.64 Mbp.

Description of *Candidatus* Zeaxanthinibacter cenotitoga sp. nov.

Candidatus Zeaxanthinibacter cenotitoga (NL. fem. n. *cenotitoga* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zeaxanthinibacter sp013003145*. The type genome for the species is the GenBank assembly GCA_013003145.1. The GC content of the type genome is 45.78 % and the genome length is 2.17 Mbp.

Description of *Candidatus* Zeaxanthinibacter indivousia sp. nov.

Candidatus Zeaxanthinibacter indivousia (NL. fem. n. *indivousia* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zeaxanthinibacter sp001683825*. The type genome for the species is the GenBank assembly RS_GCF_001683825.1. The GC content of the type genome is 49.98 % and the genome length is 4.12 Mbp. The isolation source for the NCBI BioSample associated with the type genome is descibed as "single strain isolated from microbial consortium enriched at the cathode of a solar microbial fuel cell originally enriched from seawater collected near Rutgers; NJ".

Description of *Candidatus* Zemynaea adlocicula sp. nov.

Candidatus Zemynaea adlocicula (NL. fem. n. *adlocicula* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zemynaea sp002413145*. The type genome for the species is the GenBank assembly GCA_002413145.1. The GC content of the type genome is 65.07 % and the genome length is 2.22 Mbp.

Description of *Candidatus* Zhengella nosocigena sp. nov.

Candidatus Zhengella nosocigena (NL. fem. n. *nosocigena* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zhengella sp002708825*. The type genome for the species is the GenBank assembly GCA_002710865.1. The GC content of the type genome is 63.81 % and the genome length is 4.88 Mbp.

Description of *Candidatus* Zoogloea abpatibula sp. nov.

Candidatus Zoogloea abpatibula (NL. fem. n. *abpatibula* a species epithet created

arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zoogloea sp009469605*. The type genome for the species is the GenBank assembly RS_GCF_009469605.1. The GC content of the type genome is 65.77 % and the genome length is 5.02 Mbp.

Description of *Candidatus* Zoogloea horomibra sp. nov.

Candidatus Zoogloea horomibra (NL. fem. n. *horomibra* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zoogloea sp012927165*. The type genome for the species is the GenBank assembly RS_GCF_012927165.1. The GC content of the type genome is 65.94 % and the genome length is 5.83 Mbp.

Description of *Candidatus* Zoogloea illibisca sp. nov.

Candidatus Zoogloea illibisca (NL. fem. n. *illibisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zoogloea sp008011925*. The type genome for the species is the GenBank assembly GCA_008011925.1. The GC content of the type genome is 64.65 % and the genome length is 2.93 Mbp.

Description of *Candidatus* Zoogloea indeviforma sp. nov.

Candidatus Zoogloea indeviforma (NL. fem. n. *indeviforma* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zoogloea sp009026175*. The type genome for the species is the GenBank assembly GCA_009026175.1. The GC content of the type genome is 65.57 % and the genome length is 5.44 Mbp.

Description of *Candidatus* Zoogloea vigenisca sp. nov.

Candidatus Zoogloea vigenisca (NL. fem. n. *vigenisca* a species epithet created arbitrarily, while preserving the phonotactics and morphology of Latin; used as a noun in apposition).

A species identified and delineated according to the algorithms of the Genome Taxonomy

Database (GTDB) release R06-RS202.The GTDB R06-RS202 placeholder designation for this species is *Zoogloea sp002028455*. The type genome for the species is the GenBank assembly RS_GCF_002028455.1. The GC content of the type genome is 64.2 % and the genome length is 5.81 Mbp.